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Base Realignment and Closure
Program Management Office West
1455 Frazee Road, Suite 900
San Diego, California 92108-4310

CONTRACT NO. N62473-06-D-2201
CTO NO. 0020

FINAL
ZERO-VALENT IRON TREATABILITY STUDY REPORT

August 24, 2010

DCN: ECSD-2201-0020-0008.R1

ALAMEDA POINT
ALAMEDA, CALIFORNIA

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ALAMEDA, CALIFORNIA

DCN: ECSD-2201-0020-0008.R1

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EXECUTIVE SUMMARY

A zero-valent iron (ZVI) treatability study was conducted in the Building 163 area at Installation Restoration (IR) Site 4, located in Operable Unit (OU)-2B, Alameda Point, Alameda, California, between August 2009 and February 2010. The purpose of this study was to assess the viability of ZVI injection as a treatment technology to accomplish the degradation of dissolved contaminants, particularly trichloroethene (TCE), in OU-2B groundwater.

The treatability study included a site characterization phase during which the suitability of the chosen treatability study site was evaluated and the extent of the TCE contamination was verified. Soil samples collected from beneath an excavated oil/water separator (OWS) and analyzed for volatile organic compounds (VOCs) indicated that a total VOC concentration of 223 micrograms per kilogram (µg/kg) was present at a depth of 9 feet below ground surface (bgs). A membrane interface probe survey followed by groundwater and soil sampling demonstrated that significant VOC and TCE contamination exists to the east of the excavated OWS, indicating another potential source is present underneath Building 163. A soil sample collected from approximately 6 feet bgs underneath a concrete patch inside Building 163 was reported to have a TCE concentration of 210,000 µg/kg. A maximum groundwater TCE concentration of 11,000 micrograms per liter (µg/L) was observed 28 to 33 feet bgs beneath Building 163. TCE and VOC concentration levels were sufficient to indicate a source area beneath Building 163, therefore providing a suitable site to conduct a source-reduction treatability study.

Thirty-one monitoring wells were installed to various depths ranging from 6 to 60 feet bgs to monitor the ZVI injection. These monitoring wells along with two existing wells were sampled prior to injection to establish baseline VOC concentrations and geochemical parameters. In November 2009, injection of over 500 gallons of ZVI was completed at three injection locations. One injection location was abandoned due to a surface breach; surfacing of significant amounts of ZVI material was observed at the two remaining injection locations as the injection progressed. Following the injection, all monitoring locations were sampled at four post-injection monitoring intervals, conducted approximately 1, 2, 6, and 12 weeks following injection completion.

One monitoring well within 11 feet of an injection site showed significant reduction of TCE from a baseline concentration of 38,000 µg/L to 12,000 µg/L. The majority of monitoring locations showed increases in concentrations of TCE as well as other VOCs, indicating desorption of VOC compounds from soil occurred at some locations. A composite radius of influence of 10.7 feet for the ZVI injection was calculated based on post-injection sampling data.

The results of this treatability study indicate that nanoscale ZVI (NZVI) injection for the purpose of source reduction in the OU-2B IR Site 4 area is not a cost-effective option for treatment. The ratio of ZVI to soil mass treated that was achieved in this test was 0.0008, less than the recommended 0.004 ratio. Difficulty in achieving fracture of the formation and subsequent dispersal of ZVI material into the subsurface limited the resulting zone of influence within this treatability study area and the effectiveness of the treatment technology to reduce or remove TCE and other chlorinated VOCs from groundwater. Acceptable performance of NZVI injection for application as a field-scale source reduction remedial method is not likely to be achieved in soils with lithologic characteristics similar to those in the vicinity of Building 163 in OU-2B IR Site 4.

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ABBREVIATIONS AND ACRONYMS

µg/kg	micrograms per kilogram
µg/L	micrograms per liter
bgs	below ground surface
BRAC	Base Realignment and Closure
BSU	Bay Sediment Unit
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CTO	Contract Task Order
DCE	dichloroethene
DGI	data gap investigation
DNAPL	dense nonaqueous-phase liquid
DO	dissolved oxygen
DON	Department of the Navy
DPT	direct push technology
DQO	data quality objective
ECD	electron capture detector
FID	Flame ionization detector
FWBZ	first water-bearing zone
g/L	grams per liter
HPS	Hunters Point Shipyard
IR	Installation Restoration (Program)
mg/L	milligrams per liter
MIP	membrane interface probe
MSL	mean sea level
mV	millivolt
NAS	Naval Air Station
NZVI	nanoscale zero-valent iron
ORP	oxidation/reduction potential
OU	operable unit

ABBREVIATIONS AND ACRONYMS
(Continued)

OWS	oil/water separator
PID	photoionization detector
PVC	polyvinyl chloride
psi	pounds per square inch
RI	remedial investigation
RNIP	reactive nanoscale iron particle
ROI	radius of influence
RPM	Remedial Project Manager
SWBZ	second water-bearing zone
TCE	trichloroethene
VOC	volatile organic compound
VSP	Visual Sample Plan
ZVI	zero-valent iron

1.0 INTRODUCTION

This treatability study report describes the approach, results, conclusions, and recommendations of a zero-valent iron (ZVI) treatability study conducted in the Building 163 area of Installation Restoration (IR) Site 4, located in Operable Unit (OU)-2B, Alameda Point, Alameda, California. The study was conducted to evaluate the effectiveness of ZVI treatment technology in degrading volatile organic compounds (VOCs) in OU-2B groundwater through reductive processes. The general location of Alameda Point is shown on Figure 1-1. The boundaries for OU-2B, IR Site 4, and the ZVI treatability study area are shown on Figure 1-2.

Data from previous investigations indicate that groundwater in certain areas of OU-2B at Alameda Point is contaminated with chlorinated VOCs, principally trichloroethene (TCE), as a result of historical activities. Groundwater containing TCE is migrating towards Seaplane Lagoon, posing a potential threat to human health and the environment. Additional site characterization sampling, performed in conjunction with this study, confirmed the presence of VOCs and TCE within the study area.

This treatability study was conducted in OU-2B IR Site 4 using surface-modified nanoscale zero-valent iron (NZVI), a form of ZVI that previous studies have shown to be potentially mobile in the subsurface and to rapidly degrade VOCs. This treatability study evaluates the effectiveness of NZVI in reducing or destroying VOCs in groundwater adjacent to Building 163. The treatability study results will be used to assess the potential success of full-scale ZVI applications to achieve source reduction.

The treatability study area described in this report refers to the area located in OU-2B IR Site 4, under and adjacent to Building 163, as shown on Figure 1-2. The design area for ZVI application using vendor-recommended radii of influence (ROIs) is referred to in this report as the planned treatment area. The volume of soil and groundwater influenced by the ZVI, as measured in the field, is referred to as the treated zone.

Tetra Tech EC, Inc. (TtEC) prepared this treatability study on behalf of the Department of the Navy (DON) Base Realignment and Closure (BRAC) Program Management Office West under Remedial Action Contract No. N62473-06-D-2201, Contract Task Order No. 0020.

1.1 PROJECT DATA QUALITY OBJECTIVES

The project data quality objectives (DQOs) were established in the Work Plan for Removing Oil/Water Separator (OWS) 163 and Conducting a Zero-Valent Iron Treatability Study at OU-2B (Work Plan) (TtEC 2009b). The project DQOs and actions undertaken to address each objective are summarized below.

1. **Assess VOC concentrations and geochemical parameters, and confirm design assumptions.** This objective was met by conducting a site characterization phase that included continuous soil coring, soil and groundwater HydroPunch® sampling, membrane interface probe (MIP) screening based on a Visual Sample Plan (VSP) grid, and the installation/sampling of seven multi-depth monitoring well clusters.
2. **Evaluate the effectiveness of ZVI in reducing concentrations of TCE in groundwater.** Groundwater samples were collected before ZVI injection to establish baseline conditions and after ZVI injection to monitor the treatment progress as demonstrated by reduction in contaminant concentrations over time.
3. **Evaluate the ROI of this treatment technology.** The seven multi-depth monitoring wells installed for site characterization allow sample collection at various distances from the injection points. Radial geochemical changes and/or contaminant reductions in groundwater observed at these monitoring well locations were used to assess the ROI of the injection points.
4. **Assess potential desorption of TCE from soil following ZVI injection.** As described under objective 2, groundwater samples were collected before ZVI injection to establish baseline conditions and after ZVI injection to monitor the treatment progress. If the post-ZVI injection sampling results indicate an increasing trend in TCE concentrations in groundwater in conjunction with other geochemical indications of ZVI influence, then desorption was assessed as likely to have occurred.
5. **Assess whether or not the addition of ZVI displaces the TCE radially from the treatment area.** This objective addresses concerns that contaminant displacement could result from the technology implementation, i.e., spreading of contamination that occurs as a result of ZVI injection. Potential horizontal and vertical displacement of contamination was evaluated using sampling data from monitoring wells located outside the planned treatment area.
6. **Assess geochemical considerations applicable for scaled-up applications.** This objective addresses groundwater geochemical changes that occur as a result of ZVI emplacement and potentially affect the use of ZVI as a source reduction remediation method in a field-scale application. Potential changes include development of a significantly reducing environment within the treatment zone and subsequent mobilization of secondary contamination, such as heavy metals, in response to the reductive environment. To accomplish this objective, groundwater samples were collected before and after ZVI injection and analyzed for various geochemical parameters.

The post-ZVI injection monitoring data were evaluated to assess effectiveness in achieving these DQOs.

1.2 ZVI TECHNOLOGY DESCRIPTION

Ideally, chlorinated VOCs, including TCE, can be reduced to inorganic chloride and ethene using ZVI technology. ZVI facilitates reduction of chlorinated hydrocarbons through two chemical

mechanisms: reductive dechlorination and hydrogenation. Reductive dechlorination involves direct electron transfer from the ZVI to the chlorinated VOCs; this mechanism is driven by the oxidation of the iron from the zero-valent state (Fe^0) to ferrous iron (Fe^{2+}). This reaction typically follows what is known as the "beta elimination pathway," which can be illustrated as follows (Gavaskar et al. 2005):

$$\text{TCE} \rightarrow \text{chloroacetylene} \rightarrow \text{acetylene} \rightarrow \text{ethene}$$

In this reaction, reduction of chloroacetylene to acetylene is very rapid, and chloroacetylene is difficult to detect. However, reduction of acetylene to ethene is slower, and thus the detection of acetylene can be an indicator that the process is occurring via the referenced pathway. The overall reduction is shown in the following chemical equations:

$$Fe^0 \rightarrow Fe^{2+} + 2e^-$$

$$C_2HCl_3 + 3H^+ + 6e^- \rightarrow C_2H_4 + 3Cl^-$$

Hydrogenation involves the production of hydrogen gas during corrosion of ZVI under anoxic conditions. This reduction is illustrated in the following chemical equations using TCE as an example:

$$Fe^0 + 2H_2O \rightarrow Fe^{2+} + 2OH^- + H_{2\,(gas)}$$

$$C_2HCl_3 + 3H_{2\,(gas)} \rightarrow C_2H_4 + 3Cl^- + 3H^+$$

The end products in both reaction mechanisms are ethene, chloride ion, and ferrous ion.

1.3 BENCH-SCALE RESULTS

A bench-scale test was conducted from April to August 2007 to select appropriate ZVI materials to be used for the treatability study. The bench-scale test results were presented in Appendix C of the Work Plan (TtEC 2009b) and are summarized below.

The bench-scale test scope included analysis of soil and groundwater samples from representative areas within OU-2B to evaluate the contaminant concentrations and geochemical/ conditions for appropriate implementation of the NZVI technology. Bench-scale testing determined that the selected area was reasonably amenable to NZVI treatment. The bench-scale test evaluated several alternatives for accomplishing successful source reduction within the treatability study area. The bench-scale test results supported selection of a nano-sized surface-modified ZVI material, Z-Loy™ (developed and produced by OnMaterials), for the treatability study.

Microscale iron was considered inappropriate for this application because it is immobile in the subsurface, it has been tested in other similar applications, and its performance is reasonably well understood. For this treatability study, NZVI materials were evaluated based on their likely

suitability as a remedial technique for use at this site. For the source treatment, six types of NZVI materials were tested: four different reactive nanoscale iron particles (RNIPs), and two additional materials, PolyMetallix™ and Z-Loy. TCE degradation and formation of intermediate chlorinated by-products, as well as various other parameters related to the process, were monitored.

Of the six NZVI materials tested, Z-Loy (surface-modified NZVI, proprietary coating) and MRNIP I (polyaspartate-modified RNIP) were the most promising for source zone remediation. Z-Loy had a short reactive lifetime (3 to 4 days), but provided very rapid TCE dechlorination ($t_{1/2}$ = 1.2 hours at 2 grams per liter [g/L]) without formation of significant intermediate chlorinated compounds. MRNIP I had the longest reactive lifetime of any of the products evaluated (approximately 60 days), provided TCE degradation half-life times of 20 to 54 hours at 2 g/L, and did not produce intermediate chlorinated compounds as by-products. Typical iron-to-TCE ratios (iron added/TCE degraded) for the NZVI products ranged from 27:1 to 30:1.

Both MRNIP I and Z-Loy exhibited mobility; however, MRNIP I was more mobile than Z-Loy under the same injection conditions. Both MRNIP I and Z-Loy demonstrated potential ROIs of at least 7 to 20 feet using the appropriate injection rate.

Final selection of NZVI materials was based on an analysis that considered the bench-scale test results, the cost of the materials, and material availability. Z-Loy and MRNIP I, both surface-modified NZVI products, were recommended based on the bench-scale test results. Basically, Z-Loy reacted faster but had a shorter lifetime. The column studies concluded that, while MRNIP I may be more favorable for use under site conditions, either Z-Loy or MRNIP I could be mobile in this system. The cost of these materials was preliminarily determined to be roughly comparable. Of these, Z-Loy was selected because MRNIP I is no longer being manufactured.

1.4 SITE DESCRIPTION

The following sections describe the facility history, current operations, site geology and hydrogeology, and the nature and extent of contamination in the treatability study area.

1.4.1 Site History

Alameda Point is located on Alameda Island. Originally a peninsula, Alameda Island was separated from the mainland in 1902 when a channel was cut linking San Leandro Bay to San Francisco Bay.

A summary of the historical use of Alameda Point and the former Naval Air Station (NAS) Alameda is presented below:

- Prior to 1930 – NAS Alameda, the western tip of Alameda Island, was farmland and later became an industrial and transit center. A borax plant operated in the eastern end of Alameda Point from the late 1800s to 1903. Pacific Coast Oil Works operated an oil refinery on the western tip of Alameda that was active from 1864 to 1899.

- 1930 to 1931 – The U.S. Department of the Army acquired the western tip of Alameda Point from the city of Alameda and began construction activities.
- 1936 – The DON acquired title to the land from the Army and began building NAS Alameda. Construction involved filling in the tidelands, marshes, and sloughs between the Oakland Inner Harbor and the western tip of Alameda Island. According to historical photographs and records, the NAS Alameda area was filled during two separate events:
  - 1887 to 1915 – First fill event included most of NAS Alameda.
  - 1930 to 1939 – Second fill event added the material within the southeast portion of the facility. The fill material used to create Alameda Point for both events consisted largely of dredge spoils from the surrounding San Francisco Bay and Oakland Inner Harbor.
- 1941 – After the U.S. entered World War II, the DON acquired more land to the west.
- 1945 to 1997 – Following the end of the war, Alameda Point continued to provide facilities and support for fleet aviation activities. During the period it was an active naval base, the installation provided berthing for Pacific Fleet ships and support for naval aviation.
- 1993 – NAS Alameda was identified for closure during the 1993 round of BRAC.
- 1994 – The city and county of Alameda established the Alameda Reuse and Redevelopment Authority (ARRA), which is responsible for submitting and completing the community reuse plan for NAS Alameda, as recognized by the Department of Defense.
- 1997 – NAS Alameda closed, and the DON began the process of property transfer to the city of Alameda.
- 1999 – NAS Alameda was placed on the National Priorities List.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites and petroleum corrective action areas were designated to assess contamination within specific areas of Alameda Point. IR Site 4 is included in the area designated as OU-2B under CERCLA and has been the subject of environmental investigations associated with historical documentation of petroleum, oil, and lubricant usage related to bulk fuel service, as well as ship and aircraft maintenance and repair.

IR Site 4, which includes Building 163 and the ZVI treatability study area, covers approximately 14 acres. The site is approximately 65 percent open space consisting of infrastructure that includes paved parking lots, storage areas, and a sports field. IR Site 4 is the site of Building 360, the Aircraft Engine Facility that contained multiple process shops, including a blast shop, cleaning shop, paint shop, welding shop, and plating shop; various aircraft component repair rooms; and nondestructive testing facilities.

1.4.2 Site Geology and Hydrogeology

1.4.2.1 Geology

Alameda Island lies at the base of a gently westward-sloping plain that extends from the Oakland-Berkeley Hills in the east to the shore of San Francisco Bay in the west. The thickness of geologic units varies throughout Alameda Point. Alameda Point geologic interpretation was described in the OU-2B Remedial Investigation (RI) Report for IR Sites 3, 4, 11, and 21 (OU-2B RI) (SulTech 2005a,b) and further summarized in the Work Plan (TtEC 2009b). The following geologic units characterize the subsurface geology in OU-2B IR Site 4, and the treatability study area.

Artificial Fill. Generally, the Artificial Fill consists of olive brown to dark grayish-brown poorly graded sands and silty sands with occasional brick, concrete, and wood debris. Artificial Fill was encountered from the surface to maximum depth of 8 feet below ground surface (bgs) in borings at locations across OU-2B. The Artificial Fill overlies the Bay Sediment Unit (BSU) in the central and the western portions of IR Site 4. Where the BSU is absent, the Artificial Fill overlies the Posey/Merritt/San Antonio Formation. The Artificial Fill was likely hydraulically emplaced during the infilling of the bay to create Alameda Point. In some areas it is difficult to differentiate between the Artificial Fill and the fine sands of the BSU.

Bay Sediment Unit. The BSU consists of dark greenish-gray to black fine to very fine poorly graded sands, silty sands, and clayey sands with shells that were deposited in a nearshore or estuarine environment. A clay interval is often found interbedded with the sands and may act as an aquitard where present in sufficient thicknesses (BSU Aquitard). The top of the BSU was encountered at depths as shallow as 4 feet bgs and as deep as 20 feet bgs in borings at locations across OU-2. The BSU is relatively thin and shallow (1 to 2 feet thick at depths of 4.5 to 6 feet bgs) in the eastern sides of IR Site 4 and progressively deepens and thickens towards the west. The BSU was reported to depths of 20 feet bgs in borings along Seaplane Lagoon. The BSU, where present, is underlain by the Posey/Merritt/San Antonio Formation. In borings where this transition is observed, there is typically a mottled interval with dark gray BSU sands and clays interbedded with yellowish-brown sandy clays.

A distinct clay interval (BSU Aquitard) is often found interbedded with the BSU sands or at the base of the BSU, but was not observed in the immediate vicinity of Building 163 in the area of the ZVI treatability study.

Posey/Merritt/San Antonio Formation. The Posey/Merritt/San Antonio Formation consists of non-marine sediments that underlie younger (BSU) and overlie older (Yerba Buena Mud) marine sediments (Rogers and Figuers 1991). This unit has been ubiquitously referred to as the Merritt Sand in previous OU-2A and OU-2B investigations; however, the lithologies observed in second water-bearing zone (SWBZ) borings are more consistent with the Posey and San Antonio

Formations than with the Merritt Sand. Merritt Sand is described in literature as an aeolian sand deposit and immature blow sand, while the lithologies encountered in the SWBZ were dense clayey sands, silty sands, and clay with sand. The Posey/Merritt/San Antonio Formation extends to at least 70 feet bgs at OU-2B.

Yerba Buena Mud. The Yerba Buena Mud was encountered in borings adjacent to Seaplane Lagoon at a depth of 70 feet bgs. At this depth, the Posey/Merritt/San Antonio Formation was underlain by a dark gray to very dark greenish-gray clay that extended to 73 feet bgs, the maximum depth of the investigation. At other deep borings along Seaplane Lagoon, clay was encountered at the termination of the borings, also approximately 70 feet bgs.

The Yerba Buena Mud was encountered in borings adjacent to Seaplane Lagoon at a depth of 70 feet bgs. At this depth, the Posey/Merritt/San Antonio Formation was underlain by a dark gray to very dark greenish-gray clay that extended to 73 feet bgs, the maximum depth of investigation. At other deep borings along Seaplane Lagoon, clay was encountered at the termination of the borings, also approximately 70 feet bgs.

1.4.2.2 Hydrogeology

Two water-bearing zones are impacted by the OU-2B sitewide groundwater plume. The first water-bearing zone (FWBZ) occurs in the unconfined uppermost permeable unit, mainly composed of poorly graded sands and silty sands (Artificial Fill and BSU) that occur at approximately 5 to 15 feet bgs at most locations. Groundwater flow direction in the FWBZ is generally to the west, in the direction of Seaplane Lagoon. The SWBZ is a semiconfined permeable unit within the Posey/Merritt/San Antonio Formation. Where the BSU Aquitard is not present, the SWBZ is unconfined and in hydraulic communication with the FWBZ. Groundwater flow direction in the SWBZ is generally toward Seaplane Lagoon.

The BSU Aquitard was not encountered in borings in the vicinity of Building 360 or to the west of Building 163. In these areas the FWBZ and SWBZ are in direct hydraulic communication. Groundwater was encountered in FWBZ borings at depths of 6 feet bgs in the northern portion of IR Site 4. The static water level as measured in FWBZ wells was approximately 5.2 feet above mean sea level (MSL). The static water levels as measured in SWBZ wells ranged from 6.2 to 8.4 feet above MSL.

1.4.3 Extent of Contamination

A summary of previous investigations conducted near the treatability study area is provided in the OU-2B RI (SulTech 2005a,b). An additional data gap investigation (DGI) was conducted to further delineate the vertical and horizontal extent of groundwater contamination beneath OU-2B (TtEC 2009a).

A series of commingled plumes has been identified in the FWBZ and SWBZ extending from IR Site 4 westward through IR Sites 3, 11, and 21 to Seaplane Lagoon. It appears that a northern lobe and a southern lobe of contamination originate at IR Site 4 and amass to form one plume that is migrating toward Seaplane Lagoon. The treatability study area is located within the southern lobe at IR Site 4.

Upgradient and downgradient monitoring well and HydroPunch samples collected as part of the data gap sampling (TtEC 2009a) indicate elevated concentrations of VOCs near the treatability study area extend to at least 50 feet bgs, with the highest concentrations of VOCs reported from 5 to 30 feet bgs. Data collected as part of the ZVI treatability study provide more precise estimate of the extent of vertical contamination and are discussed in Section 2.

1.5 REPORT ORGANIZATION

This report is organized into the following sections:

- Section 1.0 Introduction – presents the project data quality objectives, ZVI technology description, bench-scale test results, and site description.
- Section 2.0 Pre-injection Site Characterization – discusses the OWS excavation sampling, lithologic sampling, MIP sampling, soil and groundwater sampling, and injection area selection.
- Section 3.0 ZVI Injection – describes the injection design, monitoring well installation and baseline sampling, and injection activities.
- Section 4.0 ZVI Injection Performance – discusses the mass of ZVI injected, mass removal estimates for VOCs and TCE, zone of influence, and development of a sufficiently reducing environment.
- Section 5.0 Performance and Cost Analysis – provides preliminary, injection, and other costs and the cost per mass of contaminant reduction.
- Section 6.0 Conclusions and Recommendations – presents the report conclusions and recommendations.

Tables and figures are under separate tabs following the text. Supporting documentation is provided in the following appendices:

- Appendix A – Analytical Results
- Appendix B – Chain-of-Custody Forms, Laboratory Analytical Reports, and Data Validation Report
- Appendix C – Continuous Core Lithologic Logs
- Appendix D – Membrane Interface Probe Data
- Appendix E – ZVI Monitoring Well Completion Logs, Well Development Logs, and Survey Report

- Appendix F – Groundwater Sampling Data Sheets
- Appendix G – Data Quality Assessment
- Appendix H – ZVI Performance Evaluation Data Analysis
- Appendix I – Waste Manifests
- Appendix J – Project Photo Index

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2.0 PRE-INJECTION SITE CHARACTERIZATION

Site characterization was conducted prior to ZVI injection, monitoring, and evaluation to refine the delineation of plume geometry in the treatability study area and optimize ZVI injection placement and design.

Site characterization objectives were as follows:

- Refine plume geometry and verify lithology to optimize ZVI injection boring and monitoring well placement using MIP, groundwater, soil, and continuous core sampling. Identify potential inconsistencies in contaminant concentrations or geochemical parameters that could affect ZVI injection or dosing strategies.
- Evaluate the vertical extent of contamination previously reported at the Building 163 OWS using soil and groundwater sampling.
- Investigate FWBZ lithology using continuous core sampling. Verify the presence of a 2-inch-thick layer of saturated black sand observed at approximately 4 feet bgs during OWS 163 excavation and evaluate whether the saturated sand layer is acting as a conduit for contaminant migration from Building 360 to the OWS 163 area. Evaluate the presence or absence of a fine-grained layer(s) in the BSU and the depth to the Merritt Sand.
- Determine whether VOC concentrations within the treatability study area are indicative of a source area or of plume migration from Building 360, and whether dense nonaqueous-phase liquid (DNAPL) is present, using soil and groundwater HydroPunch sampling.

Site characterization fieldwork was conducted in accordance with the Work Plan (TtEC 2009b). Any deviations from the Sampling and Analysis Plan or the Work Plan are discussed below.

The soil and groundwater site characterization sampling results are included in Appendix A, Tables A2-1 through A2-3. Chain-of-custody forms, laboratory analytical reports, and the data validation report are presented in Appendix B. Groundwater sampling data sheets and Data Quality Assessment results are contained in Appendices F and G. Pre-injection site characterization results are depicted on Figures 2-1 through 2-5.

Sampling activities, results, and conclusions are described in the following sections. The OWS excavation sampling, continuous core lithologic sampling, MIP sampling, and follow-on groundwater HydroPunch and soil sampling are summarized in Sections 2.1 through 2.4. Conclusions and injection design implications are discussed in Section 2.5.

2.1 OWS EXCAVATION SAMPLING

Previous investigations (TtEC 2009a) identified the OWS adjacent to Building 163 (OWS 163) as a potential source of VOC contamination. Located within the treatability study area, OWS 163 was excavated and removed before the ZVI treatability study was initiated. Excavation sampling was conducted following OWS removal. OWS 163 excavation sampling results are provided in Appendix A, Table A2-1 and are displayed on Figure 2-1.

2.1.1 OWS Excavation Sampling Activities

Nine soil samples (five bottom and four sidewall) were collected from the bucket of the excavator to characterize remaining contamination after excavation. Figure 2-1 shows the excavation boundary, excavation sampling locations, and a summary of analytical results for the excavation samples. Results for locations in the area of the OWS excavation that were sampled during the OU-2A/B DGI are shown on Figure 2-1 for comparison.

Prior to excavation and OWS removal, as part of the OU-2 DGI (TtEC 2009a), a groundwater sample was collected from 5 to 10 feet bgs at OWS 163. Twelve step-out HydroPunch groundwater samples were collected at locations approximately 10 to 100 feet from the OWS. The step-out sampling locations are shown on Figure 2-2.

2.1.2 OWS Excavation Sampling Results

VOCs, including TCE (220,000 micrograms per liter [µg/L]), cis-1,2-dichloroethene (DCE) (66,000 µg/L), and vinyl chloride (16,000 µg/L), were reported in the groundwater HydroPunch sample collected directly below the OWS 163 during the OU-2 DGI (TtEC 2009a). Concentrations of VOCs above screening levels were reported in groundwater samples collected from 11 of the 12 step-out HydroPunch locations, but at concentrations two orders of magnitude lower than those reported in the OWS sample collected during the DGI. The HydroPunch groundwater samples had elevated concentrations of VOCs extending to a depth of at least 50 feet bgs, with the highest concentrations of VOCs reported at depths of 5 to 30 feet bgs (see Figure 2-2).

Nine soil samples were collected during OWS 163 removal including one sample directly below the bottom of the sump (vault bottom sample shown on Figure 2-1). TCE was reported at a maximum concentration of 8,300 micrograms per kilogram (µg/kg), and total VOCs were reported at concentrations up to 13,070 µg/kg. A total VOC concentration of 223 µg/kg was reported in the deepest sample collected during OWS 163 removal at 9 feet bgs from the bottom center of the excavation.

2.1.3 OWS Excavation Sampling Conclusions

The vertical extent of contamination beneath OWS 163 was effectively characterized. Soil contamination beneath the excavated OWS decreased rapidly with depth, with a total VOC

concentration of 223 µg/kg reported for the deepest sample collected at 9 feet bgs. Groundwater VOC contamination was observed to a depth of at least 50 feet bgs, with the highest concentrations reported at depths from 5 to 30 feet bgs.

Additional details regarding the OWS excavation and sampling are presented in the Work Plan (TtEC 2009b).

2.2 LITHOLOGIC SAMPLING

Soil at the ZVI treatability study area was characterized using the continuous coring technique to establish soil types/lithology and optimize placement of ZVI injection points. A generalized geologic cross section for the ZVI treatability study area was developed during the site characterization phase of this project, and is provided in Figure 2-3. Interpretation was based on the five continuous cores collected to support the site characterization phase of the study and data from previously logged boreholes. Continuous core logs are provided in Appendix C.

2.2.1 Continuous Coring Activities

Continuous soil core locations are shown on Figures 2-2 and 2-3. Four continuous soil cores (designated S4-CC1 through -CC3 and S4-CC5) were collected to a depth of 20 feet bgs and one continuous core (designated S4-CC4) was collected to a depth of 50 feet bgs.

Continuous soil cores were collected in July and August 2009 using a Geoprobe® direct push technology (DPT) rig and dual-tube coring equipment. This coring method was selected because the formation is sealed off during sampling to prevent vertical cross-contamination. Core lithology was logged in accordance with the Unified Soil Classification System visual-manual procedure and Munsell soil chart.

2.2.2 Continuous Coring Results

Site lithology interpreted from the continuous core data was consistent with OU-2B IR Site 4 subsurface geology discussed in Section 1.4.2.1:

- A layer of yellowish-brown, brown, or dark grayish-brown poorly graded sand with silt or silty sand, interbedded with strong brown or yellowish-brown clayey or silty sand was identified beneath the surface concrete or asphalt to 4.5 to 6 feet bgs. This layer, interpreted as the Artificial Fill, contained concrete, asphalt, brick, and wood debris at various depths. Additionally, a discontinuous, but laterally extensive concrete slab, approximately 6 to 10 inches thick, was noted at 3.5 to 5.5 feet bgs in three of five continuous core locations as well as in many hand-augered borings advanced to clear HydroPunch sampling locations for underground utilities. The approximate extent of this slab is noted on Figure 2-3. In two of the five continuous cores, a 4-inch to 1.5-foot-thick black sandy lean clay was identified at 4.5 to 6 feet bgs.

- Underlying the Artificial Fill to a depth of 10 to 12 feet bgs, a layer of brown to very dark gray silty sand was identified. To the east of Building 163 this layer consisted of poorly graded sand with silt interbedded with clayey sand. This layer was interpreted as part of the BSU.
- Underlying the BSU at this site to a depth of at least 50 feet bgs, the maximum depth of continuous cores taken during the site characterization phase, was yellowish-brown poorly graded sand with silt interbedded with yellowish-brown to gray silty and clayey sand. This layer was interpreted as belonging to the Posey/Merritt/San Antonio Formation.
- Depth of saturation was noted at all coring locations between 5.5 to 6 feet bgs.

2.2.3 Continuous Coring Conclusions

Treatability study site lithology was generally interpreted as consistent with previously characterized OU-2B geology.

- A saturated sandy layer at 3 to 6 feet bgs was not identified in any of the five continuous soil coring locations.
- No impermeable or low permeability layers were identified during lithologic investigation. The BSU Aquitard was not identified in any of the continuous soil cores. Thin clays noted near the Artificial Fill/BSU boundary in two of the continuous cores were not found to be laterally continuous or extensive. The contact between the BSU and the Posey/Merritt/San Antonio Formation was found to occur at approximately 12 to 14 feet bgs throughout the treatability study area.
- No DNAPL was encountered in any of the five continuous soil cores or in any of the hand-auger borings advanced at the treatability study area.

No impermeable layers or other lithologic inconsistencies were identified that could potentially impact ZVI injection, the treatability study, or require modification to the ZVI injection design.

2.3 MEMBRANE INTERFACE PROBE SAMPLING

The MIP survey was conducted as a qualitative screening tool to focus soil and groundwater sampling efforts. Results were used to select multi-depth soil and groundwater sampling locations to accomplish site characterization objectives. MIP survey results are included in Appendix D. MIP survey points (MIP1 to MIP17) are identified on Figure 2-2.

2.3.1 MIP Sampling Activities

The MIP screening device employs a semipermeable membrane, a heating block, carrier gas, and an electron capture detector (ECD). As the probe is advanced with a DPT rig, the heating block volatilizes contaminants, which diffuse through the membrane and are transported to the ECD by the carrier gas. In this manner, real-time three-dimensional total VOC data are collected at

approximately 0.1-foot intervals. The MIP probe also contains a soil conductivity sensor, which can provide information about formation lithology. Generally, at a given location, conductivity is inversely proportional to particle size. Clays usually have higher conductivity than sands. Thus, conductivity measurements can identify permeable (low conductivity) and nonpermeable (high conductivity) zones at a sampling point. In addition to evaluating soil conductivity, MIP results can be used to evaluate whether VOCs, specifically chlorinated VOCs, are present in the subsurface. In this process, data collected using a photoionization detector (PID) and a flame ionization detector (FID), which detect the presence and relative concentrations of VOCs, are compared with data collected using the ECD, which preferentially detects the presence and relative concentrations of chlorinated VOCs, especially heavier, more chlorinated compounds, such as DCE and TCE. Therefore, chlorinated VOCs are indicated at sample locations and depth intervals where an ECD signature is recorded but not an FID or PID signature. A graphical depiction of MIP survey results is displayed on Figure 2-4.

A sampling grid was used to select MIP sampling locations based on a VSP pattern with 21-foot by 7.5-foot rectangles covering the study area. MIP survey data were collected at 17 locations by driving a MIP probe tip with 2.25-inch drive casing to the desired depth via direct push using a Geoprobe® 7720DT Limited Access Vehicle. A MIP rig was used to process and display the MIP data as they were collected. MIP data collection was accomplished at approximate 1-foot intervals as the casing was advanced. The sensitivity of the MIP and associated electronic equipment installed within the drive casing limited the amount of hammering that could advance the MIP and casing. While MIP data collection was intended to advance to depths of 50 feet bgs at each location, at seven locations, the desired maximum sample depth was not achieved because the drive casing was unable to penetrate to total depth without risk of incurring damage to MIP equipment. Refusal criteria set by the MIP operator was a vertical advance of less than 1 foot in 2 minutes. Refusal was encountered at depths ranging from 40 to 48 feet bgs at these seven locations. Although operators avoided excessive hammering, MIP equipment was damaged twice during the course of the MIP survey, with the probe tip damaged at one location and a broken thermocouple and trunk line experienced at another location. MIP investigation proceeded from east to west with MIP borings backfilled with grout, once data collection was complete, through a polyvinyl chloride (PVC) tremie pipe installed through the MIP drive casing.

Because MIP data could be collected and evaluated in real time, the original 34-node VSP sampling grid and resulting HydroPunch and soil sampling locations were adjusted by the geologist on-site in consultation with the project manager and Navy Remedial Project Manager (RPM). This allowed optimization of the MIP survey location and data collection process to meet site characterization objectives while maintaining cost and scheduling efficiency. MIP data were collected from a total of 17 locations, including 4 locations placed east of the original sampling grid to characterize VOC contamination beneath Building 163 (survey points MIP7 through MIP10, MIP13 through MIP15, and MIP17).

2.3.2 MIP Sampling Results

In addition to confirming relatively high concentrations of VOCs near the OWS 163 excavation area (at survey points MIP11 and MIP16), MIP results indicated VOC concentrations remained relatively high inside Building 163 as well (survey points MIP7 through MIP10). The depth interval with highest apparent relative VOC concentrations was consistently identified throughout the treatability study area as 12 to 33 feet bgs. To determine the eastern extent of the zone associated with high VOC concentrations, additional MIP survey points were located inside Building 163, to the east of the planned VSP grid locations. Results from survey points MIP13, MIP14, and MIP17 indicated that relatively high VOC concentrations extended eastward to at least the interior wall partitioning the western half of Building 163 from the eastern half (see Figures 2-2 and 2-4). The PID, FID, ECD, and conductivity results for all 17 MIP survey locations are presented in Appendix D. A graphical display of MIP results across the ZVI treatability study area is shown on Figure 2-4.

2.3.3 Conclusions

MIP results indicate that VOC contamination is present under Building 163 and beneath the OWS excavation just west of the building. MIP results verified the vertical extent of contamination, demonstrating that the highest relative VOC concentrations occur at 12 to 33 feet bgs. MIP results were used to determine locations for further soil and HydroPunch groundwater sampling to characterize contamination within the treatability study area.

2.4 GROUNDWATER AND SOIL SAMPLING

After the MIP screening was completed, DPT groundwater HydroPunch and soil samples were collected to complete the site characterization. Figure 2-2 shows the soil and groundwater sampling locations and analytical results. The soil and groundwater analytical results are presented in Appendix A, Tables A2-2 and A2-3, respectively.

2.4.1 Groundwater and Soil Sampling Activities

Five clustered soil and groundwater sampling locations were selected to confirm the MIP survey and previous investigation results. HydroPunch and soil sampling locations were placed adjacent to four MIP survey points: MIP5, MIP7, MIP13, and MIP14. These goundwater and soil sampling locations were designated as S4-HP-MIP05, S4-HP-MIP07A-B/S4-SS-MIP07, S4-HP-MIP13/S4-SS-MIP13, and S4-HP-MIP14A-C/S4-SS-MIP14. One additional HydroPunch/soil sampling location was identified to confirm the high VOC concentrations detected near the center of Building 163 (particularly the results at survey point MIP17). Because the eastern portion of Building 163 is occupied, the sampling location was placed immediately east of Building 163 (identified as S4-OWS163-HP13A-C). A total of 15 HydroPunch groundwater samples were collected. The groundwater and soil sampling locations and associated depth intervals are shown on Figure 2-2 and summarized in Appendix A, Table A2-3.

Difficult advancement was encountered while driving the HydroPunch sampling equipment and casing using the dual-tube sampling method, similar to conditions experienced driving the MIP casing. Difficult advancement and refusal were most pronounced while driving casing larger than 1.5 inches in diameter to depths exceeding approximately 25 to 30 feet bgs. At four HydroPunch locations multiple borings were used to collect samples from the desired depth intervals using smaller diameter drive casing. Multiple borings were used to prevent vertical cross-contamination that could occur if smaller diameter casing were advanced to multiple sampling depths in a single borehole. The multiple boreholes were separated by an appropriate distance to preclude contamination from grouting materials used to backfill the boreholes. Other than this exception, HydroPunch sampling was conducted in accordance with the Work Plan (TtEC 2009b).

In conjunction with the HydroPunch groundwater sampling effort, saturated soil samples were collected at three MIP locations (MIP7, MIP13, and MIP14) and one additional location immediately east of Building 163. A total of six soil samples were collected at these locations, including four samples collected from depth intervals where planned groundwater sampling could not take place because insufficient water was present to sample. Soil samples were collected using a DPT rig and piston-type soil core sampling equipment. Except at one location, S4-OWS163-HP13, where no water was available to sample at the desired sampling interval (15 to 20 feet bgs), soil sampling was conducted using separate boreholes. The soil sampling locations and associated depth intervals are shown on Figure 2-2 and summarized in Appendix A, Table A2-2.

In addition to groundwater and soil sampling conducted to confirm MIP results, HydroPunch groundwater sampling was conducted at S4-CC5 (S4-HP-CC5) at a depth of 5 to 10 feet bgs. A planned sample from a depth of 10 to 15 feet bgs was not collected at this location because there was insufficient water to sample. The S4-HP-CC5 sample location and associated depth interval and analytical results are shown on Figure 2-2 and summarized in Appendix A, Table A2-2.

Well cluster S4-TT-MW3A through S4-TT-MW3E (corresponding to screened intervals at 20 to 30 feet bgs, 30 to 40 feet bgs, 40 to 50 feet bgs, 50 to 60 feet bgs, and 60 to 70 feet bgs), installed during the OU-2 DGI and between Buildings 163 and 360, was also developed and sampled during site characterization activities to verify VOC concentrations upgradient from the treatability study area. The location of this monitoring well is found on Figure 2-2. Sampling results were presented in the OU-2 DGI supplemental sampling report (TtEC 2010), are reproduced on Figure 2-5, and are discussed below.

2.4.2 Groundwater and Soil Sampling Results

All groundwater and soil samples were analyzed for VOCs. Sampling results are presented on Figure 2-2, and complete analytical results are summarized in Appendix A, Tables A2-2 and A2-3.

Chain-of-custody forms, laboratory analytical reports, and a data validation report are contained in Appendix B. VOCs and TCE were reported above the detection limit in all groundwater samples. Sample results are summarized below:

- Maximum total VOC and TCE concentrations were reported in groundwater at location:
  - S4-HP-MIP13 at 28 to 33 feet bgs:
    - Total VOC concentration of 17,308 µg/L
    - TCE concentration of 11,000 µg/L
- Relatively high total VOC and TCE concentrations were reported in groundwater at locations:
  - S4-HP-MIP-14A at 24 to 29 feet bgs:
    - Total VOC concentration of 4,478 µg/L
    - TCE concentration of 1,500 µg/L
  - S4-HP-MIP14B at 31 to 36 feet bgs:
    - Total VOC concentration of 11,330 µg/L
    - TCE concentration of 14 µg/L
  - S4-HP-MIP07A at 20 to 25 feet bgs:
    - Total VOC concentration of 1,233 µg/L
    - TCE concentration of 290 µg/L
  - S4-HP-MIP05 at 27 to 32 feet bgs:
    - Total VOC concentration of 1,202 µg/L
    - TCE concentration of 320 µg/L
  - S4-OWS163-HP13A at 24 to 29 feet bgs:
    - Total VOC concentration of 1,714 µg/L
    - TCE concentration of 15 µg/L
- Sampling results from monitoring well S4-TT-MW03A-E located east of Building 163 (see Figure 2-5) were much lower in concentration. The maximum total VOC concentration of 591 µg/L was reported at a depth of 20 to 30 feet bgs, and no VOCs were detected at depths greater than 50 feet bgs.

Soil sampling results from HydroPunch and MIP locations are provided on Figure 2-2 and summarized below:

- Maximum total VOC and TCE concentrations reported in soil at locations:
  - S4-SS-MIP07 (located beneath the narrow concrete patched area [possible former trench]) at 11 to 16 feet bgs:

    - Total VOC concentration of 17,962 µg/kg
    - TCE concentration of 14,000 µg/kg
  - S4-SS-MIP14 at 10 to 15 feet bgs:
    - Total VOCs of 12,901 µg/kg
    - TCE concentration of 9,100 µg/kg
  - S4-OWS163-HP13A at 10 to 15 feet bgs:
    - Total VOCs of 43.6 µg/kg

- Additionally, one soil sample, collected east of Building 163 (S4-OWS163-HP13A at 15 to 20 feet bgs), was analyzed for the microorganism *Dehalococcoides* spp to demonstrate the presence of anaerobic dehalogenating microbes. The result was 635J (reported below the laboratory reporting limit) cells per gram, indicating that dehalogenating microbes are present but in very small quantities. At the level indicated, sufficient microbes may be present to support bioaugmenting or biostimulative remedial techniques (although effectiveness is not likely at this low a native concentration), but not to achieve successful reductive dechlorination of TCE by natural biodegradation.
- While hand augering the initial 6 feet of the S4-SS-MIP13 borehole to clear the location for underground utilities, distinctly different soil was noted from that in nearby borings within Building 163. At a depth of 5.2 feet bgs, soil coated with a dark bluish-gray material with a strong odor was identified. A sample of the soil was collected at the western edge of a patch in the concrete floor of Building 163 (see Figure 2-2) and analyzed for VOCs. TCE was reported in the sample at a concentration of 210,000 µg/kg (total VOC concentration was 246,900 µg/kg). The dimensions of the patched area and the vertical extent of the distinct soil layer are noted on Figures 2-2 and 2-3. The discontinuous concrete slab beneath several boreholes (and identified on Figure 2-3) at depths of 3.5 to 5.5 feet bgs was not noted within the S4-SS-MIP13 boring. This concrete patch (approximately 10.5 feet long by 6 feet wide) was located adjacent to a narrower concrete patch leading to the western wall of Building 163 and, presumably, to the OWS excavation on the other side of the wall. The resurfacing along this patch had also been noted during the OWS removal phase.

2.4.3 Groundwater and Soil Sampling Conclusions

Soil and groundwater analytical results for the OWS excavation and follow-on groundwater HydroPunch and soil sampling are shown on Figures 2-1 and 2-2. The continuous soil core lithologic results are shown in cross section on Figure 2-3. The MIP survey points are shown on Figure 2-2 and the graphical survey results are presented on Figure 2-4. The groundwater sampling locations, results, and associated depth intervals are shown in cross section on Figure 2-5. These sampling results indicate:

- The HydroPunch groundwater and soil sampling data are consistent with MIP data used to characterize plume geometry and delineate the vertical extent of contamination in the vicinity of the treatability study area. The results indicate a zone of groundwater with high concentrations of chlorinated VOCs is present within the Building 163 footprint at depths of 12 to 33 feet bgs; a similar contaminant distribution is evident at similar depths, but at lower concentrations, outside the building. The results are also consistent with data collected during the OU-2 DGI (TtEC 2009a), which are shown on Figure 2-2 for comparison to the site characterization data. The results indicate that higher concentrations of VOCs are present near the center of the south part of Building 163 than along the western wall nearest the former location of OWS 163.
- High relative VOC and TCE concentrations within the Building 163 footprint beneath a narrow patched area (possible trench) and rectangular patch in the concrete floor indicate a previously unidentified potential contaminant source in addition to the OWS. Concentrations to the east of Building 163 and those to the west of the former OWS are significantly lower than those within the Building 163 footprint.
- Based on high concentrations of VOCs and TCE in soil beneath Building 163 at approximately 6 feet bgs (S4-SS-MIP13) and in groundwater at approximately 30 feet bgs (S4-HP-MIP13), DNAPL beneath Building 163 is potentially present. Additionally, post-injection groundwater monitoring results (shown on Figure 2-5 and discussed in Section 4.0) indicate high concentrations of VOCs and TCE beneath the north portion of the OWS excavation and immediately inside Building 163 to the east, indicating the possibility of DNAPL presence below the excavated area at approximately 10 to 20 feet bgs.
- VOC and TCE concentrations are indicative of a contamination source area rather than being solely related to the plume migrating westward from Building 360 (Plume 4-2). Plume 4-2 is primarily a 1,1-DCE plume (Shaw 2007). A source of contamination located beneath Building 163 is contributing to the southern lobe of the IR Site 4 plume originating from Building 360.

2.5 INJECTION AREA SELECTION

The treatability study was originally proposed to test an area located north of Building 360 in IR Site 4 and a second area between Buildings 162 and 14 in IR Site 11 (see Figure 1-2). The study was also intended to assess different ZVI materials in both a source reduction application (area north of Building 360) and a plume interception application (area between Buildings 162 and 14). Accordingly, a bench-scale test of various ZVI products was conducted in 2007 to select an appropriate ZVI material for each application and establish the preliminary treatability study design and monitoring parameters. The bench-scale test was conducted using groundwater and aquifer material collected from both areas. In addition to assessing applicability of different ZVI materials for a treatment application at OU-2B, the scope of the bench-scale test included assessment of available groundwater and soil data. The bench-scale test results were presented in Appendix C of the Work Plan (TtEC 2009b).

Based on evaluation of the data gap sampling results from OU-2B (TtEC 2009a), however, the location for the test in OU-2B was changed to the OWS 163 area adjacent to Building 163 in IR Site 4. The samples collected for the bench-scale test were located approximately 450 feet north and 1,000 feet west of the treatability study area, respectively. To ensure that aquifer material present near Building 163 was geochemically favorable for successful application of ZVI, groundwater analytical results from long-term basewide monitoring (ITSI 2009) were evaluated at two existing wells near Building 163 (372-MW1 and D03-04; see Figure 2-2 for locations). Geochemical parameters analyzed at these two locations are summarized below:

- Dissolved Oxygen (DO): Semiannual monitoring results of wells located approximately 70 feet from former OWS 163 (wells 372-MW1 and D03-04) show low levels of DO in groundwater (averaging less than 1 milligram per liter [mg/L]), which indicates a reducing environment favorable for the application of NZVI.
- pH: At a pH of 7, rapid oxidation of iron is expected (Lowry 2008). Semiannual monitoring of wells located approximately 70 feet from former OWS 163 (wells 372MW1 and D03-04) show consistent pH measurements in groundwater of approximately 7.0, which is favorable for the application of NZVI.
- Anions: Semiannual monitoring of wells approximately 70 feet from OWS 163 (wells 372-MW1 and D03-04) indicate very low levels of nitrate in groundwater, which are consistent with a reducing environment and favorable for application of NZVI.

These monitoring well geochemical data indicate favorable geochemical conditions for successful ZVI application and initiation of desired beta-reduction and hydrogenation reactions within the ZVI treatability study area in and around Building 163. Results of the site characterization sampling indicate VOC and TCE concentrations are sufficiently high to allow representation of the Building 163 and OWS 163 contamination as a source area application during the ZVI treatability study.

Based on the MIP survey, HydroPunch groundwater, and soil sampling results collected during site characterization, relatively high concentrations of VOCs and TCE were identified beneath Building 163 and discussed with the Navy RPM and regulatory agency representatives from the California Department of Toxic Substances Control and U.S. Environmental Protection Agency. Due to the magnitude of the apparent contamination (greater than 200,000 µg/kg in soil at shallow depth and greater than 10,000 µg/L in groundwater at depths of 25 to 35 feet bgs) beneath Building 163, regulatory agency representatives expressed concern with displacing contamination during ZVI injection. Based on their recommendation to maintain the subsurface beneath Building 163 outside the intended ZVI treatment area, the injection design was modified to relocate all injection points 12 feet to the west of locations indicated in the Work Plan to keep Building 163 and its subsurface clear of the planned 15-foot ROI for each injection point. Injection design considerations and implementation are further discussed in Section 3.0.

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3.0 ZVI INJECTION

An NZVI (Z-Loy) was used for the treatability study at Building 163. ZVI injection was conducted in a single injection event at each of three injection locations shown on Figure 2-2. The following sections describe the validation of injection design assumptions, injection monitoring well installation and baseline groundwater sampling activities, injection dosing and activities, and injection monitoring.

3.1 INJECTION DESIGN

Prior to injection, the following assumptions were verified:

- Assume TCE present in the FWBZ and SWBZ is the primary contaminant to be treated by NZVI at OU-2B. During site characterization, TCE was detected within the expected concentration range (i.e., 5,000 to 10,000 μg/L).
- Assume that the treatment area will encompass 1,680 square feet, based on a horizontal treatment zone that encompasses the area within an estimated 15-foot ROI (based on previous experience) from each injection point, and an injection interval of 10 to 50 feet bgs.
- As indicated by previous RIs and groundwater modeling, assume a seepage velocity of 0.1 foot/day for the treatment area.
- Assume negligible tidal influence, if any, in the treatment area.
- Assume low DO and negative oxidation/reduction potential (ORP) values, and low cation/anion and total dissolved solid levels; however, the 5 g/L (5,000 mg/L) dose is adequate to reduce DO that may be present, even if saturated DO conditions (8 mg/L) exist.
- Assume the saturated soil porosity is 25 percent.
- Assume no lithological inconsistencies (i.e., impermeable layers) are present in the subsurface that could affect NZVI injection strategies or limit ZVI injection. Lithologic information gathered during site characterization activities did not indicate the presence of impermeable zones or confining layers in subsurface conditions.
- Assume no inconsistencies in contaminant concentrations or geochemical parameters that could affect NZVI injection or dosing strategies.

Based on evaluation of these design assumptions during pre-injection site characterization, the placement of ZVI injection points described in the Work Plan and summarized above was considered adequate for the treatability study. Other than the 12-foot westward shift of the injection points, discussed in Section 2.5, no substantive changes were made to the injection design.

3.2 MONITORING WELL INSTALLATION AND BASELINE SAMPLING

Prior to injection, 31 monitoring wells situated in seven multi-level monitoring well clusters were installed in the treatability study area and sampled to establish baseline concentrations of key compounds. A summary of monitoring well installation and sampling activities, including survey data, is presented in Table 3-1. Monitoring well locations were designed to evaluate upgradient, crossgradient, downgradient, lateral, and vertical (downward) contamination displacement as well as injection horizontal ROI. All seven monitoring well clusters, identified as ZVI-MW01A2-C to ZVI-MW07A2-C, were drilled and installed via direct push using a Geoprobe 8040DT DPT rig.

3.2.1 Well Construction

Seven monitoring well clusters were installed (ZVI-MW01 through -MW07) with four to six wells in each cluster. Monitoring wells within each cluster were completed with screen intervals set from 10 to 20 (A2 wells), 20 to 30 (A3 wells), 30 to 40 (B wells), and 40 to 50 (C wells) feet bgs. Two locations (ZVI-MW01A1 and ZVI-MW04A1) were constructed with shallow well screens (6 to 11 feet bgs) to monitor the FWBZ near the treatability study area. One location (ZVI-MW01D) was constructed with a deep well screen (50 to 60 feet bgs) to assess downward displacement of contaminants and/or NZVI. Well completion details are provided in Table 3-1. Well installation was accomplished by driving 4.5-inch casing equipped with a sacrificial tip to the desired depth, and then constructing the well inside the casing as the casing was removed, thereby sealing off the formation during well installation and decreasing the likelihood of downward contaminant migration.

Well construction logs are provided in Appendix E for each of the 31 monitoring wells. At 24 locations the wells consist of 1.5-inch inner-diameter PVC casing completed with pre-packed screens (Johnson Screens with 20/40 carbolite packing material). As with the HydroPunch sampling conducted at depth during the site characterization phase, difficulties in successfully driving larger diameter casing were encountered during monitoring well construction. Drilling was consistently slow, with frequent refusals, when driving 4.5-inch- diameter casing to depths exceeding 35 feet bgs or driving 3.25-inch-diameter casing to depths exceeding 40 feet bgs. For this reason, 7 of the 31 wells (6 wells with screen intervals set at 40 to 50 feet bgs and one well with screen interval set at 50 to 60 feet bgs) were constructed using 1-inch inner-diameter PVC casing with pre-packed screens. Monitoring wells were surveyed for horizontal and vertical location, with elevations measured from the top of casing. Location information is provided in Table 3-1. A complete survey report is provided in Appendix E.

After installation, the monitoring wells were developed using a combination of bailing, surging, and pumping to remove a minimum of three times the casing volume of water in the well, plus the volume of any water added during drilling. Well Development Logs listing volumes removed are included in Appendix E.

3.2.2 Baseline Groundwater Sampling

Monitoring locations are shown on Figure 2-2. In addition to the 31 monitoring wells installed as described in Section 3.2.1, two existing monitoring wells were included within the well network to monitor shallow groundwater outside the ROI (372-MW1 screened from 2.5 to 12.5 feet bgs) and deep groundwater outside the ROI (D03-04 screened from 47 to 57 feet bgs). These two monitoring wells provided horizontal and vertical control of the treatability study.

These sampling locations comprised 33 monitoring points varying from 6 to 57 feet radial distance from injection locations, screened at six depth intervals between 11 and 60 feet bgs. The monitoring points were selected to facilitate monitoring within the expected treatment zone, at upgradient, crossgradient, and downgradient locations, as well as throughout and beneath the vertical extent of the expected treatment zone.

To establish baseline groundwater conditions, each monitoring well was sampled prior to ZVI injection using low-flow micro-purging techniques. The following parameters were monitored using field instruments during groundwater sampling activities:

- Groundwater elevation
- pH
- DO
- ORP
- Specific conductivity
- Temperature
- Ferrous iron

Groundwater samples were submitted to an off-site laboratory for the following analyses:

- Chlorinated VOCs
- Dissolved gases (acetylene, methane, ethane, and ethene)
- Total and dissolved iron
- Anions (chloride, nitrate, nitrite, sulfate, and sulfite)
- Cations (calcium, magnesium, potassium, and sodium)
- Alkalinity
- Dissolved hydrogen
- Metals (arsenic and manganese)

Baseline sampling results, post-injection analytical data, and field data are provided in Appendix A, Tables A3-1 and A3-2. Evaluation results are discussed in Section 4.0 and Appendix H. VOC

concentrations in the treatability study area prior to injection are shown in cross section on Figure 2-5.

3.3 INJECTION ACTIVITIES

ZVI injection was completed between November 10 and 20, 2009, at the three injection boring locations (points) shown on Figure 2-2. The dosing summary is presented in Table 3-2. A summary of the injection performed at the three injection locations, including date, depth intervals, injection times; pneumatic fracturing pressures; injection flow rates, amounts of material injected per depth interval, and injection monitoring parameters is presented in Table 3-3. ZVI injection was conducted using a liquid atomization or hydraulic injection process in conjunction with pneumatic fracturing.

3.3.1 Injection Dosing

Dosing requirements were based on achieving desirable design ORP and resulting iron-to-soil-mass ratios in the subsurface environment. The ZVI dose was calculated with the goal of generating an ORP of -400 millivolt (mV) or lower, which was demonstrated in previous studies (Gavascar et al. 2005) to favor the beta-elimination pathway, ideally resulting in increased reaction rates and minimizing generation of intermediate daughter products. The dosing for Z-Loy, recommended by the vendor (OnMaterials) and used in the dosing calculation for this study, was 5 g/L pore volume of the area to be treated, which equated to an iron-to-soil-mass ratio of approximately 0.001. Vendor-provided dosing calculations are provided in Table 3-2.

Assuming a 15-foot ROI for each injection location and an 84,800-cubic-foot treatment soil volume, the vendor recommended injecting a slurry mixture consisting of 1,340 gallons of Z-Loy slurry (a palladium-coated iron/propylene glycol mixture) mixed with 3,760 gallons of water via the three injection points. This is equivalent to 1,700 gallons of injectant (slurry) per injection point, or 131 gallons (29 gallons of pre-mixed ZVI, 102 gallons of water, and 0.6 gallons of dispersant) of ZVI slurry, water, and dispersant per 3-foot injection interval.

3.3.2 Injection Pneumatic Fracturing

The liquid atomization process used high-velocity nitrogen gas to disperse slurry into the treatment zone and to accomplish distribution into the soil matrix. The high flow volume of the gas served to either fracture or fluidize the formation, presumably creating emplacement pathways for the NZVI slurry. When lower flow rates were desired to prevent surfacing and where the formation yielded at lower pressures, hydraulic emplacement was used.

The injection system was equipped with a specialized injection module to regulate the flow of pressurized nitrogen, which was used as the carrier fluid. Nitrogen was provided from bulk tube trailers at about 2,500 pounds per square inch gauge pressure under ambient temperature. The compressed nitrogen was routed through the injection module to a proprietary injector that was

then lowered to the desired injection interval. The injection module reduced and regulated the pressure of nitrogen to an appropriate subsurface injection pressure. The injection tooling consisted of triple-straddle pneumatic packers and a proprietary nozzle. During injection, the packers were inflated to seal against the formation and isolate the injection interval. The injection was initiated by introducing nitrogen gas for the recommended duration by the injection vendor (fluidization phase). Near the end of the nitrogen-only pulsing, the NZVI slurry was delivered into the nitrogen stream and dispersed into the formation. Upon completion of injection at a particular interval, the packers were deflated and the injection assembly was raised to the next interval for the subsequent injection.

To initiate the injection process, each of the three injection points was advanced using a 4.5-inch casing driven by direct push rig to the deepest interval at each injection point. Injections were then attempted from the bottom interval up to 10 feet bgs, in 3-foot increments.

During the injection at location IP03, the formation did not yield at the first two depth intervals (47 to 50 feet bgs and 44 to 47 feet bgs), even at relatively high initiation pressures (750 and 700 pounds per square inch [psi], respectively, for the two intervals). Previous experience indicated that these pressures are typical of hard rock rather than unconsolidated sediment, indicating that the formation at these depth intervals was compacted or cemented. Injection was not accomplished at these two depth intervals.

3.3.3 Injection ZVI Emplacement

Due to refusal prior to advancing to the planned total depth of 50 feet bgs at IP01 and IP02, injection attempts began at 45 and 43 feet bgs, respectively, at these locations. During the attempt to inject at a depth of 41 to 44 feet bgs in IP03, the majority of the 130 gallons of ZVI slurry injected surfaced near the injection casing at IP03 within 15 seconds, causing the surface asphalt to breach. Due to the surface breach and presumed compromise of the injection borehole, IP03 was abandoned after the injection attempt, once ZVI slurry was recovered and recycled.

Surfacing of ZVI material was also observed while conducting injection at locations IP01 and IP02. While injecting at a depth of 27 to 30 feet bgs in IP01, surfacing of ZVI material was observed inside Building 163 along existing cracks and joints in the surface concrete (at a distance of up to approximately 35 feet from the injection location). At IP02, surfacing of ZVI material was observed at concrete seams near Building 163 beginning with the depth interval at 28 to 31 feet bgs. Surfacing material was observed to be frothy in appearance and less dense than ZVI slurry, indicating much of the surfacing material likely included a large quantity of gas and water.

Due to significant surfacing and eventual saturation of the formation near the injection points, injection was not able to be completed at all planned intervals. ZVI injection was partially completed at five additional intervals in IP01, two additional intervals in IP02, and one

additional interval in IP03. Injection was completed at 7 of 13 planned intervals at IP01 and 9 of 13 planned intervals at IP02. Injection was completed at a total of 16 of 39 planned intervals at the three injection points. A total of 504 gallons of ZVI (of 568 total gallons attempted and 971 gallons planned) was injected during this treatability study.

3.3.4 Optimization of Field Activities

Following the injection attempt at IP03, adjustments were made to the injection assembly and injection point design prior to continuing the injection at IP01 and IP02:

- An additional pneumatic packer was added to the assembly to seal the formation at the top of each injection interval.
- Six-inch PVC casing was installed to a depth of 5 feet bgs at each of the remaining injection points. The annular space between the casing and surrounding formation was backfilled with concrete. The PVC casing was further sealed using a rubber O-ring and inflated packer.
- The injection nozzle was replaced with a nozzle designed for use in sandy soils to prevent clogging.
- Throughout the injection process, the injection crew optimized the nitrogen and slurry flow rate in response to the site conditions, primarily to avoid excessive surfacing of ZVI material.
  - Higher pressures were used at deeper intervals where high initiation pressures were required to cause the formation to yield. When surfacing was observed, the slurry injection flow rate was decreased to maximize slurry emplacement within the formation.
  - In shallower intervals, hydraulic injection was used rather than atomized injection to further limit emplacement flow rates.
  - Finally, at the shallowest intervals (less than 21 feet bgs at IP01 and less than 16 feet bgs at IP02), gravity injection was used to prevent ZVI material from immediately surfacing. Even after employing these adjustments, ZVI material continued to surface, primarily at the injection points themselves and at surface cracks, joints, and seams within 10 feet of injection locations.

3.3.5 Injection Monitoring

During injection operations, system operational parameters were monitored to evaluate the success of the injection and to make adjustments as necessary. Injection monitoring measurements are described below and included in Table 3-2.

3.3.5.1 Initiation and Maintenance Pressures

The initiation pressure represented the pressure at which the formation yielded to the influx of injection fluids. The maintenance pressure represented the pressure required to maintain the

injection flow into the formation. Maximum successful initiation pressures were achieved in the deepest injection intervals at each injection point. An injection pressure of 460 psi was required to cause the formation to yield at 41 to 44 feet bgs at IP03 and at 42 to 45 feet bgs at IP01. Similarly, 425 psi was required to cause the formation to yield at 40 to 43 feet bgs at IP02. For some of the shallower intervals, hydraulic pressure was sufficient to emplace the ZVI slurry; higher initiation pressures were not required at these intervals.

Maintenance pressures also varied with depth of injection interval, with higher pressures generally required for deeper injection intervals. Maintenance pressures varied from 0 to 250 psi.

3.3.5.2 Pressure Response and Surface Heave

Pressure gauges were placed at selected monitoring wells to monitor pressure influence. Maximum injection pressure response was measured as greater than 60 psi (60 psi was the maximum measurable pressure for the gauge used) at ZVI-MW01B during the injection attempt at 41 to 44 feet bgs at IP03. During the injections at IP01 and IP02, maximum pressure responses of 7 and 25 psi were recorded at ZVI-MW06A2 and ZVI-MW01A2, respectively. Pressure responses were indicated at a maximum radial distance of 19.7, 23.2, and 16.5 feet during injection at IP01, IP02, and IP03, respectively. Maximum pressures were achieved during fracturing of intervals greater than 40 feet bgs, as expected since higher initiation pressures were used in these intervals.

Pressure responses were used as a real-time indication of successful fracturing for each interval. Evaluation of pressure response data also provides a rough indication of the distribution of fracturing and presumably of ZVI material. Monitoring points closest to the injection point are expected to have the greatest pressure response. However, pressure response data collected during the treatability study (Table 3-3) indicated that this was not always the case. For example, at the fracturing depth interval of 42 to 45 feet bgs at IP01, the use of a relatively high fracture initiation pressure of 460 psi produced a maximum pressure response (6 psi) at ZVI-MW01A2 and ZVI-MW02A3 located west of the injection location at distances of 10.4 and 16.4 feet from the injection point, respectively. The same pressure response was indicated at ZVI-MW06A2 at 10.4 feet east of the injection point. The closest monitoring points to the east, however (ZVI-MW06C and ZVI-MW06A3 at 6.1 and 6.6 feet from IP01, respectively), showed little or no pressure response. Generally, fracturing initiated during injection from IP01 resulted in the greatest pressure response at ZVI-MW01A2 and ZVI-MW06A2, both screened at 10 to 20 feet bgs, even though monitoring wells screened at other depth intervals were closer to the injection location (ZVI-MW06C and ZVI-MW06A3 at 6.1 and 6.6 feet east of the injection point, respectively).

Fracturing at IP02 also generally resulted in maximum pressure responses at ZVI-MW01A2 and ZVI-MW06A2, located 13.7 and 23.2 feet north of the injection location, respectively. As with

the IP01 injections, in some injection intervals at IP02, monitoring points closer to the injection location and injection depth interval showed little or no pressure response (e.g., during injection at the 40- to 43-foot-bgs interval, pressure response of 0 psi was observed at ZVI-MW06A3, screened at 20 to 30 feet bgs and located 17.4 feet from the injection point while a pressure response of 10 psi was observed at ZVI-MW06A2).

At IP03, injection was successful at only one interval. Using the same initiation pressure (460 psi) at the depth interval of 41 to 44 feet bgs produced maximum pressure responses east of the injection point (maximum of 60 psi at ZVI-MW01B at a distance of 11.6 feet from the injection point), but much less pressure response in other directions (maximum of 5 psi 13 feet west of the injection point at ZVI-MW04A3 and only 2 psi 10.1 feet west at ZVI-MW04B).

These results indicate pressure response and fracturing was asymmetrical during fracturing and injection at all three injection points.

An additional consideration in monitoring pressure response was to minimize the risk of structural damage to Building 163 due to high fracture initiation pressures. For this reason, initiation pressures were limited by the vendor to less than 800 psi.

To ensure that no damage occurred to Building 163 and that no permanent deformation occurred on nearby paved surfaces, ground surface heave was monitored using survey transits in conjunction with heave rods. The heave rod was placed near the injection point. The maximum amount of upward motion (surface heave) and the post-injection resting position (residual heave) were measured. Maximum transient surface heave during injection was measured as 0.9 inch during injection at IP01. Maximum residual heave of 0.4 inch was measured during the injection attempt at IP03. During all remaining injection intervals attempted, residual surface heave was less than 0.2 inch (see Table 3-3).

3.3.5.3 Surface Vapor Monitoring

For health and safety purposes, surface vapors in the breathing zone were monitored during injection using a Multi-RAE 4-gas detector and PID. A maximum VOC concentration of 0.1 parts per million was measured during injection; and all vapor measurements made during the injection process were below action levels.

4.0 ZVI INJECTION PERFORMANCE

The primary objective of the treatability study was to evaluate the effectiveness of ZVI in reducing VOCs, particularly TCE, in groundwater in a source reduction application. This section provides a summary and evaluation of the performance of the ZVI injection conducted within the treatability study area. Analytical results of baseline and post-injection groundwater sampling are provided in Appendix A. Injection locations and post-injection concentrations of total VOCs in the treatability study area are shown on Figure 4-1. A detailed analysis of injection sampling results and evaluation of ZVI performance, including methodology used in all calculations, is provided in Appendix H. A summary of the performance of ZVI injection in the treatability study area is provided in Table 4-1 and discussed in Sections 4.1 through 4.5.

4.1 MASS OF ZVI INJECTED

A total of 3,919 pounds of NZVI was injected at three locations within the treatability study area. Because of refusal encountered while trying to advance injection casing at IP01 and IP02, injection of ZVI was unsuccessful at depths greater than 45 feet bgs. Because of failure to initiate fracture below this depth at IP03, injection of ZVI was similarly unsuccessful below 45 feet bgs. Table 3-3 summarizes the distribution of ZVI material injected per depth interval for each injection location. Based on calculation of the injection zone of influence (see Appendix H), 5,117,070 pounds of soil was included within the treated zone. This resulted in a ratio of ZVI to soil mass of 0.0008.

Previous studies (Gavaskar et al. 2005) indicate that a ratio of ZVI to treated soil mass of at least 0.004 should be achieved for the best likelihood of successful reduction of chlorinated VOCs. Previous ZVI/NZVI demonstrations conducted at Hunters Point Shipyard (HPS) (two separate demonstrations), NAS Jacksonville (NZVI), and NAES Lakehurst (NZVI) indicated that, of the four, only the HPS demonstration resulting in the 0.004 ZVI-to-soil ratio resulted in sufficient reducing conditions for abiotic TCE degradation without rapid rebound and without accumulation of daughter products (e.g., cis-1,2-DCE). Note that while micro-scale (vice nano-scale ZVI) ZVI was used in the HPS applications, this did not impact the study's conclusions regarding suitable application ratios. For further discussion regarding development of a sufficiently reducing environment, see Section 4.5 and further discussion in Appendix H.

4.2 TCE AND VOC MASS REMOVAL ESTIMATES

The primary contaminant of concern in the vicinity of Building 163 is TCE. Performance evaluation for reduction of TCE and other chlorinated VOCs was based on percent reduction in contaminant level from the baseline concentrations realized during subsequent post-injection sampling rounds. Table 4-2 summarizes the changes in pre-injection to post-injection concentrations of TCE, 1,1-DCE, cis-1,2-DCE, vinyl chloride, and total chlorinated VOCs.

Figure 4-2 displays concentrations of TCE, cis-1,2-DCE, and vinyl chloride observed during baseline and post-injection monitoring. Changes in concentrations of total VOCs in the treatability study area can be identified by comparing Figures 2-5 and 4-1. Methodology and calculations of mass removals are described in Appendix H.

4.2.1 TCE Removal Results

The ZVI injection process reduced TCE mass in the treated zone from 2.45 pounds to 1.74 pounds. However, the reduction was primarily a result of reduction in TCE at a single monitoring location, ZVI-MW06A2 (99 percent of the calculated reduction in TCE), at 10 to 20 feet bgs within approximately 10 feet of injection locations. Further, TCE concentrations within this zone increased approximately 45 days after injection completion, indicating that reduction of TCE was complete and TCE was rebounding towards baseline values.

TCE increased or did not change at the majority (22 of 33) of monitoring locations. TCE increases within the treated zone may have been a result of desorption of TCE from soil, or a result of displacement of TCE during injection. Results of post-injection monitoring indicated that at locations showing the most significant TCE increases, ZVI-MW06A3, ZVI-MW07A2, and ZVI-MW07A3 (see Table 4-2, Figure 4-2, and Appendix H Figure H-1), an increase in TCE concentrations occurred, correlated with a significant increase then a decrease in dissolved iron concentrations. These monitoring locations were all adjacent to monitoring location ZVI-MW06A2, where the most significant TCE decrease occurred. These results indicate ZVI material reached these locations during injection and that TCE increases were due to either desorption or displacement of TCE along with injected ZVI material during the injection itself rather than by displacement of TCE from areas of upgradient high VOC concentrations. It is likely that this displacement accounted for some of the decrease in TCE indicated at ZVI-MW06A2. Fluctuations associated with adjacent areas of relatively high VOC concentrations may account for increases in TCE at other monitoring locations.

Estimated TCE mass removed in the treated zone was 0.71 pound, or 29 percent of the estimated pre-injection mass.

4.2.2 Other Chlorinated VOC Removal Results

Masses of the other primary chlorinated VOCs increased above baseline concentrations (with increases in the masses of 1,1-DCE, cis-1,2-DCE, and vinyl chloride of 48 percent, 27 percent, and 16 percent, respectively), causing total chlorinated VOC mass to remain essentially at its pre-injection level (decreasing from an estimated 5.063 pounds to 5.061 pounds). An estimated 0.04 percent of total chlorinated VOCs was removed during the injection process.

4.3 ZVI USED PER MASS TCE REMOVED

During the study, 1,600 pounds of NZVI was used per pound of TCE within the treated zone. This equates to 5,495 pounds of NZVI injected per pound of TCE removed.

4.4 ZONE OF INFLUENCE

In evaluating the effectiveness of the ZVI treatment technology, groundwater analytical and field parameter data from the 33 monitoring locations were used to establish an ROI for the injection locations and a zone of influence for the overall ZVI injection. In general, at locations most clearly influenced by ZVI injection, the following changes from baseline concentrations occurred: dissolved iron increased significantly and then decreased; ORP decreased to a negative mV value; some production of dissolved gases (either ethene, ethane, acetylene, or hydrogen gas or a combination of one or more of these) was indicated; and increased concentrations of dissolved metals, usually arsenic and/or manganese, were noted. Figure 4-1 shows the resulting zone of influence for the treatability study.

4.4.1 Maximum ROI

ROIs were established for each depth interval, with a maximum ROI of 18.2 feet identified at the 10- to 20-foot-bgs monitoring interval and a minimum ROI of 6.1 feet identified at the 40- to 50-foot-bgs monitoring interval. Observed evidence of influence at monitoring locations within Building 163 to the east of the injection points, but not at most monitoring locations immediately west of injection points, indicate that ZVI injection and distribution in the subsurface were not uniform. Pressure influence data collected during ZVI injection also show that fracture and injection were not uniform (see Section 3.3.5.2).

4.4.2 Average ROI

A composite ROI of 10.7 feet was calculated based on weighted average ROI from each depth interval. This was less than the design ROI of 15 feet.

4.4.3 Treated Zone

ROIs at each depth interval were used to calculate a treated zone volume of approximately 48,200 cubic feet. The resulting zone of influence is shown on Figure 4-1. This treated zone is smaller than the design treatment zone of approximately 70,000 cubic feet because less than 60 percent of the design ZVI material could be successfully injected, and successful injection was accomplished at fewer than the design number of depth intervals at all three injection locations. Post-injection sampling data support the conclusion that an ROI of influence of less than the design ROI of 15 feet was achieved at most depth intervals at each injection location and that the overall treatment zone of influence was smaller than the design value.

4.5 DEVELOPMENT OF SUFFICIENTLY REDUCING ENVIRONMENT

A measure of ZVI performance is the creation of a significantly reducing environment within the treatment zone to create favorable conditions for rapid dechlorination of chlorinated VOCs by abiotic beta-reduction reactions. Production of reducing conditions insufficient to favor these processes may still create conditions favorable for biodegradation of chlorinated compounds; however, reductions in TCE and other chlorinated VOCs will occur more slowly and with increased likelihood of creating undesirable intermediate chlorinated daughter products, such as cis-1,2-DCE.

Production of a sufficiently reducing environment was evaluated from post-injection sampling results for ORP, DO, and pH. Based on the results of previous studies, values of less than -400 mV for ORP, less than 1 µg/L for DO, and an increase in pH are indications that a sufficiently reducing environment has been achieved to successfully remove chlorinated VOCs. Failure to achieve these parameters and increases in daughter products (especially cis-1,2-DCE) indicates a sufficient reducing environment was not created to facilitate removal of chlorinated VOCs without production of intermediate chlorinated compounds. Further discussion of ORP, DO, and pH monitoring results can be found in Appendix H.

4.5.1 Change in ORP

An average ORP of -123 mV was achieved within the treated zone, a reduction from the average baseline value of -8.85 mV. The minimum baseline ORP was observed at ZVI-MW04A2 (-360.5 mV). Maximum reduction in ORP was achieved at ZVI-MW01A2, where ORP decreased from 199.7 mV to -334.7 mV, which was also the minimum observed post-injection ORP. Generally, monitoring locations showing significant increases in dissolved iron concentrations in post-injection monitoring also experienced reductions in ORP. Monitoring results at ZVI-MW01A2 indicated an increase in dissolved iron of 1,414 percent from baseline concentrations. Other monitoring locations showing significant increases in dissolved iron concentrations also experienced significant reductions in ORP as shown below:

- ZVI-MW06A2:
  - Increase from baseline dissolved iron concentration: 2,344 percent
  - Post-injection ORP: -304.4 mV
- ZVI-MW06C:
  - Increase from baseline dissolved iron concentration: 352 percent
  - Post-injection ORP: -154.0 mV
- ZVI-MW07A2:
  - Increase from baseline dissolved iron concentration: 646 percent
  - Post-injection ORP: -113.0 mV

- ZVI-MW07A3:
  - Increase from baseline dissolved iron concentration: 4,444 percent
  - Post-injection ORP: -218.2 mV
  - Reduction in ORP was most marked in the 10- to 20-foot-bgs (A2) depth interval.

The injection did not result in creating an ORP of less than -400 mV throughout the treated zone, indicating less than optimal reducing environment for dechlorination to progress through complete reduction.

4.5.2 Change in DO

Average DO in the treated zone decreased from 1.81 mg/L to 0.87 mg/L, indicating desired DO of less than 1 mg/L was achieved; however, the reduction in DO was not uniform throughout the treated zone. DO values of less than 1 mg/L were observed at approximately one half (16 of 33) the monitoring points during post-injection sampling.

4.5.3 Change in pH

Average pH in the treated zone decreased from 8.06 to 7.80. Desired increase in pH was not achieved.

4.5.4 Conclusions

Despite achieving a reduction in DO, desired reduction in ORP to -400 mV, or the threshold value of -200 mV, was not achieved. Increase in pH was also not achieved. Increases in concentrations from baseline values observed in other chlorinated VOCs (notably cis-1,2-DCE), discussed in Appendix H and in Section 4.2, provide further evidence that an insufficient reducing environment was created at the treated zone to allow dechlorination to progress through the complete reduction sequence required to reduce TCE and other chlorinated VOCs to dechlorinated compounds such as ethene.

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5.0 PERFORMANCE AND COST ANALYSIS

This section summarizes the cost for the treatability study application of ZVI at the Building 163 area of OU-2B IR Site 4. Table 5-1 provides a summary of costs incurred in completing the treatability study and relates the cost to corresponding reduction in TCE. Minimal permitting and regulatory costs were incurred due to the location of the treatability study area within a CERCLA site. Additionally, long-term groundwater monitoring (beyond 90 days after completion of the injection) was not included in this project. Costs for the bench-scale study conducted prior to the treatability study are not included in the cost analysis.

5.1 PRELIMINARY COSTS

5.1.1 Administrative and Planning Costs

Administrative costs of $90,000, 11 percent of the total cost of the study, included development and distribution of work plans, sampling and analysis plans, and health and safety plans, and providing site-specific health and safety training to subcontractors.

5.2 SITE CHARACTERIZATION COSTS

Site characterization costs included all costs associated with characterizing the nature and extent of subsurface contamination within the treatability study area and characterizing the subsurface lithology to confirm and adjust the injection design and ZVI dosing.

5.2.1 MIP and HydroPunch Data Collection

The cost for conducting the MIP screening and subsequent soil and groundwater HydroPunch sampling was $125,000, representing approximately 15 percent of the total cost of the study. These costs included mobilization and demobilization of a MIP rig for conducting MIP screening and a DPT rig and associated equipment for collecting the HydroPunch samples and completing the continuous coring. Also included were health and safety monitoring equipment rental and labor associated with surface coring, hand augering sampling locations, preparatory geophysical surveying, sample collection and borehole backfill, and surface restoration after completion of sample collection.

5.3 INJECTION COSTS

5.3.1 Material Purchase and Delivery

The cost for purchasing 3,919 pounds (568 gallons undiluted ZVI slurry) of Z-Loy NZVI material from OnMaterials at $19.00 per pound was $74,500. Costs for shipping and delivery of the ZVI pre-mixed slurry from Akron, Ohio, to Alameda, California, in seven 162-gallon totes

was $5,075. Material purchase included five 5-gallon buckets of dispersant. Total cost for purchase and delivery to the injection-site of the ZVI material was $79,500, or 9.5 percent of the total cost of the study.

5.3.2 Monitoring Well Installation and Injection Activities

Injection costs included all costs associated with drilling injection points, injecting the ZVI material, and preparing to monitor injection performance. Costs for injection drilling activities included constructing the well network required to monitor injection performance. Costs included mobilization and demobilization of a Geoprobe 8040DT rig, used for both drilling and construction of the monitoring well network and for performing the injection. Also included were health and safety monitoring equipment rental and labor associated with surface coring and hand augering 31 monitoring well locations; preparatory geophysical surveying; well drilling; installation and backfill with appropriate amounts of sand, grout, and concrete; installation of well boxes; and resurfacing each monitoring location. Monitoring well installation costs also included well development of 31 wells, including mobilization and demobilization of a well development rig with surge block, and surveying each well. Injection activity costs included drilling three injection points, installing injection equipment at each injection location, injecting 568 gallons of ZVI slurry among the three injection locations, and finally completing borehole backfill and surface restoration at each injection location.

The cost for all injection activities was $247,600, at 30 percent of the total cost of the study.

5.4 OTHER COSTS

5.4.1 Project Management and Procurement Costs

Project management costs of $40,000, 5 percent of the total cost of the study, included all management and oversight costs, and procurement.

5.4.2 Injection Monitoring, Sampling, and Data Management

Costs for sampling and analysis included costs for collecting groundwater samples, conducting analysis of groundwater samples, and sample data validation and management. Sample collection costs included mobilization and demobilization of sampling crews, collection of baseline samples from each of 33 monitoring locations, collection of samples during four rounds of post-injection monitoring at each of 33 monitoring locations, and shipment of samples to an off-site independent laboratory. Total sample collection cost was $69,000, at 8 percent of the total cost of the study. Sample analytical costs included laboratory analysis and reporting of ZVI monitoring well baseline and post-injection sampling results. Sample analytical costs were $78,000. Sample management costs were $43,000 including chain-of-custody records and sample shipment tracking, purchase and shipment of sampling supplies, and containers and data validation costs.

The cost for all groundwater sampling and analysis activities was $190,000, at 23 percent of the total cost of the study.

5.4.3 Waste Collection and Disposal

Costs for site characterization and treatability study-derived waste disposal included analysis and off-site transport and disposal of soil cuttings, decontamination water, well purge water, and water used in coring, in addition to a small quantity of recovered diluted ZVI slurry. Total waste disposal cost was $11,000, 1 percent of the total cost of the study.

5.4.4 Report Production Costs

The cost for developing, reproducing, and distributing the treatability study report was $55,000, 7 percent of the total cost.

5.5 COST PER MASS OF CONTAMINANT REDUCTION

For the purpose of comparing the performance of ZVI technology to other technologies at this site, or to allow comparison with conditions at different sites, a unit cost calculation was performed as follows:

5.5.1 Injection Costs

Injection costs (including installation of monitoring well network, drilling of injection points, purchase and delivery of ZVI injection material, and injection and emplacement of ZVI) were $460,300 per pound TCE removed and $6.78 per cubic foot of soil treated.

5.5.2 ZVI Material Costs

ZVI material costs (including purchase and delivery of Z-Loy material only) were $104,400 per pound of TCE removed and $1.64 per cubic foot of soil treated.

5.5.3 Total Costs

Unit cost of conducting the treatability study at the Building 163 IR 4 site was $0.16 per pound of soil treated and $1,175,100 per pound of TCE removed. Given the treatment zone at this site, this also equates to $17.30 per cubic foot treated or $469.30 per cubic yard treated. This total compares unfavorably to a study with a treatment zone of similar size conducted at HPS in 2005 (Gavaskar et al. 2005), which resulted in a unit cost per volume soil treated of $172 per cubic yard and a larger scale demonstration, also at HPS, where $50 per cubic yard treated was achieved. Note that in these studies, much higher ZVI-to-soil mass ratios were achieved (0.0035 and 0.001 versus 0.0008 achieved in the present study).

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6.0 CONCLUSIONS AND RECOMMENDATIONS

The overall objective of this treatability study was to evaluate the cost and performance of NZVI in reducing or removing chlorinated VOCs, in particular, TCE, in a source reduction application within OU-2B IR Site 4.

6.1 CONCLUSIONS

Conclusions are described below and organized to address the project objectives:

- **Assess VOC concentrations and geochemical parameters, and confirm design assumptions.**

  This objective was achieved during the pre-injection site characterization phase. The injection design was modified based on discovery and characterization of higher than expected VOC concentrations beneath Building 163. The planned treatment zone was moved west of the building to address concerns of displacing VOCs from high concentration areas.

- **Evaluate the effectiveness of NZVI in reducing concentrations of TCE in groundwater.**

  TCE was not effectively reduced during the treatability study. TCE was significantly reduced from baseline concentrations at one monitoring point located within 11 feet of an injection point in the 10- to 20-foot-bgs depth interval. However, TCE increased or did not change at the majority (22 of 33) of monitoring locations.

- **Evaluate the ROI of this treatment technology.**

  A depth-dependent zone of influence was developed based on comparing post-injection groundwater sampling data to baseline data at 33 monitoring points. Evidence of ZVI influence indicated a maximum ROI of 18.2 feet in the 10- to 20-foot-bgs depth interval and a minimum ROI of 6.1 feet in the 40- to 50-foot-bgs-depth interval. The composite ROI was estimated to be 10.7 feet. These ROIs resulted in an estimated 48,200-cubic-foot treated zone.

- **Assess potential desorption of TCE from soil following NZVI injection.**

  Increases in TCE concentrations throughout the treatment area and net increases in mass of 1,1-DCE, cis-1,2-DCE, and vinyl chloride during the treatability study with a near-zero net chlorinated VOC mass change indicate desorption of compounds from soil likely occurred within the treated zone. Although the DQOs established in the Work Plan stated that TCE increases within the treatment area would be attributed solely to desorption, monitoring data indicate that displacement from areas of high TCE concentration may have occurred during injection (TtEC 2009b). This displacement of TCE and ZVI material from within the treated area during the injection process likely accounts for some of the observed TCE increases. Similarly, diffusion of TCE from higher concentration areas upgradient and to the east of the

treated zone may account for some of the increases in TCE concentrations within the treated zone.

- **Assess whether or not the addition of NZVI displaces the TCE radially from the treatment area.**

  No displacement beyond the lateral extent of the treatment zone (in either the downgradient or crossgradient directions) or beneath the treatment zone was indicated. However the zone of influence of the treatability study was observed to extend beneath Building 163.

  While no displacement of TCE beyond the treatment zone was observed, displacement of TCE and ZVI material within the treated zone was indicated, especially at monitoring locations closest to Building 163 (see discussion in previous bullet).

  An additional potential explanation for increases in chlorinated VOCs and TCE at monitoring locations within the building is that contamination discovered to the east and upgradient of the treatability study area (identified during the site characterization phase), is migrating into the study area due to the increasing concentration gradient resulting from removing VOC mass in the treated zone.

- **Assess geochemical considerations applicable for scaled-up applications.**

  The desired creation of a sufficiently reducing environment to favor rapid dechlorination of VOCs without increasing intermediate chlorinated daughter products was not achieved. Desired ORP of -400 mV was not achieved as average ORP in the treated zone was -123 mV after ZVI injection. Minor increases in dissolved metals, such as arsenic and manganese, were observed.

6.2 DISCUSSION

While ZVI injection is a proven technology and has been successfully employed at other sites, it was not successful in reducing TCE concentrations in the treated zone near Building 163. Increases in dissolved iron in conjunction with changes in other key geochemical parameters indicate that although ZVI was distributed throughout the defined treated zone, it was not distributed evenly nor in quantities sufficient to initiate abiotic reductive dechlorination reactions.

Possible reasons for less than ideal performance of the technology at this site include difficulties delivering the NZVI at design injection depths and associated difficulties in fracturing the formation, especially at depths greater than 40 feet bgs. Difficulties in initiating fracture at depth and the asymmetrical distribution of fracturing and injection may have created preferential conduits that prevented effective distribution of ZVI material to the intended treatment area. These difficulties are apparently related to lithologic constraints at the site. During site characterization and monitoring well installation, DPT equipment operators encountered zones and depth intervals where advancing desired casing was difficult or impossible (generally at

depths greater than 35 feet bgs). The injection vendor indicated that difficulties in achieving successful fracture have been encountered at sites underlain by cemented or densely compacted sediments, especially if the distribution of these sediments is heterogeneous. Where ZVI injection was shown to be effective at nearby HPS, lithology is much different (loosely consolidated fill overlying hard rock) and the injections were performed to shallower total depths.

Based on the response observed during injection attempts (rapid surfacing of ZVI slurry at many intervals and saturation of the near subsurface causing immediate surfacing during subsequent injection attempts), it is likely that preferential vertical or near-vertical pathways were created during attempts to fracture deeper intervals, especially at the boundary of the injection casing and the surrounding sediment, creating vertical conduits for injected ZVI to either resurface or be emplaced near the surface. These vertical conduits would also serve to reduce ROIs, as was observed from sampling data used to establish zones of influence. The most significant evidence for effective ZVI influences was observed in the 10- to 20-foot bgs zone near the injection points. Post-injection sampling indicated that the most significant ORP reductions occurred within this shallow interval. The location in which significant TCE removal occurred was within the 10- to 20-foot bgs zone, approximately 10 feet from the nearest injection point, supporting the conclusion that difficulty achieving fracture of the formation and subsequent dispersal of ZVI material into the subsurface limits the zone of influence and the ultimate effectiveness of the treatment technology.

6.3 RECOMMENDATIONS

The results of this treatability study indicate that NZVI injection for the purpose of source reduction in the OU-2B IR Site 4 area is not a cost effective option for treatment. The ratio of ZVI to soil mass treated achieved in this study was 0.0008, lower than the recommended ratio of 0.004 necessary to create sufficient reducing conditions to favor abiotic reductive dechlorination of TCE. Observations during post-injection sampling of increased concentrations of TCE dechlorination daughter products throughout the treatment area, indicate desorption of these compounds from soil or failure of the technology to create an environment allowing reductive dechlorination to eliminate all dechlorinated byproducts created during the associated beta-elimination and hydrogenation-initiated reactions.

Acceptable performance of NZVI injection for application as a field-scale source reduction remedial method is not likely to be achieved in soils with lithologic characteristics similar to those in the vicinity of Building 163 in OU-2B IR Site 4. In densely packed silty sands or similar subsurface conditions, fracturing is likely to be problematic as was the case at this treatability study site. Use of high fracture initiation pressures will apparently allow the formation to fracture (at shallow enough depth intervals), but asymmetrical or near-vertical preferential pathways will likely be established, reducing the ROI of the injection location and the effectiveness of the

technology's performance. Based on the results of this treatability study, field-scale application of ZVI injection for use as a source reduction technology is not recommended.

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TABLES

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TABLE 3-1

MONITORING WELL INSTALLATION AND SAMPLING SUMMARY

Specific Well ID Number	Screened Zone	Depth of Well	Completion Date	Development Date	Sampling					Survey Data	
					Baseline Date	Week 1 Date	Week 2 Date	Week 6 Date	Week 12 Date	easting	northing
ZVI-MW01A1	6 to 11	11	22-Sep	7-Oct	6-Nov	3-Dec	16-Dec	6-Jan	17-Feb	6043017.36	2110787.26
ZVI-MW01A2	10 to 20	20	21-Sep	1-Oct	9-Nov	2-Dec	15-Dec	6-Jan	16-Feb	6043020.8	2110786.84
ZVI-MW01A3	20 to 30	30	22-Sep	5-Oct	6-Nov	3-Dec	16-Dec	7-Jan	17-Feb	6043017.26	2110785.2
ZVI-MW01B	30 to 40	40	21-Sep	2-Oct	5-Nov	2-Dec	15-Dec	7-Jan	16-Feb	6043018.88	2110788.86
ZVI-MW01C	40 t0 50	50	28-Oct	2-Nov	6-Nov	3-Dec	17-Dec	7-Jan	17-Feb	6043015.89	2110784.18
ZVI-MW01D	50 to 60	60	29-Oct	2-Nov	9-Nov	2-Dec	16-Dec	7-Jan	16-Feb	6043017.27	2110789.88
ZVI-MW02A2	10 to 20	20	23-Sep	7-Oct	4-Nov	1-Dec	16-Dec	7-Jan	16-Feb	6043010.02	2110801.06
ZVI-MW02A3	20 to 30	30	22-Sep	2-Oct	4-Nov	30-Nov	16-Dec	8-Jan	15-Feb	6043012.16	2110796.8
ZVI-MW02B	30 to 40	40	29-Sep	2-Oct	3-Nov	1-Dec	16-Dec	7-Jan	15-Feb	6043012.9	2110801.54
ZVI-MW02C	40 to 50	50	28-Oct	3-Nov	9-Nov	30-Nov	16-Dec	7-Jan	15-Feb	6043010.02	2110797.55
ZVI-MW03A2	10 to 20	20	22-Sep	8-Oct	5-Nov	2-Dec	14-Dec	5-Jan	18-Feb	6043016.26	2110756.35
ZVI-MW03A3	20 to 30	30	23-Sep	6-Oct	6-Nov	2-Dec	14-Dec	5-Jan	19-Feb	6043011.19	2110757.34
ZVI-MW03B	30 to 40	40	24-Sep	5-Oct	6-Nov	2-Dec	15-Dec	5-Jan	18-Feb	6043016.6	2110753.83
ZVI-MW03C	40 to 50	50	27-Oct	30-Oct	6-Nov	2-Dec	14-Dec	5-Jan	18-Feb	6043011.88	2110754.63
ZVI-MW04A1	6 to 11	11	25-Sep	5-Oct	4-Nov	1-Dec	16-Dec	6-Jan	17-Feb	6042996.74	2110796.18
ZVI-MW04A2	10 to 20	20	25-Sep	8-Oct	5-Nov	2-Dec	17-Dec	6-Jan	16-Feb	6042993.88	2110787.35
ZVI-MW04A3	20 to 30	30	28-Sep	5-Oct	4-Nov	1-Dec	16-Dec	7-Jan	17-Feb	6043000.29	2110795.1
ZVI-MW04B	30 to 40	40	29-Sep	8-Oct	5-Nov	2-Dec	17-Dec	6-Jan	16-Feb	6042997.96	2110785.03
ZVI-MW04C	40 to 50	50	28-Oct	2-Nov	9-Nov	1-Dec	16-Dec	6-Jan	16-Feb	6042996.25	2110790.51
ZVI-MW05A2	10 to 20	20	22-Sep	8-Oct	5-Nov	1-Dec	17-Dec	5-Jan	15-Feb	6042979.54	2110792.01
ZVI-MW05A3	20 to 30	30	21-Sep	5-Oct	5-Nov	1-Dec	15-Dec	5-Jan	15-Feb	6042984.47	2110791.16
ZVI-MW05B	30 to 40	40	29-Sep	6-Oct	5-Nov	1-Dec	15-Dec	5-Jan	16-Feb	6042979.09	2110789.36
ZVI-MW05C	40 to 50	50	28-Oct	3-Nov	9-Nov	1-Dec	15-Dec	5-Jan	15-Feb	6042984.17	2110788.58
ZVI-MW06A2	10 to 20	20	22-Sep	1-Oct	6-Nov	30-Nov	14-Dec	6-Jan	18-Feb	6043038.62	2110792.59
ZVI-MW06A3	20 to 30	30	28-Sep	1-Oct	6-Nov	30-Nov	15-Dec	5-Jan	17-Feb	6043033.22	2110789.2
ZVI-MW06B	30 to 40	40	29-Sep	1-Oct	9-Nov	30-Nov	14-Dec	6-Jan	19-Feb	6043038.53	2110789.45
ZVI-MW06C	40 to 50	50	27-Oct	30-Oct	6-Nov	30-Nov	14-Dec	6-Jan	19-Feb	6043034.26	2110792.37
ZVI-MW07A2	10 to 20	20	25-Sep	8-Oct	2-Nov	3-Dec	17-Dec	8-Jan	17-Feb	6043046.01	2110789.79
ZVI-MW07A3	20 to 30	30	28-Sep	7-Oct	2-Nov	3-Dec	17-Dec	8-Jan	18-Feb	6043044.85	2110784.15
ZVI-MW07B	30 to 40	40	28-Sep	8-Oct	3-Nov	3-Dec	17-Dec	8-Jan	18-Feb	6043048.58	2110789.87
ZVI-MW07C	40 to 50	50	29-Sep	6-Oct	2-Nov	3-Dec	17-Dec	8-Jan	18-Feb	6043047.76	2110784.6
372-MW1	2.5 to 12.5	12.5			9-Nov	2-Dec	18-Dec	8-Jan	18-Feb	6042986.67	2110731.92
D03-04	47 to 57	57			9-Nov	2-Dec	18-Dec	8-Jan	19-Feb	6043020.78	2110842.27

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TABLE 3-2

INJECTION DOSING SUMMARY

Work Scope

Total Number of Injection Points	3
Total Quantity of Z-Loy Delivered	6,700 pounds 971 gallons
Top of Treatment Zone	10 feet below ground surface
Bottom of Treatment Zone	50 feet below ground surface
Treatment Zone Thickness	40 feet
Number of Intervals per Point	13
Volume per Point	1,700 gallons
Volume per Interval	131 gallons

Quantity of Materials per Interval

Z-Loy	29 gallons
Dispersant	0.6 gallon
Water	101.8 gallons

Batching Guideline (each contains 2 injection quantities)

1. Add 100 gallons of water to mixing tank.
2. Add 1.24 gallons of dispersant to mixing tank.
3. Add 58 gallons of Z-Loy to mixing tank.
4. Top off with water to approximately 260 gallons.
5. Mix and recirculate the slurry.
6. Inject.
7. Chase with approximately 15 to 20 gallons of water to clear hose and pump.
8. Complete 2 injections and re-batch.

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TABLE 3-3

INJECTION PERFORMANCE AND MONITORING SUMMARY

Event Data				Nitrogen Data		Ground Heave		Injection Data						Monitoring Well Pressure Influence (psi)				
Injection Boring	**Date**	**Interval (feet bgs)**	**Fracture Time (s)**	**Initiation Pressure (psi)**	**Maintainance Pressure (psi)**	**Maximum Heave (inch)**	**Residual Heave (inch)**	**Water (gal)**	**Slurry Injected (gal)**	**Slurry Injection Pressure (psi)**	**Attempted ZVI injected (gal)**	**Actual ZVI injected (gal)**	**Slurry Injection Flow Rate (gpm)**	**MW1-A1**	**MW1-A2**	**MW1-A3**	**MW1-B**	**MW1-C**
IP01	**11/13/2009**	42 – 45	15:15	460	155	0.3	0.1	130	155	35	25	25	25	2	6	0	5	0
	11/12/2009	39 – 42	16:12	255	140	0.2	0.1	71	96	26	25	25	25	2	5	2	5	0
	"	36 – 39	16:33	205	140	0.9	0.2	120	145	50	25	20	24	2	6	>0	3	0
	11/16/2009	33 – 36	9:58	NA	150	0	0	100	129	35	29	29	21	>0	2	>0	>0	\
	"	30 – 33	10:40	NA	100	0	0	100	129	18	29	29	22	>0	0	>0	0	\
	"	27 – 30	11:04	NA	70	0	0	100	129	\	29	29	\	>0	>0	0	0	\
	11/17/2009	24 – 27	8:10	NA	70	0	0	100	129	35	29	29	18	0	0	0	0	\
	"	21 – 24	8:31	NA	50	0	0	100	129	35	29	8.7	19	\	\	\	\	\
	11/17-11/20/2009	10 – 21	\	NA	NA	0	0	\	\	\	47	37	\	\	\	\	\	\
IP02	**11/12/2009**	40 – 43	11:00	425	125	0.4	0.2	160	185	40	25	25	24	0	5	4	>0	11
	"	37 – 40	11:50	205	80	0.2	0.1	130	155	25	25	25	15	>0	1	4	>0	0
	"	34 – 37	13:20	160	90	0	0	130	155	15	25	25	25	>0	2	0	>0	0
	"	31 – 34	13:50	NA	70	0.1	0.1	130	155	15	25	25	25	>0	20	0	>0	0
	"	28 – 31	14:13	NA	50	0	0	130	155	11	25	25	24	>0	3	0	0	\
	"	25 – 28	14:30	NA	NA	0	0	130	155	11	25	25	22	\	\	\	\	\
	11/13/2010	22 – 25	9:06	280	250	0.4	0.2	130	155	20	25	25	15	11	25	0	0	\
	"	19 – 22	9:36	190	125	0.4	0.2	130	155	15	25	25	20	11	9	0	0	\
	"	16 – 19	10:29	210	120	0.4	0.2	130	155	15	25	25	20	9	3	0	0	\
	11/16/2009	13 – 16	11:10	NA	NA	0	0	0	0	15	0	0	15	\	\	\	\	\
	11/17-11/20/2009	10 – 16	\	NA	NA	0	0	\	\	\	51	42	\	\	\	\	\	\
IP03	**11/11/2009**	47 – 50	12:40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	\	\	\	\	\
	"	44 – 47	13:35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	\	\	\	\	\
	"	41 – 44	15:03	460	120	0.6	0.4	105	130	65	25	6	25	5.5	\	0	>60	54

Total ZVI Injected (attempted):	**568 gallons**
Total ZVI Injected (actual):	**504 gallons**

TABLE 3-3

INJECTION PERFORMANCE AND MONITORING SUMMARY

Event Data				Monitoring Well Pressure Influence (psi)																
Injection Boring	**Date**	**Interval (feet bgs)**	**Fracture Time (s)**	**MW1-D**	**MW2-A2**	**MW2-A3**	**MW2-B**	**MW2-C**	**MW3-A2**	**MW3-A3**	**MW3-B**	**MW3-C**	**MW4-A1**	**MW4-A2**	**MW4-A3**	**MW4-B**	**MW4-C**	**MW5-A2**	**MW5-A3**	**MW5-B**
IP01	**11/13/2009**	42 – 45	15:15	\	plug blew	6	>0	\	>0	0	0	0	\	>0	>0	>0	0	0	\	0
	11/12/2009	39 – 42	16:12	\	2	0	0	10	>0	>0	0	0	\	>0	>0	>0	0	0	\	0
	"	36 – 39	16:33	\	>0	0	0	>0	0	0	0	0	0	>0	0	>0	\	0	\	0
	11/16/2009	33 – 36	9:58	\	>0	0	0	\	0	>0	0	\	>0	>0	0	0	\	0	0	0
	"	30 – 33	10:40	\	>0	0	0	\	0	>0	0	\	>0	0	0	0	\	0	0	0
	"	27 – 30	11:04	\	0	0	0	\	0	0	0	\	0	0	0	0	\	0	0	0
	11/17/2009	24 – 27	8:10	\	0	0	0	\	0	0	0	\	0	0	0	0	\	0	0	0
	"	21 – 24	8:31	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\
	11/17-11/20/2009	10 – 21	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\
IP02	**11/12/2009**	40 – 43	11:00	\	\	>0	\	>0	0	5	\	\	\	\	>0	>0	>0	\	\	0
	"	37 – 40	11:50	\	\	>0	\	0	0	2	\	0	\	\	0	0	0	0	\	\
	"	34 – 37	13:20	\	\	0	\	0	0	0	\	0	\	\	>0	>0	0	0	\	\
	"	31 – 34	13:50	\	\	0	\	0	0	0	\	0	\	\	0	0	0	0	\	\
	"	28 – 31	14:13	\	0	0	\	0	2	0	\	\	0	0	>0	0	\	\	\	\
	"	25 – 28	14:30	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\
	11/13/2010	22 – 25	9:06	\	2	>0	0	\	0	0	\	\	0	0	0	\	\	\	\	\
	"	19 – 22	9:36	\	1.5	0	\	\	0	0	\	\	>0	0	0	\	\	\	\	\
	"	16 – 19	10:29	\	0	0	\	\	0	0	\	\	0	0	0	\	\	\	\	\
	11/16/2009	13 – 16	11:10	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\
	11/17-11/20/2009	10 – 16	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\
IP03	**11/11/2009**	47 – 50	12:40	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\
	"	44 – 47	13:35	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\	\
	"	41 – 44	15:03	0	9.7	0	\	>0	0	\	0	0	>0	0	5	2	0	0	0	>0

TABLE 3-3

INJECTION PERFORMANCE AND MONITORING SUMMARY

Event Data				Monitoring Well Pressure Influence (psi)												
Injection Boring	**Date**	**Interval (feet bgs)**	**Fracture Time (s)**	**MW5-C**	**MW6-A2**	**MW6-A3**	**MW6-B**	**MW6-C**	**MW7-A2**	**MW7-A3**	**MW7-B**	**MW7-C**	**IP01**	**IP02**	**IP03**	**Comments**
IP01	**11/13/2009**	42 – 45	15:15	\	6	>0	0	0	>0	>0	\	\		>0	\	Plug in MW2-A2 undone during PF.
	11/12/2009	39 – 42	16:12	\	5	1	0	0	>0	0	\	\		>0	\	PF and Atomized Injection.
	"	36 – 39	16:33	\	7	>0	0	0	0	0	\	\		\	\	PF and Atomized Injection.
	11/16/2009	33 – 36	9:58	\	3	>0	0	\	0	0	\	\		\	\	Atomized Injection.
	"	30 – 33	10:40	\	3	>0	0	\	0	0	\	\		\	\	Atomized Injection.
	"	27 – 30	11:04	\	>0	>0	0	\	0	0	\	\		\	\	Atomized Injection. DL inside building.
	11/17/2009	24 – 27	8:10	\	1	0	0	\	0	0	\	\		\	\	Atomized Injection. DL inside building.
	"	21 – 24	8:31	\	\	\	\	\	\	\	\	\		\	\	Atomized Injection. Significant DL and foaming.
	11/17-11/20/2009	10 – 21	\	\	\	\	\	\	\	\	\	\		\	\	Gravity Injection.
IP02	**11/12/2009**	40 – 43	11:00	0	10	0	>0	0	>0	0	\	\	\		\	PF and Atomized Injection.
	"	37 – 40	11:50	0	10	0	0	0	0	0	\	\	\		\	PF and Atomized Injection.
	"	34 – 37	13:20	\	8	0	0	0	>0	0	>0	\	\		\	PF and Atomized Injection.
	"	31 – 34	13:50	\	10	0	0	0	>0	0	>0	\	\		\	Atomized Injection.
	"	28 – 31	14:13	\	12	0	0	\	>0	>0	0	\	\		\	Atomized Injection. DL and foaming.
	"	25 – 28	14:30	\	\	\	\	\	\	\	\	\	\		\	Hydraulic Injection. DL and foaming along concrete seam near the building.
	11/13/2010	22 – 25	9:06	\	8	>0	0	\	>0	2	\	\	\		\	PF then Hydraulic Injection.
	"	19 – 22	9:36	\	8	0	0	0	>0	0	0	\	\		\	PF then Hydraulic Injection.
	"	16 – 19	10:29	\	5	0	0	0	0	0	0	\	\		\	PF then Hydraulic Injection. DL starting to appear near the wellhead and along the concrete seam
	11/16/2009	13 – 16	11:10	\	\	\	\	\	\	\	\	\	\		\	Hydraulic Injection. Significant DL and foaming along concrete seam near the building. Stop injection.
	11/17-11/20/2009	10 – 16	\	\	\	\	\	\	\	\	\	\	\		\	Gravity Injection.
IP03	**11/11/2009**	47 – 50	12:40	\	\	\	\	\	\	\	\	\	\	\		Formation did not yield up to 750 psi.
	"	44 – 47	13:35	\	\	\	\	\	\	\	\	\	\	\		Formation did not yield up to 700 psi.
	"	41 – 44	15:03	0	\	0	0	0	\	0	0	0	\	\		PF and Atomized Injection. Breach through asphalt at the end of injection. Could not continue at this location.

TABLE 3-3

INJECTION PERFORMANCE AND MONITORING SUMMARY

Notes:
\ indicates no data/not collected.
>0 indicates positive pressure influence not registered by pressure gauge.

Abbreviations and Acronyms:
bgs – below ground surface
DL – daylighting, defined as the surfacing of the injected gas, groundwater, or ZVI slurry (or a combination of) at locations away from the injection borehole
gal – gallon
gpm – gallons per minute
NA – not applicable
PF – pneumatic fracture
psi – pounds per square inch
s – second
ZVI – zero-valent iron

TABLE 4-1

PERFORMANCE SUMMARY

Metric	Value	Unit
Mass ZVI injected	3,919	lb
Mass of soil treated	5,117,070	lb
ZVI used per soil treated	0.0008	lb/lb
Approximate total VOC mass in treated zone	5.063	lb
Approximate total VOC mass after injection	5.061	lb
Approximate total VOCs removed	0.002	lb
Mass TCE in treated zone	2.45	lb
Mass TCE after injection	1.74	lb
Mass TCE removed	0.71	lb
nZVI used per mass TCE treated	1,600	lb/lb
nZVI used per mass TCE removed	5,495	lb/lb
Average radius of influence (all depth intervals)	10.7	feet
Maximum radius of influence (10–20' bgs depth interval)	18.2	feet
Baseline ORP (average in treated zone)	-8.85	mV
Post-injection ORP (average in treated zone)	-123.07	mV
Baseline DO (average in treated zone)	1.81	mg/L
Post-injection DO (average in treated zone)	0.87	mg/L
Baseline pH (average in treated zone)	8.06	none
Post-injection pH (average in treated zone)	7.80	none

Abbreviations and Acronyms:

bgs – below ground surface
DO – dissolved oxygen
lb – pound
lb/lb – pound per pound
mg/L – milligrams per liter
mV – millivolt
nZVI – nanoscale zero-valent iron
ORP – oxidation/reduction potential
TCE – trichloroethene
VOC – volatile organic compound
ZVI – zero-valent iron

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TABLE 4-2

CHANGES IN CONCENTRATIONS OF SELECTED VOCs

Location	Sample Date	Start Depth	End Depth	1,1-Dichloroethene		cis-1,2-Dichloroethene		Trichloroethene		Vinyl Chloride	
				µg/L	% change	µg/L	% change	µg/L	% change	µg/L	% change
ZVI-MW01A1	11/6/09	6	11	1.2		490		48.00		24	
ZVI-MW01A1	02/17/10	6	11	5.6	366.7%	510	4.1%	88.00	83.3%	59	145.8%
ZVI-MW01A2	11/9/09	10	20	80		6,300		1,600		940	
ZVI-MW01A2	2/16/2010	10	20	72	-10.0%	6,100	-3.2%	2,000	25.0%	1,100	17.0%
ZVI-MW01A3	11/6/2009	20	30	270		50		66		9.2	
ZVI-MW01A3	2/17/2010	20	30	260	-3.7%	91	82.0%	69	4.5%	14	52.2%
ZVI-MW01B	11/5/2009	30	40	650		27		5.1		0.69	
ZVI-MW01B	2/16/2010	30	40	2,400	269.2%	46	70.4%	13	154.9%	2.3	233.3%
ZVI-MW01C	11/6/2009	40	50	0.20		0.48		0.5		0.3	
ZVI-MW01C	2/17/2010	40	50	0.20	0.0%	0.83	72.9%	0.5	0.0%	0.3	0.0%
ZVI-MW01D	11/9/2009	50	60	0.5		0.26		0.5		0.3	
ZVI-MW01D	2/16/2010	50	60	0.5	0.0%	0.56	115.4%	0.21	-58.0%	0.3	0.0%
ZVI-MW02A2	11/4/2009	10	20	75		2,100		1,500		490	
ZVI-MW02A2	2/16/2010	10	20	82	9.3%	3,200	52.4%	2,500	66.7%	570	16.3%
ZVI-MW02A3	11/4/2009	20	30	1,500		110		80		11	
ZVI-MW02A3	2/15/2010	20	30	240	-84.0%	180	63.6%	140	75.0%	5.7	-48.2%
ZVI-MW02B	11/3/2009	30	40	2,400		17		0.40		0.29	
ZVI-MW02B	2/15/2010	30	40	2,100	-12.5%	14	-17.6%	0.56	40.0%	0.32	10.3%
ZVI-MW02C	11/9/2009	40	50	0.5		0.5		0.5		0.3	
ZVI-MW02C	2/15/2010	40	50	0.40	-20.0%	0.24	-76.0%	0.5	0.0%	0.3	0.0%
ZVI-MW03A2	11/5/2009	10	20	20		230		150		14	
ZVI-MW03A2	2/18/2010	10	20	15	-25.0%	280	21.7%	190	26.7%	11	-21.4%
ZVI-MW03A3	11/6/2009	20	30	290		11		39		2.9	
ZVI-MW03A3	2/19/2010	20	30	78	-73.1%	6.1	-44.5%	24	-38.5%	0.85	-70.7%
ZVI-MW03B	11/6/2009	30	40	180		0.35		1.3		0.3	
ZVI-MW03B	2/18/2010	30	40	160	-11.1%	0.53	51.4%	0.95	-26.9%	0.21	-16.0%
ZVI-MW03C	11/6/2009	40	50	0.63		0.5		0.5		0.3	
ZVI-MW03C	2/18/2010	40	50	0.94	49.2%	0.21	-79.0%	0.5	0.0%	0.3	0.0%
ZVI-MW04A1	11/4/2009	6	11	0.5		3.9		0.28		81	
ZVI-MW04A1	2/17/2010	6	11	0.5	0.0%	2	-48.7%	0.38	35.7%	24	-70.4%
ZVI-MW04A2	11/5/2009	10	20	16.00		450		180		70	
ZVI-MW04A2	2/16/2010	10	20	20	25.0%	670	48.9%	250	38.9%	96	37.1%
ZVI-MW04A3	11/4/2009	20	30	310		48		94		15	
ZVI-MW04A3	2/17/2010	20	30	380	22.6%	86	79.2%	63	-33.0%	13	-13.3%
ZVI-MW04B	11/5/2009	30	40	760		4.4		1.5		0.30	
ZVI-MW04B	2/16/2010	30	40	1,100	44.7%	7	59.1%	2.8	86.7%	0.8	166.7%

TABLE 4-2

CHANGES IN CONCENTRATIONS OF SELECTED VOCs

Location	Sample Date	Start Depth	End Depth	1,1-Dichloroethene		cis-1,2-Dichloroethene		Trichloroethene		Vinyl Chloride	
				µg/L	% change	µg/L	% change	µg/L	% change	µg/L	% change
ZVI-MW04C	11/9/2009	40	50	0.5		0.58		0.23		0.3	
ZVI-MW04C	2/16/2010	40	50	0.5	0.0%	0.48	-17.2%	0.20	-13.0%	0.3	0.0%
ZVI-MW05A2	11/5/2009	10	20	0.5		8.2		1.7		8.3	
ZVI-MW05A2	2/15/2010	10	20	0.44	-56.0%	30	265.9%	9.7	470.6%	19	128.9%
ZVI-MW05A3	11/5/2009	20	30	170		50		61		4.1	
ZVI-MW05A3	2/15/2010	20	30	310	82.4%	54	8.0%	88	44.3%	5	22.0%
ZVI-MW05B	11/5/2009	30	40	320		1.9		1		0.3	
ZVI-MW05B	2/16/2010	30	40	480	50.0%	3.5	84.2%	1.8	80.0%	0.23	-8.0%
ZVI-MW05C	11/9/2009	40	50	28		0.29		0.5		0.3	
ZVI-MW05C	2/15/2010	40	50	110	292.9%	0.34	17.2%	0.5	0.0%	0.3	0.0%
ZVI-MW06A2	11/6/2009	10	20	160		24,000		38,000		3,500	
ZVI-MW06A2	2/18/2010	10	20	62	-61.3%	31,000	29.2%	12,000	-68.4%	2,200	-37.1%
ZVI-MW06A3	11/6/2009	20	30	1,100		78		84		17	
ZVI-MW06A3	2/17/2010	20	30	350	-68.2%	500	541.0%	360	328.6%	75	341.2%
ZVI-MW06B	11/9/2009	30	40	5,800		29		9.5		1.4	
ZVI-MW06B	2/19/2010	30	40	4,700	-19.0%	31	6.9%	8.2	-13.7%	0.9	-35.7%
ZVI-MW06C	11/6/2009	40	50	33		1.50		1.9		0.3	
ZVI-MW06C	2/19/2010	40	50	46	39.4%	1.1	-26.7%	0.75	-60.5%	0.26	4.0%
ZVI-MW07A2	11/2/2009	10	20	44		8,000		10,000		700	
ZVI-MW07A2	2/17/2010	10	20	76.00	72.7%	17,000	112.5%	18,000	80.0%	2,500	257.1%
ZVI-MW07A3	11/2/2009	20	30	2,300		200		400		30	
ZVI-MW07A3	2/18/2010	20	30	1,500	-34.8%	790	295.0%	390	-2.5%	62	106.7%
ZVI-MW07B	11/3/2009	30	40	3,700		39		4.2		0.33	
ZVI-MW07B	2/18/2010	30	40	4,800	29.7%	37	-5.1%	3.8	-9.5%	0.49	48.5%
ZVI-MW07C	11/2/2009	40	50	270		65		69		6.00	
ZVI-MW07C	2/18/2010	40	50	1,600	492.6%	42	-35.4%	54	-21.7%	3.4	-43.3%
372-MW1	11/9/2009	2.5	12.5	0.5		0.5		0.29		0.3	
372-MW1	2/18/2010	2.5	12.5	0.5	0.0%	0.5	0.0%	0.5	72.4%	0.3	0.0%
D03-04	11/9/2009	47	57	0.31		0.5		0.5		0.3	
D03-04	2/19/2010	47	57	0.76	145.2%	0.5	0.0%	0.5	0.0%	0.3	0.0%

TABLE 4-2

CHANGES IN CONCENTRATIONS OF SELECTED VOCs

Location	Sample Date	Start Depth	End Depth	Total VOCs (all analyzed compounds) µg/L	% change
ZVI-MW01A1	11/6/09	6	11	570	
ZVI-MW01A1	02/17/10	6	11	671	17.6%
ZVI-MW01A2	11/9/09	10	20	8,949	
ZVI-MW01A2	2/16/2010	10	20	9317	4.1%
ZVI-MW01A3	11/6/2009	20	30	404	
ZVI-MW01A3	2/17/2010	20	30	443	9.5%
ZVI-MW01B	11/5/2009	30	40	698	
ZVI-MW01B	2/16/2010	30	40	2,492	257.2%
ZVI-MW01C	11/6/2009	40	50	5	
ZVI-MW01C	2/17/2010	40	50	6	6.4%
ZVI-MW01D	11/9/2009	50	60	6	
ZVI-MW01D	2/16/2010	50	60	6	0.2%
ZVI-MW02A2	11/4/2009	10	20	4,178	
ZVI-MW02A2	2/16/2010	10	20	6,371	52.5%
ZVI-MW02A3	11/4/2009	20	30	1,719	
ZVI-MW02A3	2/15/2010	20	30	575	-66.5%
ZVI-MW02B	11/3/2009	30	40	2,451	
ZVI-MW02B	2/15/2010	30	40	2,144	-12.5%
ZVI-MW02C	11/9/2009	40	50	6	
ZVI-MW02C	2/15/2010	40	50	5	-13.8%
ZVI-MW03A2	11/5/2009	10	20	419	
ZVI-MW03A2	2/18/2010	10	20	501	19.6%
ZVI-MW03A3	11/6/2009	20	30	353	
ZVI-MW03A3	2/19/2010	20	30	115	-67.4%
ZVI-MW03B	11/6/2009	30	40	187	
ZVI-MW03B	2/18/2010	30	40	166	-11.1%
ZVI-MW03C	11/6/2009	40	50	6	
ZVI-MW03C	2/18/2010	40	50	6	-3.3%
ZVI-MW04A1	11/4/2009	6	11	91	
ZVI-MW04A1	2/17/2010	6	11	34	-62.5%
ZVI-MW04A2	11/5/2009	10	20	744	
ZVI-MW04A2	2/16/2010	10	20	1,043	40.3%
ZVI-MW04A3	11/4/2009	20	30	476	
ZVI-MW04A3	2/17/2010	20	30	553	16.0%
ZVI-MW04B	11/5/2009	30	40	780	
ZVI-MW04B	2/16/2010	30	40	1,129	44.7%

TABLE 4-2

CHANGES IN CONCENTRATIONS OF SELECTED VOCs

Location	Sample Date	Start Depth	End Depth	Total VOCs (all analyzed compounds) µg/L	% change
ZVI-MW04C	11/9/2009	40	50	6	
ZVI-MW04C	2/16/2010	40	50	5	-2.3%
ZVI-MW05A2	11/5/2009	10	20	24	
ZVI-MW05A2	2/15/2010	10	20	64	169.1%
ZVI-MW05A3	11/5/2009	20	30	291	
ZVI-MW05A3	2/15/2010	20	30	465	59.9%
ZVI-MW05B	11/5/2009	30	40	332	
ZVI-MW05B	2/16/2010	30	40	498	49.9%
ZVI-MW05C	11/9/2009	40	50	33	
ZVI-MW05C	2/15/2010	40	50	117	254.8%
ZVI-MW06A2	11/6/2009	10	20	65,750	
ZVI-MW06A2	2/18/2010	10	20	45,338	-31.0%
ZVI-MW06A3	11/6/2009	20	30	1296	
ZVI-MW06A3	2/17/2010	20	30	1294	-0.1%
ZVI-MW06B	11/9/2009	30	40	5,889	
ZVI-MW06B	2/19/2010	30	40	4,790	-18.7%
ZVI-MW06C	11/6/2009	40	50	41	
ZVI-MW06C	2/19/2010	40	50	52	27.3%
ZVI-MW07A2	11/2/2009	10	20	18,774	
ZVI-MW07A2	2/17/2010	10	20	38,002	102.4%
ZVI-MW07A3	11/2/2009	20	30	2,953	
ZVI-MW07A3	2/18/2010	20	30	2,766	-6.3%
ZVI-MW07B	11/3/2009	30	40	3,790	
ZVI-MW07B	2/18/2010	30	40	4,896	29.2%
ZVI-MW07C	11/2/2009	40	50	422	
ZVI-MW07C	2/18/2010	40	50	1713	305.9%
372-MW1	11/9/2009	2.5	12.5	6	
372-MW1	2/18/2010	2.5	12.5	6	3.8%
D03-04	11/9/2009	47	57	6	
D03-04	2/19/2010	47	57	6	8.1%

Notes:

value below laboratory reporting limit; half the laboratory reporting limit used in computations

estimated value below laboratory reporting limit

Depths are in feet below ground surface.

Abbreviations and Acronyms:

µg/L – micrograms per liter

VOC – volatile organic compound

TABLE 5-1

COST SUMMARY

Category/ Item	Cost	% Total Cost
Preliminary Costs		
Administrative and planning costs	$90,000	10.7%
Site Characterization Costs		
MIP and HP data collection	$125,000	14.9%
Injection Costs		
ZVI (Z-Loy) material purchase ($19.00/lb) and delivery	$79,540	9.5%
Monitoring well installation and injection activities	$247,625	29.5%
Other Costs		
Project management and procurement	$40,000	4.8%
Injection monitoring and sampling (including data management)	$190,000	22.7%
Waste collection and disposal	$11,000	1.3%
Report production	$55,000	6.6%
Totals		
Treatability Study Total	**$838,165**	
Total cost per lb soil treated	**$0.16**	
ZVI material cost per lb TCE removed	**$104,402**	
Total cost per lb TCE removed	**$1,175,131**	

Abbreviations and Acronyms:
HP – HydroPunch
lb – pound
MIP – membrane interface probe
TCE – trichloroethene
ZVI – zero-valent iron

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FIGURES

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N00236_003594
ALAMEDA POINT

SENSITIVE RECORD

PORTIONS OF THIS RECORD ARE CONSIDERED SENSITIVE AND ARE NOT AVAILABLE FOR PUBLIC VIEWING

FIGURES 1-1 AND 1-2

FOR ADDITIONAL INFORMATION, CONTACT:

DIANE C. SILVA, COMMAND RECORDS MANAGER, CODE EV33
NAVAL FACILITIES ENGINEERING COMMAND, SOUTHWEST
1220 PACIFIC HIGHWAY (NBSD BLDG. 3519)
SAN DIEGO, CA 92132

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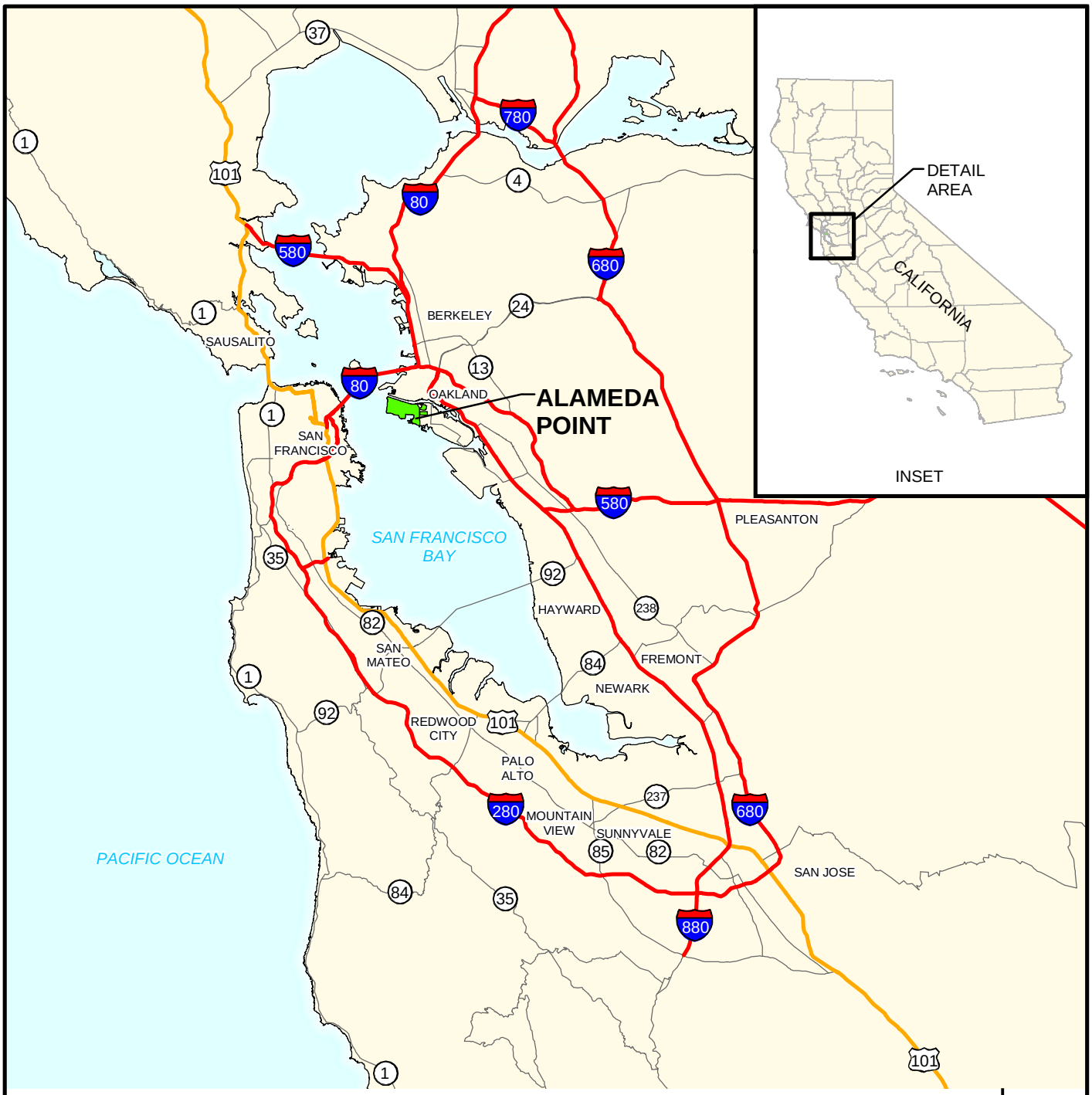


LEGEND

- STATE HIGHWAY
- US HIGHWAY
- INTERSTATE HIGHWAY
- ALAMEDA POINT
- WATER

5 0 5 10 Miles

N

NOTE:

OU - OPERABLE UNIT

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

ZERO-VALENT IRON TREATABILITY STUDY

FIGURE 1-1

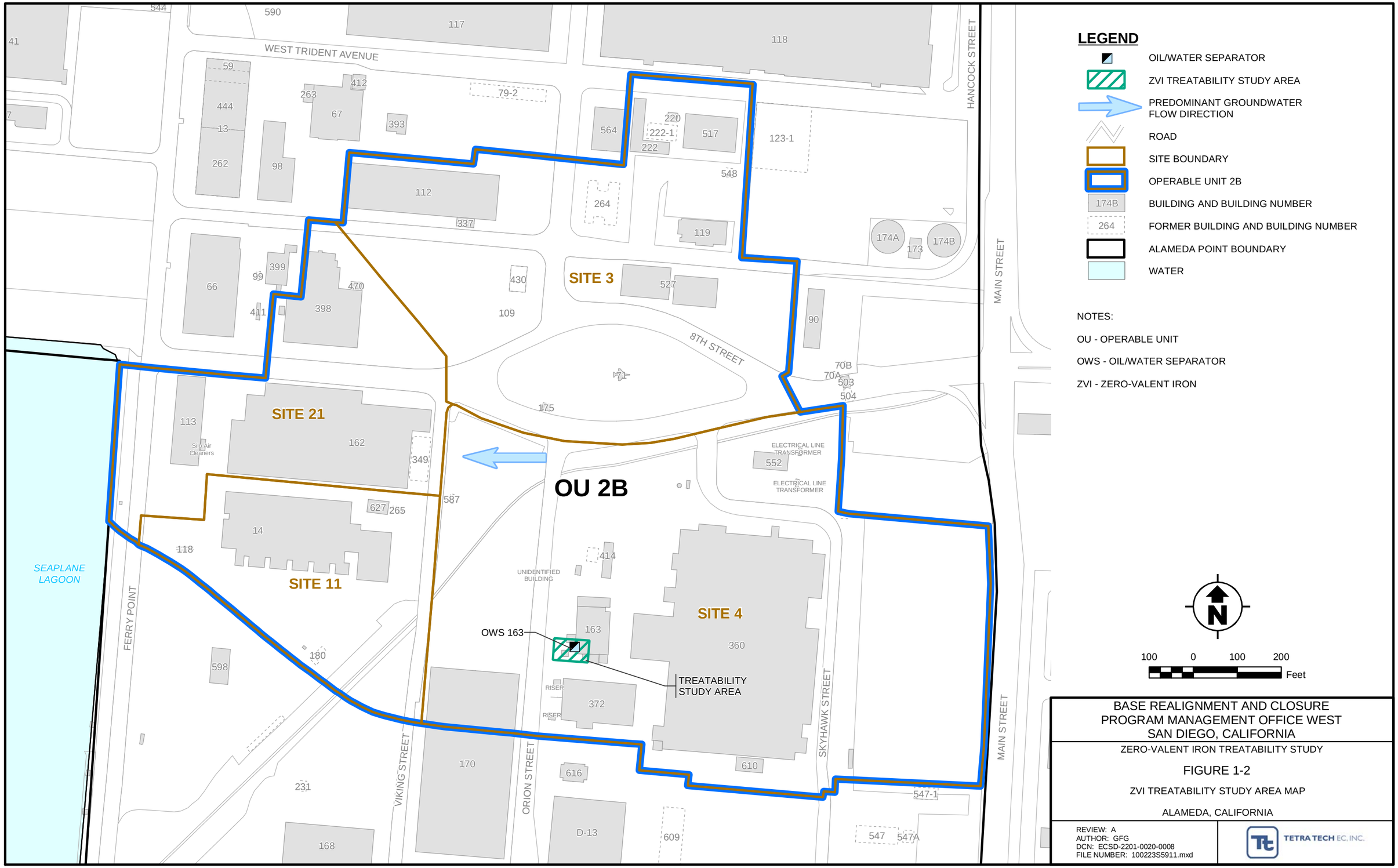
REGIONAL LOCATION MAP

ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: GFG
DCN: ECSD-2201-0020-0008
FILE NUMBER: 100223R5910.mxd

TETRA TECH EC, INC.

SENSITIVE



BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

ZERO-VALENT IRON TREATABILITY STUDY

FIGURE 1-2

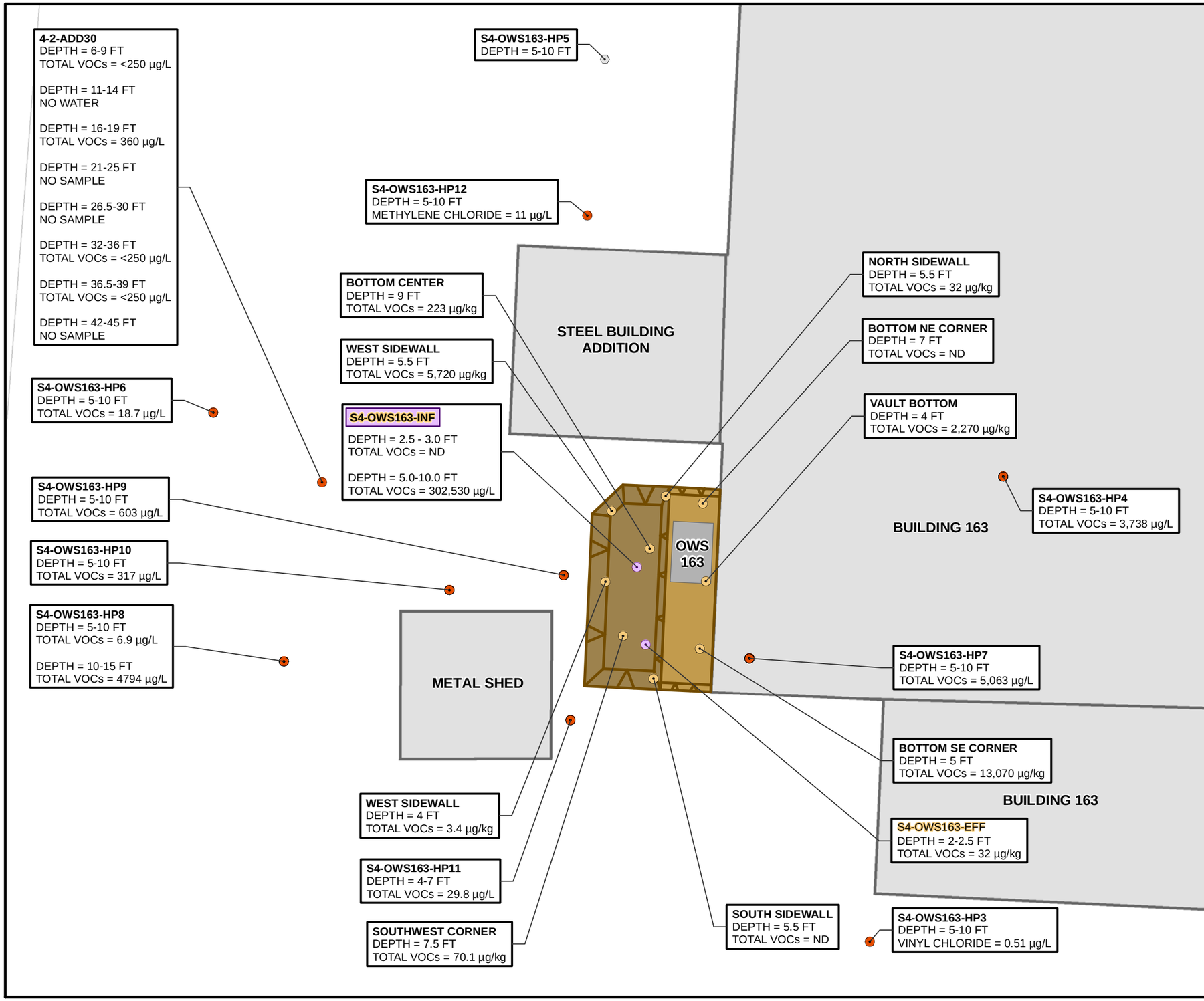
ZVI TREATABILITY STUDY AREA MAP

ALAMEDA, CALIFORNIA

REVIEW: A
AUTHOR: GFG
DCN: ECSD-2201-0020-0008
FILE NUMBER: 100223S5911.mxd

TETRA TECH EC, INC.

SENSITIVE



LEGEND

S4-OWS163-HP1	HYDROPUNCH SAMPLE LOCATION AND ID WITH TOTAL VOC RESULTS, OU-2B DGI, JANUARY 2008
S4-OWS163-HP5	HYDROPUNCH SAMPLE LOCATION AND ID WITH RESULTS BELOW SCREENING LEVELS, OU-2B DGI, JANUARY 2008
WEST SIDEWALL	EXCAVATION SOIL SAMPLE LOCATION, JANUARY 2009
S4-OWS163-EFF	SOIL SAMPLE LOCATION AND ID WITH TOTAL VOC RESULTS, OU-2B DGI, NOVEMBER 2007
S4-OWS163-INF	SOIL/WATER SAMPLE LOCATION WITH ID, OU-2B DGI, NOVEMBER 2007
	EXCAVATION 5-7 FT BGS, JANUARY 2009
	EXCAVATION 7-9 FT BGS, JANUARY 2009

NOTES:

µg/kg - MICROGRAMS PER KILOGRAM

µg/L - MICROGRAMS PER LITER

DGI - DATA GAPS INVESTIGATION

OU - OPERABLE UNIT

OWS - OIL/WATER SEPARATOR

TOTAL VOCs - SUM OF CIS-1,2-DICHLOROETHENE, TRANS-1,2-DICHLOROETHENE, TRICHLOROETHENE, AND VINYL CHLORIDE

VOC - VOLATILE ORGANIC COMPOUND

N

5 0 5 10 Feet

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

ZERO-VALENT IRON TREATABILITY STUDY

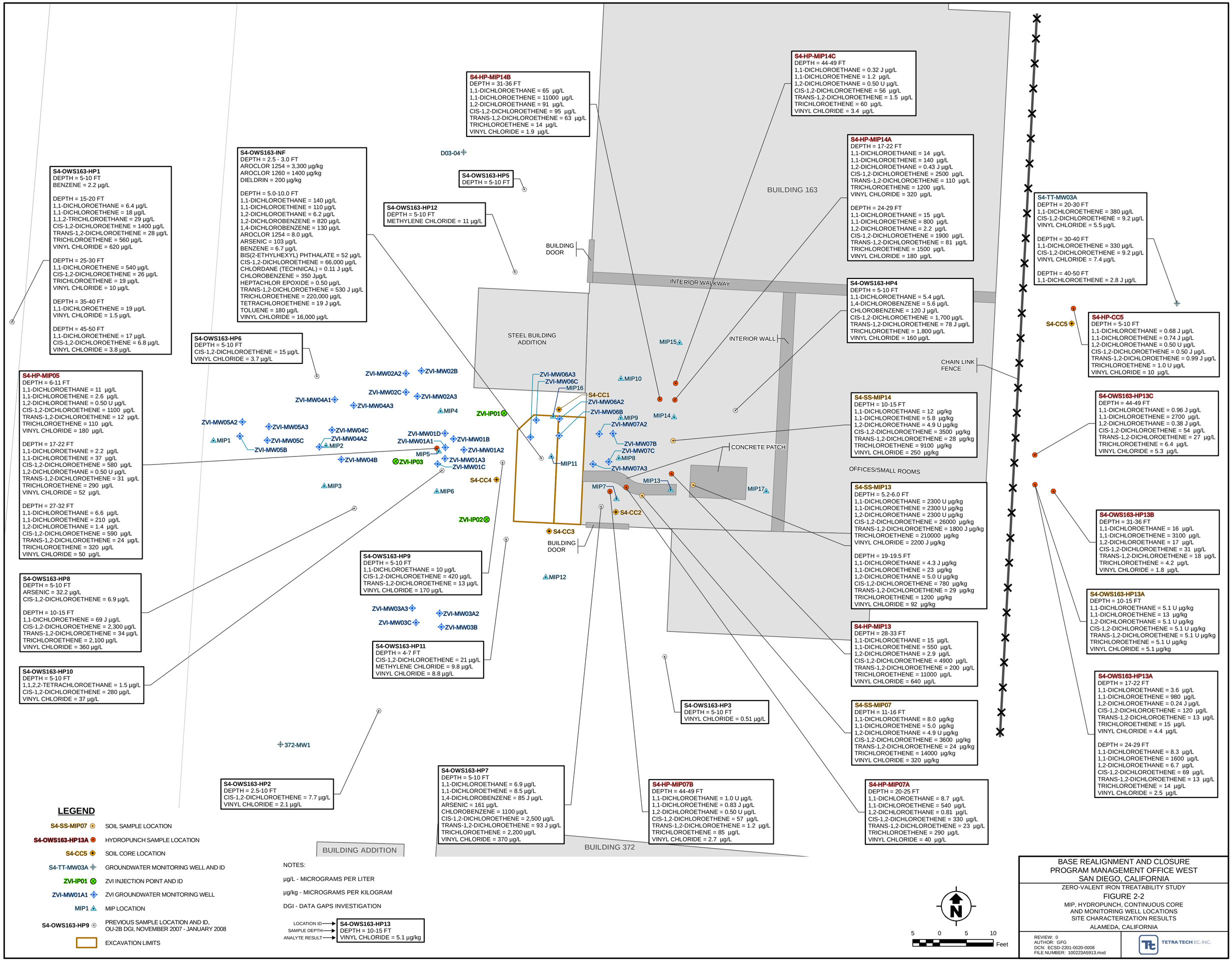
FIGURE 2-1

OWS 163 EXCAVATION SAMPLE RESULTS

ALAMEDA, CALIFORNIA

REVIEW: A
AUTHOR: GFG
DCN: ECSD-2201-0020-0008
FILE NUMBER: 100223A5912.mxd

TETRA TECH EC, INC.



BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

ZERO-VALENT IRON TREATABILITY STUDY

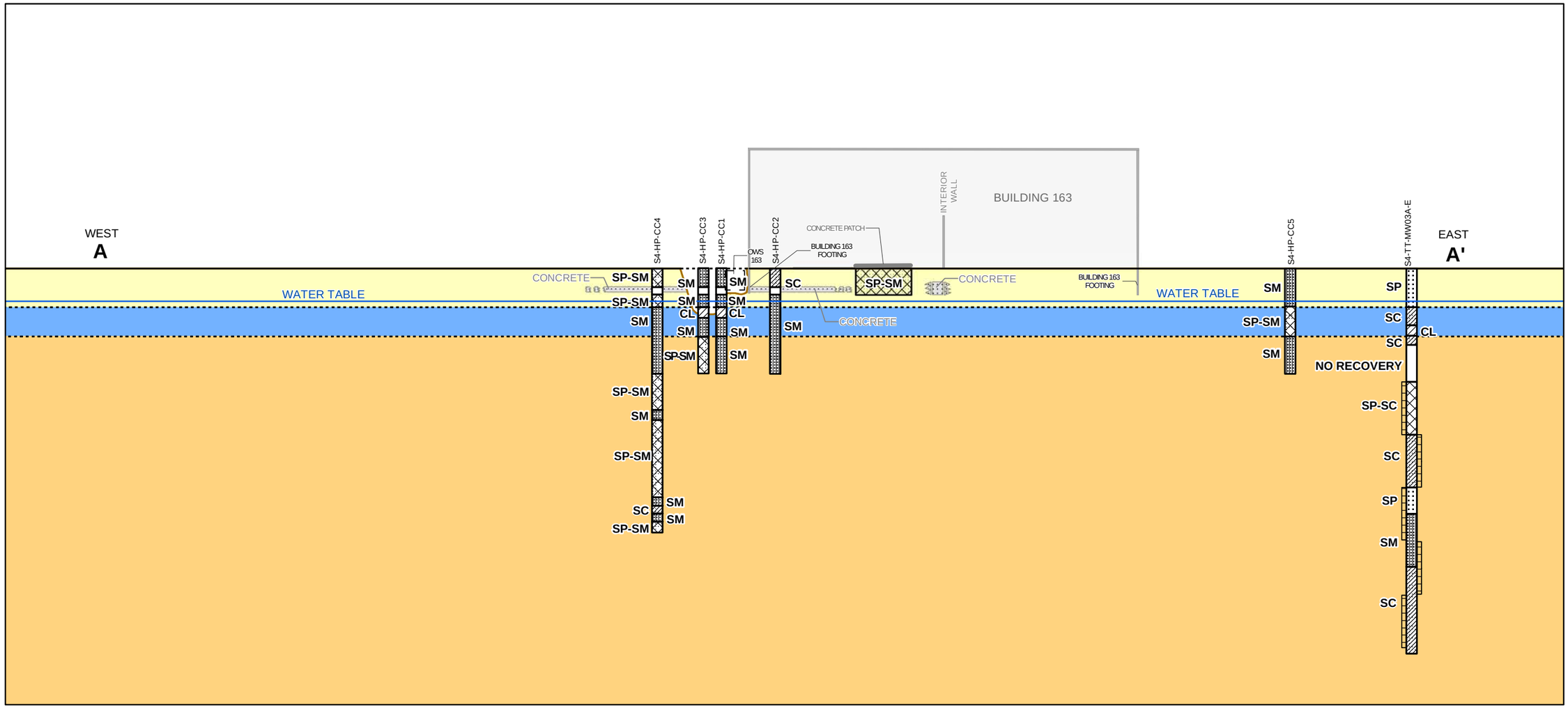
FIGURE 2-2

MIP, HYDROPUNCH, CONTINUOUS CORE AND MONITORING WELL LOCATIONS SITE CHARACTERIZATION RESULTS

ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: GFG
DCN: ECSD-2201-0020-0008
FILE NUMBER: 100223A5913.mxd

TETRA TECH EC, INC.



LEGEND

- APPROXIMATE EXTENT OF ARTIFICIAL FILL
- APPROXIMATE EXTENT OF BAY SEDIMENT UNIT
- APPROXIMATE EXTENT OF POSEY/MERRITT/ SAN ANTONIO FORMATION
- WELL SCREEN INTERVAL
- **SC** CLAYEY SAND
- **SP-SC** POORLY GRADED SAND AND CLAYEY SAND
- **SM** SILTY SANDS
- **SP** POORLY GRADED SAND
- **SP-SM** POORLY GRADED SAND AND SILTY SAND
- **CL** CLAYEY GRAVELS

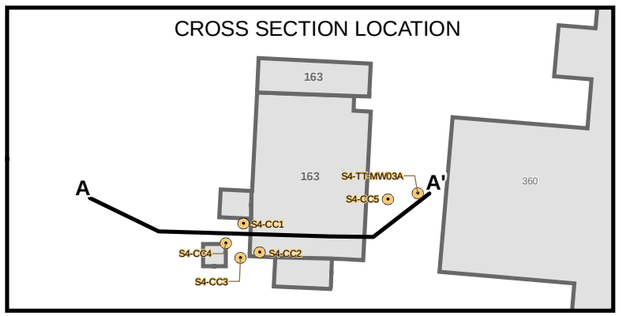
NOTES:

µg/L - MICROGRAMS PER LITER

BGS - BELOW GROUND SURFACE

VOC - VOLATILE ORGANIC COMPOUND

CROSS SECTION LOCATION



10 0 10 20 Feet

Horizontal Scale: 1" = 20'

Vertical Scale: 1" = 20'

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 2-3

GEOLOGIC CROSS SECTION AT BUILDING 163

ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: GFG
DCN: ECSD-2201-0020-0008
FILE NUMBER: 100223X5914.mxd

TETRA TECH EC, INC.

FIGURE 2-4a

MEMBRANE INTERFACE PROBE RESULTS: ECD RESULTS, VIEW TO NORTH

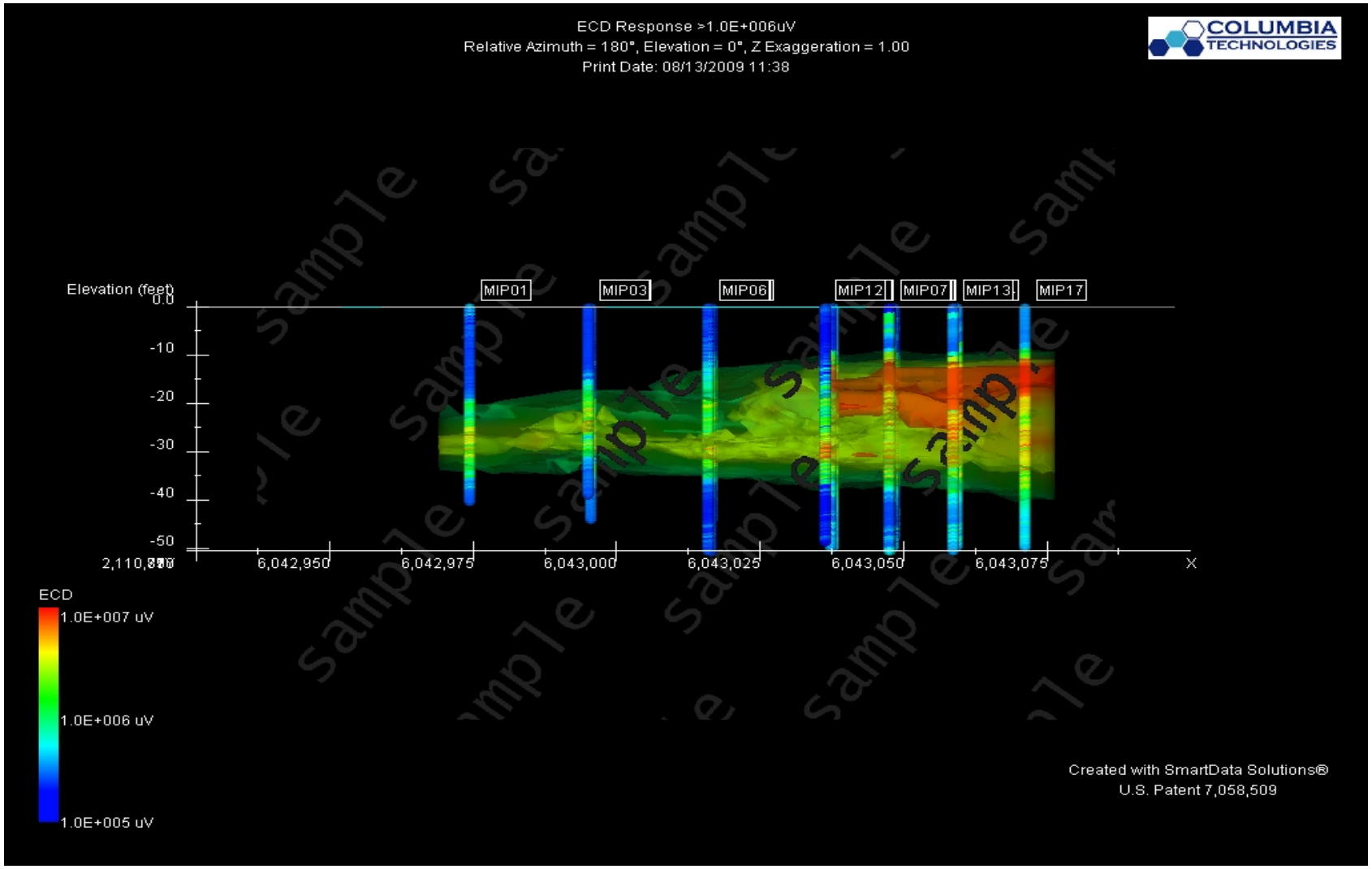
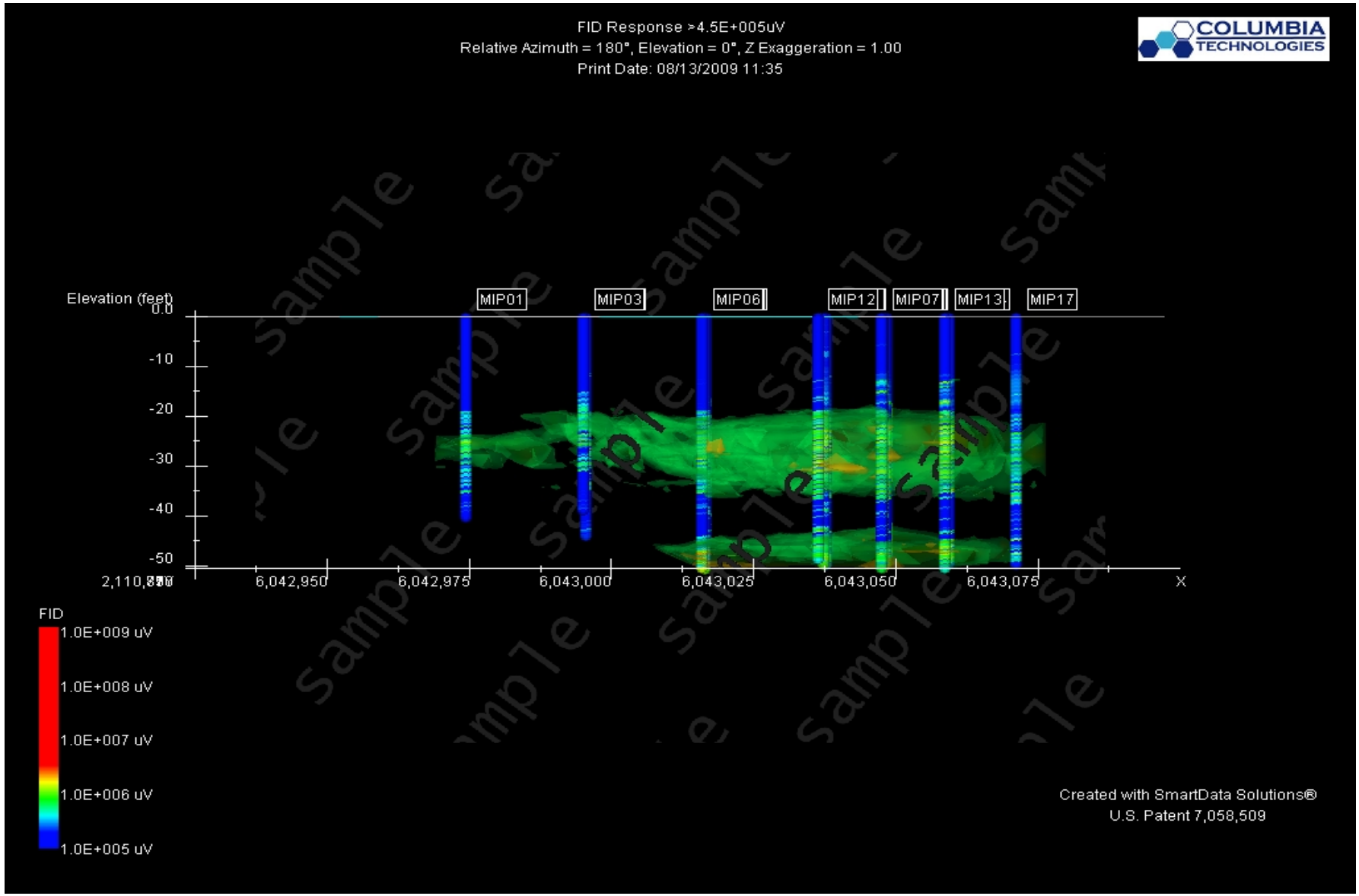
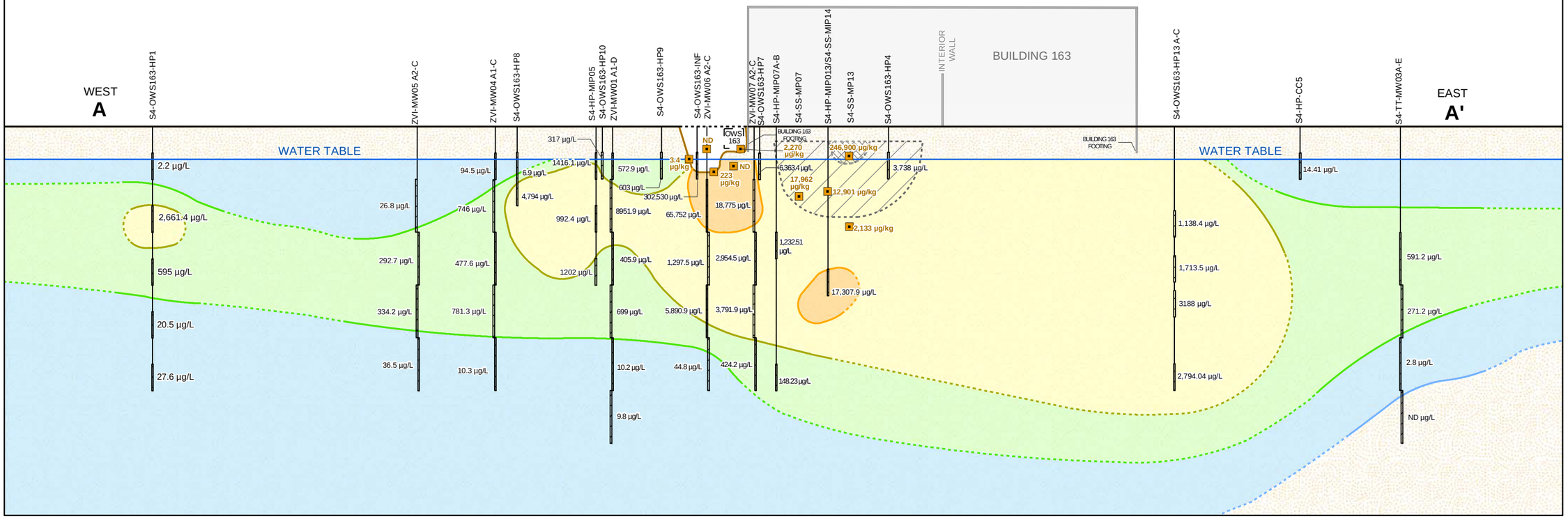


FIGURE 2-4b

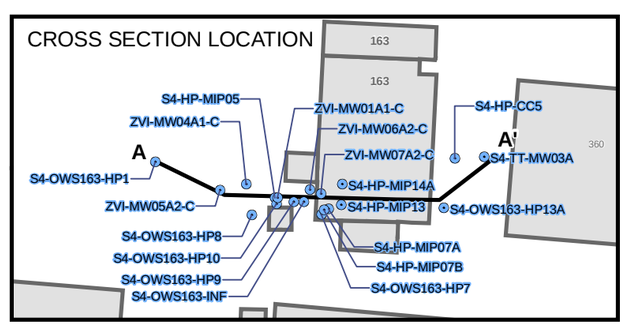
MEMBRANE INTERFACE PROBE RESULTS: FID RESULTS, VIEW TO NORTH





LEGEND

- 223 µg/kg — SOIL SAMPLE WITH TOTAL VOC RESULTS
- 2.2 µg/L — MONITORING WELL/HYDROPUNCH SCREEN INTERVAL WITH TOTAL VOC RESULTS
- APPROXIMATE EXTENT OF COMPOSITE VOC PLUME ABOVE SCREENING LEVELS TO 99 µg/L
- APPROXIMATE EXTENT OF COMPOSITE VOC PLUME 100-999 µg/L (DASHED WHERE INFERRED)
- APPROXIMATE EXTENT OF COMPOSITE VOC PLUME 1,000-9,999 µg/L (DASHED WHERE INFERRED)
- APPROXIMATE EXTENT OF COMPOSITE VOC PLUME > 10,000 µg/L (DASHED WHERE INFERRED)
- APPROXIMATE EXTENT OF SOIL CONTAMINATION > 10,000 µg/kg (DASHED WHERE INFERRED)
- APPROXIMATE EXTENT OF SOIL CONTAMINATION > 100,000 µg/kg (DASHED WHERE INFERRED)



NOTES:

µg/L - MICROGRAMS PER LITER

BGS - BELOW GROUND SURFACE

VOC - VOLATILE ORGANIC COMPOUND

10 0 10 20 Feet

Horizontal Scale: 1" = 20'

Vertical Scale: 1" = 20'

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

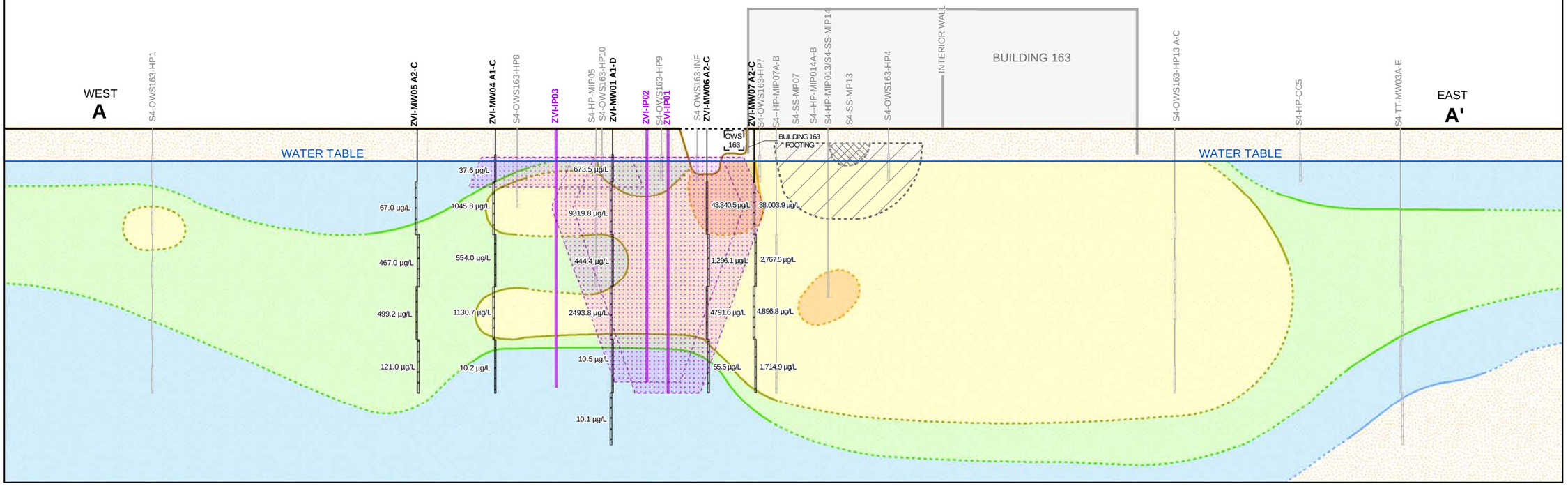
FIGURE 2-5

PRE-INJECTION VOC CONCENTRATIONS

ALAMEDA, CALIFORNIA

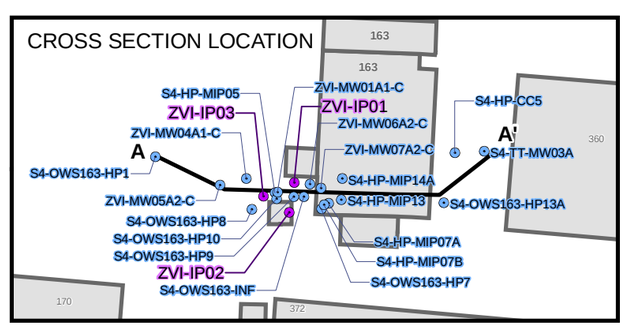
REVIEW: 0
AUTHOR: GFG
DCN: ECSD-2201-0020-0008
FILE NUMBER: 100223X5915.mxd

TETRA TECH EC, INC.



LEGEND

- ZVI WELL INJECTION
- 444.4 µg/L — ZVI MONITORING WELL SCREEN INTERVAL WITH TOTAL VOC RESULTS
- PREVIOUS SAMPLED LOCATION
- APPROXIMATE ZVI ZONE OF INFLUENCE
- APPROXIMATE EXTENT OF COMPOSITE VOC PLUME ABOVE SCREENING LEVELS TO 99 µg/L
- APPROXIMATE EXTENT OF COMPOSITE VOC PLUME 100-999 µg/L (DASHED WHERE INFERRED)
- APPROXIMATE EXTENT OF COMPOSITE VOC PLUME 1,000-9,999 µg/L (DASHED WHERE INFERRED)
- APPROXIMATE EXTENT OF COMPOSITE VOC PLUME > 10,000 µg/L (DASHED WHERE INFERRED)
- APPROXIMATE EXTENT OF SOIL CONTAMINATION > 10,000 µg/kg (DASHED WHERE INFERRED)
- APPROXIMATE EXTENT OF SOIL CONTAMINATION > 100,000 µg/kg (DASHED WHERE INFERRED)



NOTES:

µg/L - MICROGRAMS PER LITER

BGS - BELOW GROUND SURFACE

VOC - VOLATILE ORGANIC COMPOUND

ZVI - ZERO-VALENT IRON

10 0 10 20 Feet

Horizontal Scale: 1" = 20'

Vertical Scale: 1" = 20'

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 4-1

INJECTION ZONE OF INFLUENCE AND
POST-INJECTION CONCENTRATIONS

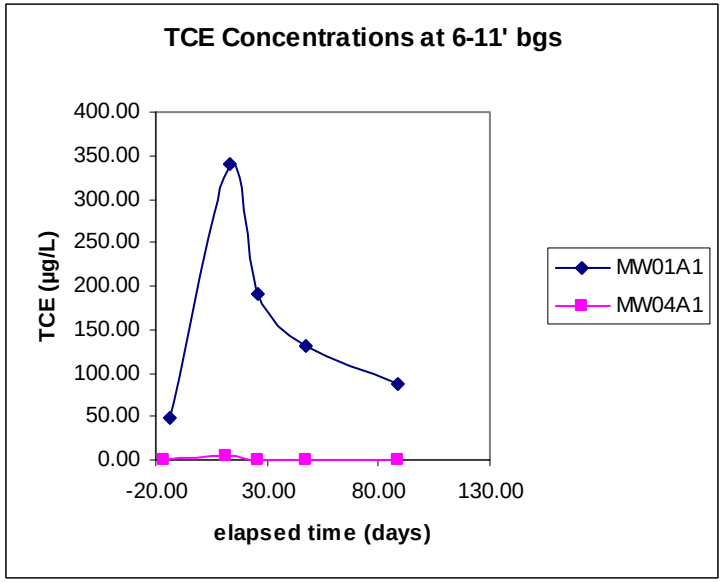
ALAMEDA, CALIFORNIA

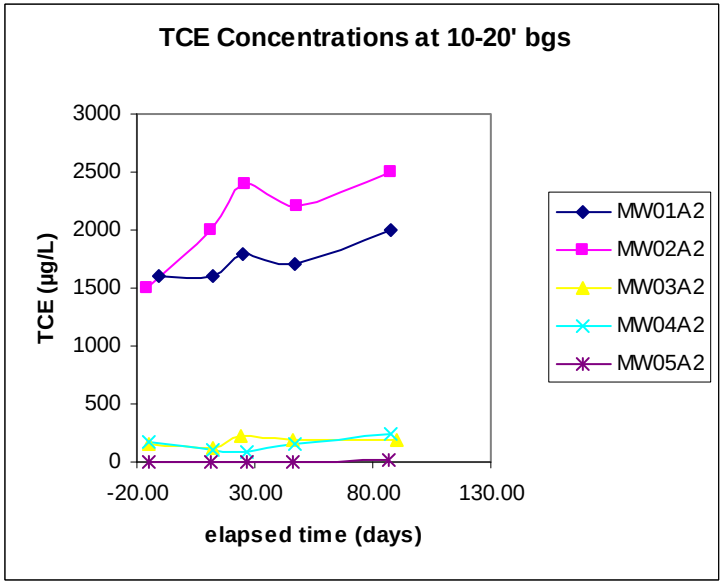
REVIEW: A
AUTHOR: GFG
DCN: ECSD-2201-0020-0008
FILE NUMBER: 100223X5917.mxd

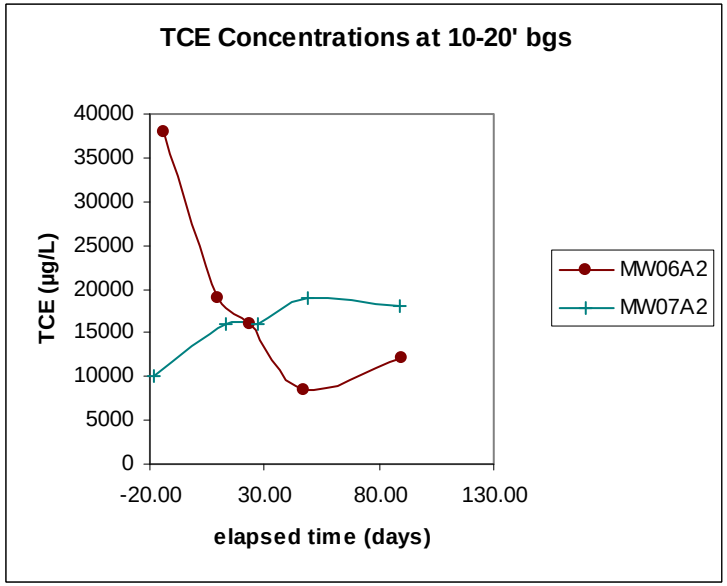
TETRA TECH EC, INC.

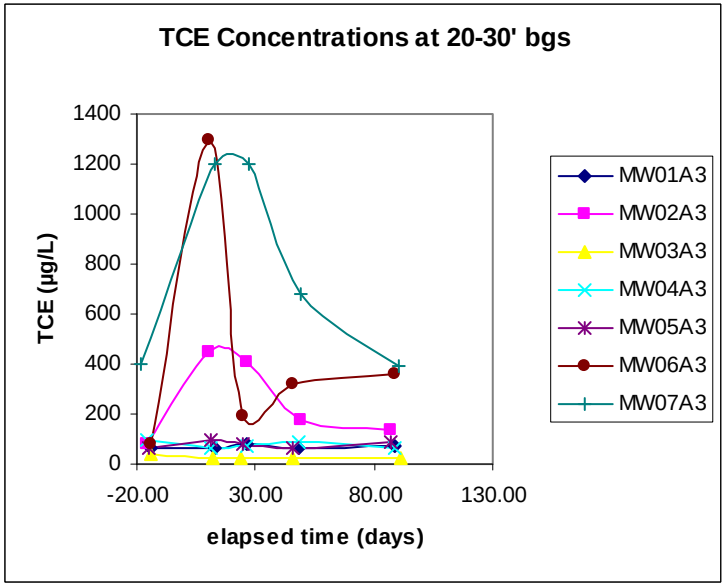
FIGURE 4-2

INJECTION INFLUENCE ON CONCENTRATIONS OF TCE, CIS-1,2-DCE, AND VC





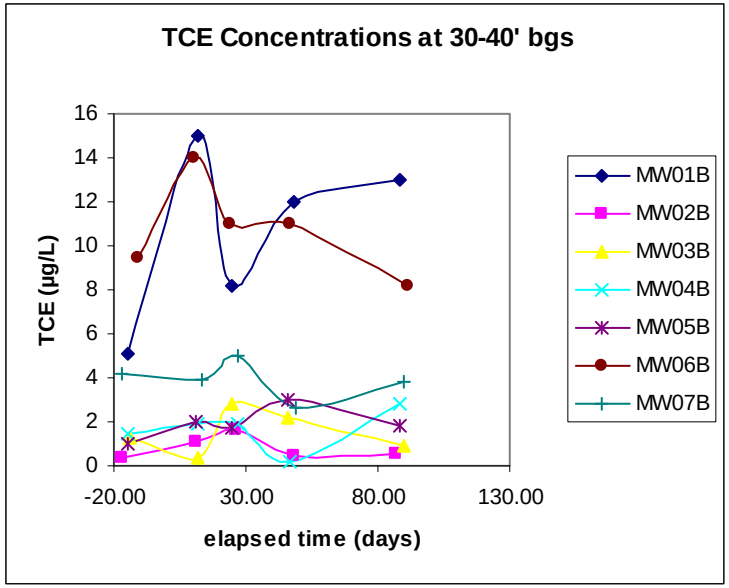


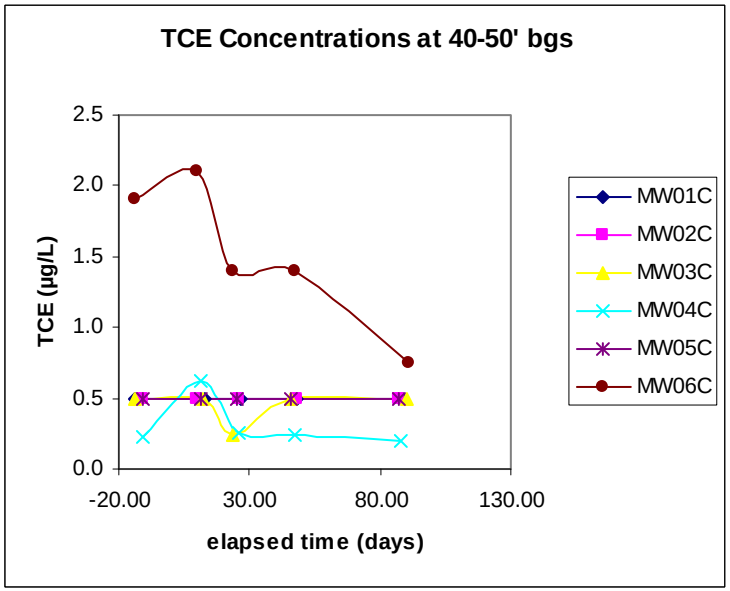


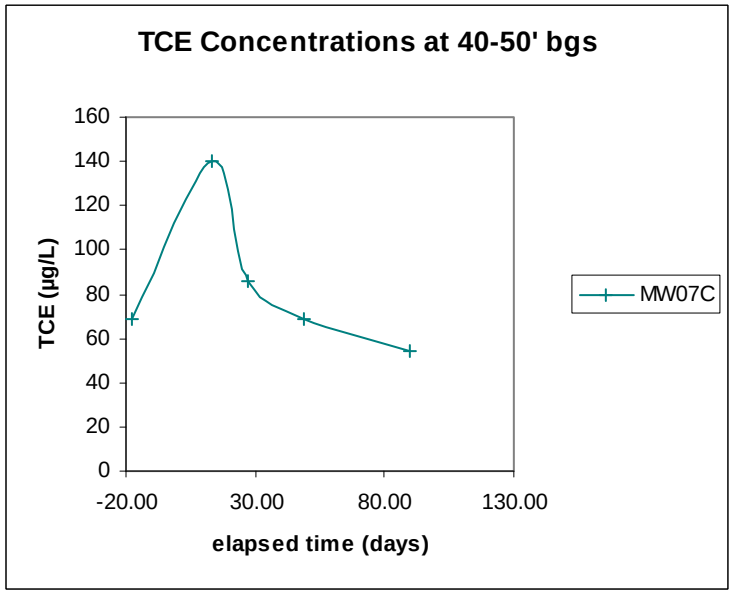
Note: Various best fit scales used

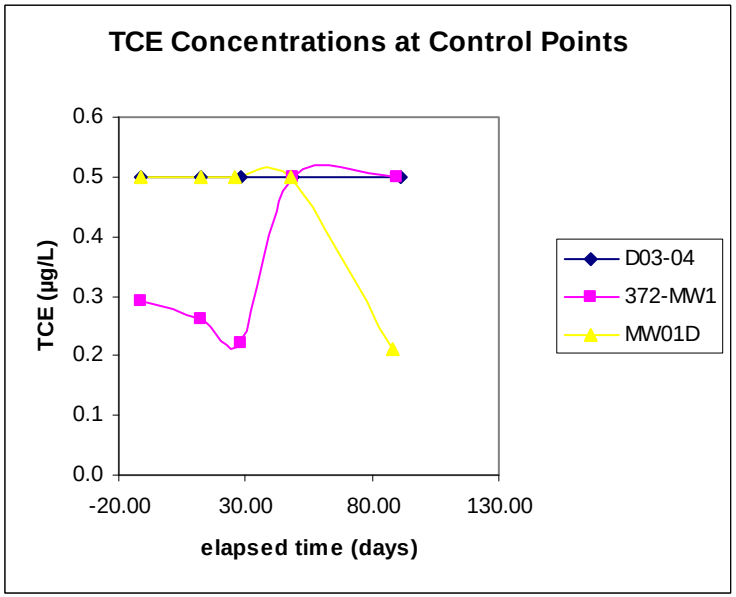
FIGURE 4-2

INJECTION INFLUENCE ON CONCENTRATIONS OF TCE, CIS-1,2-DCE, AND VC





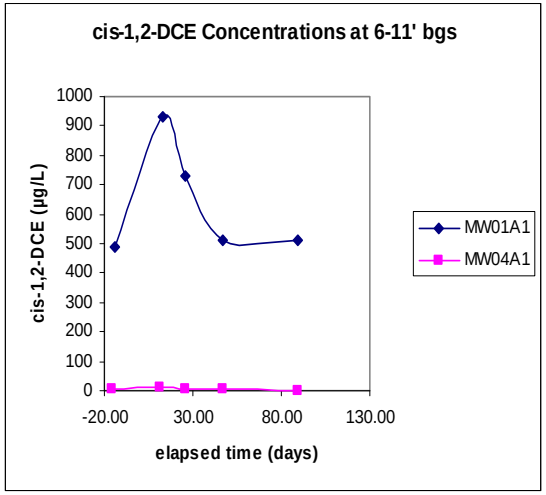


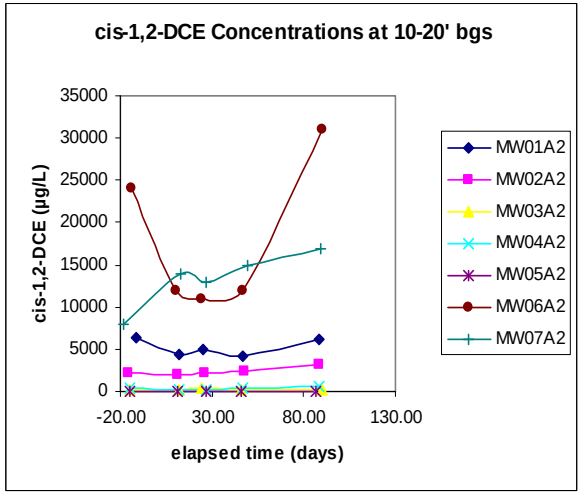


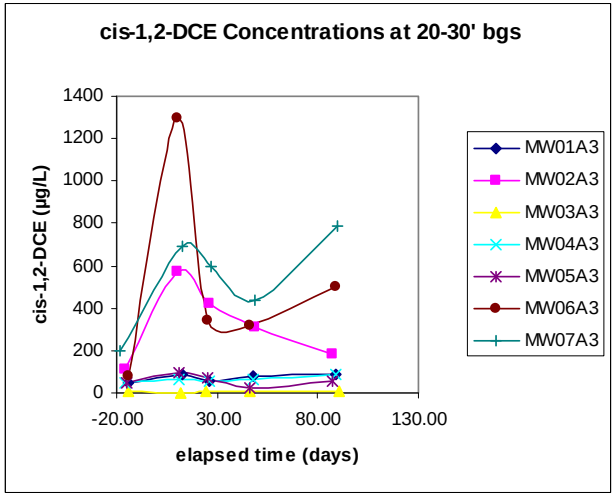
Note: Various best fit scales used

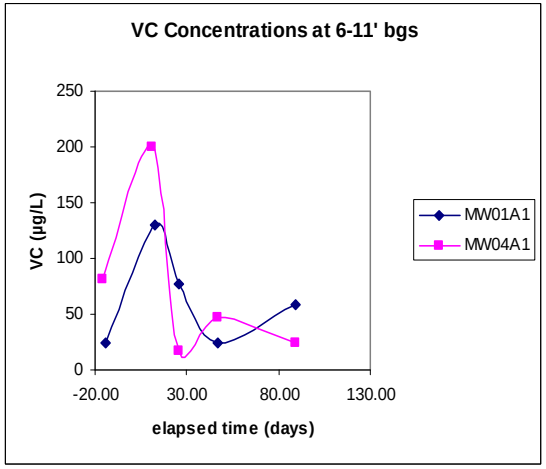
FIGURE 4-2

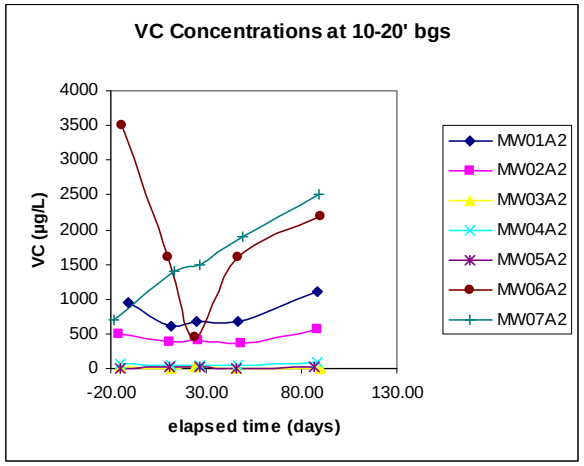
INJECTION INFLUENCE ON CONCENTRATIONS OF TCE, CIS-1,2-DCE, AND VC

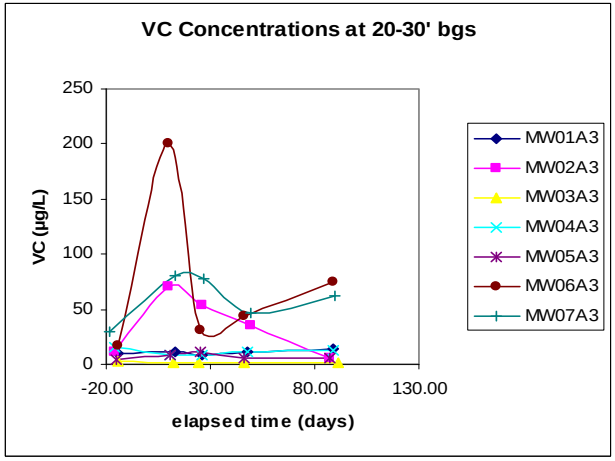








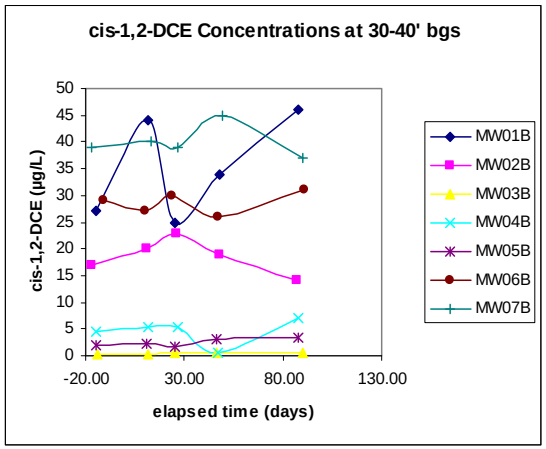


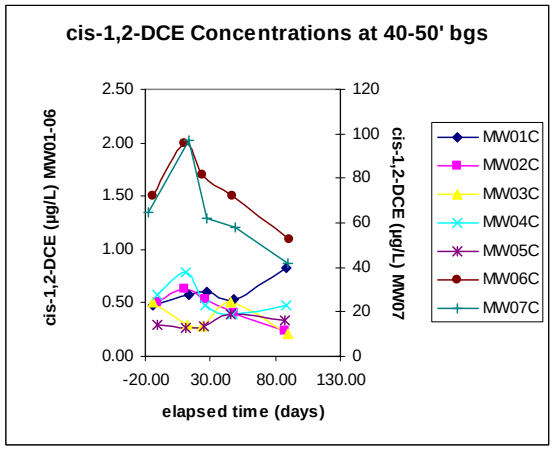


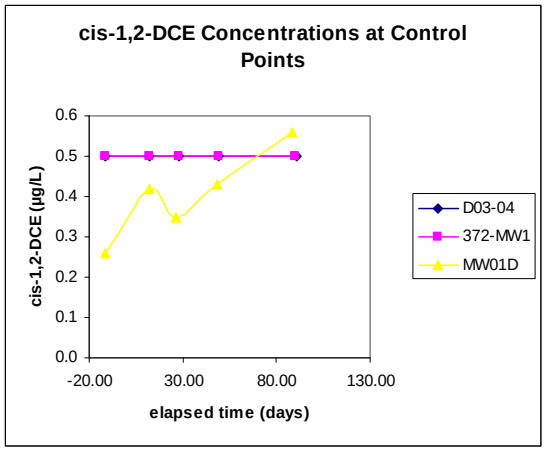
Note: Various best fit scales used

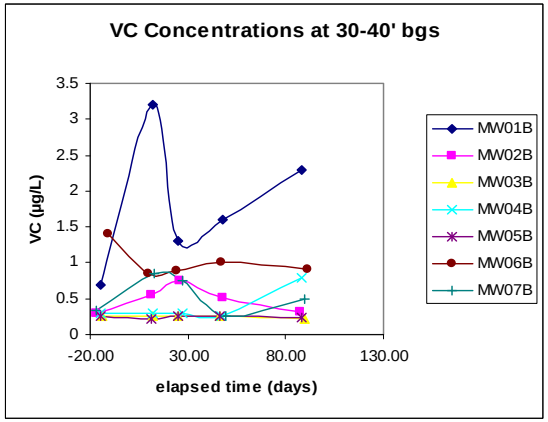
FIGURE 4-2

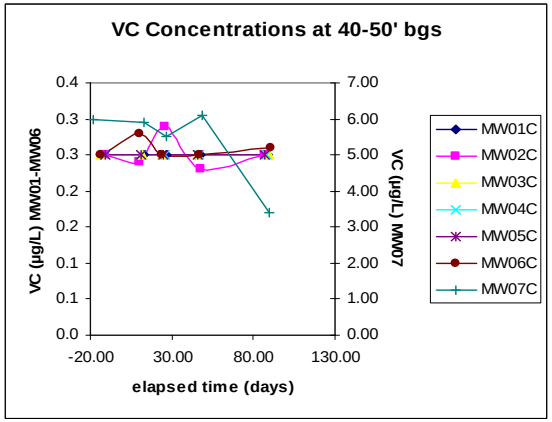
INJECTION INFLUENCE ON CONCENTRATIONS OF TCE, CIS-1,2-DCE, AND VC

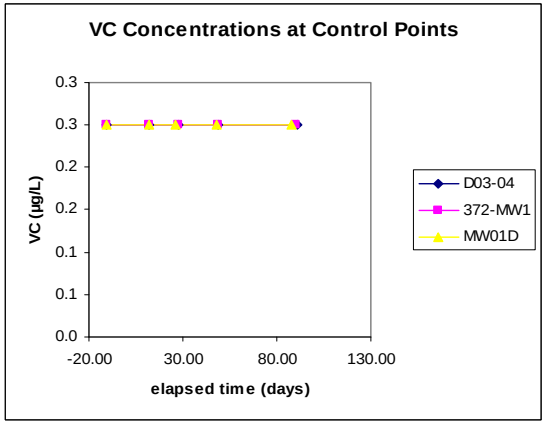












Note: Various best fit scales used

APPENDIX A

ANALYTICAL RESULTS
(on CD only)

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Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,1,1-TRICHLOROETHANE	1,1,2,2-TETRACHLOROETHANE	1,1,2-TRICHLOROETHANE
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	340 U	340 U	340 U
20-002	Bottom NE Corner	1/13/2009	7	7	840 U	840 U	840 U
20-003	West Side Wall	1/13/2009	4	4	5.6 U	5.6 U	5.6 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	300 U	300 U	300 U
20-005	West Side Wall	1/13/2009	5.5	5.5	390 U	390 U	390 U
20-006	North Side Wall	1/13/2009	5.5	5.5	5.3 U	5.3 UJ	5.3 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	6.4 U	6.4 U	6.4 U
20-009	South Side Wall	1/13/2009	5.5	5.5	300 U	300 U	300 U
20-010	Vault Bottom	1/13/2009	4	4	350 U	350 U	350 U
20-011	Bottom Center	1/13/2009	9	9	8.7 U	8.7 U	8.7 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,1-DICHLOROETHANE	1,1-DICHLOROETHENE	1,2-DICHLOROETHANE
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1800 J	340 U	340 U
20-002	Bottom NE Corner	1/13/2009	7	7	840 U	840 U	840 U
20-003	West Side Wall	1/13/2009	4	4	5.6 U	5.6 U	5.6 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	300 U	300 U	300 U
20-005	West Side Wall	1/13/2009	5.5	5.5	390 U	390 U	390 U
20-006	North Side Wall	1/13/2009	5.5	5.5	5.3 U	5.3 U	5.3 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	6.4 U	6.4 U	6.4 U
20-009	South Side Wall	1/13/2009	5.5	5.5	300 U	300 U	300 U
20-010	Vault Bottom	1/13/2009	4	4	350 U	350 U	350 U
20-011	Bottom Center	1/13/2009	9	9	8.7 U	8.7 U	8.7 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B	8260B	8260B
					1,2-DICHLOROPROPANE	2-BUTANONE	2-HEXANONE	ACETONE	BENZENE
					UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	340 U	670 U	670 U	670 U	340 U
20-002	Bottom NE Corner	1/13/2009	7	7	840 U	1700 U	1700 U	1700 U	840 U
20-003	West Side Wall	1/13/2009	4	4	5.6 U	17 J	11 U	99 J	4.8 J
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	300 U	600 U	600 U	600 U	300 U
20-005	West Side Wall	1/13/2009	5.5	5.5	390 U	770 U	770 U	770 U	390 U
20-006	North Side Wall	1/13/2009	5.5	5.5	5.3 U	7.3 J	11 U	36 UJ	5.3 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	6.4 U	13 U	13 U	13 U	6.4 U
20-009	South Side Wall	1/13/2009	5.5	5.5	300 U	610 UJ	610 UJ	610 UJ	300 U
20-010	Vault Bottom	1/13/2009	4	4	350 U	690 U	690 U	690 U	350 U
20-011	Bottom Center	1/13/2009	9	9	8.7 U	17 U	17 U	17 UJ	8.7 U
FD - field duplicate									

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					BROMODICHLOROMETHANE	BROMOFORM	BROMOMETHANE
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	340 U	340 U	670 U
20-002	Bottom NE Corner	1/13/2009	7	7	840 U	840 U	1700 U
20-003	West Side Wall	1/13/2009	4	4	5.6 U	5.6 U	11 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	300 U	300 U	600 U
20-005	West Side Wall	1/13/2009	5.5	5.5	390 U	390 U	770 U
20-006	North Side Wall	1/13/2009	5.5	5.5	5.3 U	5.3 UJ	11 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	6.4 U	6.4 U	13 U
20-009	South Side Wall	1/13/2009	5.5	5.5	300 U	300 U	610 U
20-010	Vault Bottom	1/13/2009	4	4	350 U	350 U	690 U
20-011	Bottom Center	1/13/2009	9	9	8.7 U	8.7 U	17 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B	8260B
					CARBON TETRACHLORIDE	CHLOROBENZENE	CHLOROETHANE	CHLOROFORM
					UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	340 U	180000	340 U	340 U
20-002	Bottom NE Corner	1/13/2009	7	7	840 U	760 J	840 U	840 U
20-003	West Side Wall	1/13/2009	4	4	5.6 U	66 J	5.6 U	5.6 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	300 U	410	300 U	300 U
20-005	West Side Wall	1/13/2009	5.5	5.5	390 U	1700	390 U	390 U
20-006	North Side Wall	1/13/2009	5.5	5.5	5.3 U	14 J	5.3 U	5.3 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	6.4 U	15	6.4 U	6.4 U
20-009	South Side Wall	1/13/2009	5.5	5.5	300 U	1000	300 U	300 U
20-010	Vault Bottom	1/13/2009	4	4	350 U	1300 J	350 U	350 U
20-011	Bottom Center	1/13/2009	9	9	8.7 U	8.7 U	8.7 U	8.7 U
FD - field duplicate								

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					CHLOROMETHANE	CIS-1,2-DICHLOROETHENE	CIS-1,3-DICHLOROPROPENE
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	670 U	4500 J	340 U
20-002	Bottom NE Corner	1/13/2009	7	7	1700 U	840 U	840 U
20-003	West Side Wall	1/13/2009	4	4	11 U	13 J	5.6 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	600 U	300 U	300 U
20-005	West Side Wall	1/13/2009	5.5	5.5	770 U	5300	390 U
20-006	North Side Wall	1/13/2009	5.5	5.5	11 U	20 J	5.3 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	13 U	50	6.4 U
20-009	South Side Wall	1/13/2009	5.5	5.5	610 U	300 U	300 U
20-010	Vault Bottom	1/13/2009	4	4	690 U	270 J	350 U
20-011	Bottom Center	1/13/2009	9	9	17 U	160 J	8.7 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					DIBROMOCHLOROMETHANE	ETHYLBENZENE	METHYL ISOBUTYL KETONE
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	340 U	1400 J	670 U
20-002	Bottom NE Corner	1/13/2009	7	7	840 U	840 U	1700 U
20-003	West Side Wall	1/13/2009	4	4	5.6 U	2.4 J	11 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	300 U	300 U	600 U
20-005	West Side Wall	1/13/2009	5.5	5.5	390 U	390 U	770 U
20-006	North Side Wall	1/13/2009	5.5	5.5	5.3 U	5.3 U	11 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	6.4 U	6.4 U	13 U
20-009	South Side Wall	1/13/2009	5.5	5.5	300 U	300 U	610 UJ
20-010	Vault Bottom	1/13/2009	4	4	350 U	350 U	690 U
20-011	Bottom Center	1/13/2009	9	9	8.7 U	8.7 U	17 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B	8260B
					METHYL TERT-BUTYL ETHER	METHYLENE CHLORIDE	STYRENE	TETRACHLOROETHENE
					UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	340 U	670 U	340 U	340 U
20-002	Bottom NE Corner	1/13/2009	7	7	840 U	1700 U	840 U	840 U
20-003	West Side Wall	1/13/2009	4	4	5.6 U	11 U	5.6 U	5.6 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	300 U	600 U	300 U	300 U
20-005	West Side Wall	1/13/2009	5.5	5.5	390 U	770 U	390 U	390 U
20-006	North Side Wall	1/13/2009	5.5	5.5	5.3 U	11 U	5.3 U	5.3 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	6.4 U	13 U	6.4 U	6.4 U
20-009	South Side Wall	1/13/2009	5.5	5.5	300 U	610 U	300 U	300 U
20-010	Vault Bottom	1/13/2009	4	4	350 U	690 U	350 U	350 U
20-011	Bottom Center	1/13/2009	9	9	8.7 U	17 U	8.7 U	8.7 U
FD - field duplicate								

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					TOLUENE	TRANS-1,2-DICHLOROETHENE	TRANS-1,3-DICHLOROPROPENE
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	3600 J	270 J	340 U
20-002	Bottom NE Corner	1/13/2009	7	7	840 U	840 U	840 U
20-003	West Side Wall	1/13/2009	4	4	7.5 J	5.6 U	5.6 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	300 U	300 U	300 U
20-005	West Side Wall	1/13/2009	5.5	5.5	390 U	420	390 U
20-006	North Side Wall	1/13/2009	5.5	5.5	5.3 U	2.1 J	5.3 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	6.4 U	6.4 U	6.4 U
20-009	South Side Wall	1/13/2009	5.5	5.5	300 U	300 U	300 U
20-010	Vault Bottom	1/13/2009	4	4	350 U	350 U	350 U
20-011	Bottom Center	1/13/2009	9	9	8.7 U	8.7 U	8.7 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B	8270C
					TRICHLOROETHENE	VINYL CHLORIDE	XYLENES (TOTAL)	1,2,4-TRICHLOROBENZENE
					UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	8300 J	340 U	5300 J	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	840 U	840 U	840 U	380 U
20-003	West Side Wall	1/13/2009	4	4	3.4 J	5.6 U	3.6 J	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	360	300 U	300 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	390 U	390 U	390 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	6.8 J	3.1 J	5.3 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	11	9.1	6.4 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	300 U	300 U	300 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	2000 J	350 U	720 J	530
20-011	Bottom Center	1/13/2009	9	9	86 J	37 J	8.7 U	380 U
FD - field duplicate								

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C
					1,2-DICHLOROBENZENE	1,3-DICHLOROBENZENE	1,4-DICHLOROBENZENE
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	32000	400 U	3300
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	380 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C
					2,4,5-TRICHLOROPHENOL	2,4,6-TRICHLOROPHENOL	2,4-DICHLOROPHENOL
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	400 U	400 U	400 U
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	380 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C	8270C
					2,4-DIMETHYLPHENOL	2,4-DINITROPHENOL	2,4-DINITROTOLUENE	2,6-DINITROTOLUENE
					UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	3800 U	1900 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	760 U	380 U	380 U
20-003	West Side Wall	1/13/2009	4	4	380 U	750 U	380 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	760 U	380 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	3900 U	1900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	3900 U	1900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	770 U	380 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	4000 U	2000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	400 U	790 U	400 U	400 U
20-011	Bottom Center	1/13/2009	9	9	380 U	760 U	380 U	380 U
FD - field duplicate								

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C	8270C
					2-CHLORONAPHTHALENE	2-CHLOROPHENOL	2-METHYLPHENOL	2-NITROANILINE
					UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	1900 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U	380 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	380 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	380 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	2000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	400 U	400 U	400 U	400 U
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	380 U	380 U
FD - field duplicate								

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C
					2-NITROPHENOL	3,3-DICHLOROBENZIDINE	3-NITROANILINE
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	400 U	400 U	400 U
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	380 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C
					4,6-DINITRO-2-METHYLPHENOL	4-BROMOPHENYL-PHENYLETHER
					UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	3800 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	760 U	380 U
20-003	West Side Wall	1/13/2009	4	4	750 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	760 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	3900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	3900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	770 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	4000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	790 U	400 U
20-011	Bottom Center	1/13/2009	9	9	760 U	380 U
FD - field duplicate						

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C
					4-CHLORO-3-METHYLPHENOL	4-CHLOROANILINE	4-CHLOROPHENYL-PHENYLETHER
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	400 U	400 U	400 U
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	380 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C	8270C
					4-METHYLPHENOL	4-NITROANILINE	4-NITROPHENOL	ACENAPHTHENE
					UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	3800 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	760 U	380 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	750 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	760 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	3900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	3900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	770 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	4000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	400 U	400 U	790 U	400 U
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	760 U	380 U
FD - field duplicate								

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C	8270C
					ACENAPHTHYLENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(B)FLUORANTHENE
					UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	1900 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U	380 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	380 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	380 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	2000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	400 U	400 U	400 U	550
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	380 U	380 U
FD - field duplicate								

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C
					BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	BIS(2-CHLOROETHOXY)METHANE
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	400 U	400 U	400 U
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	380 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C
					BIS(2-CHLOROISOPROPYL)ETHER	BIS(2-ETHYLHEXYL)PHTHALATE
					UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	2700
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	870
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	440
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	400 U	8000
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U
FD - field duplicate						

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C	8270C
					BUTYLBENZYLPHTHALATE	CHRYSENE	DIBENZOFURAN	DIETHYLPHTHALATE
					UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	1900 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U	380 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	380 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	380 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	2000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	400 U	400 U	400 U	400 U
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	380 U	380 U
FD - field duplicate								

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C
					DIMETHYL PHTHALATE	DI-N-BUTYLPHTHALATE	DI-N-OCTYLPHTHALATE
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	400 U	1000	400 U
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	380 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C
					FLUORANTHENE	FLUORENE	HEXACHLOROBUTADIENE
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1600 J	2800	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	350 J	400 U	400 U
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	380 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C
					HEXACHLOROCYCLOPENTADIENE	HEXACHLOROETHANE	INDENO(1,2,3-CD)PYRENE
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	1900 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	380 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	380 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	2000 U
20-010	Vault Bottom	1/13/2009	4	4	400 U	400 U	400 U
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	380 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C	8270C
					NAPHTHALENE	NITROBENZENE	N-NITROSODIPHENYLAMINE	PENTACHLOROPHENOL
					UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	1900 U	3800 U
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U	760 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	380 U	750 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U	760 U
20-005	West Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U	3900 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U	3900 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	380 U	770 U
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	2000 U	4000 U
20-010	Vault Bottom	1/13/2009	4	4	2100	400 U	400 U	790 U
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	380 U	760 U
FD - field duplicate								

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C	8270C	8270C	8270C	8270C-SIM
					PHENANTHRENE	PHENOL	PYRENE	PYRIDINE	BENZO(A)PYRENE
					UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	1900 U	1900 U	1900 U	4800 U	210
20-002	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U	950 U	23 U
20-003	West Side Wall	1/13/2009	4	4	380 U	380 U	380 U	950 U	23 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	380 U	380 U	380 U	960 U	23 U
20-005	West Side Wall	1/13/2009	5.5	5.5	2200	1900 U	2000	4900 U	530
20-006	North Side Wall	1/13/2009	5.5	5.5	1900 U	1900 U	1900 U	4900 U	520
20-008	Southwest Corner	1/13/2009	7.5	7.5	380 U	380 U	380 U	970 U	62
20-009	South Side Wall	1/13/2009	5.5	5.5	2000 U	2000 U	2000 U	5100 U	220
20-010	Vault Bottom	1/13/2009	4	4	240 J	400 U	330 J	990 U	260
20-011	Bottom Center	1/13/2009	9	9	380 U	380 U	380 U	960 U	23 U
FD - field duplicate									

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C-SIM	8270C-SIM	8270C-SIM
					BIS(2-CHLOROETHYL)ETHER	DIBENZ(A,H)ANTHRACENE	HEXACHLOROBENZENE
					UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	120 U	120 U	120 U
20-002	Bottom NE Corner	1/13/2009	7	7	23 U	23 U	23 U
20-003	West Side Wall	1/13/2009	4	4	23 U	23 U	23 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	23 U	23 U	23 U
20-005	West Side Wall	1/13/2009	5.5	5.5	120 U	85 J	120 U
20-006	North Side Wall	1/13/2009	5.5	5.5	120 U	87 J	120 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	23 U	15 J	23 U
20-009	South Side Wall	1/13/2009	5.5	5.5	120 U	120 U	120 U
20-010	Vault Bottom	1/13/2009	4	4	24 U	60	24 U
20-011	Bottom Center	1/13/2009	9	9	23 U	23 U	23 U
FD - field duplicate							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8270C-SIM	8081A	8081A	8081A	8081A	8081A
					N-NITROSODINPROPYLAMINE	4,4'-DDD	4,4'-DDE	4,4'-DDT	ALDRIN	ALPHA-BHC
					UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	120 U	360 J	210	550 J	2.3 U	2.3 U
20-002	Bottom NE Corner	1/13/2009	7	7	23 U	120 J	83	190 J	17	2.3 U
20-003	West Side Wall	1/13/2009	4	4	23 U	6.4	3.7 J	10	2.3 U	2.3 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	23 U	10	6.4	16	2.3 U	2.3 U
20-005	West Side Wall	1/13/2009	5.5	5.5	120 U	73 J	31	110 J	37	2.3 U
20-006	North Side Wall	1/13/2009	5.5	5.5	120 U	5.5	4.7 U	4.7 J	1.9 J	2.3 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	23 U	120 J	55	170 J	2.3 U	2.3 U
20-009	South Side Wall	1/13/2009	5.5	5.5	120 U	22 J	13	31 J	2.4 U	2.4 U
20-010	Vault Bottom	1/13/2009	4	4	24 U	360 J	480	1500 J	130	2.4 U
20-011	Bottom Center	1/13/2009	9	9	23 U	4.6 U	4.6 U	4.6 U	2.3 U	2.3 U
FD - field duplicate										

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8081A	8081A	8081A	8081A	8081A
					BETA-BHC	CHLORDANE (TECHNICAL)	DELTA-BHC	DIELDRIN	ENDOSULFAN I
					UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	2.3 U	58 U	2.3 U	490 J	110
20-002	Bottom NE Corner	1/13/2009	7	7	2.3 U	57 U	3.9	160	28
20-003	West Side Wall	1/13/2009	4	4	2.3 U	57 U	2.3 U	8.0	1.4 J
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	2.3 U	58 U	2.3 U	14	2.3 U
20-005	West Side Wall	1/13/2009	5.5	5.5	2.3 U	59 U	7.1	15	13
20-006	North Side Wall	1/13/2009	5.5	5.5	2.3 U	59 U	2.3 U	4.7 U	2.3 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	2.3 U	58 U	3.1	150	6.1
20-009	South Side Wall	1/13/2009	5.5	5.5	2.4 U	61 U	2.4 U	28	3.2
20-010	Vault Bottom	1/13/2009	4	4	16	60 U	21	1400	31
20-011	Bottom Center	1/13/2009	9	9	2.3 U	58 U	2.3 U	4.6 U	2.3 U
FD - field duplicate									

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8081A	8081A	8081A	8081A	8081A
					ENDOSULFAN II	ENDOSULFAN SULFATE	ENDRIN ALDEHYDE	ENDRIN KETONE	ENDRIN
					UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	41 J	180 J	160 J	4.6 U	45 J
20-002	Bottom NE Corner	1/13/2009	7	7	12	41 J	33	4.6 U	23
20-003	West Side Wall	1/13/2009	4	4	4.6 U	4.6 UJ	2.1 J	4.6 U	4.6 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	4.6 U	4.6 UJ	4.7	4.6 U	4.6 U
20-005	West Side Wall	1/13/2009	5.5	5.5	7.5	86 J	26	46	57
20-006	North Side Wall	1/13/2009	5.5	5.5	4.7 U	5.7 J	4.7 U	5.1	8.9
20-008	Southwest Corner	1/13/2009	7.5	7.5	41	40 J	43 J	4.7 U	23
20-009	South Side Wall	1/13/2009	5.5	5.5	4.9 U	9.1 J	8.6 J	2.6 J	13
20-010	Vault Bottom	1/13/2009	4	4	440	290 J	330 J	13	1200
20-011	Bottom Center	1/13/2009	9	9	4.6 U	4.6 UJ	4.6 U	4.6 U	4.6 U
FD - field duplicate									

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8081A	8081A	8081A	8081A	8081A
					HEPTACHLOR EPOXIDE	HEPTACHLOR	LINDANE	METHOXYCHLOR	TOXAPHENE
					UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	66 J	12	2.3 U	170 J	58 U
20-002	Bottom NE Corner	1/13/2009	7	7	21	1.6 J	2.3 U	54	57 U
20-003	West Side Wall	1/13/2009	4	4	4.5	2.3 U	2.3 U	23 U	57 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	9.0	2.3 U	2.3 U	7.2 J	58 U
20-005	West Side Wall	1/13/2009	5.5	5.5	2.3 U	2.3 U	2.3 U	36	59 U
20-006	North Side Wall	1/13/2009	5.5	5.5	1.1 J	2.3 U	2.3 U	23 U	59 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	93	2.1 J	2.3 U	50 J	58 U
20-009	South Side Wall	1/13/2009	5.5	5.5	15	2.4 U	2.4 U	9.5 J	61 U
20-010	Vault Bottom	1/13/2009	4	4	930	8.2	2.4 U	450 J	60 U
20-011	Bottom Center	1/13/2009	9	9	2.3 U	2.3 U	2.3 U	23 U	58 U
FD - field duplicate									

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8082	8082	8082	8082	8082
					AROCLOR-1016	AROCLOR-1221	AROCLOR-1232	AROCLOR-1242	AROCLOR-1248
					UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	58 U	58 U	58 U	58 U	58 U
20-002	Bottom NE Corner	1/13/2009	7	7	57 U	57 U	57 U	57 U	57 U
20-003	West Side Wall	1/13/2009	4	4	57 U	57 U	57 U	57 U	57 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	58 U	58 U	58 U	58 U	58 U
20-005	West Side Wall	1/13/2009	5.5	5.5	59 U	59 U	59 U	59 U	59 U
20-006	North Side Wall	1/13/2009	5.5	5.5	59 U	59 U	59 U	59 U	59 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	58 U	58 U	58 U	58 U	58 U
20-009	South Side Wall	1/13/2009	5.5	5.5	61 U	61 U	61 U	61 U	61 U
20-010	Vault Bottom	1/13/2009	4	4	1200 U	1200 U	1200 U	1200 U	1200 U
20-011	Bottom Center	1/13/2009	9	9	58 U	58 U	58 U	58 U	58 U
FD - field duplicate									

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8082	8082	6020A	6020A	6020A	6020A	6020A
					AROCLOR-1254	AROCLOR-1260	ANTIMONY	ARSENIC	BARIUM	BERYLLIUM	CADMIUM
					UG/KG	UG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	6400	58 U	0.462 J	4.21	88.2	0.208 J	1.24
20-002	Bottom NE Corner	1/13/2009	7	7	2000	57 U	0.526 J	4.52	64.3	0.251 J	0.210 J
20-003	West Side Wall	1/13/2009	4	4	97	57 U	0.118 J	1.38	57.4	0.137 J	0.571 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	160	58 U	0.384 J	5.90	78.9	0.185 J	0.218 J
20-005	West Side Wall	1/13/2009	5.5	5.5	780	59 U	0.317 J	5.07	217	0.507 J	0.144 J
20-006	North Side Wall	1/13/2009	5.5	5.5	59 U	59 U	0.217 J	2.90	92.8	0.188 J	0.163 J
20-008	Southwest Corner	1/13/2009	7.5	7.5	1500	58 U	0.133 J	7.79	45.5	0.582 U	0.582 U
20-009	South Side Wall	1/13/2009	5.5	5.5	290	61 U	0.610 UJ	1.68	41.2	0.149 J	0.610 U
20-010	Vault Bottom	1/13/2009	4	4	14000	1200 U	0.556 J	7.43	113	0.256 J	1.66
20-011	Bottom Center	1/13/2009	9	9	58 U	58 U	0.322 J	16.7	53.7	0.188 J	0.578 U
FD - field duplicate											

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	6020A	6020A	6020A	6020A	6020A	6020A	6020A
					CHROMIUM	COBALT	COPPER	LEAD	MOLYBDENUM	NICKEL	SELENIUM	SILVER
					MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	50.2 J	5.53	37.0	85.8	1.09	49.8 J	0.201 J	0.490 J
20-002	Bottom NE Corner	1/13/2009	7	7	22.3 J	3.56	7.12	13.0	0.325 J	15.3 J	0.128 J	0.251 J
20-003	West Side Wall	1/13/2009	4	4	25.7 J	3.73	5.25	3.74	0.148 J	21.8 J	0.571 U	0.571 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	26.8 J	4.11	14.9	15.7	0.399 J	17.8 J	0.579 U	0.262 J
20-005	West Side Wall	1/13/2009	5.5	5.5	17.0 J	5.48	17.9	54.6	1.19	19.8 J	0.245 J	0.587 U
20-006	North Side Wall	1/13/2009	5.5	5.5	24.2 J	3.71	8.54	33.0	0.249 J	21.9 J	0.587 U	0.587 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	21.0 J	2.92	4.11	1.97	0.582 U	13.4 J	0.582 U	0.582 U
20-009	South Side Wall	1/13/2009	5.5	5.5	26.4 J	3.92	8.32	32.7	0.155 J	23.5 J	0.610 U	0.610 U
20-010	Vault Bottom	1/13/2009	4	4	52.0 J	6.66	22.0	109	0.341 J	42.5 J	0.599 U	1.23
20-011	Bottom Center	1/13/2009	9	9	26.4 J	8.12	5.74	2.61	0.142 J	23.0 J	0.578 U	0.578 U
FD - field duplicate												

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	6020A	6020A	7471A
					THALLIUM	VANADIUM	ZINC	MERCURY
					MG/KG	MG/KG	MG/KG	MG/KG
20-001	Bottom SE Corner	1/13/2009	5	5	0.469 U	23.0	128	0.137
20-002	Bottom NE Corner	1/13/2009	7	7	0.178 U	18.6	42.1	0.115 U
20-003	West Side Wall	1/13/2009	4	4	0.571 U	17.8	17.7	0.114 U
20-004 (FD)	Bottom NE Corner	1/13/2009	7	7	0.579 U	21.1	40.7	0.116 U
20-005	West Side Wall	1/13/2009	5.5	5.5	0.587 U	19.8	43.7	0.0407 J
20-006	North Side Wall	1/13/2009	5.5	5.5	0.587 U	18.4	40.8	0.117 U
20-008	Southwest Corner	1/13/2009	7.5	7.5	0.582 U	16.5	12.4	0.116 U
20-009	South Side Wall	1/13/2009	5.5	5.5	0.610 U	18.8	23.2	0.122 U
20-010	Vault Bottom	1/13/2009	4	4	0.599 U	23.9	135	0.230
20-011	Bottom Center	1/13/2009	9	9	0.199 U	21.8	17.0	0.116 U
FD - field duplicate								

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,1,1-TRICHLOROETHANE	1,1,2,2-TETRACHLOROETHANE	1,1,2-TRICHLOROETHANE
					UG/KG	UG/KG	UG/KG
20-AC-010	S4-SS-MIP13	8/13/2009	5.2	6.0	2300 U	2300 U	2300 U
20-AC-012	S4-SS-MIP13	8/13/2009	16	21	5.0 U	5.0 U	5.0 U
20-AC-017	S4-OWS163-HP13	8/14/2009	10	15	5.1 U	5.1 U	5.1 U
20-AC-022	S4-OWS163-HP13	8/17/2009	15	20	NA	NA	NA
20-AC-015	S4-SS-MIP07	8/14/2009	11	16	4.9 UJ	4.9 UJ	4.9 UJ
20-AC-016	S4-SS-MIP14	8/14/2009	10	15	4.9 U	4.9 U	4.9 U
NA - not analyzed							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B	8260B
					1,1-DICHLOROETHANE	1,1-DICHLOROETHENE	1,2-DICHLOROETHANE	CHLOROETHANE
					UG/KG	UG/KG	UG/KG	UG/KG
20-AC-010	S4-SS-MIP13	8/13/2009	5.2	6.0	2300 U	2300 U	2300 U	2300 U
20-AC-012	S4-SS-MIP13	8/13/2009	16	21	4.3 J	23	5.0 U	5.0 U
20-AC-017	S4-OWS163-HP13	8/14/2009	10	15	5.1 U	13	5.1 U	5.1 U
20-AC-022	S4-OWS163-HP13	8/17/2009	15	20	NA	NA	NA	NA
20-AC-015	S4-SS-MIP07	8/14/2009	11	16	8.0 J	5.0 J	4.9 UJ	4.9 UJ
20-AC-016	S4-SS-MIP14	8/14/2009	10	15	12	5.8	4.9 U	4.9 U
NA - not analyzed								

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					CHLOROMETHANE	CIS-1,2-DICHLOROETHENE	TETRACHLOROETHENE
					UG/KG	UG/KG	UG/KG
20-AC-010	S4-SS-MIP13	8/13/2009	5.2	6.0	4700 U	26000 J	2300 U
20-AC-012	S4-SS-MIP13	8/13/2009	16	21	10 U	780	5.0 U
20-AC-017	S4-OWS163-HP13	8/14/2009	10	15	10 U	5.1 U	5.1 U
20-AC-022	S4-OWS163-HP13	8/17/2009	15	20	NA	NA	NA
20-AC-015	S4-SS-MIP07	8/14/2009	11	16	9.9 UJ	3600	4.9 UJ
20-AC-016	S4-SS-MIP14	8/14/2009	10	15	9.7 U	3500 J	2.7 J
NA - not analyzed							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					TRANS-1,2-DICHLOROETHENE	TRICHLOROETHENE	VINYL CHLORIDE
					UG/KG	UG/KG	UG/KG
20-AC-010	S4-SS-MIP13	8/13/2009	5.2	6.0	1800 J	210000	2200 J
20-AC-012	S4-SS-MIP13	8/13/2009	16	21	29	1200	92
20-AC-017	S4-OWS163-HP13	8/14/2009	10	15	5.1 U	5.1 U	5.1 U
20-AC-022	S4-OWS163-HP13	8/17/2009	15	20	NA	NA	NA
20-AC-015	S4-SS-MIP07	8/14/2009	11	16	24 J	14000	320
20-AC-016	S4-SS-MIP14	8/14/2009	10	15	28	9100 J	250 J
NA - not analyzed							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	CENSUS
					DEHALOCOCOIDES
					CELLS/G
20-AC-010	S4-SS-MIP13	8/13/2009	5.2	6.0	NA
20-AC-012	S4-SS-MIP13	8/13/2009	16	21	NA
20-AC-017	S4-OWS163-HP13	8/14/2009	10	15	NA
20-AC-022	S4-OWS163-HP13	8/17/2009	15	20	635 J
20-AC-015	S4-SS-MIP07	8/14/2009	11	16	NA
20-AC-016	S4-SS-MIP14	8/14/2009	10	15	NA
NA - not analyzed					

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B
					1,1,1-TRICHLOROETHANE	1,1,2,2-TETRACHLOROETHANE
					UG/L	UG/L
20-AC-001	S4-HP-CC5	7/28/2009	5	10	1.0 U	1.0 U
20-AC-002	S4-HP-MIP05	8/12/2009	6	11	1.0 U	1.0 U
20-AC-003	S4-HP-MIP05	8/12/2009	17	22	1.0 U	1.0 U
20-AC-004	S4-HP-MIP05	8/12/2009	27	32	1.0 U	1.0 U
20-AC-006	S4-HP-MIP07	8/13/2009	20	25	2.9	1.0 U
20-AC-009	S4-HP-MIP07	8/13/2009	44	49	1.0 U	1.0 U
20-AC-005	S4-HP-MIP13	8/12/2009	28	33	1.2 J	11 J
20-AC-007	S4-HP-MIP14	8/13/2009	17	22	1.0 U	1.0 U
20-AC-008	S4-HP-MIP14	8/13/2009	24	29	0.75 J	1.0 U
20-AC-013	S4-HP-MIP14	8/14/2009	31	36	1.4	1.0 U
20-AC-014	S4-HP-MIP14	8/14/2009	44	49	1.0 U	1.0 U
20-AC-018	S4-OWS163-HP13	8/14/2009	17	22	1.0 U	1.0 U
20-AC-019	S4-OWS163-HP13	8/14/2009	24	29	1.0 U	1.0 U
20-AC-020	S4-OWS163-HP13	8/14/2009	31	36	1.0 U	1.0 U
20-AC-021	S4-OWS163-HP13	8/17/2009	44	49	1.0 U	1.0 U
20-TB-001	TRIP BLANK	7/28/2009	NA	NA	1.0 U	1.0 U
20-TB-002	TRIP BLANK	8/12/2009	NA	NA	1.0 U	1.0 U
20-TB-003	TRIP BLANK	8/13/2009	NA	NA	1.0 U	1.0 U
20-TB-004	TRIP BLANK	8/14/2009	NA	NA	1.0 U	1.0 U
20-TB-005	TRIP BLANK	8/17/2009	NA	NA	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,1,2-TRICHLOROETHANE	1,1-DICHLOROETHANE	1,1-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-AC-001	S4-HP-CC5	7/28/2009	5	10	1.0 U	0.68 J	0.74 J
20-AC-002	S4-HP-MIP05	8/12/2009	6	11	1.0 U	11	2.6
20-AC-003	S4-HP-MIP05	8/12/2009	17	22	1.0 U	2.2	37
20-AC-004	S4-HP-MIP05	8/12/2009	27	32	1.1	6.6	210
20-AC-006	S4-HP-MIP07	8/13/2009	20	25	0.28 J	8.7	540
20-AC-009	S4-HP-MIP07	8/13/2009	44	49	1.0 U	1.0 U	0.83 J
20-AC-005	S4-HP-MIP13	8/12/2009	28	33	2.9 J	15 J	550
20-AC-007	S4-HP-MIP14	8/13/2009	17	22	0.23 J	14	140
20-AC-008	S4-HP-MIP14	8/13/2009	24	29	1.9	15	800
20-AC-013	S4-HP-MIP14	8/14/2009	31	36	32	65	11000
20-AC-014	S4-HP-MIP14	8/14/2009	44	49	1.0 U	0.32 J	1.2
20-AC-018	S4-OWS163-HP13	8/14/2009	17	22	0.32 J	3.6	980
20-AC-019	S4-OWS163-HP13	8/14/2009	24	29	4.8	8.3	1600
20-AC-020	S4-OWS163-HP13	8/14/2009	31	36	8.4	16	3100
20-AC-021	S4-OWS163-HP13	8/17/2009	44	49	1.0 U	0.96 J	2700
20-TB-001	TRIP BLANK	7/28/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-TB-002	TRIP BLANK	8/12/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-TB-003	TRIP BLANK	8/13/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-TB-004	TRIP BLANK	8/14/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-TB-005	TRIP BLANK	8/17/2009	NA	NA	1.0 U	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,2-DICHLOROETHANE	CHLOROETHANE	CHLOROMETHANE
					UG/L	UG/L	UG/L
20-AC-001	S4-HP-CC5	7/28/2009	5	10	0.50 U	0.50 U	1.0 U
20-AC-002	S4-HP-MIP05	8/12/2009	6	11	0.50 U	0.50 U	1.0 U
20-AC-003	S4-HP-MIP05	8/12/2009	17	22	0.50 U	0.50 U	1.0 U
20-AC-004	S4-HP-MIP05	8/12/2009	27	32	1.4	0.50 U	1.0 U
20-AC-006	S4-HP-MIP07	8/13/2009	20	25	0.81	0.50 U	1.0 U
20-AC-009	S4-HP-MIP07	8/13/2009	44	49	0.50 U	0.50 U	1.0 U
20-AC-005	S4-HP-MIP13	8/12/2009	28	33	2.9 J	0.85 J	2.3 J
20-AC-007	S4-HP-MIP14	8/13/2009	17	22	0.43 J	0.50 U	1.0 U
20-AC-008	S4-HP-MIP14	8/13/2009	24	29	2.2	0.50 U	1.0 U
20-AC-013	S4-HP-MIP14	8/14/2009	31	36	91	0.50 U	1.0 U
20-AC-014	S4-HP-MIP14	8/14/2009	44	49	0.50 U	0.50 U	1.0 U
20-AC-018	S4-OWS163-HP13	8/14/2009	17	22	0.24 J	0.50 U	1.0 U
20-AC-019	S4-OWS163-HP13	8/14/2009	24	29	6.7	0.50 U	1.0 U
20-AC-020	S4-OWS163-HP13	8/14/2009	31	36	17	0.50 U	1.0 U
20-AC-021	S4-OWS163-HP13	8/17/2009	44	49	0.38 J	0.28 J	0.24 J
20-TB-001	TRIP BLANK	7/28/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-TB-002	TRIP BLANK	8/12/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-TB-003	TRIP BLANK	8/13/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-TB-004	TRIP BLANK	8/14/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-TB-005	TRIP BLANK	8/17/2009	NA	NA	0.50 U	0.50 U	0.23 J

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					CIS-1,2-DICHLOROETHENE	TETRACHLOROETHENE	TRANS-1,2-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-AC-001	S4-HP-CC5	7/28/2009	5	10	0.50 J	1.0 U	0.99 J
20-AC-002	S4-HP-MIP05	8/12/2009	6	11	1100	1.0 U	12
20-AC-003	S4-HP-MIP05	8/12/2009	17	22	580	1.0 U	31
20-AC-004	S4-HP-MIP05	8/12/2009	27	32	590	1.0 U	24
20-AC-006	S4-HP-MIP07	8/13/2009	20	25	330	1.0 U	23
20-AC-009	S4-HP-MIP07	8/13/2009	44	49	57	1.0 U	1.2 J
20-AC-005	S4-HP-MIP13	8/12/2009	28	33	4900	1.1 J	200
20-AC-007	S4-HP-MIP14	8/13/2009	17	22	2500	1.0 U	110
20-AC-008	S4-HP-MIP14	8/13/2009	24	29	1900	0.24 J	81
20-AC-013	S4-HP-MIP14	8/14/2009	31	36	95	1.0 U	63
20-AC-014	S4-HP-MIP14	8/14/2009	44	49	56	1.0 U	1.5
20-AC-018	S4-OWS163-HP13	8/14/2009	17	22	120	1.0 U	13
20-AC-019	S4-OWS163-HP13	8/14/2009	24	29	69	1.0 U	13
20-AC-020	S4-OWS163-HP13	8/14/2009	31	36	31	1.0 U	18
20-AC-021	S4-OWS163-HP13	8/17/2009	44	49	54	1.0 U	27
20-TB-001	TRIP BLANK	7/28/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-TB-002	TRIP BLANK	8/12/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-TB-003	TRIP BLANK	8/13/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-TB-004	TRIP BLANK	8/14/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-TB-005	TRIP BLANK	8/17/2009	NA	NA	1.0 U	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B
					TRICHLOROETHENE	VINYL CHLORIDE
					UG/L	UG/L
20-AC-001	S4-HP-CC5	7/28/2009	5	10	1.0 U	10
20-AC-002	S4-HP-MIP05	8/12/2009	6	11	110	180
20-AC-003	S4-HP-MIP05	8/12/2009	17	22	290	52
20-AC-004	S4-HP-MIP05	8/12/2009	27	32	320	50
20-AC-006	S4-HP-MIP07	8/13/2009	20	25	290	40
20-AC-009	S4-HP-MIP07	8/13/2009	44	49	85	2.7 J
20-AC-005	S4-HP-MIP13	8/12/2009	28	33	11000	640
20-AC-007	S4-HP-MIP14	8/13/2009	17	22	1200	320
20-AC-008	S4-HP-MIP14	8/13/2009	24	29	1500	180
20-AC-013	S4-HP-MIP14	8/14/2009	31	36	14	1.9
20-AC-014	S4-HP-MIP14	8/14/2009	44	49	60	3.4
20-AC-018	S4-OWS163-HP13	8/14/2009	17	22	15	4.4
20-AC-019	S4-OWS163-HP13	8/14/2009	24	29	14	2.5
20-AC-020	S4-OWS163-HP13	8/14/2009	31	36	4.2	1.8
20-AC-021	S4-OWS163-HP13	8/17/2009	44	49	6.4	5.3
20-TB-001	TRIP BLANK	7/28/2009	NA	NA	1.0 U	0.50 U
20-TB-002	TRIP BLANK	8/12/2009	NA	NA	1.0 U	0.50 U
20-TB-003	TRIP BLANK	8/13/2009	NA	NA	1.0 U	0.50 U
20-TB-004	TRIP BLANK	8/14/2009	NA	NA	1.0 U	0.50 U
20-TB-005	TRIP BLANK	8/17/2009	NA	NA	1.0 U	0.50 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B
					1,1,1-TRICHLOROETHANE	1,1,2,2-TETRACHLOROETHANE
					UG/L	UG/L
20-BASE-001	ZVI-MW01A1	11/6/2009	6	11	1.0 U	1.0 U
20-R1-001	ZVI-MW01A1	12/3/2009	6	11	1.0 U	1.0 U
20-R2-001	ZVI-MW01A1	12/16/2009	6	11	1.0 U	1.0 U
20-R2-002 (FD)	ZVI-MW01A1	12/16/2009	6	11	1.0 U	1.0 U
20-R3-001	ZVI-MW01A1	1/6/2010	6	11	1.0 U	1.0 U
20-R4-001	ZVI-MW01A1	2/17/2010	6	11	1.0 U	1.0 U
20-BASE-002	ZVI-MW01A2	11/9/2009	10	20	1.0 U	1.0 U
20-R1-002	ZVI-MW01A2	12/2/2009	10	20	1.0 U	1.0 U
20-R2-003	ZVI-MW01A2	12/15/2009	10	20	1.0 U	1.0 U
20-R3-002	ZVI-MW01A2	1/6/2010	10	20	1.0 U	1.0 U
20-R4-002	ZVI-MW01A2	2/16/2010	10	20	1.0 U	1.0 U
20-BASE-003	ZVI-MW01A3	11/6/2009	20	30	0.86 J	1.0 U
20-R1-003	ZVI-MW01A3	12/3/2009	20	30	0.78 J	1.0 U
20-R1-004 (FD)	ZVI-MW01A3	12/3/2009	20	30	0.74 J	1.0 U
20-R2-004	ZVI-MW01A3	12/16/2009	20	30	1.7	1.0 U
20-R3-003	ZVI-MW01A3	1/7/2010	20	30	0.90 J	1.0 U
20-R4-003	ZVI-MW01A3	2/17/2010	20	30	0.84 J	1.0 U
20-BASE-004	ZVI-MW01B	11/5/2009	30	40	1.3	1.0 U
20-R1-005	ZVI-MW01B	12/2/2009	30	40	4.0	1.0 U
20-R2-005	ZVI-MW01B	12/15/2009	30	40	2.7 J	1.0 U
20-R3-004	ZVI-MW01B	1/7/2010	30	40	4.5	1.0 U
20-R4-004	ZVI-MW01B	2/16/2010	30	40	5.7	1.0 U
20-R4-005 (FD)	ZVI-MW01B	2/16/2010	30	40	5.9	1.0 U
20-BASE-005	ZVI-MW01C	11/6/2009	40	50	1.0 U	1.0 U
20-BASE-006 (FD)	ZVI-MW01C	11/6/2009	40	50	1.0 U	1.0 U
20-R1-006	ZVI-MW01C	12/3/2009	40	50	1.0 U	1.0 U
20-R2-006	ZVI-MW01C	12/17/2009	40	50	1.0 U	1.0 U
20-R3-005	ZVI-MW01C	1/7/2010	40	50	1.0 U	1.0 U
20-R4-006	ZVI-MW01C	2/17/2010	40	50	1.0 U	1.0 U
20-BASE-007	ZVI-MW01D	11/9/2009	50	60	1.0 U	1.0 U
20-R1-007	ZVI-MW01D	12/2/2009	50	60	1.0 U	1.0 U
20-R2-007	ZVI-MW01D	12/16/2009	50	60	1.0 U	1.0 U
20-R3-006	ZVI-MW01D	1/7/2010	50	60	1.0 U	1.0 U
20-R4-007	ZVI-MW01D	2/16/2010	50	60	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B
					1,1,1-TRICHLOROETHANE	1,1,2,2-TETRACHLOROETHANE
					UG/L	UG/L
20-R4-008 (FD)	ZVI-MW01D	2/16/2010	50	60	1.0 U	1.0 U
20-BASE-008	ZVI-MW02A2	11/4/2009	10	20	0.30 J	1.0 U
20-R1-008	ZVI-MW02A2	12/1/2009	10	20	0.35 J	1.0 U
20-R2-008	ZVI-MW02A2	12/16/2009	10	20	0.33 J	1.0 U
20-R3-007	ZVI-MW02A2	1/7/2010	10	20	0.30 J	1.0 U
20-R4-009	ZVI-MW02A2	2/16/2010	10	20	1.0 U	1.0 U
20-BASE-009	ZVI-MW02A3	11/4/2009	20	30	2.5	1.0 U
20-R1-009	ZVI-MW02A3	11/30/2009	20	30	0.94 J	1.0 U
20-R2-009	ZVI-MW02A3	12/16/2009	20	30	1.1 J	1.0 U
20-R3-008	ZVI-MW02A3	1/8/2010	20	30	1.1 J	1.0 U
20-R4-010	ZVI-MW02A3	2/15/2010	20	30	0.67 J	1.0 U
20-BASE-010	ZVI-MW02B	11/3/2009	30	40	0.77 J	1.0 U
20-R1-010	ZVI-MW02B	12/1/2009	30	40	0.87 J	1.0 U
20-R2-010	ZVI-MW02B	12/16/2009	30	40	1.5 J	1.0 U
20-R2-011 (FD)	ZVI-MW02B	12/16/2009	30	40	1.2 J	1.0 U
20-R3-009	ZVI-MW02B	1/7/2010	30	40	1.3	1.0 U
20-R4-011	ZVI-MW02B	2/15/2010	30	40	0.70 J	1.0 U
20-BASE-011	ZVI-MW02C	11/9/2009	40	50	1.0 U	1.0 U
20-R1-011	ZVI-MW02C	11/30/2009	40	50	1.0 U	1.0 U
20-R2-012	ZVI-MW02C	12/16/2009	40	50	1.0 U	1.0 U
20-R3-010	ZVI-MW02C	1/7/2010	40	50	1.0 U	1.0 U
20-R4-012	ZVI-MW02C	2/15/2010	40	50	1.0 U	1.0 U
20-R4-013 (FD)	ZVI-MW02C	2/15/2010	40	50	1.0 U	1.0 U
20-BASE-012	ZVI-MW03A2	11/5/2009	10	20	1.0 U	1.0 U
20-R1-012	ZVI-MW03A2	12/2/2009	10	20	1.0 U	1.0 U
20-R2-013	ZVI-MW03A2	12/14/2009	10	20	1.0 U	1.0 U
20-R3-011	ZVI-MW03A2	1/5/2010	10	20	1.0 U	1.0 U
20-R4-014	ZVI-MW03A2	2/18/2010	10	20	1.0 U	1.0 U
20-BASE-013	ZVI-MW03A3	11/6/2009	20	30	1.7	1.0 U
20-R1-013	ZVI-MW03A3	12/2/2009	20	30	0.24 J	1.0 U
20-R2-014	ZVI-MW03A3	12/14/2009	20	30	0.33 J	1.0 U
20-R3-012	ZVI-MW03A3	1/5/2010	20	30	0.25 J	1.0 U
20-R4-015	ZVI-MW03A3	2/19/2010	20	30	0.34 J	1.0 U
20-BASE-014	ZVI-MW03B	11/6/2009	30	40	1.1	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B
					1,1,1-TRICHLOROETHANE	1,1,2,2-TETRACHLOROETHANE
					UG/L	UG/L
20-BASE-015 (FD)	ZVI-MW03B	11/6/2009	30	40	1.2	1.0 U
20-R1-014	ZVI-MW03B	12/2/2009	30	40	0.49 J	1.0 U
20-R2-015	ZVI-MW03B	12/15/2009	30	40	2.3	1.0 UJ
20-R3-013	ZVI-MW03B	1/5/2010	30	40	1.4	1.0 U
20-R4-016	ZVI-MW03B	2/18/2010	30	40	1.1	1.0 U
20-BASE-016	ZVI-MW03C	11/6/2009	40	50	1.0 U	1.0 U
20-R1-015	ZVI-MW03C	12/2/2009	40	50	1.0 U	1.0 U
20-R1-016 (FD)	ZVI-MW03C	12/2/2009	40	50	1.0 U	1.0 U
20-R2-016	ZVI-MW03C	12/14/2009	40	50	1.0 U	1.0 U
20-R3-014	ZVI-MW03C	1/5/2010	40	50	1.0 U	1.0 U
20-R4-017	ZVI-MW03C	2/18/2010	40	50	1.0 U	1.0 U
20-BASE-017	ZVI-MW04A1	11/4/2009	6	11	1.0 U	1.0 U
20-R1-017	ZVI-MW04A1	12/1/2009	6	11	1.0 U	1.0 U
20-R2-017	ZVI-MW04A1	12/16/2009	6	11	1.0 U	1.0 U
20-R3-015	ZVI-MW04A1	1/6/2010	6	11	1.0 U	1.0 U
20-R4-018	ZVI-MW04A1	2/17/2010	6	11	1.0 U	1.0 U
20-BASE-018	ZVI-MW04A2	11/5/2009	10	20	1.0 U	1.0 U
20-R1-018	ZVI-MW04A2	12/2/2009	10	20	1.0 U	1.0 U
20-R2-018	ZVI-MW04A2	12/17/2009	10	20	1.0 U	1.0 U
20-R3-016	ZVI-MW04A2	1/6/2010	10	20	1.0 U	1.0 U
20-R4-019	ZVI-MW04A2	2/16/2010	10	20	1.0 U	1.0 U
20-BASE-019	ZVI-MW04A3	11/4/2009	20	30	0.99 J	1.0 U
20-R1-019	ZVI-MW04A3	12/1/2009	20	30	0.45 J	1.0 U
20-R2-019	ZVI-MW04A3	12/16/2009	20	30	0.46 J	1.0 U
20-R3-017	ZVI-MW04A3	1/7/2010	20	30	0.64 J	1.0 U
20-R4-020	ZVI-MW04A3	2/17/2010	20	30	1.1	1.0 U
20-BASE-020	ZVI-MW04B	11/5/2009	30	40	1.3	1.0 U
20-R1-020	ZVI-MW04B	12/2/2009	30	40	1.2 J	1.0 U
20-R2-020	ZVI-MW04B	12/17/2009	30	40	1.3	1.0 U
20-R3-018	ZVI-MW04B	1/6/2010	30	40	1.0 U	1.0 U
20-R4-021	ZVI-MW04B	2/16/2010	30	40	1.7	1.0 U
20-BASE-021	ZVI-MW04C	11/9/2009	40	50	1.0 U	1.0 U
20-R1-021	ZVI-MW04C	12/1/2009	40	50	1.0 U	1.0 U
20-R2-021	ZVI-MW04C	12/16/2009	40	50	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B
					1,1,1-TRICHLOROETHANE	1,1,2,2-TETRACHLOROETHANE
					UG/L	UG/L
20-R3-019	ZVI-MW04C	1/6/2010	40	50	1.0 U	1.0 U
20-R4-022	ZVI-MW04C	2/16/2010	40	50	1.0 U	1.0 U
20-BASE-022	ZVI-MW05A2	11/5/2009	10	20	1.0 U	1.0 U
20-R1-022	ZVI-MW05A2	12/1/2009	10	20	1.0 U	1.0 U
20-R2-022	ZVI-MW05A2	12/17/2009	10	20	1.0 U	1.0 U
20-R3-020	ZVI-MW05A2	1/5/2010	10	20	1.0 U	1.0 U
20-R4-023	ZVI-MW05A2	2/15/2010	10	20	1.0 U	1.0 U
20-BASE-023	ZVI-MW05A3	11/5/2009	20	30	0.55 J	1.0 U
20-R1-023	ZVI-MW05A3	12/1/2009	20	30	0.77 J	1.0 U
20-R2-023	ZVI-MW05A3	12/15/2009	20	30	1.3 J	1.0 UJ
20-R3-021	ZVI-MW05A3	1/5/2010	20	30	1.2	1.0 U
20-R3-022 (FD)	ZVI-MW05A3	1/5/2010	20	30	1.3	1.0 U
20-R4-024	ZVI-MW05A3	2/15/2010	20	30	1.0	1.0 U
20-BASE-024	ZVI-MW05B	11/5/2009	30	40	0.45 J	1.0 U
20-BASE-025 (FD)	ZVI-MW05B	11/5/2009	30	40	0.54 J	1.0 U
20-R1-024	ZVI-MW05B	12/1/2009	30	40	0.22 J	1.0 U
20-R2-024	ZVI-MW05B	12/15/2009	30	40	0.32 J	1.0 UJ
20-R3-023	ZVI-MW05B	1/5/2010	30	40	0.86 J	1.0 U
20-R4-025	ZVI-MW05B	2/16/2010	30	40	0.74 J	1.0 U
20-BASE-026	ZVI-MW05C	11/9/2009	40	50	1.0 U	1.0 U
20-R1-025	ZVI-MW05C	12/1/2009	40	50	1.0 U	1.0 U
20-R1-026 (FD)	ZVI-MW05C	12/1/2009	40	50	1.0 U	1.0 U
20-R2-025	ZVI-MW05C	12/15/2009	40	50	1.0 U	1.0 U
20-R3-024	ZVI-MW05C	1/5/2010	40	50	1.0 U	1.0 U
20-R4-026	ZVI-MW05C	2/15/2010	40	50	1.0 U	1.0 U
20-BASE-027	ZVI-MW06A2	11/6/2009	10	20	1.0 U	1.0 U
20-R1-027	ZVI-MW06A2	11/30/2009	10	20	1.0 U	1.0 U
20-R2-026	ZVI-MW06A2	12/14/2009	10	20	1.0 U	1.0 U
20-R3-025	ZVI-MW06A2	1/6/2010	10	20	1.0 U	1.0 U
20-R4-027	ZVI-MW06A2	2/18/2010	10	20	1.0 U	1.0 U
20-BASE-028	ZVI-MW06A3	11/6/2009	20	30	2.4	1.0 U
20-R1-028	ZVI-MW06A3	11/30/2009	20	30	1.5	1.0 U
20-R2-027	ZVI-MW06A3	12/15/2009	20	30	4.8 J	1.0 U
20-R2-028 (FD)	ZVI-MW06A3	12/15/2009	20	30	5.3 J	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B
					1,1,1-TRICHLOROETHANE	1,1,2,2-TETRACHLOROETHANE
					UG/L	UG/L
20-R3-026	ZVI-MW06A3	1/5/2010	20	30	1.9	1.0 U
20-R4-028	ZVI-MW06A3	2/17/2010	20	30	1.2	1.0 U
20-BASE-029	ZVI-MW06B	11/9/2009	30	40	9.3	1.0 U
20-R1-029	ZVI-MW06B	11/30/2009	30	40	16	1.0 U
20-R2-029	ZVI-MW06B	12/14/2009	30	40	11 J	1.0 U
20-R3-027	ZVI-MW06B	1/6/2010	30	40	16	1.0 U
20-R4-029	ZVI-MW06B	2/19/2010	30	40	7.2	1.0 U
20-BASE-030	ZVI-MW06C	11/6/2009	40	50	1.0 U	1.0 U
20-R1-030	ZVI-MW06C	11/30/2009	40	50	1.0 U	1.0 U
20-R2-030	ZVI-MW06C	12/14/2009	40	50	1.0 U	1.0 U
20-R3-028	ZVI-MW06C	1/6/2010	40	50	1.0 U	1.0 U
20-R4-030	ZVI-MW06C	2/19/2010	40	50	1.0 U	1.0 U
20-BASE-031	ZVI-MW07A2	11/2/2009	10	20	0.29 J	1.0 U
20-BASE-031A (RE)	ZVI-MW07A2	11/3/2009	10	20	NA	NA
20-R1-031	ZVI-MW07A2	12/3/2009	10	20	1.0 U	1.0 U
20-R2-031	ZVI-MW07A2	12/17/2009	10	20	1.0 U	1.0 U
20-R3-029	ZVI-MW07A2	1/8/2010	10	20	5.0 U	5.0 U
20-R3-030 (FD)	ZVI-MW07A2	1/8/2010	10	20	5.0 U	5.0 U
20-R4-031	ZVI-MW07A2	2/17/2010	10	20	1.0 U	1.0 U
20-BASE-032	ZVI-MW07A3	11/2/2009	20	30	5.8	1.0 U
20-R1-032	ZVI-MW07A3	12/3/2009	20	30	2.4	1.0 U
20-R2-032	ZVI-MW07A3	12/17/2009	20	30	1.6	1.0 U
20-R3-031	ZVI-MW07A3	1/8/2010	20	30	3.5	1.0 U
20-R4-032	ZVI-MW07A3	2/18/2010	20	30	2.8	1.0 U
20-BASE-033	ZVI-MW07B	11/3/2009	30	40	5.2	1.0 U
20-R1-033	ZVI-MW07B	12/3/2009	30	40	3.6	1.0 U
20-R2-033	ZVI-MW07B	12/17/2009	30	40	6.8	1.0 U
20-R3-032	ZVI-MW07B	1/8/2010	30	40	4.2 J	1.0 U
20-R4-033	ZVI-MW07B	2/18/2010	30	40	6.0	1.0 U
20-BASE-034	ZVI-MW07C	11/2/2009	40	50	1.0 U	1.0 U
20-BASE-034A (RE)	ZVI-MW07C	11/3/2009	40	50	NA	NA
20-R1-034	ZVI-MW07C	12/3/2009	40	50	1.0 U	1.0 U
20-R2-034	ZVI-MW07C	12/17/2009	40	50	1.0 U	1.0 U
20-R3-033	ZVI-MW07C	1/8/2010	40	50	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B
					1,1,1-TRICHLOROETHANE	1,1,2,2-TETRACHLOROETHANE
					UG/L	UG/L
20-R4-034	ZVI-MW07C	2/18/2010	40	50	1.0 U	1.0 U
20-BASE-036	372-MW1	11/9/2009	2.5	12.5	1.0 U	1.0 U
20-R1-036	372-MW1	12/2/2009	2.5	12.5	1.0 U	1.0 U
20-R2-036	372-MW1	12/18/2009	2.5	12.5	1.0 U	1.0 U
20-R3-035	372-MW1	1/8/2010	2.5	12.5	1.0 U	1.0 U
20-R3-036 (FD)	372-MW1	1/8/2010	2.5	12.5	1.0 U	1.0 U
20-R4-036	372-MW1	2/18/2010	2.5	12.5	1.0 U	1.0 U
20-BASE-035	D03-04	11/9/2009	47	57	1.0 U	1.0 U
20-R1-035	D03-04	12/2/2009	47	57	1.0 U	1.0 U
20-R2-035	D03-04	12/18/2009	47	57	1.0 U	1.0 U
20-R3-034	D03-04	1/8/2010	47	57	1.0 U	1.0 U
20-R4-035	D03-04	2/19/2010	47	57	1.0 U	1.0 U
20-R1-EB-001	EQUIPMENT BLANK	11/30/2009	NA	NA	1.0 U	1.0 U
20-R1-EB-002	EQUIPMENT BLANK	12/1/2009	NA	NA	1.0 U	1.0 U
20-R1-EB-003	EQUIPMENT BLANK	12/2/2009	NA	NA	1.0 U	1.0 U
20-R1-EB-004	EQUIPMENT BLANK	12/3/2009	NA	NA	1.0 U	1.0 U
20-R2-EB-001	EQUIPMENT BLANK	12/14/2009	NA	NA	1.0 U	1.0 U
20-R2-EB-002	EQUIPMENT BLANK	12/15/2009	NA	NA	1.0 U	1.0 U
20-R2-EB-003	EQUIPMENT BLANK	12/16/2009	NA	NA	1.0 UJ	1.0 UJ
20-R2-EB-004	EQUIPMENT BLANK	12/17/2009	NA	NA	1.0 U	1.0 U
20-R3-EB-001	EQUIPMENT BLANK	1/5/2010	NA	NA	1.0 U	1.0 U
20-R3-EB-002	EQUIPMENT BLANK	1/6/2010	NA	NA	1.0 U	1.0 U
20-R3-EB-003	EQUIPMENT BLANK	1/7/2010	NA	NA	1.0 U	1.0 U
20-R3-EB-004	EQUIPMENT BLANK	1/8/2010	NA	NA	1.0 U	1.0 U
20-R4-EB-001	EQUIPMENT BLANK	2/15/2010	NA	NA	1.0 U	1.0 U
20-R4-EB-002	EQUIPMENT BLANK	2/16/2010	NA	NA	1.0 U	1.0 U
20-R4-EB-003	EQUIPMENT BLANK	2/17/2010	NA	NA	1.0 U	1.0 U
20-R4-EB-004	EQUIPMENT BLANK	2/18/2010	NA	NA	1.0 U	1.0 U
20-R4-EB-005	EQUIPMENT BLANK	2/19/2010	NA	NA	1.0 U	1.0 U
20-BASE-TB-001	TRIP BLANK	11/2/2009	NA	NA	1.0 U	1.0 U
20-BASE-TB-002	TRIP BLANK	11/3/2009	NA	NA	1.0 U	1.0 U
20-BASE-TB-003	TRIP BLANK	11/4/2009	NA	NA	1.0 U	1.0 U
20-BASE-TB-004	TRIP BLANK	11/5/2009	NA	NA	1.0 U	1.0 U
20-BASE-TB-005	TRIP BLANK	11/6/2009	NA	NA	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B
					1,1,1-TRICHLOROETHANE	1,1,2,2-TETRACHLOROETHANE
					UG/L	UG/L
20-BASE-TB-006	TRIP BLANK	11/9/2009	NA	NA	1.0 U	1.0 U
20-R1-TB-001	TRIP BLANK	11/30/2009	NA	NA	1.0 U	1.0 U
20-R1-TB-002	TRIP BLANK	12/1/2009	NA	NA	1.0 U	1.0 U
20-R1-TB-003	TRIP BLANK	12/2/2009	NA	NA	1.0 U	1.0 U
20-R1-TB-004	TRIP BLANK	12/3/2009	NA	NA	1.0 U	1.0 U
20-R2-TB-001	TRIP BLANK	12/14/2009	NA	NA	1.0 U	1.0 U
20-R2-TB-002	TRIP BLANK	12/15/2009	NA	NA	1.0 U	1.0 U
20-R2-TB-003	TRIP BLANK	12/16/2009	NA	NA	1.0 U	1.0 U
20-R2-TB-004	TRIP BLANK	12/17/2009	NA	NA	1.0 U	1.0 U
20-R2-TB-005	TRIP BLANK	12/18/2009	NA	NA	1.0 U	1.0 U
20-R3-TB-001	TRIP BLANK	1/5/2010	NA	NA	1.0 U	1.0 U
20-R3-TB-002	TRIP BLANK	1/6/2010	NA	NA	1.0 U	1.0 U
20-R3-TB-003	TRIP BLANK	1/7/2010	NA	NA	1.0 U	1.0 U
20-R3-TB-004	TRIP BLANK	1/8/2010	NA	NA	1.0 U	1.0 U
20-R4-TB-001	TRIP BLANK	2/15/2010	NA	NA	1.0 U	1.0 U
20-R4-TB-002	TRIP BLANK	2/16/2010	NA	NA	1.0 U	1.0 U
20-R4-TB-003	TRIP BLANK	2/17/2010	NA	NA	1.0 U	1.0 U
20-R4-TB-004	TRIP BLANK	2/18/2010	NA	NA	1.0 U	1.0 U
20-R4-TB-005	TRIP BLANK	2/19/2010	NA	NA	1.0 U	1.0 U
FD - field duplicate						
RE - resample to collect anions and alkalinity tests						
NA - not analyzed						

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,1,2-TRICHLOROETHANE	1,1-DICHLOROETHANE	1,1-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-BASE-001	ZVI-MW01A1	11/6/2009	6	11	1.0 U	4.3	1.2
20-R1-001	ZVI-MW01A1	12/3/2009	6	11	1.0 U	11	23
20-R2-001	ZVI-MW01A1	12/16/2009	6	11	1.0 UJ	6.8	9.2
20-R2-002 (FD)	ZVI-MW01A1	12/16/2009	6	11	1.0 UJ	7.3	10
20-R3-001	ZVI-MW01A1	1/6/2010	6	11	1.0 U	6.0	7.4
20-R4-001	ZVI-MW01A1	2/17/2010	6	11	1.0 U	4.9	5.6
20-BASE-002	ZVI-MW01A2	11/9/2009	10	20	1.0 U	26	80
20-R1-002	ZVI-MW01A2	12/2/2009	10	20	1.0 U	27	72
20-R2-003	ZVI-MW01A2	12/15/2009	10	20	1.0 U	39 J	180
20-R3-002	ZVI-MW01A2	1/6/2010	10	20	1.0 U	32	83
20-R4-002	ZVI-MW01A2	2/16/2010	10	20	1.0 U	42	72
20-BASE-003	ZVI-MW01A3	11/6/2009	20	30	0.73 J	5.6	270
20-R1-003	ZVI-MW01A3	12/3/2009	20	30	1.1	5.2	270
20-R1-004 (FD)	ZVI-MW01A3	12/3/2009	20	30	1.0	5.2	290
20-R2-004	ZVI-MW01A3	12/16/2009	20	30	1.9	8.1	570
20-R3-003	ZVI-MW01A3	1/7/2010	20	30	0.61 J	4.9	87
20-R4-003	ZVI-MW01A3	2/17/2010	20	30	0.73 J	5.3	260
20-BASE-004	ZVI-MW01B	11/5/2009	30	40	8.7	13	650
20-R1-005	ZVI-MW01B	12/2/2009	30	40	13	26	2200
20-R2-005	ZVI-MW01B	12/15/2009	30	40	7.0 J	13 J	1500
20-R3-004	ZVI-MW01B	1/7/2010	30	40	12	23	2000
20-R4-004	ZVI-MW01B	2/16/2010	30	40	14	29	2400
20-R4-005 (FD)	ZVI-MW01B	2/16/2010	30	40	13	29	2700
20-BASE-005	ZVI-MW01C	11/6/2009	40	50	1.0 U	1.0 U	0.20 J
20-BASE-006 (FD)	ZVI-MW01C	11/6/2009	40	50	1.0 U	1.0 U	0.23 J
20-R1-006	ZVI-MW01C	12/3/2009	40	50	1.0 U	1.0 U	1.0 U
20-R2-006	ZVI-MW01C	12/17/2009	40	50	1.0 U	1.0 U	0.56 J
20-R3-005	ZVI-MW01C	1/7/2010	40	50	1.0 U	1.0 U	0.42 J
20-R4-006	ZVI-MW01C	2/17/2010	40	50	1.0 U	1.0 U	0.20 J
20-BASE-007	ZVI-MW01D	11/9/2009	50	60	1.0 U	1.0 U	1.0 U
20-R1-007	ZVI-MW01D	12/2/2009	50	60	1.0 U	1.0 U	1.0 U
20-R2-007	ZVI-MW01D	12/16/2009	50	60	1.0 U	1.0 U	1.0 U
20-R3-006	ZVI-MW01D	1/7/2010	50	60	1.0 U	1.0 U	0.21 J
20-R4-007	ZVI-MW01D	2/16/2010	50	60	1.0 U	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,1,2-TRICHLOROETHANE	1,1-DICHLOROETHANE	1,1-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-R4-008 (FD)	ZVI-MW01D	2/16/2010	50	60	1.0 U	1.0 U	1.0 U
20-BASE-008	ZVI-MW02A2	11/4/2009	10	20	1.0 U	11	75
20-R1-008	ZVI-MW02A2	12/1/2009	10	20	1.0 U	14	89
20-R2-008	ZVI-MW02A2	12/16/2009	10	20	1.0 U	14	89
20-R3-007	ZVI-MW02A2	1/7/2010	10	20	1.0 U	13	79
20-R4-009	ZVI-MW02A2	2/16/2010	10	20	1.0 U	15	82
20-BASE-009	ZVI-MW02A3	11/4/2009	20	30	5.2	17	1500
20-R1-009	ZVI-MW02A3	11/30/2009	20	30	1.4	8.9	400
20-R2-009	ZVI-MW02A3	12/16/2009	20	30	1.3 J	8.4 J	410
20-R3-008	ZVI-MW02A3	1/8/2010	20	30	2.4 J	10 J	460
20-R4-010	ZVI-MW02A3	2/15/2010	20	30	2.0	7.2	240
20-BASE-010	ZVI-MW02B	11/3/2009	30	40	0.42 J	30	2400
20-R1-010	ZVI-MW02B	12/1/2009	30	40	0.32 J	35	3200
20-R2-010	ZVI-MW02B	12/16/2009	30	40	0.48 J	39 J	4300
20-R2-011 (FD)	ZVI-MW02B	12/16/2009	30	40	0.43 J	33 J	4400
20-R3-009	ZVI-MW02B	1/7/2010	30	40	0.56 J	35	3700
20-R4-011	ZVI-MW02B	2/15/2010	30	40	0.31 J	26	2100
20-BASE-011	ZVI-MW02C	11/9/2009	40	50	1.0 U	1.0 U	1.0 U
20-R1-011	ZVI-MW02C	11/30/2009	40	50	1.0 U	1.0 U	2.3
20-R2-012	ZVI-MW02C	12/16/2009	40	50	1.0 U	1.0 U	2.1
20-R3-010	ZVI-MW02C	1/7/2010	40	50	1.0 U	1.0 U	1.8
20-R4-012	ZVI-MW02C	2/15/2010	40	50	1.0 U	1.0 U	0.40 J
20-R4-013 (FD)	ZVI-MW02C	2/15/2010	40	50	1.0 U	1.0 U	0.35 J
20-BASE-012	ZVI-MW03A2	11/5/2009	10	20	1.0 U	2.6	20
20-R1-012	ZVI-MW03A2	12/2/2009	10	20	1.0 U	2.1	9.7
20-R2-013	ZVI-MW03A2	12/14/2009	10	20	1.0 U	2.5	19
20-R3-011	ZVI-MW03A2	1/5/2010	10	20	1.0 U	2.4	16
20-R4-014	ZVI-MW03A2	2/18/2010	10	20	1.0 U	2.4	15
20-BASE-013	ZVI-MW03A3	11/6/2009	20	30	1.0	7.8	290
20-R1-013	ZVI-MW03A3	12/2/2009	20	30	1.0 U	2.8	51
20-R2-014	ZVI-MW03A3	12/14/2009	20	30	1.0 U	3.2	76
20-R3-012	ZVI-MW03A3	1/5/2010	20	30	1.0 U	2.8	60
20-R4-015	ZVI-MW03A3	2/19/2010	20	30	1.0 U	3.2	78
20-BASE-014	ZVI-MW03B	11/6/2009	30	40	0.21 J	1.8	180

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,1,2-TRICHLOROETHANE	1,1-DICHLOROETHANE	1,1-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-BASE-015 (FD)	ZVI-MW03B	11/6/2009	30	40	0.26 J	2.0	130
20-R1-014	ZVI-MW03B	12/2/2009	30	40	1.0 U	1.3	110
20-R2-015	ZVI-MW03B	12/15/2009	30	40	0.35 J	2.8	310
20-R3-013	ZVI-MW03B	1/5/2010	30	40	0.26 J	1.9	220
20-R4-016	ZVI-MW03B	2/18/2010	30	40	1.0 U	1.9	160
20-BASE-016	ZVI-MW03C	11/6/2009	40	50	1.0 U	1.0 U	0.63 J
20-R1-015	ZVI-MW03C	12/2/2009	40	50	1.0 U	1.0 U	1.3
20-R1-016 (FD)	ZVI-MW03C	12/2/2009	40	50	1.0 U	1.0 U	1.3
20-R2-016	ZVI-MW03C	12/14/2009	40	50	1.0 U	1.0 U	1.4
20-R3-014	ZVI-MW03C	1/5/2010	40	50	1.0 U	1.0 U	0.66 J
20-R4-017	ZVI-MW03C	2/18/2010	40	50	1.0 U	1.0 U	0.94 J
20-BASE-017	ZVI-MW04A1	11/4/2009	6	11	1.0 U	2.3	1.0 U
20-R1-017	ZVI-MW04A1	12/1/2009	6	11	1.0 U	4.2	0.33 J
20-R2-017	ZVI-MW04A1	12/16/2009	6	11	1.0 U	1.5	1.0 U
20-R3-015	ZVI-MW04A1	1/6/2010	6	11	1.0 U	3.8	1.0 U
20-R4-018	ZVI-MW04A1	2/17/2010	6	11	1.0 U	4.2	1.0 U
20-BASE-018	ZVI-MW04A2	11/5/2009	10	20	1.0 U	3.4 J	16 J
20-R1-018	ZVI-MW04A2	12/2/2009	10	20	1.0 U	2.7 J	12 J
20-R2-018	ZVI-MW04A2	12/17/2009	10	20	1.0 U	2.8	5.6
20-R3-016	ZVI-MW04A2	1/6/2010	10	20	1.0 U	2.7	11
20-R4-019	ZVI-MW04A2	2/16/2010	10	20	1.0 U	3.8	20
20-BASE-019	ZVI-MW04A3	11/4/2009	20	30	0.52 J	6.2	310
20-R1-019	ZVI-MW04A3	12/1/2009	20	30	0.39 J	4.9	110
20-R2-019	ZVI-MW04A3	12/16/2009	20	30	0.35 J	4.6	140
20-R3-017	ZVI-MW04A3	1/7/2010	20	30	0.40 J	4.9	190
20-R4-020	ZVI-MW04A3	2/17/2010	20	30	1.6	8.7	380
20-BASE-020	ZVI-MW04B	11/5/2009	30	40	0.61 J	12	760
20-R1-020	ZVI-MW04B	12/2/2009	30	40	0.89 J	13 J	460
20-R2-020	ZVI-MW04B	12/17/2009	30	40	0.71 J	14	700
20-R3-018	ZVI-MW04B	1/6/2010	30	40	1.0 U	0.80 J	43
20-R4-021	ZVI-MW04B	2/16/2010	30	40	0.58 J	16	1100
20-BASE-021	ZVI-MW04C	11/9/2009	40	50	1.0 U	1.0 U	1.0 U
20-R1-021	ZVI-MW04C	12/1/2009	40	50	1.0 U	1.0 U	1.0 U
20-R2-021	ZVI-MW04C	12/16/2009	40	50	1.0 U	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,1,2-TRICHLOROETHANE	1,1-DICHLOROETHANE	1,1-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-R3-019	ZVI-MW04C	1/6/2010	40	50	1.0 U	1.0 U	1.0 U
20-R4-022	ZVI-MW04C	2/16/2010	40	50	1.0 U	1.0 U	1.0 U
20-BASE-022	ZVI-MW05A2	11/5/2009	10	20	1.0 U	1.0	1.0 U
20-R1-022	ZVI-MW05A2	12/1/2009	10	20	1.0 U	1.9	3.6
20-R2-022	ZVI-MW05A2	12/17/2009	10	20	1.0 U	1.6	1.1
20-R3-020	ZVI-MW05A2	1/5/2010	10	20	1.0 U	1.5	0.45 J
20-R4-023	ZVI-MW05A2	2/15/2010	10	20	1.0 U	1.9	0.44 J
20-BASE-023	ZVI-MW05A3	11/5/2009	20	30	0.35 J	3.2	170
20-R1-023	ZVI-MW05A3	12/1/2009	20	30	0.38 J	5.0	190
20-R2-023	ZVI-MW05A3	12/15/2009	20	30	0.53 J	6.2 J	330
20-R3-021	ZVI-MW05A3	1/5/2010	20	30	0.53 J	5.6	290
20-R3-022 (FD)	ZVI-MW05A3	1/5/2010	20	30	0.55 J	5.7	310
20-R4-024	ZVI-MW05A3	2/15/2010	20	30	0.59 J	5.9	310
20-BASE-024	ZVI-MW05B	11/5/2009	30	40	1.0 U	6.5	320
20-BASE-025 (FD)	ZVI-MW05B	11/5/2009	30	40	1.0 U	7.1	410
20-R1-024	ZVI-MW05B	12/1/2009	30	40	1.0 U	3.7	140
20-R2-024	ZVI-MW05B	12/15/2009	30	40	1.0 U	4.4	180
20-R3-023	ZVI-MW05B	1/5/2010	30	40	0.26 J	7.9	440
20-R4-025	ZVI-MW05B	2/16/2010	30	40	0.24 J	9.1	480
20-BASE-026	ZVI-MW05C	11/9/2009	40	50	1.0 U	0.72 J	28
20-R1-025	ZVI-MW05C	12/1/2009	40	50	1.0 U	1.3	40
20-R1-026 (FD)	ZVI-MW05C	12/1/2009	40	50	1.0 U	1.3	40
20-R2-025	ZVI-MW05C	12/15/2009	40	50	1.0 U	1.5	60
20-R3-024	ZVI-MW05C	1/5/2010	40	50	1.0 U	2.4	110
20-R4-026	ZVI-MW05C	2/15/2010	40	50	1.0 U	2.7	110
20-BASE-027	ZVI-MW06A2	11/6/2009	10	20	1.0 U	79	160
20-R1-027	ZVI-MW06A2	11/30/2009	10	20	1.0 U	85	120
20-R2-026	ZVI-MW06A2	12/14/2009	10	20	1.0 U	52	47
20-R3-025	ZVI-MW06A2	1/6/2010	10	20	1.0 U	71	16
20-R4-027	ZVI-MW06A2	2/18/2010	10	20	1.0 U	74	62
20-BASE-028	ZVI-MW06A3	11/6/2009	20	30	7.3	16	1100
20-R1-028	ZVI-MW06A3	11/30/2009	20	30	0.62 J	9.0	410
20-R2-027	ZVI-MW06A3	12/15/2009	20	30	13 J	20 J	1200
20-R2-028 (FD)	ZVI-MW06A3	12/15/2009	20	30	13 J	21 J	1000

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,1,2-TRICHLOROETHANE	1,1-DICHLOROETHANE	1,1-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-R3-026	ZVI-MW06A3	1/5/2010	20	30	2.0	9.0	550
20-R4-028	ZVI-MW06A3	2/17/2010	20	30	1.4	7.6	350
20-BASE-029	ZVI-MW06B	11/9/2009	30	40	24	48	5800
20-R1-029	ZVI-MW06B	11/30/2009	30	40	33	46	5200
20-R2-029	ZVI-MW06B	12/14/2009	30	40	33 J	39	4400
20-R3-027	ZVI-MW06B	1/6/2010	30	40	30	40	4900
20-R4-029	ZVI-MW06B	2/19/2010	30	40	20	49	4700
20-BASE-030	ZVI-MW06C	11/6/2009	40	50	1.0 U	0.89 J	33
20-R1-030	ZVI-MW06C	11/30/2009	40	50	1.0 U	0.49 J	66
20-R2-030	ZVI-MW06C	12/14/2009	40	50	1.0 U	0.41 J	31
20-R3-028	ZVI-MW06C	1/6/2010	40	50	1.0 U	0.39 J	49
20-R4-030	ZVI-MW06C	2/19/2010	40	50	1.0 U	0.45 J	46
20-BASE-031	ZVI-MW07A2	11/2/2009	10	20	1.0 U	28	44
20-BASE-031A (RE)	ZVI-MW07A2	11/3/2009	10	20	NA	NA	NA
20-R1-031	ZVI-MW07A2	12/3/2009	10	20	1.0 U	79	84
20-R2-031	ZVI-MW07A2	12/17/2009	10	20	1.0 U	69 J	51 J
20-R3-029	ZVI-MW07A2	1/8/2010	10	20	5.0 U	67 J	170 J
20-R3-030 (FD)	ZVI-MW07A2	1/8/2010	10	20	5.0 U	66 J	140 J
20-R4-031	ZVI-MW07A2	2/17/2010	10	20	1.0 U	78 J	76 J
20-BASE-032	ZVI-MW07A3	11/2/2009	20	30	16	22	2300
20-R1-032	ZVI-MW07A3	12/3/2009	20	30	10	19	1500
20-R2-032	ZVI-MW07A3	12/17/2009	20	30	2.8	12	630
20-R3-031	ZVI-MW07A3	1/8/2010	20	30	10	20	1600
20-R4-032	ZVI-MW07A3	2/18/2010	20	30	14	22	1500
20-BASE-033	ZVI-MW07B	11/3/2009	30	40	34	44	3700
20-R1-033	ZVI-MW07B	12/3/2009	30	40	36	53	4500
20-R2-033	ZVI-MW07B	12/17/2009	30	40	32	57	6200
20-R3-032	ZVI-MW07B	1/8/2010	30	40	26 J	49 J	7200
20-R4-033	ZVI-MW07B	2/18/2010	30	40	36	52	4800
20-BASE-034	ZVI-MW07C	11/2/2009	40	50	1.3 J	3.0 J	270
20-BASE-034A (RE)	ZVI-MW07C	11/3/2009	40	50	NA	NA	NA
20-R1-034	ZVI-MW07C	12/3/2009	40	50	2.9	8.2	1500
20-R2-034	ZVI-MW07C	12/17/2009	40	50	2.8	8.6	1400
20-R3-033	ZVI-MW07C	1/8/2010	40	50	3.0	10	1800

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,1,2-TRICHLOROETHANE	1,1-DICHLOROETHANE	1,1-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-R4-034	ZVI-MW07C	2/18/2010	40	50	3.5	11	1600
20-BASE-036	372-MW1	11/9/2009	2.5	12.5	1.0 U	1.0 U	1.0 U
20-R1-036	372-MW1	12/2/2009	2.5	12.5	1.0 U	1.0 U	1.0 U
20-R2-036	372-MW1	12/18/2009	2.5	12.5	1.0 U	1.0 U	1.0 U
20-R3-035	372-MW1	1/8/2010	2.5	12.5	1.0 U	1.0 U	1.0 U
20-R3-036 (FD)	372-MW1	1/8/2010	2.5	12.5	1.0 U	1.0 U	1.0 U
20-R4-036	372-MW1	2/18/2010	2.5	12.5	1.0 U	1.0 U	1.0 U
20-BASE-035	D03-04	11/9/2009	47	57	1.0 U	1.0 U	0.31 J
20-R1-035	D03-04	12/2/2009	47	57	1.0 U	1.0 U	8.0
20-R2-035	D03-04	12/18/2009	47	57	1.0 U	1.0 U	4.1 J
20-R3-034	D03-04	1/8/2010	47	57	1.0 U	1.0 U	3.8
20-R4-035	D03-04	2/19/2010	47	57	1.0 U	1.0 U	0.76 J
20-R1-EB-001	EQUIPMENT BLANK	11/30/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-EB-002	EQUIPMENT BLANK	12/1/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-EB-003	EQUIPMENT BLANK	12/2/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-EB-004	EQUIPMENT BLANK	12/3/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-EB-001	EQUIPMENT BLANK	12/14/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-EB-002	EQUIPMENT BLANK	12/15/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-EB-003	EQUIPMENT BLANK	12/16/2009	NA	NA	1.0 UJ	1.0 UJ	1.0 UJ
20-R2-EB-004	EQUIPMENT BLANK	12/17/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-EB-001	EQUIPMENT BLANK	1/5/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-EB-002	EQUIPMENT BLANK	1/6/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-EB-003	EQUIPMENT BLANK	1/7/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-EB-004	EQUIPMENT BLANK	1/8/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-EB-001	EQUIPMENT BLANK	2/15/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-EB-002	EQUIPMENT BLANK	2/16/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-EB-003	EQUIPMENT BLANK	2/17/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-EB-004	EQUIPMENT BLANK	2/18/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-EB-005	EQUIPMENT BLANK	2/19/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-BASE-TB-001	TRIP BLANK	11/2/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-BASE-TB-002	TRIP BLANK	11/3/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-BASE-TB-003	TRIP BLANK	11/4/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-BASE-TB-004	TRIP BLANK	11/5/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-BASE-TB-005	TRIP BLANK	11/6/2009	NA	NA	1.0 U	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,1,2-TRICHLOROETHANE	1,1-DICHLOROETHANE	1,1-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-BASE-TB-006	TRIP BLANK	11/9/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-TB-001	TRIP BLANK	11/30/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-TB-002	TRIP BLANK	12/1/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-TB-003	TRIP BLANK	12/2/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-TB-004	TRIP BLANK	12/3/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-TB-001	TRIP BLANK	12/14/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-TB-002	TRIP BLANK	12/15/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-TB-003	TRIP BLANK	12/16/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-TB-004	TRIP BLANK	12/17/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-TB-005	TRIP BLANK	12/18/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-TB-001	TRIP BLANK	1/5/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-TB-002	TRIP BLANK	1/6/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-TB-003	TRIP BLANK	1/7/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-TB-004	TRIP BLANK	1/8/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-TB-001	TRIP BLANK	2/15/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-TB-002	TRIP BLANK	2/16/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-TB-003	TRIP BLANK	2/17/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-TB-004	TRIP BLANK	2/18/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-TB-005	TRIP BLANK	2/19/2010	NA	NA	1.0 U	1.0 U	1.0 U
FD - field duplicate							
RE - resample to collect anions and alkalinity tests							
NA - not analyzed							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,2-DICHLOROETHANE	CHLOROETHANE	CHLOROMETHANE
					UG/L	UG/L	UG/L
20-BASE-001	ZVI-MW01A1	11/6/2009	6	11	0.50 U	0.50 U	0.37 J
20-R1-001	ZVI-MW01A1	12/3/2009	6	11	0.50 U	0.50 U	1.0 U
20-R2-001	ZVI-MW01A1	12/16/2009	6	11	0.50 U	0.50 U	1.0 U
20-R2-002 (FD)	ZVI-MW01A1	12/16/2009	6	11	0.50 U	0.50 U	1.0 U
20-R3-001	ZVI-MW01A1	1/6/2010	6	11	0.50 U	0.50 U	1.0 U
20-R4-001	ZVI-MW01A1	2/17/2010	6	11	0.50 U	0.50 U	1.0 U
20-BASE-002	ZVI-MW01A2	11/9/2009	10	20	0.50 U	0.50 U	0.89 J
20-R1-002	ZVI-MW01A2	12/2/2009	10	20	0.36 J	0.50 U	1.0 U
20-R2-003	ZVI-MW01A2	12/15/2009	10	20	0.50 U	0.50 U	1.0 U
20-R3-002	ZVI-MW01A2	1/6/2010	10	20	0.27 J	0.50 U	1.0 U
20-R4-002	ZVI-MW01A2	2/16/2010	10	20	0.34 J	0.50 U	1.0 U
20-BASE-003	ZVI-MW01A3	11/6/2009	20	30	1.2	0.50 U	1.0 U
20-R1-003	ZVI-MW01A3	12/3/2009	20	30	1.1	0.50 U	1.0 U
20-R1-004 (FD)	ZVI-MW01A3	12/3/2009	20	30	1.1	0.50 U	1.0 U
20-R2-004	ZVI-MW01A3	12/16/2009	20	30	2.6	0.50 U	1.0 U
20-R3-003	ZVI-MW01A3	1/7/2010	20	30	1.1	0.50 U	1.0 U
20-R4-003	ZVI-MW01A3	2/17/2010	20	30	1.3	0.50 U	1.0 U
20-BASE-004	ZVI-MW01B	11/5/2009	30	40	16	0.50 U	0.66 J
20-R1-005	ZVI-MW01B	12/2/2009	30	40	21	0.50 U	2.1
20-R2-005	ZVI-MW01B	12/15/2009	30	40	14 J	0.50 U	0.86 J
20-R3-004	ZVI-MW01B	1/7/2010	30	40	20	0.50 U	1.0 U
20-R4-004	ZVI-MW01B	2/16/2010	30	40	21	0.50 U	1.0 U
20-R4-005 (FD)	ZVI-MW01B	2/16/2010	30	40	20	0.50 U	1.0 U
20-BASE-005	ZVI-MW01C	11/6/2009	40	50	0.50 U	0.50 U	1.0 U
20-BASE-006 (FD)	ZVI-MW01C	11/6/2009	40	50	0.50 U	0.50 U	1.0 U
20-R1-006	ZVI-MW01C	12/3/2009	40	50	0.50 U	0.50 U	1.0 U
20-R2-006	ZVI-MW01C	12/17/2009	40	50	0.50 U	0.50 U	1.0 U
20-R3-005	ZVI-MW01C	1/7/2010	40	50	0.50 U	0.50 U	1.0 U
20-R4-006	ZVI-MW01C	2/17/2010	40	50	0.50 U	0.50 U	1.0 U
20-BASE-007	ZVI-MW01D	11/9/2009	50	60	0.50 U	0.50 U	1.0 U
20-R1-007	ZVI-MW01D	12/2/2009	50	60	0.50 U	0.50 U	1.0 U
20-R2-007	ZVI-MW01D	12/16/2009	50	60	0.50 U	0.50 U	0.22 J
20-R3-006	ZVI-MW01D	1/7/2010	50	60	0.50 U	0.50 U	0.20 J
20-R4-007	ZVI-MW01D	2/16/2010	50	60	0.50 U	0.50 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,2-DICHLOROETHANE	CHLOROETHANE	CHLOROMETHANE
					UG/L	UG/L	UG/L
20-R4-008 (FD)	ZVI-MW01D	2/16/2010	50	60	0.50 U	0.50 U	1.0 U
20-BASE-008	ZVI-MW02A2	11/4/2009	10	20	0.25 J	0.50 U	2.5
20-R1-008	ZVI-MW02A2	12/1/2009	10	20	0.36 J	0.50 UJ	1.0 UJ
20-R2-008	ZVI-MW02A2	12/16/2009	10	20	0.32 J	0.50 U	0.43 J
20-R3-007	ZVI-MW02A2	1/7/2010	10	20	0.28 J	0.50 U	0.39 J
20-R4-009	ZVI-MW02A2	2/16/2010	10	20	0.29 J	0.50 U	1.0 J
20-BASE-009	ZVI-MW02A3	11/4/2009	20	30	10	0.50 U	4.4
20-R1-009	ZVI-MW02A3	11/30/2009	20	30	2.4	0.50 U	4.5
20-R2-009	ZVI-MW02A3	12/16/2009	20	30	2.6 J	0.50 U	1.0 U
20-R3-008	ZVI-MW02A3	1/8/2010	20	30	4.6 J	0.50 U	0.67 J
20-R4-010	ZVI-MW02A3	2/15/2010	20	30	3.4	0.50 U	1.0 U
20-BASE-010	ZVI-MW02B	11/3/2009	30	40	25	0.50 U	0.76 J
20-R1-010	ZVI-MW02B	12/1/2009	30	40	29	0.50 U	1.7 J
20-R2-010	ZVI-MW02B	12/16/2009	30	40	32 J	0.50 U	1.2 J
20-R2-011 (FD)	ZVI-MW02B	12/16/2009	30	40	32 J	0.50 U	0.91 J
20-R3-009	ZVI-MW02B	1/7/2010	30	40	26	0.50 U	0.46 J
20-R4-011	ZVI-MW02B	2/15/2010	30	40	23	0.50 U	0.60 J
20-BASE-011	ZVI-MW02C	11/9/2009	40	50	0.50 U	0.50 U	1.0 U
20-R1-011	ZVI-MW02C	11/30/2009	40	50	0.50 U	0.50 U	1.0 UJ
20-R2-012	ZVI-MW02C	12/16/2009	40	50	0.50 U	0.50 U	1.0 U
20-R3-010	ZVI-MW02C	1/7/2010	40	50	0.50 U	0.50 U	1.0 U
20-R4-012	ZVI-MW02C	2/15/2010	40	50	0.50 U	0.50 U	1.0 U
20-R4-013 (FD)	ZVI-MW02C	2/15/2010	40	50	0.50 U	0.50 U	1.0 U
20-BASE-012	ZVI-MW03A2	11/5/2009	10	20	0.50 U	0.50 U	3.3
20-R1-012	ZVI-MW03A2	12/2/2009	10	20	0.50 U	0.50 U	0.56 J
20-R2-013	ZVI-MW03A2	12/14/2009	10	20	0.50 U	0.50 U	1.0 U
20-R3-011	ZVI-MW03A2	1/5/2010	10	20	0.50 U	0.50 U	1.0 U
20-R4-014	ZVI-MW03A2	2/18/2010	10	20	0.50 U	0.50 U	1.0 U
20-BASE-013	ZVI-MW03A3	11/6/2009	20	30	1.4	0.50 U	1.0 U
20-R1-013	ZVI-MW03A3	12/2/2009	20	30	0.50 U	0.50 UJ	1.0 U
20-R2-014	ZVI-MW03A3	12/14/2009	20	30	0.26 J	0.50 U	1.0 U
20-R3-012	ZVI-MW03A3	1/5/2010	20	30	0.50 U	0.50 U	1.0 U
20-R4-015	ZVI-MW03A3	2/19/2010	20	30	0.31 J	0.50 U	1.0 U
20-BASE-014	ZVI-MW03B	11/6/2009	30	40	0.55	0.50 U	0.92 J

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,2-DICHLOROETHANE	CHLOROETHANE	CHLOROMETHANE
					UG/L	UG/L	UG/L
20-BASE-015 (FD)	ZVI-MW03B	11/6/2009	30	40	0.65	0.50 U	1.2
20-R1-014	ZVI-MW03B	12/2/2009	30	40	0.24 J	0.50 U	1.3
20-R2-015	ZVI-MW03B	12/15/2009	30	40	0.93	0.50 U	1.4
20-R3-013	ZVI-MW03B	1/5/2010	30	40	0.60	0.50 U	0.66 J
20-R4-016	ZVI-MW03B	2/18/2010	30	40	0.60	0.50 U	1.9
20-BASE-016	ZVI-MW03C	11/6/2009	40	50	0.50 U	0.50 U	0.22 J
20-R1-015	ZVI-MW03C	12/2/2009	40	50	0.50 U	0.50 U	1.0 U
20-R1-016 (FD)	ZVI-MW03C	12/2/2009	40	50	0.50 U	0.50 U	1.0 U
20-R2-016	ZVI-MW03C	12/14/2009	40	50	0.50 U	0.50 U	1.0 U
20-R3-014	ZVI-MW03C	1/5/2010	40	50	0.50 U	0.50 U	1.0 U
20-R4-017	ZVI-MW03C	2/18/2010	40	50	0.50 U	0.50 U	1.0 U
20-BASE-017	ZVI-MW04A1	11/4/2009	6	11	0.50 U	0.50 U	1.0 U
20-R1-017	ZVI-MW04A1	12/1/2009	6	11	0.50 U	0.50 UJ	1.0 U
20-R2-017	ZVI-MW04A1	12/16/2009	6	11	0.50 U	0.50 U	1.0 U
20-R3-015	ZVI-MW04A1	1/6/2010	6	11	0.50 U	0.50 U	1.0 U
20-R4-018	ZVI-MW04A1	2/17/2010	6	11	0.50 U	0.50 U	1.0 U
20-BASE-018	ZVI-MW04A2	11/5/2009	10	20	0.50 U	0.50 U	3.6 J
20-R1-018	ZVI-MW04A2	12/2/2009	10	20	0.50 U	0.50 U	3.6 J
20-R2-018	ZVI-MW04A2	12/17/2009	10	20	0.50 U	1.6	1.0 U
20-R3-016	ZVI-MW04A2	1/6/2010	10	20	0.50 U	0.50 U	1.0 U
20-R4-019	ZVI-MW04A2	2/16/2010	10	20	0.50 U	0.50 U	1.0 U
20-BASE-019	ZVI-MW04A3	11/4/2009	20	30	1.1	0.50 U	0.39 J
20-R1-019	ZVI-MW04A3	12/1/2009	20	30	0.97	0.50 U	1.0 U
20-R2-019	ZVI-MW04A3	12/16/2009	20	30	0.92	0.50 U	1.0 UJ
20-R3-017	ZVI-MW04A3	1/7/2010	20	30	0.79	0.50 U	1.0 U
20-R4-020	ZVI-MW04A3	2/17/2010	20	30	3.2	0.50 U	0.75 J
20-BASE-020	ZVI-MW04B	11/5/2009	30	40	7.9	0.50 U	2.0
20-R1-020	ZVI-MW04B	12/2/2009	30	40	12 J	0.50 U	0.67 J
20-R2-020	ZVI-MW04B	12/17/2009	30	40	11	0.50 U	0.65 J
20-R3-018	ZVI-MW04B	1/6/2010	30	40	0.50 J	0.36 J	1.0 U
20-R4-021	ZVI-MW04B	2/16/2010	30	40	9.3	0.50 U	1.0 U
20-BASE-021	ZVI-MW04C	11/9/2009	40	50	0.50 U	0.50 U	1.0 U
20-R1-021	ZVI-MW04C	12/1/2009	40	50	0.50 U	0.50 UJ	1.0 UJ
20-R2-021	ZVI-MW04C	12/16/2009	40	50	0.50 U	0.50 U	1.0 UJ

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,2-DICHLOROETHANE	CHLOROETHANE	CHLOROMETHANE
					UG/L	UG/L	UG/L
20-R3-019	ZVI-MW04C	1/6/2010	40	50	0.50 U	0.50 U	1.0 U
20-R4-022	ZVI-MW04C	2/16/2010	40	50	0.50 U	0.50 U	1.0 U
20-BASE-022	ZVI-MW05A2	11/5/2009	10	20	0.50 U	0.50 U	1.0 U
20-R1-022	ZVI-MW05A2	12/1/2009	10	20	0.50 U	0.50 UJ	1.0 UJ
20-R2-022	ZVI-MW05A2	12/17/2009	10	20	0.50 U	0.50 U	1.0 U
20-R3-020	ZVI-MW05A2	1/5/2010	10	20	0.50 U	0.50 U	1.0 U
20-R4-023	ZVI-MW05A2	2/15/2010	10	20	0.50 U	0.50 U	1.0 U
20-BASE-023	ZVI-MW05A3	11/5/2009	20	30	0.71	0.50 U	1.0 U
20-R1-023	ZVI-MW05A3	12/1/2009	20	30	0.78	0.50 UJ	1.0 UJ
20-R2-023	ZVI-MW05A3	12/15/2009	20	30	1.2 J	0.50 UJ	1.0 UJ
20-R3-021	ZVI-MW05A3	1/5/2010	20	30	0.92	0.50 U	1.0 U
20-R3-022 (FD)	ZVI-MW05A3	1/5/2010	20	30	0.93	0.50 U	1.0 U
20-R4-024	ZVI-MW05A3	2/15/2010	20	30	1.1	0.50 U	1.0 U
20-BASE-024	ZVI-MW05B	11/5/2009	30	40	3.6	0.50 U	1.2
20-BASE-025 (FD)	ZVI-MW05B	11/5/2009	30	40	3.8	0.50 U	1.2
20-R1-024	ZVI-MW05B	12/1/2009	30	40	2.5	0.50 U	0.66 J
20-R2-024	ZVI-MW05B	12/15/2009	30	40	2.8	0.50 U	1.0 U
20-R3-023	ZVI-MW05B	1/5/2010	30	40	4.3	0.50 U	0.28 J
20-R4-025	ZVI-MW05B	2/16/2010	30	40	4.1	0.50 U	0.54 J
20-BASE-026	ZVI-MW05C	11/9/2009	40	50	0.24 J	0.50 U	0.24 J
20-R1-025	ZVI-MW05C	12/1/2009	40	50	0.50 J	0.50 UJ	1.0 U
20-R1-026 (FD)	ZVI-MW05C	12/1/2009	40	50	0.59	0.50 UJ	1.0 UJ
20-R2-025	ZVI-MW05C	12/15/2009	40	50	0.58	0.50 U	1.0 U
20-R3-024	ZVI-MW05C	1/5/2010	40	50	0.71	0.50 U	1.0 U
20-R4-026	ZVI-MW05C	2/15/2010	40	50	0.81	0.50 U	1.0 U
20-BASE-027	ZVI-MW06A2	11/6/2009	10	20	3.1 J	0.50 U	3.3 J
20-R1-027	ZVI-MW06A2	11/30/2009	10	20	1.5	0.50 U	1.0 U
20-R2-026	ZVI-MW06A2	12/14/2009	10	20	1.8	0.50 U	0.70 J
20-R3-025	ZVI-MW06A2	1/6/2010	10	20	1.6	0.96	1.5
20-R4-027	ZVI-MW06A2	2/18/2010	10	20	2.4	0.50 U	1.0 U
20-BASE-028	ZVI-MW06A3	11/6/2009	20	30	8.6	0.50 U	1.7
20-R1-028	ZVI-MW06A3	11/30/2009	20	30	1.2	0.50 U	1.0 U
20-R2-027	ZVI-MW06A3	12/15/2009	20	30	16 J	0.50 U	1.0 U
20-R2-028 (FD)	ZVI-MW06A3	12/15/2009	20	30	17 J	0.50 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,2-DICHLOROETHANE	CHLOROETHANE	CHLOROMETHANE
					UG/L	UG/L	UG/L
20-R3-026	ZVI-MW06A3	1/5/2010	20	30	2.4	0.50 U	1.0 U
20-R4-028	ZVI-MW06A3	2/17/2010	20	30	2.0	0.50 U	1.0 U
20-BASE-029	ZVI-MW06B	11/9/2009	30	40	36	0.50 U	3.9
20-R1-029	ZVI-MW06B	11/30/2009	30	40	33	0.50 U	0.26 J
20-R2-029	ZVI-MW06B	12/14/2009	30	40	41	0.50 U	1.5 J
20-R3-027	ZVI-MW06B	1/6/2010	30	40	34	0.50 U	1.6
20-R4-029	ZVI-MW06B	2/19/2010	30	40	44	0.50 U	2.8
20-BASE-030	ZVI-MW06C	11/6/2009	40	50	0.50 U	0.50 U	1.0 U
20-R1-030	ZVI-MW06C	11/30/2009	40	50	0.48 J	0.50 U	1.0 U
20-R2-030	ZVI-MW06C	12/14/2009	40	50	0.53	0.50 U	1.0 U
20-R3-028	ZVI-MW06C	1/6/2010	40	50	0.41 J	0.50 U	1.0 U
20-R4-030	ZVI-MW06C	2/19/2010	40	50	0.44 J	0.50 U	1.0 U
20-BASE-031	ZVI-MW07A2	11/2/2009	10	20	0.79	0.29 J	1.4
20-BASE-031A (RE)	ZVI-MW07A2	11/3/2009	10	20	NA	NA	NA
20-R1-031	ZVI-MW07A2	12/3/2009	10	20	0.50 U	0.50 U	1.0 U
20-R2-031	ZVI-MW07A2	12/17/2009	10	20	1.7	2.1	2.1
20-R3-029	ZVI-MW07A2	1/8/2010	10	20	2.5 U	2.5 U	2.9 J
20-R3-030 (FD)	ZVI-MW07A2	1/8/2010	10	20	2.5 U	2.5 U	3.0 J
20-R4-031	ZVI-MW07A2	2/17/2010	10	20	1.8 J	2.1 J	1.0 U
20-BASE-032	ZVI-MW07A3	11/2/2009	20	30	16	0.50 U	3.3
20-R1-032	ZVI-MW07A3	12/3/2009	20	30	7.9	0.50 U	1.0 U
20-R2-032	ZVI-MW07A3	12/17/2009	20	30	3.3	0.50 U	1.0 U
20-R3-031	ZVI-MW07A3	1/8/2010	20	30	12	0.50 U	1.0 U
20-R4-032	ZVI-MW07A3	2/18/2010	20	30	12	0.50 U	1.0 U
20-BASE-033	ZVI-MW07B	11/3/2009	30	40	56	0.50 U	0.90 J
20-R1-033	ZVI-MW07B	12/3/2009	30	40	63	0.50 U	2.4
20-R2-033	ZVI-MW07B	12/17/2009	30	40	58	0.50 U	2.4
20-R3-032	ZVI-MW07B	1/8/2010	30	40	65 J	0.50 U	2.4 J
20-R4-033	ZVI-MW07B	2/18/2010	30	40	55	0.50 U	0.96 J
20-BASE-034	ZVI-MW07C	11/2/2009	40	50	4.0 J	0.50 U	1.0 U
20-BASE-034A (RE)	ZVI-MW07C	11/3/2009	40	50	NA	NA	NA
20-R1-034	ZVI-MW07C	12/3/2009	40	50	9.6	0.50 U	1.0 U
20-R2-034	ZVI-MW07C	12/17/2009	40	50	9.4	0.50 U	1.0 U
20-R3-033	ZVI-MW07C	1/8/2010	40	50	11	0.50 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,2-DICHLOROETHANE	CHLOROETHANE	CHLOROMETHANE
					UG/L	UG/L	UG/L
20-R4-034	ZVI-MW07C	2/18/2010	40	50	11	0.50 U	1.0 U
20-BASE-036	372-MW1	11/9/2009	2.5	12.5	0.50 U	0.50 U	1.0 U
20-R1-036	372-MW1	12/2/2009	2.5	12.5	0.50 U	0.50 U	1.0 U
20-R2-036	372-MW1	12/18/2009	2.5	12.5	0.50 U	0.50 U	1.0 U
20-R3-035	372-MW1	1/8/2010	2.5	12.5	0.50 U	0.50 U	1.0 U
20-R3-036 (FD)	372-MW1	1/8/2010	2.5	12.5	0.50 U	0.50 U	1.0 U
20-R4-036	372-MW1	2/18/2010	2.5	12.5	0.50 U	0.50 U	1.0 U
20-BASE-035	D03-04	11/9/2009	47	57	0.50 U	0.50 U	1.0 U
20-R1-035	D03-04	12/2/2009	47	57	0.50 U	0.50 U	1.0 U
20-R2-035	D03-04	12/18/2009	47	57	0.50 U	0.50 U	1.0 U
20-R3-034	D03-04	1/8/2010	47	57	0.50 U	0.50 U	1.0 U
20-R4-035	D03-04	2/19/2010	47	57	0.50 U	0.50 U	1.0 U
20-R1-EB-001	EQUIPMENT BLANK	11/30/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-R1-EB-002	EQUIPMENT BLANK	12/1/2009	NA	NA	0.50 U	0.50 U	1.0 UJ
20-R1-EB-003	EQUIPMENT BLANK	12/2/2009	NA	NA	0.50 U	0.50 UJ	1.0 U
20-R1-EB-004	EQUIPMENT BLANK	12/3/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-R2-EB-001	EQUIPMENT BLANK	12/14/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-R2-EB-002	EQUIPMENT BLANK	12/15/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-R2-EB-003	EQUIPMENT BLANK	12/16/2009	NA	NA	0.50 UJ	0.50 UJ	1.0 UJ
20-R2-EB-004	EQUIPMENT BLANK	12/17/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-R3-EB-001	EQUIPMENT BLANK	1/5/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R3-EB-002	EQUIPMENT BLANK	1/6/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R3-EB-003	EQUIPMENT BLANK	1/7/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R3-EB-004	EQUIPMENT BLANK	1/8/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R4-EB-001	EQUIPMENT BLANK	2/15/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R4-EB-002	EQUIPMENT BLANK	2/16/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R4-EB-003	EQUIPMENT BLANK	2/17/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R4-EB-004	EQUIPMENT BLANK	2/18/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R4-EB-005	EQUIPMENT BLANK	2/19/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-BASE-TB-001	TRIP BLANK	11/2/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-BASE-TB-002	TRIP BLANK	11/3/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-BASE-TB-003	TRIP BLANK	11/4/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-BASE-TB-004	TRIP BLANK	11/5/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-BASE-TB-005	TRIP BLANK	11/6/2009	NA	NA	0.50 U	0.50 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					1,2-DICHLOROETHANE	CHLOROETHANE	CHLOROMETHANE
					UG/L	UG/L	UG/L
20-BASE-TB-006	TRIP BLANK	11/9/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-R1-TB-001	TRIP BLANK	11/30/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-R1-TB-002	TRIP BLANK	12/1/2009	NA	NA	0.50 U	0.50 U	1.0 UJ
20-R1-TB-003	TRIP BLANK	12/2/2009	NA	NA	0.50 U	0.50 UJ	1.0 U
20-R1-TB-004	TRIP BLANK	12/3/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-R2-TB-001	TRIP BLANK	12/14/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-R2-TB-002	TRIP BLANK	12/15/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-R2-TB-003	TRIP BLANK	12/16/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-R2-TB-004	TRIP BLANK	12/17/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-R2-TB-005	TRIP BLANK	12/18/2009	NA	NA	0.50 U	0.50 U	1.0 U
20-R3-TB-001	TRIP BLANK	1/5/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R3-TB-002	TRIP BLANK	1/6/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R3-TB-003	TRIP BLANK	1/7/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R3-TB-004	TRIP BLANK	1/8/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R4-TB-001	TRIP BLANK	2/15/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R4-TB-002	TRIP BLANK	2/16/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R4-TB-003	TRIP BLANK	2/17/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R4-TB-004	TRIP BLANK	2/18/2010	NA	NA	0.50 U	0.50 U	1.0 U
20-R4-TB-005	TRIP BLANK	2/19/2010	NA	NA	0.50 U	0.50 U	1.0 U
FD - field duplicate							
RE - resample to collect anions and alkalinity tests							
NA - not analyzed							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					CIS-1,2-DICHLOROETHENE	TETRACHLOROETHENE	TRANS-1,2-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-BASE-001	ZVI-MW01A1	11/6/2009	6	11	490	1.0 U	5.1
20-R1-001	ZVI-MW01A1	12/3/2009	6	11	930	1.0 U	15
20-R2-001	ZVI-MW01A1	12/16/2009	6	11	730	1.0 U	12
20-R2-002 (FD)	ZVI-MW01A1	12/16/2009	6	11	760	1.0 U	12
20-R3-001	ZVI-MW01A1	1/6/2010	6	11	510	1.0 U	9.7
20-R4-001	ZVI-MW01A1	2/17/2010	6	11	510	1.0 U	6.9
20-BASE-002	ZVI-MW01A2	11/9/2009	10	20	6300	1.0 U	65
20-R1-002	ZVI-MW01A2	12/2/2009	10	20	4300	1.0 U	39
20-R2-003	ZVI-MW01A2	12/15/2009	10	20	4900	1.0 U	45
20-R3-002	ZVI-MW01A2	1/6/2010	10	20	4200	1.0 U	45
20-R4-002	ZVI-MW01A2	2/16/2010	10	20	6100	1.0 U	53
20-BASE-003	ZVI-MW01A3	11/6/2009	20	30	50	1.0 U	2.8
20-R1-003	ZVI-MW01A3	12/3/2009	20	30	86	1.0 U	3.4
20-R1-004 (FD)	ZVI-MW01A3	12/3/2009	20	30	59	1.0 U	2.7
20-R2-004	ZVI-MW01A3	12/16/2009	20	30	52	1.0 U	3.5
20-R3-003	ZVI-MW01A3	1/7/2010	20	30	76	1.0 U	4.0
20-R4-003	ZVI-MW01A3	2/17/2010	20	30	91	1.0 U	4.6
20-BASE-004	ZVI-MW01B	11/5/2009	30	40	27	1.0 U	2.0
20-R1-005	ZVI-MW01B	12/2/2009	30	40	44 J	1.0 U	6.5
20-R2-005	ZVI-MW01B	12/15/2009	30	40	25 J	1.0 U	3.3 J
20-R3-004	ZVI-MW01B	1/7/2010	30	40	34	1.0 U	5.5
20-R4-004	ZVI-MW01B	2/16/2010	30	40	46	1.0 U	7.3
20-R4-005 (FD)	ZVI-MW01B	2/16/2010	30	40	49	1.0 U	7.6
20-BASE-005	ZVI-MW01C	11/6/2009	40	50	0.48 J	1.0 U	1.0 U
20-BASE-006 (FD)	ZVI-MW01C	11/6/2009	40	50	0.57 J	1.0 U	1.0 U
20-R1-006	ZVI-MW01C	12/3/2009	40	50	0.57 J	1.0 U	1.0 U
20-R2-006	ZVI-MW01C	12/17/2009	40	50	0.60 J	1.0 U	1.0 U
20-R3-005	ZVI-MW01C	1/7/2010	40	50	0.54 J	1.0 U	1.0 U
20-R4-006	ZVI-MW01C	2/17/2010	40	50	0.83 J	1.0 U	1.0 U
20-BASE-007	ZVI-MW01D	11/9/2009	50	60	0.26 J	1.0 U	1.0 U
20-R1-007	ZVI-MW01D	12/2/2009	50	60	0.42 J	1.0 U	1.0 U
20-R2-007	ZVI-MW01D	12/16/2009	50	60	0.35 J	1.0 U	1.0 U
20-R3-006	ZVI-MW01D	1/7/2010	50	60	0.43 J	1.0 U	1.0 U
20-R4-007	ZVI-MW01D	2/16/2010	50	60	0.56 J	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					CIS-1,2-DICHLOROETHENE	TETRACHLOROETHENE	TRANS-1,2-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-R4-008 (FD)	ZVI-MW01D	2/16/2010	50	60	0.56 J	1.0 U	1.0 U
20-BASE-008	ZVI-MW02A2	11/4/2009	10	20	2100	1.0 U	44
20-R1-008	ZVI-MW02A2	12/1/2009	10	20	1900	1.0 U	49 J
20-R2-008	ZVI-MW02A2	12/16/2009	10	20	2100	1.0 U	49
20-R3-007	ZVI-MW02A2	1/7/2010	10	20	2300	1.0 U	49
20-R4-009	ZVI-MW02A2	2/16/2010	10	20	3200	1.0 U	54
20-BASE-009	ZVI-MW02A3	11/4/2009	20	30	110	1.0 U	7.1
20-R1-009	ZVI-MW02A3	11/30/2009	20	30	570	1.0 U	26
20-R2-009	ZVI-MW02A3	12/16/2009	20	30	420	1.0 U	26 J
20-R3-008	ZVI-MW02A3	1/8/2010	20	30	310	1.0 U	14 J
20-R4-010	ZVI-MW02A3	2/15/2010	20	30	180	1.0 U	8.6
20-BASE-010	ZVI-MW02B	11/3/2009	30	40	17	1.0 U	4.1
20-R1-010	ZVI-MW02B	12/1/2009	30	40	20	1.0 U	6.4
20-R2-010	ZVI-MW02B	12/16/2009	30	40	23 J	1.0 U	7.2 J
20-R2-011 (FD)	ZVI-MW02B	12/16/2009	30	40	20 J	1.0 U	5.8 J
20-R3-009	ZVI-MW02B	1/7/2010	30	40	19	1.0 U	6.2
20-R4-011	ZVI-MW02B	2/15/2010	30	40	14	1.0 U	4.4
20-BASE-011	ZVI-MW02C	11/9/2009	40	50	1.0 U	1.0 U	1.0 U
20-R1-011	ZVI-MW02C	11/30/2009	40	50	0.63 J	1.0 U	1.0 U
20-R2-012	ZVI-MW02C	12/16/2009	40	50	0.54 J	1.0 U	1.0 U
20-R3-010	ZVI-MW02C	1/7/2010	40	50	0.41 J	1.0 U	1.0 U
20-R4-012	ZVI-MW02C	2/15/2010	40	50	0.24 J	1.0 U	1.0 U
20-R4-013 (FD)	ZVI-MW02C	2/15/2010	40	50	0.23 J	1.0 U	1.0 U
20-BASE-012	ZVI-MW03A2	11/5/2009	10	20	230	1.0 U	33
20-R1-012	ZVI-MW03A2	12/2/2009	10	20	240	1.0 U	26
20-R2-013	ZVI-MW03A2	12/14/2009	10	20	310	1.0 U	43
20-R3-011	ZVI-MW03A2	1/5/2010	10	20	220	1.0 U	27
20-R4-014	ZVI-MW03A2	2/18/2010	10	20	280	1.0 U	32
20-BASE-013	ZVI-MW03A3	11/6/2009	20	30	11	1.0 U	0.85 J
20-R1-013	ZVI-MW03A3	12/2/2009	20	30	3.4	1.0 U	0.80 J
20-R2-014	ZVI-MW03A3	12/14/2009	20	30	5.4	1.0 U	1.2
20-R3-012	ZVI-MW03A3	1/5/2010	20	30	5.5	1.0 U	1.2
20-R4-015	ZVI-MW03A3	2/19/2010	20	30	6.1	1.0 U	1.3
20-BASE-014	ZVI-MW03B	11/6/2009	30	40	0.35 J	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					CIS-1,2-DICHLOROETHENE	TETRACHLOROETHENE	TRANS-1,2-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-BASE-015 (FD)	ZVI-MW03B	11/6/2009	30	40	1.2	1.0 U	1.0 U
20-R1-014	ZVI-MW03B	12/2/2009	30	40	0.27 J	1.0 U	1.0 U
20-R2-015	ZVI-MW03B	12/15/2009	30	40	0.62 J	1.0 U	0.21 J
20-R3-013	ZVI-MW03B	1/5/2010	30	40	0.46 J	1.0 U	1.0 U
20-R4-016	ZVI-MW03B	2/18/2010	30	40	0.53 J	1.0 U	1.0 U
20-BASE-016	ZVI-MW03C	11/6/2009	40	50	1.0 U	1.0 U	1.0 U
20-R1-015	ZVI-MW03C	12/2/2009	40	50	0.30 J	1.0 U	1.0 U
20-R1-016 (FD)	ZVI-MW03C	12/2/2009	40	50	0.31 J	1.0 U	1.0 U
20-R2-016	ZVI-MW03C	12/14/2009	40	50	0.28 J	1.0 U	1.0 U
20-R3-014	ZVI-MW03C	1/5/2010	40	50	1.0 U	1.0 U	1.0 U
20-R4-017	ZVI-MW03C	2/18/2010	40	50	0.21 J	1.0 U	1.0 U
20-BASE-017	ZVI-MW04A1	11/4/2009	6	11	3.9	1.0 U	1.9
20-R1-017	ZVI-MW04A1	12/1/2009	6	11	10	1.0 U	7.3
20-R2-017	ZVI-MW04A1	12/16/2009	6	11	5.0	1.0 U	1.5
20-R3-015	ZVI-MW04A1	1/6/2010	6	11	6.3	1.0 U	4.0
20-R4-018	ZVI-MW04A1	2/17/2010	6	11	2.0	1.0 U	4.6
20-BASE-018	ZVI-MW04A2	11/5/2009	10	20	450	1.0 U	18 J
20-R1-018	ZVI-MW04A2	12/2/2009	10	20	280	1.0 U	13 J
20-R2-018	ZVI-MW04A2	12/17/2009	10	20	290	1.0 U	12
20-R3-016	ZVI-MW04A2	1/6/2010	10	20	400	1.0 U	14
20-R4-019	ZVI-MW04A2	2/16/2010	10	20	670	1.0 U	21
20-BASE-019	ZVI-MW04A3	11/4/2009	20	30	48	1.0 U	4.6
20-R1-019	ZVI-MW04A3	12/1/2009	20	30	63	1.0 U	4.2
20-R2-019	ZVI-MW04A3	12/16/2009	20	30	59	1.0 U	4.0
20-R3-017	ZVI-MW04A3	1/7/2010	20	30	66	1.0 U	4.8
20-R4-020	ZVI-MW04A3	2/17/2010	20	30	86	1.0 U	5.0
20-BASE-020	ZVI-MW04B	11/5/2009	30	40	4.4	1.0 U	1.1
20-R1-020	ZVI-MW04B	12/2/2009	30	40	5.5 J	1.0 U	1.3 J
20-R2-020	ZVI-MW04B	12/17/2009	30	40	5.4	1.0 U	1.5
20-R3-018	ZVI-MW04B	1/6/2010	30	40	0.48 J	1.0 U	1.0 U
20-R4-021	ZVI-MW04B	2/16/2010	30	40	7.0	1.0 U	1.9
20-BASE-021	ZVI-MW04C	11/9/2009	40	50	0.58 J	1.0 U	1.0 U
20-R1-021	ZVI-MW04C	12/1/2009	40	50	0.79 J	1.0 U	1.0 U
20-R2-021	ZVI-MW04C	12/16/2009	40	50	0.48 J	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					CIS-1,2-DICHLOROETHENE	TETRACHLOROETHENE	TRANS-1,2-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-R3-019	ZVI-MW04C	1/6/2010	40	50	0.40 J	1.0 U	1.0 U
20-R4-022	ZVI-MW04C	2/16/2010	40	50	0.48 J	1.0 U	1.0 U
20-BASE-022	ZVI-MW05A2	11/5/2009	10	20	8.2	1.0 U	0.60 J
20-R1-022	ZVI-MW05A2	12/1/2009	10	20	15	1.0 U	1.5
20-R2-022	ZVI-MW05A2	12/17/2009	10	20	15	1.0 U	1.2
20-R3-020	ZVI-MW05A2	1/5/2010	10	20	15	1.0 U	1.1
20-R4-023	ZVI-MW05A2	2/15/2010	10	20	30	1.0 U	1.9
20-BASE-023	ZVI-MW05A3	11/5/2009	20	30	50	1.0 U	4.0
20-R1-023	ZVI-MW05A3	12/1/2009	20	30	97	1.0 U	8.1
20-R2-023	ZVI-MW05A3	12/15/2009	20	30	71 J	1.0 UJ	6.7 J
20-R3-021	ZVI-MW05A3	1/5/2010	20	30	25	1.0 U	3.3
20-R3-022 (FD)	ZVI-MW05A3	1/5/2010	20	30	26	1.0 U	3.3
20-R4-024	ZVI-MW05A3	2/15/2010	20	30	54	1.0 U	5.3
20-BASE-024	ZVI-MW05B	11/5/2009	30	40	1.9	1.0 U	0.32 J
20-BASE-025 (FD)	ZVI-MW05B	11/5/2009	30	40	2.0	1.0 U	0.41 J
20-R1-024	ZVI-MW05B	12/1/2009	30	40	2.3	1.0 U	0.24 J
20-R2-024	ZVI-MW05B	12/15/2009	30	40	1.8	1.0 U	0.28 J
20-R3-023	ZVI-MW05B	1/5/2010	30	40	3.0	1.0 U	0.68 J
20-R4-025	ZVI-MW05B	2/16/2010	30	40	3.5	1.0 U	0.55 J
20-BASE-026	ZVI-MW05C	11/9/2009	40	50	0.29 J	1.0 U	1.0 U
20-R1-025	ZVI-MW05C	12/1/2009	40	50	0.26 J	1.0 U	1.0 U
20-R1-026 (FD)	ZVI-MW05C	12/1/2009	40	50	0.26 J	1.0 U	1.0 U
20-R2-025	ZVI-MW05C	12/15/2009	40	50	0.28 J	1.0 U	1.0 U
20-R3-024	ZVI-MW05C	1/5/2010	40	50	0.40 J	1.0 U	1.0 U
20-R4-026	ZVI-MW05C	2/15/2010	40	50	0.34 J	1.0 U	1.0 U
20-BASE-027	ZVI-MW06A2	11/6/2009	10	20	24000	3.1 J	260
20-R1-027	ZVI-MW06A2	11/30/2009	10	20	12000	1.5	240
20-R2-026	ZVI-MW06A2	12/14/2009	10	20	11000	1.4	120
20-R3-025	ZVI-MW06A2	1/6/2010	10	20	12000	2.3	280
20-R4-027	ZVI-MW06A2	2/18/2010	10	20	31000	1.0	230
20-BASE-028	ZVI-MW06A3	11/6/2009	20	30	78	1.0 U	7.0
20-R1-028	ZVI-MW06A3	11/30/2009	20	30	1300	1.0 U	37
20-R2-027	ZVI-MW06A3	12/15/2009	20	30	340	1.0 U	13 J
20-R2-028 (FD)	ZVI-MW06A3	12/15/2009	20	30	350	1.0 U	13 J

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					CIS-1,2-DICHLOROETHENE	TETRACHLOROETHENE	TRANS-1,2-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-R3-026	ZVI-MW06A3	1/5/2010	20	30	320	1.0 U	12
20-R4-028	ZVI-MW06A3	2/17/2010	20	30	500	1.0 U	17
20-BASE-029	ZVI-MW06B	11/9/2009	30	40	29	1.0 U	14
20-R1-029	ZVI-MW06B	11/30/2009	30	40	27	1.0 U	16
20-R2-029	ZVI-MW06B	12/14/2009	30	40	30 J	1.0 U	16 J
20-R3-027	ZVI-MW06B	1/6/2010	30	40	26	1.0 U	16
20-R4-029	ZVI-MW06B	2/19/2010	30	40	31	1.0 U	13
20-BASE-030	ZVI-MW06C	11/6/2009	40	50	1.5	1.0 U	1.0 U
20-R1-030	ZVI-MW06C	11/30/2009	40	50	2.0	1.0 U	1.0 U
20-R2-030	ZVI-MW06C	12/14/2009	40	50	1.7	1.0 U	1.0 U
20-R3-028	ZVI-MW06C	1/6/2010	40	50	1.5	1.0 U	1.0 U
20-R4-030	ZVI-MW06C	2/19/2010	40	50	1.1	1.0 U	1.0 U
20-BASE-031	ZVI-MW07A2	11/2/2009	10	20	8000	0.46 J	260
20-BASE-031A (RE)	ZVI-MW07A2	11/3/2009	10	20	NA	NA	NA
20-R1-031	ZVI-MW07A2	12/3/2009	10	20	14000	2.5	260
20-R2-031	ZVI-MW07A2	12/17/2009	10	20	13000	2.5	250
20-R3-029	ZVI-MW07A2	1/8/2010	10	20	15000	2.3 J	320 J
20-R3-030 (FD)	ZVI-MW07A2	1/8/2010	10	20	16000	2.4 J	340 J
20-R4-031	ZVI-MW07A2	2/17/2010	10	20	17000	2.0 J	340 J
20-BASE-032	ZVI-MW07A3	11/2/2009	20	30	200	1.0 U	10
20-R1-032	ZVI-MW07A3	12/3/2009	20	30	690	1.0 U	18
20-R2-032	ZVI-MW07A3	12/17/2009	20	30	600	0.21 J	18
20-R3-031	ZVI-MW07A3	1/8/2010	20	30	440	1.0 U	15
20-R4-032	ZVI-MW07A3	2/18/2010	20	30	790	1.0 U	18
20-BASE-033	ZVI-MW07B	11/3/2009	30	40	39	1.0 U	1.0 U
20-R1-033	ZVI-MW07B	12/3/2009	30	40	40	1.0 U	18
20-R2-033	ZVI-MW07B	12/17/2009	30	40	39	1.0 U	23
20-R3-032	ZVI-MW07B	1/8/2010	30	40	45 J	1.0 U	22 J
20-R4-033	ZVI-MW07B	2/18/2010	30	40	37	1.0 U	19
20-BASE-034	ZVI-MW07C	11/2/2009	40	50	65	1.0 U	1.4 J
20-BASE-034A (RE)	ZVI-MW07C	11/3/2009	40	50	NA	NA	NA
20-R1-034	ZVI-MW07C	12/3/2009	40	50	97	1.0 U	4.1
20-R2-034	ZVI-MW07C	12/17/2009	40	50	62	1.0 U	4.8
20-R3-033	ZVI-MW07C	1/8/2010	40	50	58	1.0 U	6.0

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					CIS-1,2-DICHLOROETHENE	TETRACHLOROETHENE	TRANS-1,2-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-R4-034	ZVI-MW07C	2/18/2010	40	50	42	1.0 U	5.7
20-BASE-036	372-MW1	11/9/2009	2.5	12.5	1.0 U	1.0 U	1.0 U
20-R1-036	372-MW1	12/2/2009	2.5	12.5	1.0 U	1.0 U	1.0 U
20-R2-036	372-MW1	12/18/2009	2.5	12.5	1.0 U	1.0 U	1.0 U
20-R3-035	372-MW1	1/8/2010	2.5	12.5	1.0 U	1.0 U	1.0 U
20-R3-036 (FD)	372-MW1	1/8/2010	2.5	12.5	1.0 U	1.0 U	1.0 U
20-R4-036	372-MW1	2/18/2010	2.5	12.5	1.0 U	1.0 U	1.0 U
20-BASE-035	D03-04	11/9/2009	47	57	1.0 U	1.0 U	1.0 U
20-R1-035	D03-04	12/2/2009	47	57	1.0 U	1.0 U	1.0 U
20-R2-035	D03-04	12/18/2009	47	57	1.0 U	1.0 U	1.0 U
20-R3-034	D03-04	1/8/2010	47	57	1.0 U	1.0 U	1.0 U
20-R4-035	D03-04	2/19/2010	47	57	1.0 U	1.0 U	1.0 U
20-R1-EB-001	EQUIPMENT BLANK	11/30/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-EB-002	EQUIPMENT BLANK	12/1/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-EB-003	EQUIPMENT BLANK	12/2/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-EB-004	EQUIPMENT BLANK	12/3/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-EB-001	EQUIPMENT BLANK	12/14/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-EB-002	EQUIPMENT BLANK	12/15/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-EB-003	EQUIPMENT BLANK	12/16/2009	NA	NA	1.0 UJ	1.0 UJ	1.0 UJ
20-R2-EB-004	EQUIPMENT BLANK	12/17/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-EB-001	EQUIPMENT BLANK	1/5/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-EB-002	EQUIPMENT BLANK	1/6/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-EB-003	EQUIPMENT BLANK	1/7/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-EB-004	EQUIPMENT BLANK	1/8/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-EB-001	EQUIPMENT BLANK	2/15/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-EB-002	EQUIPMENT BLANK	2/16/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-EB-003	EQUIPMENT BLANK	2/17/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-EB-004	EQUIPMENT BLANK	2/18/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-EB-005	EQUIPMENT BLANK	2/19/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-BASE-TB-001	TRIP BLANK	11/2/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-BASE-TB-002	TRIP BLANK	11/3/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-BASE-TB-003	TRIP BLANK	11/4/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-BASE-TB-004	TRIP BLANK	11/5/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-BASE-TB-005	TRIP BLANK	11/6/2009	NA	NA	1.0 U	1.0 U	1.0 U

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	8260B
					CIS-1,2-DICHLOROETHENE	TETRACHLOROETHENE	TRANS-1,2-DICHLOROETHENE
					UG/L	UG/L	UG/L
20-BASE-TB-006	TRIP BLANK	11/9/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-TB-001	TRIP BLANK	11/30/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-TB-002	TRIP BLANK	12/1/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-TB-003	TRIP BLANK	12/2/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R1-TB-004	TRIP BLANK	12/3/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-TB-001	TRIP BLANK	12/14/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-TB-002	TRIP BLANK	12/15/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-TB-003	TRIP BLANK	12/16/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-TB-004	TRIP BLANK	12/17/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R2-TB-005	TRIP BLANK	12/18/2009	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-TB-001	TRIP BLANK	1/5/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-TB-002	TRIP BLANK	1/6/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-TB-003	TRIP BLANK	1/7/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R3-TB-004	TRIP BLANK	1/8/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-TB-001	TRIP BLANK	2/15/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-TB-002	TRIP BLANK	2/16/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-TB-003	TRIP BLANK	2/17/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-TB-004	TRIP BLANK	2/18/2010	NA	NA	1.0 U	1.0 U	1.0 U
20-R4-TB-005	TRIP BLANK	2/19/2010	NA	NA	1.0 U	1.0 U	1.0 U
FD - field duplicate							
RE - resample to collect anions and alkalinity tests							
NA - not analyzed							

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	RSK-175	RSK-175	RSK-175	RSK-175
					TRICHLOROETHENE	VINYL CHLORIDE	ACETYLENE	ETHANE	ETHENE	METHANE
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-BASE-001	ZVI-MW01A1	11/6/2009	6	11	48	24	3.0 U	2.0 U	2.0 U	7.1
20-R1-001	ZVI-MW01A1	12/3/2009	6	11	340	130	NA	NA	NA	NA
20-R2-001	ZVI-MW01A1	12/16/2009	6	11	190	77	3.0 U	2.4	2.4	67
20-R2-002 (FD)	ZVI-MW01A1	12/16/2009	6	11	190	68	NA	NA	NA	NA
20-R3-001	ZVI-MW01A1	1/6/2010	6	11	130	24	NA	NA	NA	NA
20-R4-001	ZVI-MW01A1	2/17/2010	6	11	88	59	3.0 U	2.0 U	0.95 J	26
20-BASE-002	ZVI-MW01A2	11/9/2009	10	20	1600	940	3.0 U	3.6	28	170
20-R1-002	ZVI-MW01A2	12/2/2009	10	20	1600	610	NA	NA	NA	NA
20-R2-003	ZVI-MW01A2	12/15/2009	10	20	1800	670	3.0 U	48	41	100
20-R3-002	ZVI-MW01A2	1/6/2010	10	20	1700	670	NA	NA	NA	NA
20-R4-002	ZVI-MW01A2	2/16/2010	10	20	2000	1100	3.0 U	33	47	150
20-BASE-003	ZVI-MW01A3	11/6/2009	20	30	66	9.2	3.0 U	5.4	9.8	300
20-R1-003	ZVI-MW01A3	12/3/2009	20	30	67	12	NA	NA	NA	NA
20-R1-004 (FD)	ZVI-MW01A3	12/3/2009	20	30	64	8.5	NA	NA	NA	NA
20-R2-004	ZVI-MW01A3	12/16/2009	20	30	77	9.1	3.0 U	4.1	8.2	130
20-R3-003	ZVI-MW01A3	1/7/2010	20	30	66	12	NA	NA	NA	NA
20-R4-003	ZVI-MW01A3	2/17/2010	20	30	69	14	3.0 U	2.5	5.7	59
20-BASE-004	ZVI-MW01B	11/5/2009	30	40	5.1	0.69	3.0 U	2.2	2.0 U	7.7
20-R1-005	ZVI-MW01B	12/2/2009	30	40	15	3.2	NA	NA	NA	NA
20-R2-005	ZVI-MW01B	12/15/2009	30	40	8.2 J	1.3 J	3.0 U	3.7	2.0 U	20
20-R3-004	ZVI-MW01B	1/7/2010	30	40	12	1.6	NA	NA	NA	NA
20-R4-004	ZVI-MW01B	2/16/2010	30	40	13	2.3	3.0 U	3.9	2.0 U	20
20-R4-005 (FD)	ZVI-MW01B	2/16/2010	30	40	14	2.4	NA	NA	NA	NA
20-BASE-005	ZVI-MW01C	11/6/2009	40	50	1.0 U	0.50 U	3.0 U	2.3	1.4 J	10
20-BASE-006 (FD)	ZVI-MW01C	11/6/2009	40	50	1.0 U	0.50 U	NA	NA	NA	NA
20-R1-006	ZVI-MW01C	12/3/2009	40	50	1.0 U	0.50 U	NA	NA	NA	NA
20-R2-006	ZVI-MW01C	12/17/2009	40	50	1.0 U	0.50 U	3.0 U	2.6	3.0	12
20-R3-005	ZVI-MW01C	1/7/2010	40	50	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-006	ZVI-MW01C	2/17/2010	40	50	1.0 U	0.50 U	3.0 U	3.2	1.7 J	11
20-BASE-007	ZVI-MW01D	11/9/2009	50	60	1.0 U	0.50 U	3.0 U	1.3 J	1.2 J	12
20-R1-007	ZVI-MW01D	12/2/2009	50	60	1.0 U	0.50 U	NA	NA	NA	NA
20-R2-007	ZVI-MW01D	12/16/2009	50	60	1.0 U	0.50 U	3.0 U	3.7	5.3	20
20-R3-006	ZVI-MW01D	1/7/2010	50	60	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-007	ZVI-MW01D	2/16/2010	50	60	0.20 J	0.50 U	3.0 U	1.0 J	2.5	7.4

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	RSK-175	RSK-175	RSK-175	RSK-175
					TRICHLOROETHENE	VINYL CHLORIDE	ACETYLENE	ETHANE	ETHENE	METHANE
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-R4-008 (FD)	ZVI-MW01D	2/16/2010	50	60	0.21 J	0.50 U	NA	NA	NA	NA
20-BASE-008	ZVI-MW02A2	11/4/2009	10	20	1500	490	6.2	2.4	19	210
20-R1-008	ZVI-MW02A2	12/1/2009	10	20	2000	390	NA	NA	NA	NA
20-R2-008	ZVI-MW02A2	12/16/2009	10	20	2400	400	3.0 U	1.8 J	13	150
20-R3-007	ZVI-MW02A2	1/7/2010	10	20	2200	360	NA	NA	NA	NA
20-R4-009	ZVI-MW02A2	2/16/2010	10	20	2500	570	3.0 U	2.8	17	180
20-BASE-009	ZVI-MW02A3	11/4/2009	20	30	80	11	3.0 U	1.9 J	12	99
20-R1-009	ZVI-MW02A3	11/30/2009	20	30	450	71	NA	NA	NA	NA
20-R2-009	ZVI-MW02A3	12/16/2009	20	30	410	54	3.0 U	2.8	11	230
20-R3-008	ZVI-MW02A3	1/8/2010	20	30	180	35	NA	NA	NA	NA
20-R4-010	ZVI-MW02A3	2/15/2010	20	30	140	5.7	3.0 U	2.0 U	0.80 J	15
20-BASE-010	ZVI-MW02B	11/3/2009	30	40	0.40 J	0.29 J	3.0 U	1.4 J	2.0 U	12
20-R1-010	ZVI-MW02B	12/1/2009	30	40	1.1	0.55	NA	NA	NA	NA
20-R2-010	ZVI-MW02B	12/16/2009	30	40	1.6 J	0.76 J	3.0 U	16	2.0 U	41
20-R2-011 (FD)	ZVI-MW02B	12/16/2009	30	40	0.97 J	0.47 J	NA	NA	NA	NA
20-R3-009	ZVI-MW02B	1/7/2010	30	40	0.48 J	0.51	NA	NA	NA	NA
20-R4-011	ZVI-MW02B	2/15/2010	30	40	0.56 J	0.32 J	3.0 U	4.2	2.0 U	13
20-BASE-011	ZVI-MW02C	11/9/2009	40	50	1.0 U	0.50 U	3.0 U	0.89 J	2.0 U	3.2
20-R1-011	ZVI-MW02C	11/30/2009	40	50	1.0 U	0.24 J	NA	NA	NA	NA
20-R2-012	ZVI-MW02C	12/16/2009	40	50	1.0 U	0.29 J	3.0 U	8.3	6.2	26
20-R3-010	ZVI-MW02C	1/7/2010	40	50	1.0 U	0.23 J	NA	NA	NA	NA
20-R4-012	ZVI-MW02C	2/15/2010	40	50	1.0 U	0.50 U	3.0 U	3.9	2.6	9.6
20-R4-013 (FD)	ZVI-MW02C	2/15/2010	40	50	1.0 U	0.50 U	NA	NA	NA	NA
20-BASE-012	ZVI-MW03A2	11/5/2009	10	20	150	14	3.0 U	1.3 J	7.3	73
20-R1-012	ZVI-MW03A2	12/2/2009	10	20	120	6.8	NA	NA	NA	NA
20-R2-013	ZVI-MW03A2	12/14/2009	10	20	220	15	3.0 U	1.6 J	6.1	130
20-R3-011	ZVI-MW03A2	1/5/2010	10	20	190	7.5	NA	NA	NA	NA
20-R4-014	ZVI-MW03A2	2/18/2010	10	20	190	11	3.0 U	0.70 J	3.2	64
20-BASE-013	ZVI-MW03A3	11/6/2009	20	30	39	2.9	3.0 U	22	20	200
20-R1-013	ZVI-MW03A3	12/2/2009	20	30	23	0.90	NA	NA	NA	NA
20-R2-014	ZVI-MW03A3	12/14/2009	20	30	28	1.2	3.0 U	6.6	7.4	120
20-R3-012	ZVI-MW03A3	1/5/2010	20	30	23	1.0	NA	NA	NA	NA
20-R4-015	ZVI-MW03A3	2/19/2010	20	30	24	0.85	3.0 U	4.0	6.9	85
20-BASE-014	ZVI-MW03B	11/6/2009	30	40	1.3	0.50 U	3.0 U	2.2	2.0 U	46

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	RSK-175	RSK-175	RSK-175	RSK-175
					TRICHLOROETHENE	VINYL CHLORIDE	ACETYLENE	ETHANE	ETHENE	METHANE
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-BASE-015 (FD)	ZVI-MW03B	11/6/2009	30	40	1.9	0.50 U	NA	NA	NA	NA
20-R1-014	ZVI-MW03B	12/2/2009	30	40	0.39 J	0.50 U	NA	NA	NA	NA
20-R2-015	ZVI-MW03B	12/15/2009	30	40	2.8	0.50 U	3.0 U	3.5	4.1	92
20-R3-013	ZVI-MW03B	1/5/2010	30	40	2.2	0.50 U	NA	NA	NA	NA
20-R4-016	ZVI-MW03B	2/18/2010	30	40	0.95 J	0.21 J	3.0 U	2.6	11	60
20-BASE-016	ZVI-MW03C	11/6/2009	40	50	1.0 U	0.50 U	3.0 U	5.1	2.3	41
20-R1-015	ZVI-MW03C	12/2/2009	40	50	1.0 U	0.50 U	NA	NA	NA	NA
20-R1-016 (FD)	ZVI-MW03C	12/2/2009	40	50	0.21 J	0.50 U	NA	NA	NA	NA
20-R2-016	ZVI-MW03C	12/14/2009	40	50	0.24 J	0.50 U	3.0 U	5.8	5.1	59
20-R3-014	ZVI-MW03C	1/5/2010	40	50	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-017	ZVI-MW03C	2/18/2010	40	50	1.0 U	0.50 U	3.0 U	3.9	5.0	38
20-BASE-017	ZVI-MW04A1	11/4/2009	6	11	0.28 J	81	3.0 U	2.0 U	1.4 J	130
20-R1-017	ZVI-MW04A1	12/1/2009	6	11	3.7	200	NA	NA	NA	NA
20-R2-017	ZVI-MW04A1	12/16/2009	6	11	0.58 J	17	3.0 U	2.0 U	0.89 J	81
20-R3-015	ZVI-MW04A1	1/6/2010	6	11	0.77 J	47	NA	NA	NA	NA
20-R4-018	ZVI-MW04A1	2/17/2010	6	11	0.38 J	24	3.0 U	2.4	39	2000
20-BASE-018	ZVI-MW04A2	11/5/2009	10	20	180	70	3.0 U	1.9 J	11	86
20-R1-018	ZVI-MW04A2	12/2/2009	10	20	98	43	NA	NA	NA	NA
20-R2-018	ZVI-MW04A2	12/17/2009	10	20	82	47	3.0 U	0.65 J	6.2	39
20-R3-016	ZVI-MW04A2	1/6/2010	10	20	160	38	NA	NA	NA	NA
20-R4-019	ZVI-MW04A2	2/16/2010	10	20	250	96	3.0 U	1.2 J	8.0	71
20-BASE-019	ZVI-MW04A3	11/4/2009	20	30	94	15	3.0 U	4.2	7.1	520
20-R1-019	ZVI-MW04A3	12/1/2009	20	30	61	7.9	NA	NA	NA	NA
20-R2-019	ZVI-MW04A3	12/16/2009	20	30	73	8.1	3.0 U	1.2 J	2.4	190
20-R3-017	ZVI-MW04A3	1/7/2010	20	30	85	12	NA	NA	NA	NA
20-R4-020	ZVI-MW04A3	2/17/2010	20	30	63	13	3.0 U	1.3 J	4.0	110
20-BASE-020	ZVI-MW04B	11/5/2009	30	40	1.5	0.30 J	3.0 U	2.0 U	3.9	7.2
20-R1-020	ZVI-MW04B	12/2/2009	30	40	1.9 J	0.30 J	NA	NA	NA	NA
20-R2-020	ZVI-MW04B	12/17/2009	30	40	1.9	0.29 J	3.0 U	2.0 U	2.9	8.1
20-R3-018	ZVI-MW04B	1/6/2010	30	40	0.22 J	0.50 U	NA	NA	NA	NA
20-R4-021	ZVI-MW04B	2/16/2010	30	40	2.8	0.80	3.0 U	1.2 J	6.6	19
20-BASE-021	ZVI-MW04C	11/9/2009	40	50	0.23 J	0.50 U	3.0 U	2.6	2.5	22
20-R1-021	ZVI-MW04C	12/1/2009	40	50	0.62 J	0.50 U	NA	NA	NA	NA
20-R2-021	ZVI-MW04C	12/16/2009	40	50	0.25 J	0.50 U	3.0 U	3.7	2.5	16

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	RSK-175	RSK-175	RSK-175	RSK-175
					TRICHLOROETHENE	VINYL CHLORIDE	ACETYLENE	ETHANE	ETHENE	METHANE
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-R3-019	ZVI-MW04C	1/6/2010	40	50	0.24 J	0.50 U	NA	NA	NA	NA
20-R4-022	ZVI-MW04C	2/16/2010	40	50	0.20 J	0.50 U	3.0 U	1.7 J	3.4	15
20-BASE-022	ZVI-MW05A2	11/5/2009	10	20	1.7	8.3	3.0 U	3.9	2.5	210
20-R1-022	ZVI-MW05A2	12/1/2009	10	20	4.0	27	NA	NA	NA	NA
20-R2-022	ZVI-MW05A2	12/17/2009	10	20	3.1	15	3.0 U	3.2	1.3 J	110
20-R3-020	ZVI-MW05A2	1/5/2010	10	20	2.9	7.4	NA	NA	NA	NA
20-R4-023	ZVI-MW05A2	2/15/2010	10	20	9.7	19	3.0 U	4.8	2.9	330
20-BASE-023	ZVI-MW05A3	11/5/2009	20	30	61	4.1	3.0 U	3.0	5.3	110
20-R1-023	ZVI-MW05A3	12/1/2009	20	30	96	8.2	NA	NA	NA	NA
20-R2-023	ZVI-MW05A3	12/15/2009	20	30	80 J	12 J	3.0 U	4.1	11	210
20-R3-021	ZVI-MW05A3	1/5/2010	20	30	67	5.4	NA	NA	NA	NA
20-R3-022 (FD)	ZVI-MW05A3	1/5/2010	20	30	68	5.5	NA	NA	NA	NA
20-R4-024	ZVI-MW05A3	2/15/2010	20	30	88	5.0	3.0 U	0.73 J	2.4	59
20-BASE-024	ZVI-MW05B	11/5/2009	30	40	1.0	0.50 U	3.0 U	1.7 J	2.0 U	18
20-BASE-025 (FD)	ZVI-MW05B	11/5/2009	30	40	1.2	0.50 U	NA	NA	NA	NA
20-R1-024	ZVI-MW05B	12/1/2009	30	40	2.0	0.22 J	NA	NA	NA	NA
20-R2-024	ZVI-MW05B	12/15/2009	30	40	1.7	0.50 U	3.0 U	1.0 J	3.8	11
20-R3-023	ZVI-MW05B	1/5/2010	30	40	3.0	0.50 U	NA	NA	NA	NA
20-R4-025	ZVI-MW05B	2/16/2010	30	40	1.8	0.23 J	3.0 U	0.84 J	4.6	13
20-BASE-026	ZVI-MW05C	11/9/2009	40	50	1.0 U	0.50 U	3.0 U	3.0	2.8	32
20-R1-025	ZVI-MW05C	12/1/2009	40	50	1.0 U	0.50 U	NA	NA	NA	NA
20-R1-026 (FD)	ZVI-MW05C	12/1/2009	40	50	1.0 U	0.50 U	NA	NA	NA	NA
20-R2-025	ZVI-MW05C	12/15/2009	40	50	1.0 U	0.50 U	3.0 U	1.8 J	3.2	22
20-R3-024	ZVI-MW05C	1/5/2010	40	50	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-026	ZVI-MW05C	2/15/2010	40	50	1.0 U	0.50 U	3.0 U	1.7 J	3.6	19
20-BASE-027	ZVI-MW06A2	11/6/2009	10	20	38000	3500	3.0 U	23	150	230
20-R1-027	ZVI-MW06A2	11/30/2009	10	20	19000	1600	NA	NA	NA	NA
20-R2-026	ZVI-MW06A2	12/14/2009	10	20	16000	450	4.0	1.8 J	7.4	4.6
20-R3-025	ZVI-MW06A2	1/6/2010	10	20	8500	1600	NA	NA	NA	NA
20-R4-027	ZVI-MW06A2	2/18/2010	10	20	12000	2200	3.0 U	35	140	290
20-BASE-028	ZVI-MW06A3	11/6/2009	20	30	84	17	3.0 U	9.1	19	310
20-R1-028	ZVI-MW06A3	11/30/2009	20	30	1300	200	NA	NA	NA	NA
20-R2-027	ZVI-MW06A3	12/15/2009	20	30	190	31 J	3.0 U	2.8	6.0	80
20-R2-028 (FD)	ZVI-MW06A3	12/15/2009	20	30	200	31 J	NA	NA	NA	NA

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	RSK-175	RSK-175	RSK-175	RSK-175
					TRICHLOROETHENE	VINYL CHLORIDE	ACETYLENE	ETHANE	ETHENE	METHANE
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-R3-026	ZVI-MW06A3	1/5/2010	20	30	320	44	NA	NA	NA	NA
20-R4-028	ZVI-MW06A3	2/17/2010	20	30	360	75	3.0 U	3.2	10	220
20-BASE-029	ZVI-MW06B	11/9/2009	30	40	9.5	1.4	3.0 U	5.8	19	45
20-R1-029	ZVI-MW06B	11/30/2009	30	40	14	0.86	NA	NA	NA	NA
20-R2-029	ZVI-MW06B	12/14/2009	30	40	11 J	0.89 J	3.0 U	1.1 J	5.5	6.9
20-R3-027	ZVI-MW06B	1/6/2010	30	40	11	1.0	NA	NA	NA	NA
20-R4-029	ZVI-MW06B	2/19/2010	30	40	8.2	0.90	3.0 U	5.3	22	33
20-BASE-030	ZVI-MW06C	11/6/2009	40	50	1.9	0.50 U	3.0 U	4.2	0.89 J	18
20-R1-030	ZVI-MW06C	11/30/2009	40	50	2.1	0.28 J	NA	NA	NA	NA
20-R2-030	ZVI-MW06C	12/14/2009	40	50	1.4	0.50 U	3.0 U	10	3.5	20
20-R3-028	ZVI-MW06C	1/6/2010	40	50	1.4	0.50 U	NA	NA	NA	NA
20-R4-030	ZVI-MW06C	2/19/2010	40	50	0.75 J	0.26 J	3.0 U	4.2	4.6	18
20-BASE-031	ZVI-MW07A2	11/2/2009	10	20	10000	700	3.3	1.1 J	9.2	20
20-BASE-031A (RE)	ZVI-MW07A2	11/3/2009	10	20	NA	NA	NA	NA	NA	NA
20-R1-031	ZVI-MW07A2	12/3/2009	10	20	16000	1400	NA	NA	NA	NA
20-R2-031	ZVI-MW07A2	12/17/2009	10	20	16000	1500	650	130	330	160
20-R3-029	ZVI-MW07A2	1/8/2010	10	20	19000	1900	NA	NA	NA	NA
20-R3-030 (FD)	ZVI-MW07A2	1/8/2010	10	20	21000	2400	NA	NA	NA	NA
20-R4-031	ZVI-MW07A2	2/17/2010	10	20	18000	2500	780	130	380	190
20-BASE-032	ZVI-MW07A3	11/2/2009	20	30	400	30	3.0 U	11	25	230
20-R1-032	ZVI-MW07A3	12/3/2009	20	30	1200	81	NA	NA	NA	NA
20-R2-032	ZVI-MW07A3	12/17/2009	20	30	1200	77	3.0	13	24	450
20-R3-031	ZVI-MW07A3	1/8/2010	20	30	680	46	NA	NA	NA	NA
20-R4-032	ZVI-MW07A3	2/18/2010	20	30	390	62	3.0 U	6.9	16	200
20-BASE-033	ZVI-MW07B	11/3/2009	30	40	4.2	0.33 J	3.0 U	2.0 U	2.0 U	3.5
20-R1-033	ZVI-MW07B	12/3/2009	30	40	3.9	0.86	NA	NA	NA	NA
20-R2-033	ZVI-MW07B	12/17/2009	30	40	5.0	0.76	3.0 U	3.5	2.0 U	29
20-R3-032	ZVI-MW07B	1/8/2010	30	40	2.6 J	0.50 U	NA	NA	NA	NA
20-R4-033	ZVI-MW07B	2/18/2010	30	40	3.8	0.49 J	3.0 U	2.0	2.0 U	16
20-BASE-034	ZVI-MW07C	11/2/2009	40	50	69	6.0 J	2.3 J	11	17	17
20-BASE-034A (RE)	ZVI-MW07C	11/3/2009	40	50	NA	NA	NA	NA	NA	NA
20-R1-034	ZVI-MW07C	12/3/2009	40	50	140	5.9	NA	NA	NA	NA
20-R2-034	ZVI-MW07C	12/17/2009	40	50	86	5.5	3.0 U	9.3	21	23
20-R3-033	ZVI-MW07C	1/8/2010	40	50	69	6.1	NA	NA	NA	NA

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	RSK-175	RSK-175	RSK-175	RSK-175
					TRICHLOROETHENE	VINYL CHLORIDE	ACETYLENE	ETHANE	ETHENE	METHANE
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-R4-034	ZVI-MW07C	2/18/2010	40	50	54	3.4	3.0 U	2.7	8.6	9.2
20-BASE-036	372-MW1	11/9/2009	2.5	12.5	0.29 J	0.50 U	3.0 U	2.0 U	2.0 U	2.0 U
20-R1-036	372-MW1	12/2/2009	2.5	12.5	0.26 J	0.50 U	NA	NA	NA	NA
20-R2-036	372-MW1	12/18/2009	2.5	12.5	0.22 J	0.50 U	3.0 UJ	2.0 U	2.0 U	2.0 U
20-R3-035	372-MW1	1/8/2010	2.5	12.5	1.0 U	0.50 U	NA	NA	NA	NA
20-R3-036 (FD)	372-MW1	1/8/2010	2.5	12.5	0.21 J	0.50 U	NA	NA	NA	NA
20-R4-036	372-MW1	2/18/2010	2.5	12.5	1.0 U	0.50 U	3.0 U	2.0 U	2.0 U	0.75 J
20-BASE-035	D03-04	11/9/2009	47	57	1.0 U	0.50 U	3.0 U	2.0 U	2.0 U	3.0
20-R1-035	D03-04	12/2/2009	47	57	1.0 U	0.50 U	NA	NA	NA	NA
20-R2-035	D03-04	12/18/2009	47	57	1.0 U	0.50 U	3.0 UJ	2.0 U	2.0 U	3.3
20-R3-034	D03-04	1/8/2010	47	57	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-035	D03-04	2/19/2010	47	57	1.0 U	0.50 U	3.0 U	2.0 U	2.0 U	3.3
20-R1-EB-001	EQUIPMENT BLANK	11/30/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R1-EB-002	EQUIPMENT BLANK	12/1/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R1-EB-003	EQUIPMENT BLANK	12/2/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R1-EB-004	EQUIPMENT BLANK	12/3/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R2-EB-001	EQUIPMENT BLANK	12/14/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R2-EB-002	EQUIPMENT BLANK	12/15/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R2-EB-003	EQUIPMENT BLANK	12/16/2009	NA	NA	1.0 UJ	0.50 UJ	NA	NA	NA	NA
20-R2-EB-004	EQUIPMENT BLANK	12/17/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R3-EB-001	EQUIPMENT BLANK	1/5/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R3-EB-002	EQUIPMENT BLANK	1/6/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R3-EB-003	EQUIPMENT BLANK	1/7/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R3-EB-004	EQUIPMENT BLANK	1/8/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-EB-001	EQUIPMENT BLANK	2/15/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-EB-002	EQUIPMENT BLANK	2/16/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-EB-003	EQUIPMENT BLANK	2/17/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-EB-004	EQUIPMENT BLANK	2/18/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-EB-005	EQUIPMENT BLANK	2/19/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-BASE-TB-001	TRIP BLANK	11/2/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-BASE-TB-002	TRIP BLANK	11/3/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-BASE-TB-003	TRIP BLANK	11/4/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-BASE-TB-004	TRIP BLANK	11/5/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-BASE-TB-005	TRIP BLANK	11/6/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	8260B	8260B	RSK-175	RSK-175	RSK-175	RSK-175
					TRICHLOROETHENE	VINYL CHLORIDE	ACETYLENE	ETHANE	ETHENE	METHANE
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-BASE-TB-006	TRIP BLANK	11/9/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R1-TB-001	TRIP BLANK	11/30/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R1-TB-002	TRIP BLANK	12/1/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R1-TB-003	TRIP BLANK	12/2/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R1-TB-004	TRIP BLANK	12/3/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R2-TB-001	TRIP BLANK	12/14/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R2-TB-002	TRIP BLANK	12/15/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R2-TB-003	TRIP BLANK	12/16/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R2-TB-004	TRIP BLANK	12/17/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R2-TB-005	TRIP BLANK	12/18/2009	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R3-TB-001	TRIP BLANK	1/5/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R3-TB-002	TRIP BLANK	1/6/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R3-TB-003	TRIP BLANK	1/7/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R3-TB-004	TRIP BLANK	1/8/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-TB-001	TRIP BLANK	2/15/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-TB-002	TRIP BLANK	2/16/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-TB-003	TRIP BLANK	2/17/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-TB-004	TRIP BLANK	2/18/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
20-R4-TB-005	TRIP BLANK	2/19/2010	NA	NA	1.0 U	0.50 U	NA	NA	NA	NA
FD - field duplicate										
RE - resample to collect anions and alkalinity tests										
NA - not analyzed										

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	6020A	6020A	6020A	6020A	6020A	6020A
					ARSENIC	CALCIUM	IRON	MAGNESIUM	MANGANESE	POTASSIUM	SODIUM
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-BASE-001	ZVI-MW01A1	11/6/2009	6	11	24.2	11600	586	7350	175	20900	106000
20-R1-001	ZVI-MW01A1	12/3/2009	6	11	23.2	NA	720 J	NA	218	NA	NA
20-R2-001	ZVI-MW01A1	12/16/2009	6	11	27.1	9790	663	6330	275	19200	105000
20-R2-002 (FD)	ZVI-MW01A1	12/16/2009	6	11	NA	NA	NA	NA	NA	NA	NA
20-R3-001	ZVI-MW01A1	1/6/2010	6	11	NA	NA	346	NA	NA	NA	NA
20-R4-001	ZVI-MW01A1	2/17/2010	6	11	26.3 J	9460	724	6320	356	18300	105000
20-BASE-002	ZVI-MW01A2	11/9/2009	10	20	15.7	6350	356	5670	25.5	3570	790000
20-R1-002	ZVI-MW01A2	12/2/2009	10	20	58.9	NA	5390	NA	568	NA	NA
20-R2-003	ZVI-MW01A2	12/15/2009	10	20	115	21600	57000	10600	3400	11000	631000
20-R3-002	ZVI-MW01A2	1/6/2010	10	20	NA	NA	47200	NA	NA	NA	NA
20-R4-002	ZVI-MW01A2	2/16/2010	10	20	80.2	13900	27700	5660	1850	6530	683000
20-BASE-003	ZVI-MW01A3	11/6/2009	20	30	3.16	80800	729	87600	2280	3350	363000
20-R1-003	ZVI-MW01A3	12/3/2009	20	30	5.31	NA	1130	NA	1990	NA	NA
20-R1-004 (FD)	ZVI-MW01A3	12/3/2009	20	30	NA	NA	NA	NA	NA	NA	NA
20-R2-004	ZVI-MW01A3	12/16/2009	20	30	4.47	72500	1080	87300	2120	3510	409000
20-R3-003	ZVI-MW01A3	1/7/2010	20	30	NA	NA	762	NA	NA	NA	NA
20-R4-003	ZVI-MW01A3	2/17/2010	20	30	5.15 J	73200	1030	88200	2070	3380	365000
20-BASE-004	ZVI-MW01B	11/5/2009	30	40	10.5	28500	3280	27700	145	7750	1810000
20-R1-005	ZVI-MW01B	12/2/2009	30	40	8.60	NA	278 J	NA	67.8	NA	NA
20-R2-005	ZVI-MW01B	12/15/2009	30	40	9.67	22300	308	22200	40.3	5920	1710000
20-R3-004	ZVI-MW01B	1/7/2010	30	40	NA	NA	198 J	NA	NA	NA	NA
20-R4-004	ZVI-MW01B	2/16/2010	30	40	12.0	19100	1000 U	19300	3.41 J	5460	1760000
20-R4-005 (FD)	ZVI-MW01B	2/16/2010	30	40	NA	NA	NA	NA	NA	NA	NA
20-BASE-005	ZVI-MW01C	11/6/2009	40	50	3.12	317000	609 J	393000	4190	13600	2770000
20-BASE-006 (FD)	ZVI-MW01C	11/6/2009	40	50	NA	NA	NA	NA	NA	NA	NA
20-R1-006	ZVI-MW01C	12/3/2009	40	50	5.00 U	NA	449 J	NA	2520	NA	NA
20-R2-006	ZVI-MW01C	12/17/2009	40	50	8.10 J	163000	182 J	270000	1470	9750	3790000
20-R3-005	ZVI-MW01C	1/7/2010	40	50	NA	NA	1000 U	NA	NA	NA	NA
20-R4-006	ZVI-MW01C	2/17/2010	40	50	5.45 J	222000	209	330000	1850	9730	3700000
20-BASE-007	ZVI-MW01D	11/9/2009	50	60	5.00 U	706000	1400	824000	9890	17900	3560000
20-R1-007	ZVI-MW01D	12/2/2009	50	60	5.00 U	NA	388 J	NA	7780	NA	NA
20-R2-007	ZVI-MW01D	12/16/2009	50	60	5.00 U	688000	2020	819000	10700	15700	3780000
20-R3-006	ZVI-MW01D	1/7/2010	50	60	NA	NA	1330	NA	NA	NA	NA
20-R4-007	ZVI-MW01D	2/16/2010	50	60	5.00 U	627000	578 J	748000	7710	16400	3390000

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	6020A	6020A	6020A	6020A	6020A	6020A
					ARSENIC	CALCIUM	IRON	MAGNESIUM	MANGANESE	POTASSIUM	SODIUM
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-R4-008 (FD)	ZVI-MW01D	2/16/2010	50	60	NA	NA	NA	NA	NA	NA	NA
20-BASE-008	ZVI-MW02A2	11/4/2009	10	20	13.2	7080	306	5440	31.7	3620	809000
20-R1-008	ZVI-MW02A2	12/1/2009	10	20	13.3	NA	318 J	NA	35.3	NA	NA
20-R2-008	ZVI-MW02A2	12/16/2009	10	20	13.4	6610	113 J	5660	27.4	2290	752000
20-R3-007	ZVI-MW02A2	1/7/2010	10	20	NA	NA	79.1 J	NA	NA	NA	NA
20-R4-009	ZVI-MW02A2	2/16/2010	10	20	12.8	5650	109 J	4400	26.2	1510	744000
20-BASE-009	ZVI-MW02A3	11/4/2009	20	30	3.25	72800	327	82500	239	11200	565000
20-R1-009	ZVI-MW02A3	11/30/2009	20	30	5.35	NA	385	NA	392	NA	NA
20-R2-009	ZVI-MW02A3	12/16/2009	20	30	5.34	75400	259	86900	480	6920	430000
20-R3-008	ZVI-MW02A3	1/8/2010	20	30	NA	NA	72.0 J	NA	NA	NA	NA
20-R4-010	ZVI-MW02A3	2/15/2010	20	30	5.20	82300	249	95600	134	5730	477000
20-BASE-010	ZVI-MW02B	11/3/2009	30	40	49.9	5850	988	1020	18.9	5720	1640000
20-R1-010	ZVI-MW02B	12/1/2009	30	40	43.9	NA	1000 U	NA	5.10	NA	NA
20-R2-010	ZVI-MW02B	12/16/2009	30	40	58.1	5280	88.4 J	760 J	5.07	4030	1950000
20-R2-011 (FD)	ZVI-MW02B	12/16/2009	30	40	NA	NA	NA	NA	NA	NA	NA
20-R3-009	ZVI-MW02B	1/7/2010	30	40	NA	NA	468	NA	NA	NA	NA
20-R4-011	ZVI-MW02B	2/15/2010	30	40	55.4	5110	59.5 J	705 J	3.08	5810	1750000
20-BASE-011	ZVI-MW02C	11/9/2009	40	50	5.00 U	391000	3060	470000	5580	12700	2510000
20-R1-011	ZVI-MW02C	11/30/2009	40	50	7.90	NA	1930	NA	535	NA	NA
20-R2-012	ZVI-MW02C	12/16/2009	40	50	5.59	119000	1160	220000	814	11100	4040000
20-R3-010	ZVI-MW02C	1/7/2010	40	50	NA	NA	927	NA	NA	NA	NA
20-R4-012	ZVI-MW02C	2/15/2010	40	50	2.05	276000	1950	423000	1990	18000	2790000
20-R4-013 (FD)	ZVI-MW02C	2/15/2010	40	50	NA	NA	NA	NA	NA	NA	NA
20-BASE-012	ZVI-MW03A2	11/5/2009	10	20	9.31	21800	198 J	20500	192	5300	413000
20-R1-012	ZVI-MW03A2	12/2/2009	10	20	9.76	NA	1000 U	NA	81.9	NA	NA
20-R2-013	ZVI-MW03A2	12/14/2009	10	20	9.05	17500	200 U	16200	127	3310	515000
20-R3-011	ZVI-MW03A2	1/5/2010	10	20	NA	NA	200 U	NA	NA	NA	NA
20-R4-014	ZVI-MW03A2	2/18/2010	10	20	8.49	15700	52.0 J	13500	98.0	2030	522000
20-BASE-013	ZVI-MW03A3	11/6/2009	20	30	8.06	56500	760	57000	1780	4430	318000
20-R1-013	ZVI-MW03A3	12/2/2009	20	30	3.76 J	NA	538 J	NA	1840	NA	NA
20-R2-014	ZVI-MW03A3	12/14/2009	20	30	3.01	45600	378	52500	1730	2430	253000
20-R3-012	ZVI-MW03A3	1/5/2010	20	30	NA	NA	239	NA	NA	NA	NA
20-R4-015	ZVI-MW03A3	2/19/2010	20	30	3.57	45100	489	48400	1860	2360	240000
20-BASE-014	ZVI-MW03B	11/6/2009	30	40	9.02	9510	146 J	4950	29.1	3510	1620000

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	6020A	6020A	6020A	6020A	6020A	6020A
					ARSENIC	CALCIUM	IRON	MAGNESIUM	MANGANESE	POTASSIUM	SODIUM
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-BASE-015 (FD)	ZVI-MW03B	11/6/2009	30	40	NA	NA	NA	NA	NA	NA	NA
20-R1-014	ZVI-MW03B	12/2/2009	30	40	10.7	NA	400 J	NA	67.0	NA	NA
20-R2-015	ZVI-MW03B	12/15/2009	30	40	8.65	11000	169 J	6330	52.0	3440	1750000
20-R3-013	ZVI-MW03B	1/5/2010	30	40	NA	NA	1000 U	NA	NA	NA	NA
20-R4-016	ZVI-MW03B	2/18/2010	30	40	10.0	12400	200 U	8150	73.3	3820	1730000
20-BASE-016	ZVI-MW03C	11/6/2009	40	50	1.04	379000	1430	429000	4200	13500	2110000
20-R1-015	ZVI-MW03C	12/2/2009	40	50	3.19 J	NA	2410	NA	3760	NA	NA
20-R1-016 (FD)	ZVI-MW03C	12/2/2009	40	50	NA	NA	NA	NA	NA	NA	NA
20-R2-016	ZVI-MW03C	12/14/2009	40	50	3.11 J	285000	2760	358000	4130	11300	2740000
20-R3-014	ZVI-MW03C	1/5/2010	40	50	NA	NA	2560	NA	NA	NA	NA
20-R4-017	ZVI-MW03C	2/18/2010	40	50	3.99 J	300000	2510	344000	4830	10800	2920000
20-BASE-017	ZVI-MW04A1	11/4/2009	6	11	16.5	42400	200 U	9070	88.4	6410	52600
20-R1-017	ZVI-MW04A1	12/1/2009	6	11	15.7	NA	1000 U	NA	206	NA	NA
20-R2-017	ZVI-MW04A1	12/16/2009	6	11	12.9	80600	748	19200	555	10000	106000
20-R3-015	ZVI-MW04A1	1/6/2010	6	11	NA	NA	1670	NA	NA	NA	NA
20-R4-018	ZVI-MW04A1	2/17/2010	6	11	24.9 J	154000	2120	30400	1240	10200	128000
20-BASE-018	ZVI-MW04A2	11/5/2009	10	20	15.0	11300	3190	5060	110	4840	667000
20-R1-018	ZVI-MW04A2	12/2/2009	10	20	11.7	NA	835 J	NA	36.1	NA	NA
20-R2-018	ZVI-MW04A2	12/17/2009	10	20	10.9 J	4750	1040	1770	58.0	3750	455000
20-R3-016	ZVI-MW04A2	1/6/2010	10	20	NA	NA	891	NA	NA	NA	NA
20-R4-019	ZVI-MW04A2	2/16/2010	10	20	12.2	4920	605	3370	44.4	2490	457000
20-BASE-019	ZVI-MW04A3	11/4/2009	20	30	4.56	77100	222	89800	1010	3600	356000
20-R1-019	ZVI-MW04A3	12/1/2009	20	30	4.34 J	NA	1000 U	NA	1030	NA	NA
20-R2-019	ZVI-MW04A3	12/16/2009	20	30	4.01	73400	200 J	92200	969	3200	332000
20-R3-017	ZVI-MW04A3	1/7/2010	20	30	NA	NA	162 J	NA	NA	NA	NA
20-R4-020	ZVI-MW04A3	2/17/2010	20	30	9.15 J	69800	706	89000	1230	3070	409000
20-BASE-020	ZVI-MW04B	11/5/2009	30	40	89.9	10400	134 J	3960	10.3	7560	2300000
20-R1-020	ZVI-MW04B	12/2/2009	30	40	36.2	NA	1000 U	NA	9.11	NA	NA
20-R2-020	ZVI-MW04B	12/17/2009	30	40	35.3 J	8770	72.0 J	2680	9.89	5900	1900000
20-R3-018	ZVI-MW04B	1/6/2010	30	40	NA	NA	217	NA	NA	NA	NA
20-R4-021	ZVI-MW04B	2/16/2010	30	40	48.5	6910	1000 U	2580 J	21.8	4190 J	2060000
20-BASE-021	ZVI-MW04C	11/9/2009	40	50	8.31	231000	1920	318000	1440	15300	3370000
20-R1-021	ZVI-MW04C	12/1/2009	40	50	5.14	NA	408 J	NA	743	NA	NA
20-R2-021	ZVI-MW04C	12/16/2009	40	50	5.62	193000	608 J	318000	826	12400	3690000

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	6020A	6020A	6020A	6020A	6020A	6020A
					ARSENIC	CALCIUM	IRON	MAGNESIUM	MANGANESE	POTASSIUM	SODIUM
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-R3-019	ZVI-MW04C	1/6/2010	40	50	NA	NA	864	NA	NA	NA	NA
20-R4-022	ZVI-MW04C	2/16/2010	40	50	8.27	136000	689 J	256000	732	8750	4330000
20-BASE-022	ZVI-MW05A2	11/5/2009	10	20	12.7	10100	396	1880	36.2	7240	363000
20-R1-022	ZVI-MW05A2	12/1/2009	10	20	12.0	NA	276 J	NA	36.9	NA	NA
20-R2-022	ZVI-MW05A2	12/17/2009	10	20	12.6 J	4470	128 J	1100	26.8	5920	263000
20-R3-020	ZVI-MW05A2	1/5/2010	10	20	NA	NA	205	NA	NA	NA	NA
20-R4-023	ZVI-MW05A2	2/15/2010	10	20	12.5	2760	270	823 J	25.8	4190	203000
20-BASE-023	ZVI-MW05A3	11/5/2009	20	30	3.71	71300	307	83600	730	4710	446000
20-R1-023	ZVI-MW05A3	12/1/2009	20	30	5.68	NA	582 J	NA	884	NA	NA
20-R2-023	ZVI-MW05A3	12/15/2009	20	30	4.59	66700	393	83200	808	3540	379000
20-R3-021	ZVI-MW05A3	1/5/2010	20	30	NA	NA	136 J	NA	NA	NA	NA
20-R3-022 (FD)	ZVI-MW05A3	1/5/2010	20	30	NA	NA	NA	NA	NA	NA	NA
20-R4-024	ZVI-MW05A3	2/15/2010	20	30	3.11	66500	200 U	85400	714	2920	454000
20-BASE-024	ZVI-MW05B	11/5/2009	30	40	136	15400	102 J	7170	25.3	9040	3000000
20-BASE-025 (FD)	ZVI-MW05B	11/5/2009	30	40	NA	NA	NA	NA	NA	NA	NA
20-R1-024	ZVI-MW05B	12/1/2009	30	40	113	NA	1000 U	NA	52.3	NA	NA
20-R2-024	ZVI-MW05B	12/15/2009	30	40	119	13500	135 J	5470	34.8	6550	3010000
20-R3-023	ZVI-MW05B	1/5/2010	30	40	NA	NA	200 U	NA	NA	NA	NA
20-R4-025	ZVI-MW05B	2/16/2010	30	40	111	8470	1000 U	3330 J	24.1	4440 J	2650000
20-BASE-026	ZVI-MW05C	11/9/2009	40	50	8.60	195000	708 J	239000	1690	10700	3510000
20-R1-025	ZVI-MW05C	12/1/2009	40	50	16.3	NA	256 J	NA	287	NA	NA
20-R1-026 (FD)	ZVI-MW05C	12/1/2009	40	50	NA	NA	NA	NA	NA	NA	NA
20-R2-025	ZVI-MW05C	12/15/2009	40	50	16.4	68100	447	107000	372	7510	3790000
20-R3-024	ZVI-MW05C	1/5/2010	40	50	NA	NA	372 J	NA	NA	NA	NA
20-R4-026	ZVI-MW05C	2/15/2010	40	50	20.1	46400	240	92600	209	5580	3610000
20-BASE-027	ZVI-MW06A2	11/6/2009	10	20	14.0	21900	97.8 J	17100	120	5510	1240000
20-R1-027	ZVI-MW06A2	11/30/2009	10	20	50.4	NA	2390	NA	58.7	NA	NA
20-R2-026	ZVI-MW06A2	12/14/2009	10	20	74.4	21500	1740	4800	105	2750	1050000
20-R3-025	ZVI-MW06A2	1/6/2010	10	20	NA	NA	871	NA	NA	NA	NA
20-R4-027	ZVI-MW06A2	2/18/2010	10	20	116	7890	582	2250	57.6	1450	816000
20-BASE-028	ZVI-MW06A3	11/6/2009	20	30	6.09	92900	355	113000	2000	5910	521000
20-R1-028	ZVI-MW06A3	11/30/2009	20	30	5.93	NA	394	NA	1520	NA	NA
20-R2-027	ZVI-MW06A3	12/15/2009	20	30	4.20	74100	1120	90100	1400	5220	625000
20-R2-028 (FD)	ZVI-MW06A3	12/15/2009	20	30	NA	NA	NA	NA	NA	NA	NA

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	6020A	6020A	6020A	6020A	6020A	6020A
					ARSENIC	CALCIUM	IRON	MAGNESIUM	MANGANESE	POTASSIUM	SODIUM
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-R3-026	ZVI-MW06A3	1/5/2010	20	30	NA	NA	324	NA	NA	NA	NA
20-R4-028	ZVI-MW06A3	2/17/2010	20	30	7.11 J	77400	716	94200	1890	5440	362000
20-BASE-029	ZVI-MW06B	11/9/2009	30	40	8.53	25600	200 U	30800	30.5	9290	1400000
20-R1-029	ZVI-MW06B	11/30/2009	30	40	2.87	NA	200 U	NA	20.9	NA	NA
20-R2-029	ZVI-MW06B	12/14/2009	30	40	5.85	30000	228	33000	103	5330	1370000
20-R3-027	ZVI-MW06B	1/6/2010	30	40	NA	NA	106 J	NA	NA	NA	NA
20-R4-029	ZVI-MW06B	2/19/2010	30	40	13.1	22900	201	24100	98.7	5060	1570000
20-BASE-030	ZVI-MW06C	11/6/2009	40	50	1.82	223000	856	245000	2330	15500	2640000
20-R1-030	ZVI-MW06C	11/30/2009	40	50	5.22	NA	3870	NA	1660	NA	NA
20-R2-030	ZVI-MW06C	12/14/2009	40	50	3.57	201000	1650	264000	2420	13500	3360000
20-R3-028	ZVI-MW06C	1/6/2010	40	50	NA	NA	1320	NA	NA	NA	NA
20-R4-030	ZVI-MW06C	2/19/2010	40	50	3.76 J	160000	1630	201000	1950	9000	3750000
20-BASE-031	ZVI-MW07A2	11/2/2009	10	20	16.2	26000	307	24100	58.1	8150	570000
20-BASE-031A (RE)	ZVI-MW07A2	11/3/2009	10	20	NA	NA	NA	NA	NA	NA	NA
20-R1-031	ZVI-MW07A2	12/3/2009	10	20	11.0	NA	2290	NA	11.4	NA	NA
20-R2-031	ZVI-MW07A2	12/17/2009	10	20	17.2 J	4280	1320	1980	10.0	1890	760000
20-R3-029	ZVI-MW07A2	1/8/2010	10	20	NA	NA	1490	NA	NA	NA	NA
20-R3-030 (FD)	ZVI-MW07A2	1/8/2010	10	20	NA	NA	NA	NA	NA	NA	NA
20-R4-031	ZVI-MW07A2	2/17/2010	10	20	34.9 J	4310	1740	1760	13.7	1470	825000
20-BASE-032	ZVI-MW07A3	11/2/2009	20	30	5.60	76200	69.1 J	89400	1250	7330	721000
20-R1-032	ZVI-MW07A3	12/3/2009	20	30	5.07	NA	3140	NA	1820	NA	NA
20-R2-032	ZVI-MW07A3	12/17/2009	20	30	5.85 J	65800	1310	76100	2330	2730	526000
20-R3-031	ZVI-MW07A3	1/8/2010	20	30	NA	NA	682	NA	NA	NA	NA
20-R4-032	ZVI-MW07A3	2/18/2010	20	30	8.92	67500	565	82200	1950	3650	668000
20-BASE-033	ZVI-MW07B	11/3/2009	30	40	6.92	29300	200 U	31300	24.8	5850	1510000
20-R1-033	ZVI-MW07B	12/3/2009	30	40	8.16	NA	1000 U	NA	49.5	NA	NA
20-R2-033	ZVI-MW07B	12/17/2009	30	40	8.29 J	30500	200 U	31000	55.0	5610	1620000
20-R3-032	ZVI-MW07B	1/8/2010	30	40	NA	NA	200 U	NA	NA	NA	NA
20-R4-033	ZVI-MW07B	2/18/2010	30	40	7.74	33100	120 J	36500	61.8	5470	1540000
20-BASE-034	ZVI-MW07C	11/2/2009	40	50	2.67	252000	1010	230000	2570	15400	2420000
20-BASE-034A (RE)	ZVI-MW07C	11/3/2009	40	50	NA	NA	NA	NA	NA	NA	NA
20-R1-034	ZVI-MW07C	12/3/2009	40	50	5.87	NA	321 J	NA	1290	NA	NA
20-R2-034	ZVI-MW07C	12/17/2009	40	50	4.80 J	67400	369	67300	618	8700	3020000
20-R3-033	ZVI-MW07C	1/8/2010	40	50	NA	NA	145 J	NA	NA	NA	NA

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	6020A	6020A	6020A	6020A	6020A	6020A
					ARSENIC	CALCIUM	IRON	MAGNESIUM	MANGANESE	POTASSIUM	SODIUM
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-R4-034	ZVI-MW07C	2/18/2010	40	50	3.83	39000	755	44900	415	6550	2900000
20-BASE-036	372-MW1	11/9/2009	2.5	12.5	2.07	37800	200 U	3160	96.3	675 J	10100
20-R1-036	372-MW1	12/2/2009	2.5	12.5	5.00 U	NA	1000 U	NA	65.0	NA	NA
20-R2-036	372-MW1	12/18/2009	2.5	12.5	1.12 J	42200	200 U	3310	21.8	543 J	10800
20-R3-035	372-MW1	1/8/2010	2.5	12.5	NA	NA	200 U	NA	NA	NA	NA
20-R3-036 (FD)	372-MW1	1/8/2010	2.5	12.5	NA	NA	NA	NA	NA	NA	NA
20-R4-036	372-MW1	2/18/2010	2.5	12.5	0.587 J	33200	200 U	2550	80.4	540 J	8140
20-BASE-035	D03-04	11/9/2009	47	57	3.70 J	784000	1000 U	924000	11700	12600	4510000
20-R1-035	D03-04	12/2/2009	47	57	5.00 U	NA	1000 U	NA	3130	NA	NA
20-R2-035	D03-04	12/18/2009	47	57	5.00 U	612000	761 J	751000	7710	10000	3490000
20-R3-034	D03-04	1/8/2010	47	57	NA	NA	2080	NA	NA	NA	NA
20-R4-035	D03-04	2/19/2010	47	57	5.00 U	795000	364	1020000	13900	12800	4480000
20-R1-EB-001	EQUIPMENT BLANK	11/30/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R1-EB-002	EQUIPMENT BLANK	12/1/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R1-EB-003	EQUIPMENT BLANK	12/2/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R1-EB-004	EQUIPMENT BLANK	12/3/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R2-EB-001	EQUIPMENT BLANK	12/14/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R2-EB-002	EQUIPMENT BLANK	12/15/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R2-EB-003	EQUIPMENT BLANK	12/16/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R2-EB-004	EQUIPMENT BLANK	12/17/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R3-EB-001	EQUIPMENT BLANK	1/5/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R3-EB-002	EQUIPMENT BLANK	1/6/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R3-EB-003	EQUIPMENT BLANK	1/7/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R3-EB-004	EQUIPMENT BLANK	1/8/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R4-EB-001	EQUIPMENT BLANK	2/15/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R4-EB-002	EQUIPMENT BLANK	2/16/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R4-EB-003	EQUIPMENT BLANK	2/17/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R4-EB-004	EQUIPMENT BLANK	2/18/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R4-EB-005	EQUIPMENT BLANK	2/19/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-BASE-TB-001	TRIP BLANK	11/2/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-BASE-TB-002	TRIP BLANK	11/3/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-BASE-TB-003	TRIP BLANK	11/4/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-BASE-TB-004	TRIP BLANK	11/5/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-BASE-TB-005	TRIP BLANK	11/6/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	6020A	6020A	6020A	6020A	6020A	6020A
					ARSENIC	CALCIUM	IRON	MAGNESIUM	MANGANESE	POTASSIUM	SODIUM
					UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
20-BASE-TB-006	TRIP BLANK	11/9/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R1-TB-001	TRIP BLANK	11/30/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R1-TB-002	TRIP BLANK	12/1/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R1-TB-003	TRIP BLANK	12/2/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R1-TB-004	TRIP BLANK	12/3/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R2-TB-001	TRIP BLANK	12/14/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R2-TB-002	TRIP BLANK	12/15/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R2-TB-003	TRIP BLANK	12/16/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R2-TB-004	TRIP BLANK	12/17/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R2-TB-005	TRIP BLANK	12/18/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R3-TB-001	TRIP BLANK	1/5/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R3-TB-002	TRIP BLANK	1/6/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R3-TB-003	TRIP BLANK	1/7/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R3-TB-004	TRIP BLANK	1/8/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R4-TB-001	TRIP BLANK	2/15/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R4-TB-002	TRIP BLANK	2/16/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R4-TB-003	TRIP BLANK	2/17/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R4-TB-004	TRIP BLANK	2/18/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-R4-TB-005	TRIP BLANK	2/19/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA
FD - field duplicate											
RE - resample to collect anions and alkalinity tests											
NA - not analyzed											

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	2320B	300	300	300
					DISSOLVED IRON	ALKALINITY, TOTAL	CHLORIDE	N NITRATE	SULFATE AS SO4
					UG/L	MG/L	MG/L	MG/L	MG/L
20-BASE-001	ZVI-MW01A1	11/6/2009	6	11	971	198	13.5	0.0570 J	95.7
20-R1-001	ZVI-MW01A1	12/3/2009	6	11	309 J	NA	NA	NA	NA
20-R2-001	ZVI-MW01A1	12/16/2009	6	11	393	220	14.8	0.100 U	62.5
20-R2-002 (FD)	ZVI-MW01A1	12/16/2009	6	11	NA	NA	NA	NA	NA
20-R3-001	ZVI-MW01A1	1/6/2010	6	11	196 J	NA	NA	NA	NA
20-R4-001	ZVI-MW01A1	2/17/2010	6	11	464	232	13.8	0.0880 J	34.9
20-BASE-002	ZVI-MW01A2	11/9/2009	10	20	84.5 J	1220	310	0.109	111
20-R1-002	ZVI-MW01A2	12/2/2009	10	20	5170	NA	NA	NA	NA
20-R2-003	ZVI-MW01A2	12/15/2009	10	20	28500	1080	146	1.00 U	56.4
20-R3-002	ZVI-MW01A2	1/6/2010	10	20	30700	NA	NA	NA	NA
20-R4-002	ZVI-MW01A2	2/16/2010	10	20	11400	1220	133	1.00 U	24.1
20-BASE-003	ZVI-MW01A3	11/6/2009	20	30	648	638	436	0.142	133
20-R1-003	ZVI-MW01A3	12/3/2009	20	30	1040	NA	NA	NA	NA
20-R1-004 (FD)	ZVI-MW01A3	12/3/2009	20	30	NA	NA	NA	NA	NA
20-R2-004	ZVI-MW01A3	12/16/2009	20	30	550	646	488	0.0703 J	141
20-R3-003	ZVI-MW01A3	1/7/2010	20	30	697	NA	NA	NA	NA
20-R4-003	ZVI-MW01A3	2/17/2010	20	30	272	628	427	0.100 U	130
20-BASE-004	ZVI-MW01B	11/5/2009	30	40	200 U	544	2170	2.68	292
20-R1-005	ZVI-MW01B	12/2/2009	30	40	1000 U	NA	NA	NA	NA
20-R2-005	ZVI-MW01B	12/15/2009	30	40	75.7 J	570	2110	2.75	291
20-R3-004	ZVI-MW01B	1/7/2010	30	40	200 U	NA	NA	NA	NA
20-R4-004	ZVI-MW01B	2/16/2010	30	40	1000 U	573	2000	1.96	226
20-R4-005 (FD)	ZVI-MW01B	2/16/2010	30	40	NA	NA	NA	NA	NA
20-BASE-005	ZVI-MW01C	11/6/2009	40	50	1000 U	584	4900	4.73	1260
20-BASE-006 (FD)	ZVI-MW01C	11/6/2009	40	50	NA	NA	NA	NA	NA
20-R1-006	ZVI-MW01C	12/3/2009	40	50	258 J	NA	NA	NA	NA
20-R2-006	ZVI-MW01C	12/17/2009	40	50	1000 U	1110	4940	0.715	1820
20-R3-005	ZVI-MW01C	1/7/2010	40	50	1000 U	NA	NA	NA	NA
20-R4-006	ZVI-MW01C	2/17/2010	40	50	200 U	1020	4850	3.24	1660
20-BASE-007	ZVI-MW01D	11/9/2009	50	60	1000 U	194	8310	2.56	1090
20-R1-007	ZVI-MW01D	12/2/2009	50	60	1000 U	NA	NA	NA	NA
20-R2-007	ZVI-MW01D	12/16/2009	50	60	2080	189	9820	0.475 J	1190
20-R3-006	ZVI-MW01D	1/7/2010	50	60	1150	NA	NA	NA	NA
20-R4-007	ZVI-MW01D	2/16/2010	50	60	480 J	223	7400	0.148 J	909

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	2320B	300	300	300
					DISSOLVED IRON	ALKALINITY, TOTAL	CHLORIDE	N NITRATE	SULFATE AS SO4
					UG/L	MG/L	MG/L	MG/L	MG/L
20-R4-008 (FD)	ZVI-MW01D	2/16/2010	50	60	NA	NA	NA	NA	NA
20-BASE-008	ZVI-MW02A2	11/4/2009	10	20	129 J	1000	309	0.100 U	359
20-R1-008	ZVI-MW02A2	12/1/2009	10	20	1000 U	NA	NA	NA	NA
20-R2-008	ZVI-MW02A2	12/16/2009	10	20	200 U	990	278	0.247	289
20-R3-007	ZVI-MW02A2	1/7/2010	10	20	200 U	NA	NA	NA	NA
20-R4-009	ZVI-MW02A2	2/16/2010	10	20	200 U	1010	259	0.0592 J	200
20-BASE-009	ZVI-MW02A3	11/4/2009	20	30	200 U	682	759	1.83	149
20-R1-009	ZVI-MW02A3	11/30/2009	20	30	228	NA	NA	NA	NA
20-R2-009	ZVI-MW02A3	12/16/2009	20	30	128 J	718	431	0.0662 J	210
20-R3-008	ZVI-MW02A3	1/8/2010	20	30	200 U	NA	NA	NA	NA
20-R4-010	ZVI-MW02A3	2/15/2010	20	30	200 U	687	527	0.0605 J	168
20-BASE-010	ZVI-MW02B	11/3/2009	30	40	60.9 J	581	2100	5.99	179
20-R1-010	ZVI-MW02B	12/1/2009	30	40	1000 U	NA	NA	NA	NA
20-R2-010	ZVI-MW02B	12/16/2009	30	40	200 U	772	2090	2.97	289
20-R2-011 (FD)	ZVI-MW02B	12/16/2009	30	40	NA	NA	NA	NA	NA
20-R3-009	ZVI-MW02B	1/7/2010	30	40	78.7 J	NA	NA	NA	NA
20-R4-011	ZVI-MW02B	2/15/2010	30	40	200 U	575	2000	0.678	163
20-BASE-011	ZVI-MW02C	11/9/2009	40	50	1580	255	5130	2.21	896
20-R1-011	ZVI-MW02C	11/30/2009	40	50	576	NA	NA	NA	NA
20-R2-012	ZVI-MW02C	12/16/2009	40	50	578 J	1350	4710	0.241	1970
20-R3-010	ZVI-MW02C	1/7/2010	40	50	383	NA	NA	NA	NA
20-R4-012	ZVI-MW02C	2/15/2010	40	50	616	405	4800	0.0911 J	998
20-R4-013 (FD)	ZVI-MW02C	2/15/2010	40	50	NA	NA	NA	NA	NA
20-BASE-012	ZVI-MW03A2	11/5/2009	10	20	200 U	753	151	0.116	108
20-R1-012	ZVI-MW03A2	12/2/2009	10	20	1000 U	NA	NA	NA	NA
20-R2-013	ZVI-MW03A2	12/14/2009	10	20	200 U	845	142	0.119	162
20-R3-011	ZVI-MW03A2	1/5/2010	10	20	200 U	NA	NA	NA	NA
20-R4-014	ZVI-MW03A2	2/18/2010	10	20	200 U	865	130	0.0516 J	147
20-BASE-013	ZVI-MW03A3	11/6/2009	20	30	467	611	333	0.133	59.6
20-R1-013	ZVI-MW03A3	12/2/2009	20	30	385 J	NA	NA	NA	NA
20-R2-014	ZVI-MW03A3	12/14/2009	20	30	294	558	138	0.0519 J	117
20-R3-012	ZVI-MW03A3	1/5/2010	20	30	197 J	NA	NA	NA	NA
20-R4-015	ZVI-MW03A3	2/19/2010	20	30	218	555	157	0.0603 J	123
20-BASE-014	ZVI-MW03B	11/6/2009	30	40	200 U	526	2100	0.958	185

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	2320B	300	300	300
					DISSOLVED IRON	ALKALINITY, TOTAL	CHLORIDE	N NITRATE	SULFATE AS SO4
					UG/L	MG/L	MG/L	MG/L	MG/L
20-BASE-015 (FD)	ZVI-MW03B	11/6/2009	30	40	NA	NA	NA	NA	NA
20-R1-014	ZVI-MW03B	12/2/2009	30	40	1000 U	NA	NA	NA	NA
20-R2-015	ZVI-MW03B	12/15/2009	30	40	61.3 J	560	2150	1.89	213
20-R3-013	ZVI-MW03B	1/5/2010	30	40	1000 U	NA	NA	NA	NA
20-R4-016	ZVI-MW03B	2/18/2010	30	40	200 U	561	2140	0.120	249
20-BASE-016	ZVI-MW03C	11/6/2009	40	50	1220	310	4530	0.401	905
20-R1-015	ZVI-MW03C	12/2/2009	40	50	2140	NA	NA	NA	NA
20-R1-016 (FD)	ZVI-MW03C	12/2/2009	40	50	NA	NA	NA	NA	NA
20-R2-016	ZVI-MW03C	12/14/2009	40	50	2490	597	4430	0.143	1290
20-R3-014	ZVI-MW03C	1/5/2010	40	50	2120	NA	NA	NA	NA
20-R4-017	ZVI-MW03C	2/18/2010	40	50	1660	744	4310	0.0781 J	1350
20-BASE-017	ZVI-MW04A1	11/4/2009	6	11	200 U	174	18.0	0.100 U	67.5
20-R1-017	ZVI-MW04A1	12/1/2009	6	11	1000 U	NA	NA	NA	NA
20-R2-017	ZVI-MW04A1	12/16/2009	6	11	122 J	387	31.5	0.0507 J	1.20
20-R3-015	ZVI-MW04A1	1/6/2010	6	11	1220	NA	NA	NA	NA
20-R4-018	ZVI-MW04A1	2/17/2010	6	11	1570	609	23.6	0.100 U	0.869
20-BASE-018	ZVI-MW04A2	11/5/2009	10	20	200 U	485	128	0.0769 J	688
20-R1-018	ZVI-MW04A2	12/2/2009	10	20	501 J	NA	NA	NA	NA
20-R2-018	ZVI-MW04A2	12/17/2009	10	20	762	439	83.9	0.0590 J	448
20-R3-016	ZVI-MW04A2	1/6/2010	10	20	353	NA	NA	NA	NA
20-R4-019	ZVI-MW04A2	2/16/2010	10	20	517	561	95.6	0.0525 J	220
20-BASE-019	ZVI-MW04A3	11/4/2009	20	30	153 J	651	445	0.100 U	141
20-R1-019	ZVI-MW04A3	12/1/2009	20	30	1000 U	NA	NA	NA	NA
20-R2-019	ZVI-MW04A3	12/16/2009	20	30	125 J	663	381	0.0621 J	127
20-R3-017	ZVI-MW04A3	1/7/2010	20	30	129 J	NA	NA	NA	NA
20-R4-020	ZVI-MW04A3	2/17/2010	20	30	397	688	477	0.214	87.1
20-BASE-020	ZVI-MW04B	11/5/2009	30	40	200 U	1200	2160	0.275	605
20-R1-020	ZVI-MW04B	12/2/2009	30	40	1000 U	NA	NA	NA	NA
20-R2-020	ZVI-MW04B	12/17/2009	30	40	200 U	789	2130	0.181	408
20-R3-018	ZVI-MW04B	1/6/2010	30	40	125 J	NA	NA	NA	NA
20-R4-021	ZVI-MW04B	2/16/2010	30	40	1000 U	915	1960	0.0514 J	366
20-BASE-021	ZVI-MW04C	11/9/2009	40	50	1000 U	961	4650	0.303	1700
20-R1-021	ZVI-MW04C	12/1/2009	40	50	1000 U	NA	NA	NA	NA
20-R2-021	ZVI-MW04C	12/16/2009	40	50	391 J	919	4960	0.295	1650

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	2320B	300	300	300
					DISSOLVED IRON	ALKALINITY, TOTAL	CHLORIDE	N NITRATE	SULFATE AS SO4
					UG/L	MG/L	MG/L	MG/L	MG/L
20-R3-019	ZVI-MW04C	1/6/2010	40	50	365	NA	NA	NA	NA
20-R4-022	ZVI-MW04C	2/16/2010	40	50	1000 U	1510	4860	0.124 J	2080
20-BASE-022	ZVI-MW05A2	11/5/2009	10	20	193 J	314	32.7	0.0561 J	405
20-R1-022	ZVI-MW05A2	12/1/2009	10	20	1000 U	NA	NA	NA	NA
20-R2-022	ZVI-MW05A2	12/17/2009	10	20	107 J	410	16.1	0.0537 J	138
20-R3-020	ZVI-MW05A2	1/5/2010	10	20	137 J	NA	NA	NA	NA
20-R4-023	ZVI-MW05A2	2/15/2010	10	20	276	373	15.6	0.100 U	32.7
20-BASE-023	ZVI-MW05A3	11/5/2009	20	30	113 J	632	494	0.0944 J	141
20-R1-023	ZVI-MW05A3	12/1/2009	20	30	1000 U	NA	NA	NA	NA
20-R2-023	ZVI-MW05A3	12/15/2009	20	30	202	702	429	0.100 U	147
20-R3-021	ZVI-MW05A3	1/5/2010	20	30	101 J	NA	NA	NA	NA
20-R3-022 (FD)	ZVI-MW05A3	1/5/2010	20	30	NA	NA	NA	NA	NA
20-R4-024	ZVI-MW05A3	2/15/2010	20	30	200 U	641	530	0.0537 J	137
20-BASE-024	ZVI-MW05B	11/5/2009	30	40	200 U	1930	2390	0.377	1080
20-BASE-025 (FD)	ZVI-MW05B	11/5/2009	30	40	NA	NA	NA	NA	NA
20-R1-024	ZVI-MW05B	12/1/2009	30	40	1000 U	NA	NA	NA	NA
20-R2-024	ZVI-MW05B	12/15/2009	30	40	144 J	1940	2280	0.128	1060
20-R3-023	ZVI-MW05B	1/5/2010	30	40	200 U	NA	NA	NA	NA
20-R4-025	ZVI-MW05B	2/16/2010	30	40	1000 U	1610	2250	0.216	854
20-BASE-026	ZVI-MW05C	11/9/2009	40	50	1000 U	1080	4290	0.254	1590
20-R1-025	ZVI-MW05C	12/1/2009	40	50	1000 U	NA	NA	NA	NA
20-R1-026 (FD)	ZVI-MW05C	12/1/2009	40	50	NA	NA	NA	NA	NA
20-R2-025	ZVI-MW05C	12/15/2009	40	50	1000 U	1960	3850	0.102 J	1740
20-R3-024	ZVI-MW05C	1/5/2010	40	50	1000 U	NA	NA	NA	NA
20-R4-026	ZVI-MW05C	2/15/2010	40	50	200 U	2140	3330	0.109 J	1310
20-BASE-027	ZVI-MW06A2	11/6/2009	10	20	200 U	1070	391	0.106	1280
20-R1-027	ZVI-MW06A2	11/30/2009	10	20	843	NA	NA	NA	NA
20-R2-026	ZVI-MW06A2	12/14/2009	10	20	649	1030	261	0.0656 J	953
20-R3-025	ZVI-MW06A2	1/6/2010	10	20	850	NA	NA	NA	NA
20-R4-027	ZVI-MW06A2	2/18/2010	10	20	611	1380	212	0.0532 J	307
20-BASE-028	ZVI-MW06A3	11/6/2009	20	30	231	568	1100	0.235	149
20-R1-028	ZVI-MW06A3	11/30/2009	20	30	364	NA	NA	NA	NA
20-R2-027	ZVI-MW06A3	12/15/2009	20	30	145 J	598	1150	2.41	148
20-R2-028 (FD)	ZVI-MW06A3	12/15/2009	20	30	NA	NA	NA	NA	NA

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	2320B	300	300	300
					DISSOLVED IRON	ALKALINITY, TOTAL	CHLORIDE	N NITRATE	SULFATE AS SO4
					UG/L	MG/L	MG/L	MG/L	MG/L
20-R3-026	ZVI-MW06A3	1/5/2010	20	30	228	NA	NA	NA	NA
20-R4-028	ZVI-MW06A3	2/17/2010	20	30	474	555	504	0.100 U	68.6
20-BASE-029	ZVI-MW06B	11/9/2009	30	40	200 U	502	1760	0.105	323
20-R1-029	ZVI-MW06B	11/30/2009	30	40	200 U	NA	NA	NA	NA
20-R2-029	ZVI-MW06B	12/14/2009	30	40	200 U	511	1920	0.0854 J	328
20-R3-027	ZVI-MW06B	1/6/2010	30	40	93.6 J	NA	NA	NA	NA
20-R4-029	ZVI-MW06B	2/19/2010	30	40	200 U	589	1900	0.0761 J	278
20-BASE-030	ZVI-MW06C	11/6/2009	40	50	641	478	4170	2.12	1140
20-R1-030	ZVI-MW06C	11/30/2009	40	50	1320	NA	NA	NA	NA
20-R2-030	ZVI-MW06C	12/14/2009	40	50	582	916	4490	0.306	1770
20-R3-028	ZVI-MW06C	1/6/2010	40	50	476	NA	NA	NA	NA
20-R4-030	ZVI-MW06C	2/19/2010	40	50	323	1180	4320	0.185 J	1970
20-BASE-031	ZVI-MW07A2	11/2/2009	10	20	59.7 J	NA	NA	NA	NA
20-BASE-031A (RE)	ZVI-MW07A2	11/3/2009	10	20	NA	1010	330	0.0906 J	167
20-R1-031	ZVI-MW07A2	12/3/2009	10	20	471 J	NA	NA	NA	NA
20-R2-031	ZVI-MW07A2	12/17/2009	10	20	324	1040	263	0.0959 J	140
20-R3-029	ZVI-MW07A2	1/8/2010	10	20	465	NA	NA	NA	NA
20-R3-030 (FD)	ZVI-MW07A2	1/8/2010	10	20	NA	NA	NA	NA	NA
20-R4-031	ZVI-MW07A2	2/17/2010	10	20	151 J	1090	283	0.0652 J	150
20-BASE-032	ZVI-MW07A3	11/2/2009	20	30	83.5 J	611	1020	2.46	167
20-R1-032	ZVI-MW07A3	12/3/2009	20	30	1850	NA	NA	NA	NA
20-R2-032	ZVI-MW07A3	12/17/2009	20	30	912	626	701	0.0954 J	147
20-R3-031	ZVI-MW07A3	1/8/2010	20	30	570	NA	NA	NA	NA
20-R4-032	ZVI-MW07A3	2/18/2010	20	30	295	700	841	1.06	56.8
20-BASE-033	ZVI-MW07B	11/3/2009	30	40	200 U	544	2050	11.7	195
20-R1-033	ZVI-MW07B	12/3/2009	30	40	1000 U	NA	NA	NA	NA
20-R2-033	ZVI-MW07B	12/17/2009	30	40	200 U	564	1970	7.52	270
20-R3-032	ZVI-MW07B	1/8/2010	30	40	200 U	NA	NA	NA	NA
20-R4-033	ZVI-MW07B	2/18/2010	30	40	200 U	585	1930	4.26	232
20-BASE-034	ZVI-MW07C	11/2/2009	40	50	1220	NA	NA	NA	NA
20-BASE-034A (RE)	ZVI-MW07C	11/3/2009	40	50	NA	319	4410	0.148	764
20-R1-034	ZVI-MW07C	12/3/2009	40	50	452 J	NA	NA	NA	NA
20-R2-034	ZVI-MW07C	12/17/2009	40	50	509	595	3920	0.395	839
20-R3-033	ZVI-MW07C	1/8/2010	40	50	80.6 U	NA	NA	NA	NA

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	2320B	300	300	300
					DISSOLVED IRON	ALKALINITY, TOTAL	CHLORIDE	N NITRATE	SULFATE AS SO4
					UG/L	MG/L	MG/L	MG/L	MG/L
20-R4-034	ZVI-MW07C	2/18/2010	40	50	128 J	590	3700	0.0683 J	720
20-BASE-036	372-MW1	11/9/2009	2.5	12.5	200 U	104	6.70	0.0668 J	12.0
20-R1-036	372-MW1	12/2/2009	2.5	12.5	1000 U	NA	NA	NA	NA
20-R2-036	372-MW1	12/18/2009	2.5	12.5	200 U	119	9.55	0.100 U	26.2 J
20-R3-035	372-MW1	1/8/2010	2.5	12.5	200 U	NA	NA	NA	NA
20-R3-036 (FD)	372-MW1	1/8/2010	2.5	12.5	NA	NA	NA	NA	NA
20-R4-036	372-MW1	2/18/2010	2.5	12.5	200 U	94.6	6.66	0.100 U	13.8
20-BASE-035	D03-04	11/9/2009	47	57	1000 U	237	10100	0.465 J	1570
20-R1-035	D03-04	12/2/2009	47	57	1000 U	NA	NA	NA	NA
20-R2-035	D03-04	12/18/2009	47	57	708 J	214	7930	2.29	1180
20-R3-034	D03-04	1/8/2010	47	57	2710	NA	NA	NA	NA
20-R4-035	D03-04	2/19/2010	47	57	320	202	10100	0.310 J	1500
20-R1-EB-001	EQUIPMENT BLANK	11/30/2009	NA	NA	NA	NA	NA	NA	NA
20-R1-EB-002	EQUIPMENT BLANK	12/1/2009	NA	NA	NA	NA	NA	NA	NA
20-R1-EB-003	EQUIPMENT BLANK	12/2/2009	NA	NA	NA	NA	NA	NA	NA
20-R1-EB-004	EQUIPMENT BLANK	12/3/2009	NA	NA	NA	NA	NA	NA	NA
20-R2-EB-001	EQUIPMENT BLANK	12/14/2009	NA	NA	NA	NA	NA	NA	NA
20-R2-EB-002	EQUIPMENT BLANK	12/15/2009	NA	NA	NA	NA	NA	NA	NA
20-R2-EB-003	EQUIPMENT BLANK	12/16/2009	NA	NA	NA	NA	NA	NA	NA
20-R2-EB-004	EQUIPMENT BLANK	12/17/2009	NA	NA	NA	NA	NA	NA	NA
20-R3-EB-001	EQUIPMENT BLANK	1/5/2010	NA	NA	NA	NA	NA	NA	NA
20-R3-EB-002	EQUIPMENT BLANK	1/6/2010	NA	NA	NA	NA	NA	NA	NA
20-R3-EB-003	EQUIPMENT BLANK	1/7/2010	NA	NA	NA	NA	NA	NA	NA
20-R3-EB-004	EQUIPMENT BLANK	1/8/2010	NA	NA	NA	NA	NA	NA	NA
20-R4-EB-001	EQUIPMENT BLANK	2/15/2010	NA	NA	NA	NA	NA	NA	NA
20-R4-EB-002	EQUIPMENT BLANK	2/16/2010	NA	NA	NA	NA	NA	NA	NA
20-R4-EB-003	EQUIPMENT BLANK	2/17/2010	NA	NA	NA	NA	NA	NA	NA
20-R4-EB-004	EQUIPMENT BLANK	2/18/2010	NA	NA	NA	NA	NA	NA	NA
20-R4-EB-005	EQUIPMENT BLANK	2/19/2010	NA	NA	NA	NA	NA	NA	NA
20-BASE-TB-001	TRIP BLANK	11/2/2009	NA	NA	NA	NA	NA	NA	NA
20-BASE-TB-002	TRIP BLANK	11/3/2009	NA	NA	NA	NA	NA	NA	NA
20-BASE-TB-003	TRIP BLANK	11/4/2009	NA	NA	NA	NA	NA	NA	NA
20-BASE-TB-004	TRIP BLANK	11/5/2009	NA	NA	NA	NA	NA	NA	NA
20-BASE-TB-005	TRIP BLANK	11/6/2009	NA	NA	NA	NA	NA	NA	NA

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	6020A	2320B	300	300	300
					DISSOLVED IRON	ALKALINITY, TOTAL	CHLORIDE	N NITRATE	SULFATE AS SO4
					UG/L	MG/L	MG/L	MG/L	MG/L
20-BASE-TB-006	TRIP BLANK	11/9/2009	NA	NA	NA	NA	NA	NA	NA
20-R1-TB-001	TRIP BLANK	11/30/2009	NA	NA	NA	NA	NA	NA	NA
20-R1-TB-002	TRIP BLANK	12/1/2009	NA	NA	NA	NA	NA	NA	NA
20-R1-TB-003	TRIP BLANK	12/2/2009	NA	NA	NA	NA	NA	NA	NA
20-R1-TB-004	TRIP BLANK	12/3/2009	NA	NA	NA	NA	NA	NA	NA
20-R2-TB-001	TRIP BLANK	12/14/2009	NA	NA	NA	NA	NA	NA	NA
20-R2-TB-002	TRIP BLANK	12/15/2009	NA	NA	NA	NA	NA	NA	NA
20-R2-TB-003	TRIP BLANK	12/16/2009	NA	NA	NA	NA	NA	NA	NA
20-R2-TB-004	TRIP BLANK	12/17/2009	NA	NA	NA	NA	NA	NA	NA
20-R2-TB-005	TRIP BLANK	12/18/2009	NA	NA	NA	NA	NA	NA	NA
20-R3-TB-001	TRIP BLANK	1/5/2010	NA	NA	NA	NA	NA	NA	NA
20-R3-TB-002	TRIP BLANK	1/6/2010	NA	NA	NA	NA	NA	NA	NA
20-R3-TB-003	TRIP BLANK	1/7/2010	NA	NA	NA	NA	NA	NA	NA
20-R3-TB-004	TRIP BLANK	1/8/2010	NA	NA	NA	NA	NA	NA	NA
20-R4-TB-001	TRIP BLANK	2/15/2010	NA	NA	NA	NA	NA	NA	NA
20-R4-TB-002	TRIP BLANK	2/16/2010	NA	NA	NA	NA	NA	NA	NA
20-R4-TB-003	TRIP BLANK	2/17/2010	NA	NA	NA	NA	NA	NA	NA
20-R4-TB-004	TRIP BLANK	2/18/2010	NA	NA	NA	NA	NA	NA	NA
20-R4-TB-005	TRIP BLANK	2/19/2010	NA	NA	NA	NA	NA	NA	NA
FD - field duplicate									
RE - resample to collect anions and alkalinity tests									
NA - not analyzed									

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	AM20GAX
					Dissolved Hydrogen
					nM
20-BASE-001	ZVI-MW01A1	11/6/2009	6	11	1.200
20-R1-001	ZVI-MW01A1	12/3/2009	6	11	NA
20-R2-001	ZVI-MW01A1	12/16/2009	6	11	2000.000
20-R2-002 (FD)	ZVI-MW01A1	12/16/2009	6	11	NA
20-R3-001	ZVI-MW01A1	1/6/2010	6	11	NA
20-R4-001	ZVI-MW01A1	2/17/2010	6	11	1.200
20-BASE-002	ZVI-MW01A2	11/9/2009	10	20	1.700
20-R1-002	ZVI-MW01A2	12/2/2009	10	20	NA
20-R2-003	ZVI-MW01A2	12/15/2009	10	20	23000.000
20-R3-002	ZVI-MW01A2	1/6/2010	10	20	NA
20-R4-002	ZVI-MW01A2	2/16/2010	10	20	380.000
20-BASE-003	ZVI-MW01A3	11/6/2009	20	30	260.000
20-R1-003	ZVI-MW01A3	12/3/2009	20	30	NA
20-R1-004 (FD)	ZVI-MW01A3	12/3/2009	20	30	NA
20-R2-004	ZVI-MW01A3	12/16/2009	20	30	1100.000
20-R3-003	ZVI-MW01A3	1/7/2010	20	30	NA
20-R4-003	ZVI-MW01A3	2/17/2010	20	30	1.300
20-BASE-004	ZVI-MW01B	11/5/2009	30	40	0.640
20-R1-005	ZVI-MW01B	12/2/2009	30	40	NA
20-R2-005	ZVI-MW01B	12/15/2009	30	40	1.800
20-R3-004	ZVI-MW01B	1/7/2010	30	40	NA
20-R4-004	ZVI-MW01B	2/16/2010	30	40	0.960
20-R4-005 (FD)	ZVI-MW01B	2/16/2010	30	40	NA
20-BASE-005	ZVI-MW01C	11/6/2009	40	50	45000.000
20-BASE-006 (FD)	ZVI-MW01C	11/6/2009	40	50	NA
20-R1-006	ZVI-MW01C	12/3/2009	40	50	NA
20-R2-006	ZVI-MW01C	12/17/2009	40	50	1.300
20-R3-005	ZVI-MW01C	1/7/2010	40	50	NA
20-R4-006	ZVI-MW01C	2/17/2010	40	50	1.400
20-BASE-007	ZVI-MW01D	11/9/2009	50	60	75000.000
20-R1-007	ZVI-MW01D	12/2/2009	50	60	NA
20-R2-007	ZVI-MW01D	12/16/2009	50	60	4000.000
20-R3-006	ZVI-MW01D	1/7/2010	50	60	NA
20-R4-007	ZVI-MW01D	2/16/2010	50	60	1.700

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	AM20GAX
					Dissolved Hydrogen
					nM
20-R4-008 (FD)	ZVI-MW01D	2/16/2010	50	60	NA
20-BASE-008	ZVI-MW02A2	11/4/2009	10	20	2.800
20-R1-008	ZVI-MW02A2	12/1/2009	10	20	NA
20-R2-008	ZVI-MW02A2	12/16/2009	10	20	3.500
20-R3-007	ZVI-MW02A2	1/7/2010	10	20	NA
20-R4-009	ZVI-MW02A2	2/16/2010	10	20	0.920
20-BASE-009	ZVI-MW02A3	11/4/2009	20	30	3.800
20-R1-009	ZVI-MW02A3	11/30/2009	20	30	NA
20-R2-009	ZVI-MW02A3	12/16/2009	20	30	52.000
20-R3-008	ZVI-MW02A3	1/8/2010	20	30	NA
20-R4-010	ZVI-MW02A3	2/15/2010	20	30	81.000
20-BASE-010	ZVI-MW02B	11/3/2009	30	40	31.000
20-R1-010	ZVI-MW02B	12/1/2009	30	40	NA
20-R2-010	ZVI-MW02B	12/16/2009	30	40	2100.000
20-R2-011 (FD)	ZVI-MW02B	12/16/2009	30	40	NA
20-R3-009	ZVI-MW02B	1/7/2010	30	40	NA
20-R4-011	ZVI-MW02B	2/15/2010	30	40	2.600
20-BASE-011	ZVI-MW02C	11/9/2009	40	50	120000.000
20-R1-011	ZVI-MW02C	11/30/2009	40	50	NA
20-R2-012	ZVI-MW02C	12/16/2009	40	50	3700.000
20-R3-010	ZVI-MW02C	1/7/2010	40	50	NA
20-R4-012	ZVI-MW02C	2/15/2010	40	50	2.100
20-R4-013 (FD)	ZVI-MW02C	2/15/2010	40	50	NA
20-BASE-012	ZVI-MW03A2	11/5/2009	10	20	14.000
20-R1-012	ZVI-MW03A2	12/2/2009	10	20	NA
20-R2-013	ZVI-MW03A2	12/14/2009	10	20	1.400
20-R3-011	ZVI-MW03A2	1/5/2010	10	20	NA
20-R4-014	ZVI-MW03A2	2/18/2010	10	20	0.800
20-BASE-013	ZVI-MW03A3	11/6/2009	20	30	1800.000
20-R1-013	ZVI-MW03A3	12/2/2009	20	30	NA
20-R2-014	ZVI-MW03A3	12/14/2009	20	30	0.840
20-R3-012	ZVI-MW03A3	1/5/2010	20	30	NA
20-R4-015	ZVI-MW03A3	2/19/2010	20	30	0.670
20-BASE-014	ZVI-MW03B	11/6/2009	30	40	340.000

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	AM20GAX
					Dissolved Hydrogen
					nM
20-BASE-015 (FD)	ZVI-MW03B	11/6/2009	30	40	NA
20-R1-014	ZVI-MW03B	12/2/2009	30	40	NA
20-R2-015	ZVI-MW03B	12/15/2009	30	40	1.500
20-R3-013	ZVI-MW03B	1/5/2010	30	40	NA
20-R4-016	ZVI-MW03B	2/18/2010	30	40	1.000
20-BASE-016	ZVI-MW03C	11/6/2009	40	50	85000.000
20-R1-015	ZVI-MW03C	12/2/2009	40	50	NA
20-R1-016 (FD)	ZVI-MW03C	12/2/2009	40	50	NA
20-R2-016	ZVI-MW03C	12/14/2009	40	50	1.100
20-R3-014	ZVI-MW03C	1/5/2010	40	50	NA
20-R4-017	ZVI-MW03C	2/18/2010	40	50	1.000
20-BASE-017	ZVI-MW04A1	11/4/2009	6	11	13.000
20-R1-017	ZVI-MW04A1	12/1/2009	6	11	NA
20-R2-017	ZVI-MW04A1	12/16/2009	6	11	25.000
20-R3-015	ZVI-MW04A1	1/6/2010	6	11	NA
20-R4-018	ZVI-MW04A1	2/17/2010	6	11	5.900
20-BASE-018	ZVI-MW04A2	11/5/2009	10	20	3.100
20-R1-018	ZVI-MW04A2	12/2/2009	10	20	NA
20-R2-018	ZVI-MW04A2	12/17/2009	10	20	2.900
20-R3-016	ZVI-MW04A2	1/6/2010	10	20	NA
20-R4-019	ZVI-MW04A2	2/16/2010	10	20	1.300
20-BASE-019	ZVI-MW04A3	11/4/2009	20	30	4100.000
20-R1-019	ZVI-MW04A3	12/1/2009	20	30	NA
20-R2-019	ZVI-MW04A3	12/16/2009	20	30	1.100
20-R3-017	ZVI-MW04A3	1/7/2010	20	30	NA
20-R4-020	ZVI-MW04A3	2/17/2010	20	30	36.000
20-BASE-020	ZVI-MW04B	11/5/2009	30	40	3.300
20-R1-020	ZVI-MW04B	12/2/2009	30	40	NA
20-R2-020	ZVI-MW04B	12/17/2009	30	40	7.400
20-R3-018	ZVI-MW04B	1/6/2010	30	40	NA
20-R4-021	ZVI-MW04B	2/16/2010	30	40	2.000
20-BASE-021	ZVI-MW04C	11/9/2009	40	50	62000.000
20-R1-021	ZVI-MW04C	12/1/2009	40	50	NA
20-R2-021	ZVI-MW04C	12/16/2009	40	50	310.000

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	AM20GAX
					Dissolved Hydrogen
					nM
20-R3-019	ZVI-MW04C	1/6/2010	40	50	NA
20-R4-022	ZVI-MW04C	2/16/2010	40	50	0.810
20-BASE-022	ZVI-MW05A2	11/5/2009	10	20	1.800
20-R1-022	ZVI-MW05A2	12/1/2009	10	20	NA
20-R2-022	ZVI-MW05A2	12/17/2009	10	20	1.000
20-R3-020	ZVI-MW05A2	1/5/2010	10	20	NA
20-R4-023	ZVI-MW05A2	2/15/2010	10	20	0.590 J
20-BASE-023	ZVI-MW05A3	11/5/2009	20	30	1.600
20-R1-023	ZVI-MW05A3	12/1/2009	20	30	NA
20-R2-023	ZVI-MW05A3	12/15/2009	20	30	1.000
20-R3-021	ZVI-MW05A3	1/5/2010	20	30	NA
20-R3-022 (FD)	ZVI-MW05A3	1/5/2010	20	30	NA
20-R4-024	ZVI-MW05A3	2/15/2010	20	30	0.590 J
20-BASE-024	ZVI-MW05B	11/5/2009	30	40	1.100
20-BASE-025 (FD)	ZVI-MW05B	11/5/2009	30	40	NA
20-R1-024	ZVI-MW05B	12/1/2009	30	40	NA
20-R2-024	ZVI-MW05B	12/15/2009	30	40	2.100
20-R3-023	ZVI-MW05B	1/5/2010	30	40	NA
20-R4-025	ZVI-MW05B	2/16/2010	30	40	2.500
20-BASE-026	ZVI-MW05C	11/9/2009	40	50	9700.000
20-R1-025	ZVI-MW05C	12/1/2009	40	50	NA
20-R1-026 (FD)	ZVI-MW05C	12/1/2009	40	50	NA
20-R2-025	ZVI-MW05C	12/15/2009	40	50	1.300
20-R3-024	ZVI-MW05C	1/5/2010	40	50	NA
20-R4-026	ZVI-MW05C	2/15/2010	40	50	0.530 J
20-BASE-027	ZVI-MW06A2	11/6/2009	10	20	1.300
20-R1-027	ZVI-MW06A2	11/30/2009	10	20	NA
20-R2-026	ZVI-MW06A2	12/14/2009	10	20	2300.000
20-R3-025	ZVI-MW06A2	1/6/2010	10	20	NA
20-R4-027	ZVI-MW06A2	2/18/2010	10	20	2400.000
20-BASE-028	ZVI-MW06A3	11/6/2009	20	30	11.000
20-R1-028	ZVI-MW06A3	11/30/2009	20	30	NA
20-R2-027	ZVI-MW06A3	12/15/2009	20	30	0.910
20-R2-028 (FD)	ZVI-MW06A3	12/15/2009	20	30	NA

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	AM20GAX
					Dissolved Hydrogen
					nM
20-R3-026	ZVI-MW06A3	1/5/2010	20	30	NA
20-R4-028	ZVI-MW06A3	2/17/2010	20	30	1.300
20-BASE-029	ZVI-MW06B	11/9/2009	30	40	610.000
20-R1-029	ZVI-MW06B	11/30/2009	30	40	NA
20-R2-029	ZVI-MW06B	12/14/2009	30	40	1.300
20-R3-027	ZVI-MW06B	1/6/2010	30	40	NA
20-R4-029	ZVI-MW06B	2/19/2010	30	40	0.960
20-BASE-030	ZVI-MW06C	11/6/2009	40	50	19000.000
20-R1-030	ZVI-MW06C	11/30/2009	40	50	NA
20-R2-030	ZVI-MW06C	12/14/2009	40	50	320.000
20-R3-028	ZVI-MW06C	1/6/2010	40	50	NA
20-R4-030	ZVI-MW06C	2/19/2010	40	50	570.000
20-BASE-031	ZVI-MW07A2	11/2/2009	10	20	31.000
20-BASE-031A (RE)	ZVI-MW07A2	11/3/2009	10	20	NA
20-R1-031	ZVI-MW07A2	12/3/2009	10	20	NA
20-R2-031	ZVI-MW07A2	12/17/2009	10	20	73000.000
20-R3-029	ZVI-MW07A2	1/8/2010	10	20	NA
20-R3-030 (FD)	ZVI-MW07A2	1/8/2010	10	20	NA
20-R4-031	ZVI-MW07A2	2/17/2010	10	20	65000.000
20-BASE-032	ZVI-MW07A3	11/2/2009	20	30	390.000
20-R1-032	ZVI-MW07A3	12/3/2009	20	30	NA
20-R2-032	ZVI-MW07A3	12/17/2009	20	30	73.000
20-R3-031	ZVI-MW07A3	1/8/2010	20	30	NA
20-R4-032	ZVI-MW07A3	2/18/2010	20	30	1.300
20-BASE-033	ZVI-MW07B	11/3/2009	30	40	0.770
20-R1-033	ZVI-MW07B	12/3/2009	30	40	NA
20-R2-033	ZVI-MW07B	12/17/2009	30	40	6.300
20-R3-032	ZVI-MW07B	1/8/2010	30	40	NA
20-R4-033	ZVI-MW07B	2/18/2010	30	40	1.000
20-BASE-034	ZVI-MW07C	11/2/2009	40	50	3.600
20-BASE-034A (RE)	ZVI-MW07C	11/3/2009	40	50	NA
20-R1-034	ZVI-MW07C	12/3/2009	40	50	NA
20-R2-034	ZVI-MW07C	12/17/2009	40	50	3.000
20-R3-033	ZVI-MW07C	1/8/2010	40	50	NA

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	AM20GAX
					Dissolved Hydrogen
					nM
20-R4-034	ZVI-MW07C	2/18/2010	40	50	1.000
20-BASE-036	372-MW1	11/9/2009	2.5	12.5	1.600
20-R1-036	372-MW1	12/2/2009	2.5	12.5	NA
20-R2-036	372-MW1	12/18/2009	2.5	12.5	1.600
20-R3-035	372-MW1	1/8/2010	2.5	12.5	NA
20-R3-036 (FD)	372-MW1	1/8/2010	2.5	12.5	NA
20-R4-036	372-MW1	2/18/2010	2.5	12.5	0.830
20-BASE-035	D03-04	11/9/2009	47	57	0.730
20-R1-035	D03-04	12/2/2009	47	57	NA
20-R2-035	D03-04	12/18/2009	47	57	1.400
20-R3-034	D03-04	1/8/2010	47	57	NA
20-R4-035	D03-04	2/19/2010	47	57	0.880
20-R1-EB-001	EQUIPMENT BLANK	11/30/2009	NA	NA	NA
20-R1-EB-002	EQUIPMENT BLANK	12/1/2009	NA	NA	NA
20-R1-EB-003	EQUIPMENT BLANK	12/2/2009	NA	NA	NA
20-R1-EB-004	EQUIPMENT BLANK	12/3/2009	NA	NA	NA
20-R2-EB-001	EQUIPMENT BLANK	12/14/2009	NA	NA	NA
20-R2-EB-002	EQUIPMENT BLANK	12/15/2009	NA	NA	NA
20-R2-EB-003	EQUIPMENT BLANK	12/16/2009	NA	NA	NA
20-R2-EB-004	EQUIPMENT BLANK	12/17/2009	NA	NA	NA
20-R3-EB-001	EQUIPMENT BLANK	1/5/2010	NA	NA	NA
20-R3-EB-002	EQUIPMENT BLANK	1/6/2010	NA	NA	NA
20-R3-EB-003	EQUIPMENT BLANK	1/7/2010	NA	NA	NA
20-R3-EB-004	EQUIPMENT BLANK	1/8/2010	NA	NA	NA
20-R4-EB-001	EQUIPMENT BLANK	2/15/2010	NA	NA	NA
20-R4-EB-002	EQUIPMENT BLANK	2/16/2010	NA	NA	NA
20-R4-EB-003	EQUIPMENT BLANK	2/17/2010	NA	NA	NA
20-R4-EB-004	EQUIPMENT BLANK	2/18/2010	NA	NA	NA
20-R4-EB-005	EQUIPMENT BLANK	2/19/2010	NA	NA	NA
20-BASE-TB-001	TRIP BLANK	11/2/2009	NA	NA	NA
20-BASE-TB-002	TRIP BLANK	11/3/2009	NA	NA	NA
20-BASE-TB-003	TRIP BLANK	11/4/2009	NA	NA	NA
20-BASE-TB-004	TRIP BLANK	11/5/2009	NA	NA	NA
20-BASE-TB-005	TRIP BLANK	11/6/2009	NA	NA	NA

Client Sample ID	LocationCode	Sample Date	StartDepth	EndDepth	AM20GAX
					Dissolved Hydrogen
					nM
20-BASE-TB-006	TRIP BLANK	11/9/2009	NA	NA	NA
20-R1-TB-001	TRIP BLANK	11/30/2009	NA	NA	NA
20-R1-TB-002	TRIP BLANK	12/1/2009	NA	NA	NA
20-R1-TB-003	TRIP BLANK	12/2/2009	NA	NA	NA
20-R1-TB-004	TRIP BLANK	12/3/2009	NA	NA	NA
20-R2-TB-001	TRIP BLANK	12/14/2009	NA	NA	NA
20-R2-TB-002	TRIP BLANK	12/15/2009	NA	NA	NA
20-R2-TB-003	TRIP BLANK	12/16/2009	NA	NA	NA
20-R2-TB-004	TRIP BLANK	12/17/2009	NA	NA	NA
20-R2-TB-005	TRIP BLANK	12/18/2009	NA	NA	NA
20-R3-TB-001	TRIP BLANK	1/5/2010	NA	NA	NA
20-R3-TB-002	TRIP BLANK	1/6/2010	NA	NA	NA
20-R3-TB-003	TRIP BLANK	1/7/2010	NA	NA	NA
20-R3-TB-004	TRIP BLANK	1/8/2010	NA	NA	NA
20-R4-TB-001	TRIP BLANK	2/15/2010	NA	NA	NA
20-R4-TB-002	TRIP BLANK	2/16/2010	NA	NA	NA
20-R4-TB-003	TRIP BLANK	2/17/2010	NA	NA	NA
20-R4-TB-004	TRIP BLANK	2/18/2010	NA	NA	NA
20-R4-TB-005	TRIP BLANK	2/19/2010	NA	NA	NA
FD - field duplicate					
RE - resample to collect anions and alkalinity tests					
NA - not analyzed					

Location ID	Date	Time	Temp	pH	Conductivity	Turbidity	DO	ORP	DTW
			deg C		uS	NTUs	mg/L	mV	feet bgs
ZVI-MW01A1									
Baseline	11/6/2009	1306	18.28	8.26	731	318	3.06	7.8	6.42
Week 1	12/3/2009	1046	14.15	8.01	537	7	2.82	-13.1	6.18
Week 2	12/16/2009	1118	13.51	7.88	630	118	2.42	-51.2	5.22
Week 6	1/6/2010	1350	14.71	7.75	554	92	3.31	323	5.35
Week 12	2/17/2010	1112	17.6	7.49	597	513	1.02	-44.4	4.9
ZVI-MW01A2									
Baseline	11/9/2009	1128	14.59	8.93	2997	28	1.49	199.7	5.8
Week 1	12/2/2009	1159	16.69	9.11	2894	390	0.4	-151.1	7.37
Week 2	12/15/2009	1325	15.47	8.92	2394	>1000	0.2	-312.5	7.94
Week 6	1/6/2010	1236	15.61	9.02	2346	>1000	0.21	-198	7.3
Week 12	2/16/2010	1400	18.57	8.2	2602	>1000	0.23	-334.7	7.19
ZVI-MW01A3									
Baseline	11/6/2009	1100	19.26	6.78	2720	7	1.48	-146.8	6.38
Week 1	12/3/2009	0954	16.92	7.36	2624	2	0.77	-153.9	7.69
Week 2	12/16/2009	1350	16.99	6.99	2911	26	0.79	-106.8	7.8
Week 6	1/7/2010	1132	14.66	7.11	2524	9	1.62	23	6.64
Week 12	2/17/2010	0952	15.16	6.81	2826	5	0.96	-109.1	5.84
ZVI-MW01B									
Baseline	11/5/2009	1406	18.85	8.37	8581	130	1.54	-68	5.7
Week 1	12/2/2009	1253	17.84	8.52	7887	6	0.51	18.3	7.37
Week 2	12/15/2009	1108	15.8	8.22	7999	40	0.51	23.6	7.3
Week 6	1/7/2010	0913	13.86	8.32	7532	20	6.52	231	6.58
Week 12	2/16/2010	1235	17.66	7.65	7819	3	1.37	-191.3	6.99
ZVI-MW01C									
Baseline	11/6/2009	939	17.8	7.57	1.67	24	2.76	124.3	9.53
Week 1	12/3/2009	0856	12.99	7.71	17133	4	1.71	-72.2	7.36
Week 2	12/17/2009	1345	16.03	7.65	17.36	8	0.92	185.1	7.4
Week 6	1/7/2010	1323	14.35	7.79	17.25	9	0.84	156	8.76
Week 12	2/17/2010	1332	14.60	7.81	17.34	8	0.82	192	9.15
ZVI-MW01D									
Baseline	11/9/2009	1343	17.41	7.33	2.5	5	2.21	93.1	10.47
Week 1	12/2/2009	1346	15.87	7.51	22482	2	0.66	-153.9	9.6
Week 2	12/16/2009	0916	14.37	7.02	29941	4	1.34	-72.8	8.15
Week 6	1/7/2010	1019	14.15	7.06	22.9	8	1.1	-18	8.51
Week 12	2/16/2010	1107	17.74	6.96	22533	7	0.61	-274.5	9.16
ZVI-MW02A2									
Baseline	11/4/2009	0912	18.63	8.83	3355	17	1.85	36.9	5.91
Week 1	12/1/2009	0853	15.94	8.9	3197	6	0.56	-106.7	7.33
Week 2	12/16/2009	1347	15.67	8.81	3200	7	0.54	97.1	6.82
Week 6	1/7/2010	1137	12.48	8.95	3127	3	1	4	6.89
Week 12	2/16/2010	0933	16.24	8.31	3097	4	0.94	113.9	5.46
ZVI-MW02A3									
Baseline	11/4/2009	1128	18.33	7.75	4801	47	9.2	52.5	6.2

Week 1	11/30/2009	1341	19.92	7.5	3220	6	1.39	-135.2	7.5
Week 2	12/16/2009	1032	17.02	7.57	2925	11	0.57	-65.5	7.64
Week 6	1/8/2010	0954	11.64	7.49	3264	7	1.62	-67.8	5.87
Week 12	2/15/2010	1300	19.01	6.48	3222	31	0.73	-63.4	7.16
ZVI-MW02B									
Baseline	11/3/2009	1303	22.21	9.5	7950	40	1.1	51.6	5.62
Week 1	12/1/2009	1014	17.46	10.14	7552	5	0.51	-9.9	7.02
Week 2	12/16/2009	1143	15.13	9.39	8108	12	0.7	67	6.21
Week 6	1/7/2010	1040	14.33	9.36	7817	37	0.61	-31.5	7.41
Week 12	2/15/2010	1401	18.89	8.1	7928	4	0.6	-72.1	6.18
ZVI-MW02C									
Baseline	11/9/2009	1311	18.02	7.56	16317	24	0.97	-107.5	5.58
Week 1	11/30/2009	1239	19.31	8.25	18403	4	1.23	-86.7	7.61
Week 2	12/16/2009	0909	15.25	8.16	18.34	54	0.65	50.1	8.1
Week 6	1/7/2010	1345	12.34	8.84	17310	11	1.34	-50.1	8.81
Week 12	2/15/2010	1015	16.9	6.78	17263	22	0.61	-217	6.12
ZVI-MW03A2									
Baseline	11/5/2009	1457	19	8.4	2201	6	2.4	5.4	5.48
Week 1	12/2/2009	1014	11.77	8.26	2173	5	0.84	123.6	7.49
Week 2	12/14/2009	1344	15.34	7.9	2200	7	1.28	108.2	7.1
Week 6	1/5/2010	0919	14.28	7.37	2116	4	0.73	344	8.28
Week 12	2/18/2010	1007	13.67	8.52	2374	3	1.49	77	5.23
ZVI-MW03A3									
Baseline	11/6/2009	0900	18.09	7.41	3418	9	0.71	-156.2	5.48
Week 1	12/2/2009	856	14.59	7.36	1628	23	0.25	-70.6	5.92
Week 2	12/14/2009	0954	15.28	7.66	11628	25	0.86	-270.6	5.62
Week 6	1/5/2010	1027	14.31	6.35	1570	10	1.36	124	5.77
Week 12	2/19/2010	0919	14.95	7.61	1847	4	2.05	-85	4.81
ZVI-MW03B									
Baseline	11/6/2009	1020	18.13	8.72	7598	3	1.25	-119.2	5.49
Week 1	12/2/2009	1326	12.78	8.52	11400	16	0.71	88.8	7.01
Week 2	12/15/2009	0858	14.71	8.39	7583	22	0.65	223.4	6.57
Week 6	1/5/2010	1230	14.28	7.6	7697	11	0.92	326	6.38
Week 12	2/18/2010	0859	14.04	8.76	8826	4	1.72	97	5.36
ZVI-MW03C									
Baseline	11/6/2009	1205	18.3	7.34	14352	7	0.68	-117.3	6.56
Week 1	12/2/2009	1215	13.82	7.34	15390	40	0.69	-74.1	8.09
Week 2	12/14/2009	1149	14.31	7.69	14.87	42	0.88	-252.6	7.1
Week 6	1/5/2010	1120	13.15	6.22	15444	24	0.83	-29.2	7.61
Week 12	2/18/2010	1149	14.52	7.99	15.6	28	1.43	-200	6.5
ZVI-MW04A1									
Baseline	11/4/2009	1430	20.22	7.8	563	9	1.03	-66.4	4.15
Week 1	12/1/2009	1249	18.26	7.57	599	2	0.22	-305.1	5.05
Week 2	12/16/2009	1100	13.91	7.39	928	126	8.11	-61.7	3.86
Week 6	1/6/2010	1323	14.67	8.31	1390	14	0.78	-147	4.22
Week 12	2/17/2010	1036	17.05	7.88	1377	6	0.58	-204	3.64
ZVI-MW04A2									

Baseline	11/5/2009	925	17.99	8.64	2908	247	0.63	-360.5	6.15
Week 1	12/2/2009	0851	13.7	9.01	2129	10	0.87	-183	6.3
Week 2	12/17/2009	1041	14.78	8.44	1827	59	0.92	105.3	6.88
Week 6	1/6/2010	0906	11.06	9.37	2011	104	1.36	65.4	8.4
Week 12	2/16/2010	1303	15.66	8.74	1805	41	0.8	1	6.92
ZVI-MW04A3									
Baseline	11/4/2009	1306	20.3	7.33	2659	17	0.37	-316.9	5.3
Week 1	12/1/2009	1109	16.77	7.67	2545	3	0.58	-113.2	5.46
Week 2	12/16/2009	0939	13.46	7.25	2566	3	9	-46	5.11
Week 6	1/7/2010	0914	14.4	7.14	2435	8	2.1	-74.2	5.23
Week 12	2/17/2010	0925	15.27	7.96	3201	9	1.58	-288	4.6
ZVI-MW04B									
Baseline	11/5/2009	1105	19.32	9.06	11179	18	1	-273.2	5.5
Week 1	12/2/2009	0959	15.94	9.34	8197	3	0.41	-249.1	6.94
Week 2	12/17/2009	1218	15.53	8.96	7777	7	0.53	-96.3	9.05
Week 6	1/6/2010	1026	12.95	7.78	18058	2	0.71	-66.1	10.37
Week 12	2/16/2010	1107	16.3	10.08	9813	6	0.59	-267	7.85
ZVI-MW04C									
Baseline	11/9/2009	0945	15.27	8.23	1.77	135	1.23	100.8	7.37
Week 1	12/1/2009	1346	19.32	8.01	17315	5	0.18	-308	10.75
Week 2	12/16/2009	1333	16.3	7.86	17987	8	7.2	69.4	5.96
Week 6	1/6/2010	1233	13.92	8.7	18412	32	0.91	-127.1	10.05
Week 12	2/16/2010	1416	16.96	8.38	19.3	68	0.99	-75	7.47
ZVI-MW05A2									
Baseline	11/5/2009	0957	17.93	8.47	1690	15	1.69	-138.6	4.43
Week 1	12/1/2009	0904	14.14	8.19	1275	12	0.49	87.9	7.29
Week 2	12/17/2009	0919	14.14	8.05	1041	6	0.62	122.5	6.31
Week 6	1/5/2010	1145	14.86	10.44	1001	4	0.89	-123.9	8.36
Week 12	2/15/2010	1352	16.77	8.72	840	15	0.62	27	6.34
ZVI-MW05A3									
Baseline	11/5/2009	1131	19.9	7.79	2863	5	0.66	-176.6	5.1
Week 1	12/1/2009	1029	11.76	7.63	2751	31	0.42	-17.6	5.61
Week 2	12/15/2009	1327	16.54	7.06	2760	13	0.74	-21.5	5.65
Week 6	1/5/2010	1028	14.64	8.52	3094	2	2.44	-73.1	6.75
Week 12	2/15/2010	1204	15.81	7.87	2962	4	2.24	4	5.49
ZVI-MW05B									
Baseline	11/5/2009	1302	20.5	9.21	11760	4	1.7	47.9	5.2
Week 1	12/1/2009	1414	16.34	9.02	15908	7	0.69	122.6	7.28
Week 2	12/15/2009	1142	16.44	9.11	11.62	16	0.56	111.4	6.2
Week 6	1/5/2010	1338	14.4	11.04	11044	2	0.87	-143.1	8.1
Week 12	2/16/2010	0954	15.49	9.48	10839	3	1.36	29	6.61
ZVI-MW05C									
Baseline	11/9/2009	1127	17	8.32	1.7	46	1.02	50	7.12
Week 1	12/1/2009	1225	16.73	8.48	15738	18	0.07	-99.3	6.41
Week 2	12/15/2009	1034	15.81	8.38	16639	31	0.7	-11.6	7.3
Week 6	1/5/2010	0924	15.93	9.76	14373	45	1.31	-239.5	8.57
Week 12	2/15/2010	1032	16.49	9.58	15192	17	1.16	-210	9.95

ZVI-MW06A2									
Baseline	11/6/2009	1327	17.16	8.68	5805	16	1.13	-284	6.41
Week 1	11/30/2009	1312	16.49	8.86	4088	109	0.11	-101.5	6.92
Week 2	12/14/2009	1200	15.21	8.49	4500	187	9.47	-95.8	7.29
Week 6	1/5/2010	1005	14.56	8.71	3108	112	6.55	32	7.4
Week 12	2/18/2010	1334	14.3	7.86	4370	12	0.46	-304.4	6.26
ZVI-MW06A3									
Baseline	11/6/2009	1136	17.86	7.47	4738	25	1.57	-184.6	5.41
Week 1	11/30/2009	1157	16.82	7.29	2751	5	0.32	-59.9	6.1
Week 2	12/15/2009	0922	13.21	7.43	5548	45	1.66	-35.1	5.29
Week 6	1/5/2010	1333	16.11	6.3	3064	12	0.74	-3	5.8
Week 12	2/17/2010	1332	19.38	6.87	2353	8	0.42	-310.1	5.01
ZVI-MW06B									
Baseline	11/9/2009	951	14.42	8.5	4919	18	1.42	176.1	5.99
Week 1	11/30/2009	1449	18.47	8.2	6809	7	0.39	124.3	8.2
Week 2	12/14/2009	1423	16.08	8.29	7099	21	7.8	-127.8	6.41
Week 6	1/6/2010	0903	13.93	8.12	6675	9	0.7	-49	7.12
Week 12	2/19/2010	1049	15.5	9.2	8612	13	1.11	-215	5.93
ZVI-MW06C									
Baseline	11/6/2009	938	16.73	7.26	15013	10	1.25	45.9	7.61
Week 1	11/30/2009	1017	15.78	7.63	15609	15	0.35	-88.6	6.94
Week 2	12/14/2009	1026	17.15	7.63	17001	37	7.41	-65.8	9.9
Week 6	1/6/2010	1100	14.6	7.57	16.72	35	0.72	-82	7.74
Week 12	2/19/2010	1157	1525	8.14	17681	25	1.5	-154	6.85
ZVI-MW07A2									
Baseline	11/2/2009	1604	24.22	8.55	3107	29	0.72	11.8	7.91
Week 1	12/3/2009	1331	14.69	8.78	2857	25	0.61	-5.3	9.32
Week 2	12/17/2009	0947	13.88	8.61	287	19	0.74	-146.1	9.22
Week 6	1/8/2010	0936	12.06	8.69	2790	23	0.53	-333	8.35
Week 12	2/17/2010	1302	17.14	8.66	3125	21	0.88	-113	6.08
ZVI-MW07A3									
Baseline	11/2/2009	1034	20.57	7.18	5767	10	0.74	56.6	7.71
Week 1	12/3/2009	0931	13.35	7.2	4264	84	0.49	-67.2	8.38
Week 2	12/17/2009	1329	16.58	7.03	3400	26	0.87	-100.5	7.5
Week 6	1/8/2010	0834	12.25	7.06	4203	9	1.79	-172	7.13
Week 12	2/18/2010	1146	15.28	7.45	4429	4	0.92	-218.2	5.96
ZVI-MW07B									
Baseline	11/3/2009	930	18.17	8.25	7730	10	0.79	91.7	8.07
Week 1	12/3/2009	1206	14.16	8.22	7965	22	6.7	112.9	7.27
Week 2	12/17/2009	1122	16.46	8.03	7588	5	0.57	16.4	8.81
Week 6	1/8/2010	1050	11.31	8.34	7837	4	1.43	-9	6.75
Week 12	2/18/2010	1020	14.21	8.33	7819	4	1.54	17.1	5.82
ZVI-MW07C									
Baseline	11/2/2009	1238	22.19	7.84	15274	25	0.49	-156.9	5.75
Week 1	12/3/2009	1046	15.77	7.94	14596	3	0.38	-119.3	6.51
Week 2	12/17/2009	1217	17.14	8.19	13433	5	0.5	-159.1	6.03
Week 6	1/8/2010	1113	14.68	8.36	12126	6	0.66	-163	6.28
Week 12	2/18/2010	0915	14.92	8.33	13175	2	0.98	12.4	5.56

D03-04									
Baseline	11/9/2009	0914	18.02	7.57	28629	4	0.52	226.9	5.3
Week 1	12/2/2009	1438	18.5	7.79	17496	3	0.19	-13.2	5.25
Week 2	12/18/2009	0752	18.13	7.32	23312	1	0.31	-18.1	5.04
Week 6	1/8/2010	1206	18.3	7.24	24109	1	0.22	-117.7	5.14
Week 12	2/19/2010	1107	16.73	7.05	30980	24	0.6	68.2	4.55
372-MW1									
Baseline	11/9/2009	1044	17.45	7.69	398	3	3.18	141	4.02
Week 1	12/2/2009	1426	16.65	7.56	272	3	3.86	119.5	4.4
Week 2	12/18/2009	0855	15.24	7.45	311	3	2.27	34.4	3.9
Week 6	1/8/2010	0846	15.08	7.15	216	5	3.59	12.6	4.54
Week 12	2/18/2010	1141	14.43	7.58	244	6	1.57	-61	3.14

APPENDIX B

CHAIN-OF-CUSTODY FORMS, LABORATORY ANALYTICAL REPORTS, AND DATA VALIDATION REPORT (on CD only)

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TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 25984

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO
CTO 20 ALAMEDA	1034131-2
PROJECT LOCATION: ALAMEDA	PROJECT NO: 106-3210-020
SAMPLER NAME: AKJ SL	AIRBILL NUMBER: 7930 5656 6420
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 09L004

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOCS SHORT LIST	6020A DISSOLVED IRON	6020A TOTAL IRON ARSENIC, MANGANESE	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R1-030	11/30/09	1020	5	X		W	10	X	X	X	* SEE BELOW	2U1-MW06C	40	50	REG
20-R1-028		1200	5	X		W	10	X	X	X		2U1-MW06A3	20	30	
20-R1-027		1315	5	X		W	10	X	X	X		2U1-MW06A2	10	20	
20-R1-029		1450	5	X		W	10	X	X	X		2U1-MW06B	30	40	
20-R1-011		1240	5	X		W	10	X	X	X		2U1-MW02C	40	50	
20-R1-009		1345	15		X	W	10	X	X	X	MS/MSD	2U1-MW02A3	20	30	
20-R1-TB-001		1505	3	X		W	10	X			TRIP BLANK				REG
20-R1-EB-001		1520	3	X		W	10	X			EQUIPMENT B.				REG

Project Information Section
Do not submit to Laboratory

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	11/30/09	[signature]
COMPANY: BTS	TIME: 1730	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS
8260B = HCL PRES., 6020A DISS. IRON (FIELD FILTER) W/ .45 MICRON HNO_3 PRES, ALL 6020A HNO_3 PRES.

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/02/09 17:22
Sample ID: 20-R1-030	Date Analyzed: 12/02/09 17:22
Lab Samp ID: L004-01	Dilution Factor: 1
Lab File ID: RLD065	Matrix : WATER
Ext Btch ID: VO94L03	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	0.49J	1.0	0.20
1,1-DICHLOROETHENE	62E	1.0	0.20
1,2-DICHLOROETHANE	0.48J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	2.0	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	2.1	1.0	0.20
VINYL CHLORIDE	0.28J	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/04/09 19:33
Sample ID: 20-R1-030DL	Date Analyzed: 12/04/09 19:33
Lab Samp ID: L004-01T	Dilution Factor: 10
Lab File ID: RLD163	Matrix : WATER
Ext Btch ID: VO94L07	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHENE	66	10	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	2.2J	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	ND	10	2.0
TRICHLOROETHENE	2.5J	10	2.0
VINYL CHLORIDE	ND	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	110	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/02/09 17:53
Sample ID: 20-R1-028	Date Analyzed: 12/02/09 17:53
Lab Samp ID: L004-02	Dilution Factor: 1
Lab File ID: RLD066	Matrix : WATER
Ext Btch ID: VO94L03	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.5	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.62J	1.0	0.20
1,1-DICHLOROETHANE	9.0	1.0	0.20
1,1-DICHLOROETHENE	140E	1.0	0.20
1,2-DICHLOROETHANE	1.2	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	46E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	37	1.0	0.20
TRICHLOROETHENE	140E	1.0	0.20
VINYL CHLORIDE	190E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	110	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
Batch No.	: 09L004	Date Extracted:	12/03/09 20:36
Sample ID:	20-R1-028DL	Date Analyzed:	12/03/09 20:36
Lab Samp ID:	L004-02T	Dilution Factor:	25
Lab File ID:	RLD118	Matrix	: WATER
Ext Btch ID:	VO94L05	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	9.3J	25	5.0
1,1-DICHLOROETHENE	410	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	1300E	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	36	25	5.0
TRICHLOROETHENE	1200E	25	5.0
VINYL CHLORIDE	200	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/04/09 18:32
Sample ID: 20-R1-028DL	Date Analyzed: 12/04/09 18:32
Lab Samp ID: L004-02I	Dilution Factor: 250
Lab File ID: RLD161	Matrix : WATER
Ext Btch ID: VO94L07	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	250	50
1,1,2,2-TETRACHLOROETHANE	ND	250	50
1,1,2-TRICHLOROETHANE	ND	250	50
1,1-DICHLOROETHANE	ND	250	50
1,1-DICHLOROETHENE	430	250	50
1,2-DICHLOROETHANE	ND	120	50
CHLOROETHANE	ND	120	50
CHLOROMETHANE	ND	250	50
CIS-1,2-DICHLOROETHENE	1300	250	50
TETRACHLOROETHENE	ND	250	50
TRANS-1,2-DICHLOROETHENE	ND	250	50
TRICHLOROETHENE	1300	250	50
VINYL CHLORIDE	200	120	50

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
4-BROMOFLUOROBENZENE	116	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/02/09 18:23
Sample ID: 20-R1-027	Date Analyzed: 12/02/09 18:23
Lab Samp ID: L004-03	Dilution Factor: 1
Lab File ID: RLD067	Matrix : WATER
Ext Btch ID: VO94L03	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	77E	1.0	0.20
1,1-DICHLOROETHENE	25E	1.0	0.20
1,2-DICHLOROETHANE	1.5	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	150E	1.0	0.20
TETRACHLOROETHENE	1.5	1.0	0.20
TRANS-1,2-DICHLOROETHENE	210E	1.0	0.20
TRICHLOROETHENE	56E	1.0	0.20
VINYL CHLORIDE	160E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	117	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/03/09 17:34
Sample ID: 20-R1-027DL	Date Analyzed: 12/03/09 17:34
Lab Samp ID: L004-03T	Dilution Factor: 50
Lab File ID: RLD112	Matrix : WATER
Ext Btch ID: VO94L05	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	85	50	10
1,1-DICHLOROETHENE	120	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	7200E	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	240	50	10
TRICHLOROETHENE	8000E	50	10
VINYL CHLORIDE	1600	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/04/09 18:02
Sample ID: 20-R1-027DL	Date Analyzed: 12/04/09 18:02
Lab Samp ID: L004-03I	Dilution Factor: 500
Lab File ID: RLD160	Matrix : WATER
Ext Btch ID: VO94L07	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	500	100
1,1,2,2-TETRACHLOROETHANE	ND	500	100
1,1,2-TRICHLOROETHANE	ND	500	100
1,1-DICHLOROETHANE	ND	500	100
1,1-DICHLOROETHENE	ND	500	100
1,2-DICHLOROETHANE	ND	250	100
CHLOROETHANE	ND	250	100
CHLOROMETHANE	ND	500	100
CIS-1,2-DICHLOROETHENE	12000	500	100
TETRACHLOROETHENE	ND	500	100
TRANS-1,2-DICHLOROETHENE	230J	500	100
TRICHLOROETHENE	19000	500	100
VINYL CHLORIDE	1800	250	100

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
Batch No.	: 09L004	Date Extracted:	12/03/09 21:37
Sample ID:	20-R1-029	Date Analyzed:	12/03/09 21:37
Lab Samp ID:	L004-04R	Dilution Factor:	1
Lab File ID:	RLD120	Matrix	: WATER
Ext Btch ID:	VO94L05	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	16	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	33	1.0	0.20
1,1-DICHLOROETHANE	43E	1.0	0.20
1,1-DICHLOROETHENE	150E	1.0	0.20
1,2-DICHLOROETHANE	33	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.26J	1.0	0.20
CIS-1,2-DICHLOROETHENE	27	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	16	1.0	0.20
TRICHLOROETHENE	14	1.0	0.20
VINYL CHLORIDE	0.86	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/03/09 20:06
Sample ID: 20-R1-029DL	Date Analyzed: 12/03/09 20:06
Lab Samp ID: L004-04T	Dilution Factor: 25
Lab File ID: RLD117	Matrix : WATER
Ext Btch ID: VO94L05	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	17J	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	32	25	5.0
1,1-DICHLOROETHANE	46	25	5.0
1,1-DICHLOROETHENE	5100E	25	5.0
1,2-DICHLOROETHANE	34	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	29	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	17J	25	5.0
TRICHLOROETHENE	17J	25	5.0
VINYL CHLORIDE	ND	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	99	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/04/09 19:03
Sample ID: 20-R1-029DL	Date Analyzed: 12/04/09 19:03
Lab Samp ID: L004-04I	Dilution Factor: 250
Lab File ID: RLD162	Matrix : WATER
Ext Btch ID: VO94L07	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	250	50
1,1,2,2-TETRACHLOROETHANE	ND	250	50
1,1,2-TRICHLOROETHANE	ND	250	50
1,1-DICHLOROETHANE	ND	250	50
1,1-DICHLOROETHENE	5200	250	50
1,2-DICHLOROETHANE	ND	120	50
CHLOROETHANE	ND	120	50
CHLOROMETHANE	ND	250	50
CIS-1,2-DICHLOROETHENE	ND	250	50
TETRACHLOROETHENE	ND	250	50
TRANS-1,2-DICHLOROETHENE	ND	250	50
TRICHLOROETHENE	ND	250	50
VINYL CHLORIDE	ND	120	50

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/03/09 17:04
Sample ID: 20-R1-011	Date Analyzed: 12/03/09 17:04
Lab Samp ID: L004-05R	Dilution Factor: 1
Lab File ID: RLD111	Matrix : WATER
Ext Btch ID: VO94L05	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	2.3	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.63J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	0.24J	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/02/09 20:25
Sample ID: 20-R1-009	Date Analyzed: 12/02/09 20:25
Lab Samp ID: L004-06	Dilution Factor: 1
Lab File ID: RLD071	Matrix : WATER
Ext Btch ID: VO94L03	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.94J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	1.4	1.0	0.20
1,1-DICHLOROETHANE	8.9	1.0	0.20
1,1-DICHLOROETHENE	130E	1.0	0.20
1,2-DICHLOROETHANE	2.4	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	4.5	1.0	0.20
CIS-1,2-DICHLOROETHENE	100E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	26	1.0	0.20
TRICHLOROETHENE	150E	1.0	0.20
VINYL CHLORIDE	67E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/03/09 18:04
Sample ID: 20-R1-009DL	Date Analyzed: 12/03/09 18:04
Lab Samp ID: L004-06T	Dilution Factor: 50
Lab File ID: RLD113	Matrix : WATER
Ext Btch ID: VO94L05	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	400	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	570	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	28J	50	10
TRICHLOROETHENE	450	50	10
VINYL CHLORIDE	71	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	110	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/02/09 15:20
Sample ID: 20-R1-TB-001	Date Analyzed: 12/02/09 15:20
Lab Samp ID: L004-07	Dilution Factor: 1
Lab File ID: RLD061	Matrix : WATER
Ext Btch ID: VO94L03	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	99	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 11/30/09
Project : CTO 20, ALAMEDA	Date Received: 12/01/09
Batch No. : 09L004	Date Extracted: 12/02/09 15:51
Sample ID: 20-R1-EB-001	Date Analyzed: 12/02/09 15:51
Lab Samp ID: L004-08	Dilution Factor: 1
Lab File ID: RLD062	Matrix : WATER
Ext Btch ID: VO94L03	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	100	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	102	85-120

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
SDG NO.	: 09L004	Date Extracted:	12/04/09 14:30
Sample ID:	20-R1-030	Date Analyzed:	12/08/09 20:07
Lab Samp ID:	L004-01	Dilution Factor:	1
Lab File ID:	98L05065	Matrix :	WATER
Ext Btch ID:	IML005W	% Moisture :	NA
Calib. Ref.:	98L05063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.22	1.00	0.500
Iron	3870	200	50.0
Manganese	1660	1.00	0.500

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
SDG NO.	: 09L004	Date Extracted:	12/04/09 14:30
Sample ID:	20-R1-028	Date Analyzed:	12/08/09 20:13
Lab Samp ID:	L004-02	Dilution Factor:	1
Lab File ID:	98L05066	Matrix :	WATER
Ext Btch ID:	IML005W	% Moisture :	NA
Calib. Ref.:	98L05063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.93	1.00	0.500
Iron	394	200	50.0
Manganese	1520	1.00	0.500

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
SDG NO.	: 09L004	Date Extracted:	12/04/09 14:30
Sample ID:	20-R1-027	Date Analyzed:	12/08/09 20:19
Lab Samp ID:	L004-03	Dilution Factor:	1
Lab File ID:	98L05067	Matrix :	WATER
Ext Btch ID:	IML005W	% Moisture :	NA
Calib. Ref.:	98L05063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	50.4	1.00	0.500
Iron	2390	200	50.0
Manganese	58.7	1.00	0.500

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
SDG NO.	: 09L004	Date Extracted:	12/04/09 14:30
Sample ID:	20-R1-029	Date Analyzed:	12/08/09 20:26
Lab Samp ID:	L004-04	Dilution Factor:	1
Lab File ID:	98L05068	Matrix :	WATER
Ext Btch ID:	IML005W	% Moisture :	NA
Calib. Ref.:	98L05063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	2.87	1.00	0.500
Iron	ND	200	50.0
Manganese	20.9	1.00	0.500

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
SDG NO.	: 09L004	Date Extracted:	12/04/09 14:30
Sample ID:	20-R1-011	Date Analyzed:	12/08/09 20:32
Lab Samp ID:	L004-05	Dilution Factor:	1
Lab File ID:	98L05069	Matrix :	WATER
Ext Btch ID:	IML005W	% Moisture :	NA
Calib. Ref.:	98L05063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	7.90	1.00	0.500
Iron	1930	200	50.0
Manganese	535	1.00	0.500

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
SDG NO.	: 09L004	Date Extracted:	12/04/09 14:30
Sample ID:	20-R1-009	Date Analyzed:	12/08/09 20:38
Lab Samp ID:	L004-06	Dilution Factor:	1
Lab File ID:	98L05070	Matrix :	WATER
Ext Btch ID:	IML005W	% Moisture :	NA
Calib. Ref.:	98L05063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.35	1.00	0.500
Iron	385	200	50.0
Manganese	392	1.00	0.500

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
SDG NO.	: 09L004	Date Extracted:	12/04/09 14:30
Sample ID:	20-R1-030	Date Analyzed:	12/08/09 21:22
Lab Samp ID:	L004-01	Dilution Factor:	1
Lab File ID:	98L05077	Matrix :	WATER
Ext Btch ID:	IML005W	% Moisture :	NA
Calib. Ref.:	98L05075	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	1320	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
SDG NO.	: 09L004	Date Extracted:	12/04/09 14:30
Sample ID:	20-R1-028	Date Analyzed:	12/08/09 21:29
Lab Samp ID:	L004-02	Dilution Factor:	1
Lab File ID:	98L05078	Matrix :	WATER
Ext Btch ID:	IML005W	% Moisture :	NA
Calib. Ref.:	98L05075	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	364	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
SDG NO.	: 09L004	Date Extracted:	12/04/09 14:30
Sample ID:	20-R1-027	Date Analyzed:	12/08/09 21:35
Lab Samp ID:	L004-03	Dilution Factor:	1
Lab File ID:	98L05079	Matrix :	WATER
Ext Btch ID:	IML005W	% Moisture :	NA
Calib. Ref.:	98L05075	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	843	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
SDG NO.	: 09L004	Date Extracted:	12/04/09 14:30
Sample ID:	20-R1-029	Date Analyzed:	12/08/09 21:41
Lab Samp ID:	L004-04	Dilution Factor:	1
Lab File ID:	98L05080	Matrix :	WATER
Ext Btch ID:	IML005W	% Moisture :	NA
Calib. Ref.:	98L05075	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
SDG NO.	: 09L004	Date Extracted:	12/04/09 14:30
Sample ID:	20-R1-011	Date Analyzed:	12/08/09 21:48
Lab Samp ID:	L004-05	Dilution Factor:	1
Lab File ID:	98L05081	Matrix :	WATER
Ext Btch ID:	IML005W	% Moisture :	NA
Calib. Ref.:	98L05075	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	576	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	11/30/09
Project	: CTO 20, ALAMEDA	Date Received:	12/01/09
SDG NO.	: 09L004	Date Extracted:	12/04/09 14:30
Sample ID:	20-R1-009	Date Analyzed:	12/08/09 21:54
Lab Samp ID:	L004-06	Dilution Factor:	1
Lab File ID:	98L05082	Matrix :	WATER
Ext Btch ID:	IML005W	% Moisture :	NA
Calib. Ref.:	98L05075	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	228	200	50.0

NUMBER 26011

1 of 2

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AK, SL	798182315116
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 09L041

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC'S SHORT LIST	6020A DISSOLVED IRON	6020A TOTAL IRON ARSENIC, MANGANESE	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R1-022	12/1/09	905	5	X		W	10	X	X	X	* SEE BELOW	2V1-MW05A2	10	20	
20-R1-008		855	5	X		W	10	X	X	X	* SEE BELOW		10	20	
20-R1-TB-002		910	3	X		W	10	X			TRIP BLANK				
20-R1-EB-002		935	3	X		W	10	X			EQUIPMENT BLANK				
20-R1-023		1030	5	X		W	10	X	X	X	* SEE BELOW	2V1-MW05A3	20	30	
20-R1-025		1225	5	X		W	10	X	X	X	* SEE BELOW	2V1-MW05C	40	50	
20-R1-026		1225	3		X	W	10	X			* SEE BELOW	FIELD DUP 2V1-MW05C	40	50	
20-R1-024		1415	5	X		W	10	X	X	X	* SEE BELOW	2V1-MW05B	30	40	
20-R1-010		1015	5	X		W	10	X	X	X	* SEE BELOW	2V1-MW02B	30	40	
20-R-019		1110	5	X		W	10	X	X	X	* SEE BELOW	2V1-MW04A3	20	30	

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
	12/1/09	FEDEX
COMPANY	TIME	COMPANY
BIS	1630	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS
* 8260B = HCL PRES, 6020A DISS. IRON FIELD FILTERED W/.45 MICRON, ALL 6020A HNO_3 PRES.

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

Project Information Section
Do not submit to Laboratory

SAMPLING COMMENT

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26050

CHAIN-OF-CUSTODY RECORD

p 2 of 2

PROJECT NAME	PURCHASE ORDER NO
CTO 20 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AK, SL	7981823151 16
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 09L041

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOCS SHORT LIST	6020A DISSOLVED IRON	6020A TOTAL IRON MANGANESE ARSENIC						COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R1-017	12/1/09	1250	5	X		W	10	X	X	X						* SEE BELOW	2V1-MW04A1	6	11	REG
20-R1-021	↓	1350	15		X	W	10	X	X	X						* SEE BELOW MS/MSD	2V1-MW04C	40	50	↓

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/1/09	FEDEX
COMPANY: BTS	TIME: 1630	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS
* 8260B = HCL PRES., 6020A DISS. IRON (FIELD FILTERED) W/.45 MICRON, ALL 6020A HNO3 PRES.

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/04/09 08:16
Sample ID: 20-R1-022	Date Analyzed: 12/04/09 08:16
Lab Samp ID: L041-01R	Dilution Factor: 1
Lab File ID: RLD141	Matrix : WATER
Ext Btch ID: VO94L06	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	1.9	1.0	0.20
1,1-DICHLOROETHENE	3.6	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	15	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	1.5	1.0	0.20
TRICHLOROETHENE	4.0	1.0	0.20
VINYL CHLORIDE	27	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	111	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/04/09 09:17
Sample ID: 20-R1-008	Date Analyzed: 12/04/09 09:17
Lab Samp ID: L041-02R	Dilution Factor: 1
Lab File ID: RLD143	Matrix : WATER
Ext Btch ID: VO94L06	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.35J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	14	1.0	0.20
1,1-DICHLOROETHENE	110E	1.0	0.20
1,2-DICHLOROETHANE	0.36J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	32E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	57E	1.0	0.20
TRICHLOROETHENE	27E	1.0	0.20
VINYL CHLORIDE	440E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	119	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/04/09 05:14
Sample ID: 20-R1-008DL	Date Analyzed: 12/04/09 05:14
Lab Samp ID: L041-02T	Dilution Factor: 50
Lab File ID: RLD135	Matrix : WATER
Ext Btch ID: VO94L06	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	14J	50	10
1,1-DICHLOROETHENE	89	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	2300E	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	49J	50	10
TRICHLOROETHENE	2000	50	10
VINYL CHLORIDE	390	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/11/09 11:47
Sample ID: 20-R1-008DL	Date Analyzed: 12/11/09 11:47
Lab Samp ID: L041-02I	Dilution Factor: 100
Lab File ID: RLD340	Matrix : WATER
Ext Btch ID: VO94L14	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	ND	100	20
1,1-DICHLOROETHENE	88J	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	1900	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	46J	100	20
TRICHLOROETHENE	2100	100	20
VINYL CHLORIDE	410	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/03/09 15:32
Sample ID: 20-R1-TB-002	Date Analyzed: 12/03/09 15:32
Lab Samp ID: L041-03	Dilution Factor: 1
Lab File ID: RLD108	Matrix : WATER
Ext Btch ID: VO94L05	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/03/09 16:02
Sample ID: 20-R1-EB-002	Date Analyzed: 12/03/09 16:02
Lab Samp ID: L041-04	Dilution Factor: 1
Lab File ID: RLD109	Matrix : WATER
Ext Btch ID: VO94L05	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/04/09 08:46
Sample ID: 20-R1-023	Date Analyzed: 12/04/09 08:46
Lab Samp ID: L041-05R	Dilution Factor: 1
Lab File ID: RLD142	Matrix : WATER
Ext Btch ID: VO94L06	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.77J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.38J	1.0	0.20
1,1-DICHLOROETHANE	5.0	1.0	0.20
1,1-DICHLOROETHENE	210E	1.0	0.20
1,2-DICHLOROETHANE	0.78	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	99E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	8.1	1.0	0.20
TRICHLOROETHENE	98E	1.0	0.20
VINYL CHLORIDE	8.2	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/04/09 04:43
Sample ID: 20-R1-023DL	Date Analyzed: 12/04/09 04:43
Lab Samp ID: L041-05T	Dilution Factor: 50
Lab File ID: RLD134	Matrix : WATER
Ext Btch ID: VO94L06	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	190	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	97	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	96	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
Batch No.	: 09L041	Date Extracted:	12/04/09 20:04
Sample ID:	20-R1-025	Date Analyzed:	12/04/09 20:04
Lab Samp ID:	L041-06R	Dilution Factor:	1
Lab File ID:	RLD164	Matrix :	WATER
Ext Btch ID:	VO94L07	% Moisture :	NA
Calib. Ref.:	RKD579	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	1.3	1.0	0.20
1,1-DICHLOROETHENE	40	1.0	0.20
1,2-DICHLOROETHANE	0.50J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.26J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	119	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/04/09 07:46
Sample ID: 20-R1-026	Date Analyzed: 12/04/09 07:46
Lab Samp ID: L041-07R	Dilution Factor: 1
Lab File ID: RLD140	Matrix : WATER
Ext Btch ID: VO94L06	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	1.3	1.0	0.20
1,1-DICHLOROETHENE	40	1.0	0.20
1,2-DICHLOROETHANE	0.59	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.26J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	116	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	104	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/03/09 10:35
Sample ID: 20-R1-024	Date Analyzed: 12/03/09 10:35
Lab Samp ID: L041-08	Dilution Factor: 1
Lab File ID: RLD099	Matrix : WATER
Ext Btch ID: VO94L04	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.22J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	3.7	1.0	0.20
1,1-DICHLOROETHENE	140E	1.0	0.20
1,2-DICHLOROETHANE	2.5	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.66J	1.0	0.20
CIS-1,2-DICHLOROETHENE	2.3	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	0.24J	1.0	0.20
TRICHLOROETHENE	2.0	1.0	0.20
VINYL CHLORIDE	0.22J	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	110	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
Batch No.	: 09L041	Date Extracted:	12/04/09 06:14
Sample ID:	20-R1-024DL	Date Analyzed:	12/04/09 06:14
Lab Samp ID:	L041-08T	Dilution Factor:	10
Lab File ID:	RLD137	Matrix :	WATER
Ext Btch ID:	VO94L06	% Moisture :	NA
Calib. Ref.:	RKD579	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHANE	3.6J	10	2.0
1,1-DICHLOROETHENE	140	10	2.0
1,2-DICHLOROETHANE	2.2J	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	2.1J	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	ND	10	2.0
TRICHLOROETHENE	ND	10	2.0
VINYL CHLORIDE	ND	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/03/09 22:38
Sample ID: 20-R1-010	Date Analyzed: 12/03/09 22:38
Lab Samp ID: L041-09	Dilution Factor: 1
Lab File ID: RLD122	Matrix : WATER
Ext Btch ID: VO94L05	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.87J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.32J	1.0	0.20
1,1-DICHLOROETHANE	35	1.0	0.20
1,1-DICHLOROETHENE	110E	1.0	0.20
1,2-DICHLOROETHANE	29	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	1.7	1.0	0.20
CIS-1,2-DICHLOROETHENE	20	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	6.4	1.0	0.20
TRICHLOROETHENE	1.1	1.0	0.20
VINYL CHLORIDE	0.55	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	109	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/07/09 18:39
Sample ID: 20-R1-010DL	Date Analyzed: 12/07/09 18:39
Lab Samp ID: L041-09I	Dilution Factor: 500
Lab File ID: RLD221	Matrix : WATER
Ext Btch ID: VO94L09	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	500	100
1,1,2,2-TETRACHLOROETHANE	ND	500	100
1,1,2-TRICHLOROETHANE	ND	500	100
1,1-DICHLOROETHANE	ND	500	100
1,1-DICHLOROETHENE	3200	500	100
1,2-DICHLOROETHANE	ND	250	100
CHLOROETHANE	ND	250	100
CHLOROMETHANE	ND	500	100
CIS-1,2-DICHLOROETHENE	ND	500	100
TETRACHLOROETHENE	ND	500	100
TRANS-1,2-DICHLOROETHENE	ND	500	100
TRICHLOROETHENE	ND	500	100
VINYL CHLORIDE	ND	250	100

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	86	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	105	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/03/09 23:09
Sample ID: 20-R1-019	Date Analyzed: 12/03/09 23:09
Lab Samp ID: L041-10	Dilution Factor: 1
Lab File ID: RLD123	Matrix : WATER
Ext Btch ID: VO94L05	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.45J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.39J	1.0	0.20
1,1-DICHLOROETHANE	4.9	1.0	0.20
1,1-DICHLOROETHENE	140E	1.0	0.20
1,2-DICHLOROETHANE	0.97	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	65E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	4.2	1.0	0.20
TRICHLOROETHENE	68E	1.0	0.20
VINYL CHLORIDE	7.9	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	108	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/04/09 21:36
Sample ID: 20-R1-019DL	Date Analyzed: 12/04/09 21:36
Lab Samp ID: L041-10T	Dilution Factor: 50
Lab File ID: RLD167	Matrix : WATER
Ext Btch ID: VO94L07	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	110	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	63	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	61	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	108	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	104	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/04/09 22:37
Sample ID: 20-R1-017	Date Analyzed: 12/04/09 22:37
Lab Samp ID: L041-11R	Dilution Factor: 1
Lab File ID: RLD169	Matrix : WATER
Ext Btch ID: VO94L07	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	4.2	1.0	0.20
1,1-DICHLOROETHENE	0.33J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	10	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	7.3	1.0	0.20
TRICHLOROETHENE	3.7	1.0	0.20
VINYL CHLORIDE	190E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	111	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
Batch No.	: 09L041	Date Extracted:	12/04/09 21:05
Sample ID:	20-R1-017DL	Date Analyzed:	12/04/09 21:05
Lab Samp ID:	L041-11T	Dilution Factor:	25
Lab File ID:	RLD166	Matrix	: WATER
Ext Btch ID:	VO94L07	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHENE	ND	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	11J	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	6.7J	25	5.0
TRICHLOROETHENE	ND	25	5.0
VINYL CHLORIDE	200	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	109	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
Batch No. : 09L041	Date Extracted: 12/04/09 11:52
Sample ID: 20-R1-021	Date Analyzed: 12/04/09 11:52
Lab Samp ID: L041-12	Dilution Factor: 1
Lab File ID: RLD148	Matrix : WATER
Ext Btch ID: VO94L06	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.79J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.62J	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	120	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	100	85-120

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:30
Sample ID:	20-R1-022	Date Analyzed:	12/17/09 19:00
Lab Samp ID:	L041-01T	Dilution Factor:	5
Lab File ID:	98L15025	Matrix :	WATER
Ext Btch ID:	IML010W	% Moisture :	NA
Calib. Ref.:	98L15015	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	12.0	5.00	2.50
Iron	276J	1000	250
Manganese	36.9	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:30
Sample ID:	20-R1-008	Date Analyzed:	12/17/09 19:25
Lab Samp ID:	L041-02T	Dilution Factor:	5
Lab File ID:	98L15029	Matrix :	WATER
Ext Btch ID:	IML010W	% Moisture :	NA
Calib. Ref.:	98L15027	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	13.3	5.00	2.50
Iron	318J	1000	250
Manganese	35.3	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:30
Sample ID:	20-R1-023	Date Analyzed:	12/17/09 19:31
Lab Samp ID:	L041-05T	Dilution Factor:	5
Lab File ID:	98L15030	Matrix :	WATER
Ext Btch ID:	IML010W	% Moisture :	NA
Calib. Ref.:	98L15027	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.68	5.00	2.50
Iron	582J	1000	250
Manganese	884	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
SDG NO. : 09L041	Date Extracted: 12/09/09 10:30
Sample ID: 20-R1-025	Date Analyzed: 12/17/09 19:38
Lab Samp ID: L041-06T	Dilution Factor: 5
Lab File ID: 98L15031	Matrix : WATER
Ext Btch ID: IML010W	% Moisture : NA
Calib. Ref.: 98L15027	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	16.3	5.00	2.50
Iron	256J	1000	250
Manganese	287	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
SDG NO. : 09L041	Date Extracted: 12/09/09 10:30
Sample ID: 20-R1-024	Date Analyzed: 12/17/09 19:44
Lab Samp ID: L041-08T	Dilution Factor: 5
Lab File ID: 98L15032	Matrix : WATER
Ext Btch ID: IML010W	% Moisture : NA
Calib. Ref.: 98L15027	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	113	5.00	2.50
Iron	ND	1000	250
Manganese	52.3	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
SDG NO. : 09L041	Date Extracted: 12/09/09 10:30
Sample ID: 20-R1-010	Date Analyzed: 12/17/09 19:50
Lab Samp ID: L041-09T	Dilution Factor: 5
Lab File ID: 98L15033	Matrix : WATER
Ext Btch ID: IML010W	% Moisture : NA
Calib. Ref.: 98L15027	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	43.9	5.00	2.50
Iron	ND	1000	250
Manganese	5.10	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
SDG NO. : 09L041	Date Extracted: 12/09/09 10:30
Sample ID: 20-R1-019	Date Analyzed: 12/17/09 19:57
Lab Samp ID: L041-10T	Dilution Factor: 5
Lab File ID: 98L15034	Matrix : WATER
Ext Btch ID: IML010W	% Moisture : NA
Calib. Ref.: 98L15027	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	4.34J	5.00	2.50
Iron	ND	1000	250
Manganese	1030	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/01/09
Project : CTO 20, ALAMEDA	Date Received: 12/02/09
SDG NO. : 09L041	Date Extracted: 12/09/09 10:30
Sample ID: 20-R1-017	Date Analyzed: 12/17/09 20:03
Lab Samp ID: L041-11T	Dilution Factor: 5
Lab File ID: 98L15035	Matrix : WATER
Ext Btch ID: IML010W	% Moisture : NA
Calib. Ref.: 98L15027	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	15.7	5.00	2.50
Iron	ND	1000	250
Manganese	206	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:30
Sample ID:	20-R1-021	Date Analyzed:	12/17/09 18:47
Lab Samp ID:	L041-12T	Dilution Factor:	5
Lab File ID:	98L15023	Matrix :	WATER
Ext Btch ID:	IML010W	% Moisture :	NA
Calib. Ref.:	98L15015	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.14	5.00	2.50
Iron	408J	1000	250
Manganese	743	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	NA
Project	: CTO 20, ALAMEDA	Date Received:	12/09/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:30
Sample ID:	MBLK1W	Date Analyzed:	12/17/09 18:09
Lab Samp ID:	IML010WB	Dilution Factor:	1
Lab File ID:	98L15017	Matrix :	WATER
Ext Btch ID:	IML010W	% Moisture :	NA
Calib. Ref.:	98L15015	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	1.00	0.500
Iron	ND	200	50.0
Manganese	ND	1.00	0.500

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-022	Date Analyzed:	12/17/09 21:24
Lab Samp ID:	L041-01T	Dilution Factor:	5
Lab File ID:	98L15048	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L15038	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-008	Date Analyzed:	12/17/09 21:50
Lab Samp ID:	L041-02T	Dilution Factor:	5
Lab File ID:	98L15052	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L15050	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-023	Date Analyzed:	12/17/09 21:56
Lab Samp ID:	L041-05T	Dilution Factor:	5
Lab File ID:	98L15053	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L15050	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-025	Date Analyzed:	12/17/09 22:02
Lab Samp ID:	L041-06T	Dilution Factor:	5
Lab File ID:	98L15054	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L15050	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-024	Date Analyzed:	12/17/09 22:09
Lab Samp ID:	L041-08T	Dilution Factor:	5
Lab File ID:	98L15055	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L15050	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-010	Date Analyzed:	12/17/09 22:15
Lab Samp ID:	L041-09T	Dilution Factor:	5
Lab File ID:	98L15056	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L15050	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-019	Date Analyzed:	12/17/09 22:21
Lab Samp ID:	L041-10T	Dilution Factor:	5
Lab File ID:	98L15057	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L15050	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-017	Date Analyzed:	12/17/09 22:27
Lab Samp ID:	L041-11T	Dilution Factor:	5
Lab File ID:	98L15058	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L15050	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/01/09
Project	: CTO 20, ALAMEDA	Date Received:	12/02/09
SDG NO.	: 09L041	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-021	Date Analyzed:	12/17/09 21:12
Lab Samp ID:	L041-12T	Dilution Factor:	5
Lab File ID:	98L15046	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L15038	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26012

CHAIN-OF-CUSTODY RECORD

pg 1 of 2

PROJECT NAME	PURCHASE ORDER NO.	LABORATORY NAME
CTO 20 ALAMEDA	1034131-2	EMAX
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106-3210.020	
SAMPLER NAME: AK, SL	AIRBILL NUMBER: 7981877 68134	LABORATORY ID (FOR LABORATORY): 09L071
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584	

Project Information Section
Do not submit to Laboratory

ANALYSES REQUIRED: 8260B VOCS SIGEF LIST; 6020A DISSOLVED IRON; 6020A ARSENIC; 6020A MANGANESE

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOCS SIGEF LIST	6020A DISSOLVED IRON	6020A ARSENIC MANGANESE	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R1-TB-003	12/2/09	830	3	X		W	10	X			TRIP BLANK	~~TRIP~~ TRIP BLANK			TB
20-R1-EB-003		930	3	X		W	10	X			EQUIPMENT BLANK	~~TAKEN AFTER EQUIPMENT BLANK 2VI-MW03A3~~			EB
20-R1-013		900	5	X		W	10	X	X	X	* SEE BELOW	2VI-MW03A3	20	30	N
20-R1-012		1015	5	X		W	10	X	X	X		2VI-MW03A2	10	20	N
20-R1-018		855	5	X		W		X	X	X		2VI-MW04A2	10	20	N
20-R1-020		1000	5	X		W	10	X	X	X		2VI-MW04B	30	40	N
20-R1-002		1200	5	X		W	10	X	X	X		2VI-MW01A2	10	20	N
20-R1-015		1215	5	X		W	10	X	X	X		2VI-MW03C	40	50	N
20-R1-016		1215	3		X	W	10	X				2VI-MW03C F.D.	40	50	FD
20-R1-036		1430	5	X		W	10	X	X	X		372-MW1	2.5	12.5	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/2/09	FEDEX
COMPANY: BTS	TIME: 1730	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: (AK)

COMPOSITE DESCRIPTION: * 8260B - HCL PRES, 6020A DISS. IRON / FIELD FILTERED W/ .45 MICRON. ALL 6020A HNO3 PRES

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
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San Diego, CA 92101 (619) 234-8696

NUMBER 26013

CHAIN-OF-CUSTODY RECORD

pg 2 of 2

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1034131-2
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106-3210.020
SAMPLER NAME: AK, SL	AIRBILL NUMBER: 798187768134
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 091071

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: 8260B VOC SHORT LIST; 6020A DISS; 6020A TOTAL IRON; 6020A MANGANESE; 6020A ARSENIC

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC SHORT LIST	6020A DISS IRON	6020A TOTAL IRON	6020A MANGANESE	6020A ARSENIC	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R1-007	12/2/09	1350	5	X		W	10	X	X	X			* SEE BELOW	ZVI-MW01D	50	60	REG MS
20-R1-005	↓	1255	5	X		W	10	X	X	X			↓	ZVI-MW01B	30	40	N
20-R1-014	↓	1330	5	X		W	10	X	X	X			↓	ZVI-MW03B	30	40	N
20-R1-035	↓	1440	5	X		W	10	X	X	X			↓	D03-04	47	57	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/2/09	FEDEX
COMPANY: BTS	TIME: 1730	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS
* 8260B = HCL PRES., 6020A DISS IRON/MANG FILTERED FILTERED w/ .45 MICRON, ALL 6020A HNO3 PRES

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/04/09 17:01
Sample ID: 20-R1-TB-003	Date Analyzed: 12/04/09 17:01
Lab Samp ID: L071-01	Dilution Factor: 1
Lab File ID: RLD158	Matrix : WATER
Ext Btch ID: VO94L07	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
Batch No.	: 09L071	Date Extracted:	12/04/09 17:31
Sample ID:	20-R1-EB-003	Date Analyzed:	12/04/09 17:31
Lab Samp ID:	L071-02	Dilution Factor:	1
Lab File ID:	RLD159	Matrix :	WATER
Ext Btch ID:	VO94L07	% Moisture :	NA
Calib. Ref.:	RKD579	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	97	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	104	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/05/09 00:07
Sample ID: 20-R1-013	Date Analyzed: 12/05/09 00:07
Lab Samp ID: L071-03	Dilution Factor: 1
Lab File ID: RLD172	Matrix : WATER
Ext Btch ID: VO94L07	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.24J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	2.8	1.0	0.20
1,1-DICHLOROETHENE	74E	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	3.4	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	0.80J	1.0	0.20
TRICHLOROETHENE	23	1.0	0.20
VINYL CHLORIDE	0.90	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/11/09 18:24
Sample ID: 20-R1-013DL	Date Analyzed: 12/11/09 18:24
Lab Samp ID: L071-03T	Dilution Factor: 10
Lab File ID: RLD353	Matrix : WATER
Ext Btch ID: VO94L14	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHANE	2.5J	10	2.0
1,1-DICHLOROETHENE	51	10	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	3.0J	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	ND	10	2.0
TRICHLOROETHENE	22	10	2.0
VINYL CHLORIDE	ND	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	79	70-120
4-BROMOFLUOROBENZENE	96	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/05/09 00:38
Sample ID: 20-R1-012	Date Analyzed: 12/05/09 00:38
Lab Samp ID: L071-04	Dilution Factor: 1
Lab File ID: RLD173	Matrix : WATER
Ext Btch ID: VO94L07	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	2.1	1.0	0.20
1,1-DICHLOROETHENE	9.7	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.56J	1.0	0.20
CIS-1,2-DICHLOROETHENE	160E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	26	1.0	0.20
TRICHLOROETHENE	110E	1.0	0.20
VINYL CHLORIDE	6.8	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	118	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/12/09 03:33
Sample ID: 20-R1-012DL	Date Analyzed: 12/12/09 03:33
Lab Samp ID: L071-04T	Dilution Factor: 50
Lab File ID: RLD371	Matrix : WATER
Ext Btch ID: VO94L15	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	ND	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	240	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	25J	50	10
TRICHLOROETHENE	120	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	118	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/08/09 19:55
Sample ID: 20-R1-018	Date Analyzed: 12/08/09 19:55
Lab Samp ID: L071-05R	Dilution Factor: 1
Lab File ID: RLD251	Matrix : WATER
Ext Btch ID: VO94L10	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	2.7	1.0	0.20
1,1-DICHLOROETHENE	12	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	3.6	1.0	0.20
CIS-1,2-DICHLOROETHENE	220E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	13	1.0	0.20
TRICHLOROETHENE	100E	1.0	0.20
VINYL CHLORIDE	50E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	128*	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/15/09 10:13
Sample ID: 20-R1-018DL	Date Analyzed: 12/15/09 10:13
Lab Samp ID: L071-05T	Dilution Factor: 25
Lab File ID: RLD433	Matrix : WATER
Ext Btch ID: VO94L17	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHENE	8.3J	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	280	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	11J	25	5.0
TRICHLOROETHENE	98	25	5.0
VINYL CHLORIDE	43	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	99	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
Batch No.	: 09L071	Date Extracted:	12/08/09 19:24
Sample ID:	20-R1-020	Date Analyzed:	12/08/09 19:24
Lab Samp ID:	L071-06R	Dilution Factor:	1
Lab File ID:	RLD250	Matrix :	WATER
Ext Btch ID:	VO94L10	% Moisture :	NA
Calib. Ref.:	RKD579	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.2	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.89J	1.0	0.20
1,1-DICHLOROETHANE	13	1.0	0.20
1,1-DICHLOROETHENE	150E	1.0	0.20
1,2-DICHLOROETHANE	12	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.67J	1.0	0.20
CIS-1,2-DICHLOROETHENE	5.5	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	1.3	1.0	0.20
TRICHLOROETHENE	1.9	1.0	0.20
VINYL CHLORIDE	0.30J	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	125*	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/11/09 19:25
Sample ID: 20-R1-020DL	Date Analyzed: 12/11/09 19:25
Lab Samp ID: L071-06T	Dilution Factor: 25
Lab File ID: RLD355	Matrix : WATER
Ext Btch ID: VO94L14	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	11J	25	5.0
1,1-DICHLOROETHENE	460	25	5.0
1,2-DICHLOROETHANE	7.8J	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	ND	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	ND	25	5.0
TRICHLOROETHENE	ND	25	5.0
VINYL CHLORIDE	ND	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	84	70-120
4-BROMOFLUOROBENZENE	93	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/06/09 12:20
Sample ID: 20-R1-002	Date Analyzed: 12/06/09 12:20
Lab Samp ID: L071-07	Dilution Factor: 1
Lab File ID: RLD187	Matrix : WATER
Ext Btch ID: VO94L08	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	27	1.0	0.20
1,1-DICHLOROETHENE	58E	1.0	0.20
1,2-DICHLOROETHANE	0.36J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	46E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	39	1.0	0.20
TRICHLOROETHENE	120E	1.0	0.20
VINYL CHLORIDE	150E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/08/09 16:23
Sample ID: 20-R1-002DL	Date Analyzed: 12/08/09 16:23
Lab Samp ID: L071-07T	Dilution Factor: 50
Lab File ID: RLD244	Matrix : WATER
Ext Btch ID: VO94L10	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	29J	50	10
1,1-DICHLOROETHENE	72	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	4300E	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	39J	50	10
TRICHLOROETHENE	1600	50	10
VINYL CHLORIDE	610	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	108	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/12/09 02:32
Sample ID: 20-R1-002DL	Date Analyzed: 12/12/09 02:32
Lab Samp ID: L071-07I	Dilution Factor: 500
Lab File ID: RLD369	Matrix : WATER
Ext Btch ID: VO94L15	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	500	100
1,1,2,2-TETRACHLOROETHANE	ND	500	100
1,1,2-TRICHLOROETHANE	ND	500	100
1,1-DICHLOROETHANE	ND	500	100
1,1-DICHLOROETHENE	ND	500	100
1,2-DICHLOROETHANE	ND	250	100
CHLOROETHANE	ND	250	100
CHLOROMETHANE	ND	500	100
CIS-1,2-DICHLOROETHENE	4300	500	100
TETRACHLOROETHENE	ND	500	100
TRANS-1,2-DICHLOROETHENE	ND	500	100
TRICHLOROETHENE	1800	500	100
VINYL CHLORIDE	590	250	100

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	111	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/08/09 18:54
Sample ID: 20-R1-015	Date Analyzed: 12/08/09 18:54
Lab Samp ID: L071-08R	Dilution Factor: 1
Lab File ID: RLD249	Matrix : WATER
Ext Btch ID: VO94L10	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	1.3	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.30J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	117	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	108	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
Batch No.	: 09L071	Date Extracted:	12/08/09 18:24
Sample ID:	20-R1-016	Date Analyzed:	12/08/09 18:24
Lab Samp ID:	L071-09R	Dilution Factor:	1
Lab File ID:	RLD248	Matrix	: WATER
Ext Btch ID:	VO94L10	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	1.3	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.31J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.21J	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	113	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/08/09 17:53
Sample ID: 20-R1-036	Date Analyzed: 12/08/09 17:53
Lab Samp ID: L071-10R	Dilution Factor: 1
Lab File ID: RLD247	Matrix : WATER
Ext Btch ID: VO94L10	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.26J	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	109	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	110	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/08/09 17:23
Sample ID: 20-R1-007	Date Analyzed: 12/08/09 17:23
Lab Samp ID: L071-11R	Dilution Factor: 1
Lab File ID: RLD246	Matrix : WATER
Ext Btch ID: VO94L10	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.42J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	110	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/06/09 14:52
Sample ID: 20-R1-005	Date Analyzed: 12/06/09 14:52
Lab Samp ID: L071-12	Dilution Factor: 1
Lab File ID: RLD192	Matrix : WATER
Ext Btch ID: VO94L08	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	4.0	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	13	1.0	0.20
1,1-DICHLOROETHANE	26	1.0	0.20
1,1-DICHLOROETHENE	110E	1.0	0.20
1,2-DICHLOROETHANE	21	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	2.1	1.0	0.20
CIS-1,2-DICHLOROETHENE	48E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	6.5	1.0	0.20
TRICHLOROETHENE	15	1.0	0.20
VINYL CHLORIDE	3.2	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/08/09 15:52
Sample ID: 20-R1-005DL	Date Analyzed: 12/08/09 15:52
Lab Samp ID: L071-12T	Dilution Factor: 50
Lab File ID: RLD243	Matrix : WATER
Ext Btch ID: VO94L10	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	12J	50	10
1,1-DICHLOROETHANE	25J	50	10
1,1-DICHLOROETHENE	2200E	50	10
1,2-DICHLOROETHANE	21J	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	44J	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	14J	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	110	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/12/09 02:02
Sample ID: 20-R1-005DL	Date Analyzed: 12/12/09 02:02
Lab Samp ID: L071-12I	Dilution Factor: 500
Lab File ID: RLD368	Matrix : WATER
Ext Btch ID: VO94L15	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	500	100
1,1,2,2-TETRACHLOROETHANE	ND	500	100
1,1,2-TRICHLOROETHANE	ND	500	100
1,1-DICHLOROETHANE	ND	500	100
1,1-DICHLOROETHENE	2200	500	100
1,2-DICHLOROETHANE	ND	250	100
CHLOROETHANE	ND	250	100
CHLOROMETHANE	ND	500	100
CIS-1,2-DICHLOROETHENE	ND	500	100
TETRACHLOROETHENE	ND	500	100
TRANS-1,2-DICHLOROETHENE	ND	500	100
TRICHLOROETHENE	ND	500	100
VINYL CHLORIDE	ND	250	100

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/11/09 19:56
Sample ID: 20-R1-014	Date Analyzed: 12/11/09 19:56
Lab Samp ID: L071-13N	Dilution Factor: 1
Lab File ID: RLD356	Matrix : WATER
Ext Btch ID: VO94L14	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.49J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	1.3	1.0	0.20
1,1-DICHLOROETHENE	94E	1.0	0.20
1,2-DICHLOROETHANE	0.24J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	1.3	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.27J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.39J	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	82	70-120
4-BROMOFLUOROBENZENE	95	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/08/09 15:22
Sample ID: 20-R1-014DL	Date Analyzed: 12/08/09 15:22
Lab Samp ID: L071-13T	Dilution Factor: 50
Lab File ID: RLD242	Matrix : WATER
Ext Btch ID: VO94L10	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	110	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	ND	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	ND	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	109	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
Batch No. : 09L071	Date Extracted: 12/11/09 18:54
Sample ID: 20-R1-035	Date Analyzed: 12/11/09 18:54
Lab Samp ID: L071-14N	Dilution Factor: 1
Lab File ID: RLD354	Matrix : WATER
Ext Btch ID: VO94L14	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	8.0	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	79	70-120
4-BROMOFLUOROBENZENE	91	75-120
TOLUENE-D8	97	85-120

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:30
Sample ID:	20-R1-013	Date Analyzed:	12/18/09 14:44
Lab Samp ID:	L071-03T	Dilution Factor:	5
Lab File ID:	98L16030	Matrix :	WATER
Ext Btch ID:	IML010W	% Moisture :	NA
Calib. Ref.:	98L16027	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.76J	5.00	2.50
Iron	538J	1000	250
Manganese	1840	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
SDG NO. : 09L071	Date Extracted: 12/09/09 10:30
Sample ID: 20-R1-012	Date Analyzed: 12/22/09 14:45
Lab Samp ID: L071-04T	Dilution Factor: 5
Lab File ID: 98L18016	Matrix : WATER
Ext Btch ID: IML010W	% Moisture : NA
Calib. Ref.: 98L18014	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	9.76	5.00	2.50
Iron	ND	1000	250
Manganese	81.9	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
SDG NO. : 09L071	Date Extracted: 12/09/09 10:30
Sample ID: 20-R1-018	Date Analyzed: 12/22/09 14:51
Lab Samp ID: L071-05T	Dilution Factor: 5
Lab File ID: 98L18017	Matrix : WATER
Ext Btch ID: IML010W	% Moisture : NA
Calib. Ref.: 98L18014	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	11.7	5.00	2.50
Iron	835J	1000	250
Manganese	36.1	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:30
Sample ID:	20-R1-020	Date Analyzed:	12/22/09 14:57
Lab Samp ID:	L071-06T	Dilution Factor:	5
Lab File ID:	98L18018	Matrix :	WATER
Ext Btch ID:	IML010W	% Moisture :	NA
Calib. Ref.:	98L18014	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	36.2	5.00	2.50
Iron	ND	1000	250
Manganese	9.11	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
SDG NO. : 09L071	Date Extracted: 12/09/09 10:30
Sample ID: 20-R1-002	Date Analyzed: 12/22/09 15:04
Lab Samp ID: L071-07T	Dilution Factor: 5
Lab File ID: 98L18019	Matrix : WATER
Ext Btch ID: IML010W	% Moisture : NA
Calib. Ref.: 98L18014	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	58.9	5.00	2.50
Iron	5390	1000	250
Manganese	568	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
SDG NO. : 09L071	Date Extracted: 12/09/09 10:30
Sample ID: 20-R1-015	Date Analyzed: 12/22/09 15:10
Lab Samp ID: L071-08T	Dilution Factor: 5
Lab File ID: 98L18020	Matrix : WATER
Ext Btch ID: IML010W	% Moisture : NA
Calib. Ref.: 98L18014	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.19J	5.00	2.50
Iron	2410	1000	250
Manganese	3760	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:30
Sample ID:	20-R1-036	Date Analyzed:	12/22/09 15:16
Lab Samp ID:	L071-10T	Dilution Factor:	5
Lab File ID:	98L18021	Matrix :	WATER
Ext Btch ID:	IML010W	% Moisture :	NA
Calib. Ref.:	98L18014	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	5.00	2.50
Iron	ND	1000	250
Manganese	65.0	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:30
Sample ID:	20-R1-007	Date Analyzed:	12/22/09 15:23
Lab Samp ID:	L071-11T	Dilution Factor:	5
Lab File ID:	98L18022	Matrix :	WATER
Ext Btch ID:	IML010W	% Moisture :	NA
Calib. Ref.:	98L18014	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	5.00	2.50
Iron	388J	1000	250
Manganese	7780	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:30
Sample ID:	20-R1-005	Date Analyzed:	12/22/09 15:29
Lab Samp ID:	L071-12T	Dilution Factor:	5
Lab File ID:	98L18023	Matrix :	WATER
Ext Btch ID:	IML010W	% Moisture :	NA
Calib. Ref.:	98L18014	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	8.60	5.00	2.50
Iron	278J	1000	250
Manganese	67.8	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:30
Sample ID:	20-R1-014	Date Analyzed:	12/22/09 15:35
Lab Samp ID:	L071-13T	Dilution Factor:	5
Lab File ID:	98L18024	Matrix :	WATER
Ext Btch ID:	IML010W	% Moisture :	NA
Calib. Ref.:	98L18014	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	10.7	5.00	2.50
Iron	400J	1000	250
Manganese	67.0	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/02/09
Project : CTO 20, ALAMEDA	Date Received: 12/03/09
SDG NO. : 09L071	Date Extracted: 12/09/09 10:30
Sample ID: 20-R1-035	Date Analyzed: 12/22/09 16:00
Lab Samp ID: L071-14T	Dilution Factor: 5
Lab File ID: 98L18028	Matrix : WATER
Ext Btch ID: IML010W	% Moisture : NA
Calib. Ref.: 98L18026	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	5.00	2.50
Iron	ND	1000	250
Manganese	3130	5.00	2.50

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-013	Date Analyzed:	12/18/09 16:25
Lab Samp ID:	L071-03T	Dilution Factor:	5
Lab File ID:	98L16046	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L16039	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	385J	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-012	Date Analyzed:	12/18/09 16:37
Lab Samp ID:	L071-04T	Dilution Factor:	5
Lab File ID:	98L16048	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L16039	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-018	Date Analyzed:	12/18/09 16:43
Lab Samp ID:	L071-05T	Dilution Factor:	5
Lab File ID:	98L16049	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L16039	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	501J	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-020	Date Analyzed:	12/18/09 17:09
Lab Samp ID:	L071-06T	Dilution Factor:	5
Lab File ID:	98L16053	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L16051	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-002	Date Analyzed:	12/18/09 17:15
Lab Samp ID:	L071-07T	Dilution Factor:	5
Lab File ID:	98L16054	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L16051	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	5170	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-015	Date Analyzed:	12/18/09 17:21
Lab Samp ID:	L071-08T	Dilution Factor:	5
Lab File ID:	98L16055	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L16051	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	2140	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-036	Date Analyzed:	12/18/09 17:27
Lab Samp ID:	L071-10T	Dilution Factor:	5
Lab File ID:	98L16056	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L16051	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-007	Date Analyzed:	12/22/09 16:07
Lab Samp ID:	L071-11T	Dilution Factor:	5
Lab File ID:	98L18029	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L18026	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-005	Date Analyzed:	12/18/09 17:40
Lab Samp ID:	L071-12T	Dilution Factor:	5
Lab File ID:	98L16058	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L16051	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-014	Date Analyzed:	12/18/09 17:46
Lab Samp ID:	L071-13T	Dilution Factor:	5
Lab File ID:	98L16059	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L16051	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/02/09
Project	: CTO 20, ALAMEDA	Date Received:	12/03/09
SDG NO.	: 09L071	Date Extracted:	12/09/09 10:45
Sample ID:	20-R1-035	Date Analyzed:	12/18/09 17:53
Lab Samp ID:	L071-14T	Dilution Factor:	5
Lab File ID:	98L16060	Matrix :	WATER
Ext Btch ID:	IML011W	% Moisture :	NA
Calib. Ref.:	98L16051	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26049

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: CTO 20 ALAMEDA
PURCHASE ORDER NO.: 1034131-2
PROJECT LOCATION: ALAMEDA
PROJECT NO.: 106-3210.020
SAMPLER NAME: AK, SL
AIRBILL NUMBER: 7981 9178 2807
PROJECT CONTACT: DIANE SUZUKI
PROJECT CONTACT PHONE NUMBER: 949-756-7584
LABORATORY NAME: EMAX
LABORATORY ID (FOR LABORATORY): 09L097

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC'S SHORT LIST	6020 A DISSOLVED IRON	6020A TOTAL IRON, ARSENIC, MANGANESE						COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R1-TB-004	12/3/09	855	3	X		W	10	X	~~X~~	~~X~~ (Arc)						* ↑	TRIP BLANK	—		REG
20-R1-032	↓	935	5		X	W	10	X	X	X						* SEE BELOW	ZVI-MW07A3	20	30	↓
20-R1-EB-004	↓	955	3	X		W	10	X								* ↓	EQUIPMENT B	—		↓
20-R1-034	↓	1050	5		X	W	10	X	X	X						* ↓	ZVI-MW07B (MS/MSD)	30	40	↓
20-R1-031	↓	1335 ~~1210~~	5	X		W	10	X	X	X						* ↓	ZVI-MW07A2	10	20	↓
20-R1-006	↓	0900	5	X		W	10	X	X	X						* ↓	ZVI-MW01C	40	50	↓
20-R1-003	↓	0955	5	X		W	10	X	X	X						* ↓	ZVI-MW01A3	20	30	↓
20-R1-004	↓	0955	3		X	W	10	X								* ↓	F.D.	—		↓
20-R1-001	↓	1050	5	X		W	10	X	X	X						* ↓	ZVI-MW01A1	6	11	↓
20-R1-033	↓	~~1335~~ 1210	5	X		W	10	X	X	X						* ↓	ZVI-MW07A2	30	40	↓

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
JKM	12/3/09	FEDEX
COMPANY: BTS	TIME: 1540	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: 8260B = HCL PRES., 6020A DISS. IRON FIELD FILTERED W/.45 MICRON, ALL 6020A HNO3 PRES.

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

Project Information Section
Do not submit to Laboratory

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
Batch No.	: 09L097	Date Extracted:	12/09/09 02:03
Sample ID:	20-R1-TB-004	Date Analyzed:	12/09/09 02:03
Lab Samp ID:	L097-01	Dilution Factor:	1
Lab File ID:	RLD263	Matrix :	WATER
Ext Btch ID:	VO94L11	% Moisture :	NA
Calib. Ref.:	RKD579	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	108	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/09/09 05:05
Sample ID: 20-R1-032	Date Analyzed: 12/09/09 05:05
Lab Samp ID: L097-02	Dilution Factor: 1
Lab File ID: RLD269	Matrix : WATER
Ext Btch ID: VO94L11	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	2.4	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	10	1.0	0.20
1,1-DICHLOROETHANE	19	1.0	0.20
1,1-DICHLOROETHENE	32E	1.0	0.20
1,2-DICHLOROETHANE	7.9	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	62E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	18	1.0	0.20
TRICHLOROETHENE	26E	1.0	0.20
VINYL CHLORIDE	85E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	82	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	104	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/15/09 20:50
Sample ID: 20-R1-032DL	Date Analyzed: 12/15/09 20:50
Lab Samp ID: L097-02T	Dilution Factor: 50
Lab File ID: RLD446	Matrix : WATER
Ext Btch ID: VO94L18	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	22J	50	10
1,1-DICHLOROETHENE	1500	50	10
1,2-DICHLOROETHANE	11J	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	690	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	19J	50	10
TRICHLOROETHENE	1200	50	10
VINYL CHLORIDE	81	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	99	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
Batch No.	: 09L097	Date Extracted:	12/09/09 02:34
Sample ID:	20-R1-EB-004	Date Analyzed:	12/09/09 02:34
Lab Samp ID:	L097-03	Dilution Factor:	1
Lab File ID:	RLD264	Matrix :	WATER
Ext Btch ID:	VO94L11	% Moisture :	NA
Calib. Ref.:	RKD579	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	100	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/16/09 01:24
Sample ID: 20-R1-034	Date Analyzed: 12/16/09 01:24
Lab Samp ID: L097-04R	Dilution Factor: 1
Lab File ID: RLD455	Matrix : WATER
Ext Btch ID: VO94L18	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	2.9	1.0	0.20
1,1-DICHLOROETHANE	8.2	1.0	0.20
1,1-DICHLOROETHENE	110E	1.0	0.20
1,2-DICHLOROETHANE	9.6	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	66E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	4.1	1.0	0.20
TRICHLOROETHENE	99E	1.0	0.20
VINYL CHLORIDE	5.9	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-120
4-BROMOFLUOROBENZENE	100	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/15/09 22:52
Sample ID: 20-R1-034DL	Date Analyzed: 12/15/09 22:52
Lab Samp ID: L097-04T	Dilution Factor: 50
Lab File ID: RLD450	Matrix : WATER
Ext Btch ID: VO94L18	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	1500	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	97	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	140	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	106	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/09/09 09:00
Sample ID: 20-R1-031	Date Analyzed: 12/09/09 09:00
Lab Samp ID: L097-05	Dilution Factor: 1
Lab File ID: RLD271	Matrix : WATER
Ext Btch ID: VO94L11	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	66E	1.0	0.20
1,1-DICHLOROETHENE	35E	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	17E	1.0	0.20
TETRACHLOROETHENE	2.5	1.0	0.20
TRANS-1,2-DICHLOROETHENE	130E	1.0	0.20
TRICHLOROETHENE	95E	1.0	0.20
VINYL CHLORIDE	130E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	88	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/15/09 22:22
Sample ID: 20-R1-031DL	Date Analyzed: 12/15/09 22:22
Lab Samp ID: L097-05T	Dilution Factor: 50
Lab File ID: RLD449	Matrix : WATER
Ext Btch ID: VO94L18	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	79	50	10
1,1-DICHLOROETHENE	84	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	3200E	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	260	50	10
TRICHLOROETHENE	6500E	50	10
VINYL CHLORIDE	1400	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	106	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	93	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/15/09 19:19
Sample ID: 20-R1-031DL	Date Analyzed: 12/15/09 19:19
Lab Samp ID: L097-05I	Dilution Factor: 500
Lab File ID: RLD443	Matrix : WATER
Ext Btch ID: VO94L18	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	500	100
1,1,2,2-TETRACHLOROETHANE	ND	500	100
1,1,2-TRICHLOROETHANE	ND	500	100
1,1-DICHLOROETHANE	ND	500	100
1,1-DICHLOROETHENE	ND	500	100
1,2-DICHLOROETHANE	ND	250	100
CHLOROETHANE	ND	250	100
CHLOROMETHANE	ND	500	100
CIS-1,2-DICHLOROETHENE	14000	500	100
TETRACHLOROETHENE	ND	500	100
TRANS-1,2-DICHLOROETHENE	250J	500	100
TRICHLOROETHENE	16000	500	100
VINYL CHLORIDE	1500	250	100

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	87	70-120
4-BROMOFLUOROBENZENE	100	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/15/09 18:48
Sample ID: 20-R1-006	Date Analyzed: 12/15/09 18:48
Lab Samp ID: L097-06R	Dilution Factor: 1
Lab File ID: RLD442	Matrix : WATER
Ext Btch ID: VO94L18	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.57J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	87	70-120
4-BROMOFLUOROBENZENE	94	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/09/09 10:01
Sample ID: 20-R1-003	Date Analyzed: 12/09/09 10:01
Lab Samp ID: L097-07	Dilution Factor: 1
Lab File ID: RLD273	Matrix : WATER
Ext Btch ID: VO94L11	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.78J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	1.1	1.0	0.20
1,1-DICHLOROETHANE	5.2	1.0	0.20
1,1-DICHLOROETHENE	48E	1.0	0.20
1,2-DICHLOROETHANE	1.1	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	73E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	3.4	1.0	0.20
TRICHLOROETHENE	74E	1.0	0.20
VINYL CHLORIDE	12	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	79	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/15/09 21:51
Sample ID: 20-R1-003DL	Date Analyzed: 12/15/09 21:51
Lab Samp ID: L097-07T	Dilution Factor: 50
Lab File ID: RLD448	Matrix : WATER
Ext Btch ID: VO94L18	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	270	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	86	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	67	50	10
VINYL CHLORIDE	12J	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/09/09 10:32
Sample ID: 20-R1-004	Date Analyzed: 12/09/09 10:32
Lab Samp ID: L097-08	Dilution Factor: 1
Lab File ID: RLD274	Matrix : WATER
Ext Btch ID: VO94L11	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.74J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	1.0	1.0	0.20
1,1-DICHLOROETHANE	5.2	1.0	0.20
1,1-DICHLOROETHENE	78E	1.0	0.20
1,2-DICHLOROETHANE	1.1	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	51E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	2.7	1.0	0.20
TRICHLOROETHENE	59E	1.0	0.20
VINYL CHLORIDE	8.5	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	78	70-120
4-BROMOFLUOROBENZENE	95	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/15/09 21:20
Sample ID: 20-R1-004DL	Date Analyzed: 12/15/09 21:20
Lab Samp ID: L097-08T	Dilution Factor: 50
Lab File ID: RLD447	Matrix : WATER
Ext Btch ID: VO94L18	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	290	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	59	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	64	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	97	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/16/09 00:23
Sample ID: 20-R1-001	Date Analyzed: 12/16/09 00:23
Lab Samp ID: L097-09R	Dilution Factor: 1
Lab File ID: RLD453	Matrix : WATER
Ext Btch ID: VO94L18	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	11	1.0	0.20
1,1-DICHLOROETHENE	23	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	39E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	15	1.0	0.20
TRICHLOROETHENE	140E	1.0	0.20
VINYL CHLORIDE	140E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	114	70-120
4-BROMOFLUOROBENZENE	100	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/16/09 19:41
Sample ID: 20-R1-001DL	Date Analyzed: 12/16/09 19:41
Lab Samp ID: L097-09T	Dilution Factor: 25
Lab File ID: RLD490	Matrix : WATER
Ext Btch ID: VO94L20	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	9.5J	25	5.0
1,1-DICHLOROETHENE	21J	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	930	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	14J	25	5.0
TRICHLOROETHENE	340	25	5.0
VINYL CHLORIDE	130	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
Batch No.	: 09L097	Date Extracted:	12/10/09 03:02
Sample ID:	20-R1-033	Date Analyzed:	12/10/09 03:02
Lab Samp ID:	L097-10	Dilution Factor:	1
Lab File ID:	RLD305	Matrix	: WATER
Ext Btch ID:	VO94L12	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	3.6	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	36	1.0	0.20
1,1-DICHLOROETHANE	47E	1.0	0.20
1,1-DICHLOROETHENE	120E	1.0	0.20
1,2-DICHLOROETHANE	44E	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	2.4	1.0	0.20
CIS-1,2-DICHLOROETHENE	40	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	18	1.0	0.20
TRICHLOROETHENE	3.9	1.0	0.20
VINYL CHLORIDE	0.86	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	84	70-120
4-BROMOFLUOROBENZENE	94	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/15/09 23:23
Sample ID: 20-R1-033DL	Date Analyzed: 12/15/09 23:23
Lab Samp ID: L097-10T	Dilution Factor: 25
Lab File ID: RLD451	Matrix : WATER
Ext Btch ID: VO94L18	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	5.7J	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	40	25	5.0
1,1-DICHLOROETHANE	53	25	5.0
1,1-DICHLOROETHENE	4900E	25	5.0
1,2-DICHLOROETHANE	63	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	46	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	20J	25	5.0
TRICHLOROETHENE	12J	25	5.0
VINYL CHLORIDE	ND	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	104	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/03/09
Project : CTO 20, ALAMEDA	Date Received: 12/04/09
Batch No. : 09L097	Date Extracted: 12/16/09 19:11
Sample ID: 20-R1-033DL	Date Analyzed: 12/16/09 19:11
Lab Samp ID: L097-10I	Dilution Factor: 500
Lab File ID: RLD489	Matrix : WATER
Ext Btch ID: VO94L20	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	500	100
1,1,2,2-TETRACHLOROETHANE	ND	500	100
1,1,2-TRICHLOROETHANE	ND	500	100
1,1-DICHLOROETHANE	ND	500	100
1,1-DICHLOROETHENE	4500	500	100
1,2-DICHLOROETHANE	ND	250	100
CHLOROETHANE	ND	250	100
CHLOROMETHANE	ND	500	100
CIS-1,2-DICHLOROETHENE	ND	500	100
TETRACHLOROETHENE	ND	500	100
TRANS-1,2-DICHLOROETHENE	ND	500	100
TRICHLOROETHENE	ND	500	100
VINYL CHLORIDE	ND	250	100

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	90	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	101	85-120

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-032	Date Analyzed:	12/18/09 19:28
Lab Samp ID:	L097-02T	Dilution Factor:	5
Lab File ID:	98L16071	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L16063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.07	5.00	2.50
Iron	3140	1000	250
Manganese	1820	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-034	Date Analyzed:	12/21/09 20:45
Lab Samp ID:	L097-04T	Dilution Factor:	5
Lab File ID:	98L17056	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L17054	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.87	5.00	2.50
Iron	321J	1000	250
Manganese	1290	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-031	Date Analyzed:	12/21/09 20:52
Lab Samp ID:	L097-05T	Dilution Factor:	5
Lab File ID:	98L17057	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L17054	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	11.0	5.00	2.50
Iron	2290	1000	250
Manganese	11.4	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-006	Date Analyzed:	12/21/09 20:58
Lab Samp ID:	L097-06T	Dilution Factor:	5
Lab File ID:	98L17058	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L17054	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	5.00	2.50
Iron	449J	1000	250
Manganese	2520	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-003	Date Analyzed:	12/21/09 21:04
Lab Samp ID:	L097-07T	Dilution Factor:	5
Lab File ID:	98L17059	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L17054	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.31	5.00	2.50
Iron	1130	1000	250
Manganese	1990	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-001	Date Analyzed:	12/21/09 21:10
Lab Samp ID:	L097-09T	Dilution Factor:	5
Lab File ID:	98L17060	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L17054	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	23.2	5.00	2.50
Iron	720J	1000	250
Manganese	218	5.00	2.50

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-033	Date Analyzed:	12/21/09 21:17
Lab Samp ID:	L097-10T	Dilution Factor:	5
Lab File ID:	98L17061	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L17054	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	8.16	5.00	2.50
Iron	ND	1000	250
Manganese	49.5	5.00	2.50

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-032	Date Analyzed:	12/21/09 21:23
Lab Samp ID:	L097-02T	Dilution Factor:	5
Lab File ID:	98L17062	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L17054	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	1850	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-034	Date Analyzed:	12/21/09 17:36
Lab Samp ID:	L097-04T	Dilution Factor:	5
Lab File ID:	98L17026	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L17023	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	452J	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-031	Date Analyzed:	12/21/09 17:42
Lab Samp ID:	L097-05T	Dilution Factor:	5
Lab File ID:	98L17027	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L17023	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	471J	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-006	Date Analyzed:	12/21/09 17:49
Lab Samp ID:	L097-06T	Dilution Factor:	5
Lab File ID:	98L17028	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L17023	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	258J	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-003	Date Analyzed:	12/21/09 17:55
Lab Samp ID:	L097-07T	Dilution Factor:	5
Lab File ID:	98L17029	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L17023	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	1040	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-001	Date Analyzed:	12/21/09 18:01
Lab Samp ID:	L097-09T	Dilution Factor:	5
Lab File ID:	98L17030	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L17023	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	309J	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/03/09
Project	: CTO 20, ALAMEDA	Date Received:	12/04/09
SDG NO.	: 09L097	Date Extracted:	12/14/09 10:00
Sample ID:	20-R1-033	Date Analyzed:	12/21/09 18:08
Lab Samp ID:	L097-10T	Dilution Factor:	5
Lab File ID:	98L17031	Matrix :	WATER
Ext Btch ID:	IML014W	% Moisture :	NA
Calib. Ref.:	98L17023	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: GL	Date: 12/3/09
Well I.D.: 2VI-MW01A1	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 11.20	Depth to Water Pre: 4.74 Post: 6.23
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other_____
Flow Rate: 50 ml/m Pump Depth: 8'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1028	15.19	8.21	617	18	3.81	-19.7	150	DTW 5.05
1031	14.59	8.15	575	12	3.51	-11.8	300	5.32
1034	14.55	8.09	550	9	3.24	-6.2	450	5.63
1037	14.25	8.05	537	10	3.00	-11.0	600	5.82
1040	14.23	8.04	535	8	2.92	-13.2	750	5.97
1043	14.14	8.03	536	8	2.88	-13.4	900	6.07
1046	14.15	8.01	537	7	2.82	-13.1	1050	6.18

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 1050	Sampling Date: 12/3/09
Sample I.D.: 20-R1-001	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/2/09
Well I.D.: ZVI-MW01A2	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 20.50	Depth to Water Pre: 5.45 Post: 8.59
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 50 ml/m Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1135	15.42	9.12	2992	243	2.76	-91.1	150	DTW 5.69
1138	16.63	9.14	2889	499	0.75	-116.0	300	6.00
1141	17.08	9.14	2872	472	0.44	-139.3	450	6.31
1144	17.06	9.15	2899	443	0.47	-145.7	600	6.60
1147	17.09	9.14	2908	422	0.46	-146.9	750	6.85
1150	16.52	9.14	2914	413	0.43	-147.1	900	7.12
1153	16.60	9.09	2891	391	0.48	-144.8	1050	7.21
1156	16.75	9.11	2897	388	0.41	-150.3	1200	7.30
1159	16.69	9.11	2894	390	0.40	-151.1	1350	7.37

Did well dewater? Yes (No)	Amount actually evacuated: 1350 ml
Sampling Time: 1200	Sampling Date: 12/2/09
Sample I.D.: 20-R1-002	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: GL	Date: 12/3/09
Well I.D.: ZVI-MW01A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 20.62	Depth to Water Pre: 5.78 Post: 8.41
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other_____
Flow Rate: 50 ml/m Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
0933	14.95	7.48	3208	7	1.94	-106.5	150	DTW 5.90
0936	15.17	7.40	2868	8	1.39	-138.1	300	6.21
0939	16.15	7.38	2739	7	0.92	-153.3	450	6.51
0942	16.64	7.37	2675	5	1.23	-158.8	600	6.83
0945	16.83	7.37	2655	4	1.55	-159.5	750	7.12
0948	16.82	7.36	2634	2	0.85	-155.1	900	7.42
0951	16.90	7.36	2629	2	0.79	-152.3	1050	7.69
0954	16.92	7.36	2624	2	0.77	-153.9	1200	

Did well dewater? Yes (No)	Amount actually evacuated: 1.2 l
Sampling Time: 0955	Sampling Date: 12/3/09
Sample I.D.: 20-R1-003	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20-R1-004 @ 0955

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: GL	Date: 12/2/09
Well I.D.: ZV1-MW01B	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 29.83	Depth to Water Pre: 5.63 Post: 9.59
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder Pump~~
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other_____
Flow Rate: 50 ml/m Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1238	17.86	8.54	7604	13	3.61	18.4	150	DTW 5.83
1241	17.90	8.53	7883	8	0.89	17.3	300	6.14
1244	17.91	8.53	7891	9	0.72	16.4	450	6.44
1247	17.87	8.52	7894	8	0.57	16.4	600	6.76
1250	17.79	8.52	7891	6	0.54	17.6	750	7.05
1253	17.84	8.52	7887	6	0.51	18.3	900	7.37

Did well dewater? Yes (No)	Amount actually evacuated: 900 ml
Sampling Time: 1255	Sampling Date: 12/2/09
Sample I.D.: ZO-RI-005	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/3/09
Well I.D.: ZV1-MW01C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 50.14	Depth to Water Pre: 5.78 Post: 9.49
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other_____
Flow Rate: 50 ml/m Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
0841	12.91	7.65	16741	9	2.97	54.0	150	PW 6.02
0844	13.45	7.69	16832	8	2.35	-2.0	300	6.39
0847	13.37	7.69	16975	8	2.27	-24.5	450	6.65
0850	13.08	7.70	17104	6	1.79	-69.4	600	6.92
0853	13.01	7.70	17129	6	1.75	-71.3	750	7.14
0856	12.99	7.71	17133	4	1.71	-72.2	900	7.36

Did well dewater? Yes (No)	Amount actually evacuated: 900 ml
Sampling Time: 0900	Sampling Date: 12/3/09
Sample I.D.: 20-R1-006	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: GL	Date: 12/2/09
Well I.D.: ZV1-MW01D	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 60.19	Depth to Water Pre: 6.00 Post: 15.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder Pump~~
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other_____
Flow Rate: 500ml/m Pump Depth: 55'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1325	15.16	7.45	20680	5	3.36	3.3	150	~~DTW~~ 6.09
1328	16.06	7.41	22021	7	1.52	-90.9	300	6.71
1331	16.31	7.51	22522	6	0.97	-105.5	450	7.20
1334	15.70	7.53	22690	5	0.79	-119.5	600	7.92
1337	15.27	7.52	22622	4	0.71	-129.1	750	8.48
1340	15.73	7.51	22482	3	0.67	-149.7	900	8.89
1343	15.84	7.51	22475	3	0.67	-152.3	1050	9.31
1346	15.87	7.51	22482	2	0.66	-153.9	1200	9.60

Did well dewater? Yes (No)	Amount actually evacuated: 1.2 l
Sampling Time: 1350	Sampling Date: 12/2/09
Sample I.D.: 20-R1-007	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/1/09
Well I.D.: ZV1-MW02A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 20.25	Depth to Water Pre: 5.26 Post: 8.51
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 75ml/m Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
0835	14.97	8.86	3331	16	1.75	-106.6	225	DTW 5.50
0838	15.86	8.89	3198	11	0.99	-109.8	450	5.83
0841	16.14	8.93	3214	8	0.72	-110.7	675	6.09
0844	16.01	8.93	3201	7	0.62	-91.3	900	6.38
0847	15.98	8.91	3199	7	0.59	-103.1	1125	6.71
0850	15.95	8.90	3198	5	0.56	-104.6	1350	7.02
0853	15.94	8.90	3197	6	0.56	-106.7	1575	7.33

Did well dewater? Yes No	Amount actually evacuated: 1575ml
Sampling Time: 0855	Sampling Date: 12/1/09
Sample I.D.: 20-R1-008	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 11/30/09
Well I.D.: ZVI-MW02A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.22	Depth to Water Pre: 5.22 Post: 11.67
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other_____
Flow Rate: 75 ml/m Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1323	20.80	7.91	3810	18	3.07	-128.4	225	DTW 5.69
1326	20.76	7.62	3435	10	2.40	-125.2	450	6.15
1329	20.77	7.58	3358	9	2.05	-124.9	675	6.47
1332	20.18	7.51	3228	8	1.48	-128.5	900	6.82
1335	20.01	7.50	3229	9	1.42	-130.5	1125	7.03
1338	19.95	7.50	3222	7	1.36	-133.9	1350	7.22
1341	19.92	7.50	3220	6	1.39	-135.2	1575	7.50
		MS/MSD						

Did well dewater? Yes (No) Amount actually evacuated: 1575 ml
Sampling Time: 1345 Sampling Date: 11/30/09
Sample I.D.: ZO-R1-009 Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC
Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/1/09
Well I.D.: ZV1-MW02B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 40.00	Depth to Water Pre: 5.45 Post: 7.75
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other_____
Flow Rate: 75ml/m Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
0953	15.58	9.76	7079	9	1.89	-28.4	225	DTW 5.75
0956	16.00	9.82	7248	9	1.47	-33.2	450	6.03
0959	16.49	9.84	7380	8	1.02	-35.7	675	6.21
1002	16.97	9.91	7442	9	0.70	-40.8	900	6.53
1005	17.30	10.00	7484	8	0.52	-52.9	1125	6.69
1008	17.42	10.10	7541	7	0.53	-75.0	1350	6.83
1011	17.46	10.12	7550	7	0.49	-77.7	1575	6.92
1014	17.46	10.14	7552	5	0.51	-79.9	1800	7.02

Did well dewater? Yes No	Amount actually evacuated: 1.8 L
Sampling Time: 1015	Sampling Date: 12/1/09
Sample I.D.: ZO-R1-010	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: GL	Date: 11/30/09
Well I.D.: ZV1-MW02C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 49.93	Depth to Water Pre: 5.46 Post: 8.32
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other_____
Flow Rate: 50 ml/m Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1218	18.08	7.72	16765	7	3.13	-86.8	150	DTW 6.38
1221	18.37	8.07	17299	12	2.87	-104.4	300	6.50
1224	18.50	8.18	17829	15	2.43	-106.2	450	6.70
1227	19.15	8.23	18312	9	1.55	-96.3	600	6.94
1230	19.25	8.25	18377	7	1.37	-92.7	750	7.11
1233	19.28	8.23	18391	5	1.29	-89.3	900	7.29
1236	19.30	8.24	18399	6	1.25	-88.7	1050	7.43
1239	19.31	8.25	18403	4	1.23	-86.7	1200	7.61

Did well dewater? Yes (No)	Amount actually evacuated: 1.2 l
Sampling Time: 1240	Sampling Date: 11/30/09
Sample I.D.: 20-R1-011	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-2-09
Well I.D.: ZVI-MW03A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 20.22	Depth to Water Pre: 5.30 Post: 7.49
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
959	10.68	8.19	2141	9	1.49	121.9	150	6.06
1002	11.38	8.23	2150	6	1.25	121.9	300	6.35
1005	11.57	8.25	2159	7	1.03	121.9	450	6.60
1008	11.70	8.25	2168	6	0.93	122.5	600	6.91
1011	11.62	8.25	2175	6	0.88	122.5	750	7.20
1014	11.77	8.26	2173	5	0.84	123.6	900	7.49

Did well dewater? Yes No	Amount actually evacuated: 900 ml
Sampling Time: 1015	Sampling Date: 12/2/09
Sample I.D.: 20-R1-012	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-2-09
Well I.D.: 2V1-MW03A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.11	Depth to Water Pre: 5.14 Post: 5.92
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW: Observations
835	14.32	7.41	1879	26	0.95	-95.7	150	5.45
838	13.42	7.39	1865	31	0.82	-87.5	300	5.58
841	15.48	7.34	1759	33	0.39	-89.6	450	5.86
844	15.15	7.36	1704	29	0.40	-85.9	600	6.00
847	14.93	7.38	1653	27	0.35	-81.4	750	5.70
850	14.14	7.36	1644	25	0.32	-75.5	900	5.72
853	14.53	7.37	1655	24	0.29	-70.3	1050	6.00
856	14.59	7.36	1628	23	0.25	-70.6	1200	5.92

Did well dewater? Yes (No)	Amount actually evacuated: 1200 ml
Sampling Time: 900	Sampling Date: 12-2-09
Sample I.D.: 20-R1-013	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

20-R1-TB-003 @ 830
20-R1-EB-003 @ 930

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-2-09
Well I.D.: ZVI- MW03B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 40.28	Depth to Water Pre: 5.28 Post: 7.01
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____

Flow Rate: 50 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1311	12.57	8.42	12340	34	1.64	77.9	150	5.90
1314	12.46	8.45	12289	10	0.96	76.1	300	6.25
1317	12.48	8.46	12264	12	0.88	77.2	450	6.35
1320	12.63	8.48	11829	14	0.80	81.2	600	6.60
1323	12.74	8.51	11649	15	0.75	88.1	750	6.82
1326	12.78	8.52	11400	16	0.71	88.8	900	7.01

Did well dewater? Yes No	Amount actually evacuated: 900 ml
Sampling Time: 1330	Sampling Date: 12-2-09
Sample I.D.: 20-R1-014	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-2-09
Well I.D.: ZV1-MW03C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 50.15	Depth to Water Pre: 3.51 Post: 8.09
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml / min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW: Observations
1200	13.53	7.30	15362	57	1.23	-80.3	150	6.42
1203	13.64	7.31	15416	60	0.97	-75.9	300	6.82
1206	13.70	7.32	15417	52	0.82	-73.6	450	7.13
1209	13.77	7.33	15398	45	0.78	-73.4	600	7.49
1212	13.80	7.34	15400	42	0.73	-74.0	750	7.80
1215	13.82	7.34	15390	40	0.69	-74.1	900	8.09

Did well dewater? Yes (No)	Amount actually evacuated: 900 ml
Sampling Time: 1215	Sampling Date: 12-2-09
Sample I.D.: 20-R1-015	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20-R1-016

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/1/09
Well I.D.: ZV1-MW04A1	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 10.91	Depth to Water Pre: 4.00 Post: 5.05
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder Pump~~
Sampling Method: Dedicated Tubing ~~New Tubing~~ Other _____
Flow Rate: 50 ml/m Pump Depth: 8'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1228	17.21	7.67	672	4	1.59	-226.9	150	DTW 4.69
1231	17.60	7.48	645	4	0.67	-244.8	300	4.83
1234	17.70	7.45	630	3	0.44	-256.9	450	4.91
1237	17.93	7.45	622	3	0.30	-282.7	600	4.98
1240	18.03	7.46	618	3	0.25	-292.9	750	5.03
1243	18.20	7.53	605	3	0.21	-300.1	900	5.05
1246	18.23	7.54	601	2	0.21	-303.2	1050	5.05
1249	18.26	7.57	599	2	0.22	-305.1	1200	5.05

Did well dewater? Yes ~~No~~	Amount actually evacuated: 1.2 l
Sampling Time: 1250	Sampling Date: 12/1/09
Sample I.D.: 20-R1-017	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 09/130-AK1	Client: TetraTech
Sampler: GL	Date: 12/2/09
Well I.D.: ZVI-MW04A2	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 20.31	Depth to Water Pre: 4.70 Post: 7.12
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 50 ml/m Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
0830	13.78	9.04	2251	61	1.61	-132.7	150	DTW 5.03
0833	13.79	9.05	2207	49	1.25	-156.0	300	5.29
0836	13.81	9.04	2180	30	1.16	-165.0	450	5.43
0839	13.84	9.04	2158	26	1.06	-171.4	600	5.58
0842	13.88	9.02	2139	21	0.93	-176.9	750	5.84
0845	13.79	9.03	2137	11	0.91	-180.4	900	5.90
0848	13.76	9.03	2137	9	0.88	-182.7	1050	6.06
0851	13.70	9.01	2129	10	0.87	-183.0	1200	6.30

Did well dewater? Yes (No)	Amount actually evacuated: 1.2 l
Sampling Time: 0855	Sampling Date: 12/2/09
Sample I.D.: 20-R1-018	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/1/09
Well I.D.: ZV1-MW04A3	Well Diameter: 2 3 4 6 8 (15)
Total Well Depth: 30.45	Depth to Water Pre: 5.24 Post: 5.46
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 75 ml/m Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1051	16.41	7.73	2804	3	2.02	-71.0	225	DTW 5.32
1054	17.06	7.68	2614	3	0.94	-96.2	450	5.50
1057	16.74	7.68	2568	3	0.80	-100.7	675	5.46
1100	16.78	7.63	2550	2	0.66	-105.4	900	5.46
1103	16.82	7.65	2545	2	0.61	-110.1	1125	5.46
1106	16.79	7.66	2548	2	0.59	-112.3	1350	5.46
1109	16.77	7.67	2545	3	0.58	-113.2	1575	5.46

Did well dewater? Yes (No)	Amount actually evacuated: 1575 ml
Sampling Time: 1110	Sampling Date: 12/1/09
Sample I.D.: ZO-R1-019	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: GL	Date: 12/2/09
Well I.D.: ZVI-MW043	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 40.14	Depth to Water Pre: 5.15 Post: 8.44
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder Pump~~
Sampling Method: Dedicated Tubing ~~New Tubing~~ Other _____
Flow Rate: 75 ml/m Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
0941	13.71	9.19	7773	5	1.50	-201.6	225	DTW 5.31
0944	14.61	9.27	7869	6	1.11	-215.3	450	5.45
0947	15.42	9.33	8033	5	0.70	-229.5	675	5.75
0950	15.66	9.34	8144	4	0.55	-236.6	900	6.04
0953	15.98	9.33	8176	4	0.48	-241.7	1125	6.36
0956	15.97	9.36	8192	4	0.46	-245.3	1350	6.66
0959	15.94	9.34	8197	3	0.41	-249.1	1575	6.94

Did well dewater? Yes No	Amount actually evacuated: 1575 ml
Sampling Time: 1000	Sampling Date: 12/2/09
Sample I.D.: ZO-R1-020	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/1/09
Well I.D.: ZVI-MW04C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 49.33	Depth to Water Pre: 5.40 Post: 19.20
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 50 ml/m Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	Observations
1331	19.54	8.04	17156	6	1.46	-282.2	150	DTW 6.48
1334	19.36	8.10	17215	7	0.42	-303.8	300	7.23
1337	19.46	8.07	17241	7	0.27	-305.6	450	8.12
1340	19.24	8.03	17322	6	0.21	-306.3	600	8.91
1343	19.29	8.01	17322	5	0.19	-306.4	750	9.91
1346	19.32	8.01	17315	5	0.18	-308.0	900	10.75
		MS/MSD						

Did well dewater? Yes (No)	Amount actually evacuated: 900 ml
Sampling Time: 1350	Sampling Date: 12/1/09
Sample I.D.: 20-R1-021	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12/1/09
Well I.D.: 2U1-MW05A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 19.22	Depth to Water Pre: 4.70 Post: 7.29
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW: Observations
843	12.98	8.20	1284	19	1.11	-7.0	150	5.53
846	13.64	8.19	1279	16	0.87	17.4	300	5.78
849	13.84	8.18	1278	14	0.72	37.4	450	6.05
852	13.92	8.18	1275	12	0.60	52.4	600	6.26
855	14.10	8.18	1273	12	0.59	68.0	750	6.53
858	14.13	8.18	1273	12	0.54	78.5	900	6.80
901	14.10	8.19	1275	12	0.53	83.5	1050	7.05
904	14.14	8.19	1275	12	0.49	87.9	1200	7.29

Did well dewater? Yes No	Amount actually evacuated: 1200 ml
Sampling Time: 905	Sampling Date: 12-1-09
Sample I.D.: 20-R1-022	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130 AK1	Client: TETRA TECH
Sampler: AK	Date: 12-1-09
Well I.D.: 2V1- MW05A3	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 30.28	Depth to Water Pre: 5.00 Post: 5.61
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____

Flow Rate: 50 ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1014	11.83	7.71	2726	32	1.14	-9.5	150	5.30
1017	11.77	7.69	2730	31	0.90	-11.8	300	5.40
1020	11.69	7.67	2734	32	0.71	-14.8	450	5.42
1023	11.70	7.65	2742	31	0.51	-15.6	600	5.51
1026	11.72	7.64	2749	30	0.47	-16.6	750	5.55
1029	11.76	7.63	2751	31	0.42	-17.6	900	5.61

Did well dewater? Yes No	Amount actually evacuated: 900 ml
Sampling Time: 1030	Sampling Date: 12-1-09
Sample I.D.: 20-R1-023	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-1-09
Well I.D.: 2V1-MW05B	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 39.99	Depth to Water Pre: 5.19 Post: 7.28
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1350	15.99	9.00	18914	14	1.81	107.9	150	5.34
1353	16.20	9.02	19015	12	1.22	112.1	300	5.60
1356	16.13	9.02	18480	10	1.07	114.7	450	5.86
1359	16.20	9.02	18049	9	0.98	115.1	600	6.10
1402	16.14	9.02	17376	10	0.88	117.7	750	6.31
1405	16.17	9.02	16904	8	0.82	118.1	900	6.60
1408	16.29	9.02	16381	8	0.75	120.3	1050	6.82
1411	16.33	9.02	16089	8	0.78	120.7	1200	7.01
1414	16.34	9.02	15908	7	0.69	122.6	1350	7.28

Did well dewater? Yes (No)	Amount actually evacuated: 1350 ml
Sampling Time: 1415	Sampling Date: 12-1-09
Sample I.D.: 20-R1-024	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-1-09
Well I.D.: 2V1-MW05C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 48.68	Depth to Water Pre: 5.19 Post: 6.41
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 ml/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1219	17.10	8.52	15628	19	0.14	-93.0	150	6.19
1222	17.05	8.48	15716	20	0.04	-99.2	300	6.29
1225	16.73	8.48	15738	18	0.07	-99.3	450	6.41
* BUBBLES	IN	WATER	LINE					

Did well dewater? Yes (No)	Amount actually evacuated: 450 ml
Sampling Time: 1225	Sampling Date: 12-1-09
Sample I.D.: 20-R1-025	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20_R1-026 @ 1225

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 11-30-09
Well I.D.: 2U1-MW06A2	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 19.01	Depth to Water Pre: 5.60 Post: 6.92
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml / min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1303	16.06	8.89	4137	98	0.23	-98.4	150	6.52
1306	16.28	8.88	4114	102	0.20	-100.3	300	6.60
1309	16.40	8.87	4099	107	0.13	-101.1	450	6.80
1312	16.49	8.86	4088	109	0.11	-101.5	600	6.92

Did well dewater? Yes (No)	Amount actually evacuated: 600 ml
Sampling Time: 1315	Sampling Date: 11/30/09
Sample I.D.: 20-R1-027	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: ~~09~~ AND 11-30-09
Well I.D.: 2V1- MW06A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.30	Depth to Water Pre: 5.33 Post: 6.10
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW: Observations
1136	15.49	7.35	2880	11	2.43	-84.9	150	5.98
1139	15.98	7.32	2820	10	1.57	-87.9	300	6.01
1142	16.13	7.30	2798	8	1.08	-85.6	450	6.05
1145	16.23	7.29	2785	7	0.70	-81.7	600	6.09
1148	16.38	7.29	2774	6	0.52	-76.6	750	6.06
1151	16.52	7.28	2765	6	0.42	-69.6	900	6.08
1154	16.64	7.28	2755	4	0.34	-62.2	1050	6.11
1157	16.82	7.29	2751	5	0.32	-59.9	1200	6.10

Did well dewater? Yes (No)	Amount actually evacuated: 1200 ml
Sampling Time: 1200	Sampling Date: 11-30-09
Sample I.D.: 20-R1-028	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TERTA TECH
Sampler: AK	Date: 11/30/09
Well I.D.: ZV1-MW06B	Well Diameter: 2 3 4 6 8 (.5)
Total Well Depth: 40.20	Depth to Water Pre: 5.30 Post: 8.20
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW! Observations
1431	18.54	8.24	6809	11	2.17	116.8	150	6.75
1434	18.58	8.24	6812	12	1.35	118.4	300	7.00
1437	18.64	8.23	6814	10	0.84	120.9	450	7.25
1440	18.61	8.23	6811	9	0.65	121.0	600	7.53
1443	18.58	8.22	6808	10	0.49	122.6	750	7.70
1446	18.57	8.21	6809	9	0.41	123.5	900	7.99
1449	18.47	8.20	6809	7	0.39	124.3	1050	8.20

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 1450	Sampling Date: 11/30/09
Sample I.D.: 20-R1-029	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 11-30-09
Well I.D.: 2VI-MW06C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 48.80	Depth to Water Pre: 5.50 Post: 6.94
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 ml/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1005	16.21	7.66	15842	133	0.58	-102.2	300	5.95
1008	16.46	7.64	15467	17	0.44	-98.4	600	6.29
1011	16.48	7.63	15567	15	0.38	-92.5	900	6.55
1014	16.04	7.63	15555	16	0.34	-90.1	1200	6.79
1017	15.78	7.63	15609	15	0.35	-88.6	1500	6.94

Did well dewater? Yes (No)	Amount actually evacuated: 1500 ml
Sampling Time: 1020	Sampling Date: 11-30-09
Sample I.D.: 20-R1-030	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-3-09
Well I.D.: ZV1-MW07A2	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 19.80	Depth to Water Pre: 7.13 Post: 9.32
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml / min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1319	14.61	8.79	2880	32	0.99	9.9	150	8.42
1322	14.65	8.78	2873	26	0.85	4.5	300	8.69
1325	14.62	8.78	2867	27	0.71	-1.4	450	8.90
1328	14.51	8.78	2860	26	0.64	-8.8	600	9.10
1331	14.69	8.78	2857	25	0.61	-5.3	750	9.32

Did well dewater? Yes (No)	Amount actually evacuated: 750 ml
Sampling Time: 1335	Sampling Date: 12-3-09
Sample I.D.: 20-R1-031	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-3-09
Well I.D.: ZV1-MW07A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.03	Depth to Water Pre: 5.50 Post: 8.38
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW! Observations
852	13.09	7.31	5137	398	6.85	-90.8	150	6.70
855	13.56	7.35	5201	851	0.59	-110.2	300	6.83
858	13.25	7.34	5049	>1000	0.16	-110.9	450	7.05
901	13.26	7.31	4848	>1000	0.23	-105.1	600	7.17
904	13.18	7.29	4697	>1000	0.26	-96.3	750	7.30
907	13.08	7.29	4636	668	0.29	-92.0	900	7.47
910	13.15	7.28	4531	338	0.38	-89.9	1050	7.61
913	13.29	7.28	4430	222	0.43	-87.3	1200	7.70
916	13.39	7.27	4349	162	0.59	-85.4	1350	7.81
919	13.44	7.28	4316	117	0.55	-82.7	1500	7.93
922	13.21	7.25	4273	104	0.54	-78.4	1650	8.04

SEE NEXT PAGE →

Did well dewater? Yes (No)	Amount actually evacuated: 2100 ml
Sampling Time: 935	Sampling Date: 12-3-09
Sample I.D.: 20-R1-032	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

20-R1-TB-004 @ 855
20-R1-EB-004 @ 955

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-3-09
Well I.D.: ZVI-MW07A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.03	Depth to Water Pre: 5.50 Post: 8.38
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
925	13.23	7.23	4251	88	0.51	-73.8	1800	8.12
928	13.38	7.22	4254	90	0.50	-74.0	1950	8.23
931	13.35	7.20	4264	84	0.49	-67.2	2100	8.38

Did well dewater? Yes (No)	Amount actually evacuated: 2100 ml
Sampling Time: 935	Sampling Date: 12-3-09
Sample I.D.: 20-R1-032	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-3-09
Well I.D.: ZVI-MW07B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 40.22	Depth to Water Pre: 5.40 Post: 7.27
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50ml / MIN Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1131	14.69	8.22	8124	48	5.42	86.1	150	6.24
1134	13.89	8.21	8063	35	5.92	101.8	300	6.51
AIR	IN	WATER	LINE	STOPPED	PURGE	—	REATTACHED	
TUBING	&	RESTARTED	PURGE					
1154	14.24	8.21	8008	20	6.93	110.1	450	7.22
1157	13.87	8.21	8002	18	6.78	111.6	600	7.22
1200	14.34	8.20	7983	24	6.71	113.5	750	7.25
1203	14.61	8.21	7963	23	6.71	111.8	900	7.26
1206	14.16	8.22	7965	22	6.70	112.9	1050	7.27

Did well dewater? Yes No	Amount actually evacuated: 1050 ml
Sampling Time: 1210	Sampling Date: 12-3-09
Sample I.D.: 20-R1-033	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-3-09
Well I.D.: 2U1-MW07C	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 50.47	Depth to Water Pre: 5.56 Post: 6.51
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml / MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW! Observations
1019	14.83	8.31	13769	15	0.93	-88.8	150	6.33
1022	15.13	8.28	13899	13	0.79	-85.2	300	6.40
1025	15.26	8.22	14097	10	0.60	-80.6	450	6.47
1028	15.69	8.18	14143	7	0.57	-83.3	600	6.48
1031	15.73	8.16	14250	7	0.49	-84.2	750	6.40
1034	15.63	8.06	14465	6	0.42	-108.8	900	6.45
1037	15.62	8.04	14477	5	0.42	-111.9	1050	6.48
1040	15.38	7.99	14569	4	0.38	-121.2	1200	6.50
1043	15.70	7.98	14603	3	0.38	-122.7	1350	6.51
1046	15.77	7.94	14596	3	0.38	-119.3	1500	6.51

Did well dewater? Yes (No)	Amount actually evacuated: 1500 ml
Sampling Time: 1050	Sampling Date: 12-3-09
Sample I.D.: 20-R1-034	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130 AK1	Client: TETRA TECH
Sampler: AK / SL	Date: 12/2/09
Well I.D.: D0304	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: N/A	Depth to Water Pre: 5.19 Post: 5.25
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump ~~Peristaltic Pump~~ ~~Bladder Pump~~
Sampling Method: ~~Dedicated~~ Tubing New Tubing Other ____
Flow Rate: 200 ml/m Pump Depth: N/A

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1426	18.40	7.86	17278	8	0.35	-8.2	600	DTW 5.25
1429	18.51	7.86	17021	5	0.23	-10.0	1200	5.25
1432	18.52	7.82	17520	4	0.21	-11.4	1800	5.25
1435	18.55	7.85	17445	4	0.20	-12.8	2400	5.25
1438	18.50	7.79	17496	3	0.19	-13.2	3000	5.25

Did well dewater? Yes (No)	Amount actually evacuated: 3.0 L
Sampling Time: 1440 ~~A20-R1-035~~	Sampling Date: 12/2/09
Sample I.D.: ~~03-2009D-040~~ (AK2)	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130A1C1	Client: TETRA TECH
Sampler: AIC	Date: 12-2-09
Well I.D.: 372 - MW1	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: N/A	Depth to Water Pre: 3.91 Post: 4.40
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: (Dedicated Tubing) New Tubing Other ____

Flow Rate: 200 ml / min Pump Depth: DEDICATED

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1420	16.60	7.57	275	6	3.96	114.8	600	4.14
1423	16.61	7.56	273	3	3.91	116.8	1200	4.25
1426	16.65	7.56	272	3	3.86	119.9	1800	4.40

Did well dewater? Yes (No)	Amount actually evacuated: 1800 ml
Sampling Time: 1430	Sampling Date: 12-2-09
Sample I.D.: 20-R1-036	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME	TETRA TECH @ ALAMEDA			PROJECT NUMBER	091130AK1		
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
RAE	2000.39	11/30/09 @ 630	150B 100	101	YES	N/A	AC
RAE	2000.56	11/30/09 @ 634	150B 100	101	YES	N/A	AC
YSI 556	06F1362AT	11/30/09 @ 707	ORP 244	241.3	244.0	15.74	AC
↓	↓	↓	PH 7.0 4.0 10.0	7.01, 4.04, 9.82	7.00 4.00 9.97	15.76	AC
↓	↓	↓	CONDUCTIVITY 3900	3765	3900	15.72	AC
↓	↓	↓	DO 100%	96.2	100.4	15.26	AC
YSI 556	02D0577AH ~~05L1520AT~~ AC	11/30/09 @ 717	ORP 244	254.1 ~~240.1~~ AC	244.0	15.56 ~~14.75~~ AC	AC
↓	↓	↓	PH 7.0 4.0 10.0	7.12 4.00 9.85	7.01 4.00 9.99	15.23 ~~14.95~~ AC	AC
↓	↓	↓	CONDUCTIVITY 3900	3721	3900	15.06	AC
↓	↓	↓	DO 100%	96.6	99.2	14.87	AC

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH @ ALAMEDA				PROJECT NUMBER CP111 3C ARC1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	02D0577AH	12/1/09 @ 615	ORP 240	238.4	240.0	17.07	ARC
↓	↓	↓	PH 7.0 4.0 10.0	7.07 3.92 9.86	7.0 3.98 9.96	17.00	ARC
↓	↓	↓	CONDUCTIVITY 3900	3991	3901	16.76	ARC
↓	↓	↓	DO 100.0%	102.1	99.8	16.50	ARC

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH @ ALAMEDA				PROJECT NUMBER 091130AK1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	02D0577AH	11/30/09 @ 1349	ORP 237	238.9	237.0	19.47	AK
↓		↓	PH 7.0 4.0 10.0	7.06 3.90 9.87	7.0 4.0 9.99	18.34	AK
↓		↓	CONDUCTIVITY 3900	3871	3900	18.65	AK
↓		↓	DO 100%	98.1	101.4	16.54	AK
YSI 556	02D0577AH	12/2/09 @ 630	ORP 240	240.6	240.0	16.59	AK
↓	↓	↓	PH 7.0 4.0 10.0	7.12 3.90 9.76	7.00 4.00 10.01	16.59	AK
↓	↓	↓	CONDUCTIVITY 3900	3831	3902	16.53	AK
↓	↓	↓	DO 100%	102.1	99.1	16.05	AK
YSI 556	02D0577AH	12/3/09 805	ORP 247	245.5	247	13.05	AK
↓	↓	↓	PH 7.0 4.0 10.0	7.07 3.93 9.81	7.01 4.04 9.98	13.07	AK
↓	↓	↓	CONDUCTIVITY 3940	3840	3901	13.03	AK
↓	↓	↓	DO 100%	98.0	99.9	12.29	AK

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME	TETRA TECH @ ALAMEDA			PROJECT NUMBER	091130AC1		
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	06F1362	12/1/09 0613	pH 4 7 10	pH 4.00 7.00 10.00	✓	17.02	
↓	↓	↓	3900uS	3900	✓	16.85	
↓	↓	↓	244.0mV	244.3	✓	16.50	
↓	↓	↓	100% DO	99.1%	✓	16.42	
YSI 556	06F1362	12/2/09 0630	pH 4 7 10	pH 4.00 7.00 10.00	✓	17.54	
↓	↓	↓	3900uS	3900uS	✓	17.06	
↓	↓	↓	244.0mV	243.1	✓	16.62	
↓	↓	↓	3900uS 100% DO	98.7%	✓	15.96	

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME	TETRA TECH @ ALAMEDA			PROJECT NUMBER	091130 AK1		
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	°C TEMP.	INITIALS
YSI 556	06F1362	12/2/09 1105	pH 4 7 10	pH 4.00 7.00 10.00	✓	15.13	[illegible]
↓	↓	↓	3900 uS	3897 uS	✓	15.27	[illegible]
↓	↓	↓	244.0 mV	242.3 mV	✓	15.02	[illegible]
↓	↓	↓	100% DO	99.1%	✓	14.69	[illegible]
YSI 556	06F1362	12/3/09 0800	pH 4 7 10	pH 4.00 7.00 10.00	✓	14.25	[illegible]
↓	↓	↓	3900 uS	3898 uS	✓	12.87	[illegible]
↓	↓	↓	244.0 mV	247.3	✓	12.35	[illegible]
↓	↓	↓	100% DO	99.1%	✓	12.45	[illegible]

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26058

CHAIN-OF-CUSTODY RECORD

pg 1 of 2

PROJECT NAME: CTO 20 ALAMEDA	PURCHASE ORDER NO.: 1042720
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106-3210.020
SAMPLER NAME: AK, FS, IW	AIRBILL NUMBER: 7982 3784 3360
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: MK ROSEEPS

LABORATORY ID (FOR LABORATORY): P0912302

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: DISS. HYDROCARBONS AMAZOE CY

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISS. HYDROCARBONS AMAZOE CY	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R2-001	12/16/09	1120	1	X		W	10	X		2V1-MW01A1	6	11	N
~~20-R2-002~~													
20-R2-003	12/15/09	1325	1	X		W	10	X		2V1-MW01A2	10	20	N
20-R2-004	12/16/09	1350	1		X	W	10	X		2V1-MW01A3	20	30	N
20-R2-005	12/15/09	1110	1	X		W	10	X		2V1-MW01B	30	40	N
20-R2-006	12/17/09	1450 ~~1350~~	1	X		W	10	X		2V1-MW01C	40	50	N
20-R2-007	12/16/09	920	1	X		W	10	X		2V1-MW01D	50	60	N
20-R2-008	12/16/09	1450 ~~1400~~	1	X		W	10	X		2V1-MW02A2	10	20	N
20-R2-009	12/16/09	1130	1	X		W	10	X		2V1-MW02A3	20	30	N
20-R2-010	12/16/09	1310	1	X		W	10	X		2V1-MW02B	30	40	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/18/09	FEDEX
COMPANY: BTS	TIME: 1200	COMPANY:
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
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San Diego, CA 92101 (619) 234-8696

NUMBER **26059**

CHAIN-OF-CUSTODY RECORD

pg 2 of 2

PROJECT NAME: CTU 20 ALAMEDA	PURCHASE ORDER NO. 1042720 ~~104120~~ (Ac)
PROJECT LOCATION: ALAMEDA	PROJECT NO. 106-3210.020
SAMPLER NAME: AK, FS, IW	AIRBILL NUMBER: 7982 3784 3360
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: MICROSEEP

LABORATORY ID (FOR LABORATORY): P0912302

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: DISS. HYDROCARB AMZOKA X

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISS. HYDROCARB AMZOKA	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-RZ-012	12/14/09	1015	1	X		W	10	X		2U1-MW02C	40	50	N
20-RZ-013	12/14/09	1440	1	X		W	10	X		2U1-MW03A2	10	20	N
20-RZ-014	12/14/09	1120	1		X	W	10	X		2U1-MW03A3	20	30	N
20-RZ-015	12/15/09	955	1	X		W	10	X		2U1-MW03B	30	40	N
20-RZ-016	12/14/09	1245	1	X		W	10	X		2U1-MW03C	40	50	N
20-RZ-017	12/16/09	1130	1		X	W	10	X		2U1-MW04A1	6	11	N
20-RZ-018	12/17/09	1200	1	X		W	10	X		2U1-MW04A2	10	20	N
20-RZ-019	12/16/09	1000	1	X		W	10	X		2U1-MW04A3	20	30	N
20-RZ-020	12/17/09	1320	1	X		W	10	X		2U1-MW04B	30	40	N
20-RZ-021	12/16/09	1440	1	X		W	10	X		2U1-MW04C	40	50	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/18/09	FEDEX
COMPANY: BTS	TIME: 1200	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

microseeps
from insight comes solutions

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 1 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Laboratory Results

Total pages in data package: 126

Lab Sample #	Client Sample ID
P0912302-01	20-R2-001
P0912302-02	20-R2-003
P0912302-03	20-R2-004
P0912302-04	20-R2-005
P0912302-05	20-R2-006
P0912302-06	20-R2-007
P0912302-07	20-R2-008
P0912302-08	20-R2-009
P0912302-09	20-R2-010
P0912302-10	20-R2-012
P0912302-11	20-R2-013
P0912302-12	20-R2-014
P0912302-13	20-R2-015
P0912302-14	20-R2-016
P0912302-15	20-R2-017
P0912302-16	20-R2-018
P0912302-17	20-R2-019
P0912302-18	20-R2-020
P0912302-19	20-R2-021

Microseeps test results meet all the requirements of the NELAC standards or provide reasons and/or justification if they do not.

Approved By: Debbie Hallo ***Date:*** 1-7-10

Project Manager: Debbie Hallo

The analytical results reported here are reliable and usable to the precision expressed in this report. As required by some regulating authorities, a full discussion of the uncertainty in our analytical results can be obtained at our web site or through customer service. Unless otherwise specified, all results are reported on a wet weight basis.

As a valued client we would appreciate your comments on our service.
Please call customer service at (412)826-5245 or email customerservice@microseeps.com.

Case Narrative:

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 2 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-001	Vapor	P0912302-01	16 Dec. 09 11:20	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		2000.000	60.000	nM	AM20GAX	1/5/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 3 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-003	Vapor	P0912302-02	15 Dec. 09 13:25	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		23000.000	600.000	nM	AM20GAX	1/6/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 4 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-004	Vapor	P0912302-03	16 Dec. 09 13:50	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1100.000	30.000	nM	AM20GAX	1/5/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
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Santa Ana, CA 92705

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Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-005	Vapor	P0912302-04	15 Dec. 09 11:10	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.800	0.600	nM	AM20GAX	1/4/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

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Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-006	Vapor	P0912302-05	17 Dec. 09 14:50	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.300	0.600	nM	AM20GAX	12/30/09	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

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Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-007	Vapor	P0912302-06	16 Dec. 09 9:20	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		4000.000	120.000	nM	AM20GAX	1/5/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
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Santa Ana, CA 92705

Page: Page 8 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-008	Vapor	P0912302-07	16 Dec. 09 14:50	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		3.500	0.600	nM	AM20GAX	12/30/09	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 9 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-009	Vapor	P0912302-08	16 Dec. 09 11:30	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		52.000	6.000	nM	AM20GAX	1/5/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

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Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-010	Vapor	P0912302-09	16 Dec. 09 13:10	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		2100.000	60.000	nM	AM20GAX	1/5/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
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Santa Ana, CA 92705

Page: Page 11 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-012	Vapor	P0912302-10	16 Dec. 09 10:15	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		3700.000	120.000	nM	AM20GAX	1/6/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
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Santa Ana, CA 92705

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Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-013	Vapor	P0912302-11	14 Dec. 09 14:40	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.400	0.600	nM	AM20GAX	12/28/09	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 13 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-014	Vapor	P0912302-12	14 Dec. 09 11:20	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		0.840	0.600	nM	AM20GAX	12/28/09	sl

Data Qualifiers. J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
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Santa Ana, CA 92705

Page: Page 14 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-015	Vapor	P0912302-13	15 Dec. 09 9:55	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.500	0.600	nM	AM20GAX	1/4/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
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Santa Ana, CA 92705

Page: Page 15 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-016	Vapor	P0912302-14	14 Dec. 09 12:45	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.100	0.600	nM	AM20GAX	12/28/09	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
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Santa Ana, CA 92705

Page: Page 16 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-017	Vapor	P0912302-15	16 Dec. 09 11:30	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		25.000	1.200	nM	AM20GAX	1/6/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 17 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-018	Vapor	P0912302-16	17 Dec. 09 12:00	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		2.900	0.600	nM	AM20GAX	12/30/09	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 18 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-019	Vapor	P0912302-17	16 Dec. 09 10:00	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.100	0.600	nM	AM20GAX	12/30/09	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 19 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-020	Vapor	P0912302-18	17 Dec. 09 13:20	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		7.400	0.600	nM	AM20GAX	12/30/09	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
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Santa Ana, CA 92705

Page: Page 20 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-021	Vapor	P0912302-19	16 Dec. 09 14:40	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		310.000	12.000	nM	AM20GAX	1/6/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip
Analysis Method: Hydrogen by Bubble Strip

M091230026-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M091230026-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125

M091230026-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125	0.00	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip
Analysis Method: Hydrogen by Bubble Strip

M100104010-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100104010-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	9.700	nM	9.78	99.00	75 - 125

M100104010-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	9.800	nM	9.78	100.00	75 - 125	1.03	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 23 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip

Analysis Method: Hydrogen by Bubble Strip

M100105017-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100105017-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125

M100105017-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125	0.00	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 24 of 25
Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip

Analysis Method: Hydrogen by Bubble Strip

M100105019-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100105019-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125

M100105019-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125	0.00	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Lab Proj #: P0912302
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip

Analysis Method: Hydrogen by Bubble Strip

M100106027-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100106027-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	10.000	nM	9.78	102.00	75 - 125

M100106027-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	10.000	nM	9.78	102.00	75 - 125	0.00	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Chain of Custody Documents

P0912302

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26058

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1042720
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AK, FS, IW	7982 3784 3360
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: MICROSEEPS

LABORATORY ID (FOR LABORATORY):

ANALYSES REQUIRED: DISS. HYDROGEN, AMTOCAY

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISS. HYDROGEN	AMTOCAY	COMMENTS
1	20-RZ-001	12/16/09	1120	1	X		W	10	X		
(A1)	~~20-RZ-002~~										
2	20-RZ-003	12/15/09	1325	1	X		W	10	X		
3	20-RZ-004	12/16/09	1350	1		X	W	10	X		
4	20-RZ-005	12/15/09	1110	1	X		W	10	X		
5	20-RZ-006	12/17/09	~~1350~~ 1450 (A1)	1	X		W	10	X		
6	20-RZ-007	12/16/09	920	1	X		W	10	X		
7	20-RZ-008	12/16/09	~~1440~~ 1450 (A1)	1	X		W	10	X		
8	20-RZ-009	12/16/09	1130	1	X		W	10	X		
9	20-RZ-010	12/16/09	1310	1	X		W	10	X		

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/18/09	FEDEX
COMPANY: BTS	TIME: 1200	COMPANY: [signature]
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
		[signature]
COMPANY	TIME	COMPANY
		[signature]
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
		[signature] 12/18/09
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

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P0912302

P0912302

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26059

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: CTO 20 ALAMEDA	PURCHASE ORDER NO. 1042720 ~~104120~~ (AC)
PROJECT LOCATION: ALAMEDA	PROJECT NO. 106-3210.020
SAMPLER NAME: AK, FS, IW	AIRBILL NUMBER: 7982 3784 3360
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: MICROSEEP

LABORATORY ID (FOR LABORATORY):

ANALYSES REQUIRED: DISS. HYDROGEN AMMONIA

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISS. HYDROGEN	AMMONIA	COMMENTS
10	20-R2-012	12/16/09	1015	1	X		W	10	X		
10	20-R2-013	12/14/09	1440	1	X		W	10	X		
10	20-R2-014	12/14/09	1120	1		X	W	10	X		
14	20-R2-015	12/15/09	955	1	X		W	10	X		
14	20-R2-016	12/14/09	1245	1	X		W	10	X		
15	20-R2-017	12/16/09	1130	1		X	W	10	X		
16	20-R2-018	12/17/09	1200	1	X		W	10	X		
17	20-R2-019	12/16/09	1000	1	X		W	10	X		
18	20-R2-020	12/17/09	1320	1	X		W	10	X		
19	20-R2-021	12/16/09	1440	1	X		W	10	X		

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/18/09	FEDEX
COMPANY: BTS	TIME: 1200	COMPANY:
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

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P0912302

Hydrogen Data

Method File: BUBBLE102009
Operator: slyon

12302

Printed: 12/31/2009 12:16:25 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update 12/28/2009 12:15:59 PM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Window	Standard	Int.Type	Cal.Type
1	Methane	0.645 min	0.645 min			0.200 AN	External	Area	LOff
2	Ethane	0.908 min	0.908 min			0.200 AN	External	Area	Lin
3	Ethene	1.155 min	1.155 min			0.200 AN	External	Area	Lin
4	Propane	1.785 min	1.785 min			0.200 AN	External	Area	Lin
5	*Hydrogen*	*3.210 min*			*3.210 min*	*0.200 AN*	*External*	*Area*	*Lin*
6	Propene	3.284 min	3.284 min			0.200 AN	External	Area	Lin
7	Carbon Dioxide	4.200 min		4.200 min		0.500 AN	External	Area	Lin
8	iso-Butane	4.560 min	4.560 min			0.500 AN	External	Area	Lin
9	n-Butane	5.310 min	5.310 min			0.500 AN	External	Area	Lin
10	Oxygen	5.870 min		5.870 min		0.300 AN	External	Area	Lin
11	Nitrogen	6.260 min		6.260 min		0.300 AN	External	Area	Lin
12	Acetylene	6.600 min	6.600 min			0.500 AN	External	Area	Lin
13	Methane	7.560 min		7.560 min		0.400 AN	External	Area	Lin
14	Carbon Monoxide	8.450 min		8.450 min		0.400 AN	External	Area	Lin
15	Carbon Monoxide	8.600 min			8.600 min	0.400 AN	External	Area	Lin

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Peak Type	Group	Comment
1	Methane	0.645 min	Auto		
2	Ethane	0.908 min	Auto		
3	Ethene	1.155 min	Auto		
4	Propane	1.785 min	Auto		
5	*Hydrogen*	*3.210 min*	*Auto*		
6	Propene	3.284 min	Auto		
7	Carbon Dioxide	4.200 min	Auto		
8	iso-Butane	4.560 min	Auto		
9	n-Butane	5.310 min	Auto		
10	Oxygen	5.870 min	Auto		
11	Nitrogen	6.260 min	Auto		
12	Acetylene	6.600 min	Auto		
13	Methane	7.560 min	Auto		
14	Carbon Monoxide	8.450 min	Auto		
15	Carbon Monoxide	8.600 min	Auto		

Method File: BUBBLE102009
Operator: slyon

Printed: 12/31/2009 12:16:25 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Amount ICAL Acetylene L5	Amount ICAL Acetylene L4
1	Methane	0.645 min	0.645 min				
2	Ethane	0.908 min	0.908 min				
3	Ethene	1.155 min	1.155 min				
4	Propane	1.785 min	1.785 min				
5	*Hydrogen*	*3.210 min*			*3.210 min*		
6	Propene	3.284 min	3.284 min				
7	Carbon Dioxide	4.200 min		4.200 min			
8	iso-Butane	4.560 min	4.560 min				
9	n-Butane	5.310 min	5.310 min				
10	Oxygen	5.870 min		5.870 min			
11	Nitrogen	6.260 min		6.260 min			
12	Acetylene	6.600 min	6.600 min			0.529000	2.648000
13	Methane	7.560 min		7.560 min			
14	Carbon Monoxide	8.450 min		8.450 min			
15	Carbon Monoxide	8.600 min			8.600 min		

Method File: BUBBLE102009
Operator: slyon

Printed: 12/31/2009 12:16:25 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL Acetylene L3	Amount ICAL Acetylene L2	Amount ICAL Acetylene L1	Amount ICAL FID L8	Amount ICAL FID L7
1	Methane	0.645 min				0.002280	0.007120
2	Ethane	0.908 min				0.005880	0.018300
3	Ethene	1.155 min				0.013800	0.043300
4	Propane	1.785 min				0.006640	0.020700
5	*Hydrogen*	*3.210 min*					
6	Propene	3.284 min				0.019800	0.062100
7	Carbon Dioxide	4.200 min					
8	iso-Butane	4.560 min				0.004950	0.015400
9	n-Butane	5.310 min				0.006190	0.019300
10	Oxygen	5.870 min					
11	Nitrogen	6.260 min					
12	Acetylene	6.600 min	13.240000	66.200000	264.800000		
13	Methane	7.560 min					
14	Carbon Monoxide	8.450 min					
15	Carbon Monoxide	8.600 min					

Method File: BUBBLE102009
Operator: slyon

Printed: 12/31/2009 12:16:25 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4 SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL FID L6	Amount ICAL FID L5	Amount ICAL FID L4	Amount ICAL FID L3	Amount ICAL FID L2	Amount ICAL FID L1	Amount ICAL H2 L7
1	Methane	0.645 min	0.028500	0.114000	0.456000	2.280000	11.402000	57.011000	
2	Ethane	0.908 min	0.073500	0.294000	1.176000	5.880000	29.403000	147.016000	
3	Ethene	1.155 min	0.173000	0.693000	2.774000	13.870000	69.353000	346.766000	
4	Propane	1.785 min	0.083000	0.332000	1.328000	6.644000	33.220000	166.100000	
5	*Hydrogen*	*3.210 min*							*0.396000*
6	Propene	3.284 min	0.248000	0.993000	3.975000	19.877000	99.388000	496.942000	
7	Carbon Dioxide	4.200 min							
8	iso-Butane	4.560 min	0.061800	0.247000	0.990000	4.951000	24.756000	123.783000	
9	n-Butane	5.310 min	0.077400	0.309000	1.238000	6.192000	30.961000	154.808000	
10	Oxygen	5.870 min							
11	Nitrogen	6.260 min							
12	Acetylene	6.600 min							
13	Methane	7.560 min							
14	Carbon Monoxide	8.450 min							
15	Carbon Monoxide	8.600 min							

Method File: BUBBLE102009
Operator: slyon

Printed: 12/31/2009 12:16.25 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4 SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL H2 L6	Amount ICAL H2 L5	Amount ICAL H2 L4	Amount ICAL H2 L3	Amount ICAL RGD CO L3	Amount ICAL RGD CO L2
1	Methane	0.645 min						
2	Ethane	0.908 min						
3	Ethene	1.155 min						
4	Propane	1.785 min						
5	*Hydrogen*	*3.210 min*	*0.990000*	*3.960000*	*9.900000*	*19.800000*		
6	Propene	3.284 min						
7	Carbon Dioxide	4.200 min						
8	iso-Butane	4.560 min						
9	n-Butane	5.310 min						
10	Oxygen	5.870 min						
11	Nitrogen	6.260 min						
12	Acetylene	6.600 min						
13	Methane	7.560 min						
14	Carbon Monoxide	8.450 min						
15	Carbon Monoxide	8.600 min					0.100000	0.500000

Method File: BUBBLE102009
Operator: slyon

Printed: 12/31/2009 12:16:25 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL RGD CO L1	Amount ICAL RGD CO L1A	Amount ICAL TCD L6	Amount ICAL TCD L5	Amount ICAL TCD L4
1	Methane	0.645 min					
2	Ethane	0.908 min					
3	Ethene	1.155 min					
4	Propane	1.785 min					
5	*Hydrogen*	*3.210 min*					
6	Propene	3.284 min					
7	Carbon Dioxide	4.200 min			2.196000	5.490000	10.980000
8	iso-Butane	4.560 min					
9	n-Butane	5.310 min					
10	Oxygen	5.870 min			0.015900	0.039900	0.079800
11	Nitrogen	6.260 min			0.051400	0.129000	0.257000
12	Acetylene	6.600 min					
13	Methane	7.560 min				23.580000	47.160000
14	Carbon Monoxide	8.450 min				0.046900	0.093800
15	Carbon Monoxide	8.600 min	2.000000	10.000000			

Method File: BUBBLE102009
Operator: slyon

Printed: 12/31/2009 12:16:25 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL TCD L3	Amount ICAL TCD L2	Amount ICAL TCD L1
1	Methane	0.645 min			
2	Ethane	0.908 min			
3	Ethene	1.155 min			
4	Propane	1.785 min			
5	*Hydrogen*	*3.210 min*			
6	Propene	3.284 min			
7	Carbon Dioxide	4.200 min	54.900000	274.500000	549.000000
8	iso-Butane	4.560 min			
9	n-Butane	5.310 min			
10	Oxygen	5.870 min	0.399200	1.996000	3.992000
11	Nitrogen	6.260 min	1.286000	6.430000	12.860000
12	Acetylene	6.600 min			
13	Methane	7.560 min	235.800000	1179.000000	2358.000000
14	Carbon Monoxide	8.450 min	0.469000	2.345000	4.690000
15	Carbon Monoxide	8.600 min			

Method File: BUBBLE102009
Operator: slyon

Printed: 12/31/2009 12:16:25 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Calibration:

Calibration Mode: Total
Auto Recalibrate: On
Curve Fitting Model: Normal
Dual-Column Separate Calibration: Off

No.	Enabled	Name	Smp.No.	Pos.	Inj. Vol.	Weight	ISTD Amount	Dil. Factor	Inj. Date/Time
1	☒	ICAL Acetylene L5	1	3	20.0	1.0000	1.0000	1.0000	10/19/2009 10:32:27 AM
2	☒	ICAL Acetylene L4	2	4	20.0	1.0000	1.0000	1.0000	10/19/2009 10:44:48 AM
3	☒	ICAL Acetylene L3	3	5	20.0	1.0000	1.0000	1.0000	10/19/2009 10:57:25 AM
4	☒	ICAL Acetylene L2	4	6	20.0	1.0000	1.0000	1.0000	10/19/2009 11:09:48 AM
5	☒	ICAL Acetylene L1	5	7	20.0	1.0000	1.0000	1.0000	10/19/2009 11:22:07 AM
6	☒	ICAL FID L8	6	10	20.0	1.0000	1.0000	1.0000	10/19/2009 12:11:06 PM
7	☒	ICAL FID L7	7	11	20.0	1.0000	1.0000	1.0000	10/19/2009 12:30:57 PM
8	☒	ICAL FID L6	8	12	20.0	1.0000	1.0000	1.0000	10/19/2009 12:50:36 PM
9	☒	*ICAL FID L5*	*9*	*13*	*20.0*	*1.0000*	*1.0000*	*1.0000*	*10/19/2009 1:04:42 PM*
10	☒	ICAL FID L4	10	14	20.0	1.0000	1.0000	1.0000	10/19/2009 1:21:34 PM
11	☒	ICAL FID L3	11	15	20.0	1.0000	1.0000	1.0000	10/19/2009 1:37:49 PM
12	☒	ICAL FID L2	12	16	20.0	1.0000	1.0000	1.0000	10/19/2009 1:50:17 PM
13	☒	ICAL FID L1	13	17	20.0	1.0000	1.0000	1.0000	10/19/2009 2:03:02 PM
14	☒	ICAL TCD L6	16	33	20.0	1.0000	1.0000	1.0000	10/19/2009 5:35:41 PM
15	☒	ICAL TCD L5	17	34	20.0	1.0000	1.0000	1.0000	10/19/2009 5:48:26 PM
16	☒	ICAL TCD L4	18	35	20.0	1.0000	1.0000	1.0000	10/19/2009 6:01:02 PM
17	☒	ICAL TCD L3	19	36	20.0	1.0000	1.0000	1.0000	10/19/2009 6:16:31 PM
18	☒	ICAL TCD L2	20	37	20.0	1.0000	1.0000	1.0000	10/19/2009 6:28:51 PM
19	☒	ICAL TCD L1	21	38	20.0	1.0000	1.0000	1.0000	10/19/2009 6:41:18 PM
20	☒	ICAL H2 L7	25	1	20.0	1.0000	1.0000	1.0000	12/28/2009 10:57:53 AM
21	☒	ICAL H2 L6	26	2	20.0	1.0000	1.0000	1.0000	12/28/2009 11:10:23 AM
22	☒	ICAL H2 L5	27	3	20.0	1.0000	1.0000	1.0000	12/28/2009 11:23:19 AM
23	☒	ICAL H2 L4	28	4	20.0	1.0000	1.0000	1.0000	12/28/2009 11:39:19 AM
24	☒	ICAL H2 L3	29	5	20.0	1.0000	1.0000	1.0000	12/28/2009 11:51:38 AM

Hydrogen

Method AM20GAX

12/28/2009

No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square %	Offset	Slope	Curve
1	3.17	Hydrogen	Lin	5	99.967	0.00000	6.88136	0.00000

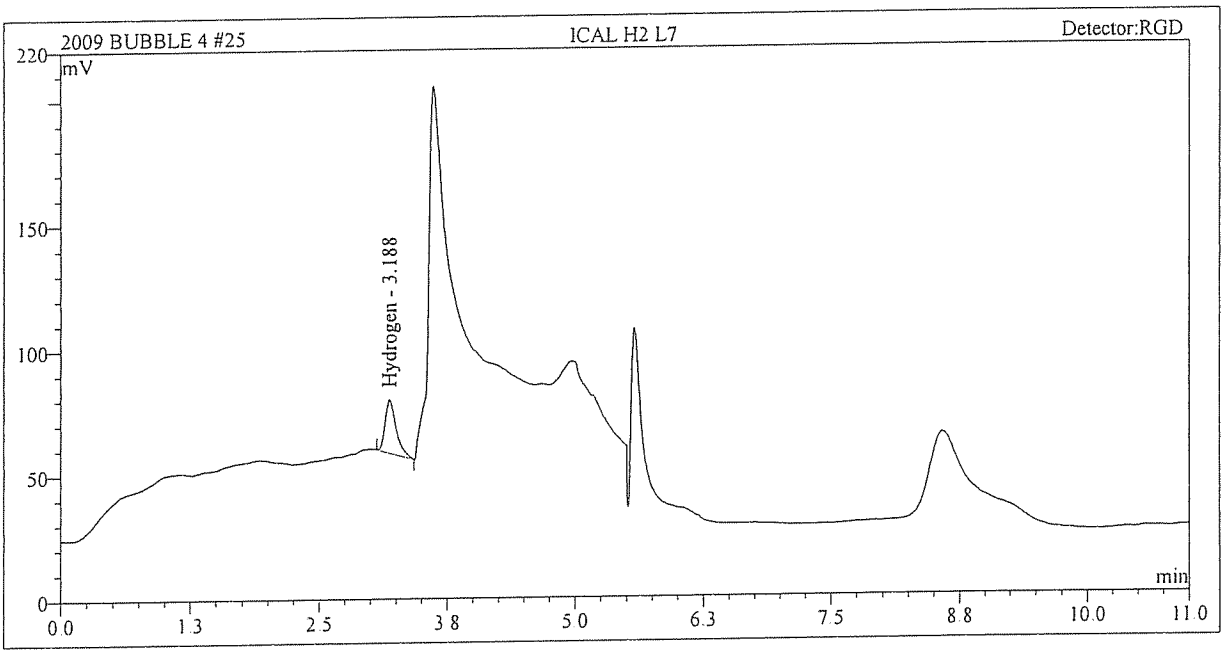
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L7	**Sequence No:**	25
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 10:57 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.188	2.703	21.543	BMB	0.3928

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



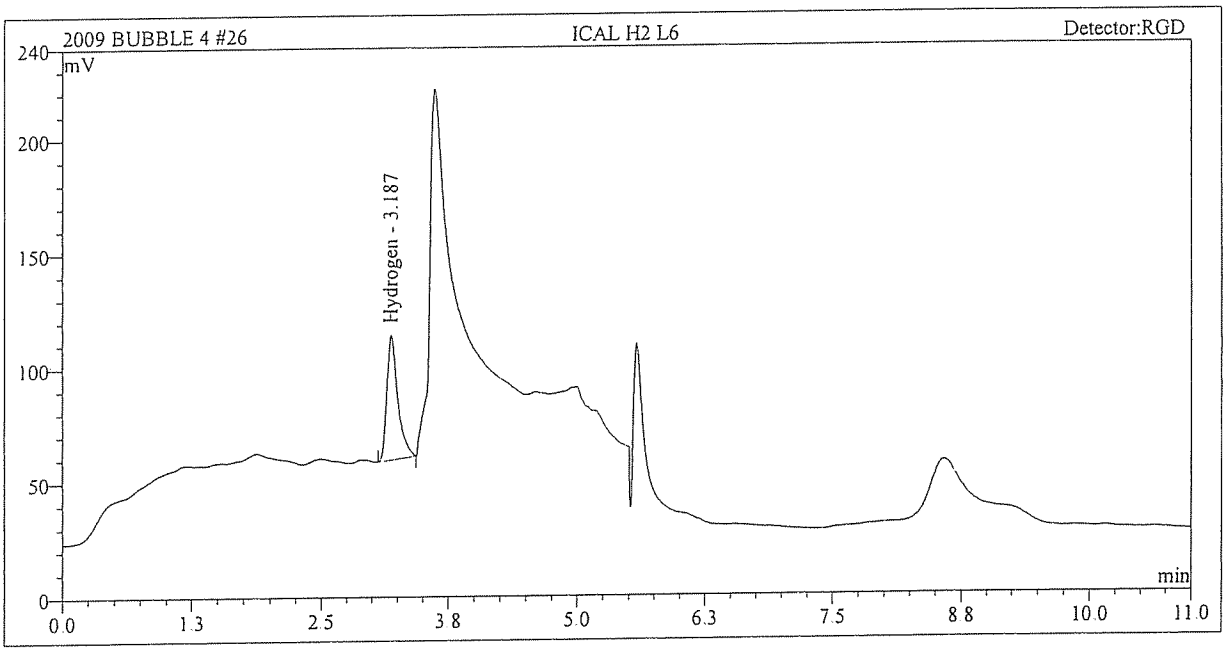
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L6	**Sequence No:**	26
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 11:10 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.187	6.878	54.686	BMB	0.9994

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



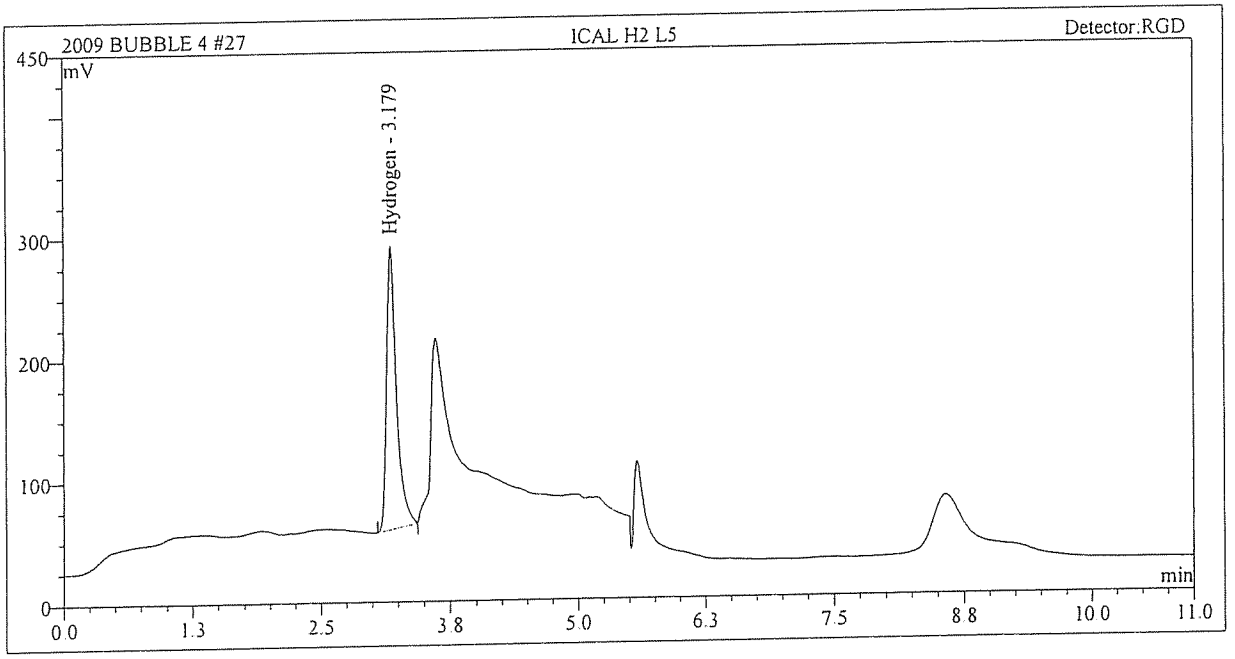
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L5	**Sequence No:**	27
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 11:23 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.179	26.081	231.856	BMB	3.7901

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



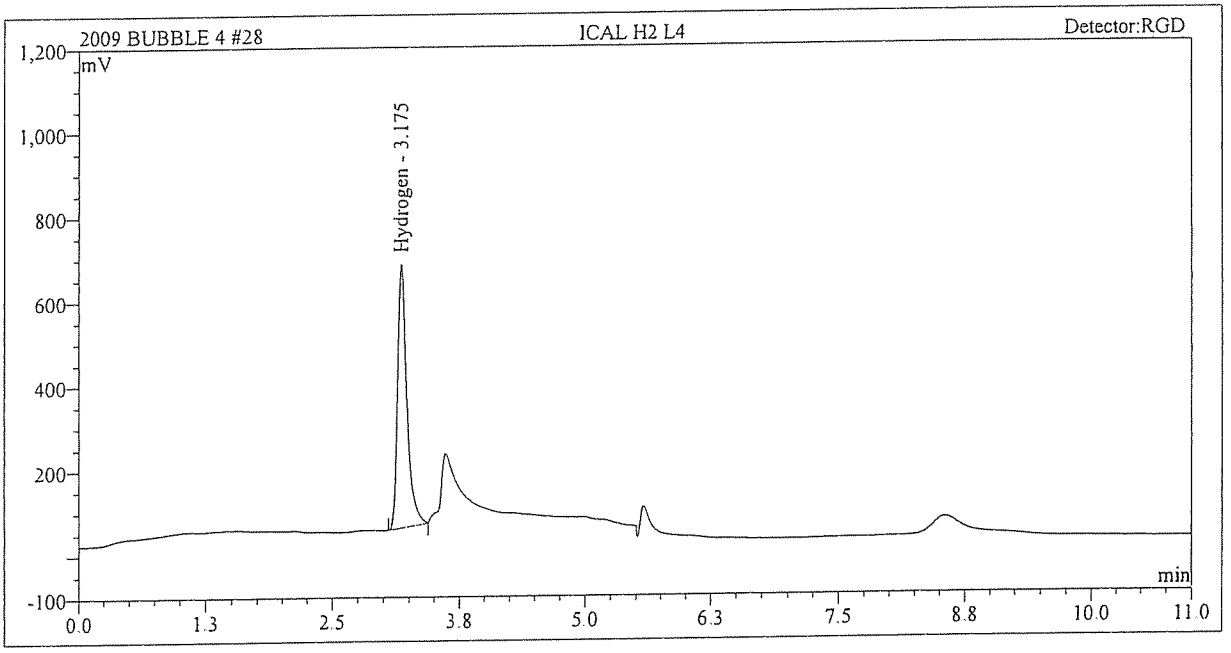
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L4	**Sequence No:**	28
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 11:39 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.175	66.747	622.525	BMB	9.6997

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



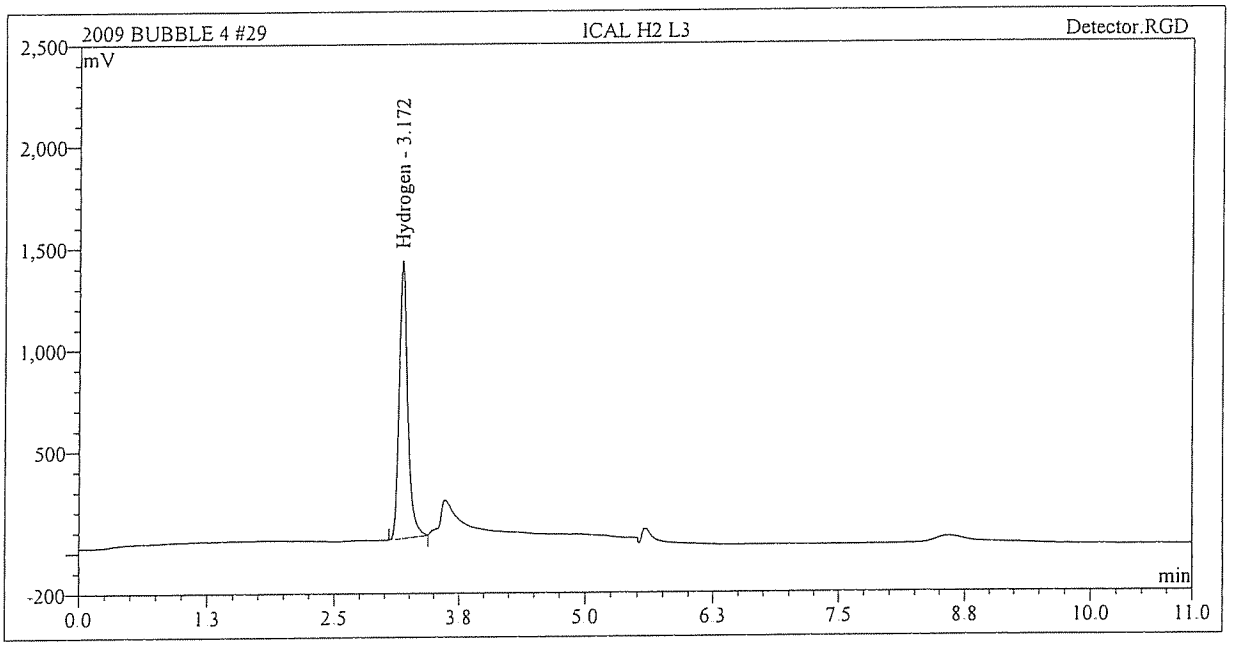
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L3	**Sequence No:**	29
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 11:51 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.172	137.171	1367.391	BMB	19.9337

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



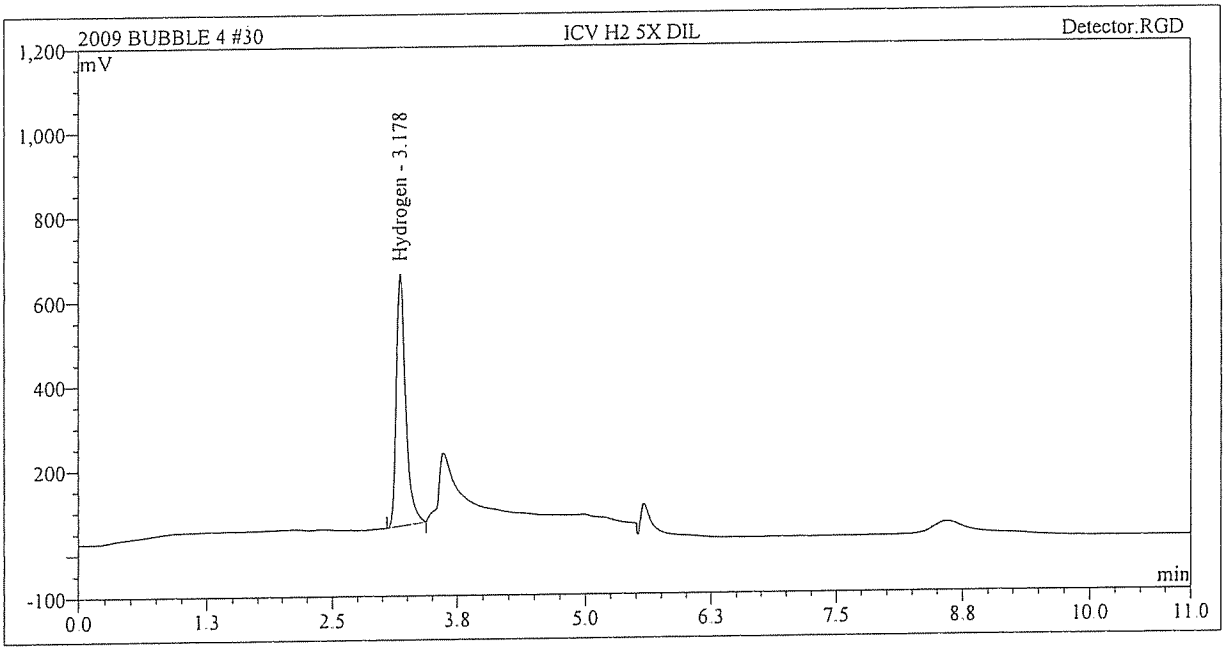
MICROSEEPS

Sample Analysis Report

Sample Name:	ICV H2 5X DIL	**Sequence No:**	30
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 12:04 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.178	64.094	596.960	BMB	10.246	9.3141

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



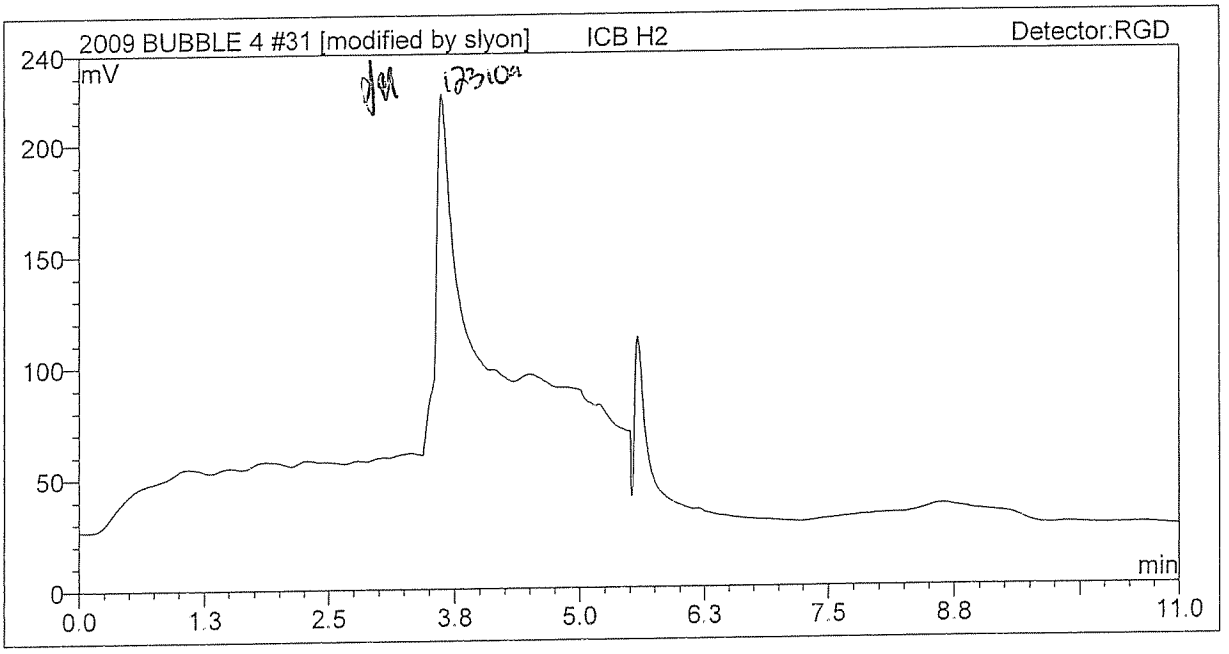
MICROSEEPS

Sample Analysis Report

Sample Name:	ICB H2	**Sequence No:**	31
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 12:16 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M091230026 - H2
M091228014 - LHC
M091228015 - P6

Original Run Date: 122809

Matrix: Bubble Strip

Sample numbers:
P0912218-(1-2)
P0912302-(11,12,14) FDP
P0912303-(5,7,8) FDP
P0912228-(1-4)
P0912281-(7)
P0912255-(1,4-6)
P0912344-(1-2) FDP
P0912233-(1)

Out of Control Event: (attach another page, if necessary)
P0912303-(5,8), P0912228-(1,3) Require dilutions for H2, ethane, or ethene

Corrective Action Taken:
None

Result:
Report dilutions on a future batch

Observations to support use of data: (Note any occurrences of manual integration here)
The samples listed below required Manual integration to repair baseline inaccuracies

P0912303-(5)
P0912228-(1-4)
P0912281-(7)

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. _____ Date _____

Analyzed & Reviewed by: AN Date: 122809
Manual Integration Conducted? (YES) NO
(Circle One)
Reviewed by: _____ Date: _____
Reviewed & Entered by: Upload Date: 123009
Reviewed by: _____ Date: _____
Corrected by: _____ Date: _____

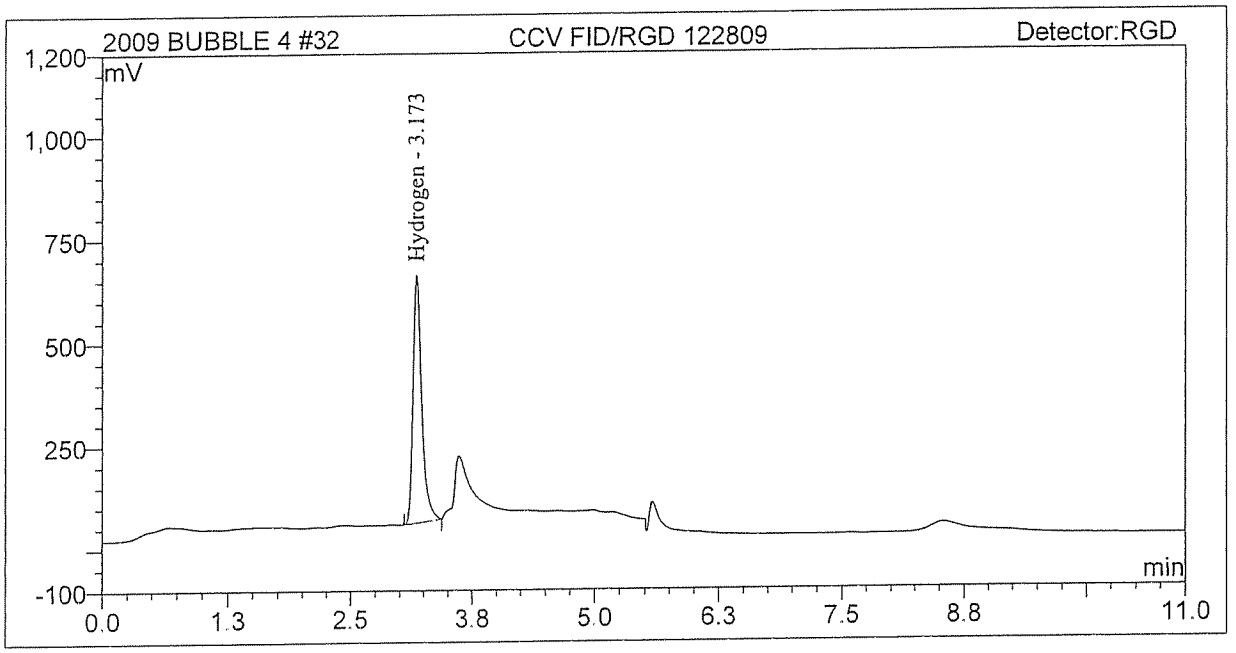
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 122809	**Sequence No:**	32
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 12:36 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.173	64.222	599.880	BMB	10.296	9.3327

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



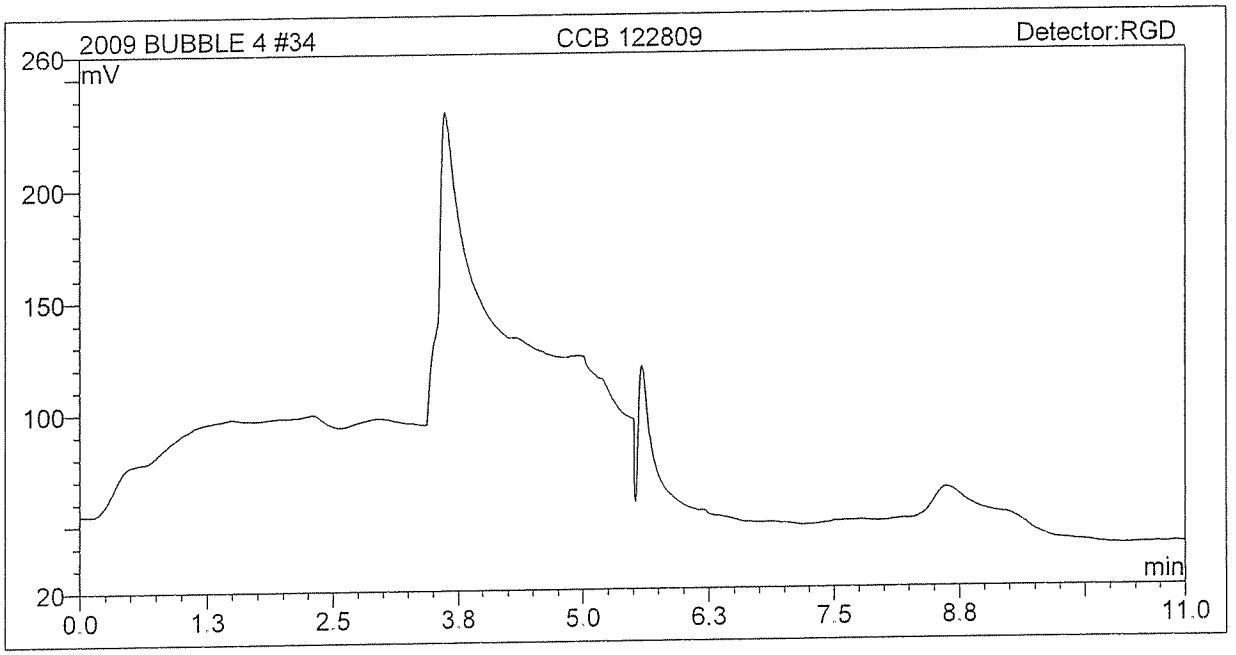
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 122809	**Sequence No:**	34
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 1:08 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



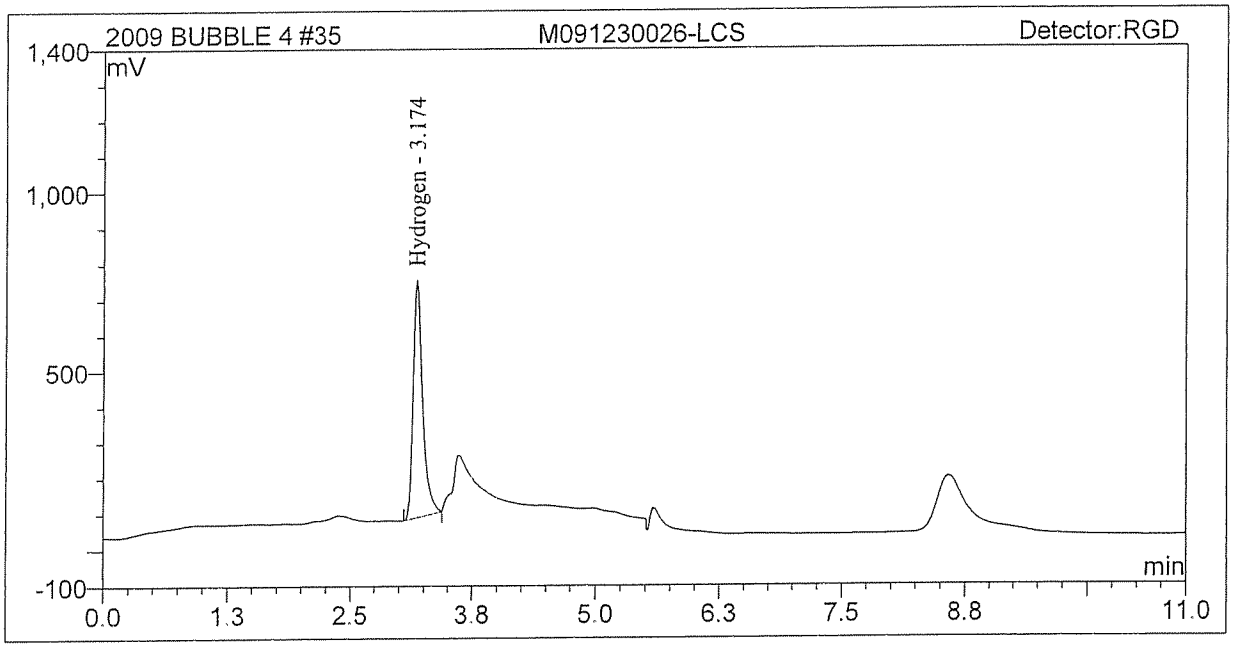
MICROSEEPS

Sample Analysis Report

Sample Name:	M091230026-LCS	**Sequence No:**	35
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 1:20 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.174	74.583	665.791	BMB	9.782	10.8385

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



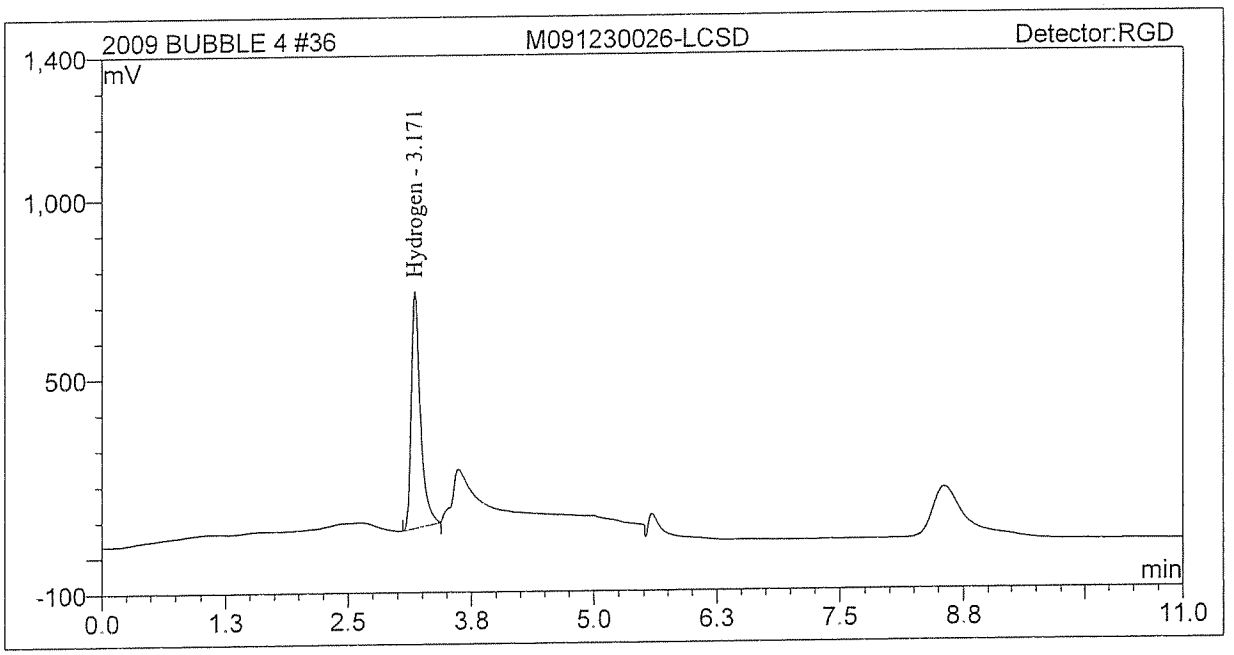
MICROSEEPS

Sample Analysis Report

Sample Name:	M091230026-LCSD	**Sequence No:**	36
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 1:33 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.171	73.433	661.809	BMB	9.782	10.6713

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



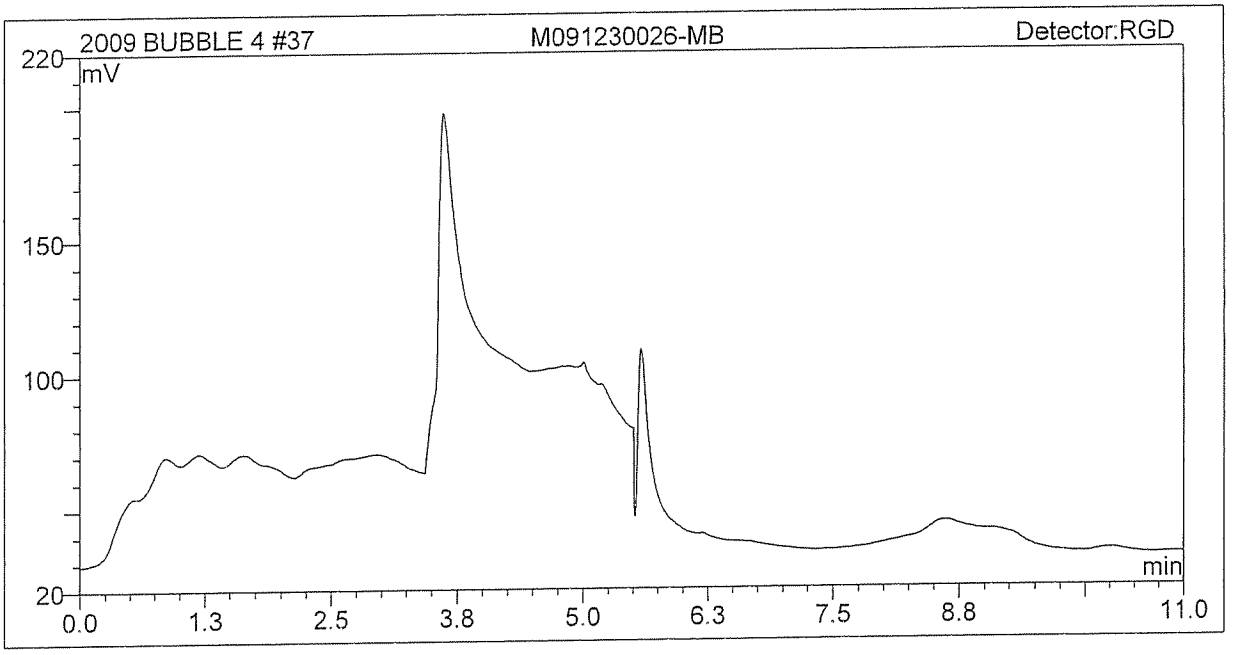
MICROSEEPS

Sample Analysis Report

Sample Name:	M091230026-MB	**Sequence No:**	37
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 1:51 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



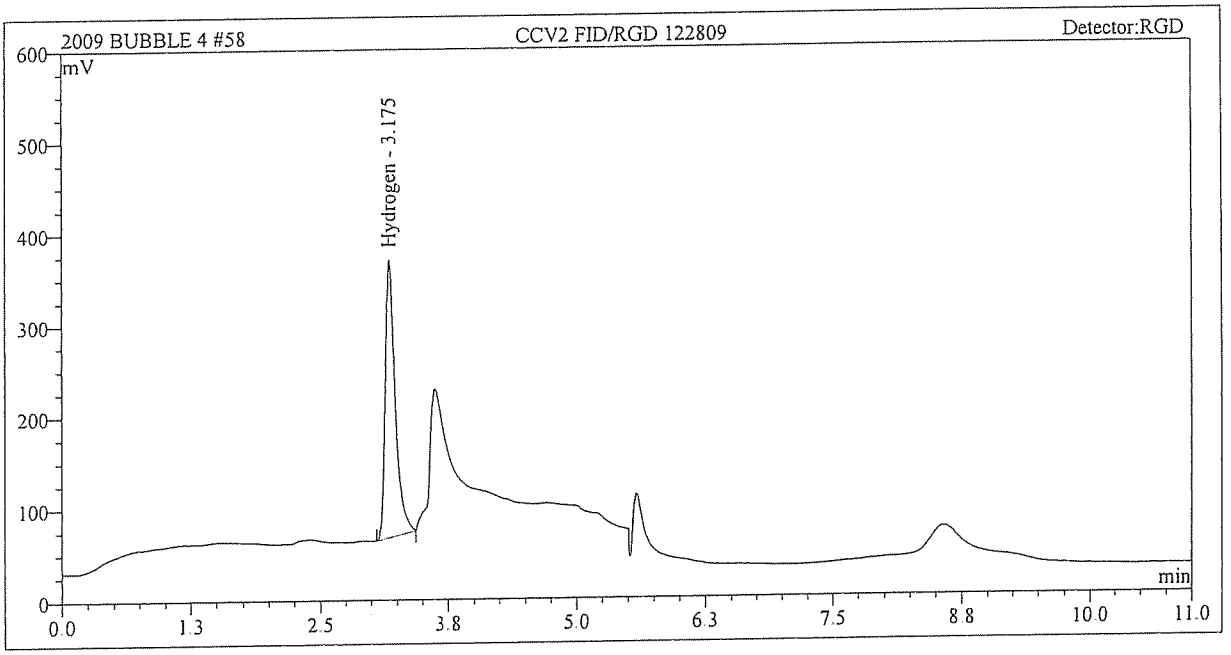
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 122809	**Sequence No:**	58
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 6:19 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.175	33.930	302.853	BMB	5.148	4.9307

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



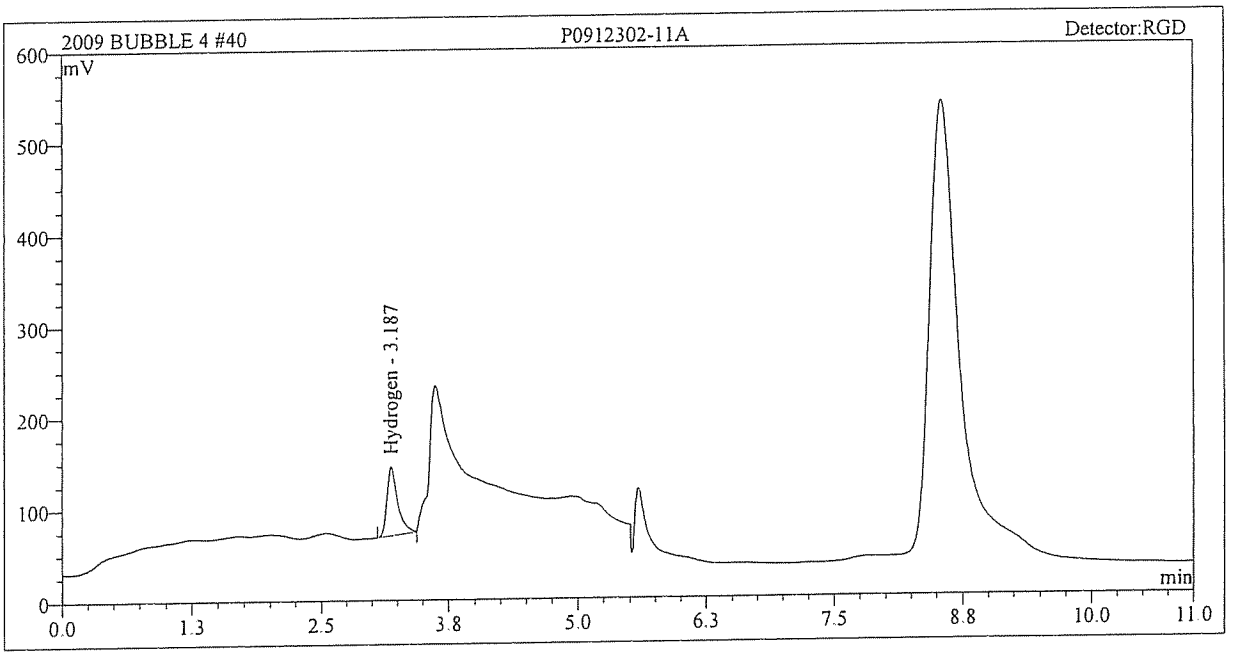
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-11A	**Sequence No:**	40
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 2:31 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.187	9.356	74.906	BMB	1.3596

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



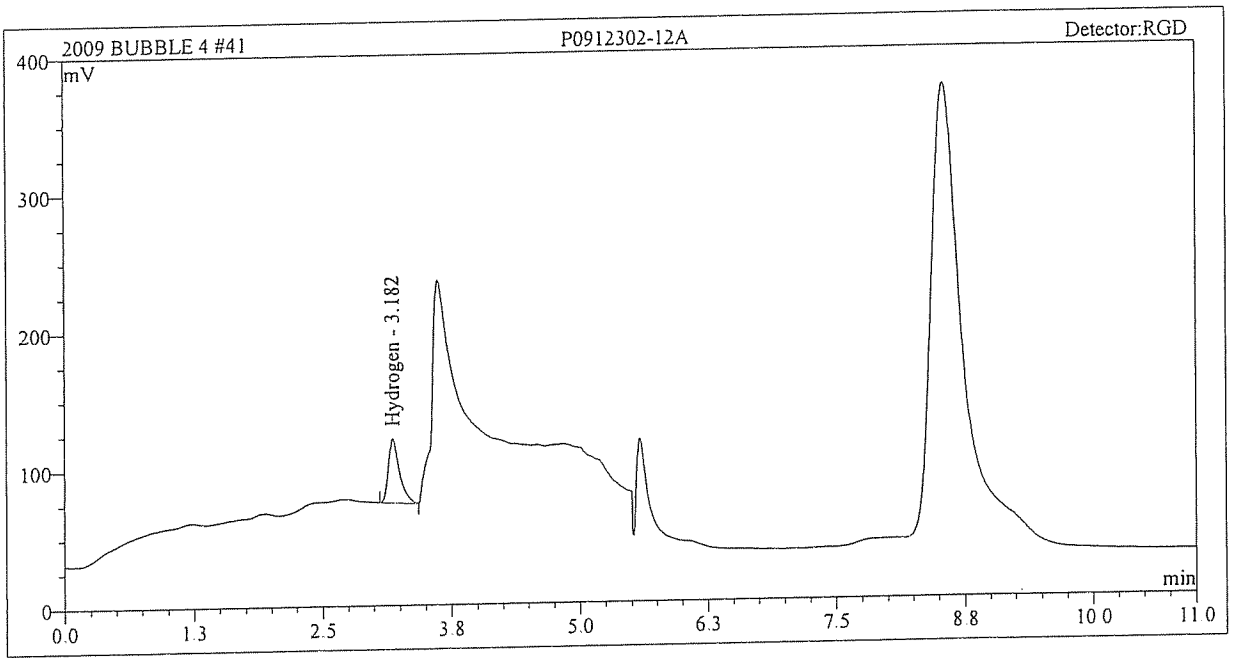
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-12A	**Sequence No:**	41
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 2:44 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.182	5.784	46.540	BMB	0.8405

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



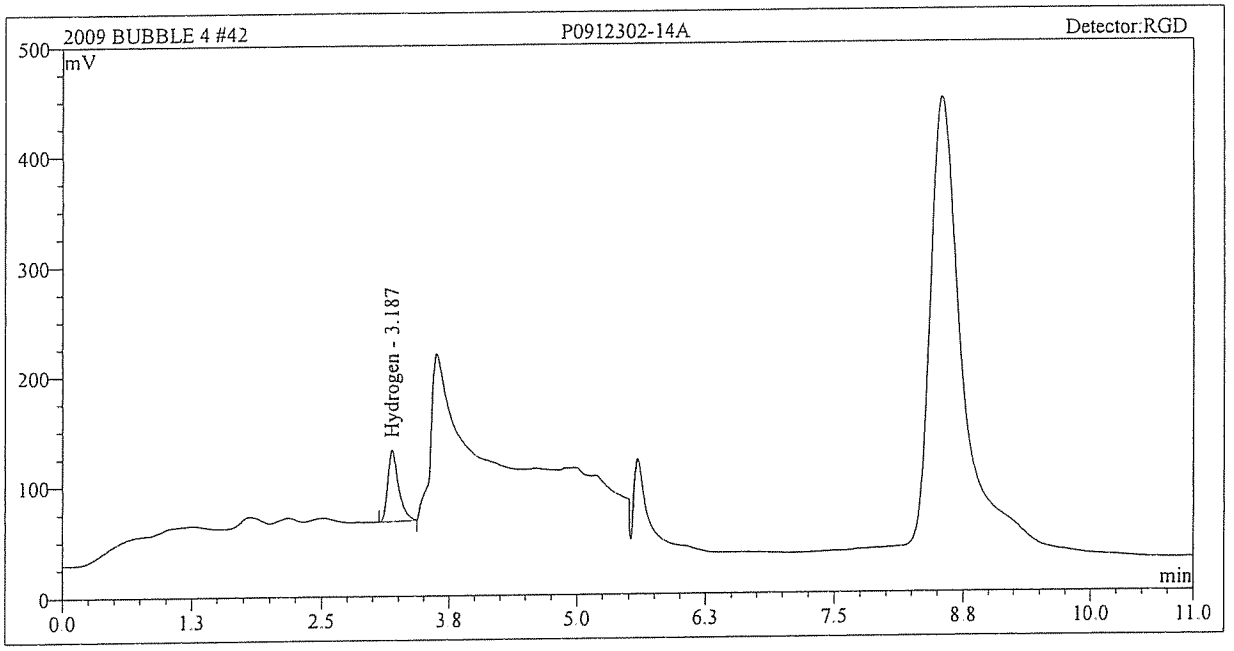
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-14A	**Sequence No:**	42
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 2:58 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.187	7.909	64.587	BMB	1.1494

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100102005 - Hz M100104010 - Hz
M091230013 - LHC M091230020 - LHC
M091230014 - P6

Original Run Date: 12-30-09

Sample numbers:
P0912275 - (1-6) FD?
P0912277 - (5)
P0912278 - (1,3,4)
P0912281 - (1-6)
P0912335 - (1-4)
P0912302 - (1,3,5-10,15-19) FD?
P0912303 - (1) FD?
P0912312 - (1)

Matrix: Bubble Strip
P0912335 - (5)
P0912344 - (8-11)

Out of Control Event: (attach another page, if necessary)
P0912275 - (1-6), P0912278 - (3,4) P0912302 - (1,3,6,8,9,10,15,19) Require dilutions for Hz

Corrective Action Taken:
None

Result:
Report Hz on a future Batch

Observations to support use of data: (Note any occurrences of manual integration here)
The samples listed below required manual integration to repair baseline inaccuracies

P0912275 - (1-6)
P0912278 - (3-4)
P0912281 - (1-6)
P0912235 - (1-4)
P0912302 - (3,9,10)
P0912335 - (5)

Analyzed & Reviewed by: [signature] Date: 12/30/09
Manual Integration Conducted? YES NO
(Circle One)
Reviewed by: _____ Date: _____
Reviewed & Entered by: Upland Date: 010410
Reviewed by: _____ Date: _____
Corrected by: _____ Date: _____

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

_____ _____
Signature Lead Analyst or Lab. Mgr. Date

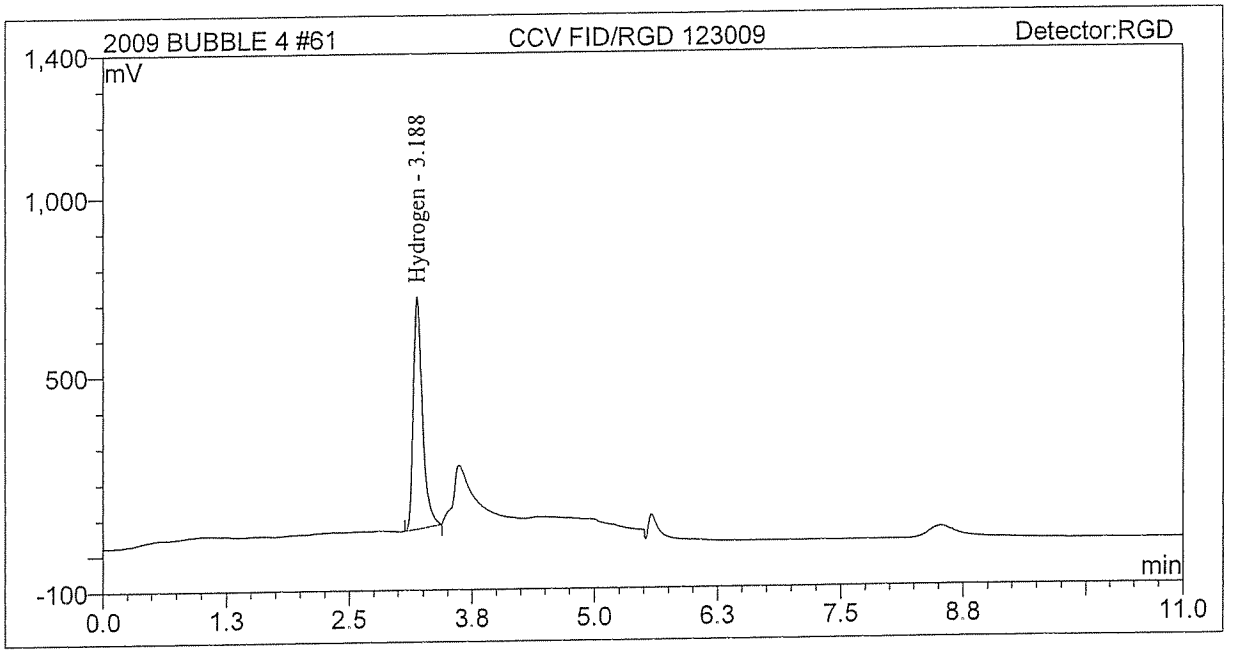
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 123009	**Sequence No:**	61
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 9:07 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.188	69.252	649.360	BMB	10.296	10.0638

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



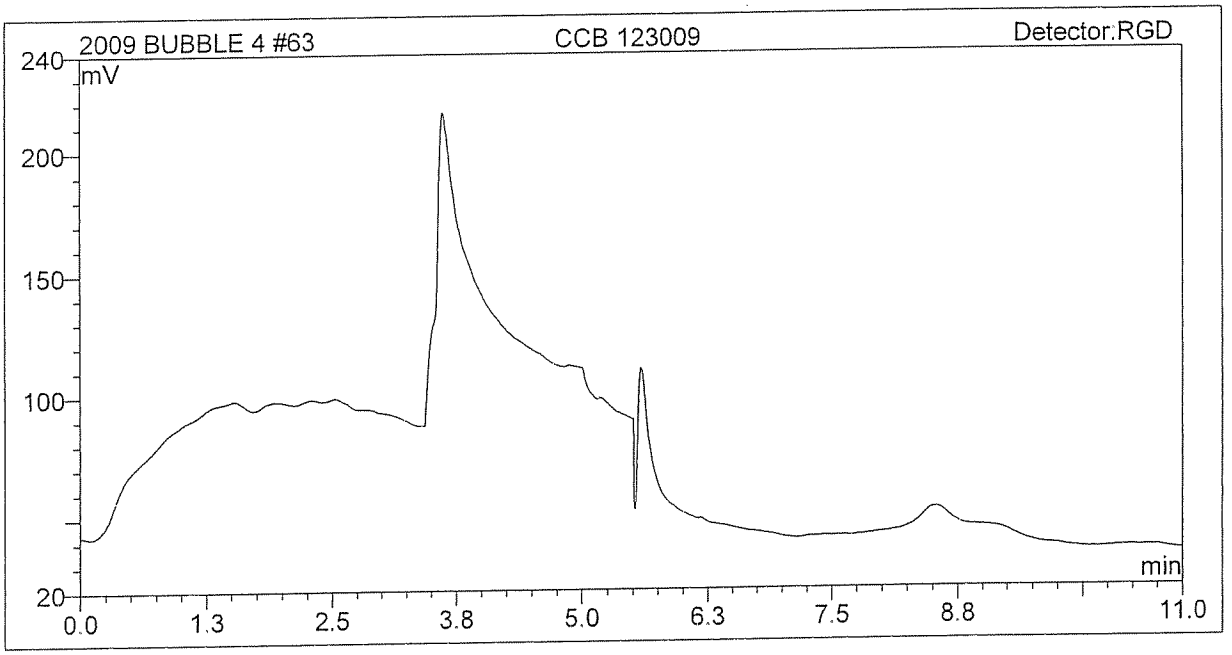
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 123009	**Sequence No:**	63
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 9:42 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



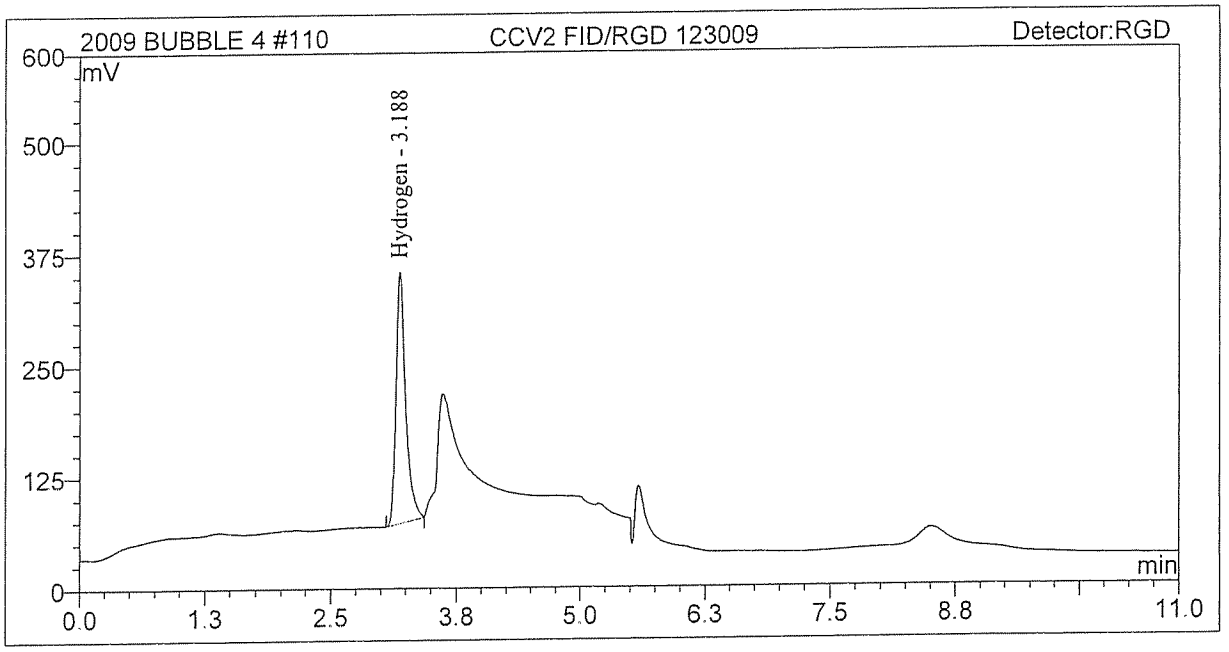
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 123009	**Sequence No:**	110
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 8:42 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.188	31.795	282.006	BMB	5.148	4.6204

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



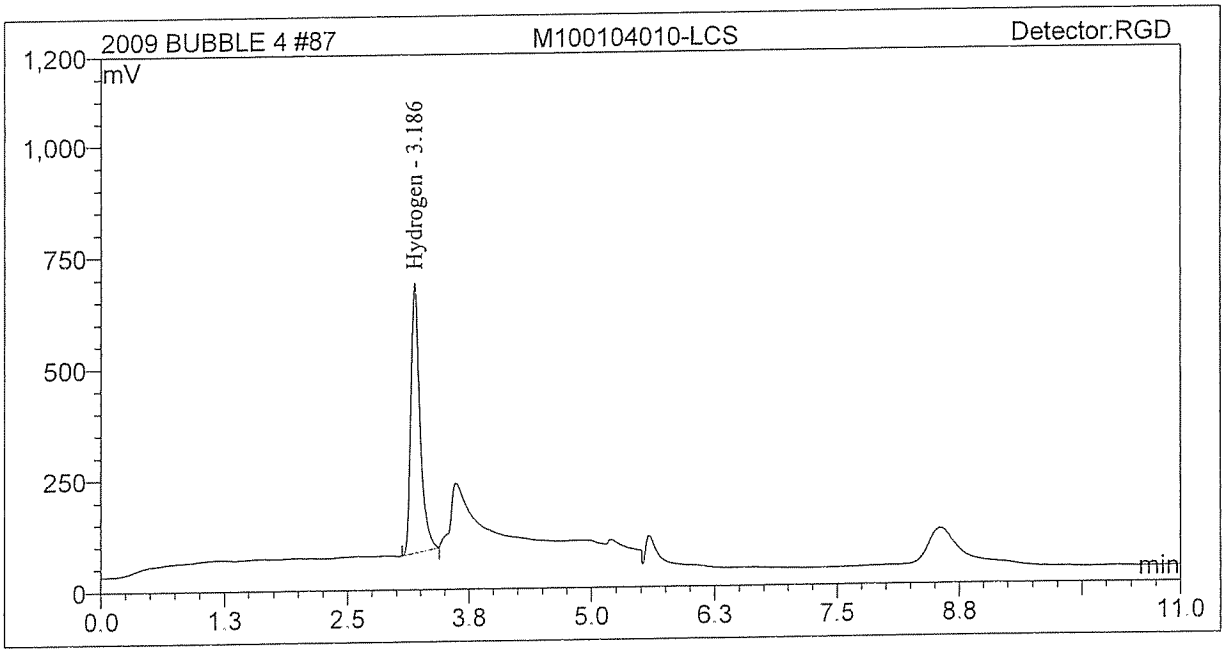
MICROSEEPS

Sample Analysis Report

Sample Name:	M100104010-LCS	**Sequence No:**	87
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 3:28 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount	
1	Hydrogen	3.186	66.985	606.495	BMB	9.752	9.7342

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



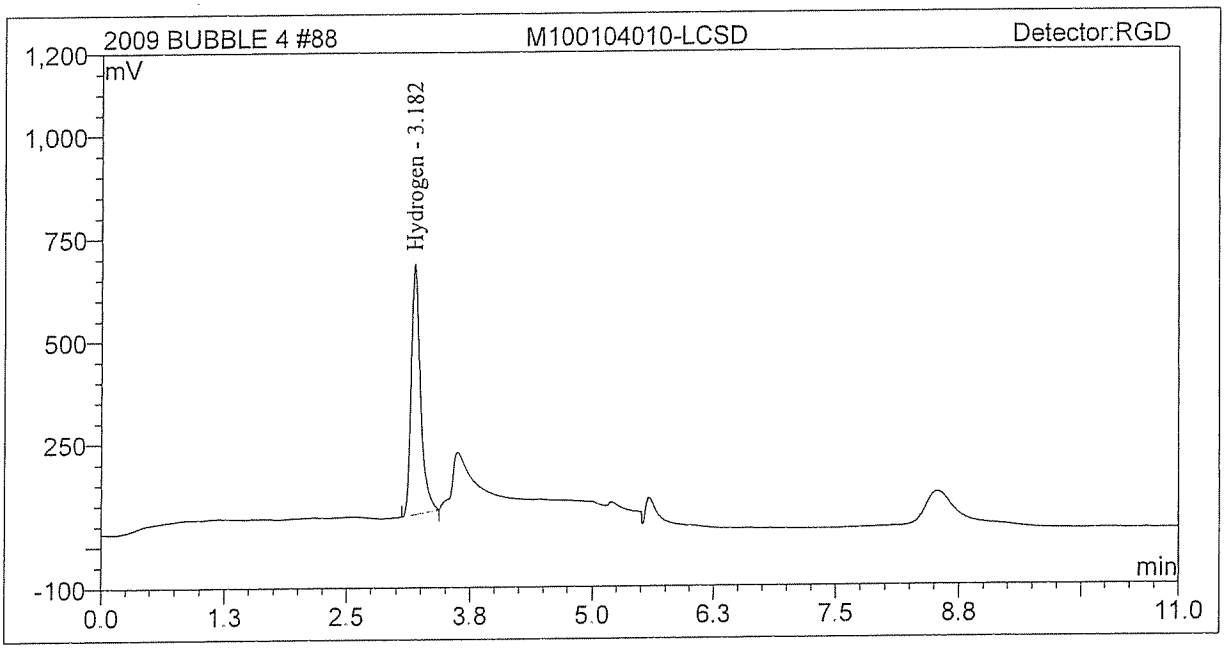
MICROSEEPS

Sample Analysis Report

Sample Name:	M100104010-LCSD	**Sequence No:**	88
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 3:41 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.182	67.283	608.990	BMB	9.752	9.7776

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



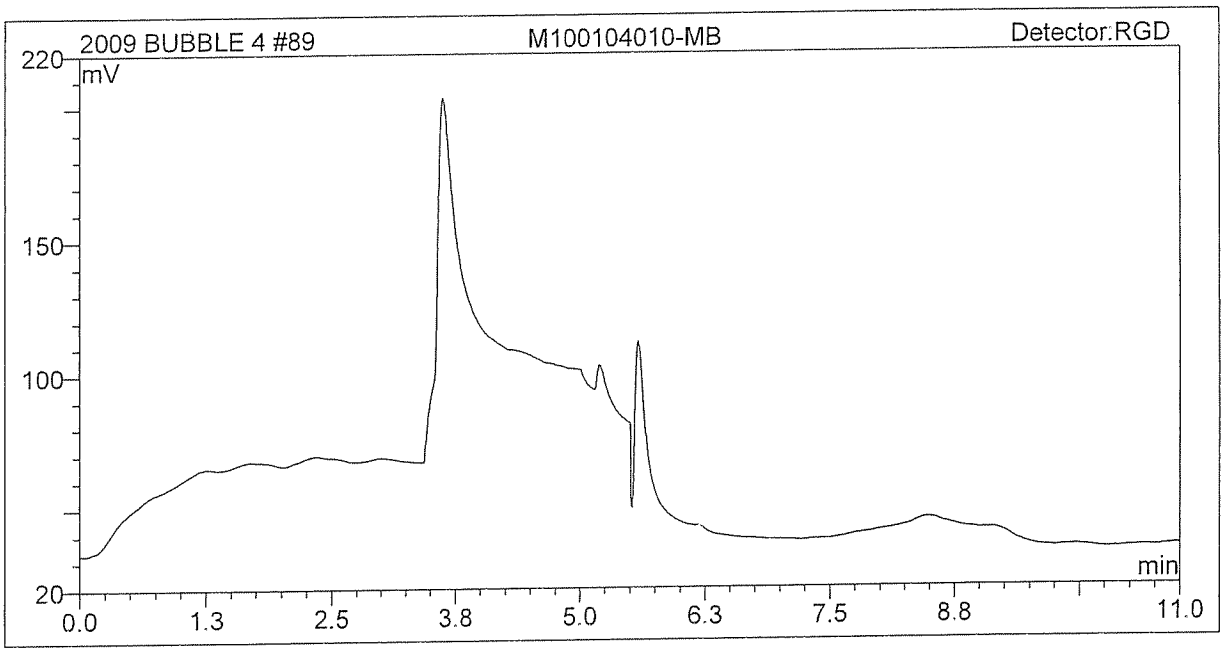
MICROSEEPS

Sample Analysis Report

Sample Name:	M100104010-MB	**Sequence No:**	89
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 3:55 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



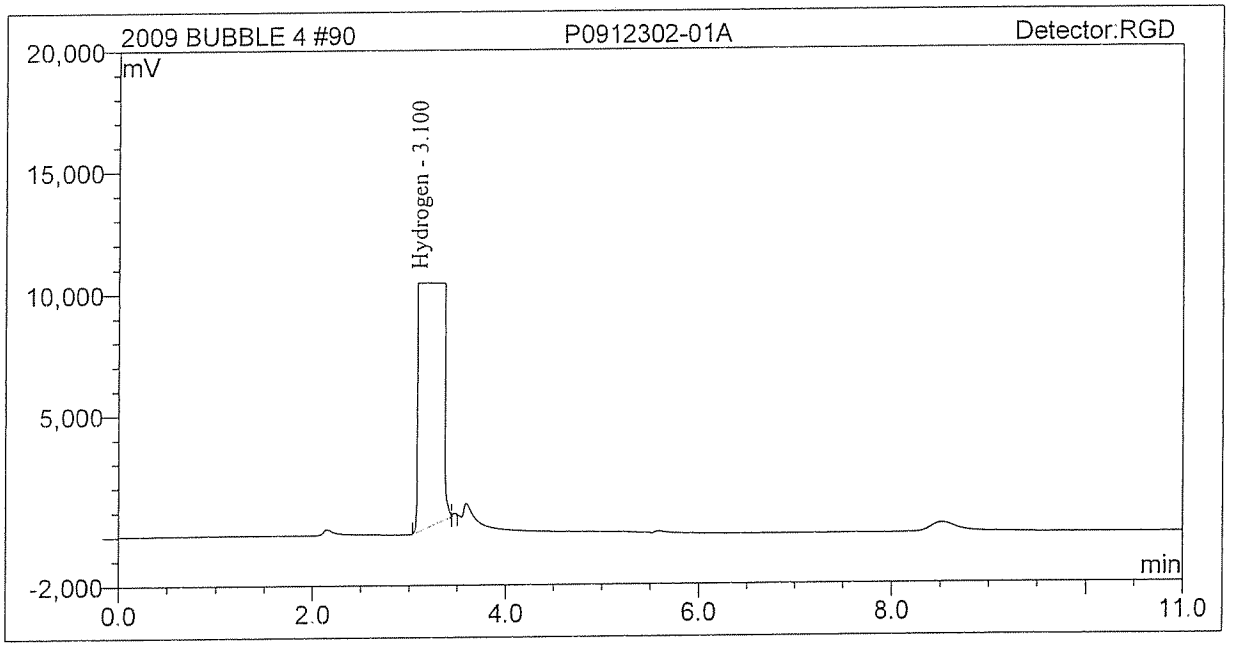
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-01A	**Sequence No:**	90
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 4:08 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.100	2996.624	10231.533	BM	~~435.4700~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



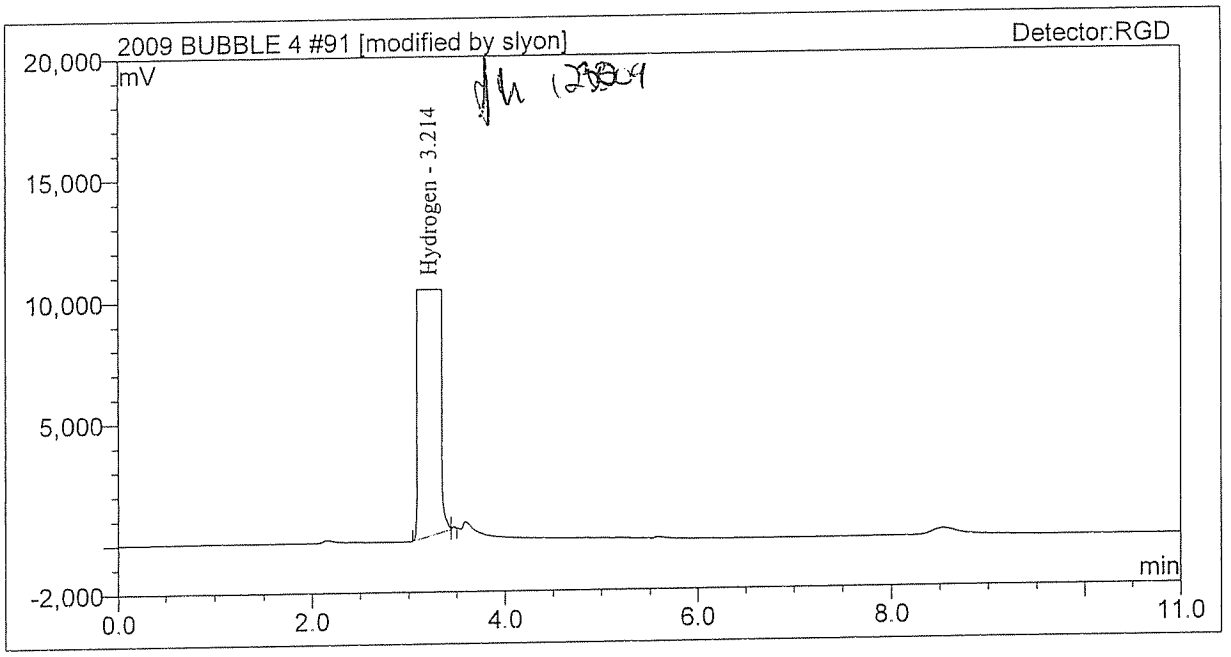
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-03A	**Sequence No:**	91
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 4:21 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.214	2703.154	10144.087	BM *	~~392.8229~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



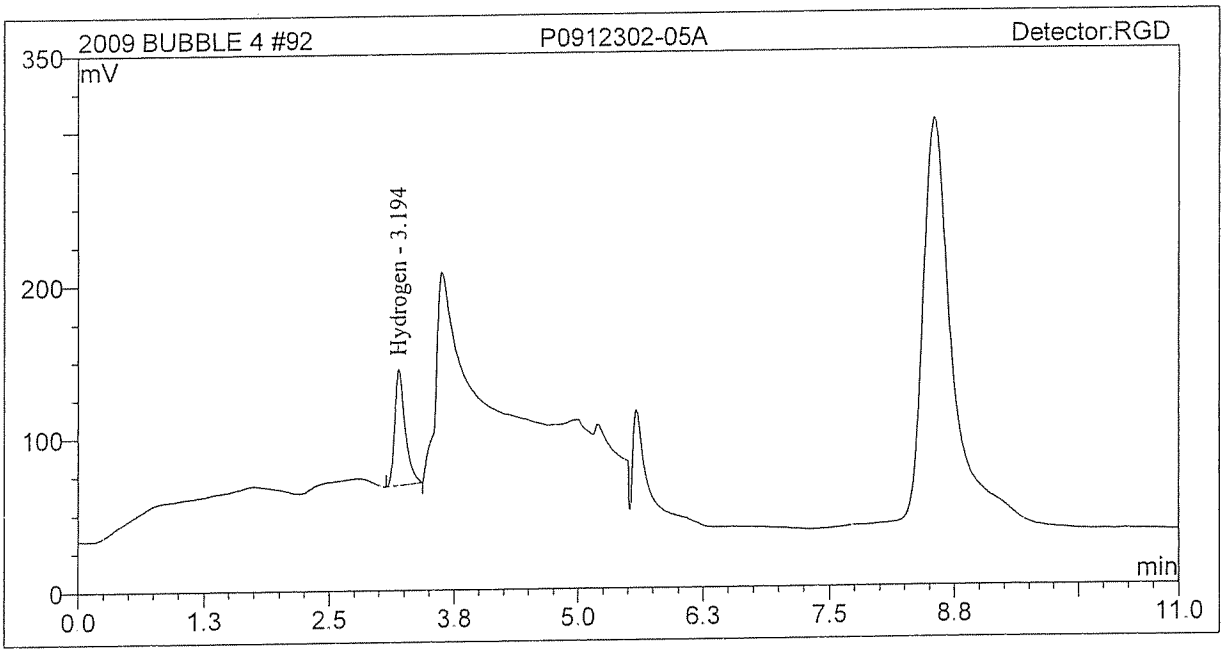
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-05A	**Sequence No:**	92
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 4:36 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.194	9.203	76.006	BMB	1.3373

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



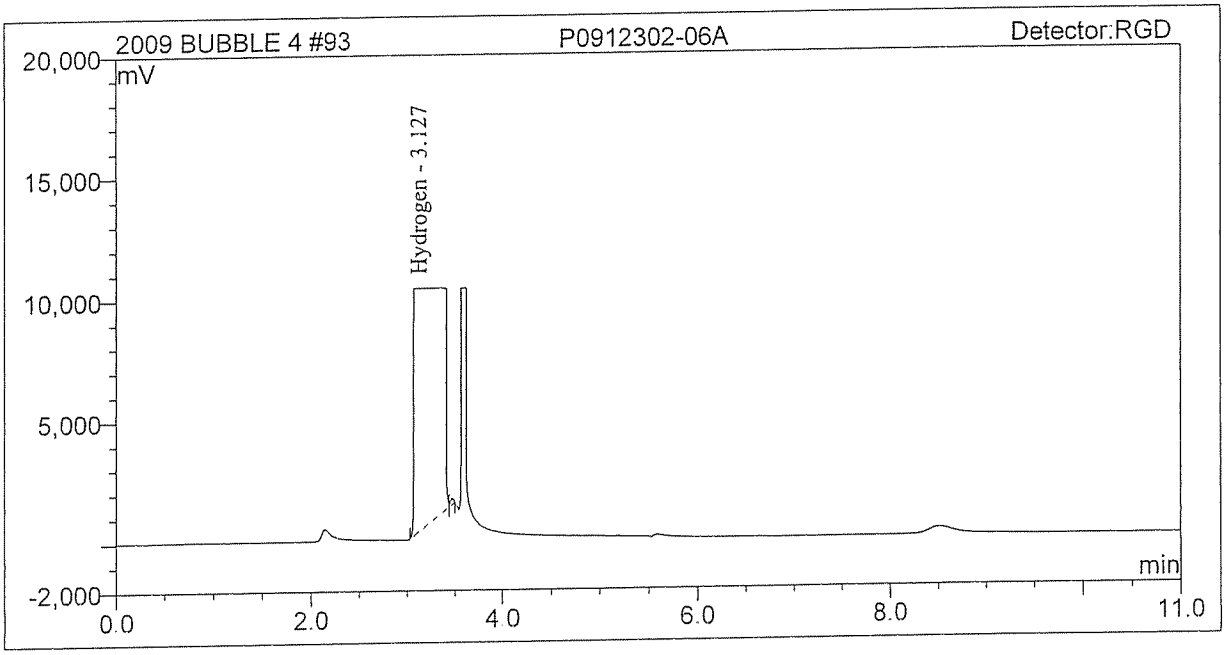
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-06A	**Sequence No:**	93
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 4:50 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.127	3335.853	10019.751	BM	~~484.7659~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



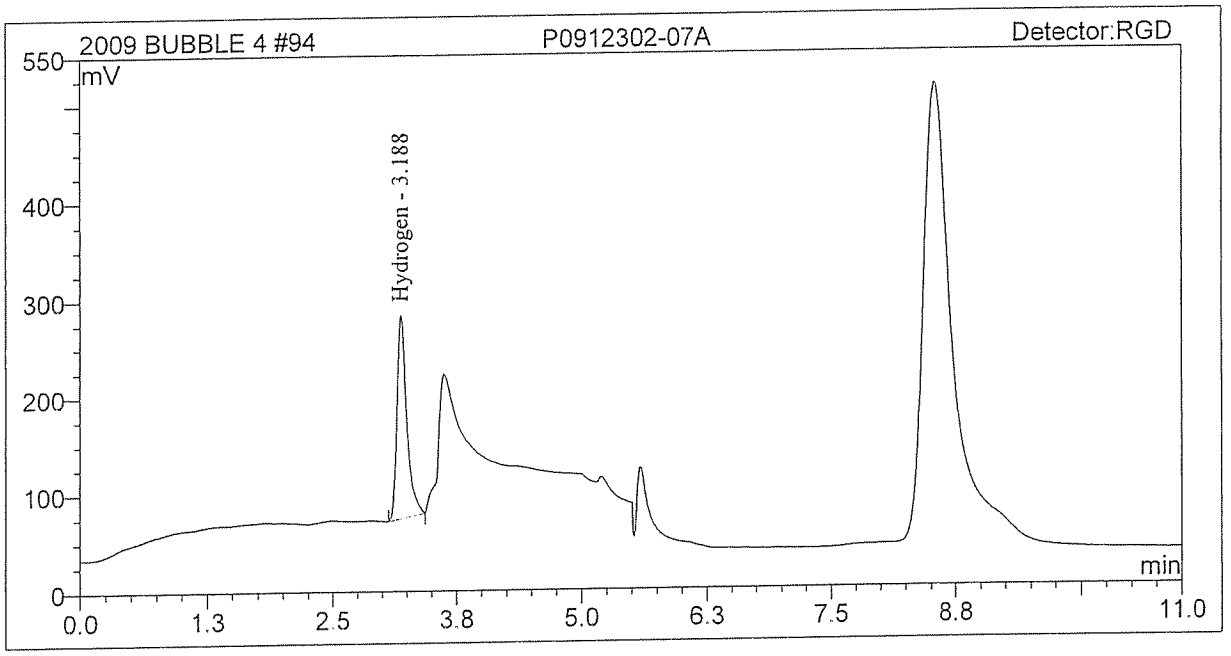
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-07A	**Sequence No:**	94
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 5:02 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.188	24.154	208.967	BMB	3.5101

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



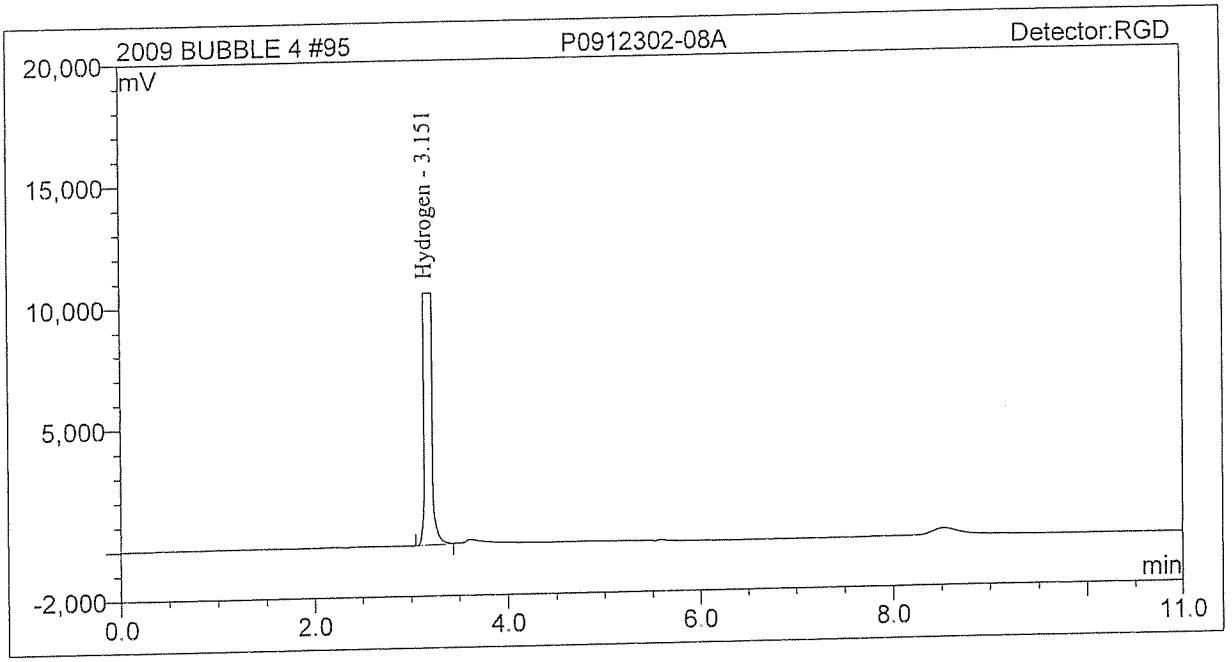
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-08A	**Sequence No:**	95
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 5:15 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.151	1043.668	10348.775	BMB	~~151.6661~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



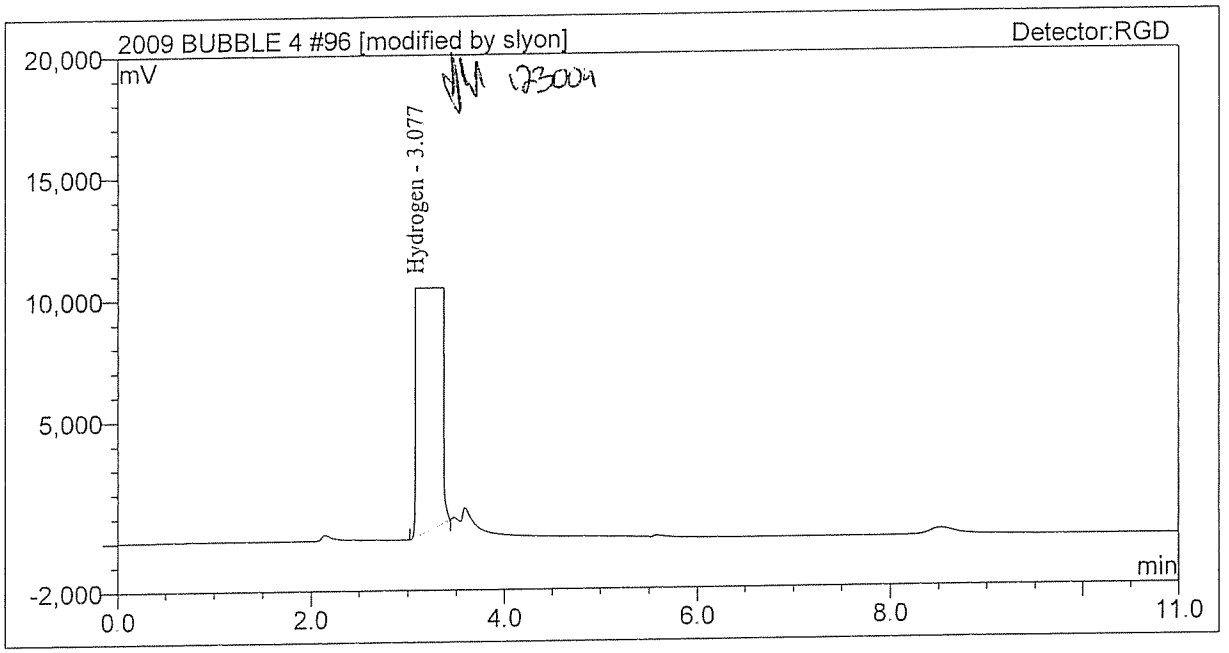
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-09A	**Sequence No:**	96
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 5:31 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.077	2992.152	10254.216	BMB*	~~434.8202~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



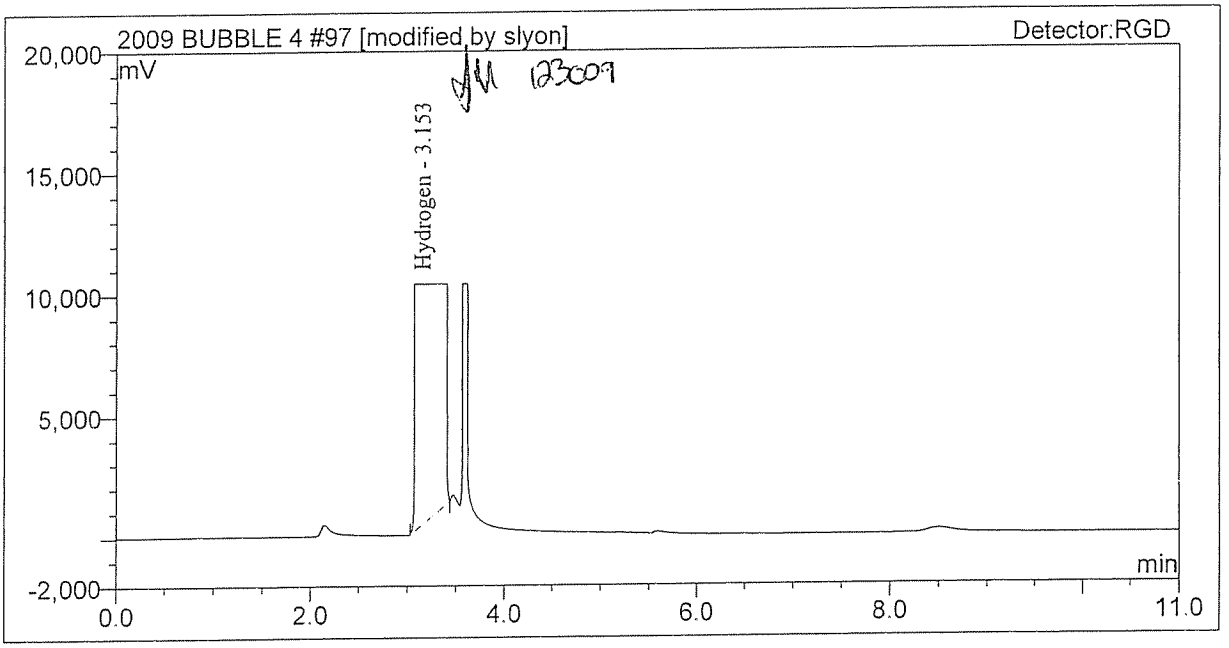
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-10A	**Sequence No:**	97
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 5:50 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.153	3317.289	9923.487	BMB*	~~482.0692~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



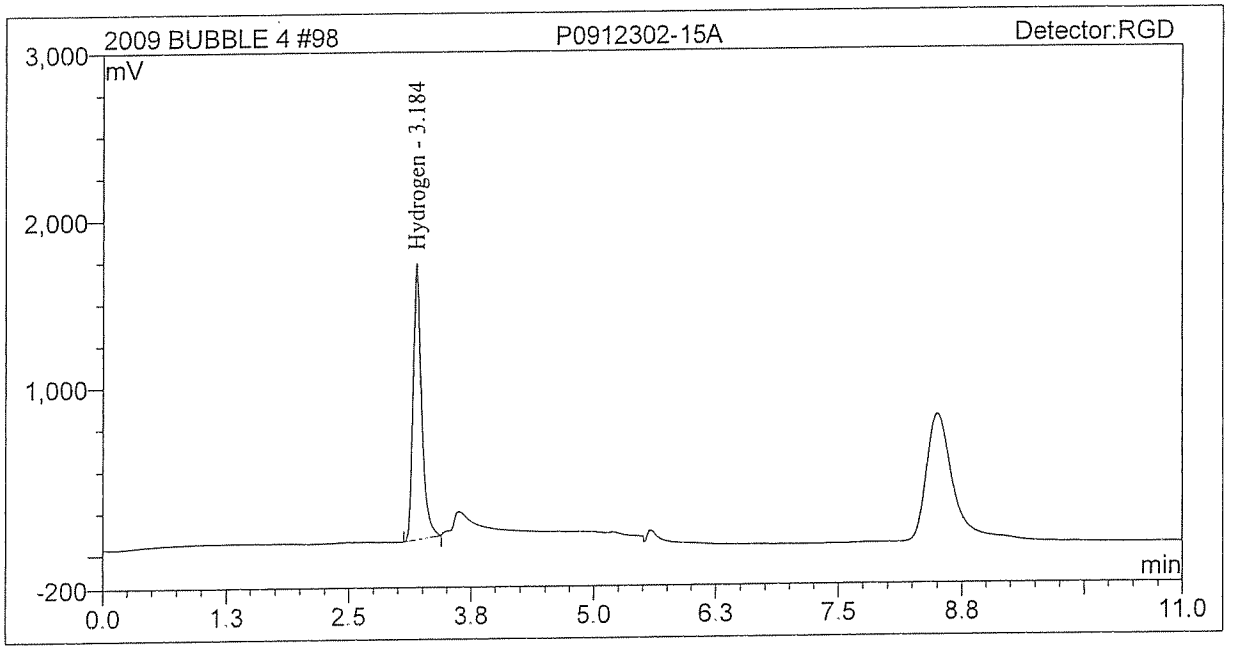
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-15A	**Sequence No:**	98
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 6:03 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.184	164.596	1651.627	BMB	~~23.0191~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



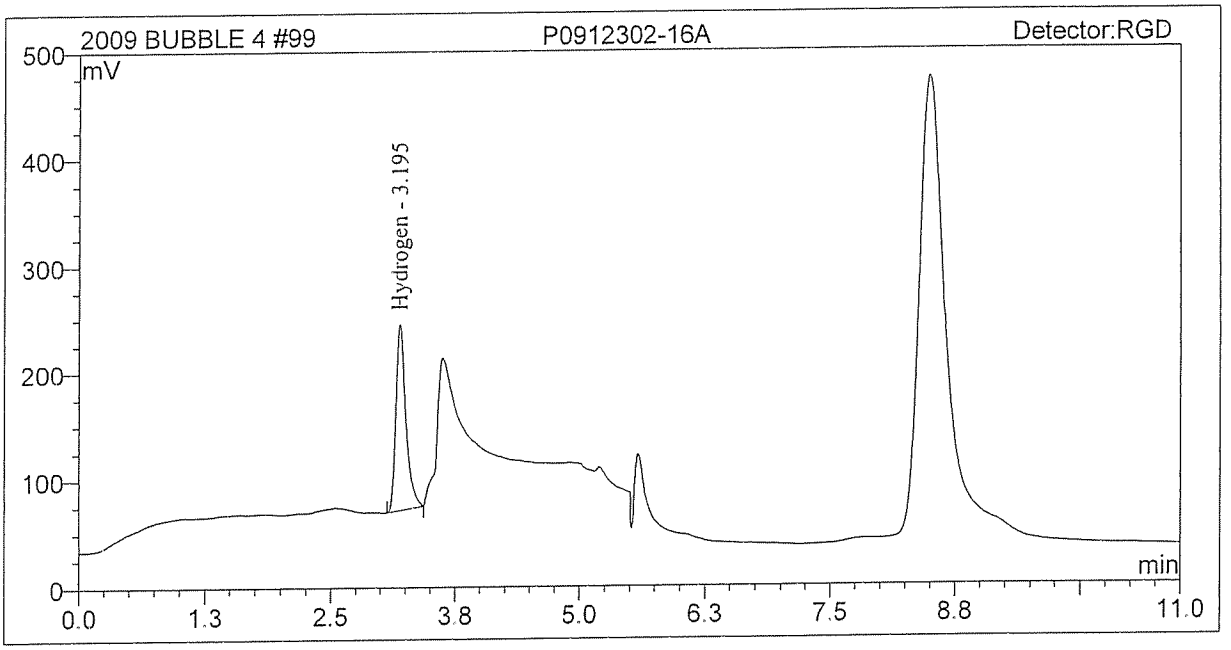
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-16A	**Sequence No:**	99
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 6:16 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.195	20.138	174.172	BMB	2.9264

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



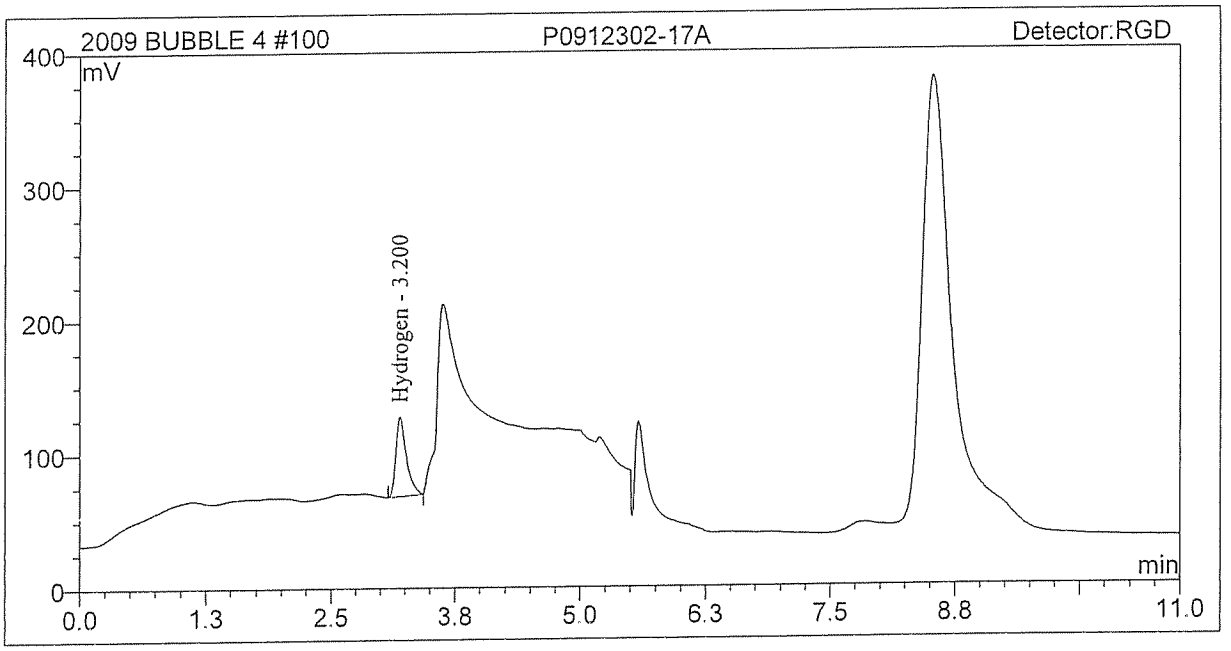
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-17A	**Sequence No:**	100
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 6:28 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.200	7.309	59.261	BMB	1.0622

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



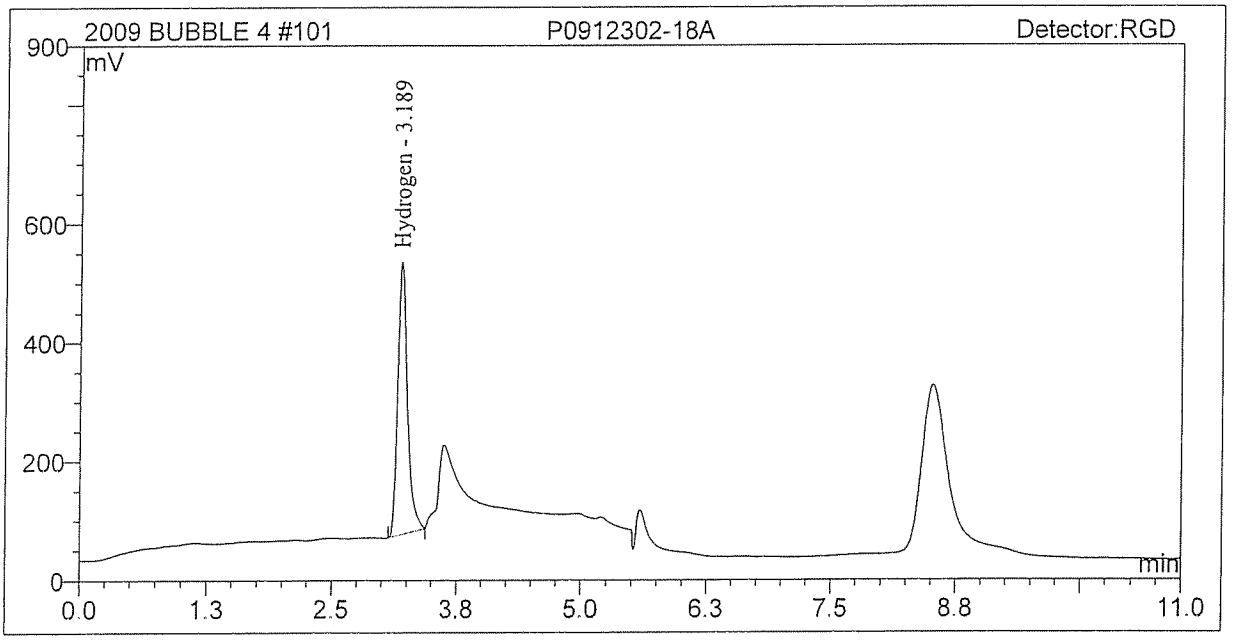
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-18A	**Sequence No:**	101
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 6:41 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	-

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.189	51.065	459.213	BMB	7.4208

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



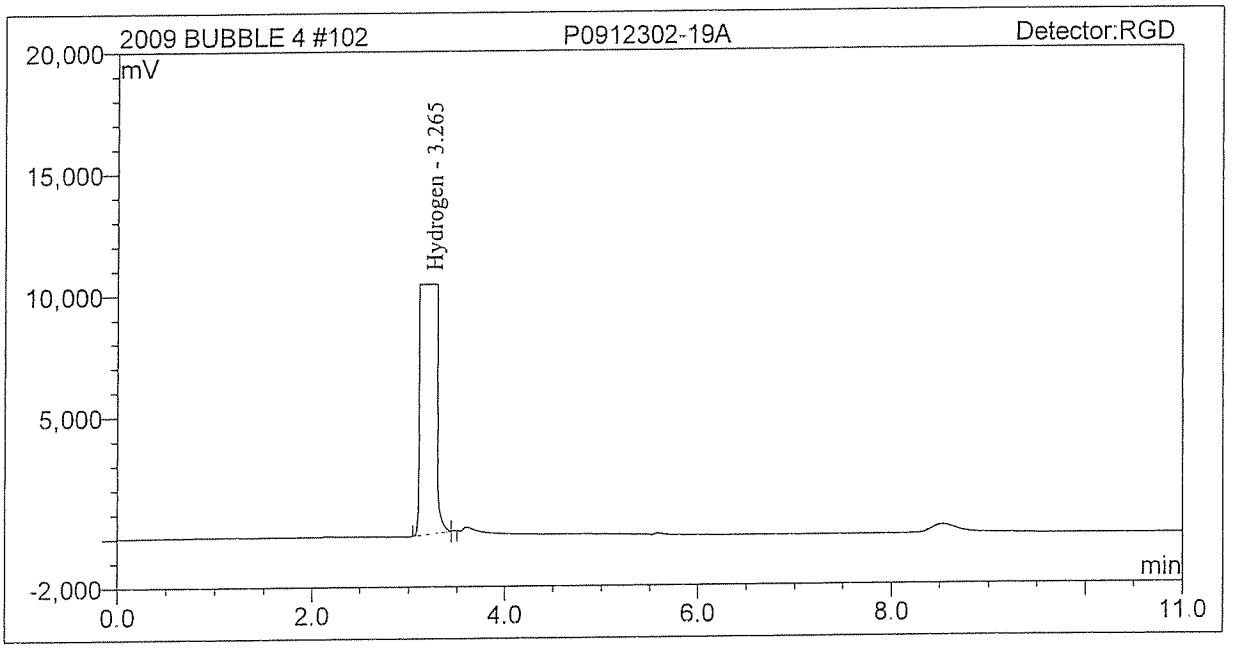
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-19A	**Sequence No:**	102
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 6:54 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.265	2081.263	10252.387	BM	~~302.4496~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Method File: BUBBLE102009
Operator: slyon

12302

Printed: 1/6/2010 2:03:54 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Window	Standard	Int.Type	Cal.Type
1	Methane	0.645 min	0.645 min			0.200 AN	External	Area	LOff
2	Ethane	0.908 min	0.908 min			0.200 AN	External	Area	Lin
3	Ethene	1.155 min	1.155 min			0.200 AN	External	Area	Lin
4	Propane	1.785 min	1.785 min			0.200 AN	External	Area	Lin
5	*Hydrogen*	*3.210 min*			*3.210 min*	*0.200 AN*	*External*	*Area*	*Lin*
6	Propene	3.284 min	3.284 min			0.200 AN	External	Area	Lin
7	Carbon Dioxide	4.200 min		4.200 min		0.500 AN	External	Area	Lin
8	iso-Butane	4.560 min	4.560 min			0.500 AN	External	Area	Lin
9	n-Butane	5.310 min	5.310 min			0.500 AN	External	Area	Lin
10	Oxygen	5.870 min		5.870 min		0.300 AN	External	Area	Lin
11	Nitrogen	6.260 min		6.260 min		0.300 AN	External	Area	Lin
12	Acetylene	6.600 min	6.600 min			0.500 AN	External	Area	Lin
13	Methane	7.560 min		7.560 min		0.400 AN	External	Area	Lin
14	Carbon Monoxide	8.450 min		8.450 min		0.400 AN	External	Area	Lin
15	Carbon Monoxide	8.600 min			8.600 min	0.400 AN	External	Area	Lin

Method File: BUBBLE102009
Operator: slyon

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Peak Type	Group	Comment
1	Methane	0.645 min	Auto		
2	Ethane	0.908 min	Auto		
3	Ethene	1.155 min	Auto		
4	Propane	1.785 min	Auto		
5	*Hydrogen*	*3.210 min*	*Auto*		
6	Propene	3.284 min	Auto		
7	Carbon Dioxide	4.200 min	Auto		
8	iso-Butane	4.560 min	Auto		
9	n-Butane	5.310 min	Auto		
10	Oxygen	5.870 min	Auto		
11	Nitrogen	6.260 min	Auto		
12	Acetylene	6.600 min	Auto		
13	Methane	7.560 min	Auto		
14	Carbon Monoxide	8.450 min	Auto		
15	Carbon Monoxide	8.600 min	Auto		

Method File: BUBBLE102009
Operator: slyon

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Amount ICAL Acetylene L5	Amount ICAL Acetylene L4
1	Methane	0.645 min	0.645 min				
2	Ethane	0.908 min	0.908 min				
3	Ethene	1.155 min	1.155 min				
4	Propane	1.785 min	1.785 min				
5	*Hydrogen*	*3.210 min*			*3.210 min*		
6	Propene	3.284 min	3.284 min				
7	Carbon Dioxide	4.200 min		4.200 min			
8	iso-Butane	4.560 min	4.560 min				
9	n-Butane	5.310 min	5.310 min				
10	Oxygen	5.870 min		5.870 min			
11	Nitrogen	6.260 min		6.260 min			
12	Acetylene	6.600 min	6.600 min			0.529000	2.648000
13	Methane	7.560 min		7.560 min			
14	Carbon Monoxide	8.450 min		8.450 min			
15	Carbon Monoxide	8.600 min			8.600 min		

Method File: BUBBLE102009
Operator: slyon

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1 SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30.15 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL Acetylene L3	Amount ICAL Acetylene L2	Amount ICAL Acetylene L1	Amount ICAL FID L8	Amount ICAL FID L7
1	Methane	0.645 min				0.002280	0.007120
2	Ethane	0.908 min				0.005880	0.018300
3	Ethene	1.155 min				0.013800	0.043300
4	Propane	1.785 min				0.006640	0.020700
5	*Hydrogen*	*3.210 min*					
6	Propene	3.284 min				0.019800	0.062100
7	Carbon Dioxide	4.200 min					
8	iso-Butane	4.560 min				0.004950	0.015400
9	n-Butane	5.310 min				0.006190	0.019300
10	Oxygen	5.870 min					
11	Nitrogen	6.260 min					
12	Acetylene	6.600 min	13.240000	66.200000	264.800000		
13	Methane	7.560 min					
14	Carbon Monoxide	8.450 min					
15	Carbon Monoxide	8.600 min					

Method File: BUBBLE102009
Operator: slyon

Printed: 1/6/2010 2:03:54 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL FID L6	Amount ICAL FID L5	Amount ICAL FID L4	Amount ICAL FID L3	Amount ICAL FID L2	Amount ICAL FID L1	Amount ICAL H2 L7
1	Methane	0.645 min	0.028500	0.114000	0.456000	2.280000	11.402000	57.011000	
2	Ethane	0.908 min	0.073500	0.294000	1.176000	5.880000	29.403000	147.016000	
3	Ethene	1.155 min	0.173000	0.693000	2.774000	13.870000	69.353000	346.766000	
4	Propane	1.785 min	0.083000	0.332000	1.328000	6.644000	33.220000	166.100000	
5	*Hydrogen*	*3.210 min*							*0.396000*
6	Propene	3.284 min	0.248000	0.993000	3.975000	19.877000	99.388000	496.942000	
7	Carbon Dioxide	4.200 min							
8	iso-Butane	4.560 min	0.061800	0.247000	0.990000	4.951000	24.756000	123.783000	
9	n-Butane	5.310 min	0.077400	0.309000	1.238000	6.192000	30.961000	154.808000	
10	Oxygen	5.870 min							
11	Nitrogen	6.260 min							
12	Acetylene	6.600 min							
13	Methane	7.560 min							
14	Carbon Monoxide	8.450 min							
15	Carbon Monoxide	8.600 min							

Method File: BUBBLE102009
Operator: slyon

Printed: 1/6/2010 2:03:54 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL H2 L6	Amount ICAL H2 L5	Amount ICAL H2 L4	Amount ICAL H2 L3	Amount ICAL RGD CO L3	Amount ICAL RGD CO L2
1	Methane	0.645 min						
2	Ethane	0.908 min						
3	Ethene	1.155 min						
4	Propane	1.785 min						
5	*Hydrogen*	*3.210 min*	*0.990000*	*3.960000*	*9.900000*	*19.800000*		
6	Propene	3.284 min						
7	Carbon Dioxide	4.200 min						
8	iso-Butane	4.560 min						
9	n-Butane	5.310 min						
10	Oxygen	5.870 min						
11	Nitrogen	6.260 min						
12	Acetylene	6.600 min						
13	Methane	7.560 min						
14	Carbon Monoxide	8.450 min						
15	Carbon Monoxide	8.600 min					0.100000	0.500000

Method File: BUBBLE102009
Operator: slyon

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL RGD CO L1	Amount ICAL RGD CO L1A	Amount ICAL TCD L6	Amount ICAL TCD L5	Amount ICAL TCD L4
1	Methane	0.645 min					
2	Ethane	0.908 min					
3	Ethene	1.155 min					
4	Propane	1.785 min					
5	*Hydrogen*	*3.210 min*					
6	Propene	3.284 min					
7	Carbon Dioxide	4.200 min			2.196000	5.490000	10.980000
8	iso-Butane	4.560 min					
9	n-Butane	5.310 min					
10	Oxygen	5.870 min			0.015900	0.039900	0.079800
11	Nitrogen	6.260 min			0.051400	0.129000	0.257000
12	Acetylene	6.600 min					
13	Methane	7.560 min				23.580000	47.160000
14	Carbon Monoxide	8.450 min				0.046900	0.093800
15	Carbon Monoxide	8.600 min	2.000000	10.000000			

Method File: BUBBLE102009
Operator: slyon

Printed: 1/6/2010 2:03:54 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL TCD L3	Amount ICAL TCD L2	Amount ICAL TCD L1
1	Methane	0.645 min			
2	Ethane	0.908 min			
3	Ethene	1.155 min			
4	Propane	1.785 min			
5	*Hydrogen*	*3.210 min*			
6	Propene	3.284 min			
7	Carbon Dioxide	4.200 min	54.900000	274.500000	549.000000
8	iso-Butane	4.560 min			
9	n-Butane	5.310 min			
10	Oxygen	5.870 min	0.399200	1.996000	3.992000
11	Nitrogen	6.260 min	1.286000	6.430000	12.860000
12	Acetylene	6.600 min			
13	Methane	7.560 min	235.800000	1179.000000	2358.000000
14	Carbon Monoxide	8.450 min	0.469000	2.345000	4.690000
15	Carbon Monoxide	8.600 min			

Method File: BUBBLE102009
Operator: slyon

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1 SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Calibration:

Calibration Mode: Total
Auto Recalibrate: On
Curve Fitting Model: Normal
Dual-Column Separate Calibration: Off

No.	Enabled	Name	Smp.No.	Pos.	Inj. Vol.	Weight	ISTD Amount	Dil. Factor	Inj. Date/Time
1	☒	ICAL Acetylene L5	1	3	20.0	1.0000	1.0000	1.0000	10/19/2009 10:32:27 AM
2	☒	ICAL Acetylene L4	2	4	20.0	1.0000	1.0000	1.0000	10/19/2009 10:44:48 AM
3	☒	ICAL Acetylene L3	3	5	20.0	1.0000	1.0000	1.0000	10/19/2009 10:57:25 AM
4	☒	ICAL Acetylene L2	4	6	20.0	1.0000	1.0000	1.0000	10/19/2009 11:09:48 AM
5	☒	ICAL Acetylene L1	5	7	20.0	1.0000	1.0000	1.0000	10/19/2009 11:22:07 AM
6	☒	ICAL FID L8	6	10	20.0	1.0000	1.0000	1.0000	10/19/2009 12:11:06 PM
7	☒	ICAL FID L7	7	11	20.0	1.0000	1.0000	1.0000	10/19/2009 12:30:57 PM
8	☒	ICAL FID L6	8	12	20.0	1.0000	1.0000	1.0000	10/19/2009 12:50:36 PM
9	☒	ICAL FID L5	9	13	20.0	1.0000	1.0000	1.0000	10/19/2009 1:04:42 PM
10	☒	ICAL FID L4	10	14	20.0	1.0000	1.0000	1.0000	10/19/2009 1:21:34 PM
11	☒	*ICAL FID L3*	*11*	*15*	*20.0*	*1.0000*	*1.0000*	*1.0000*	*10/19/2009 1:37:49 PM*
12	☒	ICAL FID L2	12	16	20.0	1.0000	1.0000	1.0000	10/19/2009 1:50:17 PM
13	☒	ICAL FID L1	13	17	20.0	1.0000	1.0000	1.0000	10/19/2009 2:03:02 PM
14	☒	ICAL TCD L6	16	33	20.0	1.0000	1.0000	1.0000	10/19/2009 5:35:41 PM
15	☒	ICAL TCD L5	17	34	20.0	1.0000	1.0000	1.0000	10/19/2009 5:48:26 PM
16	☒	ICAL TCD L4	18	35	20.0	1.0000	1.0000	1.0000	10/19/2009 6:01:02 PM
17	☒	ICAL TCD L3	19	36	20.0	1.0000	1.0000	1.0000	10/19/2009 6:16:31 PM
18	☒	ICAL TCD L2	20	37	20.0	1.0000	1.0000	1.0000	10/19/2009 6:28:51 PM
19	☒	ICAL TCD L1	21	38	20.0	1.0000	1.0000	1.0000	10/19/2009 6:41:18 PM
20	☒	ICAL H2 L7	25	1	20.0	1.0000	1.0000	1.0000	1/2/2010 2:08:22 PM
21	☒	ICAL H2 L6	26	2	20.0	1.0000	1.0000	1.0000	1/2/2010 2:20:40 PM
22	☒	ICAL H2 L5	27	3	20.0	1.0000	1.0000	1.0000	1/2/2010 2:32:59 PM
23	☒	ICAL H2 L4	28	4	20.0	1.0000	1.0000	1.0000	1/2/2010 2:47:03 PM
24	☒	ICAL H2 L3	29	5	20.0	1.0000	1.0000	1.0000	1/2/2010 2:59:20 PM

Hydrogen

Method AM20GAX

1/2/2010

No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square %	Offset	Slope	Curve
1	3.19	Hydrogen	Lin	5	99.999	0.00000	6.14783	0.00000

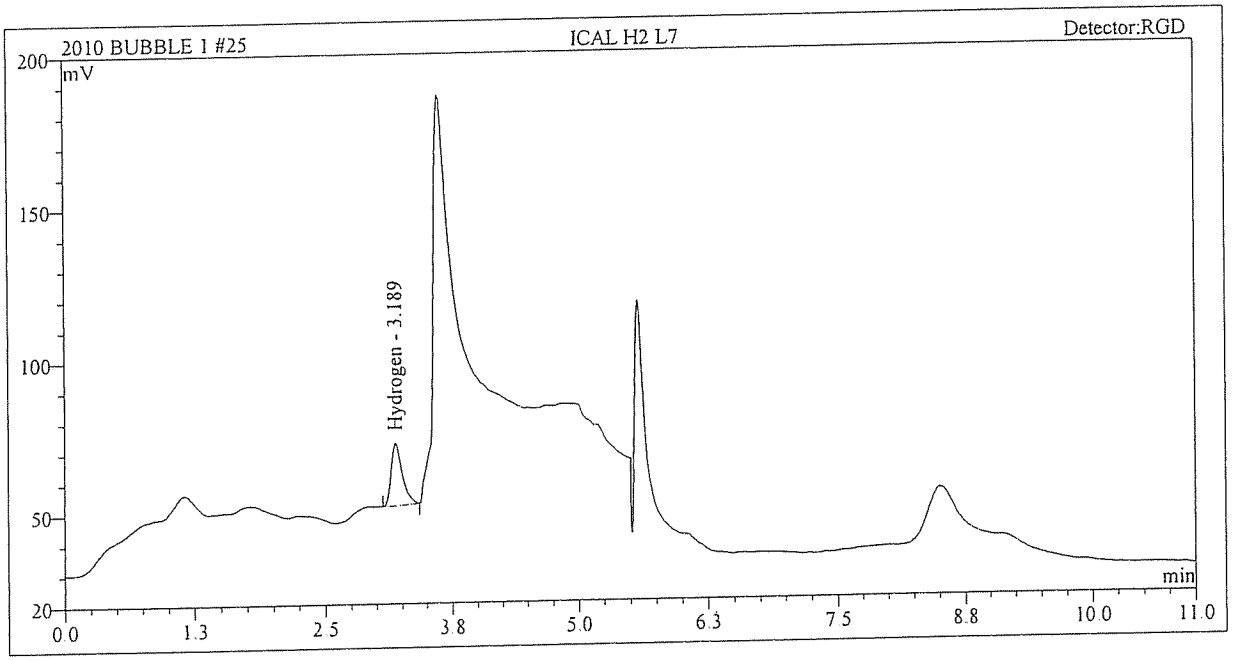
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L7	**Sequence No:**	25
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 2:08 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.189	2.621	20.512	BMB	0.4263

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



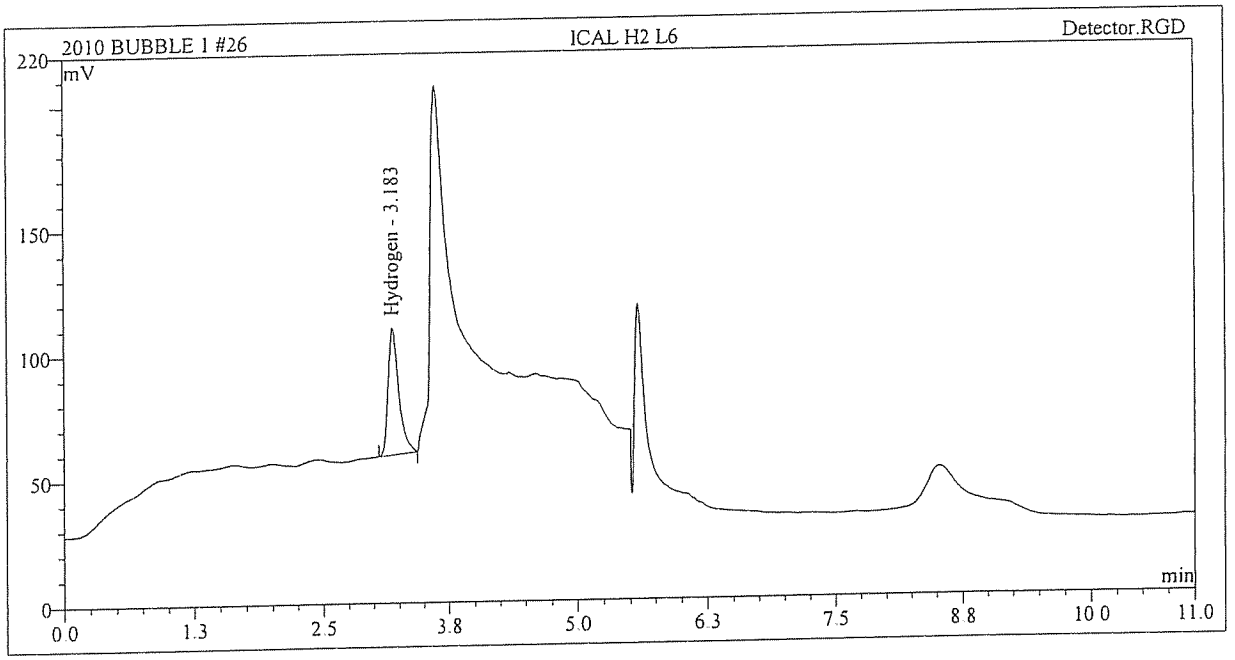
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L6	**Sequence No:**	26
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 2:20 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.183	6.280	50.811	BMB	1.0216

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



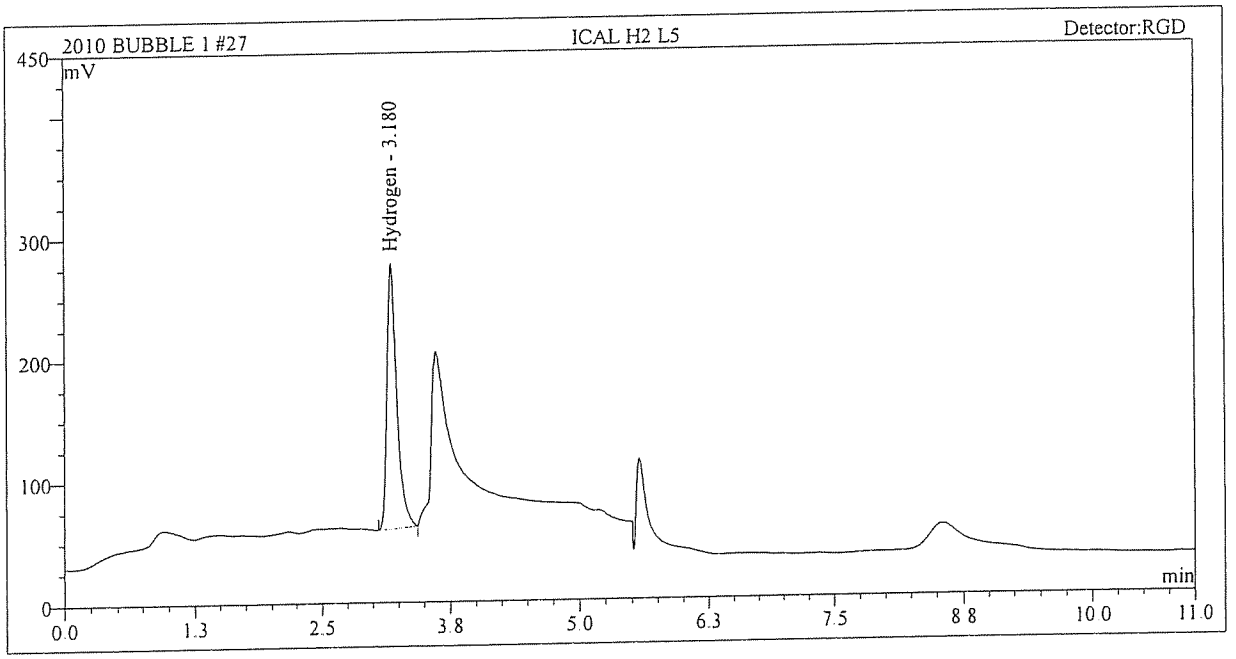
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L5	**Sequence No:**	27
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 2:32 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.180	24.098	217.387	BMB	3.9198

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



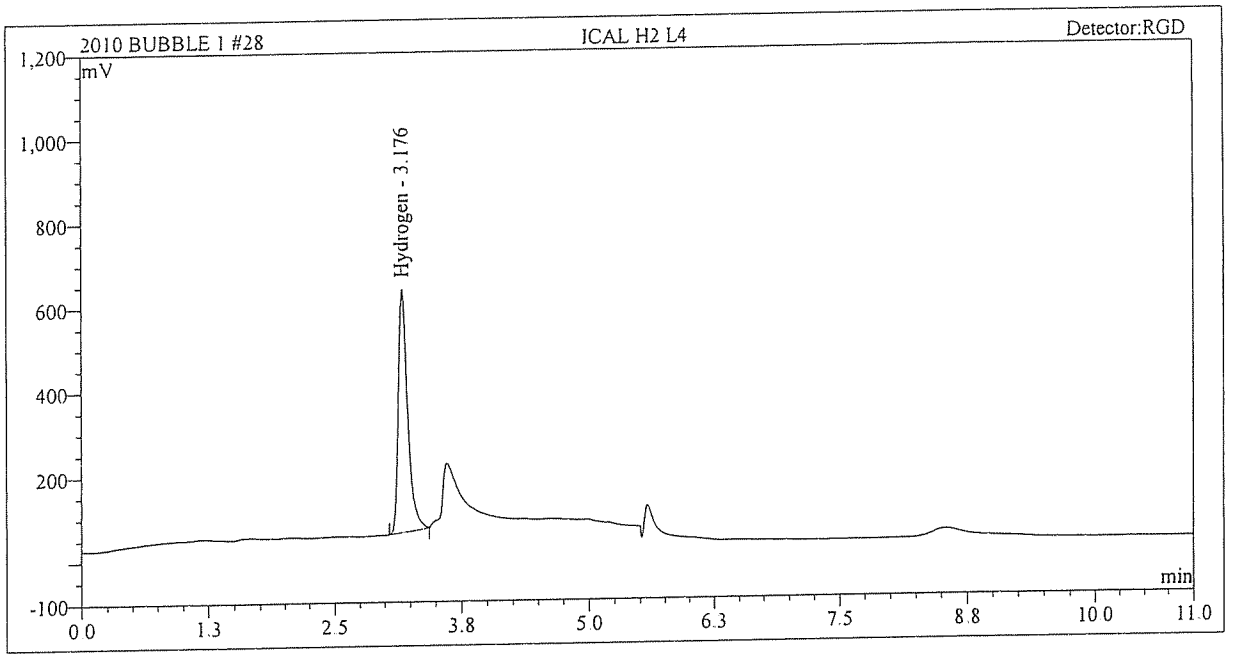
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L4	**Sequence No:**	28
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 2:47 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.176	60.960	574.577	BMB	9.9158

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



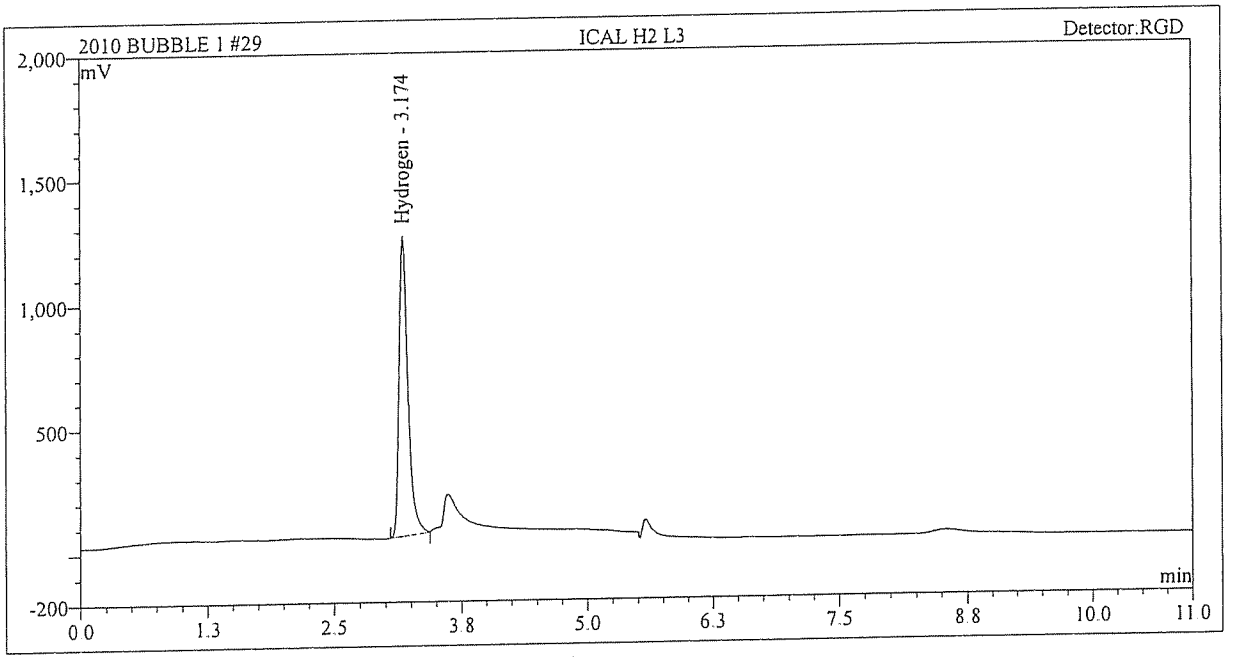
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L3	**Sequence No:**	29
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 2:59 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.174	121.715	1203.194	BMB	19.7980

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



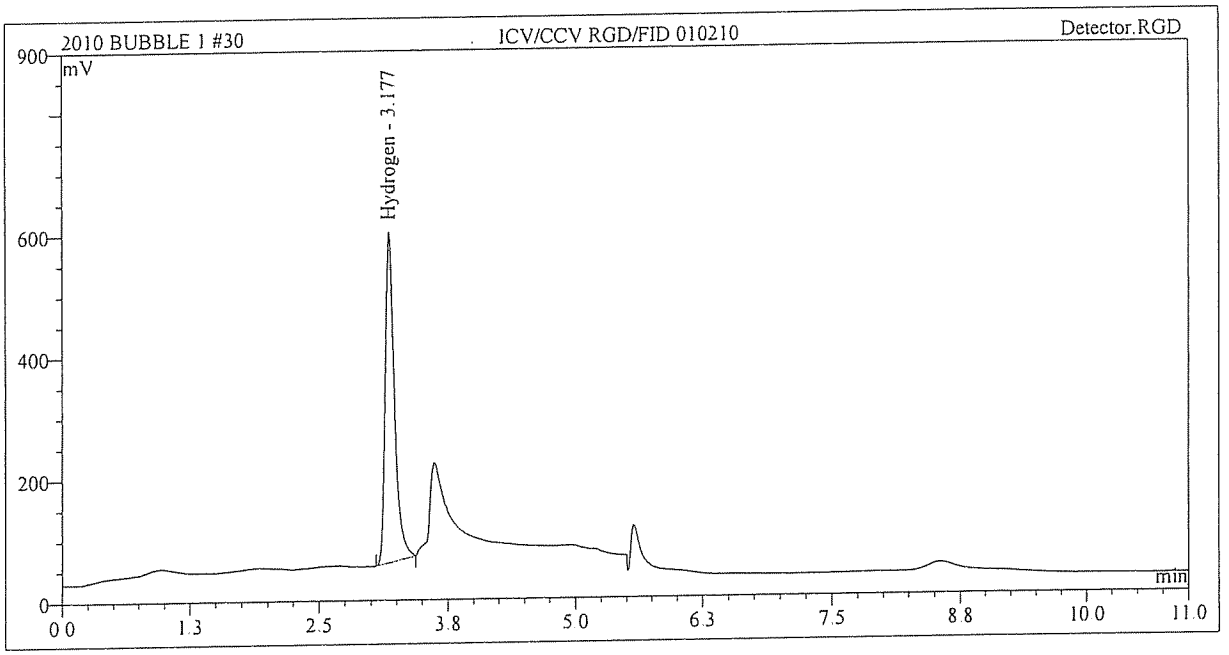
MICROSEEPS

Sample Analysis Report

Sample Name:	ICV/CCV RGD/FID 010210	**Sequence No:**	30
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 3:11 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.177	57.340	540.813	BMB	10.296	9.3269

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



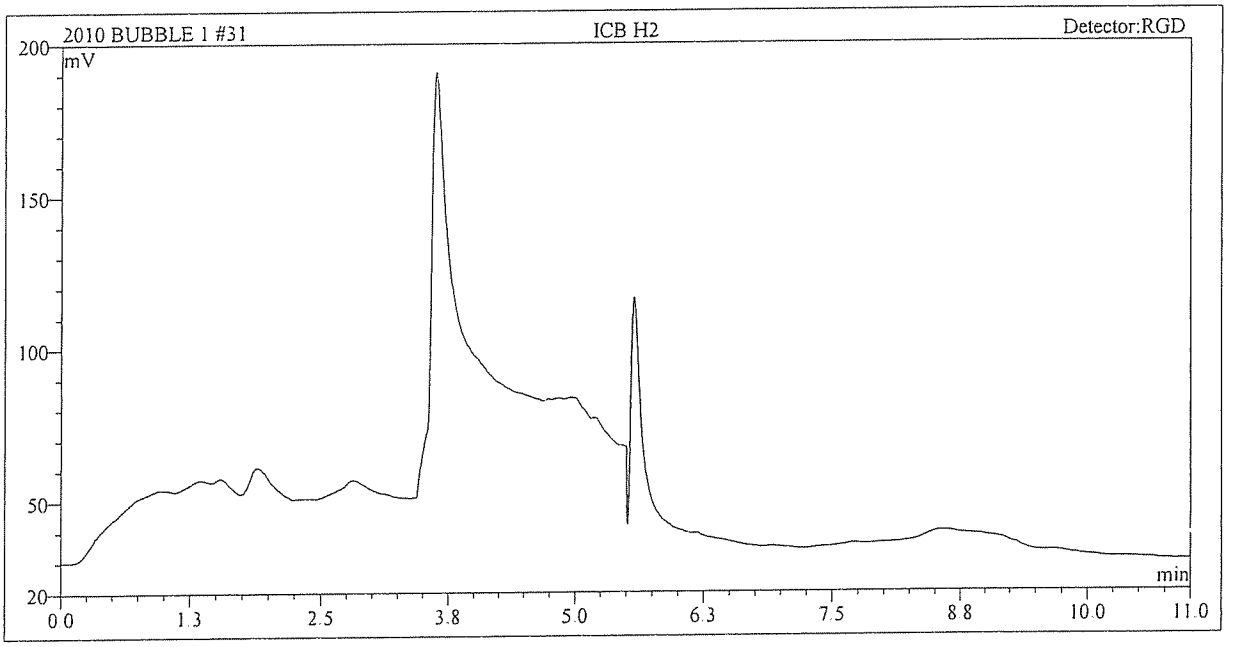
MICROSEEPS

Sample Analysis Report

Sample Name:	ICB H2	**Sequence No:**	31
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 3:27 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100105018-Hz
021-LHC
017-Hz
M100104006-LHC

Original Run Date: 1-4-10

Matrix: Bubble Strip

Sample numbers:
P0912281-(8-10)
P0912289-(1-3) FDP
P0912302-(2,4,13) FDP
P0912303-(2-4, 6, 9-14) FDP
P0912335-(6-14)
P0912344-(3-7, 12-14) FDP

Out of Control Event: (attach another page, if necessary)

1. P0912289-(1), P0912344-(3) Low pressure in vial
2. P0912302-(2), P0912303-(9-10) Require dilutions for Hz

Corrective Action Taken:

1. Added 2cc UHP N2 and analyzed as 2x DIL
2. None

Result:

1. Report as 2x DIL
2. Report Hz on a future batch

Observations to support use of data: (Note any occurrences of manual integration here)

The samples listed below required manual integration to repair baseline inaccuracies

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. _____ Date _____

Analyzed & Reviewed by: JM Date: 010410

Manual Integration Conducted? YES NO
(Circle One)

Reviewed by: _____ Date: _____

Reviewed & Entered by: Upload Date: 010610

Reviewed by: _____ Date: _____

Corrected by: _____ Date: _____

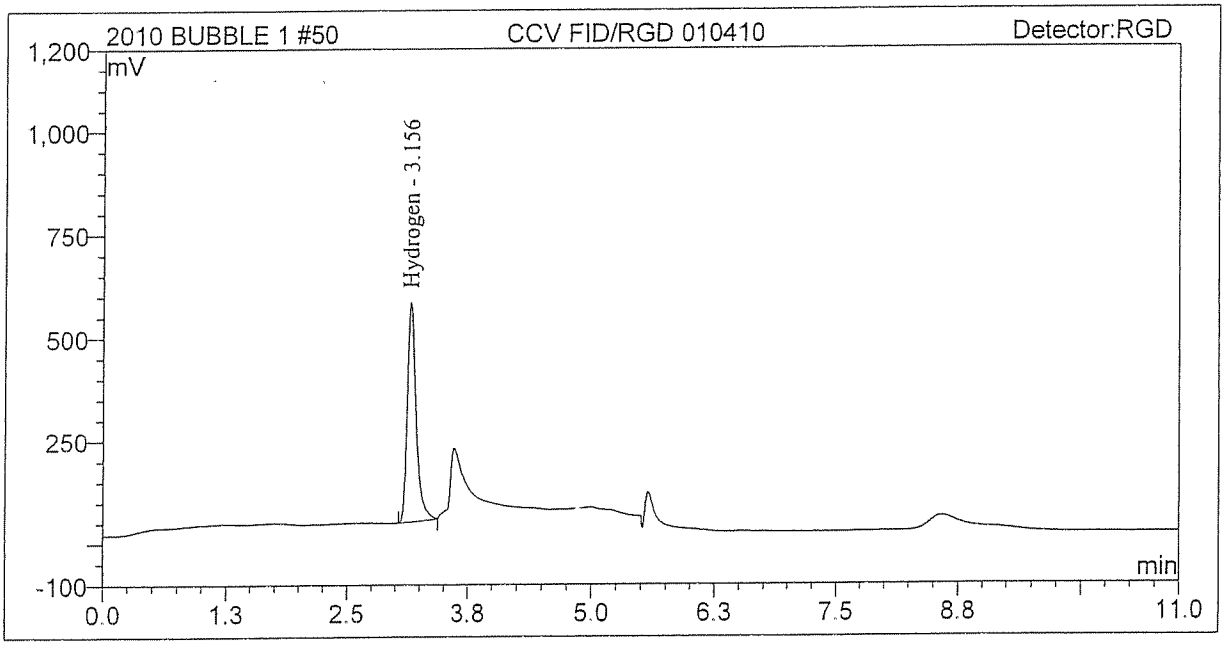
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 010410	**Sequence No:**	50
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 9:11 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.156	55.878	534.078	BMB	10.296	9.0891

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



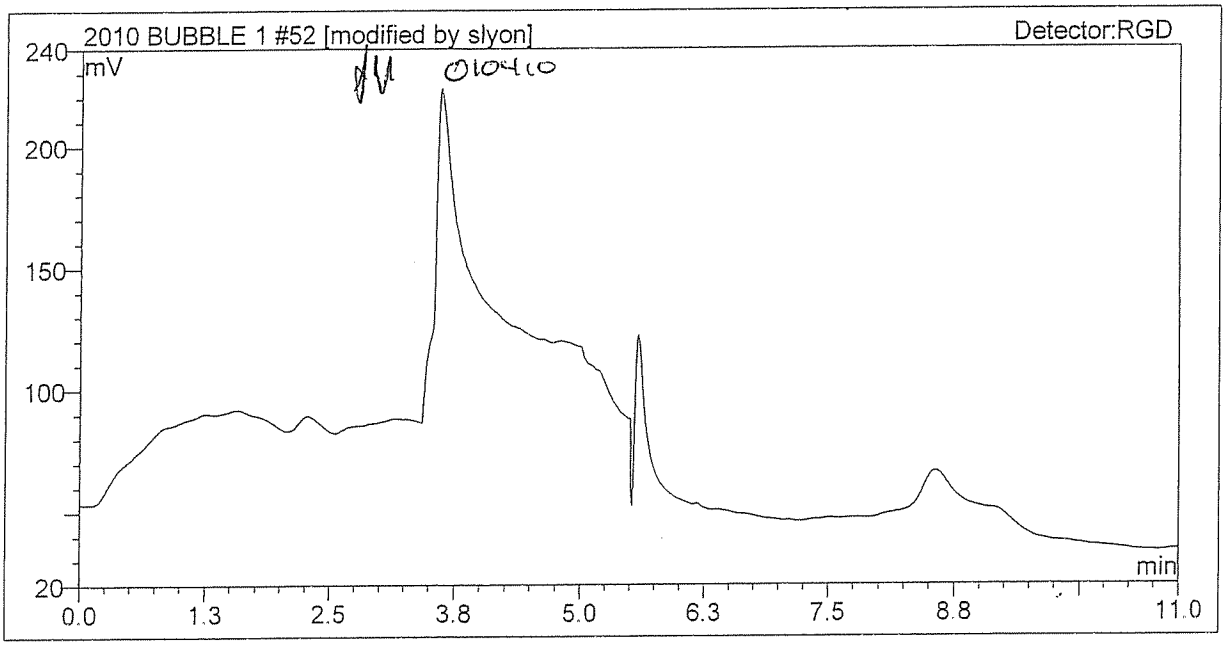
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 010410	**Sequence No:**	52
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 9:43 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



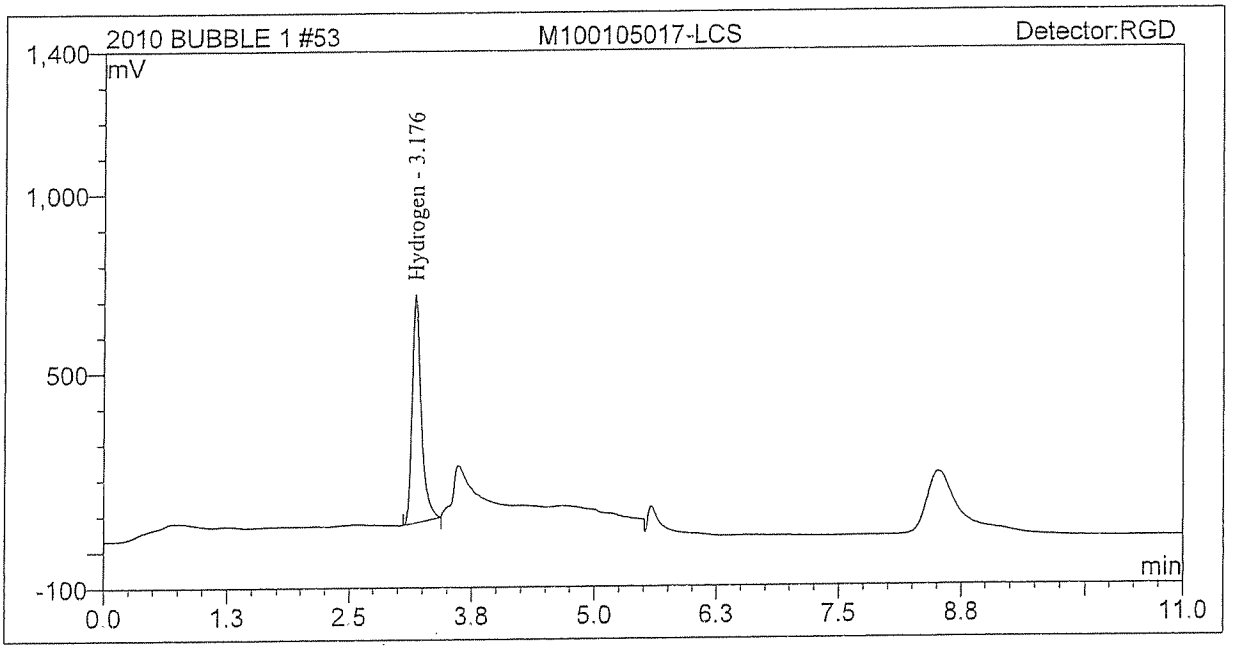
MICROSEEPS

Sample Analysis Report

Sample Name:	M100105017-LCS	**Sequence No:**	53
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 9:56 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.176	70.405	639.632	BMB	9.752	11.4520

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



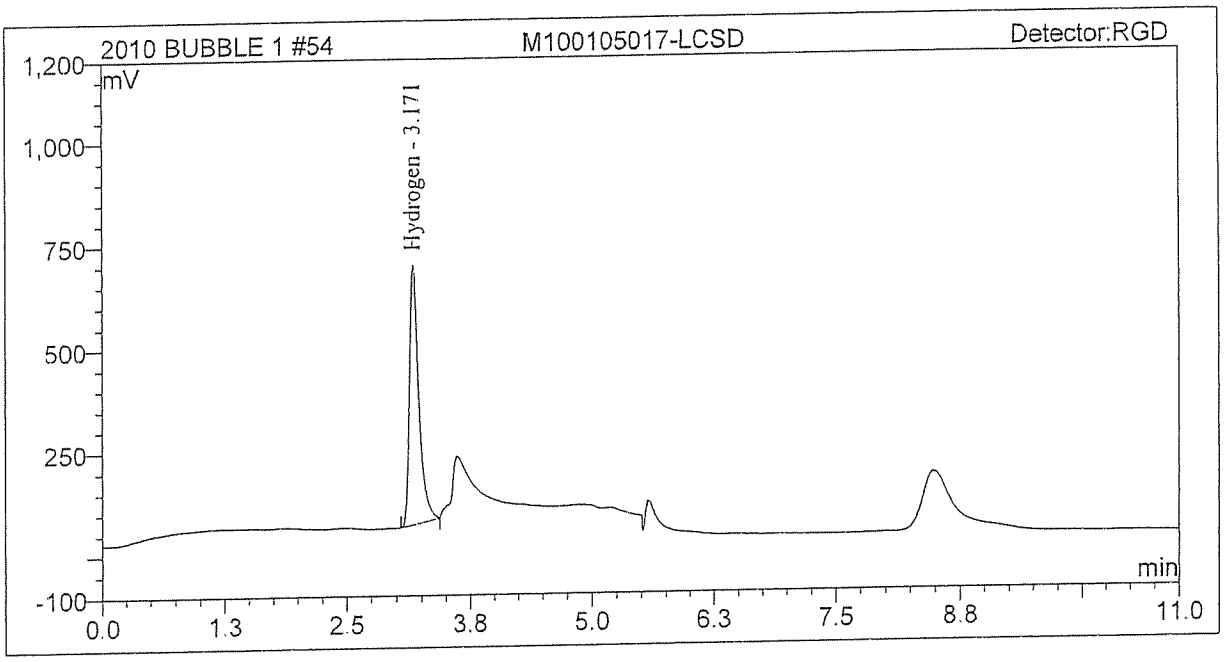
MICROSEEPS

Sample Analysis Report

Sample Name:	M100105017-LCSD	**Sequence No:**	54
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 10:12 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.171	69.043	629.860	BMB	9.752	11.2304

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



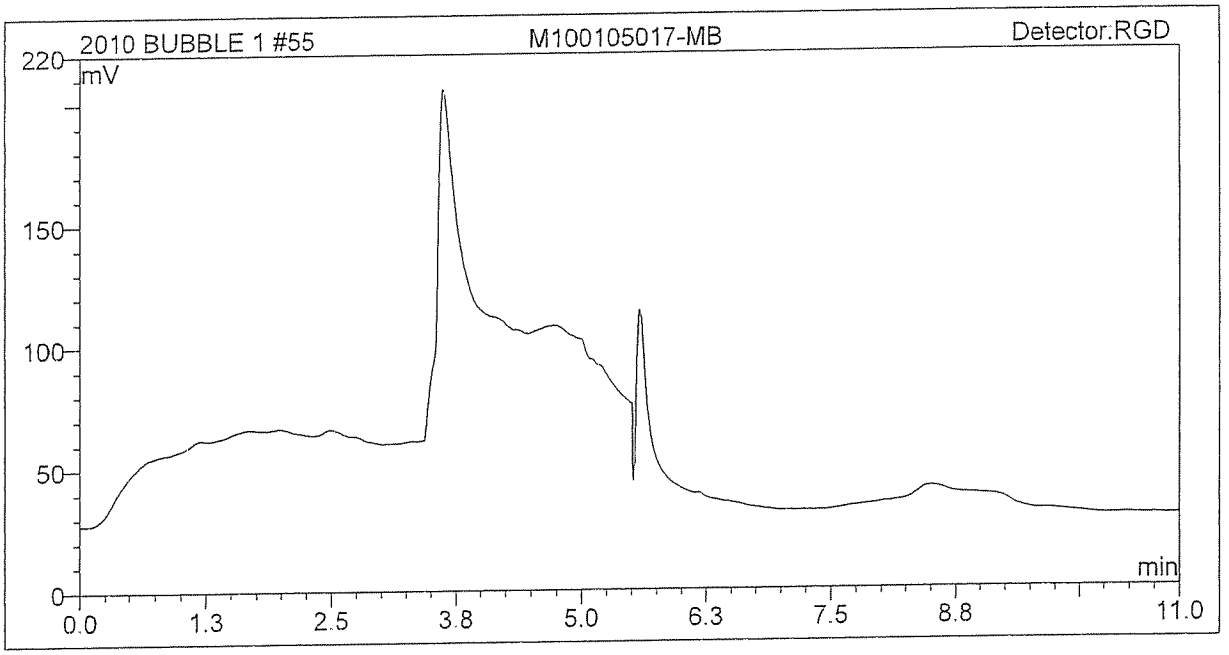
MICROSEEPS

Sample Analysis Report

Sample Name:	M100105017-MB	**Sequence No:**	55
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 10:27 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



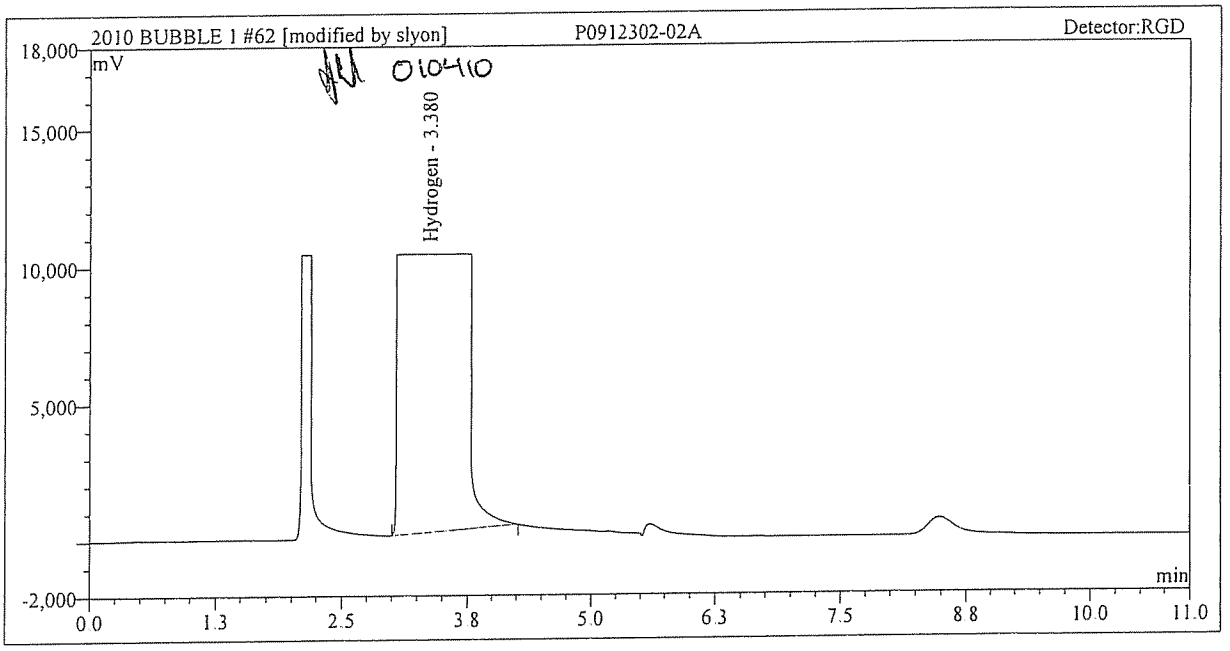
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-02A	**Sequence No:**	62
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 12:11 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.380	7823.921	10129.937	BMB*	~~1272.6315~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



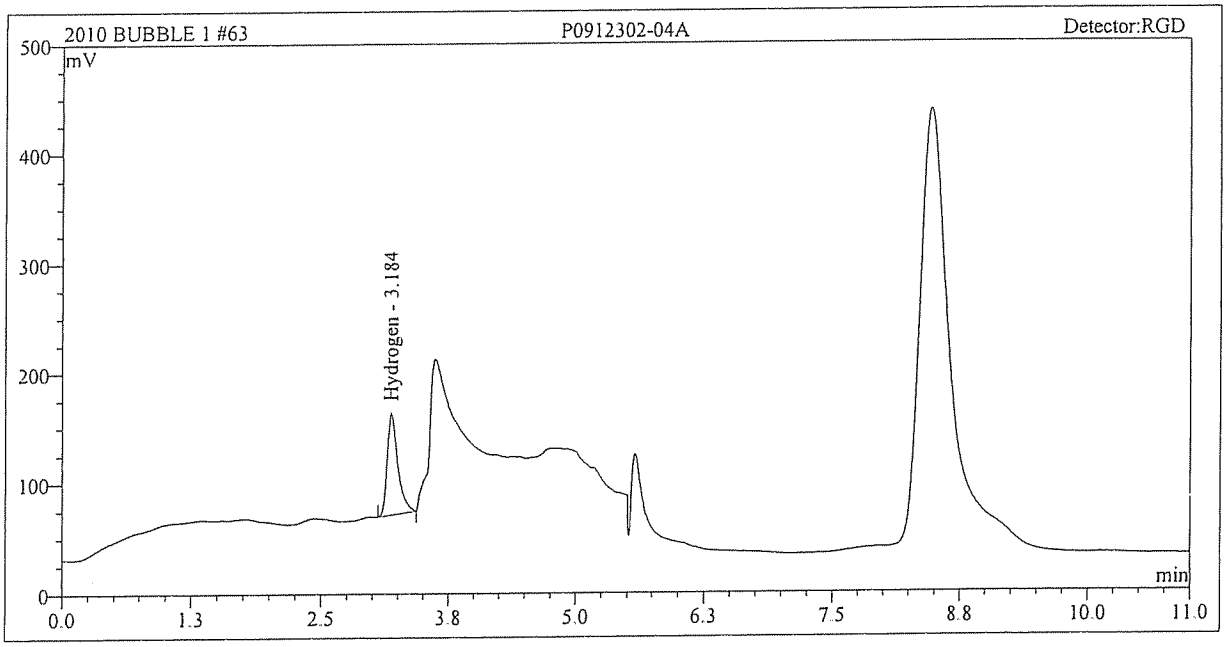
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-04A	**Sequence No:**	63
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 12:25 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.184	11.189	92.277	BMB	1.8200

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



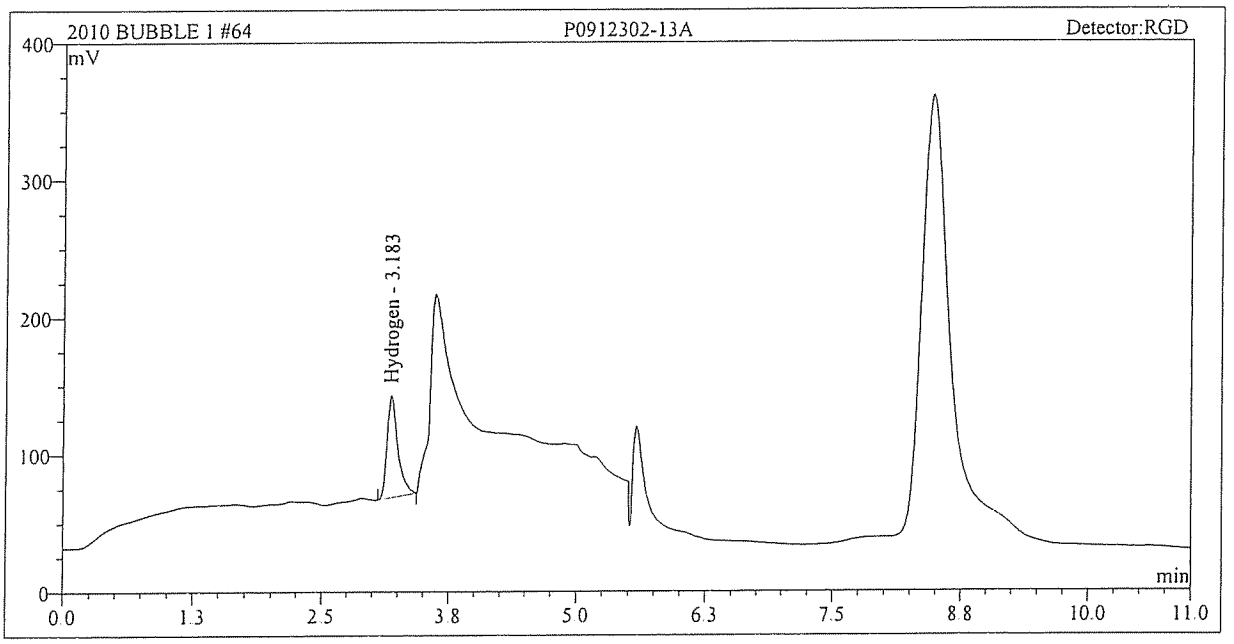
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-13A	**Sequence No:**	64
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 12:38 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.183	9.133	74.676	BMB	1.4855

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



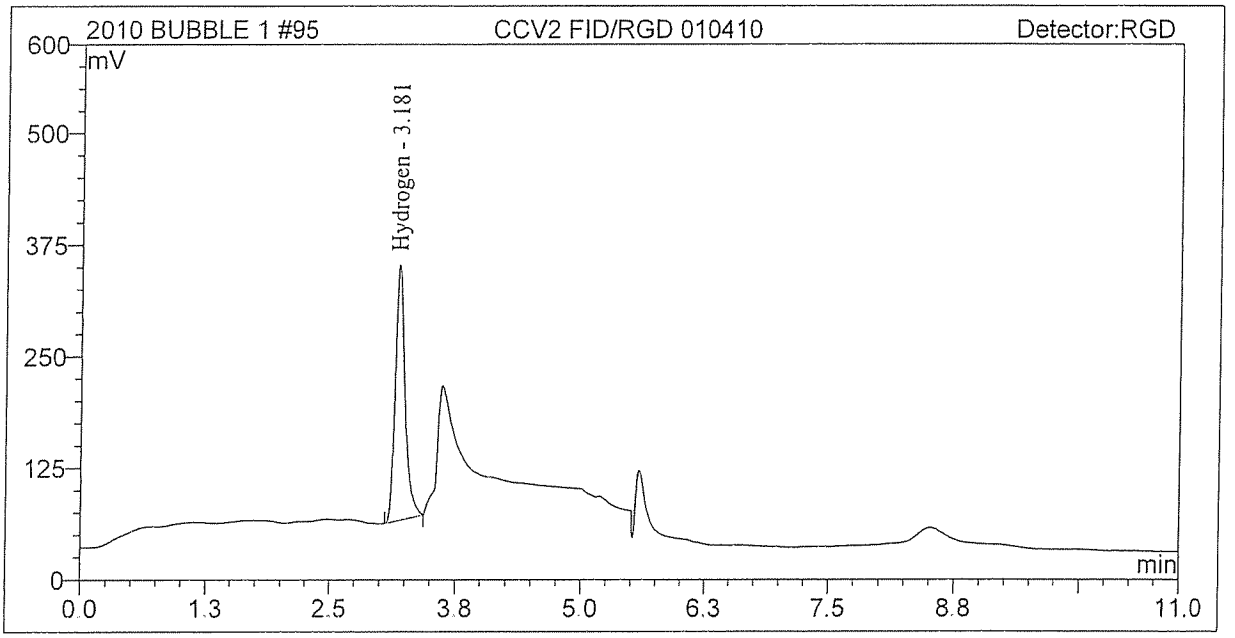
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 010410	**Sequence No:**	95
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 7:53 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.181	31.648	286.456	BMB	5.148	5.1479

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100105019-Hz
020-Lik
022-PG

Original Run Date: 1-5-10

Matrix: Bubble Strip

Sample numbers:
P0912352-(1-2, 4-8)
P0912354-(1-2)
P0912275-(1-6) DIL's FD?
P0912302-(1,3,6,8,9) DIL's FD? –

Out of Control Event: (attach another page, if necessary)
P0912352-(5) Possible low pressure vial

Corrective Action Taken:
Will reanalyze at 2x ~~verify~~ on a future batch to verify results

Result:

Observations to support use of data: (Note any occurrences of manual integration here)
P0912352-(1-2, 4-8) Required manual integration to repair baseline inaccuracies

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. _____ Date _____

Analyzed & Reviewed by: AU Date: 010510
Manual Integration Conducted? YES NO
(Circle One)
Reviewed by: _____ Date: _____
Reviewed & Entered by: Upload Date: 010710
Reviewed by: _____ Date: _____
Corrected by: _____ Date: _____

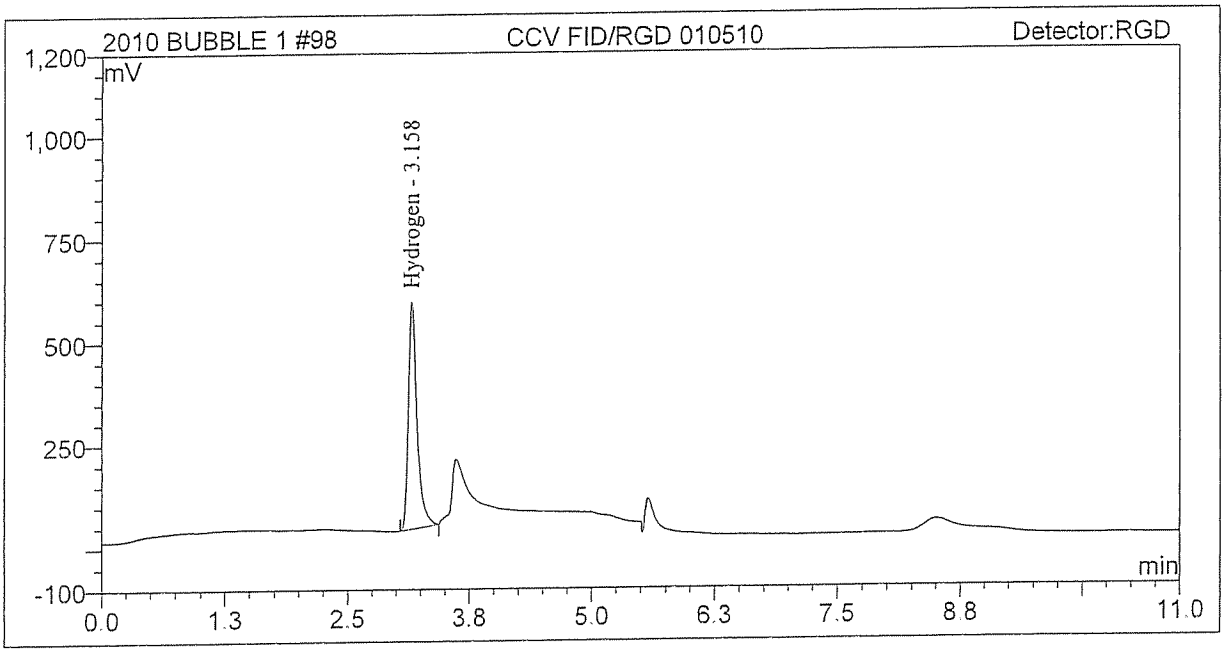
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 010510	**Sequence No:**	98
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/5/2010 10:10 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.158	57.836	550.622	BMB	10.296	9.4076

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



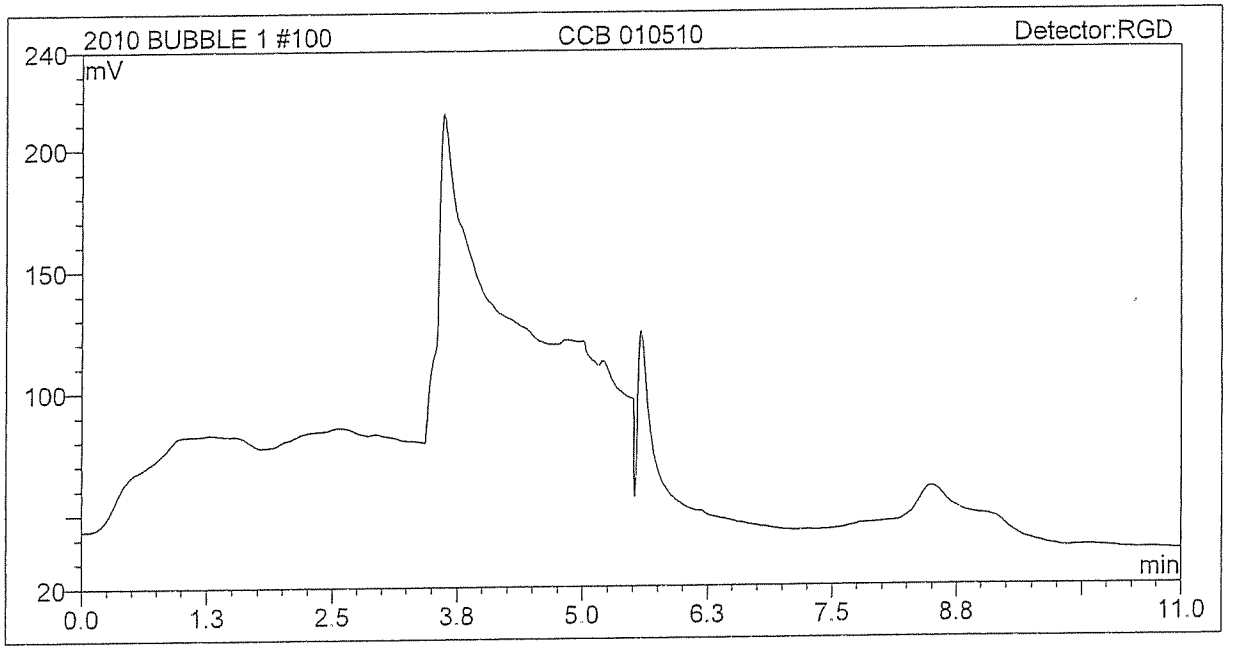
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 010510	**Sequence No:**	100
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/5/2010 10:42 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



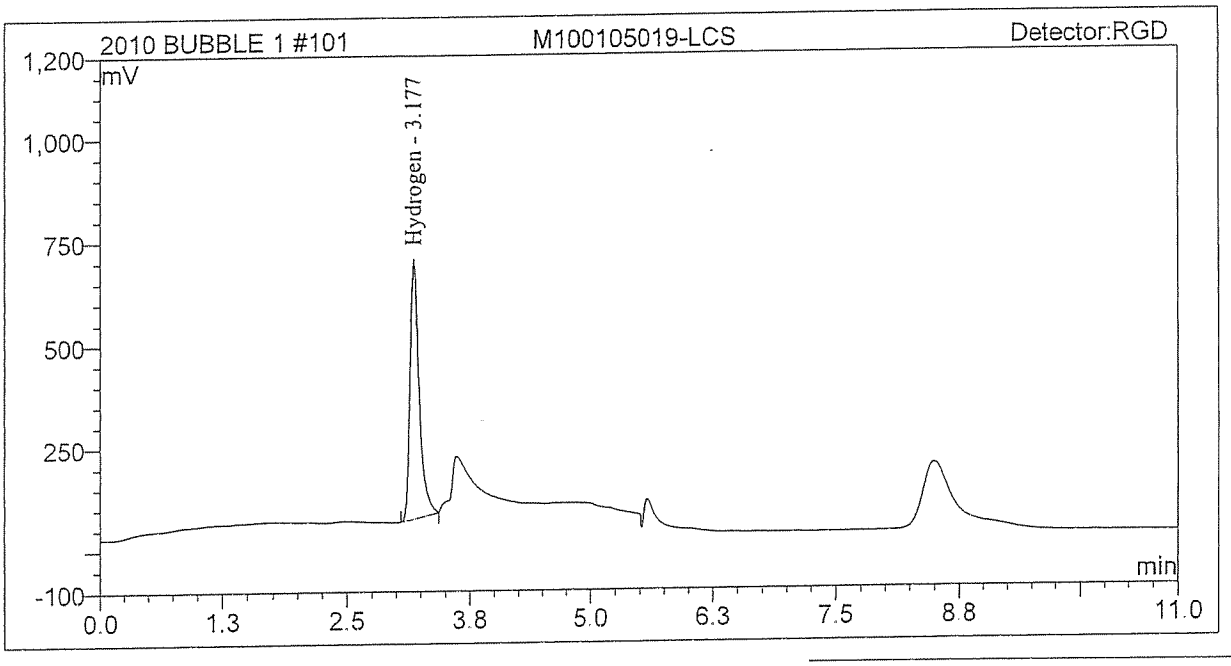
MICROSEEPS

Sample Analysis Report

Sample Name:	M100105019-LCS	**Sequence No:**	101
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/5/2010 11:04 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.177	69.176	630.443	BMB	9.752	11.2520

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



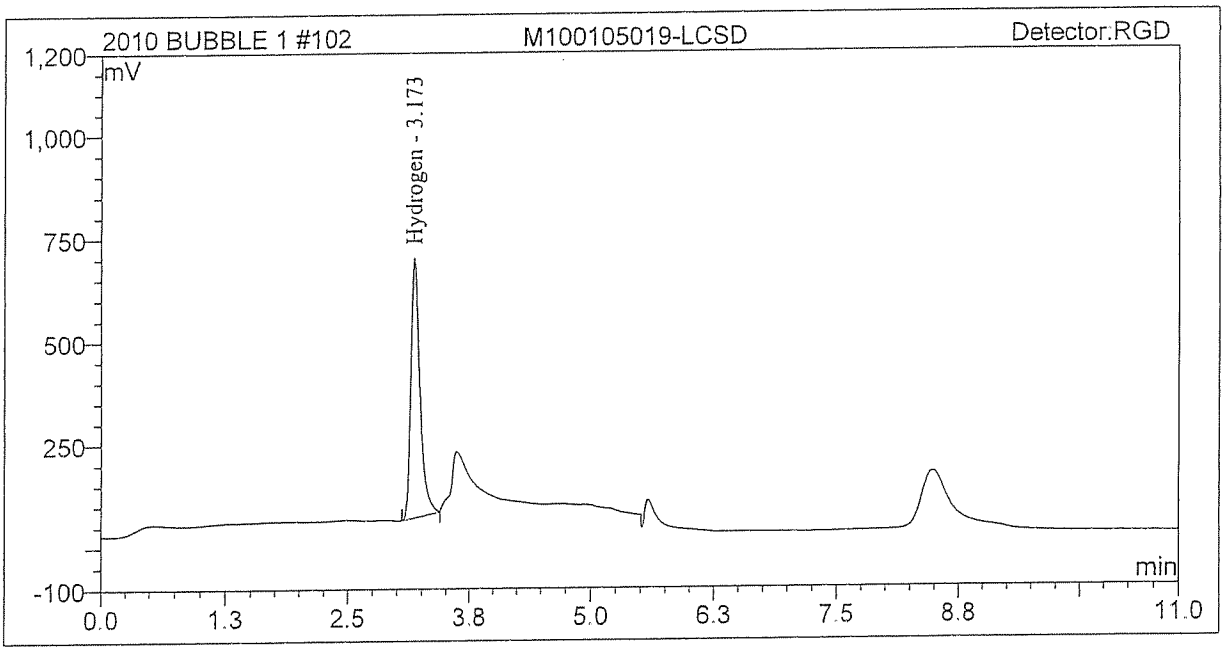
MICROSEEPS

Sample Analysis Report

Sample Name:	M100105019-LCSD	**Sequence No:**	102
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/5/2010 11:19 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.173	68.546	630.001	BMB	9.752	11.1496

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



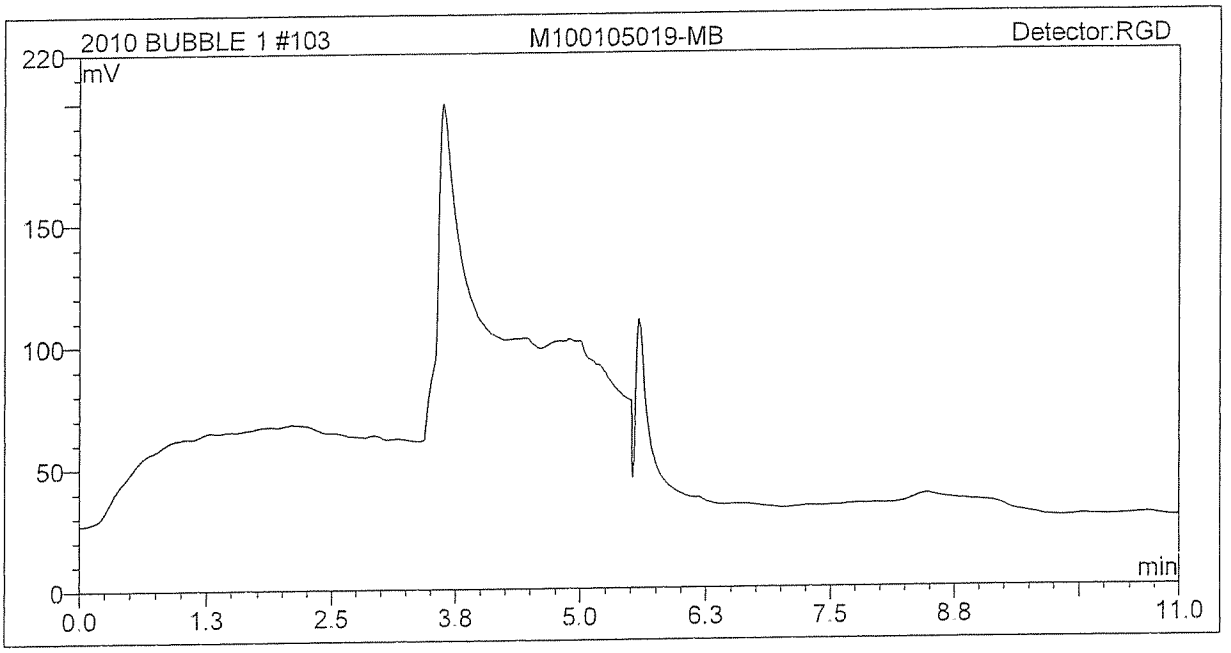
MICROSEEPS

Sample Analysis Report

Sample Name:	M100105019-MB	**Sequence No:**	103
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/5/2010 11:32 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



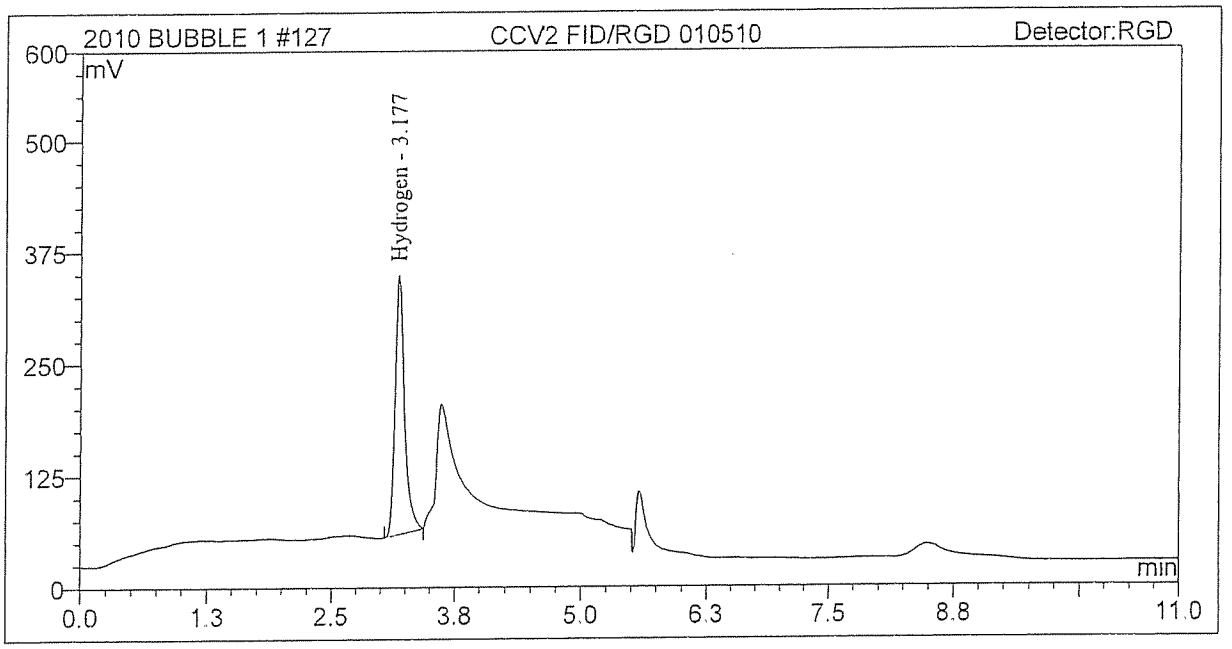
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 010510	**Sequence No:**	127
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/5/2010 5:37 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.177	32.008	289.340	BMB	5.148	5.2063

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



MICROSEEPS

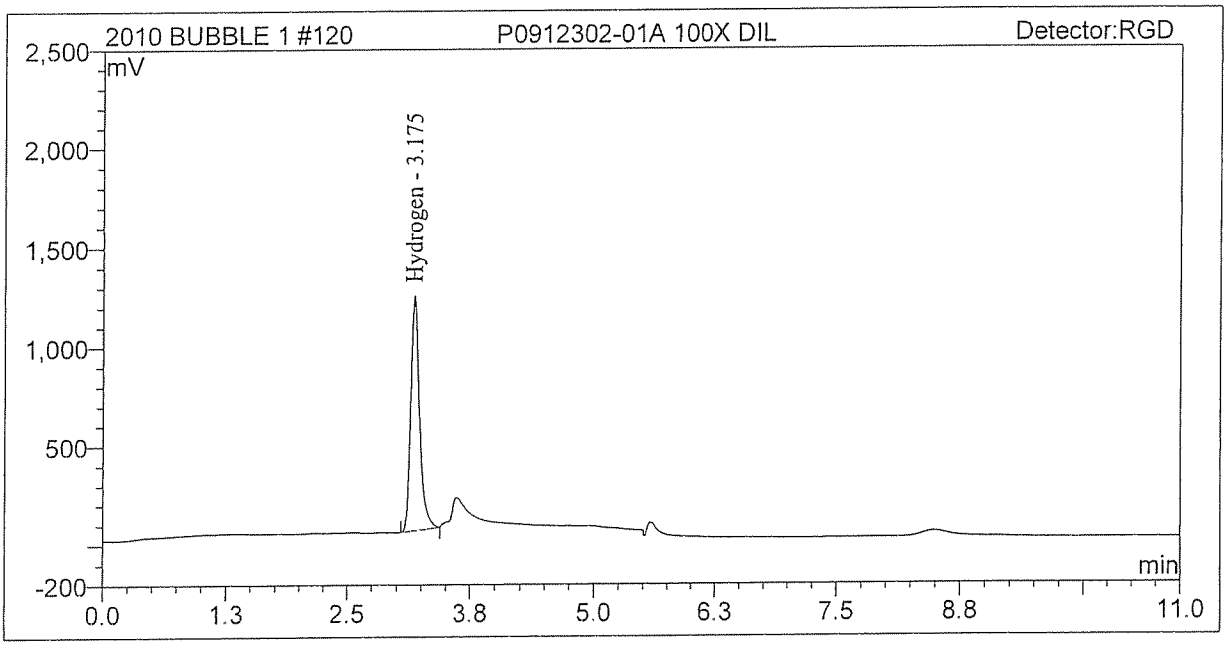
Sample Analysis Report

Sample Name:	P0912302-01A 100X DIL	**Sequence No:**	120
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/5/2010 4:07 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.175	122.427	1187.466	BMB	19.9139

X100

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



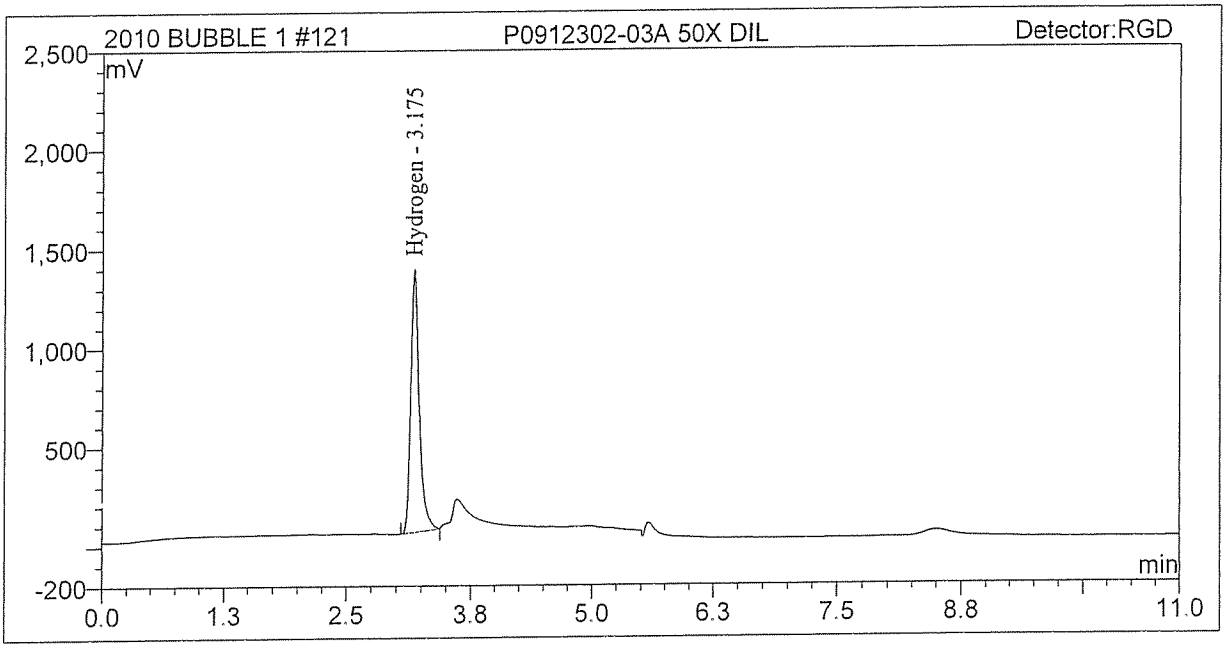
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-03A 50X DIL	**Sequence No:**	121
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/5/2010 4:19 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.175	134.119	1326.967	BMB	21.8157 x50

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



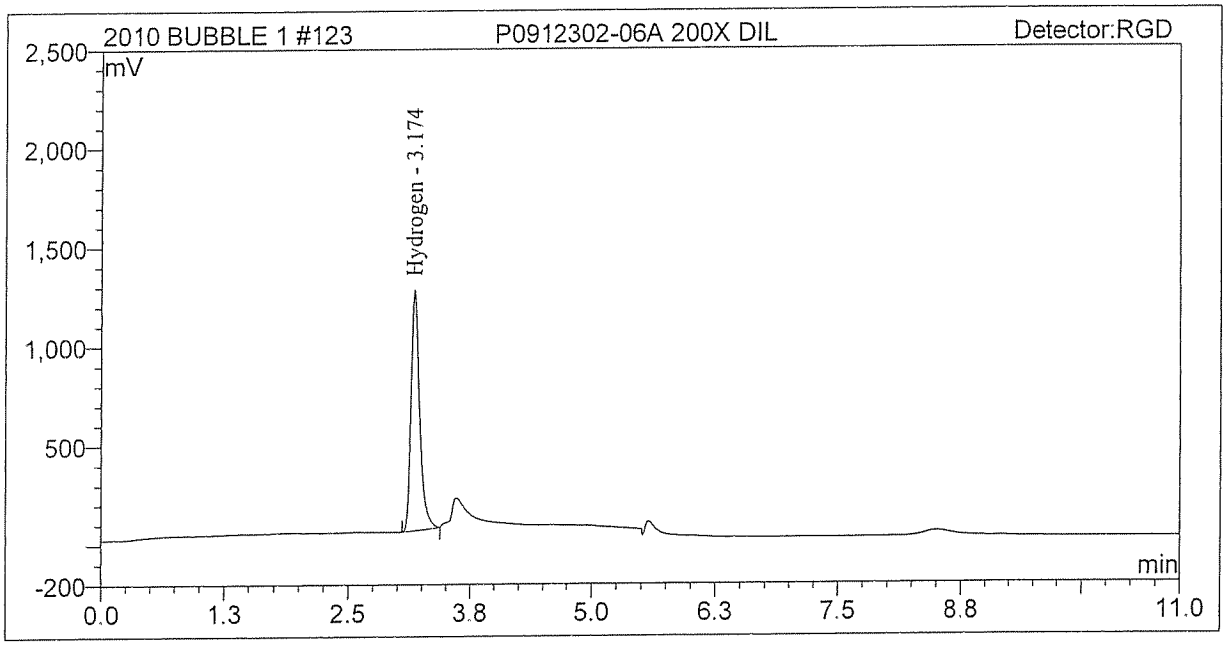
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-06A 200X DIL	**Sequence No:**	123
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/5/2010 4:47 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.174	124.377	1213.363	BMB	20.2311 x200

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



MICROSEEPS

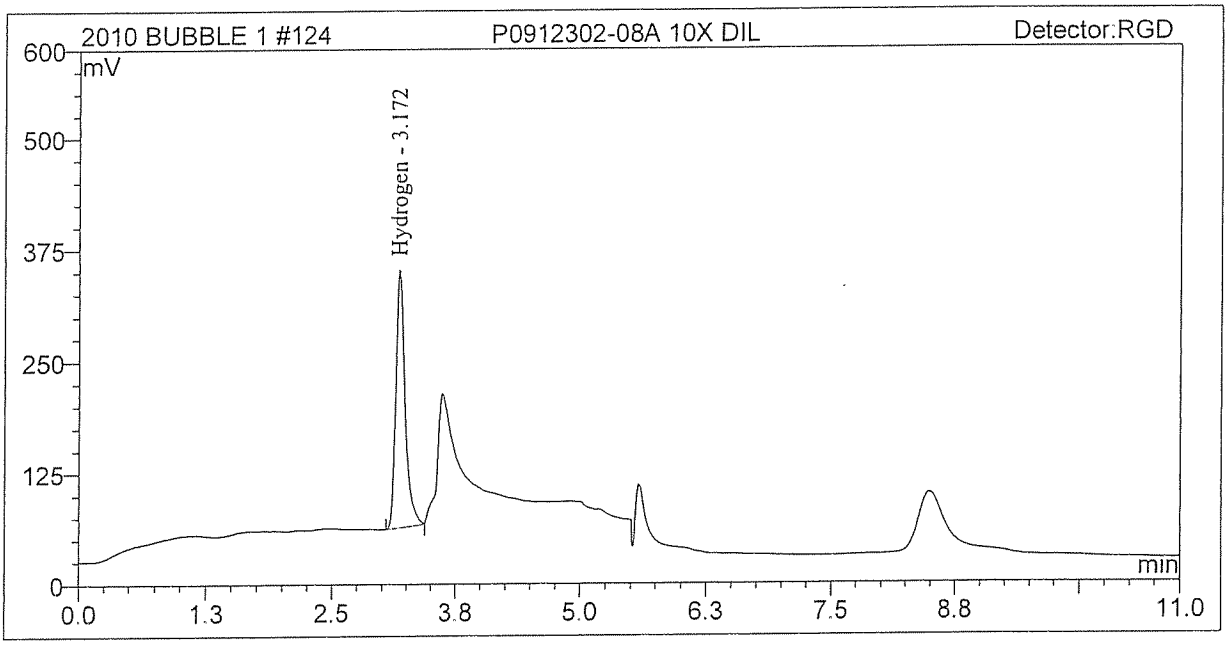
Sample Analysis Report

Sample Name:	P0912302-08A 10X DIL	**Sequence No:**	124
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/5/2010 5:00 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.172	31.700	288.476	BMB	5.1563

X10

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



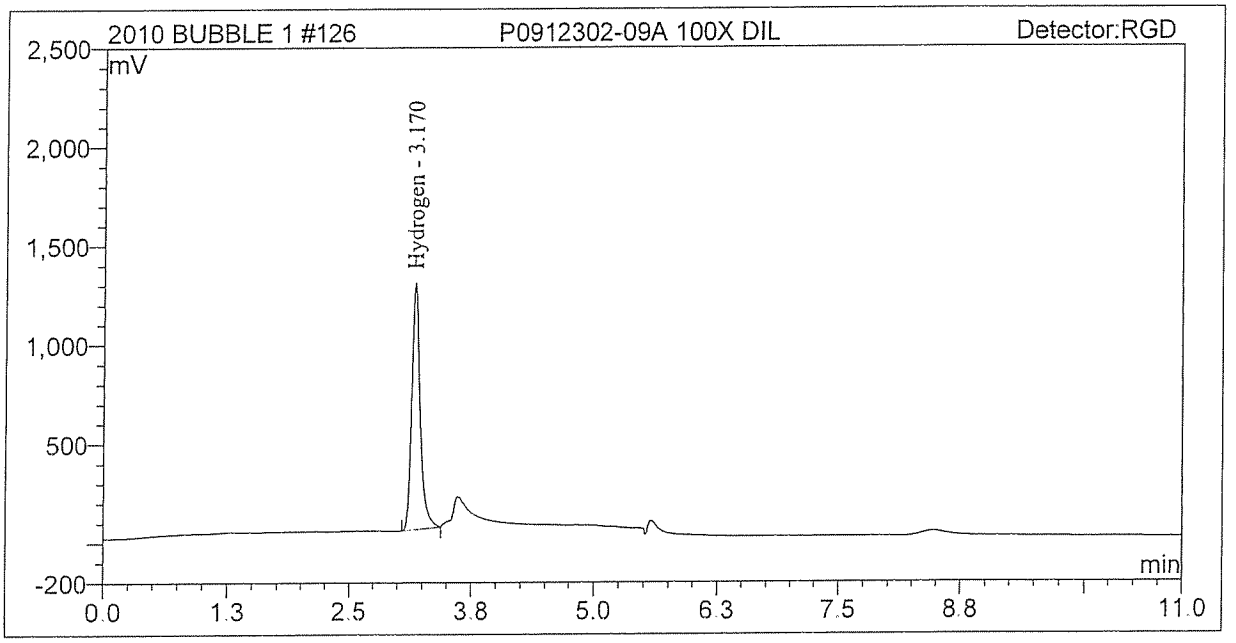
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-09A 100X DIL	**Sequence No:**	126
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/5/2010 5:24 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.170	127.047	1244.131	BMB	20.6654 X100

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100106027 - Hc
028 - LHC

Original Run Date: 1-6-10

Sample numbers:
P0912183 - (1-2) DIL's
P0912235 - (20) DIL
P0912228 - (3) DIL's
P0912302 - (2,10,15,19) DIL's / FDP -
P0912303 - (5,8,9,10) DIL's / FDP
P0912278 - (3-4) DIL's
P0912168 - (4,5,8)

Matrix: Bubble Strip

Out of Control Event: (attach another page, if necessary)

None

Corrective Action Taken:

Result:

Observations to support use of data: (Note any occurrences of manual integration here)

The samples listed below required manual integration to repair baseline inaccuracies

P0912183 - (1,2)
P0912235 - (20)
P0912228 - (1,3)

Analyzed & Reviewed by: [signature] Date: 010610
Manual Integration Conducted? (YES) NO
(Circle One)
Reviewed by: _____ Date: _____
Reviewed & Entered by: Upload Date: 010710
Reviewed by: _____ Date: _____
Corrected by: _____ Date: _____

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

_____ _____
Signature Lead Analyst or Lab. Mgr. Date

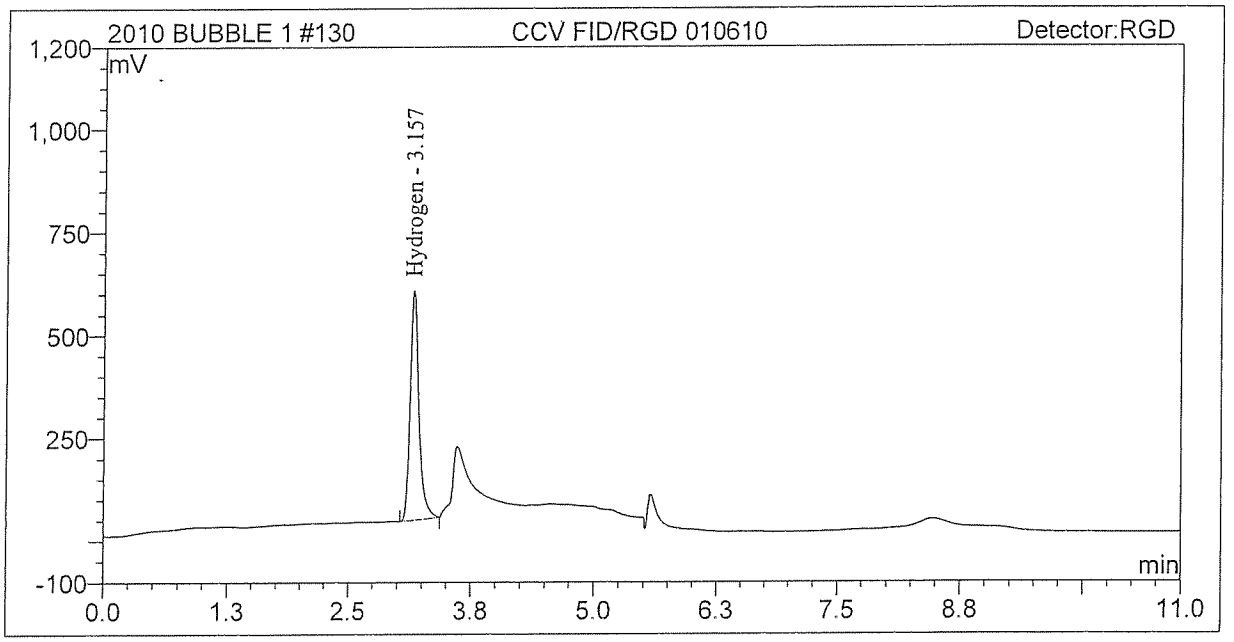
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 010610	**Sequence No:**	130
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 9:47 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.157	58.801	558.389	BMB	10.296	9.5646

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



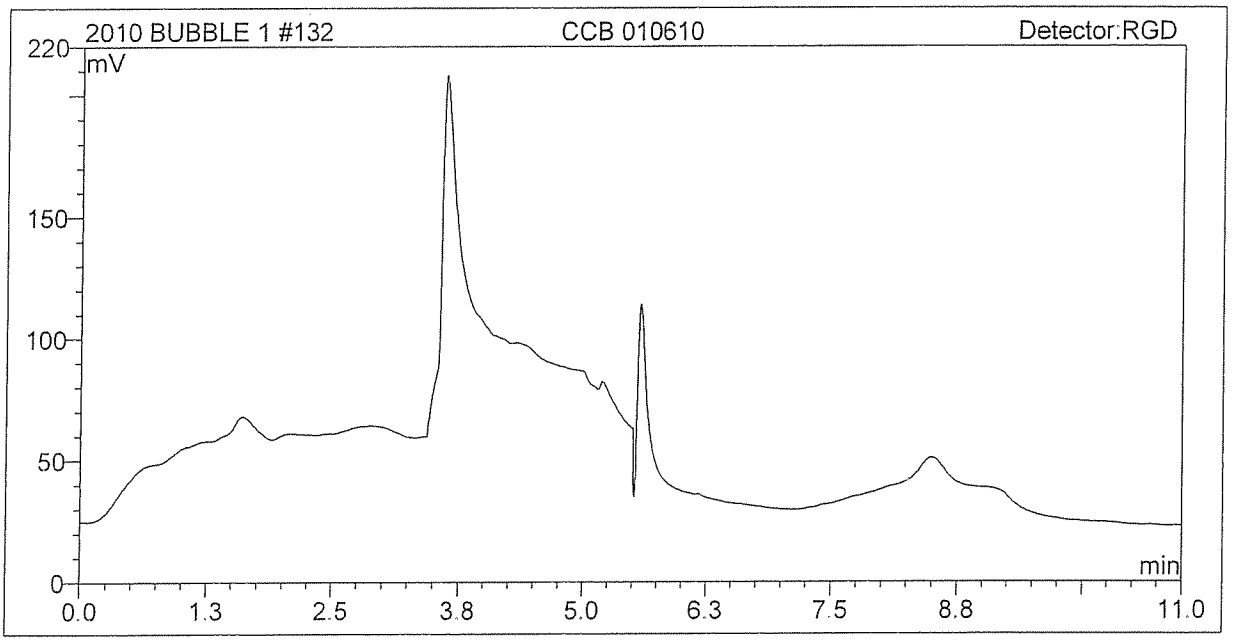
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 010610	**Sequence No:**	132
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 10:22 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



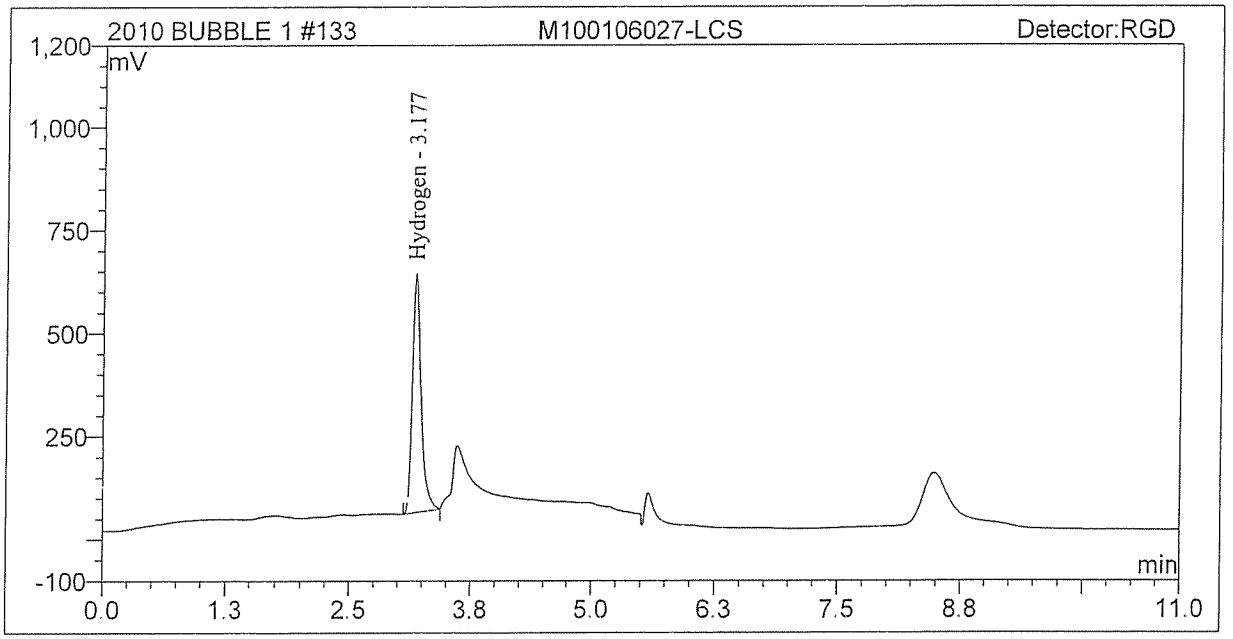
MICROSEEPS

Sample Analysis Report

Sample Name:	M100106027-LCS	**Sequence No:**	133
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 10:46 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.177	61.324	577.871	BMB	9.782	9.9749

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



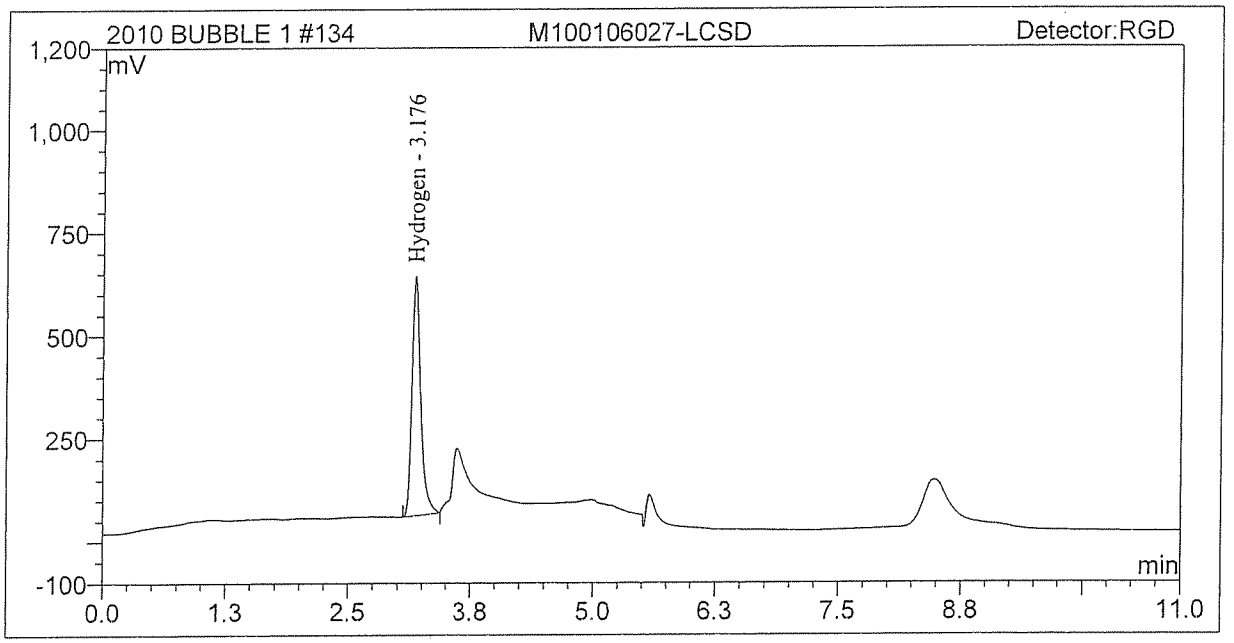
MICROSEEPS

Sample Analysis Report

Sample Name:	M100106027-LCSD	**Sequence No:**	134
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 10:58 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.176	61.670	580.234	BMB	9.782	10.0311

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



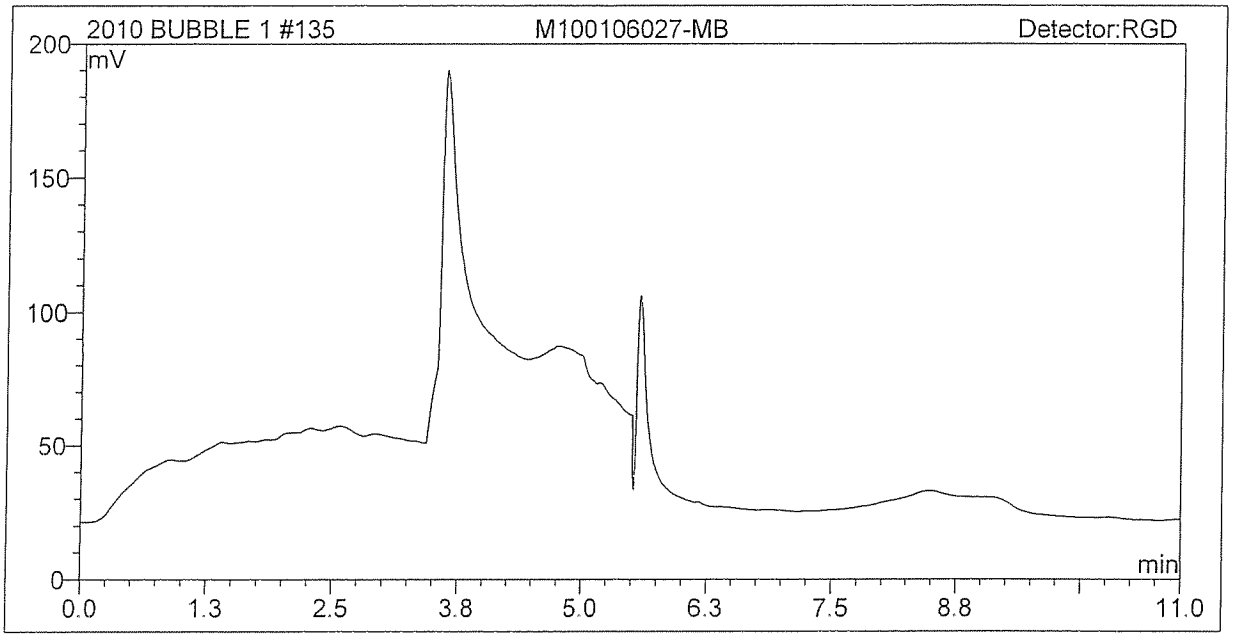
MICROSEEPS

Sample Analysis Report

Sample Name:	M100106027-MB	**Sequence No:**	135
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 11:16 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



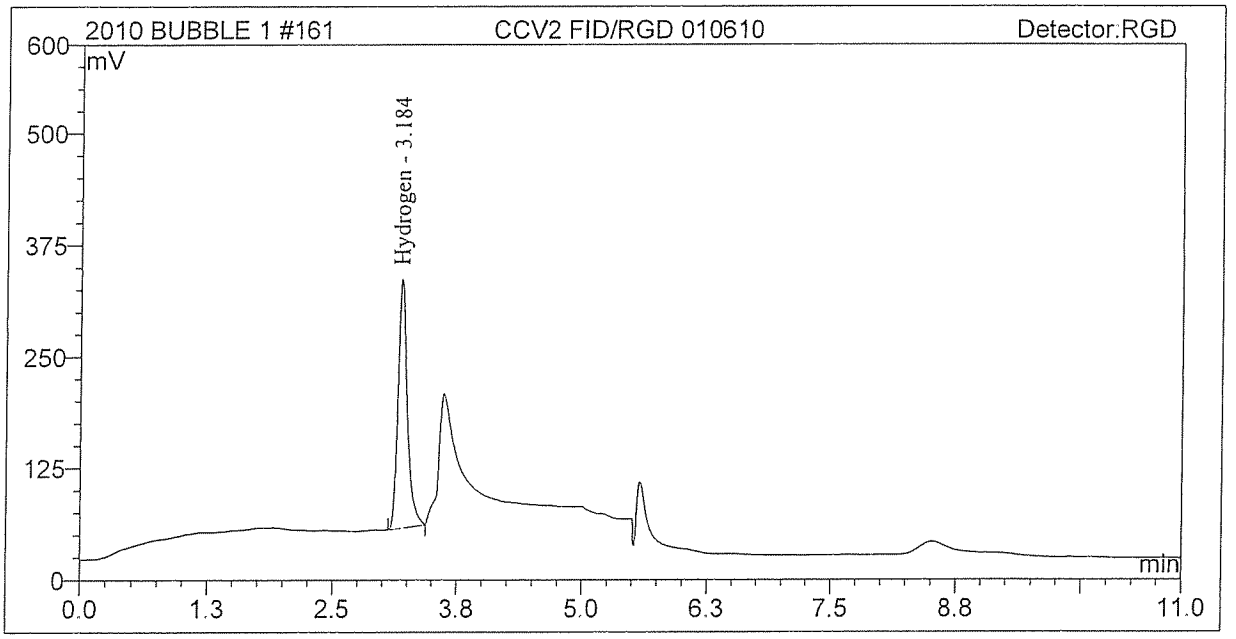
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 010610	**Sequence No:**	161
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 5:44 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.184	30.560	279.385	BMB	5.148	4.9709

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



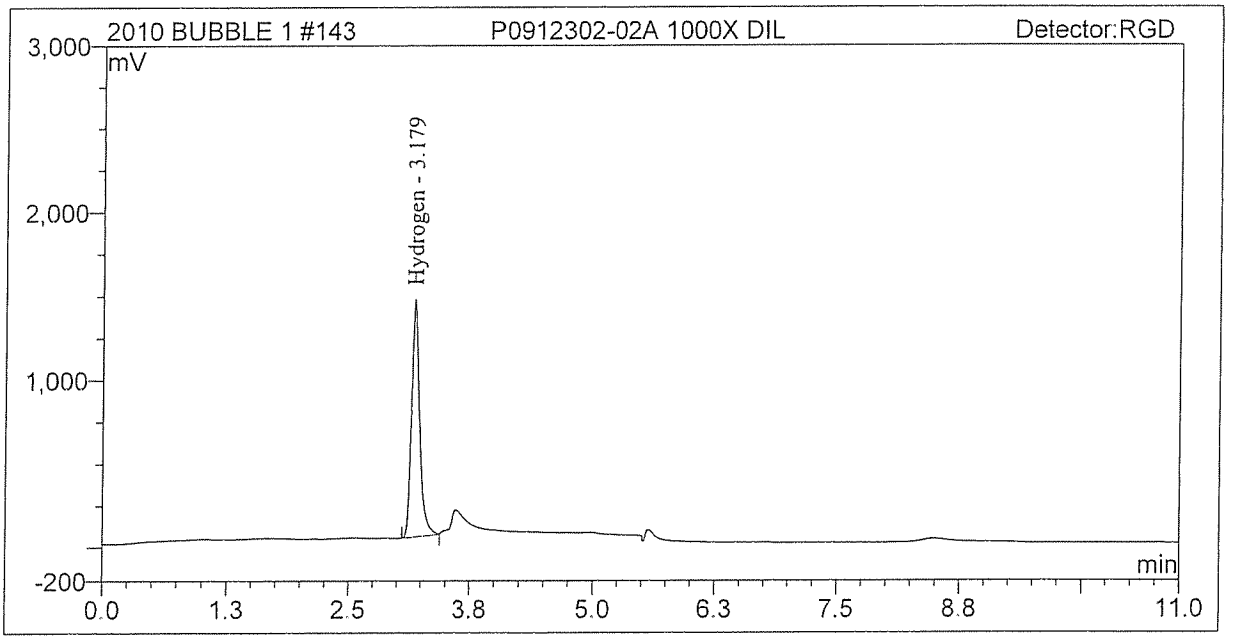
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912302-02A 1000X DIL	**Sequence No:**	143
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 1:17 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.179	140.694	1420.566	BMB	22.8851 x 1000

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



MICROSEEPS

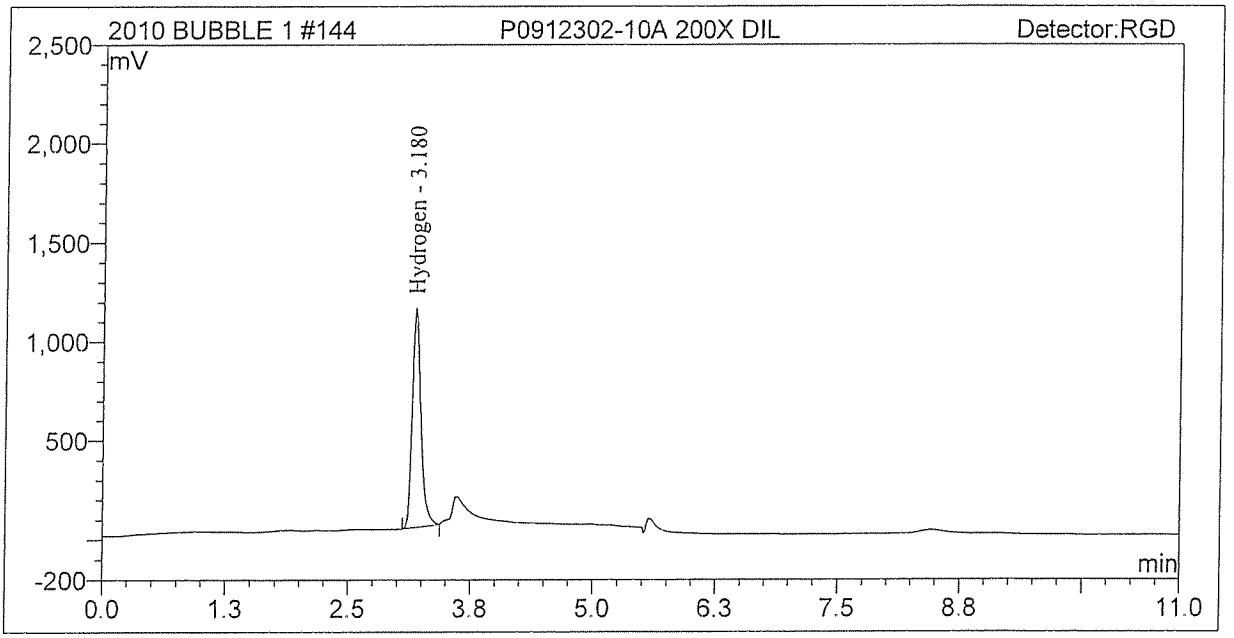
Sample Analysis Report

Sample Name:	P0912302-10A 200X DIL	**Sequence No:**	144
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 1:35 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.180	113.988	1107.771	BMB	18.5411

X 200

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



MICROSEEPS

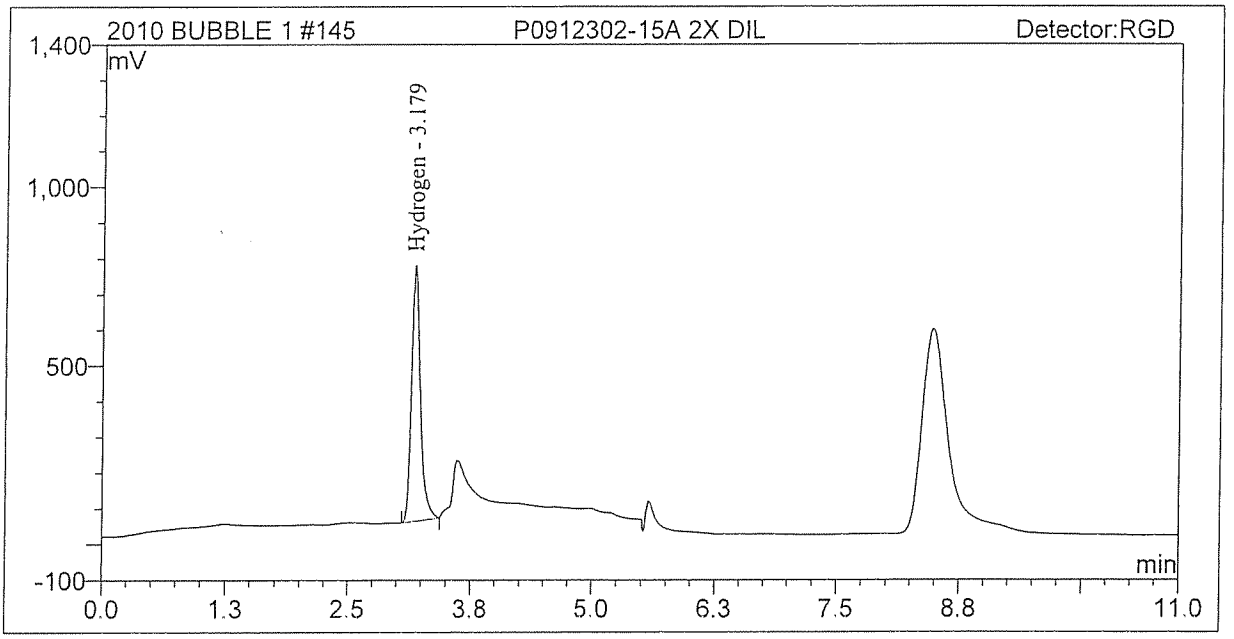
Sample Analysis Report

Sample Name:	P0912302-15A 2X DIL	**Sequence No:**	145
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 1:47 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.179	75.699	716.753	BMB	12.3130

X2

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



MICROSEEPS

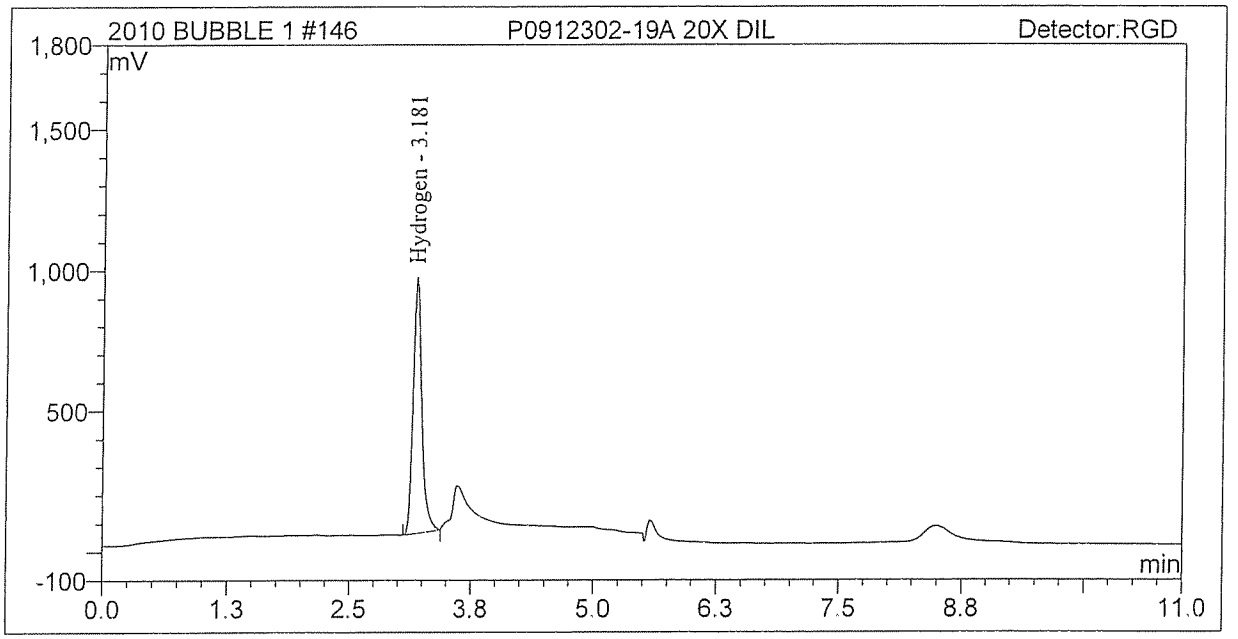
Sample Analysis Report

Sample Name:	P0912302-19A 20X DIL	**Sequence No:**	146
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 2:00 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.181	95.007	910.091	BMB	15.4537

x 20

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26060

CHAIN-OF-CUSTODY RECORD

pg 1 of 2

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1042720
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106-3210-020
SAMPLER NAME: AK, FS, IW	AIRBILL NUMBER: 7982 3784 3360
PROJECT CONTACT: DANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: MICROSEEPS

LABORATORY ID (FOR LABORATORY): R0912303

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: DISS. HYDROGEN, AMZOCAX

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISS. HYDROGEN	AMZOCAX	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R2-022	12/17/09	1030	1	X		W	10	X			2U1-MW05A2	10	20	N
20-R2-023	12/15/09	1425	1	X		W	10	X			2U1-MW05A3	20	30	N
20-R2-024	12/15/09	1235	1	X		W	10	X			2U1-MW05B	30	40	N
20-R2-025	12/15/09	1135	1	X		W	10	X			2U1-MW05C	40	50	N
20-R2-026	12/14/09	1200	1	X		W	10	X			2U1-MW06A2	10	20	N
20-R2-027	12/15/09	925	1	X		W	10	X			2U1-MW06A3	20	30	N
20-R2-029	12/14/09	1425	1	X		W	10	X			2U1-MW06B	30	40	N
20-R2-030	12/14/09	1030	1	X		W	10	X			2U1-MW06C	40	50	N
20-R2-031	12/17/09	950	1	X		W	10	X			2U1-MW07A2	10	20	N
20-R2-032	12/17/09	1330	1	X		W	10	X			2U1-MW07A3	20	30	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/18/09	FEDEX
COMPANY: BTS	TIME: 1200	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26064

CHAIN-OF-CUSTODY RECORD

pg 2 of 2

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1042720
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106-3210.020
SAMPLER NAME: AK, FS, IW	AIRBILL NUMBER: 7982 3784 3360
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: MKPOSEEPS

LABORATORY ID (FOR LABORATORY): P0912303

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: DASS, HYDROCARB, AMTO, GAX

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DASS	HYDROCARB	AMTO	GAX	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R7-033	12/17/09	1175	1		X	W	10	X					ZU1-MW07B	30	40	N
20-R7-034	12/17/09	1220	1	X		W	10	X					ZU1-MW07C	40	50	N
20-R7-035	12/18/09	755	1	X		W	10	X					DX3-04	47	57	N
20-R7-036	12/18/09	855	1	X		W	10	X					372-MW1	2.5	12.5	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/18/09	FEDEX
COMPANY: BTS	TIME: 1200	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

microseeps
From insight comes solutions

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 1 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Laboratory Results

Total pages in data package: 103

Lab Sample #	Client Sample ID
P0912303-01	20-R2-022
P0912303-02	20-R2-023
P0912303-03	20-R2-024
P0912303-04	20-R2-025
P0912303-05	20-R2-026
P0912303-06	20-R2-027
P0912303-07	20-R2-029
P0912303-08	20-R2-030
P0912303-09	20-R2-031
P0912303-10	20-R2-032
P0912303-11	20-R2-033
P0912303-12	20-R2-034
P0912303-13	20-R2-035
P0912303-14	20-R2-036

Microseeps test results meet all the requirements of the NELAC standards or provide reasons and/or justification if they do not.

Approved By: Debbie Hallo ***Date:*** 1-7-10

Project Manager: Debbie Hallo

The analytical results reported here are reliable and usable to the precision expressed in this report. As required by some regulating authorities, a full discussion of the uncertainty in our analytical results can be obtained at our web site or through customer service. Unless otherwise specified, all results are reported on a wet weight basis.

As a valued client we would appreciate your comments on our service.
Please call customer service at (412)826-5245 or email customerservice@microseeps.com.

Case Narrative:

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 2 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-022	Vapor	P0912303-01	17 Dec. 09 10:30	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.000	0.600	nM	AM20GAX	12/30/09	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 3 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-023	Vapor	P0912303-02	15 Dec. 09 14:25	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.000	0.600	nM	AM20GAX	1/4/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 4 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-024	Vapor	P0912303-03	15 Dec. 09 12:35	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		2.100	0.600	nM	AM20GAX	1/4/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 5 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-025	Vapor	P0912303-04	15 Dec. 09 11:35	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.300	0.600	nM	AM20GAX	1/4/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 6 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-026	Vapor	P0912303-05	14 Dec. 09 12:00	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		2300.000	60.000	nM	AM20GAX	1/6/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 7 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-027	Vapor	P0912303-06	15 Dec. 09 9:25	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		0.910	0.600	nM	AM20GAX	1/4/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 8 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-029	Vapor	P0912303-07	14 Dec. 09 14:25	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.300	0.600	nM	AM20GAX	12/28/09	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 9 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-030	Vapor	P0912303-08	14 Dec. 09 10:30	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		320.000	12.000	nM	AM20GAX	1/6/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 10 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-031	Vapor	P0912303-09	17 Dec. 09 9:50	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		73000.000	3000.000	nM	AM20GAX	1/6/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 11 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-032	Vapor	P0912303-10	17 Dec. 09 13:30	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		73.000	6.000	nM	AM20GAX	1/6/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 12 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-033	Vapor	P0912303-11	17 Dec. 09 11:25	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		6.300	0.600	nM	AM20GAX	1/4/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 13 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-034	Vapor	P0912303-12	17 Dec. 09 12:20	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		3.000	0.600	nM	AM20GAX	1/4/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 14 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-035	Vapor	P0912303-13	18 Dec. 09 7:55	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.400	0.600	nM	AM20GAX	1/4/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 15 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R2-036	Vapor	P0912303-14	18 Dec. 09 8:55	21 Dec. 09 14:44

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.600	0.600	nM	AM20GAX	1/4/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 16 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip
Analysis Method: Hydrogen by Bubble Strip

M091230026-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M091230026-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125

M091230026-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125	0.00	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 17 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip

Analysis Method: Hydrogen by Bubble Strip

M100104010-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100104010-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	9.700	nM	9.78	99.00	75 - 125

M100104010-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	9.800	nM	9.78	100.00	75 - 125	1.03	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 18 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip

Analysis Method: Hydrogen by Bubble Strip

M100105017-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100105017-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125

M100105017-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125	0.00	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 19 of 19
Lab Proj #: P0912303
Report Date: 01/07/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip

Analysis Method: Hydrogen by Bubble Strip

M100106027-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100106027-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	10.000	nM	9.78	102.00	75 - 125

M100106027-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	10.000	nM	9.78	102.00	75 - 125	0.00	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Chain of Custody Documents

P0912303

NUMBER 26960

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: CTO 20 ALAMEDA	PURCHASE ORDER NO: 1042720
PROJECT LOCATION: ALAMEDA	PROJECT NO: 106-3210-020
SAMPLER NAME: AK, FS, IW	AIRBILL NUMBER: 7982 3784 3360
PROJECT CONTACT: DANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

ANALYSES REQUIRED: PCB's (8082) by EPA 8082

LABORATORY NAME: MICROSEEPS

LABORATORY ID (FOR LABORATORY):

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	PCB's (8082) by EPA 8082	COMMENTS
20-R2-022	12/15/09	1030	1	X		W	10	X	
20-R2-023	12/15/09	1425	1	X		W	10	X	
20-R2-024	12/15/09	1235	1	X		W	10	X	
20-R2-025	12/15/09	1125	1	X		W	10	X	
20-R2-026	12/15/09	1700	1	X		W	10	X	
20-R2-027	12/15/09	925	1	X		W	10	X	
20-R2-029	12/15/09	1425	1	X		W	10	X	
20-R2-030	12/15/09	1030	1	X		W	10	X	
20-R2-031	12/15/09	950	1	X		W	10	X	
20-R2-032	12/15/09	1330	1	X		W	10	X	

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/16/09	FEDEX
COMPANY: BTS	TIME: 1200	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

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TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26064

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: CTO 20 ALAMEDA	PURCHASE ORDER NO.: 1042720
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106-3210.020
SAMPLER NAME: AK, FS, IW	AIRBILL NUMBER: 7982 3784 3360
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: MICROSEEPS

LABORATORY ID (FOR LABORATORY):

ANALYSES REQUIRED: DISS. HYDROGEN, AMMO GAS

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISS. HYDROGEN	AMMO GAS	COMMENTS
11	20-RZ-033	12/17/09	1125	1		X	W	10	X		
12	20-RZ-034	12/17/09	1220	1	X		W	10	X		
13	20-RZ-035	12/18/09	755	1	X		W	10	X		
14	20-RZ-036	12/18/09	855	1	X		W	10	X		

RELINQUISHED BY (Signature): [signature]	DATE: 12/18/09	RECEIVED BY (Signature): FEDEX	LABORATORY INSTRUCTIONS/COMMENTS
COMPANY: TTS	TIME: 1200	COMPANY:	
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	COMPOSITE DESCRIPTION
COMPANY:	TIME:	COMPANY:	
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
COMPANY:	TIME:	COMPANY:	TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

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Hydrogen Data

Method File: BUBBLE102009
Operator: slyon

12303

Printed: 12/31/2009 12:16:25 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Window	Standard	Int.Type	Cal.Type
1	Methane	0.645 min	0.645 min			0.200 AN	External	Area	LOff
2	Ethane	0.908 min	0.908 min			0.200 AN	External	Area	Lin
3	Ethene	1.155 min	1.155 min			0.200 AN	External	Area	Lin
4	Propane	1.785 min	1.785 min			0.200 AN	External	Area	Lin
5	*Hydrogen*	*3.210 min*			*3.210 min*	*0.200 AN*	*External*	*Area*	*Lin*
6	Propene	3.284 min	3.284 min			0.200 AN	External	Area	Lin
7	Carbon Dioxide	4.200 min		4.200 min		0.500 AN	External	Area	Lin
8	iso-Butane	4.560 min	4.560 min			0.500 AN	External	Area	Lin
9	n-Butane	5.310 min	5.310 min			0.500 AN	External	Area	Lin
10	Oxygen	5.870 min		5.870 min		0.300 AN	External	Area	Lin
11	Nitrogen	6.260 min		6.260 min		0.300 AN	External	Area	Lin
12	Acetylene	6.600 min	6.600 min			0.500 AN	External	Area	Lin
13	Methane	7.560 min		7.560 min		0.400 AN	External	Area	Lin
14	Carbon Monoxide	8.450 min		8.450 min		0.400 AN	External	Area	Lin
15	Carbon Monoxide	8.600 min			8.600 min	0.400 AN	External	Area	Lin

Chromeleon © Dionex Corporation, Version 6.80 SR5 Build 2413 (137116)

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4 SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Peak Type	Group	Comment
1	Methane	0.645 min	Auto		
2	Ethane	0.908 min	Auto		
3	Ethene	1.155 min	Auto		
4	Propane	1.785 min	Auto		
5	*Hydrogen*	*3.210 min*	*Auto*		
6	Propene	3.284 min	Auto		
7	Carbon Dioxide	4.200 min	Auto		
8	iso-Butane	4.560 min	Auto		
9	n-Butane	5.310 min	Auto		
10	Oxygen	5.870 min	Auto		
11	Nitrogen	6.260 min	Auto		
12	Acetylene	6.600 min	Auto		
13	Methane	7.560 min	Auto		
14	Carbon Monoxide	8.450 min	Auto		
15	Carbon Monoxide	8.600 min	Auto		

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Amount ICAL Acetylene L5	Amount ICAL Acetylene L4
1	Methane	0.645 min	0.645 min				
2	Ethane	0.908 min	0.908 min				
3	Ethene	1.155 min	1.155 min				
4	Propane	1.785 min	1.785 min				
5	*Hydrogen*	*3.210 min*			*3.210 min*		
6	Propene	3.284 min	3.284 min				
7	Carbon Dioxide	4.200 min		4.200 min			
8	iso-Butane	4.560 min	4.560 min				
9	n-Butane	5.310 min	5.310 min				
10	Oxygen	5.870 min		5.870 min			
11	Nitrogen	6.260 min		6.260 min			
12	Acetylene	6.600 min	6.600 min			0.529000	2.648000
13	Methane	7.560 min		7.560 min			
14	Carbon Monoxide	8.450 min		8.450 min			
15	Carbon Monoxide	8.600 min			8.600 min		

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL Acetylene L3	Amount ICAL Acetylene L2	Amount ICAL Acetylene L1	Amount ICAL FID L8	Amount ICAL FID L7
1	Methane	0.645 min				0.002280	0.007120
2	Ethane	0.908 min				0.005880	0.018300
3	Ethene	1.155 min				0.013800	0.043300
4	Propane	1.785 min				0.006640	0.020700
5	*Hydrogen*	*3.210 min*					
6	Propene	3.284 min				0.019800	0.062100
7	Carbon Dioxide	4.200 min					
8	iso-Butane	4.560 min				0.004950	0.015400
9	n-Butane	5.310 min				0.006190	0.019300
10	Oxygen	5.870 min					
11	Nitrogen	6.260 min					
12	Acetylene	6.600 min	13.240000	66.200000	264.800000		
13	Methane	7.560 min					
14	Carbon Monoxide	8.450 min					
15	Carbon Monoxide	8.600 min					

Method File: BUBBLE102009
Operator: slyon

Printed: 12/31/2009 12:16:25 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL FID L6	Amount ICAL FID L5	Amount ICAL FID L4	Amount ICAL FID L3	Amount ICAL FID L2	Amount ICAL FID L1	Amount ICAL H2 L7
1	Methane	0.645 min	0.028500	0.114000	0.456000	2.280000	11.402000	57.011000	
2	Ethane	0.908 min	0.073500	0.294000	1.176000	5.880000	29.403000	147.016000	
3	Ethene	1.155 min	0.173000	0.693000	2.774000	13.870000	69.353000	346.766000	
4	Propane	1.785 min	0.083000	0.332000	1.328000	6.644000	33.220000	166.100000	
5	*Hydrogen*	*3.210 min*							*0.396000*
6	Propene	3.284 min	0.248000	0.993000	3.975000	19.877000	99.388000	496.942000	
7	Carbon Dioxide	4.200 min							
8	iso-Butane	4.560 min	0.061800	0.247000	0.990000	4.951000	24.756000	123.783000	
9	n-Butane	5.310 min	0.077400	0.309000	1.238000	6.192000	30.961000	154.808000	
10	Oxygen	5.870 min							
11	Nitrogen	6.260 min							
12	Acetylene	6.600 min							
13	Methane	7.560 min							
14	Carbon Monoxide	8.450 min							
15	Carbon Monoxide	8.600 min							

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL H2 L6	Amount ICAL H2 L5	Amount ICAL H2 L4	Amount ICAL H2 L3	Amount ICAL RGD CO L3	Amount ICAL RGD CO L2
1	Methane	0.645 min						
2	Ethane	0.908 min						
3	Ethene	1.155 min						
4	Propane	1.785 min						
5	*Hydrogen*	*3.210 min*	*0.990000*	*3.960000*	*9.900000*	*19.800000*		
6	Propene	3.284 min						
7	Carbon Dioxide	4.200 min						
8	iso-Butane	4.560 min						
9	n-Butane	5.310 min						
10	Oxygen	5.870 min						
11	Nitrogen	6.260 min						
12	Acetylene	6.600 min						
13	Methane	7.560 min						
14	Carbon Monoxide	8.450 min						
15	Carbon Monoxide	8.600 min					0.100000	0.500000

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL RGD CO L1	Amount ICAL RGD CO L1A	Amount ICAL TCD L6	Amount ICAL TCD L5	Amount ICAL TCD L4
1	Methane	0.645 min					
2	Ethane	0.908 min					
3	Ethene	1.155 min					
4	Propane	1.785 min					
5	*Hydrogen*	*3.210 min*					
6	Propene	3.284 min					
7	Carbon Dioxide	4.200 min			2.196000	5.490000	10.980000
8	iso-Butane	4.560 min					
9	n-Butane	5.310 min					
10	Oxygen	5.870 min			0.015900	0.039900	0.079800
11	Nitrogen	6.260 min			0.051400	0.129000	0.257000
12	Acetylene	6.600 min					
13	Methane	7.560 min				23.580000	47.160000
14	Carbon Monoxide	8.450 min				0.046900	0.093800
15	Carbon Monoxide	8.600 min	2.000000	10.000000			

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL TCD L3	Amount ICAL TCD L2	Amount ICAL TCD L1
1	Methane	0.645 min			
2	Ethane	0.908 min			
3	Ethene	1.155 min			
4	Propane	1.785 min			
5	*Hydrogen*	*3.210 min*			
6	Propene	3.284 min			
7	Carbon Dioxide	4.200 min	54.900000	274.500000	549.000000
8	iso-Butane	4.560 min			
9	n-Butane	5.310 min			
10	Oxygen	5.870 min	0.399200	1.996000	3.992000
11	Nitrogen	6.260 min	1.286000	6.430000	12.860000
12	Acetylene	6.600 min			
13	Methane	7.560 min	235.800000	1179.000000	2358.000000
14	Carbon Monoxide	8.450 min	0.469000	2.345000	4.690000
15	Carbon Monoxide	8.600 min			

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2009 BUBBLE 4 SEQ

Created: 5/5/2004 12:45.44 PM by bcarnicelli
Last Update: 12/28/2009 12:15:59 PM by slyon

Calibration:

Calibration Mode: Total
Auto Recalibrate: On
Curve Fitting Model: Normal
Dual-Column Separate Calibration: Off

No.	Enabled	Name	Smp.No.	Pos.	Inj. Vol.	Weight	ISTD Amount	Dil. Factor	Inj. Date/Time
1	☒	ICAL Acetylene L5	1	3	20.0	1.0000	1.0000	1.0000	10/19/2009 10:32:27 AM
2	☒	ICAL Acetylene L4	2	4	20.0	1.0000	1.0000	1.0000	10/19/2009 10:44:48 AM
3	☒	ICAL Acetylene L3	3	5	20.0	1.0000	1.0000	1.0000	10/19/2009 10:57:25 AM
4	☒	ICAL Acetylene L2	4	6	20.0	1.0000	1.0000	1.0000	10/19/2009 11:09:48 AM
5	☒	ICAL Acetylene L1	5	7	20.0	1.0000	1.0000	1.0000	10/19/2009 11:22:07 AM
6	☒	ICAL FID L8	6	10	20.0	1.0000	1.0000	1.0000	10/19/2009 12:11:06 PM
7	☒	ICAL FID L7	7	11	20.0	1.0000	1.0000	1.0000	10/19/2009 12:30:57 PM
8	☒	ICAL FID L6	8	12	20.0	1.0000	1.0000	1.0000	10/19/2009 12:50:36 PM
9	☒	*ICAL FID L5*	*9*	*13*	*20.0*	*1.0000*	*1.0000*	*1.0000*	*10/19/2009 1:04:42 PM*
10	☒	ICAL FID L4	10	14	20.0	1.0000	1.0000	1.0000	10/19/2009 1:21:34 PM
11	☒	ICAL FID L3	11	15	20.0	1.0000	1.0000	1.0000	10/19/2009 1:37:49 PM
12	☒	ICAL FID L2	12	16	20.0	1.0000	1.0000	1.0000	10/19/2009 1:50:17 PM
13	☒	ICAL FID L1	13	17	20.0	1.0000	1.0000	1.0000	10/19/2009 2:03:02 PM
14	☒	ICAL TCD L6	16	33	20.0	1.0000	1.0000	1.0000	10/19/2009 5:35:41 PM
15	☒	ICAL TCD L5	17	34	20.0	1.0000	1.0000	1.0000	10/19/2009 5:48:26 PM
16	☒	ICAL TCD L4	18	35	20.0	1.0000	1.0000	1.0000	10/19/2009 6:01:02 PM
17	☒	ICAL TCD L3	19	36	20.0	1.0000	1.0000	1.0000	10/19/2009 6:16:31 PM
18	☒	ICAL TCD L2	20	37	20.0	1.0000	1.0000	1.0000	10/19/2009 6:28:51 PM
19	☒	ICAL TCD L1	21	38	20.0	1.0000	1.0000	1.0000	10/19/2009 6:41:18 PM
20	☒	ICAL H2 L7	25	1	20.0	1.0000	1.0000	1.0000	12/28/2009 10:57:53 AM
21	☒	ICAL H2 L6	26	2	20.0	1.0000	1.0000	1.0000	12/28/2009 11:10:23 AM
22	☒	ICAL H2 L5	27	3	20.0	1.0000	1.0000	1.0000	12/28/2009 11:23:19 AM
23	☒	ICAL H2 L4	28	4	20.0	1.0000	1.0000	1.0000	12/28/2009 11:39:19 AM
24	☒	ICAL H2 L3	29	5	20.0	1.0000	1.0000	1.0000	12/28/2009 11:51:38 AM

Hydrogen

Method AM20GAX

12/28/2009

No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square %	Offset	Slope	Curve
1	3.17	Hydrogen	Lin	5	99.967	0.00000	6.88136	0.00000

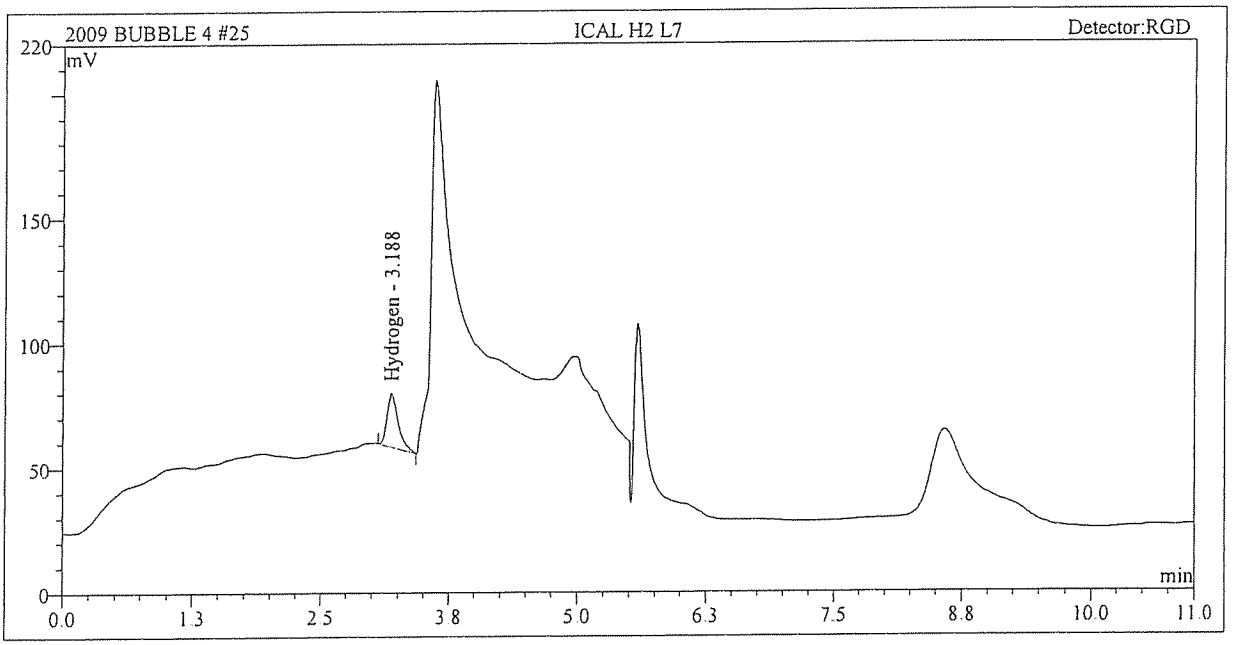
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L7	**Sequence No:**	25
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 10:57 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.188	2.703	21.543	BMB	0.3928

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



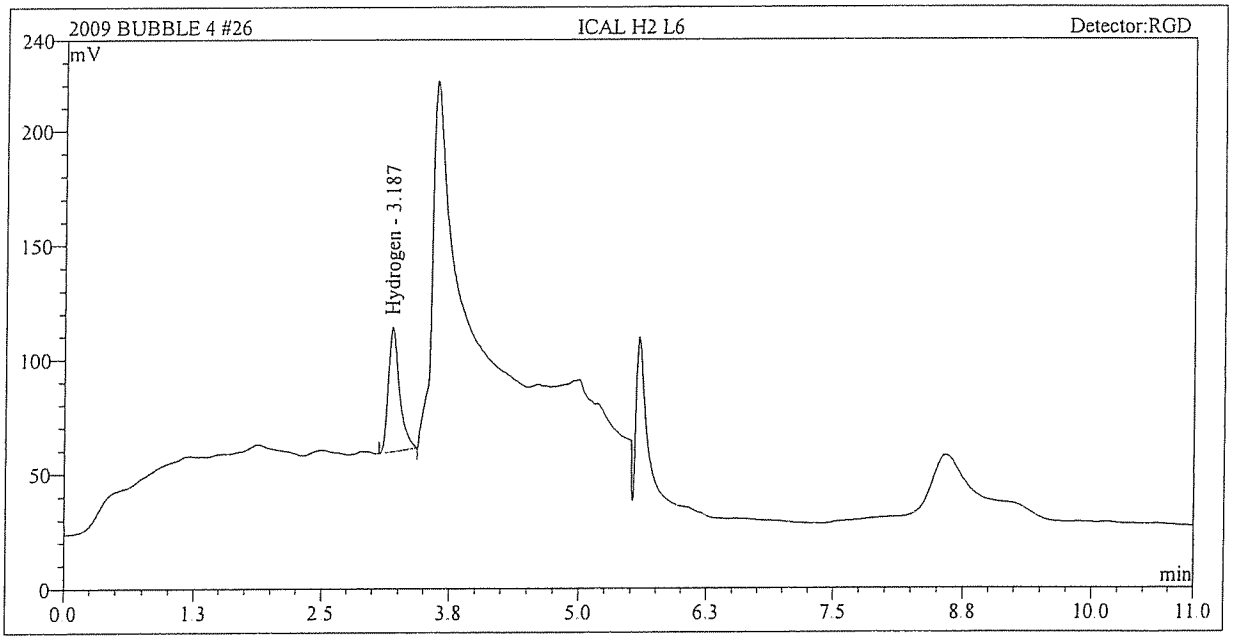
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L6	**Sequence No:**	26
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 11:10 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.187	6.878	54.686	BMB	0.9994

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



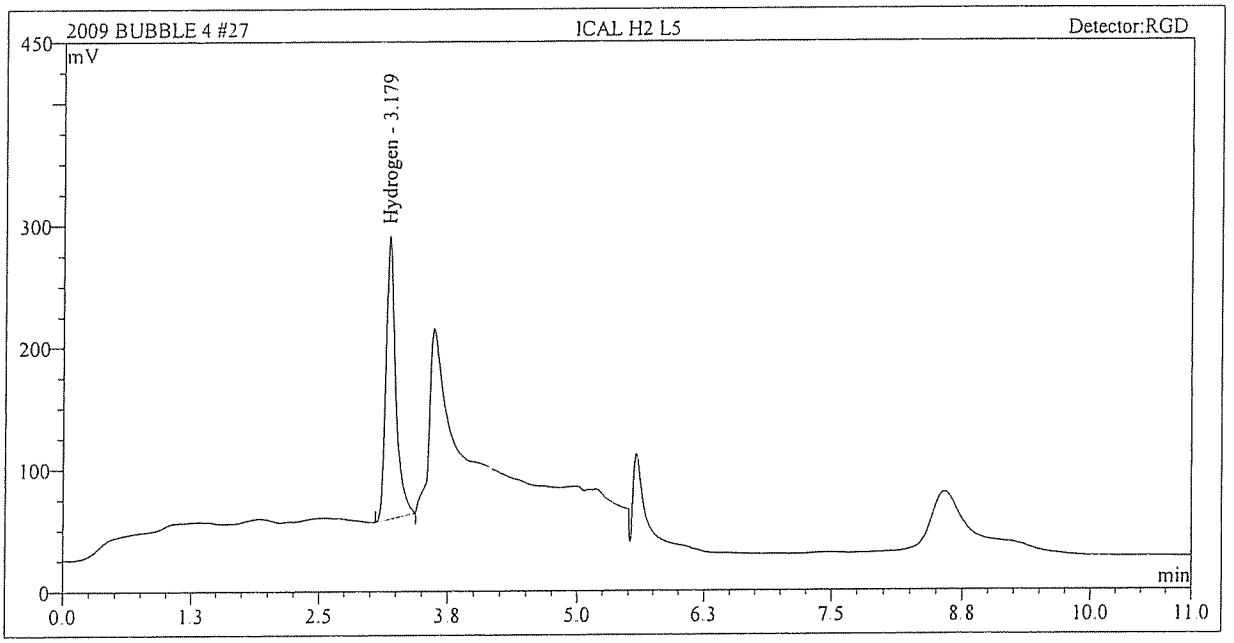
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L5	**Sequence No:**	27
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 11:23 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.179	26.081	231.856	BMB	3.7901

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



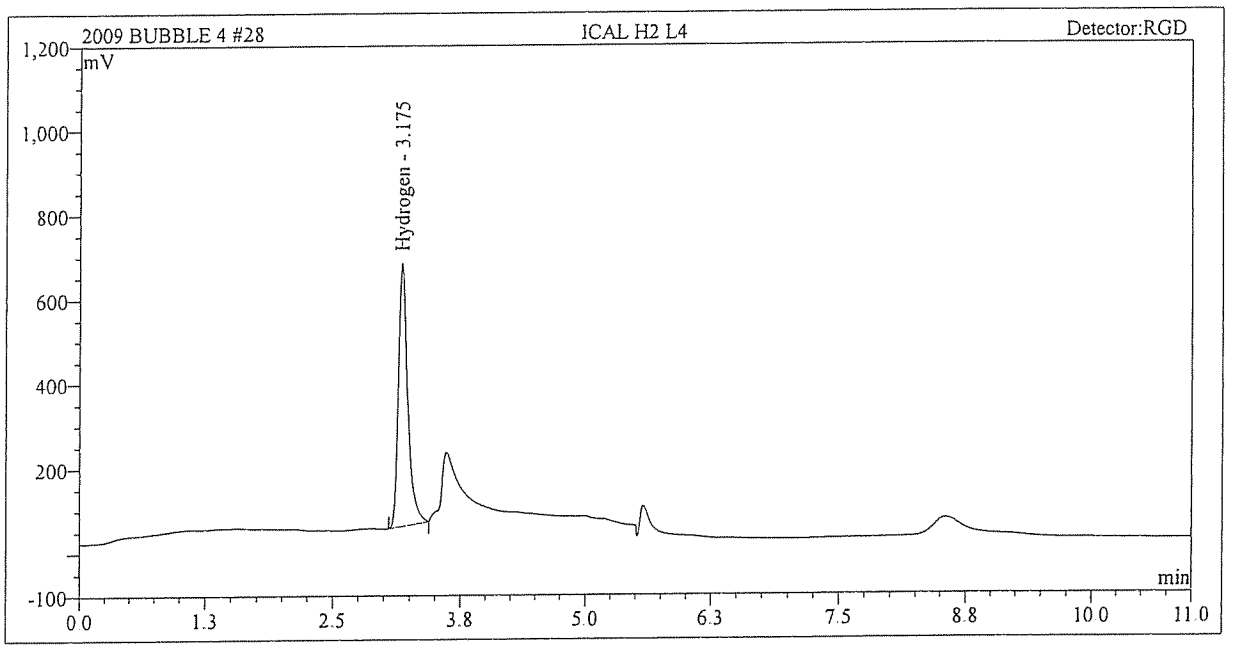
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L4	**Sequence No:**	28
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 11:39 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.175	66.747	622.525	BMB	9.6997

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



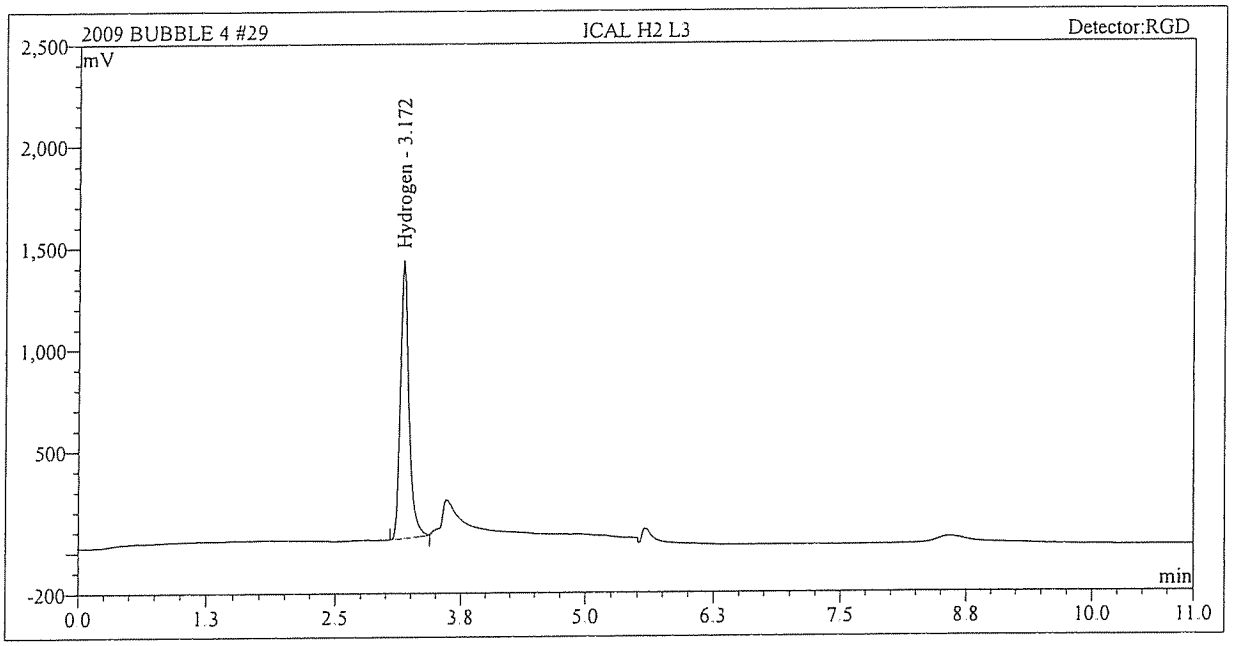
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L3	**Sequence No:**	29
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 11:51 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.172	137.171	1367.391	BMB	19.9337

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



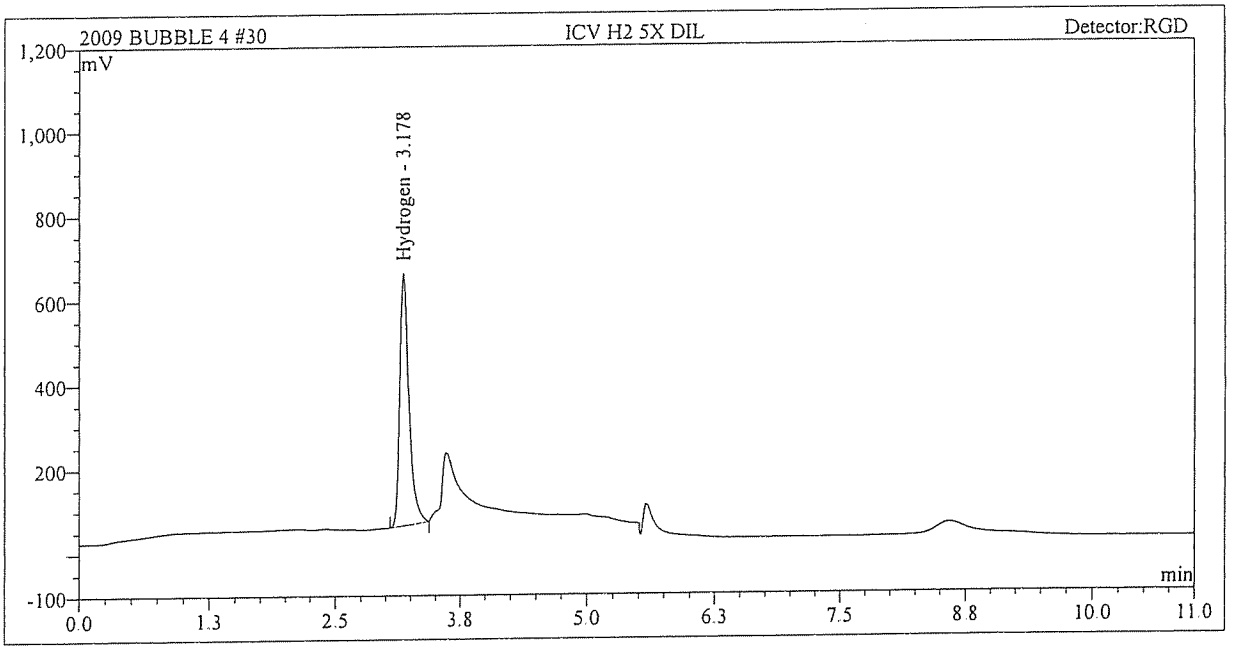
MICROSEEPS

Sample Analysis Report

Sample Name:	ICV H2 5X DIL	**Sequence No:**	30
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 12:04 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV
1	Hydrogen	3.178	64.094	596.960	BMB	10.296 9.3141

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



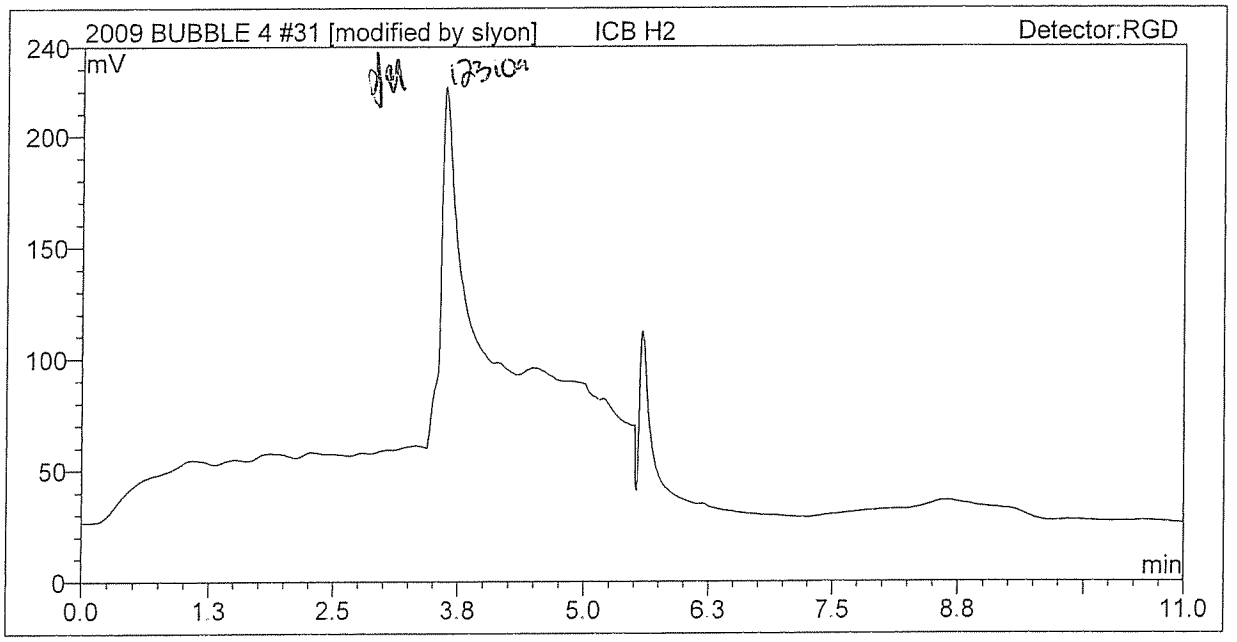
MICROSEEPS

Sample Analysis Report

Sample Name:	ICB H2	**Sequence No:**	31
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 12:16 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M091230026 - H2
M091228014 - LHC
M091228015 - P6

Original Run Date: 122809

Matrix: Bubble Strip

Sample numbers:
P0912218-(1-2)
P0912302-(11,12,14) FDP
P0912303-(5,7,8) FDP
P0912228-(1-4)
P0912281-(7)
P0912255-(1,4-6)
P0912344-(1-2) FDP
P0912233-(1)

Out of Control Event: (attach another page, if necessary)
P0912303-(5,8), P0912228-(1,3) Require dilutions for H2, ethane, or ethene

Corrective Action Taken:
None

Result:
Report dilutions on a future batch

Observations to support use of data: (Note any occurrences of manual integration here)
The samples listed below required Manual integration to repair baseline inaccuracies

P0912303-(5)
P0912228-(1-4)
P0912281-(7)

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. _____ Date _____

Analyzed & Reviewed by: AN Date: 122809
Manual Integration Conducted? YES NO
(Circle One)
Reviewed by: _____ Date: _____
Reviewed & Entered by: Upload Date: 123009
Reviewed by: _____ Date: _____
Corrected by: _____ Date: _____

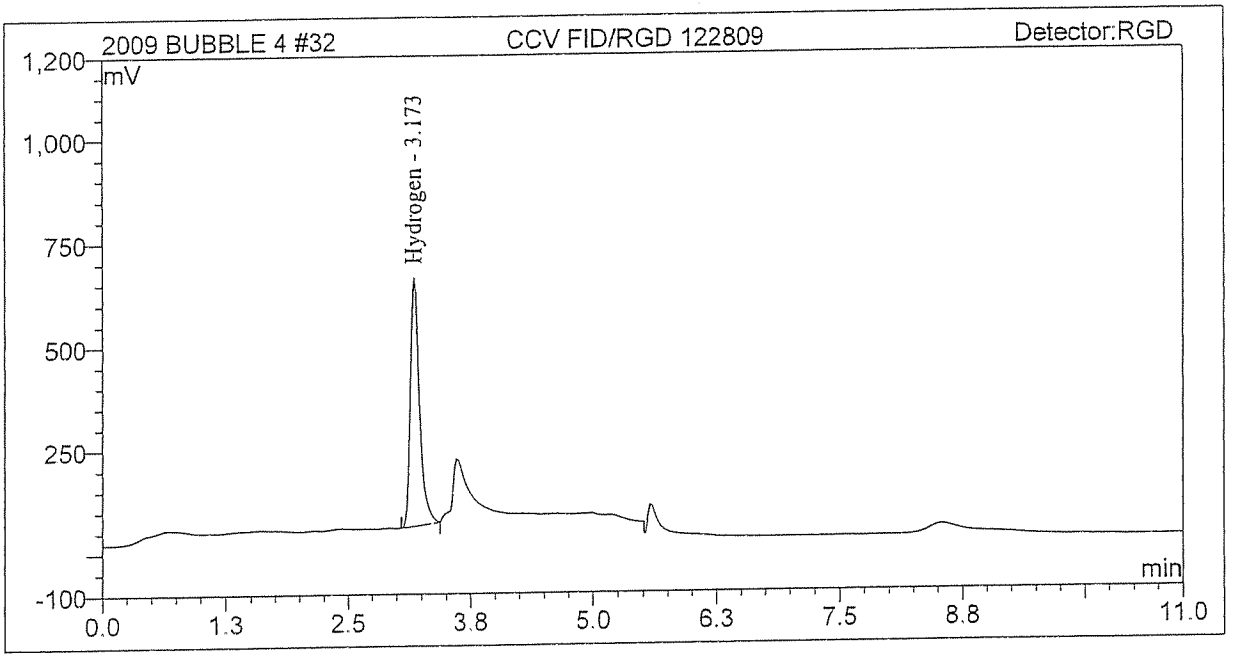
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 122809	**Sequence No:**	32
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 12:36 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.173	64.222	599.880	BMB	10.296	9.3327

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



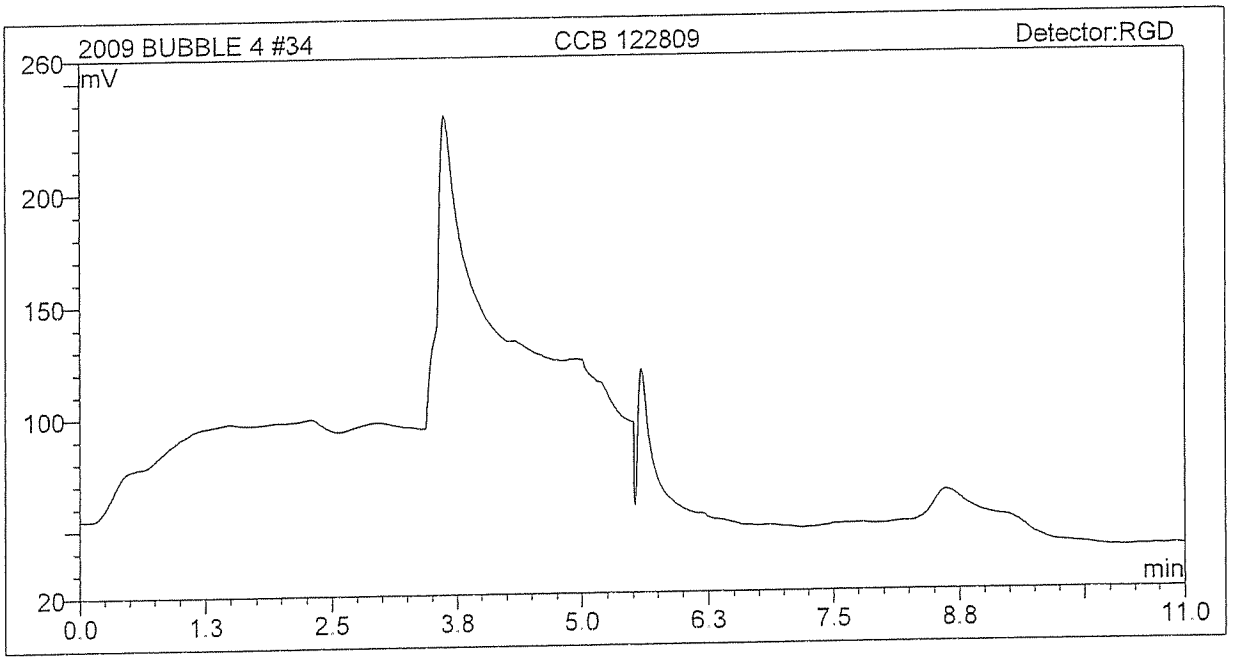
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 122809	**Sequence No:**	34
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 1:08 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



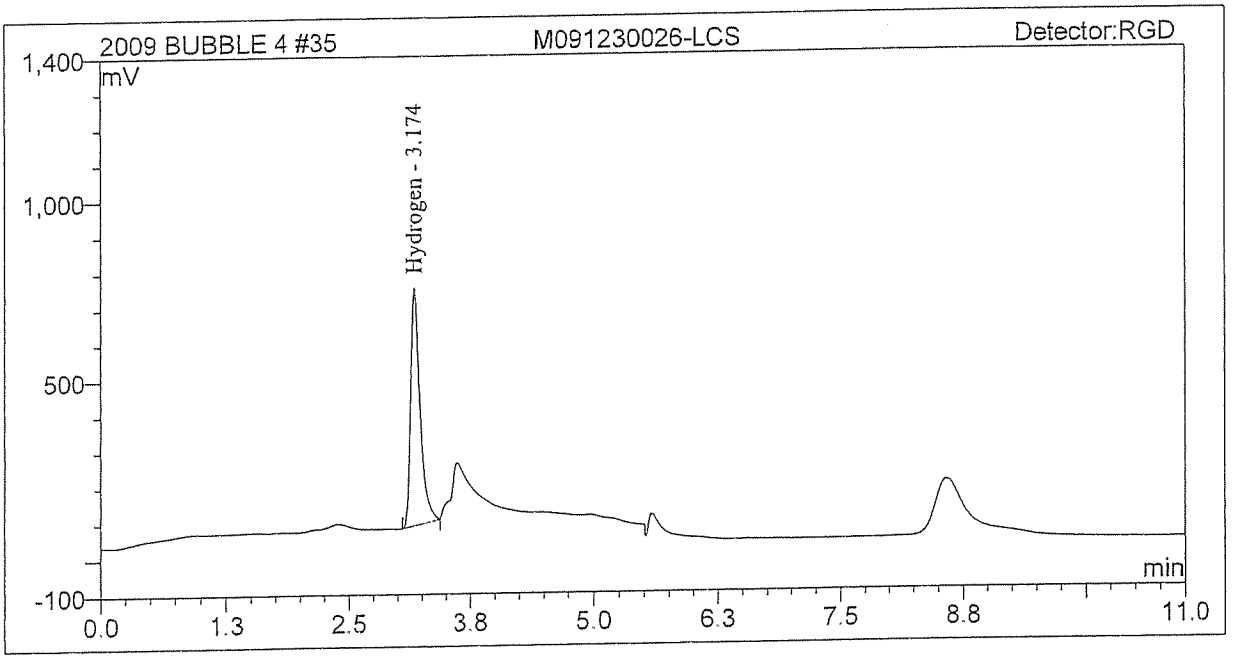
MICROSEEPS

Sample Analysis Report

Sample Name:	M091230026-LCS	**Sequence No:**	35
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 1:20 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.174	74.583	665.791	BMB	9.782	10.8385

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



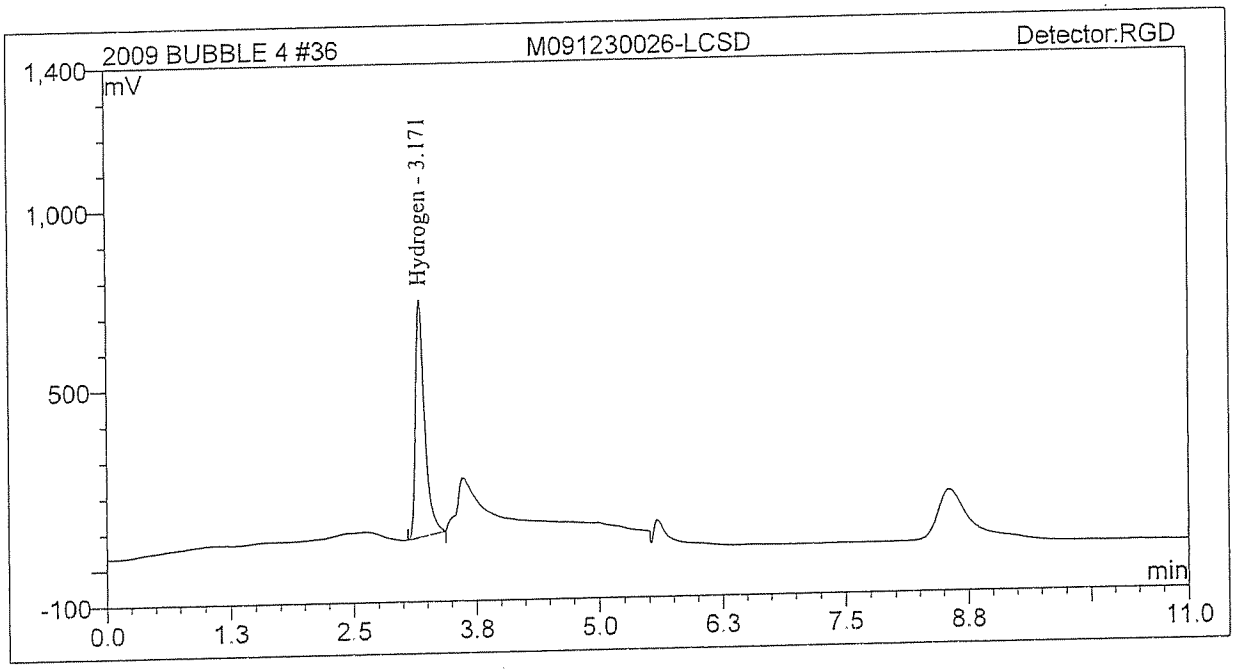
MICROSEEPS

Sample Analysis Report

Sample Name:	M091230026-LCSD	**Sequence No:**	36
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 1:33 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.171	73.433	661.809	BMB	9.752	10.6713

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



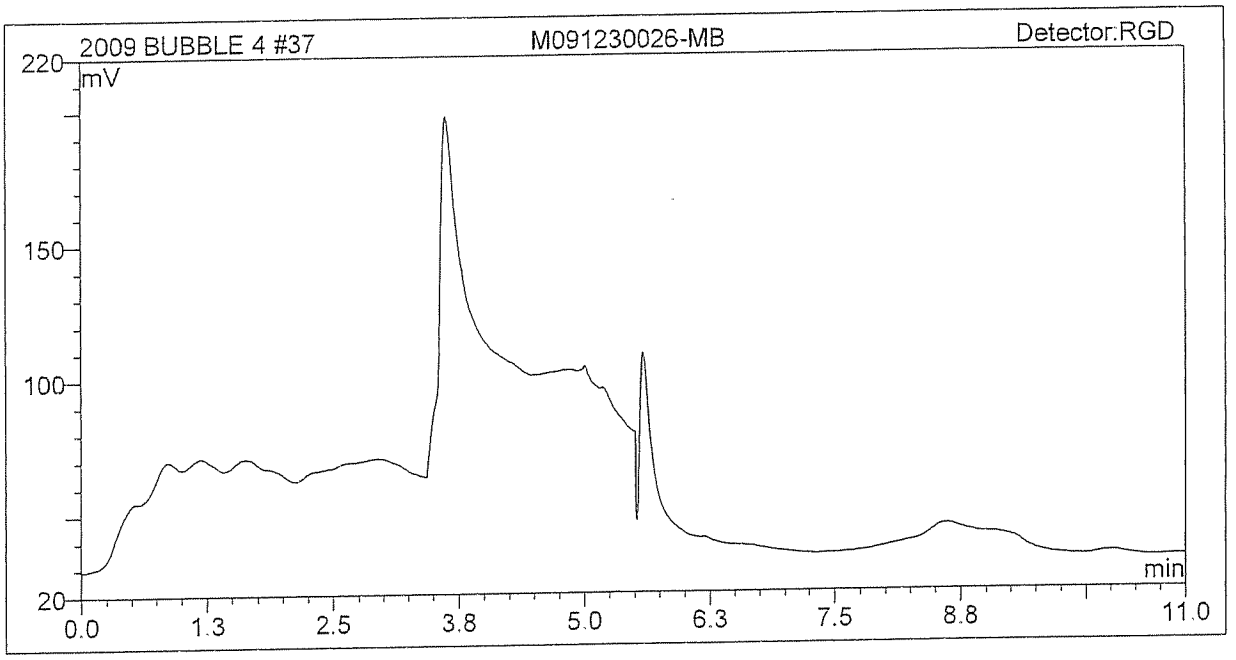
MICROSEEPS

Sample Analysis Report

Sample Name:	M091230026-MB	**Sequence No:**	37
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 1:51 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



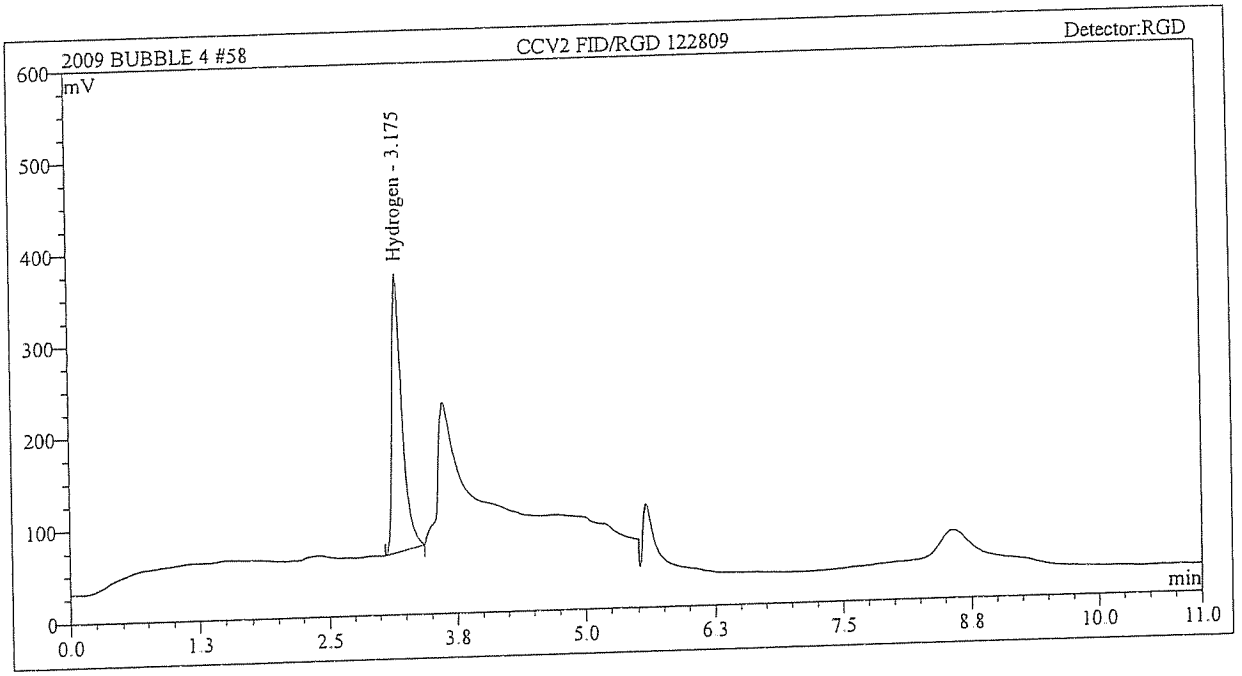
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 122809	Sequence No:	58
Sequence Name:	2009 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BR14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE102009	Dilution Factor:	1.0000
Date Time Collected:	12/28/2009 6:19 PM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV
1	Hydrogen	3.175	33.930	302.853	BMB	5.148 4.9307

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM).



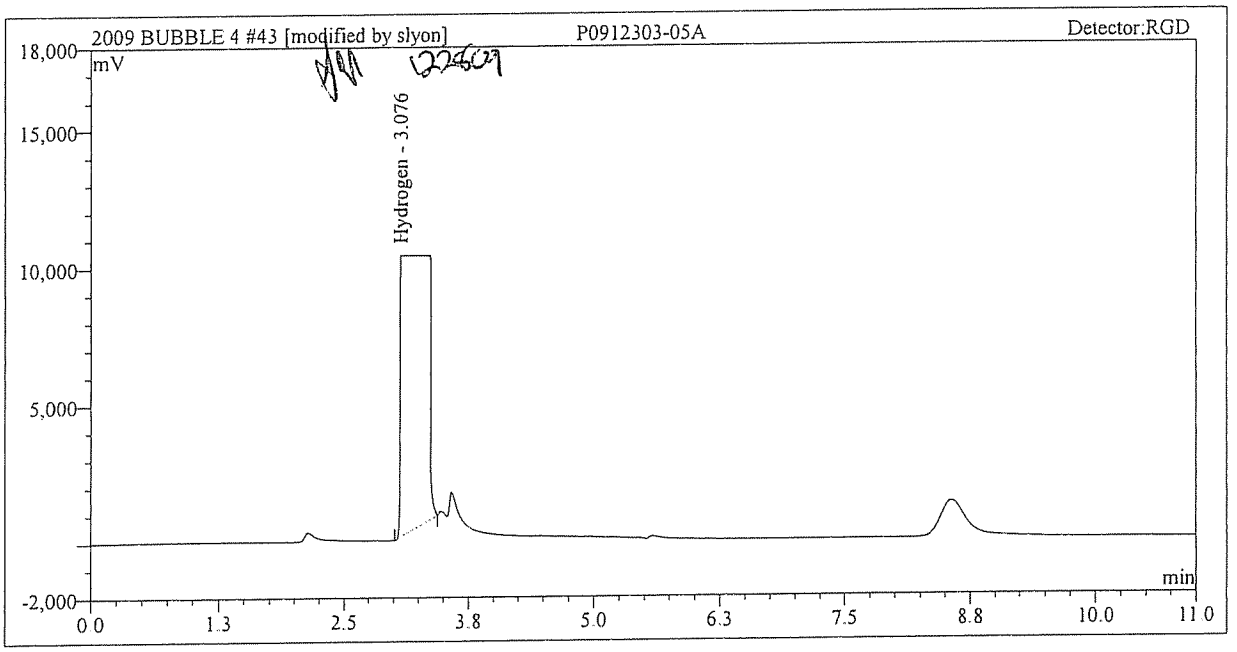
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-05A	**Sequence No:**	43
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 3:11 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.076	3095.740	10222.011	BMB*	~~449.8736~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



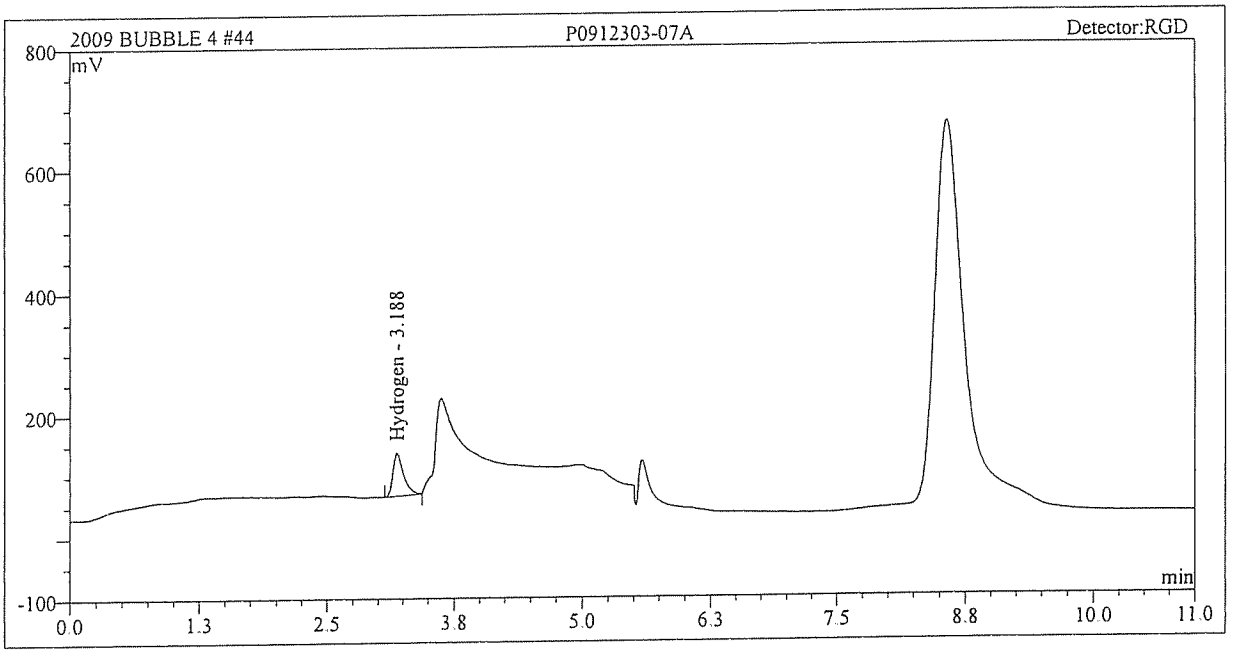
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-07A	**Sequence No:**	44
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 3:23 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.188	8.748	70.323	BMB	1.2712

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



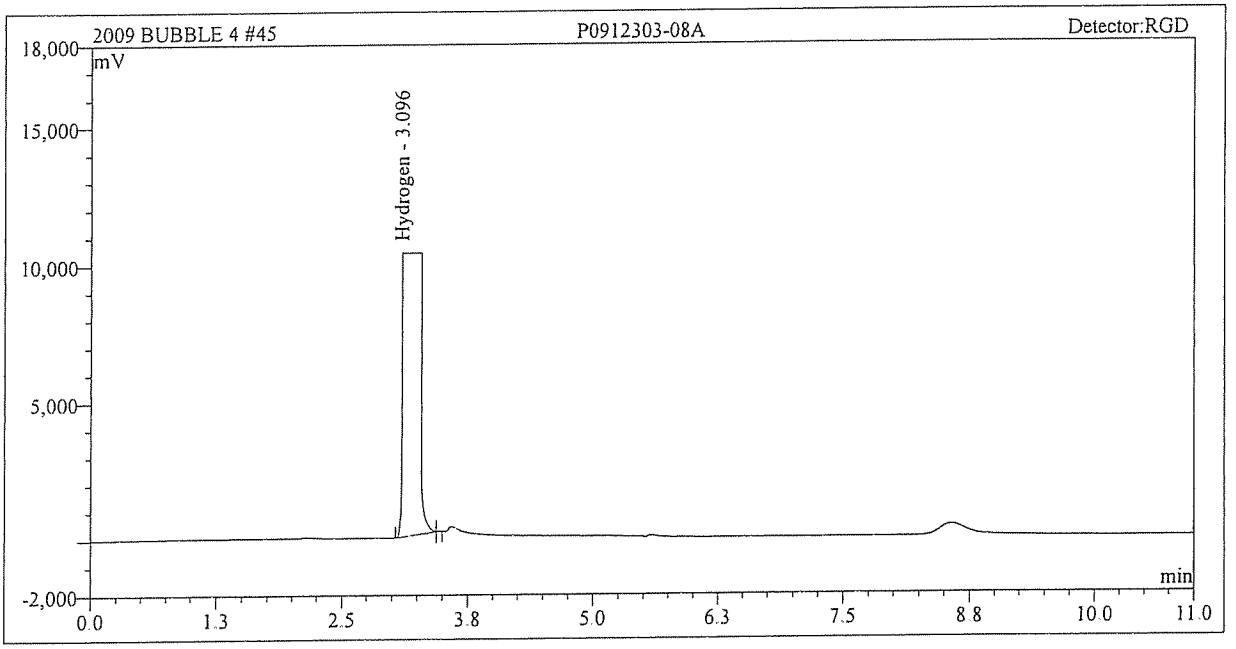
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-08A	**Sequence No:**	45
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/28/2009 3:36 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.096	2102.941	10327.417	BMB	~~305.5998~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100102005 - Hz
M091230013 - LHL
M091230014 - P6
M100104010 - Hz
M091230020 - LHL

Original Run Date: 12-30-09

Sample numbers:
P0912275-(1-6) FD?
P0912277-(5)
P0912278-(1,3,4)
P0912281-(1-6)
P0912335-(1-4)
P0912302-(1,3,5-10,15-19) FD?
P0912303-(1) FD?
P0912312-(1)

Matrix: Bubble Strip
P0912335-(5)
P0912344-(8-11)

Out of Control Event: (attach another page, if necessary)
P0912275-(1-6), P0912278-(3,4) P0912302-(1,3,6,8,9,10,15,19) Require dilutions for Hz

Corrective Action Taken:
None

Result:
Report Hz on a future Batch

Observations to support use of data: (Note any occurrences of manual integration here)
The samples listed below required manual integration to repair baseline inaccuracies

P0912275-(1-6)
P0912278-(3-4)
P0912281-(1-6)
P0912235-(1-4)
P0912302-(3,9,10)
P0912335-(5)

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. _____ Date _____

Analyzed & Reviewed by: [signature] Date: 123009
Manual Integration Conducted? YES NO
(Circle One)
Reviewed by: _____ Date: _____
Reviewed & Entered by: Upland Date: 010410
Reviewed by: _____ Date: _____
Corrected by: _____ Date: _____

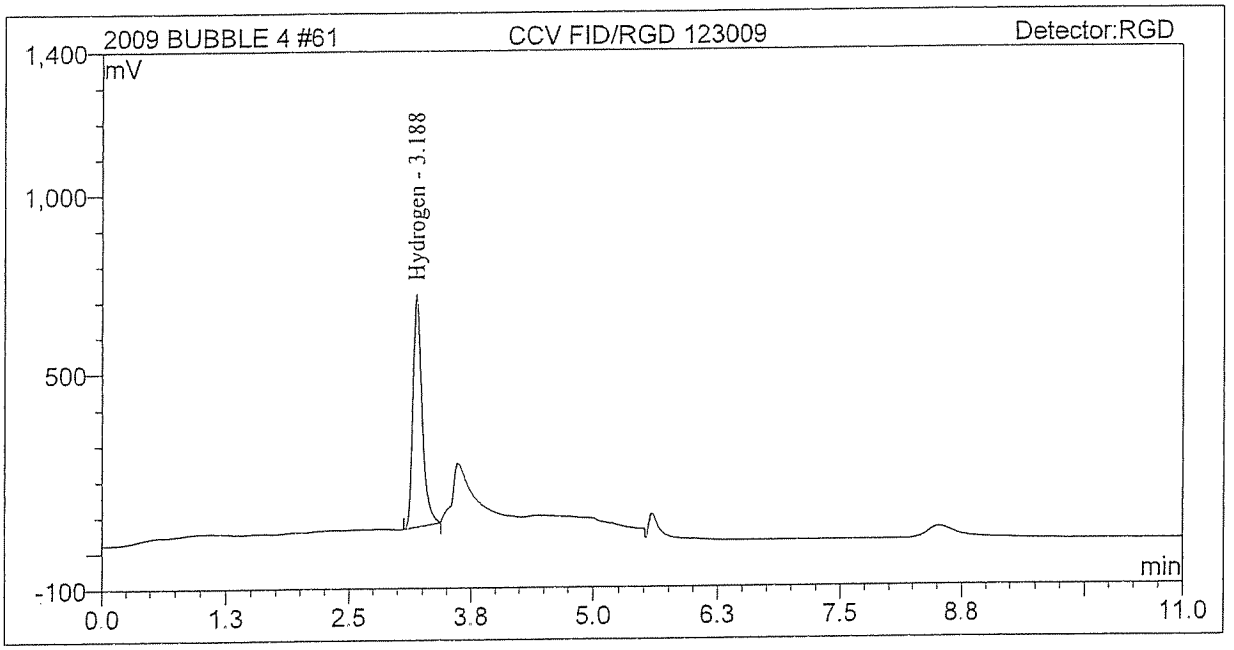
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 123009	**Sequence No:**	61
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 9:07 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.188	69.252	649.360	BMB	10.296	10.0638

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



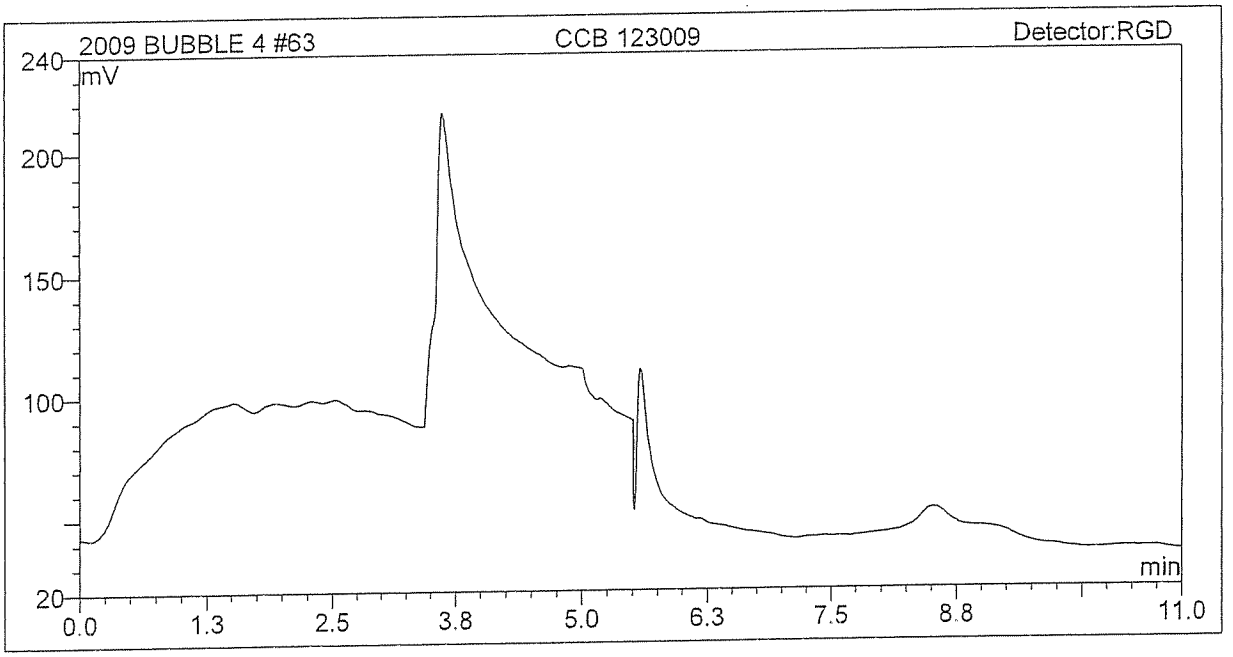
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 123009	**Sequence No:**	63
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 9:42 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



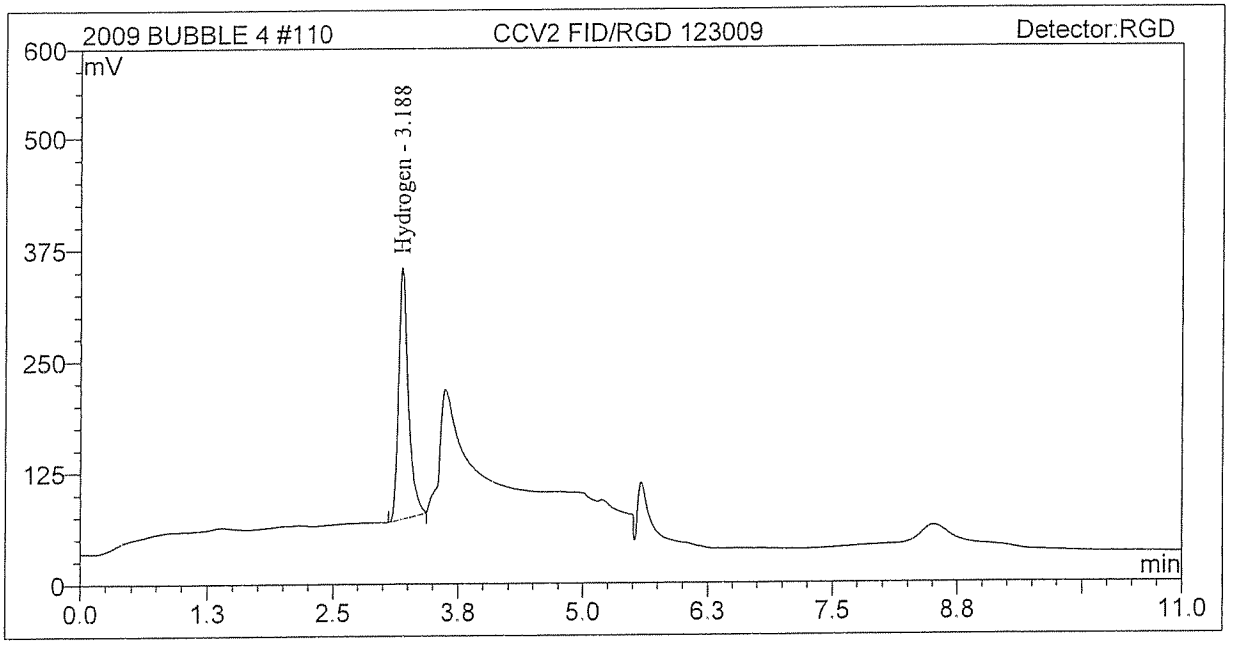
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 123009	**Sequence No:**	110
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 8:42 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.188	31.795	282.006	BMB	5.148	4.6204

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



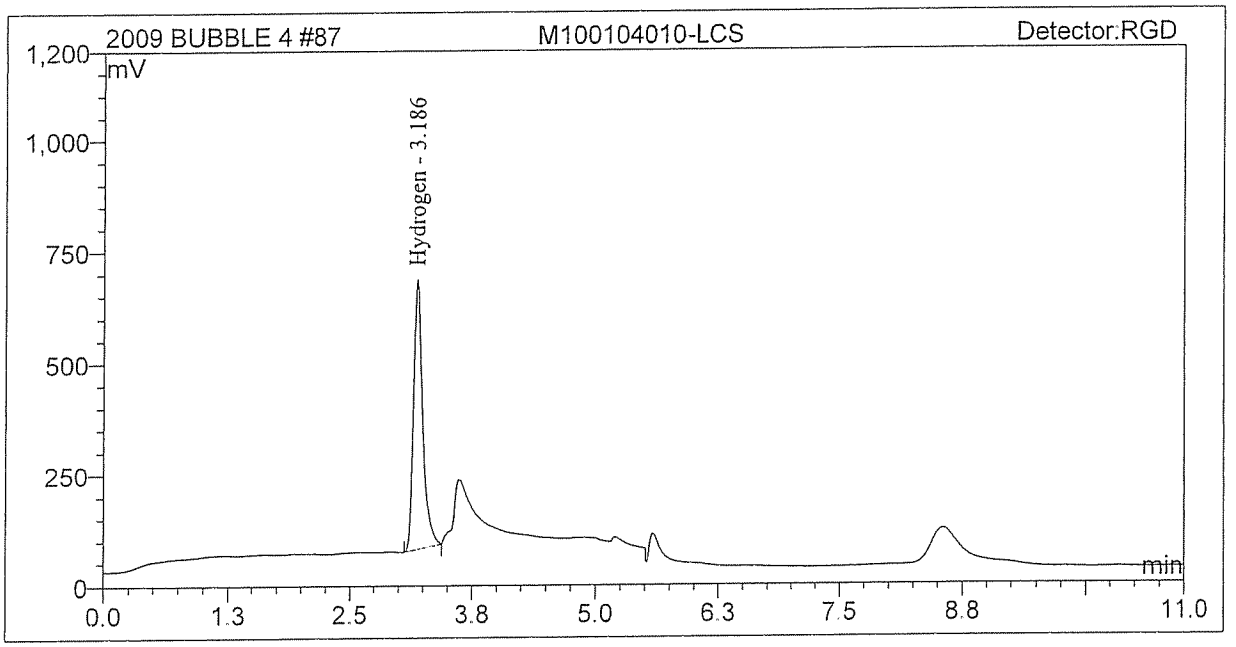
MICROSEEPS

Sample Analysis Report

Sample Name:	M100104010-LCS	**Sequence No:**	87
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 3:28 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.186	66.985	606.495	BMB	9.782	9.7342

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



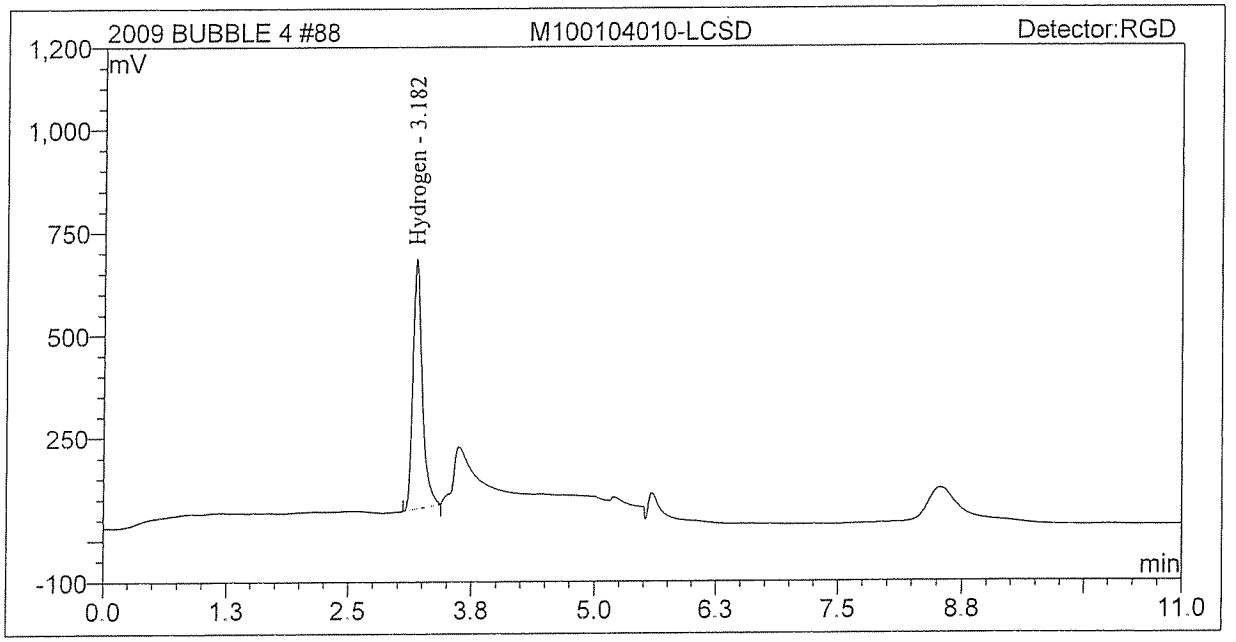
MICROSEEPS

Sample Analysis Report

Sample Name:	M100104010-LCSD	**Sequence No:**	88
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 3:41 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.182	67.283	608.990	BMB	9.752	9.7776

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



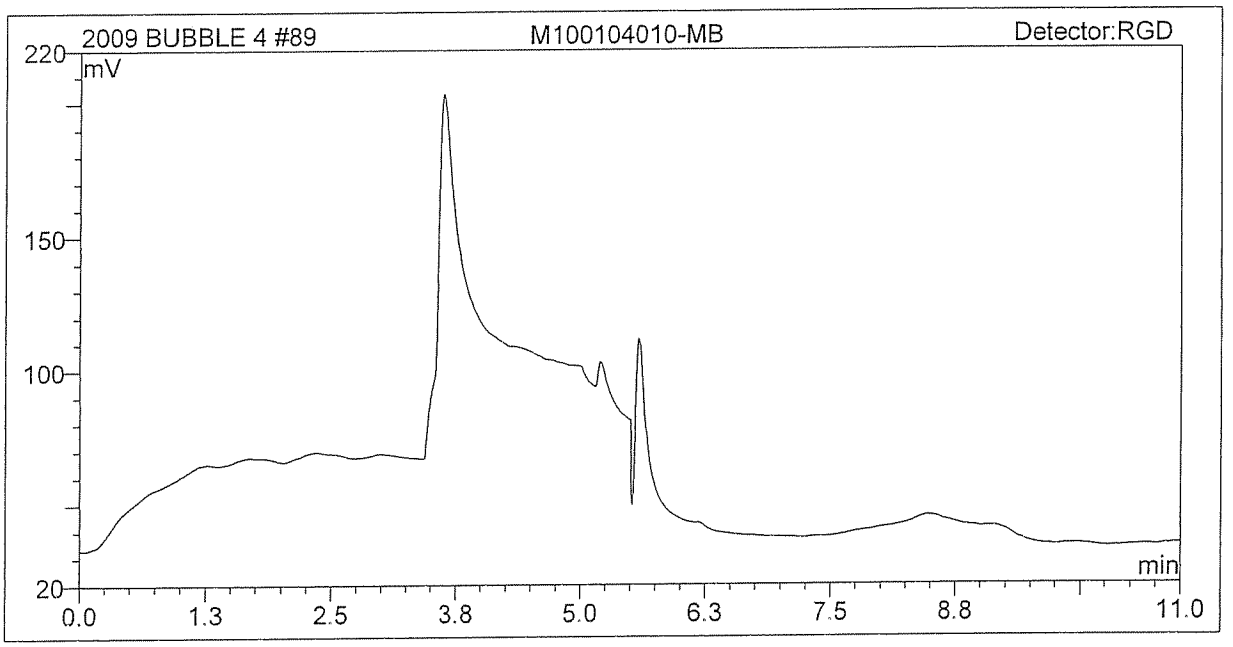
MICROSEEPS

Sample Analysis Report

Sample Name:	M100104010-MB	**Sequence No:**	89
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 3:55 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



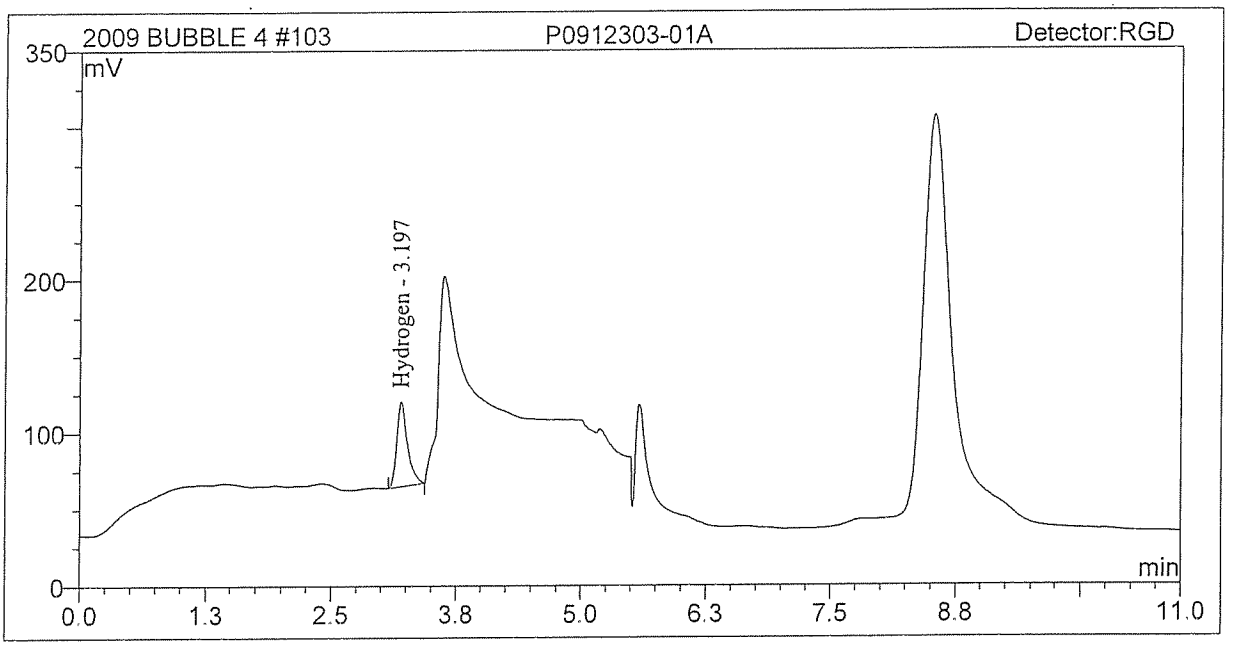
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-01A	**Sequence No:**	103
Sequence Name:	2009 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	12/30/2009 7:07 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.197	6.891	55.263	BMB	1.0014

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Method File: BUBBLE102009
Operator: slyon

12303

Printed: 1/6/2010 2:03:54 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Window	Standard	Int.Type	Cal.Type
1	Methane	0.645 min	0.645 min			0.200 AN	External	Area	LOff
2	Ethane	0.908 min	0.908 min			0.200 AN	External	Area	Lin
3	Ethene	1.155 min	1.155 min			0.200 AN	External	Area	Lin
4	Propane	1.785 min	1.785 min			0.200 AN	External	Area	Lin
5	*Hydrogen*	*3.210 min*			*3.210 min*	*0.200 AN*	*External*	*Area*	*Lin*
6	Propene	3.284 min	3.284 min			0.200 AN	External	Area	Lin
7	Carbon Dioxide	4.200 min		4.200 min		0.500 AN	External	Area	Lin
8	iso-Butane	4.560 min	4.560 min			0.500 AN	External	Area	Lin
9	n-Butane	5.310 min	5.310 min			0.500 AN	External	Area	Lin
10	Oxygen	5.870 min		5.870 min		0.300 AN	External	Area	Lin
11	Nitrogen	6.260 min		6.260 min		0.300 AN	External	Area	Lin
12	Acetylene	6.600 min	6.600 min			0.500 AN	External	Area	Lin
13	Methane	7.560 min		7.560 min		0.400 AN	External	Area	Lin
14	Carbon Monoxide	8.450 min		8.450 min		0.400 AN	External	Area	Lin
15	Carbon Monoxide	8.600 min			8.600 min	0.400 AN	External	Area	Lin

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Peak Type	Group	Comment
1	Methane	0.645 min	Auto		
2	Ethane	0.908 min	Auto		
3	Ethene	1.155 min	Auto		
4	Propane	1.785 min	Auto		
5	*Hydrogen*	*3.210 min*	*Auto*		
6	Propene	3.284 min	Auto		
7	Carbon Dioxide	4.200 min	Auto		
8	iso-Butane	4.560 min	Auto		
9	n-Butane	5.310 min	Auto		
10	Oxygen	5.870 min	Auto		
11	Nitrogen	6.260 min	Auto		
12	Acetylene	6.600 min	Auto		
13	Methane	7.560 min	Auto		
14	Carbon Monoxide	8.450 min	Auto		
15	Carbon Monoxide	8.600 min	Auto		

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Amount ICAL Acetylene L5	Amount ICAL Acetylene L4
1	Methane	0.645 min	0.645 min				
2	Ethane	0 908 min	0.908 min				
3	Ethene	1.155 min	1.155 min				
4	Propane	1.785 min	1.785 min				
5	*Hydrogen*	*3.210 min*			*3.210 min*		
6	Propene	3.284 min	3.284 min				
7	Carbon Dioxide	4.200 min		4.200 min			
8	iso-Butane	4.560 min	4.560 min				
9	n-Butane	5.310 min	5.310 min				
10	Oxygen	5.870 min		5.870 min			
11	Nitrogen	6.260 min		6.260 min			
12	Acetylene	6.600 min	6.600 min			0.529000	2.648000
13	Methane	7.560 min		7.560 min			
14	Carbon Monoxide	8.450 min		8.450 min			
15	Carbon Monoxide	8.600 min			8.600 min		

Method File: BUBBLE102009
Operator: slyon

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1 SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL Acetylene L3	Amount ICAL Acetylene L2	Amount ICAL Acetylene L1	Amount ICAL FID L8	Amount ICAL FID L7
1	Methane	0.645 min				0.002280	0.007120
2	Ethane	0.908 min				0.005880	0.018300
3	Ethene	1.155 min				0.013800	0.043300
4	Propane	1.785 min				0.006640	0.020700
5	*Hydrogen*	*3.210 min*					
6	Propene	3.284 min				0.019800	0.062100
7	Carbon Dioxide	4.200 min					
8	iso-Butane	4.560 min				0.004950	0.015400
9	n-Butane	5.310 min				0.006190	0.019300
10	Oxygen	5.870 min					
11	Nitrogen	6.260 min					
12	Acetylene	6.600 min	13.240000	66.200000	264.800000		
13	Methane	7.560 min					
14	Carbon Monoxide	8.450 min					
15	Carbon Monoxide	8.600 min					

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL FID L6	Amount ICAL FID L5	Amount ICAL FID L4	Amount ICAL FID L3	Amount ICAL FID L2	Amount ICAL FID L1	Amount ICAL H2 L7
1	Methane	0.645 min	0.028500	0.114000	0.456000	2.280000	11.402000	57.011000	
2	Ethane	0.908 min	0.073500	0.294000	1.176000	5.880000	29.403000	147.016000	
3	Ethene	1.155 min	0.173000	0.693000	2.774000	13.870000	69.353000	346.766000	
4	Propane	1.785 min	0.083000	0.332000	1.328000	6.644000	33.220000	166.100000	
5	*Hydrogen*	*3.210 min*							*0.396000*
6	Propene	3.284 min	0.248000	0.993000	3.975000	19.877000	99.388000	496.942000	
7	Carbon Dioxide	4.200 min							
8	iso-Butane	4.560 min	0.061800	0.247000	0.990000	4.951000	24.756000	123.783000	
9	n-Butane	5.310 min	0.077400	0.309000	1.238000	6.192000	30.961000	154.808000	
10	Oxygen	5.870 min							
11	Nitrogen	6.260 min							
12	Acetylene	6.600 min							
13	Methane	7.560 min							
14	Carbon Monoxide	8.450 min							
15	Carbon Monoxide	8.600 min							

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1 SEQ
Created: 5/5/2004 12:45 44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL H2 L6	Amount ICAL H2 L5	Amount ICAL H2 L4	Amount ICAL H2 L3	Amount ICAL RGD CO L3	Amount ICAL RGD CO L2
1	Methane	0.645 min						
2	Ethane	0.908 min						
3	Ethene	1.155 min						
4	Propane	1.785 min						
5	*Hydrogen*	*3.210 min*	*0.990000*	*3.960000*	*9.900000*	*19.800000*		
6	Propene	3.284 min						
7	Carbon Dioxide	4.200 min						
8	iso-Butane	4.560 min						
9	n-Butane	5.310 min						
10	Oxygen	5.870 min						
11	Nitrogen	6.260 min						
12	Acetylene	6.600 min						
13	Methane	7.560 min						
14	Carbon Monoxide	8.450 min						
15	Carbon Monoxide	8.600 min					0.100000	0.500000

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL RGD CO L1	Amount ICAL RGD CO L1A	Amount ICAL TCD L6	Amount ICAL TCD L5	Amount ICAL TCD L4
1	Methane	0.645 min					
2	Ethane	0.908 min					
3	Ethene	1.155 min					
4	Propane	1.785 min					
5	*Hydrogen*	*3.210 min*					
6	Propene	3.284 min					
7	Carbon Dioxide	4.200 min			2.196000	5.490000	10.980000
8	iso-Butane	4.560 min					
9	n-Butane	5.310 min					
10	Oxygen	5.870 min			0.015900	0.039900	0.079800
11	Nitrogen	6.260 min			0.051400	0.129000	0.257000
12	Acetylene	6.600 min					
13	Methane	7.560 min				23.580000	47.160000
14	Carbon Monoxide	8.450 min				0.046900	0.093800
15	Carbon Monoxide	8.600 min	2.000000	10.000000			

Method File: BUBBLE102009
Operator: slyon

Printed: 1/6/2010 2:03:54 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ

Created: 5/5/2004 12:45 44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL TCD L3	Amount ICAL TCD L2	Amount ICAL TCD L1
1	Methane	0.645 min			
2	Ethane	0.908 min			
3	Ethene	1.155 min			
4	Propane	1.785 min			
5	*Hydrogen*	*3.210 min*			
6	Propene	3.284 min			
7	Carbon Dioxide	4.200 min	54.900000	274.500000	549.000000
8	iso-Butane	4.560 min			
9	n-Butane	5.310 min			
10	Oxygen	5.870 min	0.399200	1.996000	3.992000
11	Nitrogen	6.260 min	1.286000	6.430000	12.860000
12	Acetylene	6.600 min			
13	Methane	7.560 min	235.800000	1179.000000	2358.000000
14	Carbon Monoxide	8.450 min	0.469000	2.345000	4.690000
15	Carbon Monoxide	8.600 min			

Method File: BUBBLE102009
Operator: slyon

Printed: 1/6/2010 2:03:54 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 1.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 1/2/2010 2:30:15 PM by slyon

Calibration:

Calibration Mode: Total
Auto Recalibrate: On
Curve Fitting Model: Normal
Dual-Column Separate Calibration: Off

No.	Enabled	Name	Smp.No.	Pos.	Inj. Vol.	Weight	ISTD Amount	Dil. Factor	Inj. Date/Time
1	☒	ICAL Acetylene L5	1	3	20.0	1.0000	1.0000	1.0000	10/19/2009 10:32:27 AM
2	☒	ICAL Acetylene L4	2	4	20.0	1.0000	1.0000	1.0000	10/19/2009 10:44:48 AM
3	☒	ICAL Acetylene L3	3	5	20.0	1.0000	1.0000	1.0000	10/19/2009 10:57:25 AM
4	☒	ICAL Acetylene L2	4	6	20.0	1.0000	1.0000	1.0000	10/19/2009 11:09:48 AM
5	☒	ICAL Acetylene L1	5	7	20.0	1.0000	1.0000	1.0000	10/19/2009 11:22:07 AM
6	☒	ICAL FID L8	6	10	20.0	1.0000	1.0000	1.0000	10/19/2009 12:11:06 PM
7	☒	ICAL FID L7	7	11	20.0	1.0000	1.0000	1.0000	10/19/2009 12:30:57 PM
8	☒	ICAL FID L6	8	12	20.0	1.0000	1.0000	1.0000	10/19/2009 12:50:36 PM
9	☒	ICAL FID L5	9	13	20.0	1.0000	1.0000	1.0000	10/19/2009 1:04:42 PM
10	☒	ICAL FID L4	10	14	20.0	1.0000	1.0000	1.0000	10/19/2009 1:21:34 PM
11	☒	*ICAL FID L3*	*11*	*15*	*20.0*	*1.0000*	*1.0000*	*1.0000*	*10/19/2009 1:37:49 PM*
12	☒	ICAL FID L2	12	16	20.0	1.0000	1.0000	1.0000	10/19/2009 1:50:17 PM
13	☒	ICAL FID L1	13	17	20.0	1.0000	1.0000	1.0000	10/19/2009 2:03:02 PM
14	☒	ICAL TCD L6	16	33	20.0	1.0000	1.0000	1.0000	10/19/2009 5:35:41 PM
15	☒	ICAL TCD L5	17	34	20.0	1.0000	1.0000	1.0000	10/19/2009 5:48:26 PM
16	☒	ICAL TCD L4	18	35	20.0	1.0000	1.0000	1.0000	10/19/2009 6:01:02 PM
17	☒	ICAL TCD L3	19	36	20.0	1.0000	1.0000	1.0000	10/19/2009 6:16:31 PM
18	☒	ICAL TCD L2	20	37	20.0	1.0000	1.0000	1.0000	10/19/2009 6:28:51 PM
19	☒	ICAL TCD L1	21	38	20.0	1.0000	1.0000	1.0000	10/19/2009 6:41:18 PM
20	☒	ICAL H2 L7	25	1	20.0	1.0000	1.0000	1.0000	1/2/2010 2:08:22 PM
21	☒	ICAL H2 L6	26	2	20.0	1.0000	1.0000	1.0000	1/2/2010 2:20:40 PM
22	☒	ICAL H2 L5	27	3	20.0	1.0000	1.0000	1.0000	1/2/2010 2:32:59 PM
23	☒	ICAL H2 L4	28	4	20.0	1.0000	1.0000	1.0000	1/2/2010 2:47:03 PM
24	☒	ICAL H2 L3	29	5	20.0	1.0000	1.0000	1.0000	1/2/2010 2:59:20 PM

Hydrogen

Method AM20GAX

1/2/2010

No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square %	Offset	Slope	Curve
1	3.19	Hydrogen	Lin	5	99.999	0.00000	6.14783	0.00000

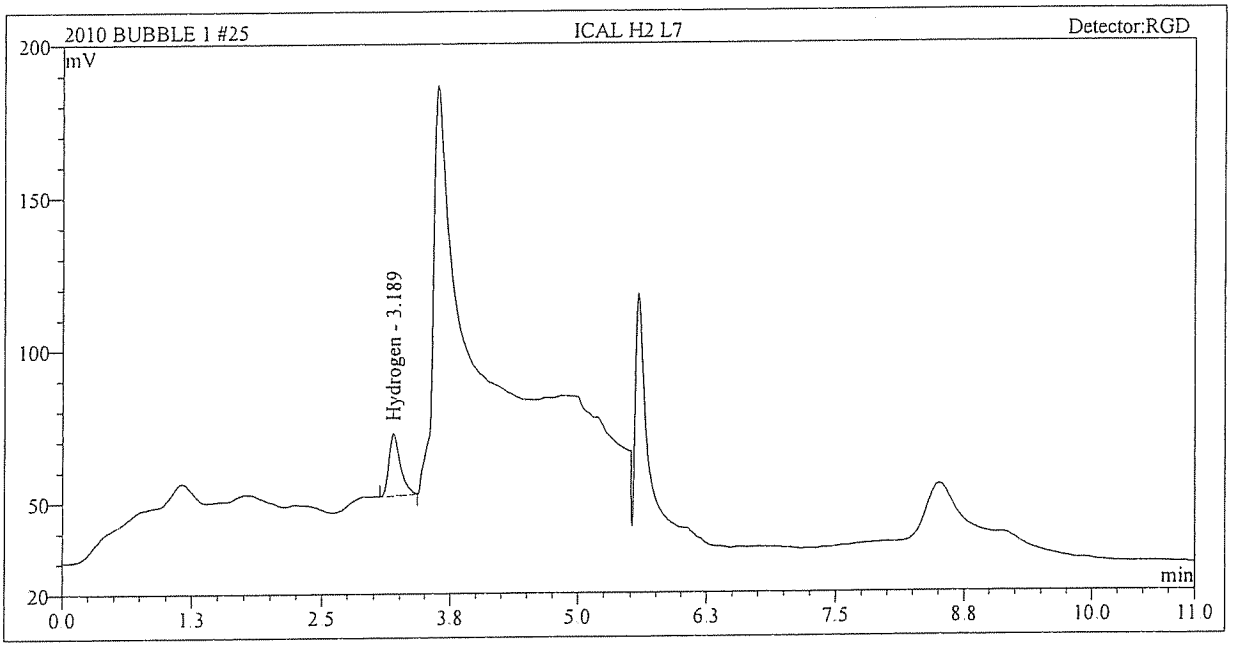
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L7	**Sequence No:**	25
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 2:08 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.189	2.621	20.512	BMB	0.4263

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



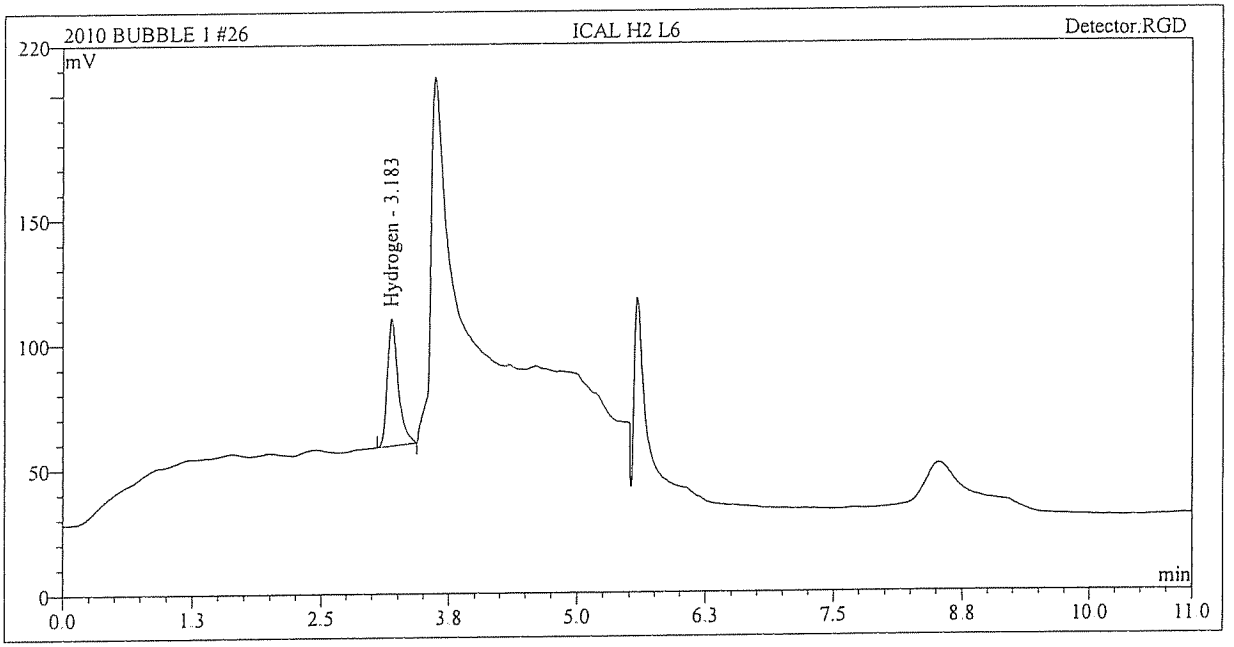
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L6	**Sequence No:**	26
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 2:20 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.183	6.280	50.811	BMB	1.0216

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



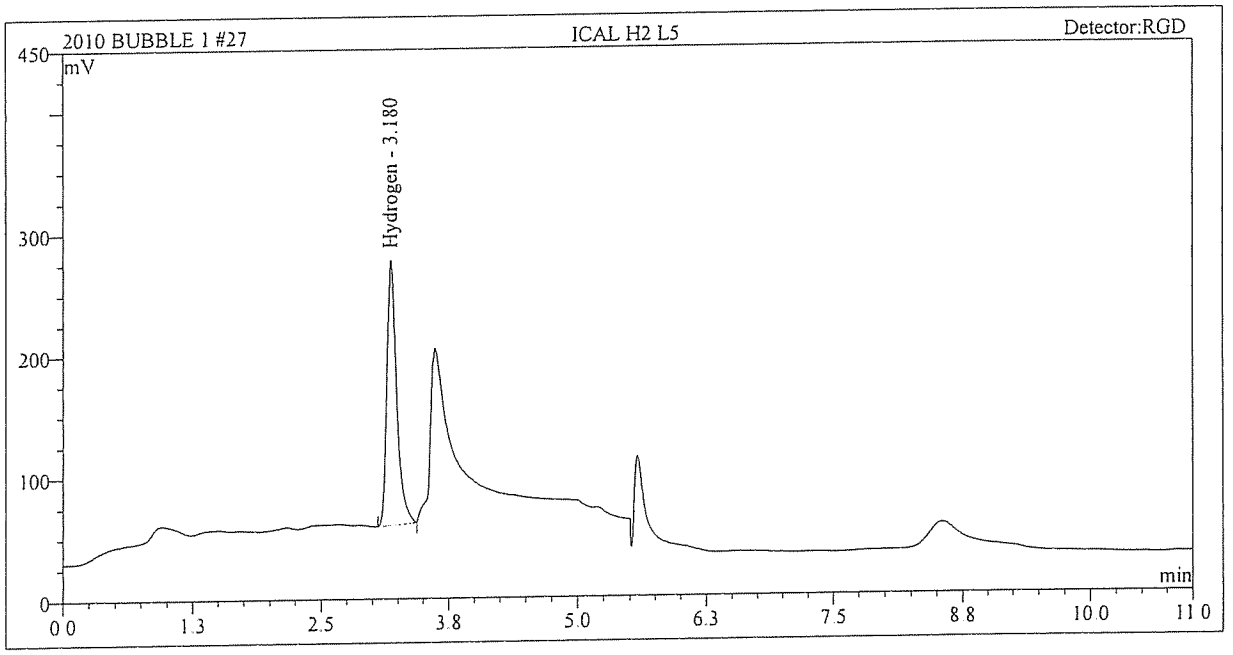
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L5	**Sequence No:**	27
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 2:32 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.180	24.098	217.387	BMB	3.9198

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



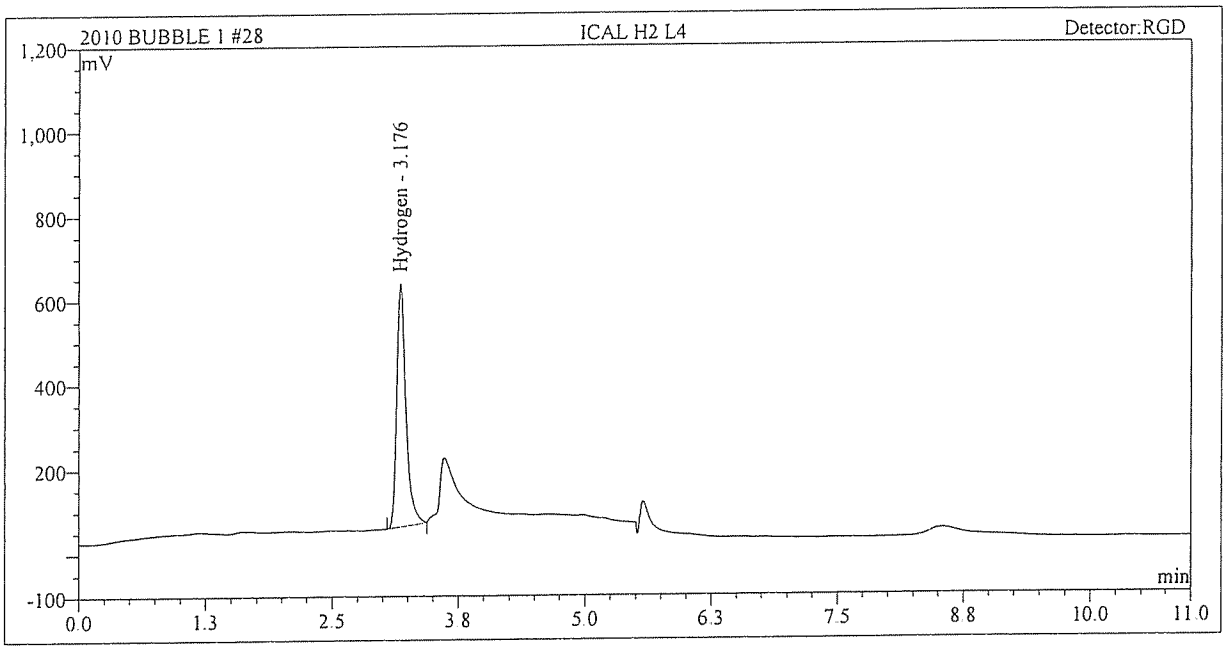
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L4	**Sequence No:**	28
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 2:47 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.176	60.960	574.577	BMB	9.9158

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



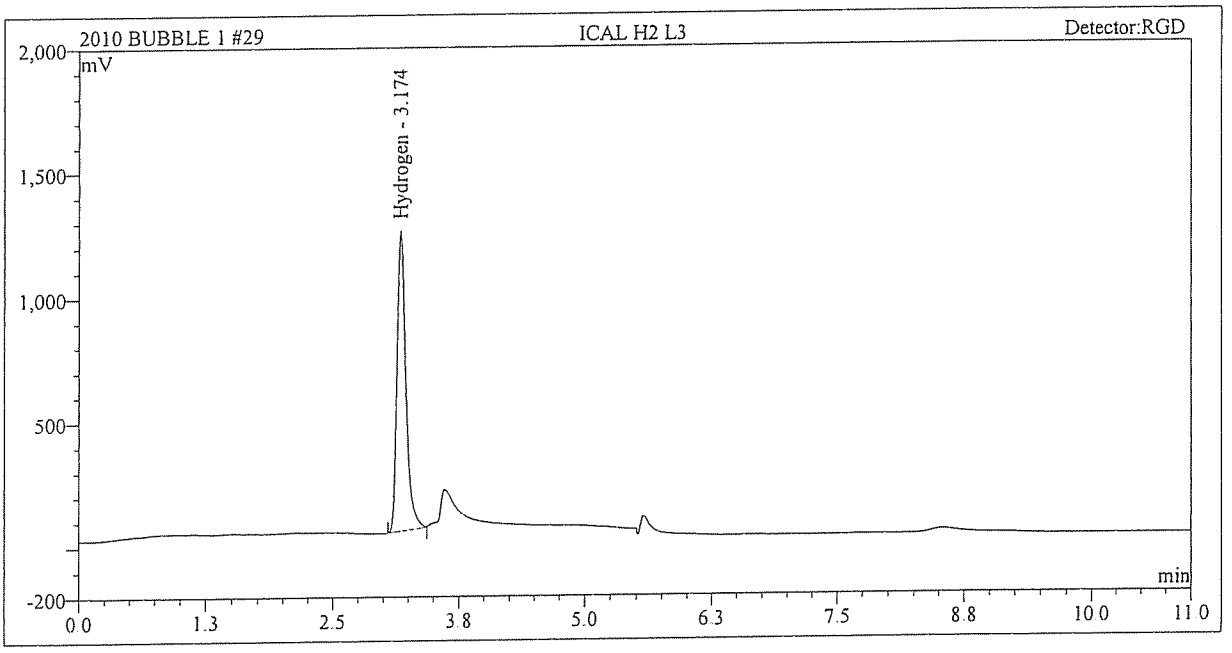
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L3	**Sequence No:**	29
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 2:59 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.174	121.715	1203.194	BMB	19.7980

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



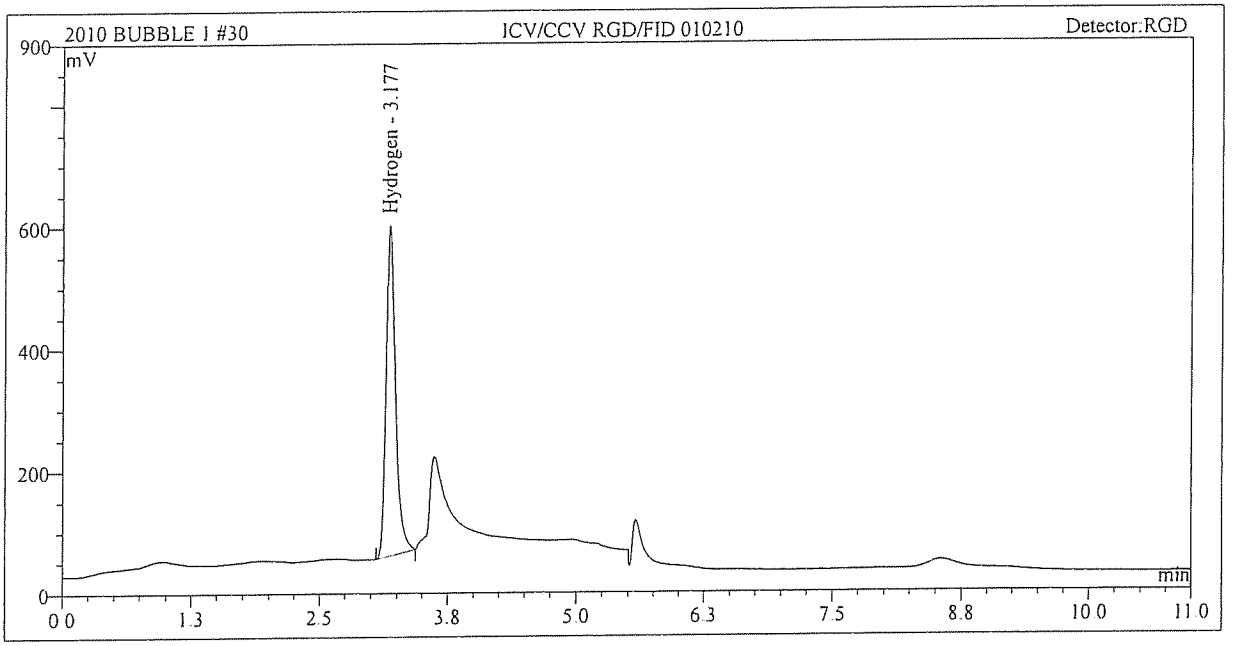
MICROSEEPS

Sample Analysis Report

Sample Name:	ICV/CCV RGD/FID 010210	**Sequence No:**	30
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 3:11 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.177	57.340	540.813	BMB	10.296	9.3269

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



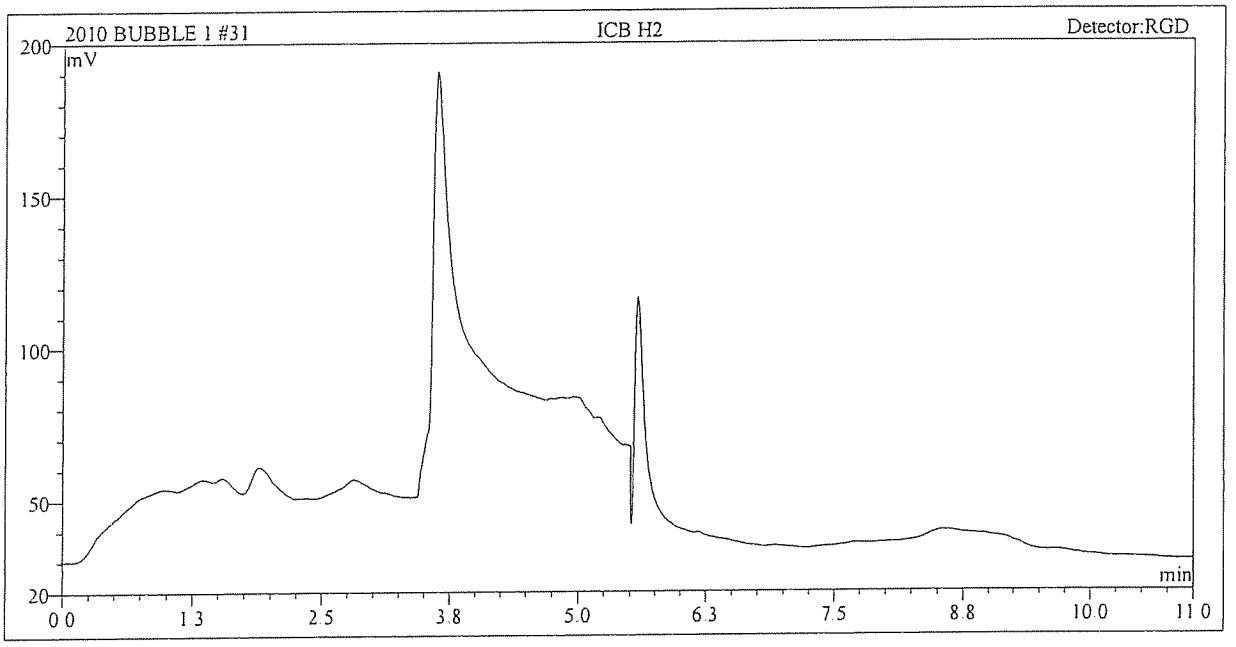
MICROSEEPS

Sample Analysis Report

Sample Name:	ICB H2	**Sequence No:**	31
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/2/2010 3:27 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100105018 - Hz
021 - LHC
017 - Hz
M100104006 - LHC

Original Run Date: 1-4-10

Sample numbers:
P0912281 - (8-10)
P0912289 - (1-3) FDP
P0912302 - (2,4,13) FDP
P0912303 - (2-4, 6, 9-14) FDP
P0912335 - (6-14)
P0912344 - (3-7, 12-14) FDP

Matrix: Bubble Strip

Out of Control Event: (attach another page, if necessary)

(1) P0912289 - (1), P0912344 - (3) Low pressure in vial

(2) P0912302 - (2), P0912303 - (9-10) Require dilutions for Hz

Corrective Action Taken:

(1) Added 2cc UHP N_2 and analyzed as 2x DIL

(2) None

Result:

(1) Report as 2x DIL

(2) Report Hz on a future batch

Observations to support use of data: (Note any occurrences of manual integration here)

The samples listed below required manual integration to repair baseline inaccuracies

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. _____ Date _____

Analyzed & Reviewed by: JM Date: 010410

Manual Integration Conducted? YES NO
(Circle One)

Reviewed by: _____ Date: _____

Reviewed & Entered by: Upload Date: 010610

Reviewed by: _____ Date: _____

Corrected by: _____ Date: _____

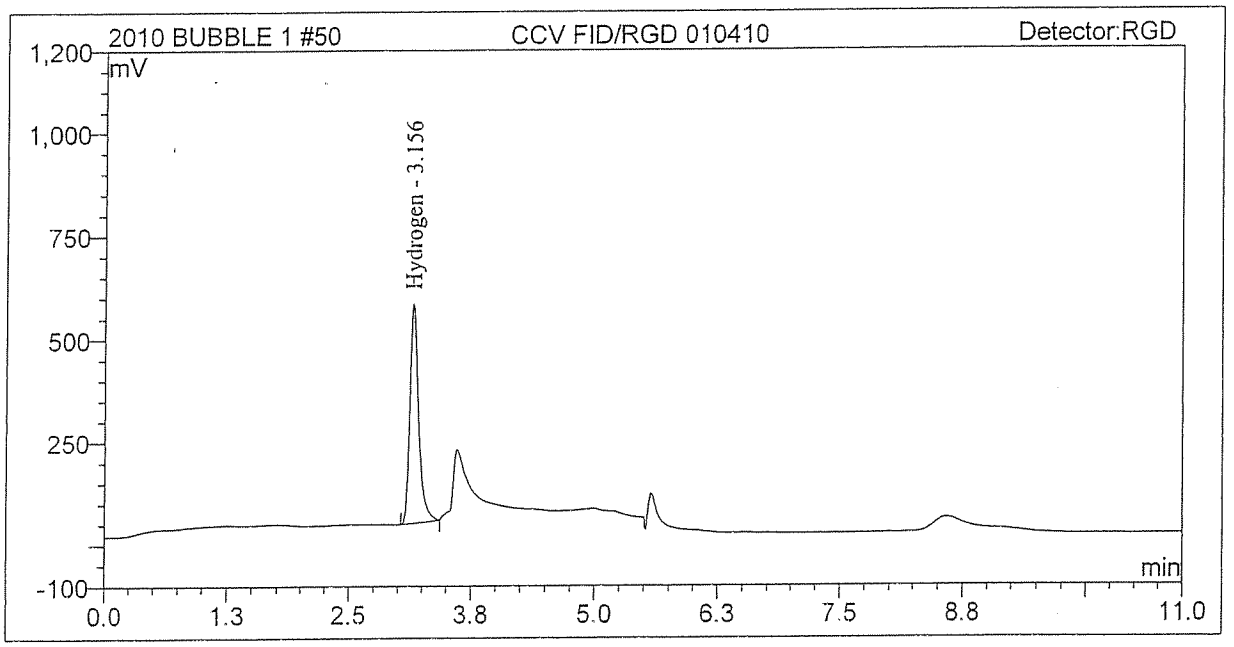
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 010410	**Sequence No:**	50
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 9:11 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.156	55.878	534.078	BMB	10.296	9.0891

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



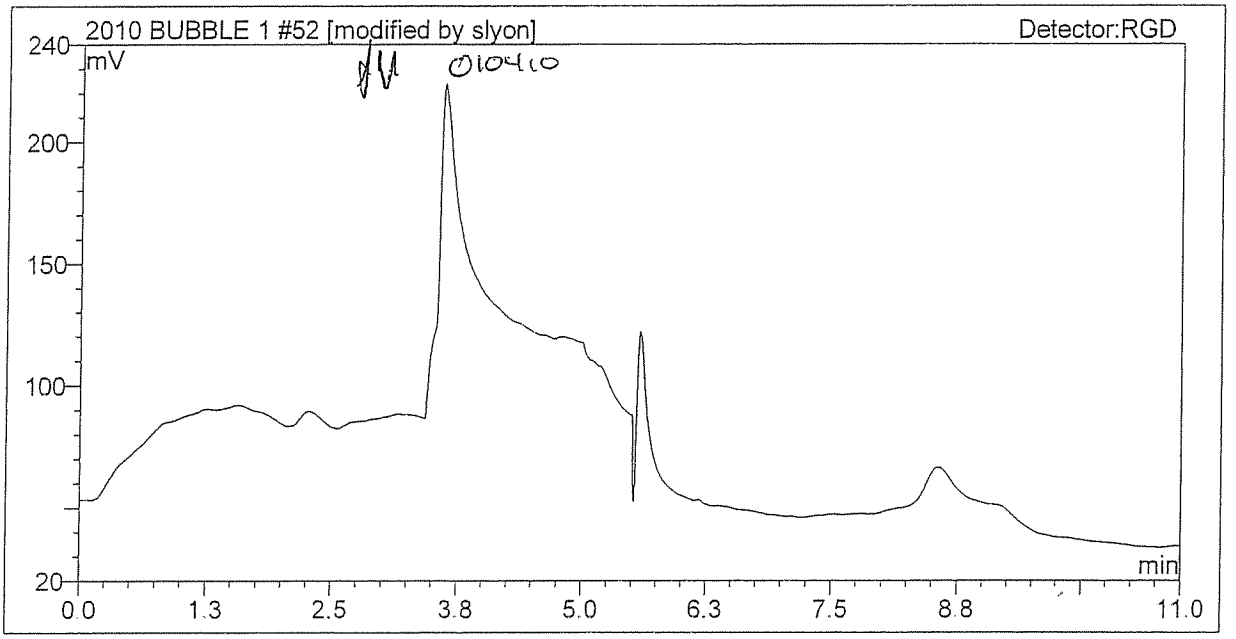
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 010410	**Sequence No:**	52
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 9:43 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



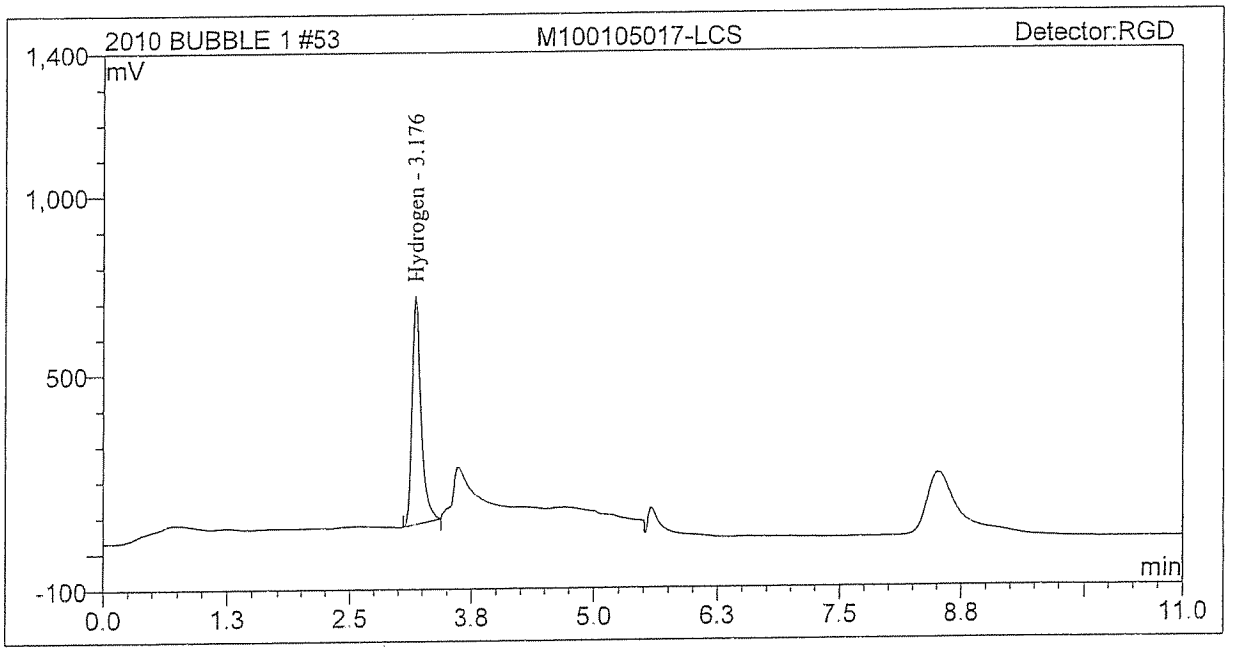
MICROSEEPS

Sample Analysis Report

Sample Name:	M100105017-LCS	**Sequence No:**	53
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 9:56 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.176	70.405	639.632	BMB	9.782	11.4520

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



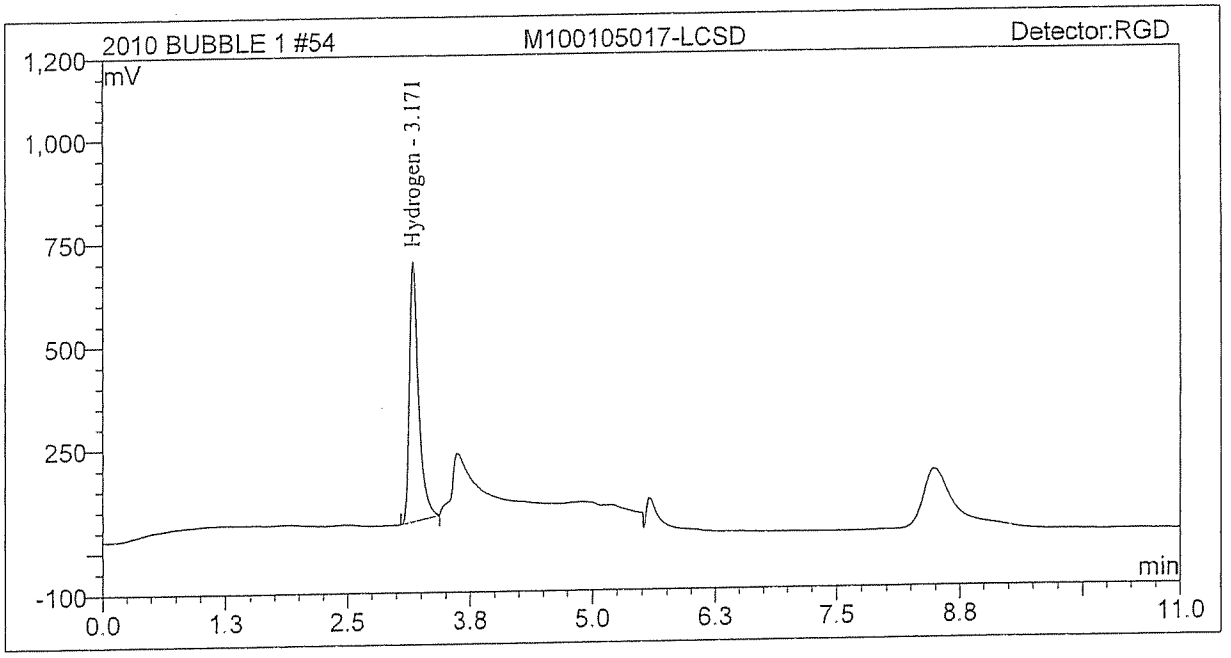
MICROSEEPS

Sample Analysis Report

Sample Name:	M100105017-LCSD	**Sequence No:**	54
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 10:12 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.171	69.043	629.860	BMB	9.752	11.2304

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



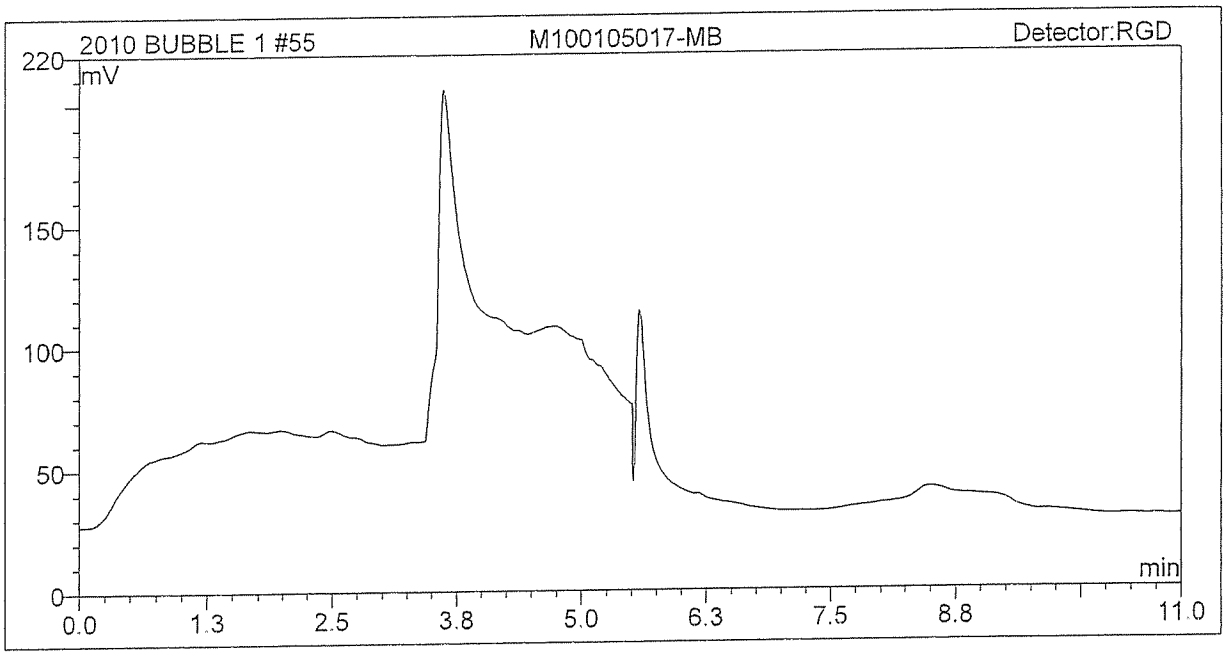
MICROSEEPS

Sample Analysis Report

Sample Name:	M100105017-MB	Sequence No:	55
Sequence Name:	2010 BUBBLE 1	Instrument ID:	BIOREM14
Program Method:	BR14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE102009	Dilution Factor:	1.0000
Date Time Collected:	1/4/2010 10:27 AM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



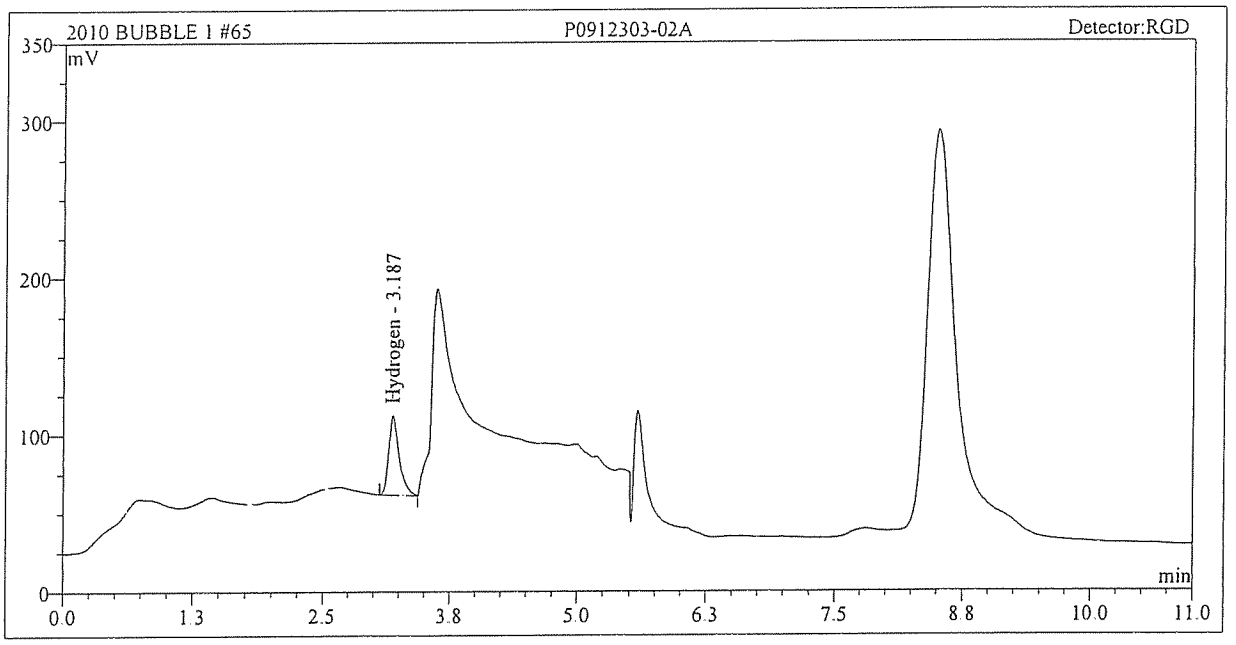
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-02A	**Sequence No:**	65
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 1:07 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.187	6.194	50.461	BMB	1.0075

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



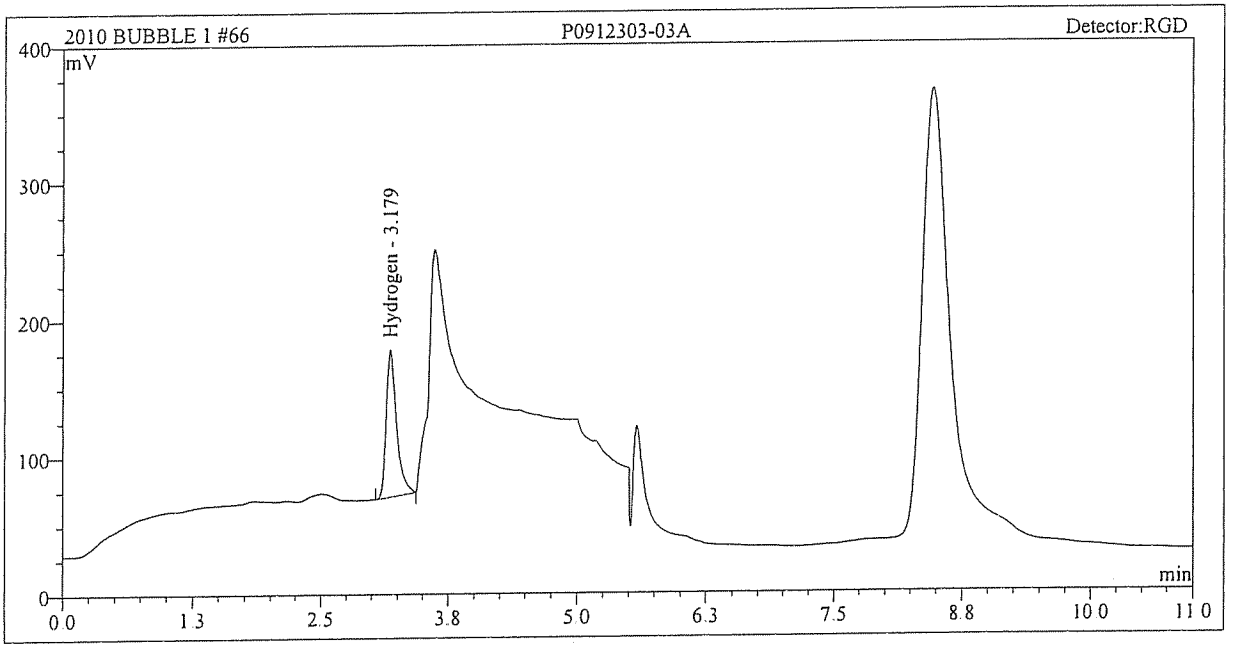
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-03A	**Sequence No:**	66
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 1:20 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.179	12.692	107.347	BMB	2.0645

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



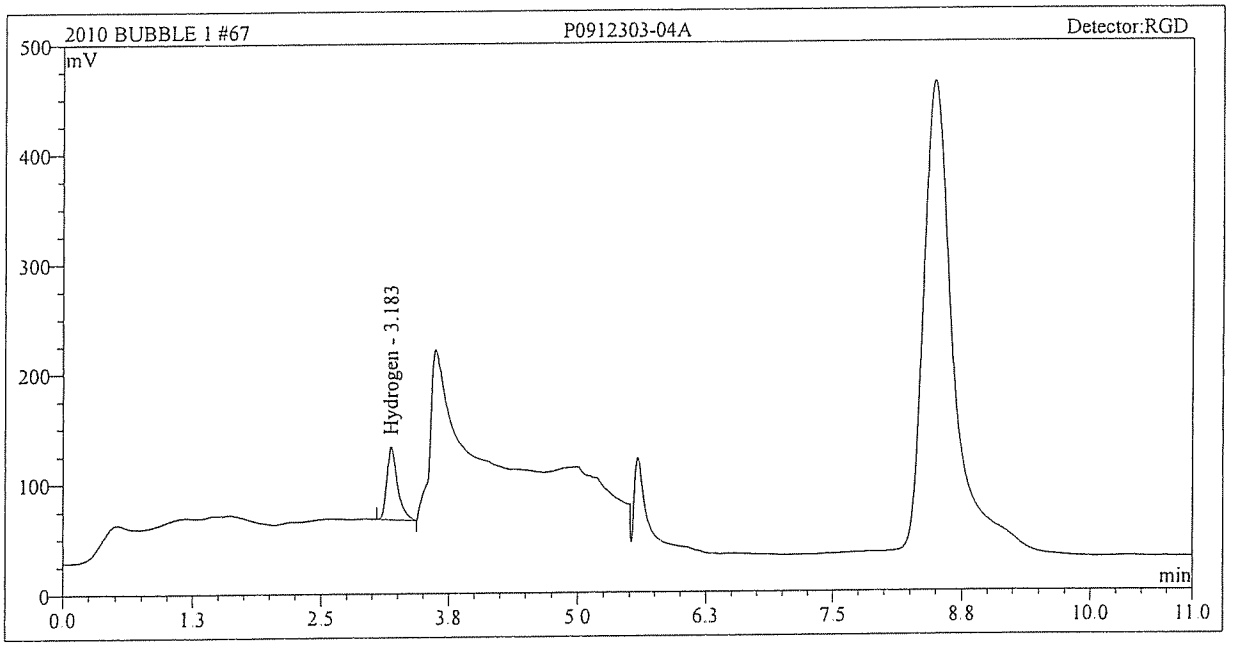
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-04A	**Sequence No:**	67
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 1:34 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.183	7.992	65.864	BMB	1.3000

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



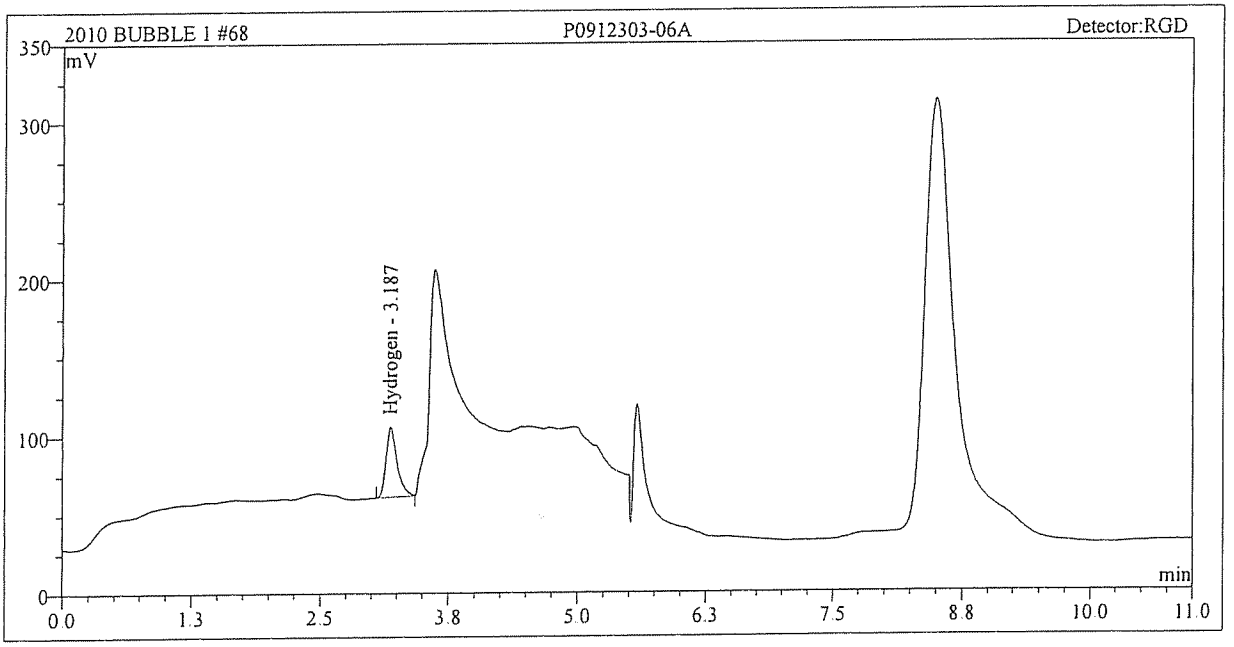
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-06A	**Sequence No:**	68
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 1:46 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.187	5.604	44.665	BMB	0.9116

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



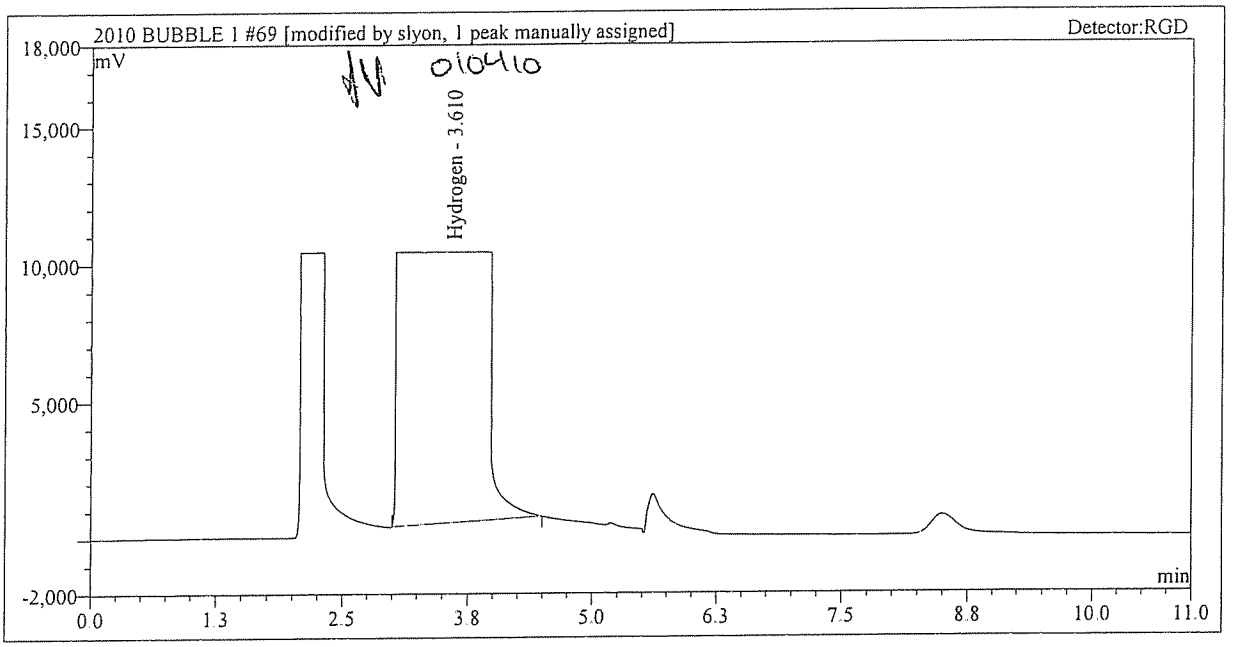
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-09A	**Sequence No:**	69
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 1:59 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.610	9704.893	9838.077	BMB*^	~~1578.5885~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



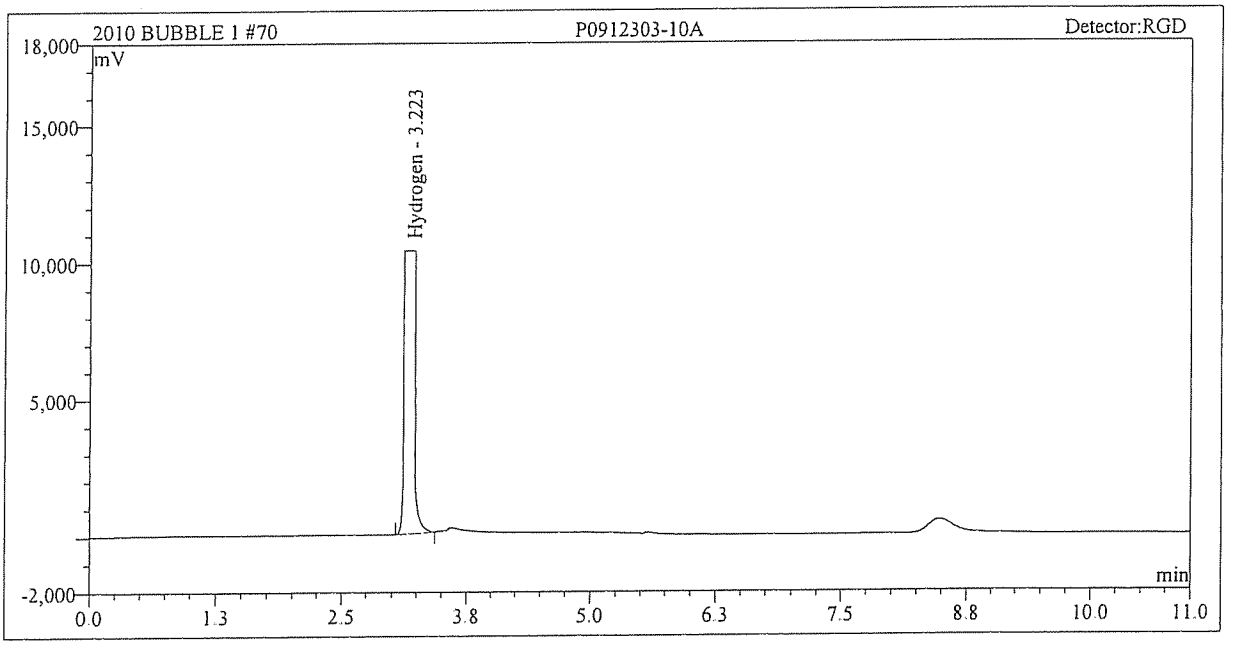
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-10A	**Sequence No:**	70
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 2:12 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.223	1320.698	10309.960	BMB	~~214.8234~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



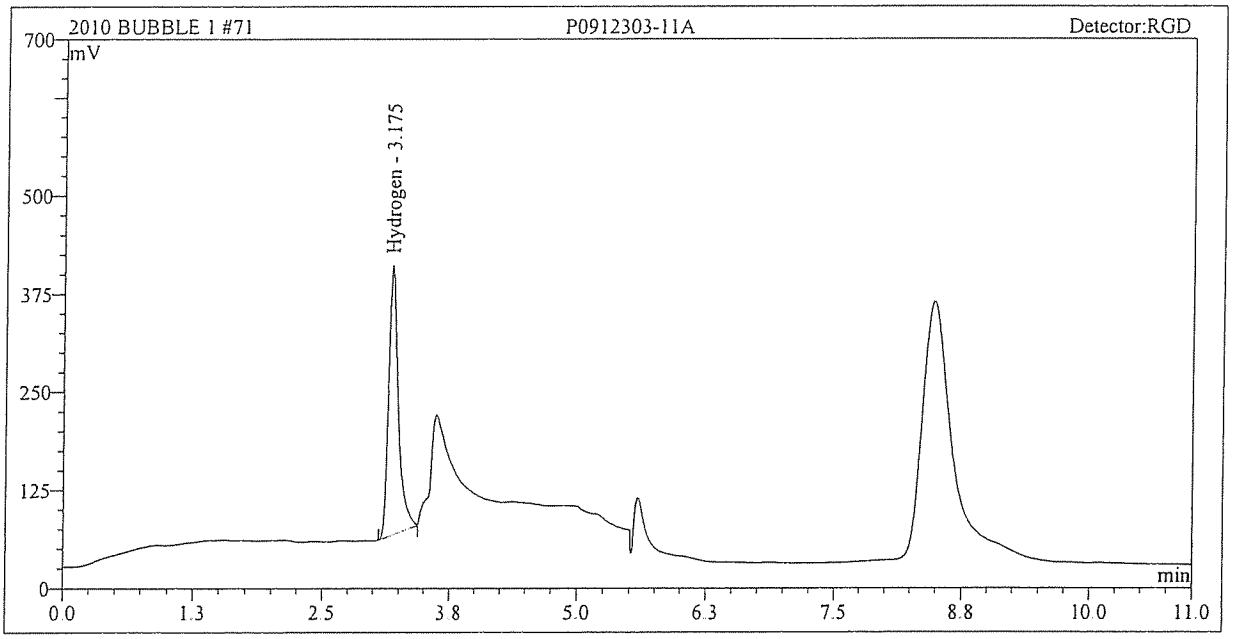
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-11A	**Sequence No:**	71
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 2:45 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.175	38.605	343.647	BMB	6.2794

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



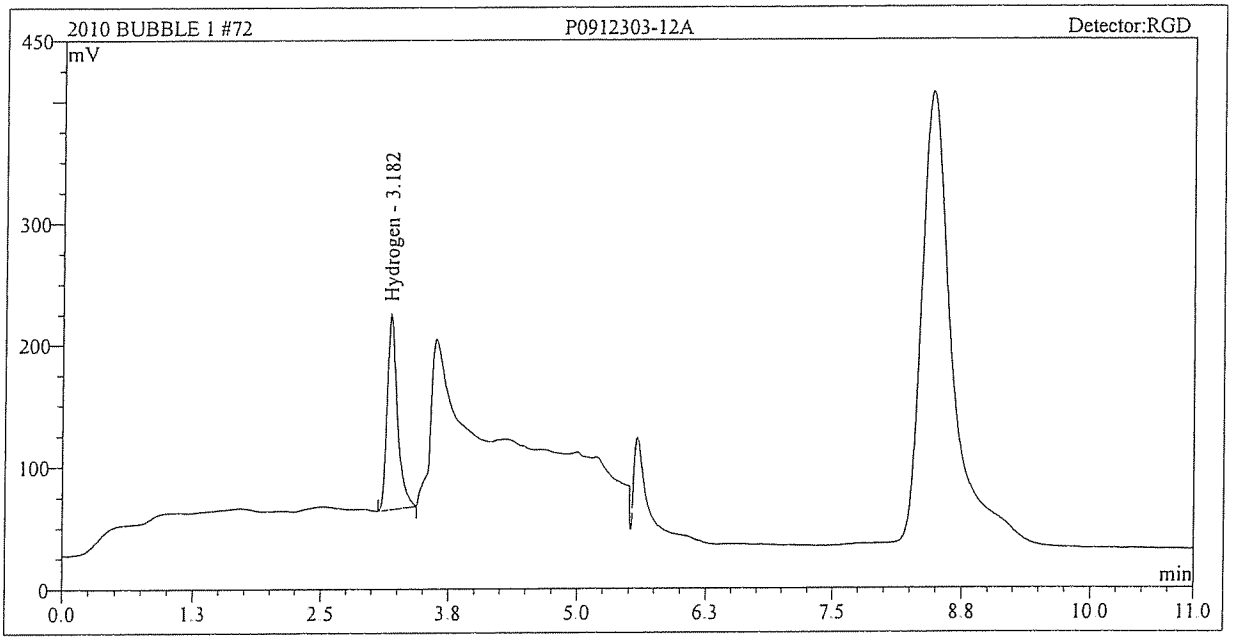
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-12A	**Sequence No:**	72
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 2:58 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.182	18.562	160.683	BMB	3.0192

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



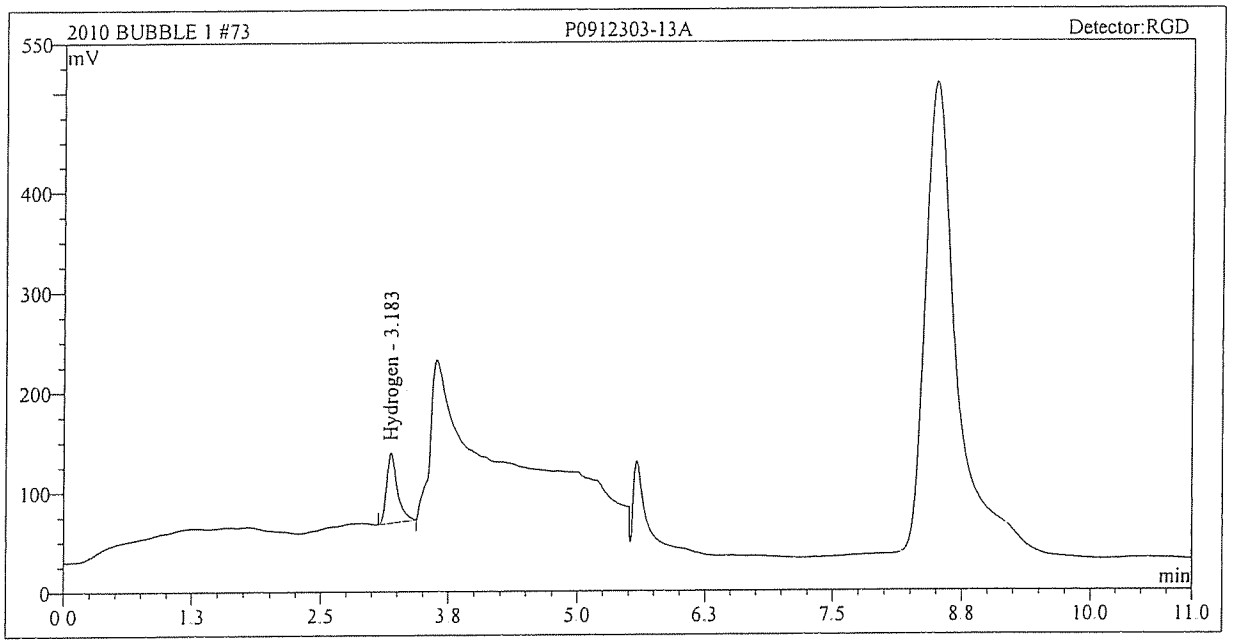
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-13A	**Sequence No:**	73
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 3:11 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.183	8.559	70.414	BMB	1.3922

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



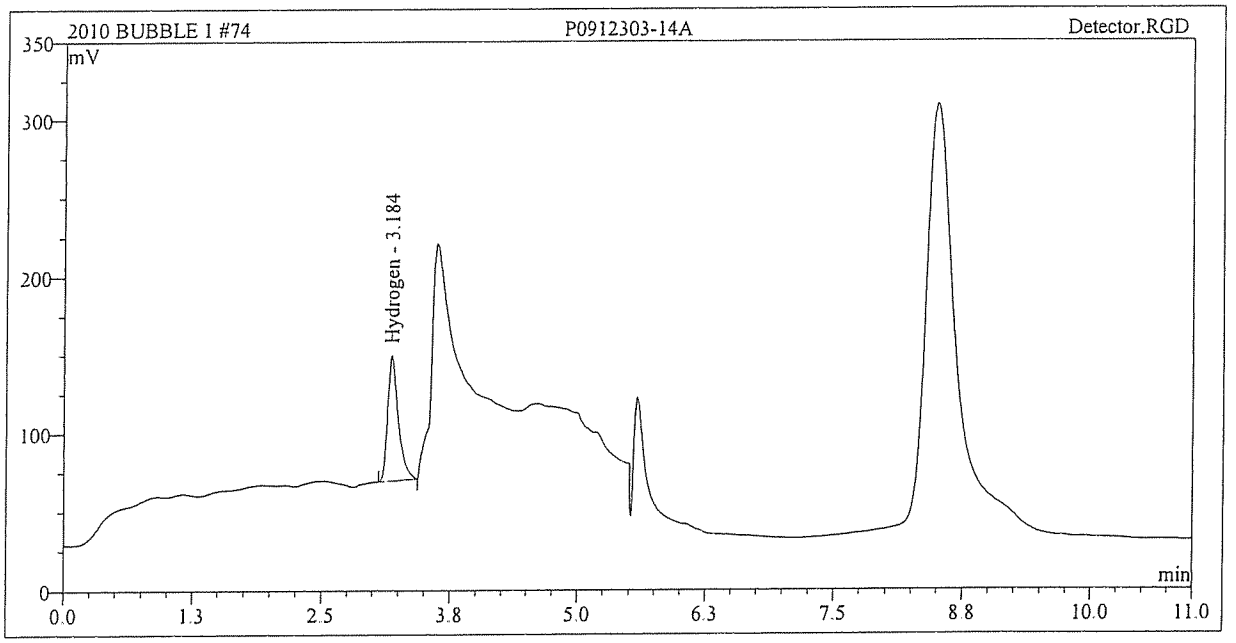
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-14A	**Sequence No:**	74
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 3:24 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.184	9.746	80.194	BMB	1.5853

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



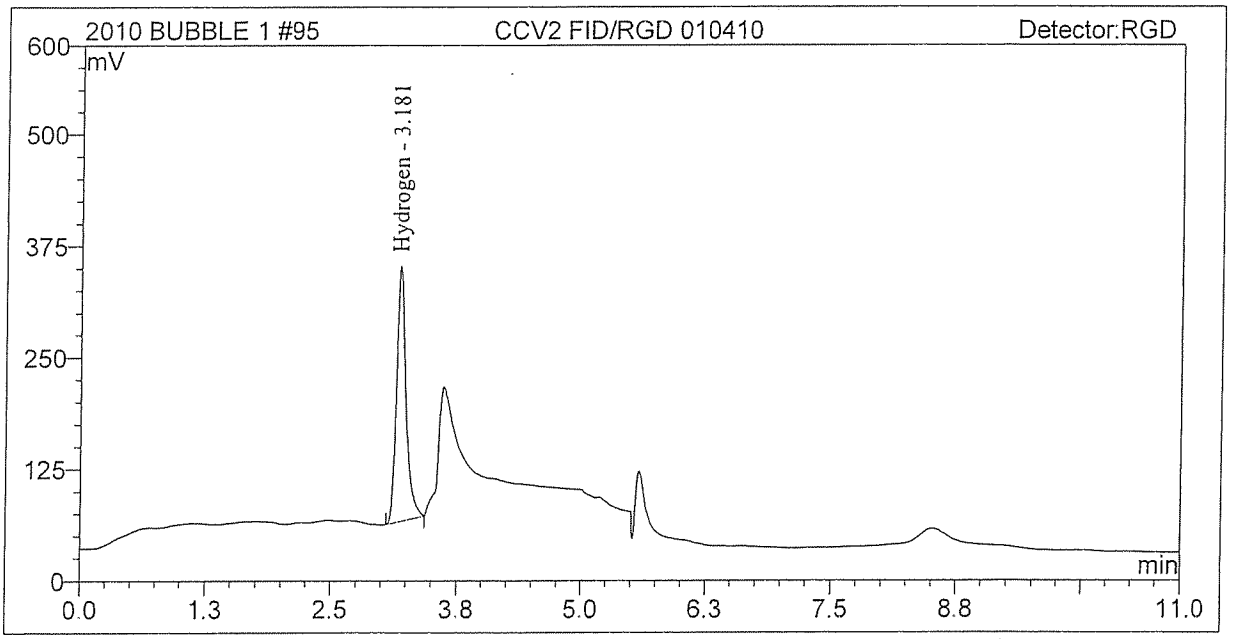
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 010410	**Sequence No:**	95
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/4/2010 7:53 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.181	31.648	286.456	BMB	5.148	5.1479

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100106027-Hc
028-LHC

Original Run Date: 1-6-10

Matrix: Bubble Strip

Sample numbers:
P0912183-(1-2) DIL's
P0912235-(20) DIL
P0912228-(3) DIL's
P0912302-(2,10,15,19) DIL's/FDP
P0912303-(5,8,9,10) DIL's/FDP
P0912278-(3-4) DIL's
P0912168-(4,5,8)

Out of Control Event: (attach another page, if necessary)

None

Corrective Action Taken:

Result:

Observations to support use of data: (Note any occurrences of manual integration here)

The samples listed below required manual integration to repair baseline inaccuracies

P0912183-(1,2)
P0912235-(20)
P0912228-(1,3)

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. Date

Analyzed & Reviewed by: [signature] Date: 010610

Manual Integration Conducted? YES NO
(Circle One)

Reviewed by: _____ Date: _____

Reviewed & Entered by: [signature] Date: 010710

Reviewed by: _____ Date: _____

Corrected by: _____ Date: _____

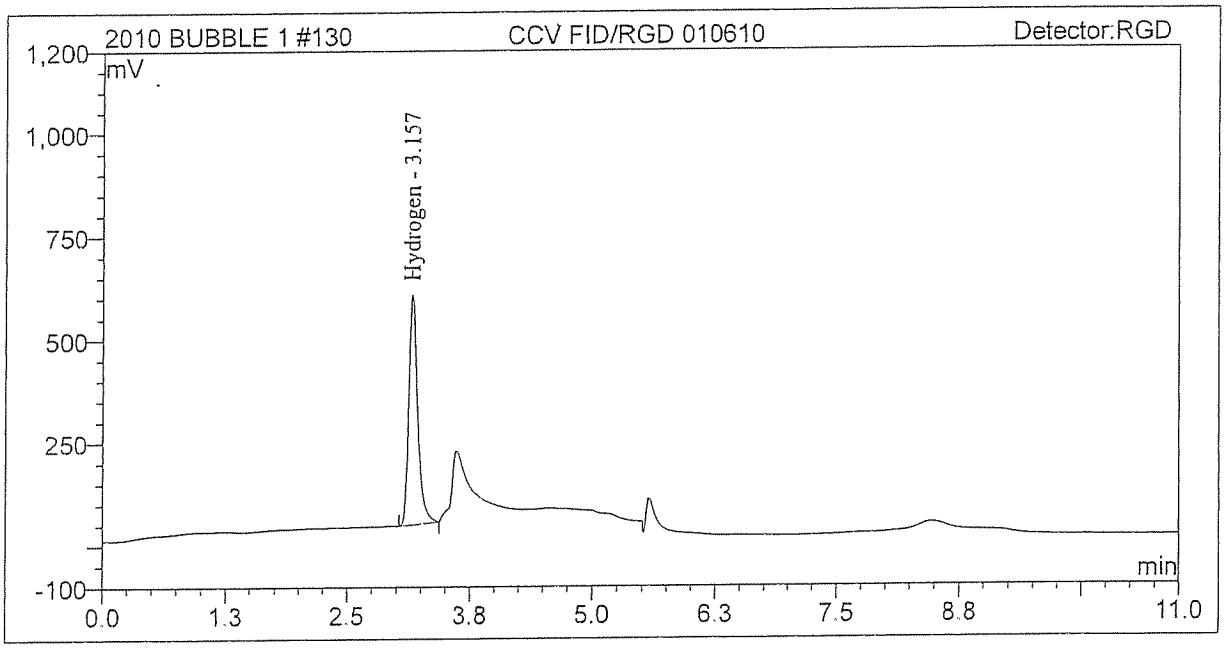
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 010610	**Sequence No:**	130
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 9:47 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.157	58.801	558.389	BMB	10.296	9.5646

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



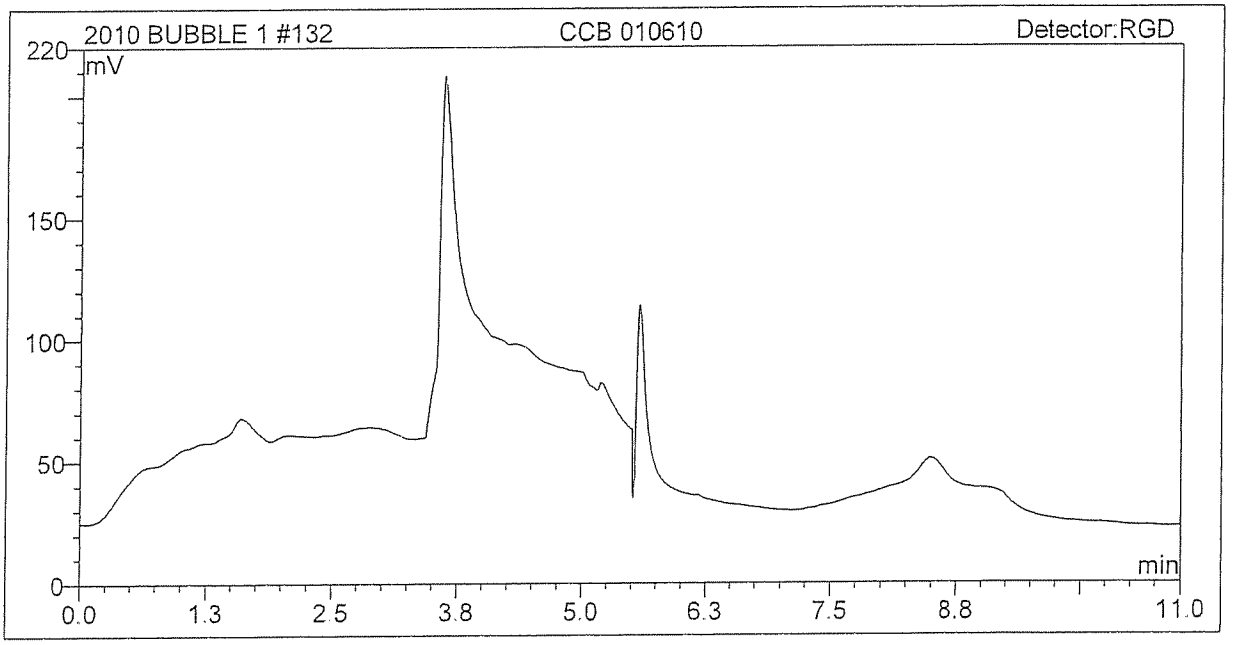
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 010610	**Sequence No:**	132
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 10:22 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



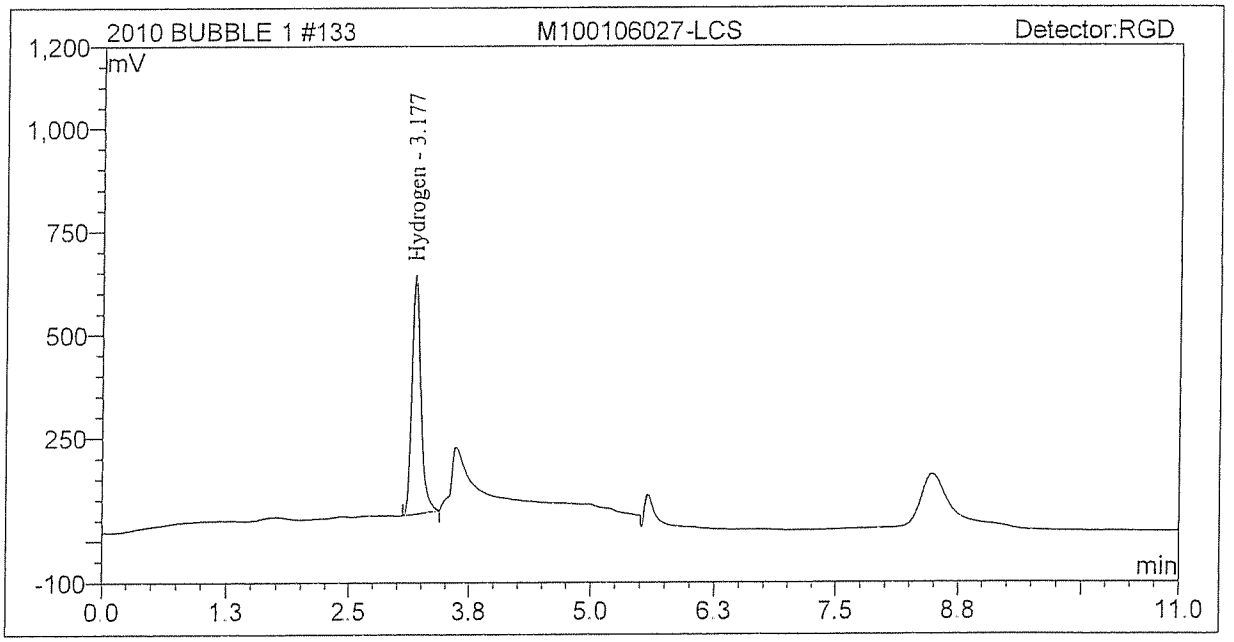
MICROSEEPS

Sample Analysis Report

Sample Name:	M100106027-LCS	**Sequence No:**	133
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 10:46 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.177	61.324	577.871	BMB	9.782	9.9749

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



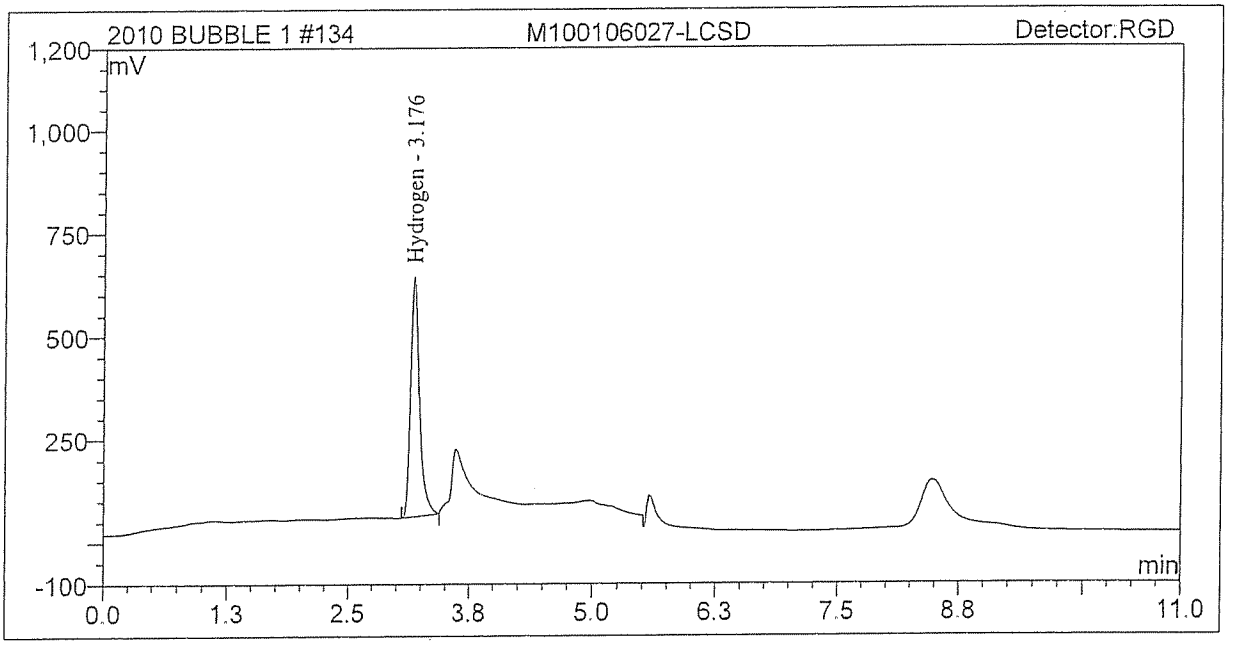
MICROSEEPS

Sample Analysis Report

Sample Name:	M100106027-LCSD	**Sequence No:**	134
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 10:58 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.176	61.670	580.234	BMB	9.782	10.0311

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



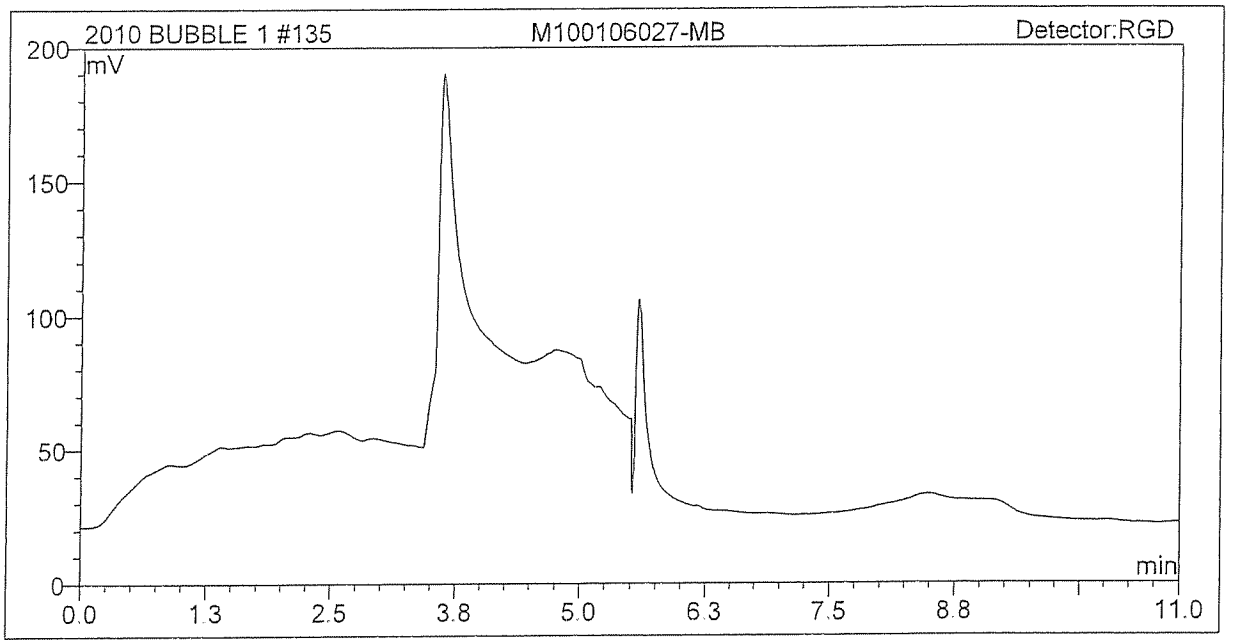
MICROSEEPS

Sample Analysis Report

Sample Name:	M100106027-MB	**Sequence No:**	135
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 11:16 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



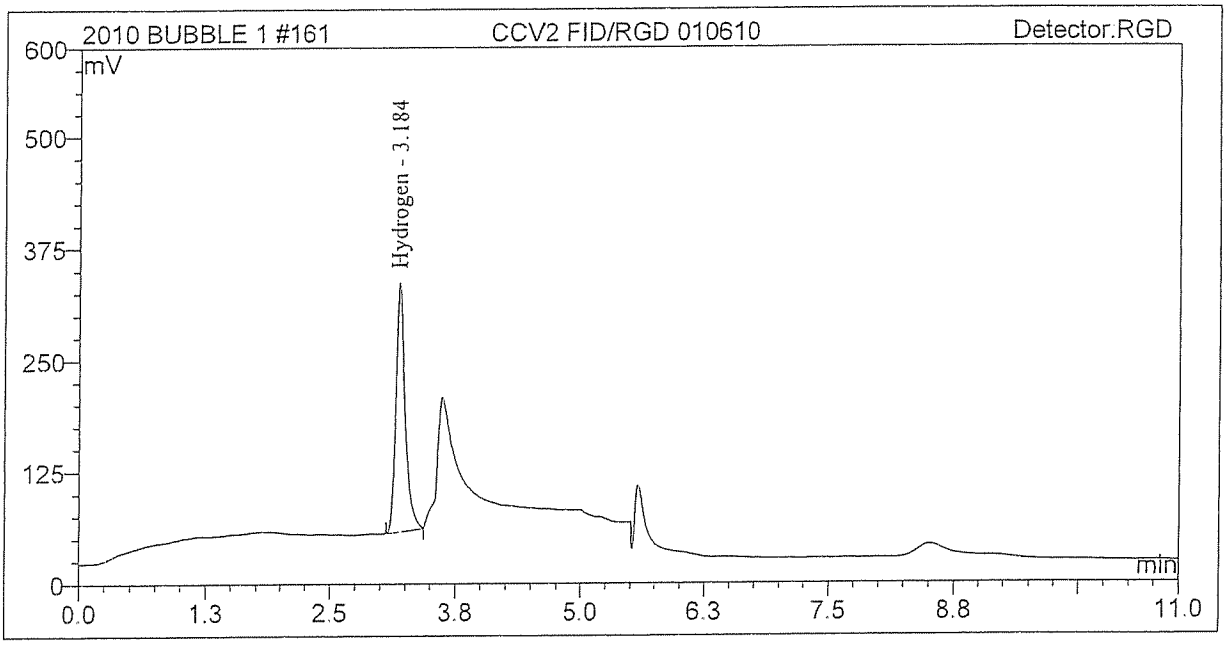
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 010610	**Sequence No:**	161
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 5:44 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount	
1	Hydrogen	3.184	30.560	279.385	BMB	5.148	4.9709

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



MICROSEEPS

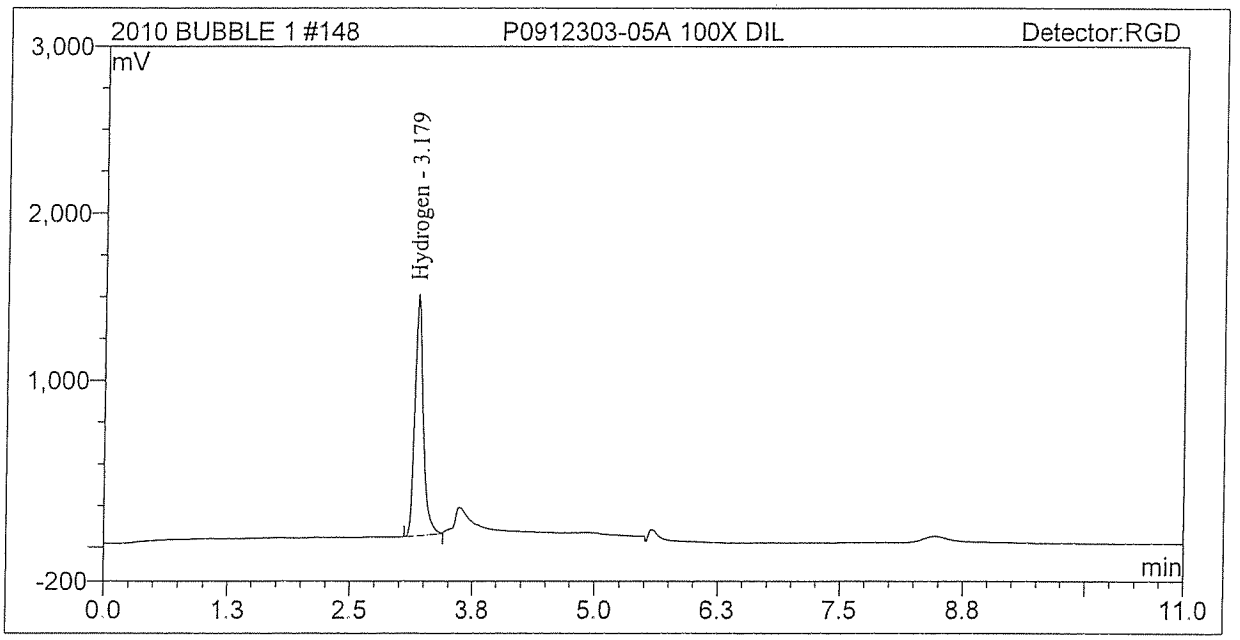
Sample Analysis Report

Sample Name:	P0912303-05A 100X DIL	**Sequence No:**	148
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 2:46 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.179	143.574	1447.407	BMB	23.3535

x 100

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



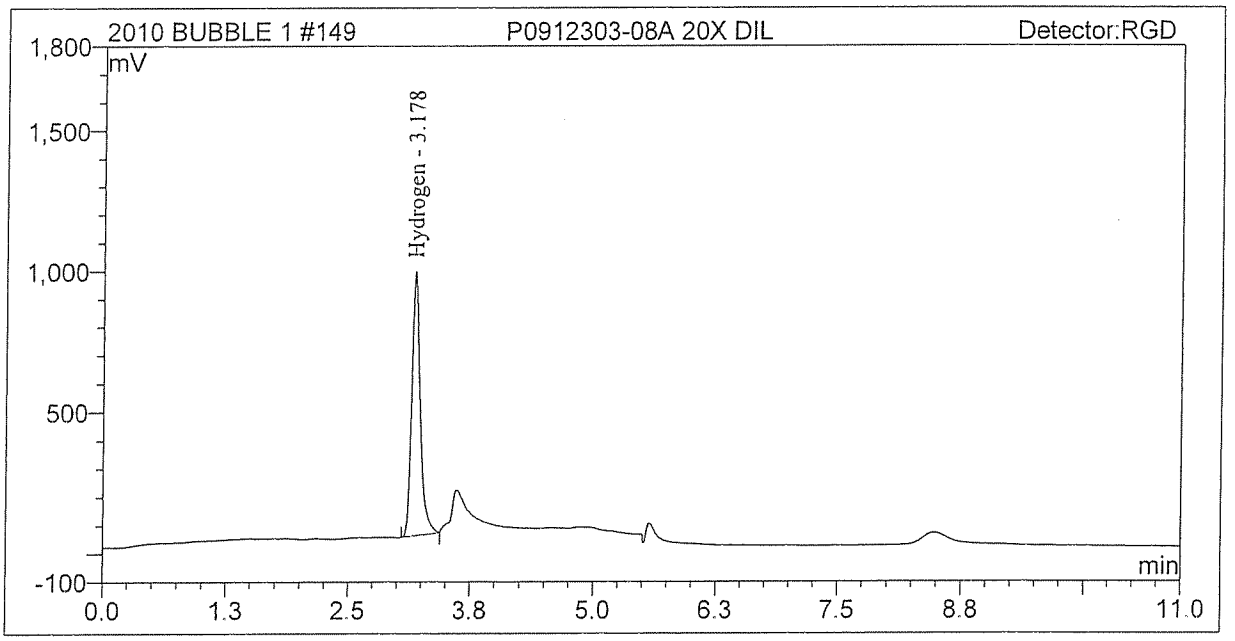
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-08A 20X DIL	**Sequence No:**	149
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 3:03 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.178	96.985	934.679	BMB	15.7755 X 20

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



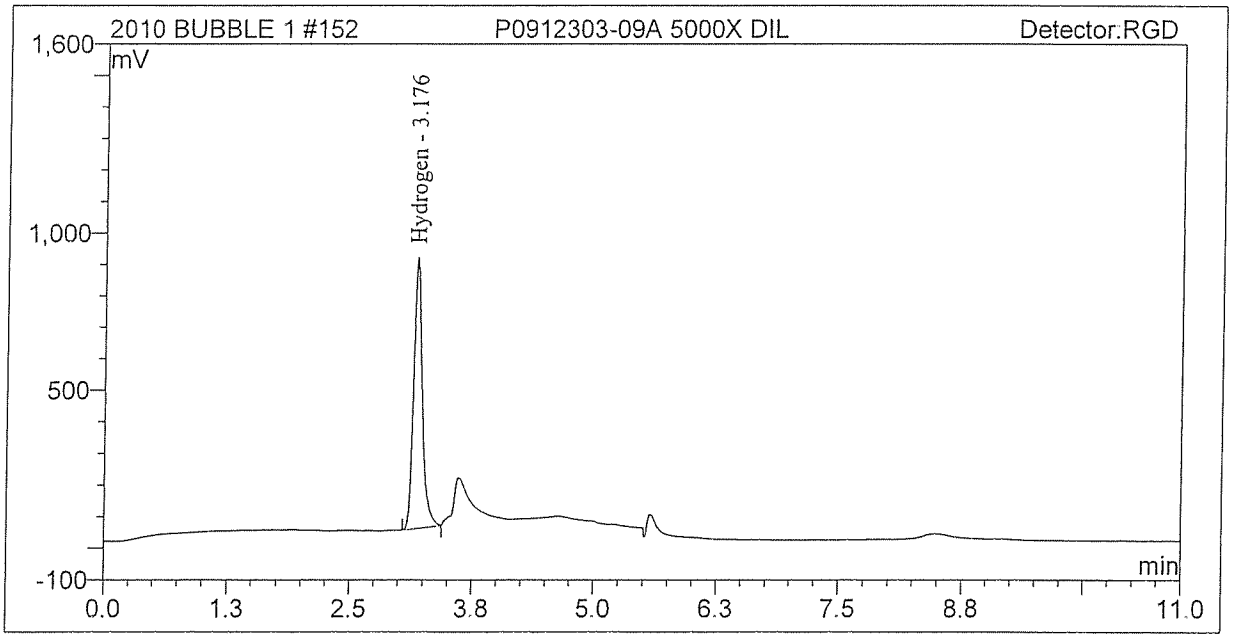
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-09A 5000X DIL	**Sequence No:**	152
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 3:44 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.176	89.800	859.875	BMB	14.6068 x 5000

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



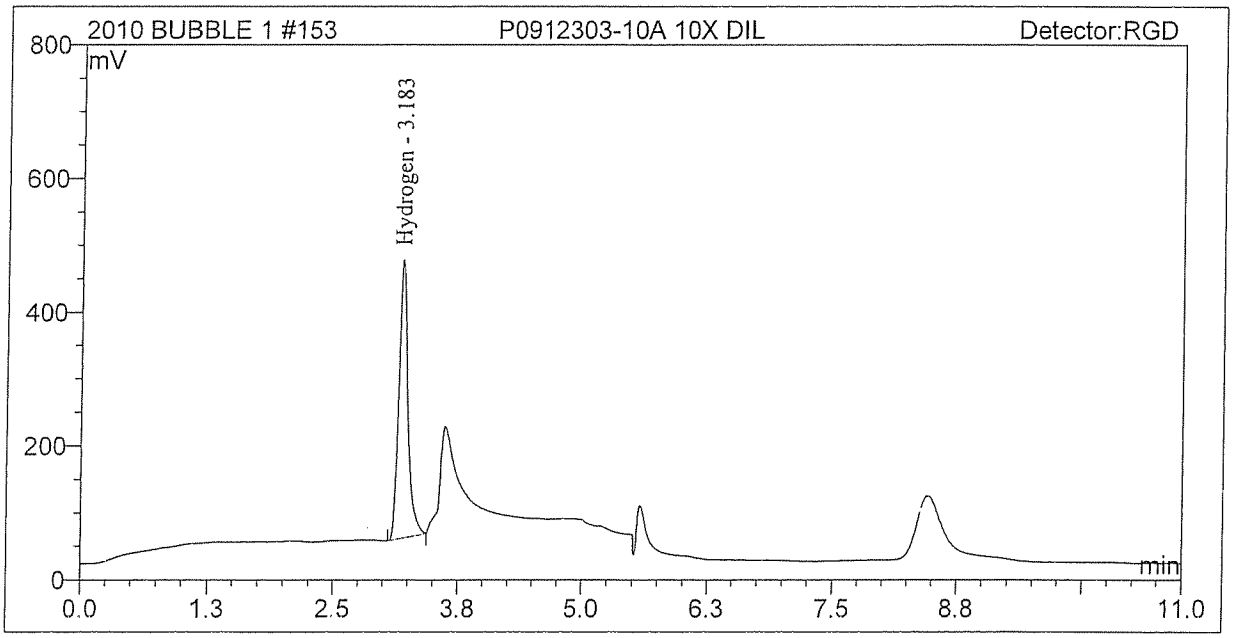
MICROSEEPS

Sample Analysis Report

Sample Name:	P0912303-10A 10X DIL	**Sequence No:**	153
Sequence Name:	2010 BUBBLE 1	**Instrument ID:**	BIOREM14
Program Method:	BR14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE102009	**Dilution Factor:**	1.0000
Date Time Collected:	1/6/2010 3:56 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.183	44.687	417.160	BMB	7.2687 x 10

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26054

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CTO20 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AK, FS	7982 2525 8834
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 09L251

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B SHORT LIST	RSK 175 DISS. GASES	6020A DISS. IRON	6020A TOTAL METALS (Fe, As, Mn, Ca, As, K, Na)	300.0 ANIONS (Cl, NO3, SO4)	SM 2320B ALKALINITY				COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-RZ-TB-001	12/14/09	1205	3	X		W	10	X									* SEE BELOW	TRIP BLANK	—	—	TB
20-RZ-EB-001	12/14/09	1305	3	X		W	10	X									*	EQUIPTMENT BLANK	—	—	EB
20-RZ-014	12/14/09	1000	~~4~~ 27 (Anc)		X	W	10	X	X	X	X	X	X				* MS/MSD	ZVI-MW03A3	20	30	MS/N/MSD
20-RZ-030	12/14/09	1030	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW06C	40	50	N
20-RZ-016	12/14/09	1155	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW03C	40	50	N
20-RZ-026	12/14/09	1200	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW06A2	10	20	N
20-RZ-013	12/14/09	1350	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW03A2	10	20	N
20-RZ-029	12/14/09	1425	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW06B	30	40	N

Project Information Section
Do not submit to Laboratory

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/14/09	FEDEX
COMPANY: BTS	TIME: 1700	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS * 8260B - HCL PRES. RSK175 - HCL PRES., 6020A DISS IRON - FIELD FILTERED 6020A TOTAL METALS/DISS. IRON HNO_3 PRES

COMPOSITE DESCRIPTION 300.0 ANIONS/SM 2320B - NON PRES.

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/17/09 08:51
Sample ID: 20-R2-TB-001	Date Analyzed: 12/17/09 08:51
Lab Samp ID: L251-01	Dilution Factor: 1
Lab File ID: RLD516	Matrix : WATER
Ext Btch ID: VO94L21	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	95	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/17/09 02:18
Sample ID: 20-R2-EB-001	Date Analyzed: 12/17/09 02:18
Lab Samp ID: L251-02	Dilution Factor: 1
Lab File ID: RLD503	Matrix : WATER
Ext Btch ID: VO94L20	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/17/09 02:48
Sample ID: 20-R2-014	Date Analyzed: 12/17/09 02:48
Lab Samp ID: L251-03	Dilution Factor: 1
Lab File ID: RLD504	Matrix : WATER
Ext Btch ID: VO94L20	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.33J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	3.2	1.0	0.20
1,1-DICHLOROETHENE	88E	1.0	0.20
1,2-DICHLOROETHANE	0.26J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	5.4	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	1.2	1.0	0.20
TRICHLOROETHENE	28	1.0	0.20
VINYL CHLORIDE	1.2	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	106	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/18/09 03:43
Sample ID: 20-R2-014DL	Date Analyzed: 12/18/09 03:43
Lab Samp ID: L251-03T	Dilution Factor: 25
Lab File ID: RLD541	Matrix : WATER
Ext Btch ID: VO94L22	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHENE	76	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	5.5J	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	ND	25	5.0
TRICHLOROETHENE	26	25	5.0
VINYL CHLORIDE	ND	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/17/09 14:56
Sample ID: 20-R2-030	Date Analyzed: 12/17/09 14:56
Lab Samp ID: L251-04	Dilution Factor: 1
Lab File ID: RLD528	Matrix : WATER
Ext Btch ID: VO94L21	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	0.41J	1.0	0.20
1,1-DICHLOROETHENE	31	1.0	0.20
1,2-DICHLOROETHANE	0.53	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	1.7	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	1.4	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	106	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
Batch No.	: 09L251	Date Extracted:	12/18/09 05:46
Sample ID:	20-R2-016	Date Analyzed:	12/18/09 05:46
Lab Samp ID:	L251-05R	Dilution Factor:	1
Lab File ID:	RLD545	Matrix	: WATER
Ext Btch ID:	VO94L22	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	1.4	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.28J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.24J	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	109	70-120
4-BROMOFLUOROBENZENE	94	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
Batch No.	: 09L251	Date Extracted:	12/17/09 15:57
Sample ID:	20-R2-026	Date Analyzed:	12/17/09 15:57
Lab Samp ID:	L251-06	Dilution Factor:	1
Lab File ID:	RLD530	Matrix	: WATER
Ext Btch ID:	VO94L21	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	45E	1.0	0.20
1,1-DICHLOROETHENE	24E	1.0	0.20
1,2-DICHLOROETHANE	1.8	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.70J	1.0	0.20
CIS-1,2-DICHLOROETHENE	180E	1.0	0.20
TETRACHLOROETHENE	1.4	1.0	0.20
TRANS-1,2-DICHLOROETHENE	120E	1.0	0.20
TRICHLOROETHENE	75E	1.0	0.20
VINYL CHLORIDE	190E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	113	70-120
4-BROMOFLUOROBENZENE	93	75-120
TOLUENE-D8	93	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/18/09 07:46
Sample ID: 20-R2-026DL	Date Analyzed: 12/18/09 07:46
Lab Samp ID: L251-06T	Dilution Factor: 25
Lab File ID: RLD549	Matrix : WATER
Ext Btch ID: VO94L22	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	52	25	5.0
1,1-DICHLOROETHENE	47	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	1900E	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	120	25	5.0
TRICHLOROETHENE	1800E	25	5.0
VINYL CHLORIDE	450	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	111	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	92	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/18/09 06:16
Sample ID: 20-R2-026DL	Date Analyzed: 12/18/09 06:16
Lab Samp ID: L251-06I	Dilution Factor: 250
Lab File ID: RLD546	Matrix : WATER
Ext Btch ID: VO94L22	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	250	50
1,1,2,2-TETRACHLOROETHANE	ND	250	50
1,1,2-TRICHLOROETHANE	ND	250	50
1,1-DICHLOROETHANE	57J	250	50
1,1-DICHLOROETHENE	ND	250	50
1,2-DICHLOROETHANE	ND	120	50
CHLOROETHANE	ND	120	50
CHLOROMETHANE	ND	250	50
CIS-1,2-DICHLOROETHENE	12000E	250	50
TETRACHLOROETHENE	ND	250	50
TRANS-1,2-DICHLOROETHENE	140J	250	50
TRICHLOROETHENE	15000E	250	50
VINYL CHLORIDE	520	120	50

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/21/09 13:27
Sample ID: 20-R2-026DL	Date Analyzed: 12/21/09 13:27
Lab Samp ID: L251-06J	Dilution Factor: 1000
Lab File ID: RLD637	Matrix : WATER
Ext Btch ID: VO94L26	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1000	200
1,1,2,2-TETRACHLOROETHANE	ND	1000	200
1,1,2-TRICHLOROETHANE	ND	1000	200
1,1-DICHLOROETHANE	ND	1000	200
1,1-DICHLOROETHENE	ND	1000	200
1,2-DICHLOROETHANE	ND	500	200
CHLOROETHANE	ND	500	200
CHLOROMETHANE	ND	1000	200
CIS-1,2-DICHLOROETHENE	11000	1000	200
TETRACHLOROETHENE	ND	1000	200
TRANS-1,2-DICHLOROETHENE	ND	1000	200
TRICHLOROETHENE	16000	1000	200
VINYL CHLORIDE	550	500	200

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	97	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	95	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/21/09 14:59
Sample ID: 20-R2-013	Date Analyzed: 12/21/09 14:59
Lab Samp ID: L251-07N	Dilution Factor: 1
Lab File ID: RLD640	Matrix : WATER
Ext Btch ID: VO94L26	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	2.5	1.0	0.20
1,1-DICHLOROETHENE	19	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	110E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	42E	1.0	0.20
TRICHLOROETHENE	250E	1.0	0.20
VINYL CHLORIDE	15	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/21/09 14:28
Sample ID: 20-R2-013DL	Date Analyzed: 12/21/09 14:28
Lab Samp ID: L251-07T	Dilution Factor: 25
Lab File ID: RLD639	Matrix : WATER
Ext Btch ID: VO94L26	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHENE	20J	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	310	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	43	25	5.0
TRICHLOROETHENE	220	25	5.0
VINYL CHLORIDE	15	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/21/09 17:02
Sample ID: 20-R2-029	Date Analyzed: 12/21/09 17:02
Lab Samp ID: L251-08N	Dilution Factor: 1
Lab File ID: RLD644	Matrix : WATER
Ext Btch ID: VO94L26	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	11	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	33	1.0	0.20
1,1-DICHLOROETHANE	44E	1.0	0.20
1,1-DICHLOROETHENE	220E	1.0	0.20
1,2-DICHLOROETHANE	47E	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	1.5	1.0	0.20
CIS-1,2-DICHLOROETHENE	30	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	16	1.0	0.20
TRICHLOROETHENE	11	1.0	0.20
VINYL CHLORIDE	0.89	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	130*	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/18/09 06:46
Sample ID: 20-R2-029DL	Date Analyzed: 12/18/09 06:46
Lab Samp ID: L251-08T	Dilution Factor: 25
Lab File ID: RLD547	Matrix : WATER
Ext Btch ID: VO94L22	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	8.7J	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	27	25	5.0
1,1-DICHLOROETHANE	39	25	5.0
1,1-DICHLOROETHENE	3300E	25	5.0
1,2-DICHLOROETHANE	41	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	30	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	13J	25	5.0
TRICHLOROETHENE	16J	25	5.0
VINYL CHLORIDE	ND	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	100	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
Batch No.	: 09L251	Date Extracted:	12/21/09 16:31
Sample ID:	20-R2-029DL	Date Analyzed:	12/21/09 16:31
Lab Samp ID:	L251-08I	Dilution Factor:	250
Lab File ID:	RLD643	Matrix	: WATER
Ext Btch ID:	VO94L26	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	250	50
1,1,2,2-TETRACHLOROETHANE	ND	250	50
1,1,2-TRICHLOROETHANE	ND	250	50
1,1-DICHLOROETHANE	ND	250	50
1,1-DICHLOROETHENE	4400	250	50
1,2-DICHLOROETHANE	ND	120	50
CHLOROETHANE	ND	120	50
CHLOROMETHANE	ND	250	50
CIS-1,2-DICHLOROETHENE	52J	250	50
TETRACHLOROETHENE	ND	250	50
TRANS-1,2-DICHLOROETHENE	ND	250	50
TRICHLOROETHENE	ND	250	50
VINYL CHLORIDE	ND	120	50

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	108	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	101	85-120

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/16/09 09:30
Sample ID: 20-R2-014	Date Analyzed: 12/16/09 11:55
Lab Samp ID: L251-03	Dilution Factor: 1
Lab File ID: FL16009A	Matrix : WATER
Ext Btch ID: DGL015W	% Moisture : NA
Calib. Ref.: FL16002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	6.6	2.0	0.60
ETHENE	7.4	2.0	0.60
METHANE	78E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/16/09 09:30
Sample ID: 20-R2-014DL	Date Analyzed: 12/16/09 12:59
Lab Samp ID: L251-03T	Dilution Factor: 5
Lab File ID: FL16014A	Matrix : WATER
Ext Btch ID: DGL015W	% Moisture : NA
Calib. Ref.: FL16002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	6.1J	10	3.0
ETHENE	7.2J	10	3.0
METHANE	120	10	3.0
ACETYLENE	ND	15	7.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/16/09 09:30
Sample ID: 20-R2-030	Date Analyzed: 12/16/09 13:56
Lab Samp ID: L251-04	Dilution Factor: 1
Lab File ID: FL16018A	Matrix : WATER
Ext Btch ID: DGL015W	% Moisture : NA
Calib. Ref.: FL16015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	10	2.0	0.60
ETHENE	3.5	2.0	0.60
METHANE	20	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/16/09 09:30
Sample ID: 20-R2-016	Date Analyzed: 12/16/09 14:09
Lab Samp ID: L251-05	Dilution Factor: 1
Lab File ID: FL16019A	Matrix : WATER
Ext Btch ID: DGL015W	% Moisture : NA
Calib. Ref.: FL16015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	5.8	2.0	0.60
ETHENE	5.1	2.0	0.60
METHANE	55E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/16/09 09:30
Sample ID: 20-R2-016DL	Date Analyzed: 12/16/09 14:59
Lab Samp ID: L251-05T	Dilution Factor: 2
Lab File ID: FL16023A	Matrix : WATER
Ext Btch ID: DGL015W	% Moisture : NA
Calib. Ref.: FL16015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	5.6	4.0	1.2
ETHENE	5.0	4.0	1.2
METHANE	59	4.0	1.2
ACETYLENE	ND	6.0	3.0

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/16/09 09:30
Sample ID: 20-R2-026	Date Analyzed: 12/16/09 14:22
Lab Samp ID: L251-06	Dilution Factor: 1
Lab File ID: FL16020A	Matrix : WATER
Ext Btch ID: DGL015W	% Moisture : NA
Calib. Ref.: FL16015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.8J	2.0	0.60
ETHENE	7.4	2.0	0.60
METHANE	4.6	2.0	0.60
ACETYLENE	4.0	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/16/09 09:30
Sample ID: 20-R2-013	Date Analyzed: 12/16/09 14:35
Lab Samp ID: L251-07	Dilution Factor: 1
Lab File ID: FL16021A	Matrix : WATER
Ext Btch ID: DGL015W	% Moisture : NA
Calib. Ref.: FL16015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.6J	2.0	0.60
ETHENE	6.1	2.0	0.60
METHANE	80E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/16/09 09:30
Sample ID: 20-R2-013DL	Date Analyzed: 12/16/09 15:10
Lab Samp ID: L251-07T	Dilution Factor: 5
Lab File ID: FL16024A	Matrix : WATER
Ext Btch ID: DGL015W	% Moisture : NA
Calib. Ref.: FL16015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	10	3.0
ETHENE	6.2J	10	3.0
METHANE	130	10	3.0
ACETYLENE	ND	15	7.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
Batch No. : 09L251	Date Extracted: 12/16/09 09:30
Sample ID: 20-R2-029	Date Analyzed: 12/16/09 14:47
Lab Samp ID: L251-08	Dilution Factor: 1
Lab File ID: FL16022A	Matrix : WATER
Ext Btch ID: DGL015W	% Moisture : NA
Calib. Ref.: FL16015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.1J	2.0	0.60
ETHENE	5.5	2.0	0.60
METHANE	6.9	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
SDG NO.	: 09L251	Date Extracted:	12/17/09 14:10
Sample ID:	20-R2-014	Date Analyzed:	12/23/09 22:10
Lab Samp ID:	L251-03	Dilution Factor:	1
Lab File ID:	98L20081	Matrix :	WATER
Ext Btch ID:	IML019W	% Moisture :	NA
Calib. Ref.:	98L20079	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.01	1.00	0.500
Calcium	45600	1000	200
Iron	378	200	50.0
Magnesium^	52500	5000	1000
Manganese	1730	1.00	0.500
Potassium	2430	1000	200
Sodium^	253000	5000	1000

^: Analyzed at DF 5 on 12/23/09 17:21 | File ID 98L20035

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
SDG NO.	: 09L251	Date Extracted:	12/17/09 14:10
Sample ID:	20-R2-030	Date Analyzed:	12/24/09 00:28
Lab Samp ID:	L251-04	Dilution Factor:	1
Lab File ID:	98L20103	Matrix :	WATER
Ext Btch ID:	IML019W	% Moisture :	NA
Calib. Ref.:	98L20100	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.57	1.00	0.500
Calcium	201000	1000	200
Iron	1650	200	50.0
Magnesium^	264000	20000	4000
Manganese	2420	1.00	0.500
Potassium	13500	1000	200
Sodium^	3360000	20000	4000

^: Analyzed at DF 20 on 12/23/09 18:55 | File ID 98L20050

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
SDG NO.	: 09L251	Date Extracted:	12/17/09 14:10
Sample ID:	20-R2-016	Date Analyzed:	12/23/09 19:58
Lab Samp ID:	L251-05T	Dilution Factor:	5
Lab File ID:	98L20060	Matrix :	WATER
Ext Btch ID:	IML019W	% Moisture :	NA
Calib. Ref.:	98L20057	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.11J	5.00	2.50
Calcium	285000	5000	1000
Iron	2760	1000	250
Magnesium	358000	5000	1000
Manganese	4130	5.00	2.50
Potassium	11300	5000	1000
Sodium^	2740000	20000	4000

^: Analyzed at DF 20 on 12/23/09 19:02 | File ID 98L20051

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
SDG NO.	: 09L251	Date Extracted:	12/17/09 14:10
Sample ID:	20-R2-026	Date Analyzed:	12/28/09 18:45
Lab Samp ID:	L251-06W	Dilution Factor:	1
Lab File ID:	98L21054	Matrix :	WATER
Ext Btch ID:	IML019W	% Moisture :	NA
Calib. Ref.:	98L21048	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	74.4	1.00	0.500
Calcium	21500	1000	200
Iron	1740	200	50.0
Magnesium	4800	1000	200
Manganese	105	1.00	0.500
Potassium	2750	1000	200
Sodium^	1050000	5000	1000

^: Analyzed at DF 5 on 12/28/09 13:54 | File ID 98L21050

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/14/09
Project : CTO 20, ALAMEDA	Date Received: 12/15/09
SDG NO. : 09L251	Date Extracted: 12/17/09 14:10
Sample ID: 20-R2-013	Date Analyzed: 12/23/09 22:35
Lab Samp ID: L251-07	Dilution Factor: 1
Lab File ID: 98L20085	Matrix : WATER
Ext Btch ID: IML019W	% Moisture : NA
Calib. Ref.: 98L20079	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	9.05	1.00	0.500
Calcium	17500	1000	200
Iron	ND	200	50.0
Magnesium^	16200	5000	1000
Manganese	127	1.00	0.500
Potassium	3310	1000	200
Sodium^	515000	5000	1000

^: Analyzed at DF 5 on 12/23/09 17:46 | File ID 98L20039

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
SDG NO.	: 09L251	Date Extracted:	12/17/09 14:10
Sample ID:	20-R2-029	Date Analyzed:	12/23/09 22:41
Lab Samp ID:	L251-08	Dilution Factor:	1
Lab File ID:	98L20086	Matrix :	WATER
Ext Btch ID:	IML019W	% Moisture :	NA
Calib. Ref.:	98L20079	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.85	1.00	0.500
Calcium	30000	1000	200
Iron	228	200	50.0
Magnesium^	33000	5000	1000
Manganese	103	1.00	0.500
Potassium	5330	1000	200
Sodium^	1370000	5000	1000

^: Analyzed at DF 5 on 12/23/09 17:53 | File ID 98L20040

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
SDG NO.	: 09L251	Date Extracted:	12/17/09 14:10
Sample ID:	20-R2-014	Date Analyzed:	12/23/09 23:19
Lab Samp ID:	L251-03	Dilution Factor:	1
Lab File ID:	98L20092	Matrix :	WATER
Ext Btch ID:	IML019W	% Moisture :	NA
Calib. Ref.:	98L20089	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	294	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
SDG NO.	: 09L251	Date Extracted:	12/17/09 14:10
Sample ID:	20-R2-030	Date Analyzed:	12/24/09 00:41
Lab Samp ID:	L251-04	Dilution Factor:	1
Lab File ID:	98L20105	Matrix :	WATER
Ext Btch ID:	IML019W	% Moisture :	NA
Calib. Ref.:	98L20100	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	582	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
SDG NO.	: 09L251	Date Extracted:	12/17/09 14:10
Sample ID:	20-R2-016	Date Analyzed:	12/24/09 00:47
Lab Samp ID:	L251-05	Dilution Factor:	1
Lab File ID:	98L20106	Matrix :	WATER
Ext Btch ID:	IML019W	% Moisture :	NA
Calib. Ref.:	98L20100	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	2490	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
SDG NO.	: 09L251	Date Extracted:	12/17/09 14:10
Sample ID:	20-R2-026	Date Analyzed:	12/23/09 23:38
Lab Samp ID:	L251-06	Dilution Factor:	1
Lab File ID:	98L20095	Matrix :	WATER
Ext Btch ID:	IML019W	% Moisture :	NA
Calib. Ref.:	98L20089	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	649	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
SDG NO.	: 09L251	Date Extracted:	12/17/09 14:10
Sample ID:	20-R2-013	Date Analyzed:	12/23/09 23:44
Lab Samp ID:	L251-07	Dilution Factor:	1
Lab File ID:	98L20096	Matrix :	WATER
Ext Btch ID:	IML019W	% Moisture :	NA
Calib. Ref.:	98L20089	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/14/09
Project	: CTO 20, ALAMEDA	Date Received:	12/15/09
SDG NO.	: 09L251	Date Extracted:	12/17/09 14:10
Sample ID:	20-R2-029	Date Analyzed:	12/23/09 23:50
Lab Samp ID:	L251-08	Dilution Factor:	1
Lab File ID:	98L20097	Matrix :	WATER
Ext Btch ID:	IML019W	% Moisture :	NA
Calib. Ref.:	98L20089	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 300.0
CHLORIDE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L251

Matrix : WATER
Instrument ID : I107

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICL032WB	ND	1	NA	0.200	0.100	12/18/0916:03	NA	AL22-03	AL22-01	ICL032W	NA	NA
LCS1W	ICL032WL	5.46	1	NA	0.200	0.100	12/18/0916:28	NA	AL22-04	AL22-01	ICL032W	NA	NA
LCD1W	ICL032WC	5.36	1	NA	0.200	0.100	12/18/0917:01	NA	AL22-05	AL22-01	ICL032W	NA	NA
20-R2-014	L251-03	138	20	NA	4.00	2.00	12/19/0902:17	NA	AL22-27	AL22-25	ICL032W	12/14/0910:00	12/15/09
20-R2-014DUP	L251-03D	137	20	NA	4.00	2.00	12/19/0902:43	NA	AL22-28	AL22-25	ICL032W	12/14/0910:00	12/15/09
20-R2-014MS	L251-03M	240	20	NA	4.00	2.00	12/19/0903:08	NA	AL22-29	AL22-25	ICL032W	12/14/0910:00	12/15/09
20-R2-014MSD	L251-03S	245	20	NA	4.00	2.00	12/19/0903:33	NA	AL22-30	AL22-25	ICL032W	12/14/0910:00	12/15/09
20-R2-016	L251-05	4430	200	NA	40.0	20.0	12/19/0903:58	NA	AL22-31	AL22-25	ICL032W	12/14/0911:55	12/15/09
20-R2-026	L251-06	261	80	NA	16.0	8.00	12/19/0904:24	NA	AL22-32	AL22-25	ICL032W	12/14/0912:00	12/15/09
20-R2-013	L251-07	142	20	NA	4.00	2.00	12/19/0904:49	NA	AL22-33	AL22-25	ICL032W	12/14/0913:50	12/15/09
20-R2-029	L251-08	1920	200	NA	40.0	20.0	12/19/0905:14	NA	AL22-34	AL22-25	ICL032W	12/14/0914:25	12/15/09
MBLK2W	ICL038WB	ND	1	NA	0.200	0.100	12/21/0911:07	NA	AL24-03	AL24-01	ICL038W	NA	NA
LCS2W	ICL038WL	5.27	1	NA	0.200	0.100	12/21/0911:32	NA	AL24-04	AL24-01	ICL038W	NA	NA
LCD2W	ICL038WC	5.10	1	NA	0.200	0.100	12/21/0911:57	NA	AL24-05	AL24-01	ICL038W	NA	NA
20-R2-030	L251-04	4490	200	NA	40.0	20.0	12/21/0915:24	NA	AL24-13	AL24-11	ICL038W	12/14/0910:30	12/15/09

METHOD 300.0
NITRATE-N

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L251

Matrix : WATER
Instrument ID : I107

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICL022WQ	ND	1	NA	0.100	0.0500	12/16/0903:29	NA	AL16-99	AL16-97	ICL022W	NA	NA
LCS1W	ICL022WX	2.09	1	NA	0.100	0.0500	12/16/0903:53	NA	AL16-100	AL16-97	ICL022W	NA	NA
LCD1W	ICL022WY	2.10	1	NA	0.100	0.0500	12/16/0904:17	NA	AL16-101	AL16-97	ICL022W	NA	NA
20-R2-014	L251-03	0.0519J	1	NA	0.100	0.0500	12/15/0922:37	NA	AL16-87	AL16-85	ICL022W	12/14/0910:00	12/15/09
20-R2-014DUP	L251-03D	0.0517J	1	NA	0.100	0.0500	12/15/0923:01	NA	AL16-88	AL16-85	ICL022W	12/14/0910:00	12/15/09
20-R2-014MS	L251-03M	2.17	1	NA	0.100	0.0500	12/15/0923:26	NA	AL16-89	AL16-85	ICL022W	12/14/0910:00	12/15/09
20-R2-014MSD	L251-03S	2.18	1	NA	0.100	0.0500	12/15/0923:50	NA	AL16-90	AL16-85	ICL022W	12/14/0910:00	12/15/09
20-R2-030	L251-04	0.306	1	NA	0.100	0.0500	12/16/0900:14	NA	AL16-91	AL16-85	ICL022W	12/14/0910:30	12/15/09
20-R2-016	L251-05	0.143	1	NA	0.100	0.0500	12/16/0900:39	NA	AL16-92	AL16-85	ICL022W	12/14/0911:55	12/15/09
20-R2-026	L251-06	0.0656J	1	NA	0.100	0.0500	12/16/0901:03	NA	AL16-93	AL16-85	ICL022W	12/14/0912:00	12/15/09
20-R2-013	L251-07	0.119	1	NA	0.100	0.0500	12/16/0901:27	NA	AL16-94	AL16-85	ICL022W	12/14/0913:50	12/15/09
20-R2-029	L251-08	0.0854J	1	NA	0.100	0.0500	12/16/0901:51	NA	AL16-95	AL16-85	ICL022W	12/14/0914:25	12/15/09

METHOD 300.0
SULFATE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L251

Matrix : WATER
Instrument ID : I107

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICL032WB	ND	1	NA	0.500	0.250	12/18/0916:03	NA	AL22-03	AL22-01	ICL032W	NA	NA
LCS1W	ICL032WL	5.42	1	NA	0.500	0.250	12/18/0916:28	NA	AL22-04	AL22-01	ICL032W	NA	NA
LCD1W	ICL032WC	5.28	1	NA	0.500	0.250	12/18/0917:01	NA	AL22-05	AL22-01	ICL032W	NA	NA
20-R2-014	L251-03	117	20	NA	10.0	5.00	12/19/0902:17	NA	AL22-27	AL22-25	ICL032W	12/14/0910:00	12/15/09
20-R2-014DUP	L251-03D	116	20	NA	10.0	5.00	12/19/0902:43	NA	AL22-28	AL22-25	ICL032W	12/14/0910:00	12/15/09
20-R2-014MS	L251-03M	220	20	NA	10.0	5.00	12/19/0903:08	NA	AL22-29	AL22-25	ICL032W	12/14/0910:00	12/15/09
20-R2-014MSD	L251-03S	224	20	NA	10.0	5.00	12/19/0903:33	NA	AL22-30	AL22-25	ICL032W	12/14/0910:00	12/15/09
20-R2-016	L251-05	1290	200	NA	100	50.0	12/19/0903:58	NA	AL22-31	AL22-25	ICL032W	12/14/0911:55	12/15/09
20-R2-026	L251-06	953	80	NA	40.0	20.0	12/19/0904:24	NA	AL22-32	AL22-25	ICL032W	12/14/0912:00	12/15/09
20-R2-013	L251-07	162	20	NA	10.0	5.00	12/19/0904:49	NA	AL22-33	AL22-25	ICL032W	12/14/0913:50	12/15/09
20-R2-029	L251-08	328	200	NA	100	50.0	12/19/0905:14	NA	AL22-34	AL22-25	ICL032W	12/14/0914:25	12/15/09
MBLK2W	ICL038WB	ND	1	NA	0.500	0.250	12/21/0911:07	NA	AL24-03	AL24-01	ICL038W	NA	NA
LCS2W	ICL038WL	5.14	1	NA	0.500	0.250	12/21/0911:32	NA	AL24-04	AL24-01	ICL038W	NA	NA
LCD2W	ICL038WC	4.97	1	NA	0.500	0.250	12/21/0911:57	NA	AL24-05	AL24-01	ICL038W	NA	NA
20-R2-030	L251-04	1770	200	NA	100	50.0	12/21/0915:24	NA	AL24-13	AL24-11	ICL038W	12/14/0910:30	12/15/09

METHOD SM2320B
TOTAL ALKALINITY

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L251

Matrix : WATER
Instrument ID : E5

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALL007WB	ND	1	NA	5.00	1.00	12/18/0914:28	NA	E5L03028	NA	ALL007W	NA	NA
LCS1W	ALL007WL	235	1	NA	5.00	1.00	12/18/0914:38	NA	E5L03029	NA	ALL007W	NA	NA
LCD1W	ALL007WC	231	1	NA	5.00	1.00	12/18/0914:46	NA	E5L03030	NA	ALL007W	NA	NA
20-R2-014	L251-03	558	1	NA	5.00	1.00	12/18/0915:11	NA	E5L03033	NA	ALL007W	12/14/0910:00	12/15/09
20-R2-014DUP	L251-03D	552	1	NA	5.00	1.00	12/18/0915:21	NA	E5L03034	NA	ALL007W	12/14/0910:00	12/15/09
20-R2-030	L251-04	916	1	NA	5.00	1.00	12/18/0915:34	NA	E5L03035	NA	ALL007W	12/14/0910:30	12/15/09
20-R2-016	L251-05	597	1	NA	5.00	1.00	12/18/0915:45	NA	E5L03036	NA	ALL007W	12/14/0911:55	12/15/09
20-R2-026	L251-06	1030	1	NA	5.00	1.00	12/18/0915:59	NA	E5L03037	NA	ALL007W	12/14/0912:00	12/15/09
20-R2-013	L251-07	845	1	NA	5.00	1.00	12/18/0916:12	NA	E5L03038	NA	ALL007W	12/14/0913:50	12/15/09
20-R2-029	L251-08	511	1	NA	5.00	1.00	12/18/0916:20	NA	E5L03039	NA	ALL007W	12/14/0914:25	12/15/09

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26055

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: CTO20 ALAMEDA
PROJECT LOCATION: ALAMEDA
SAMPLER NAME: AK, FS
PROJECT CONTACT: DIANE SUZUKI
PURCHASE ORDER NO.: 103431-2
PROJECT NO.: 106-3210.020
AIRBILL NUMBER: 7982 2616 2314
PROJECT CONTACT PHONE NUMBER: 949-756-7584
LABORATORY NAME: EMAX
LABORATORY ID (FOR LABORATORY): 09L270

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOCs SHORT LIST	RSK 175 DISS. GASES	6020A DISS. IRON	6020A TOTAL METALS (Fe, As, Mn, Ca, Mg, K, Na)	300.0 ANIONS (Cl, NO3, SO4)	SM 2320B ALKALINITY				COMMENTS
20-R2-TB-002	12/15/09	900	3	X		W	10	X									* SEE BELOW
20-R2-EB-002	12/15/09	1040	3	X		W	10	X									*
20-R2-027	12/15/09	925	9	X		W	10	X	X	X	X	X	X				*
20-R2-028	12/15/09	925	3		X	W	10	X									*
20-R2-005	12/15/09	1110	9	X		W	10	X	X	X	X	X	X				*
20-R2-003	12/15/09	1325	9	X		W	10	X	X	X	X	X	X				*
20-R2-015	12/15/09	905	9	X		W	10	X	X	X	X	X	X				*
20-R2-025	12/15/09	1040	9	X		W	10	X	X	X	X	X	X				*
20-R2-024	12/15/09	1145	9	X		W	10	X	X	X	X	X	X				*
20-R2-023	12/15/09	1335	9	X		W	10	X	X	X	X	X	X				*

Project Information Section
Do not submit to Laboratory

LOCATION	DEPTH START	DEPTH END	QC
TRIP BLANK	—	—	TB
EQUIPMENT BLANK	—	—	EB
2V1-MW06A3	20	30	N
2V1-MW06A3	20	30	FD
2V1-MW01B	30	40	N
2V1-MW01A2	10	20	N
2V1-MW03B	30	40	N
2V1-MW05C	40	50	N
2V1-MW05B	30	40	N
2V1-MW05A3	20	30	N

SAMPLING COMMENT:

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/15/09	FED EX
COMPANY: BTS	TIME: 1700	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260B - HCL PRES., RSK 175 - HCL PRES., 6020A DISS. IRON - FIELD FILTERED, 6020A TOTAL METALS/DISS. IRON - HNO_3 PRES. 300.0 ANIONS / SM 2320B - NO PRES.

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/18/09 02:42
Sample ID: 20-R2-TB-002	Date Analyzed: 12/18/09 02:42
Lab Samp ID: L270-01	Dilution Factor: 1
Lab File ID: RLD539	Matrix : WATER
Ext Btch ID: VO94L22	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	100	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
Batch No.	: 09L270	Date Extracted:	12/18/09 03:13
Sample ID:	20-R2-EB-002	Date Analyzed:	12/18/09 03:13
Lab Samp ID:	L270-02	Dilution Factor:	1
Lab File ID:	RLD540	Matrix	: WATER
Ext Btch ID:	VO94L22	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/21/09 18:34
Sample ID: 20-R2-027	Date Analyzed: 12/21/09 18:34
Lab Samp ID: L270-03	Dilution Factor: 1
Lab File ID: RLD647	Matrix : WATER
Ext Btch ID: VO94L26	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	4.8	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	13	1.0	0.20
1,1-DICHLOROETHANE	20	1.0	0.20
1,1-DICHLOROETHENE	140E	1.0	0.20
1,2-DICHLOROETHANE	16	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	190E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	13	1.0	0.20
TRICHLOROETHENE	270E	1.0	0.20
VINYL CHLORIDE	31	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	122*	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/29/09 15:29
Sample ID: 20-R2-027DL	Date Analyzed: 12/29/09 15:29
Lab Samp ID: L270-03T	Dilution Factor: 50
Lab File ID: RLW827	Matrix : WATER
Ext Btch ID: VO06L39	% Moisture : NA
Calib. Ref.: RLW243	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	11J	50	10
1,1-DICHLOROETHANE	20J	50	10
1,1-DICHLOROETHENE	1200	50	10
1,2-DICHLOROETHANE	15J	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	340	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	13J	50	10
TRICHLOROETHENE	190	50	10
VINYL CHLORIDE	27	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	113	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	91	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
Batch No.	: 09L270	Date Extracted:	12/21/09 19:05
Sample ID:	20-R2-028	Date Analyzed:	12/21/09 19:05
Lab Samp ID:	L270-04	Dilution Factor:	1
Lab File ID:	RLD648	Matrix	: WATER
Ext Btch ID:	VO94L26	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	5.3	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	13	1.0	0.20
1,1-DICHLOROETHANE	21	1.0	0.20
1,1-DICHLOROETHENE	190E	1.0	0.20
1,2-DICHLOROETHANE	17	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	180E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	13	1.0	0.20
TRICHLOROETHENE	250E	1.0	0.20
VINYL CHLORIDE	31	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	127*	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/29/09 16:03
Sample ID: 20-R2-028DL	Date Analyzed: 12/29/09 16:03
Lab Samp ID: L270-04T	Dilution Factor: 50
Lab File ID: RLW828	Matrix : WATER
Ext Btch ID: VO06L39	% Moisture : NA
Calib. Ref.: RLW243	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	17J	50	10
1,1-DICHLOROETHENE	1000	50	10
1,2-DICHLOROETHANE	12J	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	350	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	12J	50	10
TRICHLOROETHENE	200	50	10
VINYL CHLORIDE	27	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	114	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	90	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
Batch No.	: 09L270	Date Extracted:	12/21/09 19:35
Sample ID:	20-R2-005	Date Analyzed:	12/21/09 19:35
Lab Samp ID:	L270-05	Dilution Factor:	1
Lab File ID:	RLD649	Matrix	: WATER
Ext Btch ID:	VO94L26	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	2.7	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	7.0	1.0	0.20
1,1-DICHLOROETHANE	13	1.0	0.20
1,1-DICHLOROETHENE	64E	1.0	0.20
1,2-DICHLOROETHANE	14	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.86J	1.0	0.20
CIS-1,2-DICHLOROETHENE	25	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	3.3	1.0	0.20
TRICHLOROETHENE	8.2	1.0	0.20
VINYL CHLORIDE	1.3	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	124*	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/29/09 18:49
Sample ID: 20-R2-005DL	Date Analyzed: 12/29/09 18:49
Lab Samp ID: L270-05I	Dilution Factor: 100
Lab File ID: RLW833	Matrix : WATER
Ext Btch ID: VO06L39	% Moisture : NA
Calib. Ref.: RLW243	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	25J	100	20
1,1-DICHLOROETHENE	1500	100	20
1,2-DICHLOROETHANE	26J	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	43J	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	ND	100	20
TRICHLOROETHENE	ND	100	20
VINYL CHLORIDE	ND	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	116	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	92	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/21/09 20:05
Sample ID: 20-R2-003	Date Analyzed: 12/21/09 20:05
Lab Samp ID: L270-06	Dilution Factor: 1
Lab File ID: RLD650	Matrix : WATER
Ext Btch ID: VO94L26	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	39	1.0	0.20
1,1-DICHLOROETHENE	240E	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	69E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	58E	1.0	0.20
TRICHLOROETHENE	41E	1.0	0.20
VINYL CHLORIDE	230E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	128*	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
Batch No.	: 09L270	Date Extracted:	12/29/09 17:18
Sample ID:	20-R2-003DL	Date Analyzed:	12/29/09 17:18
Lab Samp ID:	L270-06T	Dilution Factor:	25
Lab File ID:	RLB403	Matrix	: WATER
Ext Btch ID:	VO03L26	% Moisture	: NA
Calib. Ref.:	RLB073	Instrument ID	: T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	33	25	5.0
1,1-DICHLOROETHENE	180	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	4200E	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	45	25	5.0
TRICHLOROETHENE	1800	25	5.0
VINYL CHLORIDE	670	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	110	70-120
4-BROMOFLUOROBENZENE	95	75-120
TOLUENE-D8	91	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/29/09 07:10
Sample ID: 20-R2-003DL	Date Analyzed: 12/29/09 07:10
Lab Samp ID: L270-06I	Dilution Factor: 100
Lab File ID: RLW812	Matrix : WATER
Ext Btch ID: VO06L38	% Moisture : NA
Calib. Ref.: RLW243	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	35J	100	20
1,1-DICHLOROETHENE	190	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	4900	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	50J	100	20
TRICHLOROETHENE	1600	100	20
VINYL CHLORIDE	810	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	113	70-120
4-BROMOFLUOROBENZENE	111	75-120
TOLUENE-D8	94	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/29/09 08:17
Sample ID: 20-R2-015	Date Analyzed: 12/29/09 08:17
Lab Samp ID: L270-07R	Dilution Factor: 1
Lab File ID: RLW814	Matrix : WATER
Ext Btch ID: VO06L38	% Moisture : NA
Calib. Ref.: RLW243	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	2.3	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.35J	1.0	0.20
1,1-DICHLOROETHANE	2.8	1.0	0.20
1,1-DICHLOROETHENE	300E	1.0	0.20
1,2-DICHLOROETHANE	0.93	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	1.4	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.62J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	0.21J	1.0	0.20
TRICHLOROETHENE	2.8	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	117	70-120
4-BROMOFLUOROBENZENE	113	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/29/09 16:49
Sample ID: 20-R2-015DL	Date Analyzed: 12/29/09 16:49
Lab Samp ID: L270-07T	Dilution Factor: 10
Lab File ID: RLB402	Matrix : WATER
Ext Btch ID: VO03L26	% Moisture : NA
Calib. Ref.: RLB073	Instrument ID : T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHANE	2.9J	10	2.0
1,1-DICHLOROETHENE	310	10	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	ND	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	ND	10	2.0
TRICHLOROETHENE	3.7J	10	2.0
VINYL CHLORIDE	ND	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	93	75-120
TOLUENE-D8	92	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
Batch No.	: 09L270	Date Extracted:	12/29/09 16:36
Sample ID:	20-R2-025	Date Analyzed:	12/29/09 16:36
Lab Samp ID:	L270-08N	Dilution Factor:	1
Lab File ID:	RLW829	Matrix	: WATER
Ext Btch ID:	VO06L39	% Moisture	: NA
Calib. Ref.:	RLW243	Instrument ID	: T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	1.5	1.0	0.20
1,1-DICHLOROETHENE	60	1.0	0.20
1,2-DICHLOROETHANE	0.58	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.28J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	117	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	86	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/29/09 09:23
Sample ID: 20-R2-024	Date Analyzed: 12/29/09 09:23
Lab Samp ID: L270-09R	Dilution Factor: 1
Lab File ID: RLW816	Matrix : WATER
Ext Btch ID: VO06L38	% Moisture : NA
Calib. Ref.: RLW243	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.32J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	4.4	1.0	0.20
1,1-DICHLOROETHENE	200E	1.0	0.20
1,2-DICHLOROETHANE	2.8	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	1.8	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	0.28J	1.0	0.20
TRICHLOROETHENE	1.7	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	114	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	87	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/29/09 04:57
Sample ID: 20-R2-024DL	Date Analyzed: 12/29/09 04:57
Lab Samp ID: L270-09T	Dilution Factor: 25
Lab File ID: RLW808	Matrix : WATER
Ext Btch ID: VO06L38	% Moisture : NA
Calib. Ref.: RLW243	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHENE	180	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	ND	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	ND	25	5.0
TRICHLOROETHENE	ND	25	5.0
VINYL CHLORIDE	ND	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	100	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	85	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
Batch No.	: 09L270	Date Extracted:	12/29/09 17:09
Sample ID:	20-R2-023	Date Analyzed:	12/29/09 17:09
Lab Samp ID:	L270-10R	Dilution Factor:	1
Lab File ID:	RLW830	Matrix	: WATER
Ext Btch ID:	VO06L39	% Moisture	: NA
Calib. Ref.:	RLW243	Instrument ID	: T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.3	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.53J	1.0	0.20
1,1-DICHLOROETHANE	6.2	1.0	0.20
1,1-DICHLOROETHENE	310E	1.0	0.20
1,2-DICHLOROETHANE	1.2	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	71	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	6.7	1.0	0.20
TRICHLOROETHENE	80	1.0	0.20
VINYL CHLORIDE	12	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	83*	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/29/09 09:57
Sample ID: 20-R2-023DL	Date Analyzed: 12/29/09 09:57
Lab Samp ID: L270-10T	Dilution Factor: 5
Lab File ID: RLW817	Matrix : WATER
Ext Btch ID: VO06L38	% Moisture : NA
Calib. Ref.: RLW243	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.2J	5.0	1.0
1,1,2,2-TETRACHLOROETHANE	ND	5.0	1.0
1,1,2-TRICHLOROETHANE	ND	5.0	1.0
1,1-DICHLOROETHANE	6.2	5.0	1.0
1,1-DICHLOROETHENE	330	5.0	1.0
1,2-DICHLOROETHANE	1.2J	2.5	1.0
CHLOROETHANE	ND	2.5	1.0
CHLOROMETHANE	ND	5.0	1.0
CIS-1,2-DICHLOROETHENE	74	5.0	1.0
TETRACHLOROETHENE	ND	5.0	1.0
TRANS-1,2-DICHLOROETHENE	6.4	5.0	1.0
TRICHLOROETHENE	78	5.0	1.0
VINYL CHLORIDE	11	2.5	1.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	120	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	92	85-120

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/17/09 09:50
Sample ID: 20-R2-027	Date Analyzed: 12/17/09 12:01
Lab Samp ID: L270-03	Dilution Factor: 1
Lab File ID: FL17009A	Matrix : WATER
Ext Btch ID: DGL018W	% Moisture : NA
Calib. Ref.: FL17002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	2.8	2.0	0.60
ETHENE	6.0	2.0	0.60
METHANE	65E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/17/09 09:50
Sample ID: 20-R2-027DL	Date Analyzed: 12/17/09 13:02
Lab Samp ID: L270-03T	Dilution Factor: 5
Lab File ID: FL17013A	Matrix : WATER
Ext Btch ID: DGL018W	% Moisture : NA
Calib. Ref.: FL17002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	10	3.0
ETHENE	5.3J	10	3.0
METHANE	80	10	3.0
ACETYLENE	ND	15	7.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/17/09 09:50
Sample ID: 20-R2-005	Date Analyzed: 12/17/09 12:15
Lab Samp ID: L270-05	Dilution Factor: 1
Lab File ID: FL17010A	Matrix : WATER
Ext Btch ID: DGL018W	% Moisture : NA
Calib. Ref.: FL17002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.7	2.0	0.60
ETHENE	ND	2.0	0.60
METHANE	20	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/17/09 09:50
Sample ID: 20-R2-003	Date Analyzed: 12/17/09 12:28
Lab Samp ID: L270-06	Dilution Factor: 1
Lab File ID: FL17011A	Matrix : WATER
Ext Btch ID: DGL018W	% Moisture : NA
Calib. Ref.: FL17002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	48	2.0	0.60
ETHENE	41	2.0	0.60
METHANE	73E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/17/09 09:50
Sample ID: 20-R2-003DL	Date Analyzed: 12/17/09 13:16
Lab Samp ID: L270-06T	Dilution Factor: 5
Lab File ID: FL17014A	Matrix : WATER
Ext Btch ID: DGL018W	% Moisture : NA
Calib. Ref.: FL17002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	44	10	3.0
ETHENE	38	10	3.0
METHANE	100	10	3.0
ACETYLENE	ND	15	7.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/17/09 09:50
Sample ID: 20-R2-015	Date Analyzed: 12/17/09 12:49
Lab Samp ID: L270-07	Dilution Factor: 1
Lab File ID: FL17012A	Matrix : WATER
Ext Btch ID: DGL018W	% Moisture : NA
Calib. Ref.: FL17002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.5	2.0	0.60
ETHENE	4.1	2.0	0.60
METHANE	70E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/17/09 09:50
Sample ID: 20-R2-015DL	Date Analyzed: 12/17/09 13:28
Lab Samp ID: L270-07T	Dilution Factor: 5
Lab File ID: FL17015A	Matrix : WATER
Ext Btch ID: DGL018W	% Moisture : NA
Calib. Ref.: FL17002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	10	3.0
ETHENE	3.7J	10	3.0
METHANE	92	10	3.0
ACETYLENE	ND	15	7.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/17/09 09:50
Sample ID: 20-R2-025	Date Analyzed: 12/17/09 14:13
Lab Samp ID: L270-08	Dilution Factor: 1
Lab File ID: FL17018A	Matrix : WATER
Ext Btch ID: DGL018W	% Moisture : NA
Calib. Ref.: FL17016A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.8J	2.0	0.60
ETHENE	3.2	2.0	0.60
METHANE	22	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/17/09 09:50
Sample ID: 20-R2-024	Date Analyzed: 12/17/09 14:28
Lab Samp ID: L270-09	Dilution Factor: 1
Lab File ID: FL17019A	Matrix : WATER
Ext Btch ID: DGL018W	% Moisture : NA
Calib. Ref.: FL17016A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.0J	2.0	0.60
ETHENE	3.8	2.0	0.60
METHANE	11	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/17/09 09:50
Sample ID: 20-R2-023	Date Analyzed: 12/17/09 14:40
Lab Samp ID: L270-10	Dilution Factor: 1
Lab File ID: FL17020A	Matrix : WATER
Ext Btch ID: DGL018W	% Moisture : NA
Calib. Ref.: FL17016A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	4.1	2.0	0.60
ETHENE	11	2.0	0.60
METHANE	92E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
Batch No. : 09L270	Date Extracted: 12/17/09 09:50
Sample ID: 20-R2-023DL	Date Analyzed: 12/17/09 14:53
Lab Samp ID: L270-10T	Dilution Factor: 10
Lab File ID: FL17021A	Matrix : WATER
Ext Btch ID: DGL018W	% Moisture : NA
Calib. Ref.: FL17016A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	20	6.0
ETHENE	9.8J	20	6.0
METHANE	210	20	6.0
ACETYLENE	ND	30	15

METHOD 300.0
CHLORIDE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L270

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICL047WB	ND	1	NA	0.200	0.100	12/17/0912:38	NA	AL27-15	AL27-13	ICL047W	NA	NA
LCS1W	ICL047WL	5.08	1	NA	0.200	0.100	12/17/0912:54	NA	AL27-16	AL27-13	ICL047W	NA	NA
LCD1W	ICL047WC	5.10	1	NA	0.200	0.100	12/17/0913:10	NA	AL27-17	AL27-13	ICL047W	NA	NA
20-R2-003	L270-06	146	10	NA	2.00	1.00	12/17/0910:45	NA	AL27-08	AL27-01	ICL047W	12/15/0913:25	12/16/09
MBLK2W	ICL061WB	ND	1	NA	0.200	0.100	12/23/0909:15	NA	AL33-62	AL33-60	ICL061W	NA	NA
LCS2W	ICL061WL	5.00	1	NA	0.200	0.100	12/23/0909:31	NA	AL33-63	AL33-60	ICL061W	NA	NA
LCD2W	ICL061WC	4.99	1	NA	0.200	0.100	12/23/0909:47	NA	AL33-64	AL33-60	ICL061W	NA	NA
20-R2-027	L270-03	1150	100	NA	20.0	10.0	12/23/0910:52	NA	AL33-68	AL33-60	ICL061W	12/15/0909:25	12/16/09
20-R2-005	L270-05	2110	100	NA	20.0	10.0	12/23/0911:24	NA	AL33-70	AL33-60	ICL061W	12/15/0911:10	12/16/09
20-R2-015	L270-07	2150	200	NA	40.0	20.0	12/23/0912:45	NA	AL33-75	AL33-72	ICL061W	12/15/0909:05	12/16/09
20-R2-025	L270-08	3850	200	NA	40.0	20.0	12/23/0913:01	NA	AL33-76	AL33-72	ICL061W	12/15/0910:40	12/16/09
20-R2-024	L270-09	2280	200	NA	40.0	20.0	12/23/0913:17	NA	AL33-77	AL33-72	ICL061W	12/15/0911:45	12/16/09
20-R2-023	L270-10	429	20	NA	4.00	2.00	12/23/0913:33	NA	AL33-78	AL33-72	ICL061W	12/15/0913:35	12/16/09

METHOD 300.0
SULFATE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L270

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICL047WB	ND	1	NA	0.500	0.250	12/17/0912:38	NA	AL27-15	AL27-13	ICL047W	NA	NA
LCS1W	ICL047WL	4.92	1	NA	0.500	0.250	12/17/0912:54	NA	AL27-16	AL27-13	ICL047W	NA	NA
LCD1W	ICL047WC	4.93	1	NA	0.500	0.250	12/17/0913:10	NA	AL27-17	AL27-13	ICL047W	NA	NA
20-R2-003	L270-06	56.4	10	NA	5.00	2.50	12/17/0910:45	NA	AL27-08	AL27-01	ICL047W	12/15/0913:25	12/16/09
MBLK2W	ICL061WB	ND	1	NA	0.500	0.250	12/23/0909:15	NA	AL33-62	AL33-60	ICL061W	NA	NA
LCS2W	ICL061WL	4.97	1	NA	0.500	0.250	12/23/0909:31	NA	AL33-63	AL33-60	ICL061W	NA	NA
LCD2W	ICL061WC	4.97	1	NA	0.500	0.250	12/23/0909:47	NA	AL33-64	AL33-60	ICL061W	NA	NA
20-R2-027	L270-03	148	10	NA	5.00	2.50	12/23/0910:36	NA	AL33-67	AL33-60	ICL061W	12/15/0909:25	12/16/09
20-R2-005	L270-05	291	20	NA	10.0	5.00	12/23/0911:08	NA	AL33-69	AL33-60	ICL061W	12/15/0911:10	12/16/09
20-R2-015	L270-07	213	10	NA	5.00	2.50	12/23/0912:29	NA	AL33-74	AL33-72	ICL061W	12/15/0909:05	12/16/09
20-R2-025	L270-08	1740	200	NA	100	50.0	12/23/0913:01	NA	AL33-76	AL33-72	ICL061W	12/15/0910:40	12/16/09
20-R2-024	L270-09	1060	200	NA	100	50.0	12/23/0913:17	NA	AL33-77	AL33-72	ICL061W	12/15/0911:45	12/16/09
20-R2-023	L270-10	147	20	NA	10.0	5.00	12/23/0913:33	NA	AL33-78	AL33-72	ICL061W	12/15/0913:35	12/16/09

METHOD SM2320B
TOTAL ALKALINITY

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L270

Matrix : WATER
Instrument ID : 53

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALL012WB	ND	1	NA	5.00	1.00	12/23/0910:33	NA	ALL012-01	NA	ALL012W	NA	NA
LCS1W	ALL012WL	235	1	NA	5.00	1.00	12/23/0910:38	NA	ALL012-02	NA	ALL012W	NA	NA
LCD1W	ALL012WC	234	1	NA	5.00	1.00	12/23/0910:44	NA	ALL012-03	NA	ALL012W	NA	NA
20-R2-027	L270-03	598	1	NA	5.00	1.00	12/23/0912:13	NA	ALL012-08	NA	ALL012W	12/15/0909:25	12/16/09
20-R2-005	L270-05	570	1	NA	5.00	1.00	12/23/0912:29	NA	ALL012-09	NA	ALL012W	12/15/0911:10	12/16/09
20-R2-003	L270-06	1080	1	NA	5.00	1.00	12/23/0912:53	NA	ALL012-10	NA	ALL012W	12/15/0913:25	12/16/09
20-R2-015	L270-07	560	1	NA	5.00	1.00	12/23/0913:58	NA	ALL012-11	NA	ALL012W	12/15/0909:05	12/16/09
20-R2-025	L270-08	1960	1	NA	5.00	1.00	12/23/0914:13	NA	ALL012-12	NA	ALL012W	12/15/0910:40	12/16/09
20-R2-024	L270-09	1940	1	NA	5.00	1.00	12/23/0914:30	NA	ALL012-13	NA	ALL012W	12/15/0911:45	12/16/09
20-R2-023	L270-10	702	1	NA	5.00	1.00	12/23/0914:47	NA	ALL012-14	NA	ALL012W	12/15/0913:35	12/16/09

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
SDG NO.	: 09L270	Date Extracted:	12/21/09 10:00
Sample ID:	20-R2-027	Date Analyzed:	12/29/09 22:32
Lab Samp ID:	L270-03	Dilution Factor:	1
Lab File ID:	98L22085	Matrix :	WATER
Ext Btch ID:	IML020W	% Moisture :	NA
Calib. Ref.:	98L22080	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	4.20	1.00	0.500
Calcium	74100	1000	200
Iron	1120	200	50.0
Magnesium	90100	1000	200
Manganese	1400	1.00	0.500
Potassium	5220	1000	200
Sodium^	625000	5000	1000

^: Analyzed at DF 5 on 12/28/09 22:12 | File ID 98L21087

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
SDG NO.	: 09L270	Date Extracted:	12/21/09 10:00
Sample ID:	20-R2-005	Date Analyzed:	12/29/09 22:45
Lab Samp ID:	L270-05	Dilution Factor:	1
Lab File ID:	98L22087	Matrix :	WATER
Ext Btch ID:	IML020W	% Moisture :	NA
Calib. Ref.:	98L22080	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	9.67	1.00	0.500
Calcium	22300	1000	200
Iron	308	200	50.0
Magnesium	22200	1000	200
Manganese	40.3	1.00	0.500
Potassium	5920	1000	200
Sodium^	1710000	20000	4000

^: Analyzed at DF 20 on 12/30/09 15:42 | File ID 98L23018

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
SDG NO.	: 09L270	Date Extracted:	12/21/09 10:00
Sample ID:	20-R2-003	Date Analyzed:	12/29/09 22:51
Lab Samp ID:	L270-06	Dilution Factor:	1
Lab File ID:	98L22088	Matrix :	WATER
Ext Btch ID:	IML020W	% Moisture :	NA
Calib. Ref.:	98L22080	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	115	1.00	0.500
Calcium	21600	1000	200
Iron	57000	200	50.0
Magnesium	10600	1000	200
Manganese^	3400	5.00	2.50
Potassium	11000	1000	200
Sodium^	631000	5000	1000

^: Analyzed at DF 5 on 12/28/09 22:56 | File ID 98L21094

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
SDG NO.	: 09L270	Date Extracted:	12/21/09 10:00
Sample ID:	20-R2-015	Date Analyzed:	12/29/09 23:28
Lab Samp ID:	L270-07	Dilution Factor:	1
Lab File ID:	98L22094	Matrix :	WATER
Ext Btch ID:	IML020W	% Moisture :	NA
Calib. Ref.:	98L22092	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	8.65	1.00	0.500
Calcium	11000	1000	200
Iron	169J	200	50.0
Magnesium	6330	1000	200
Manganese	52.0	1.00	0.500
Potassium	3440	1000	200
Sodium^	1750000	20000	4000

^: Analyzed at DF 20 on 12/30/09 15:48 | File ID 98L23019

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
SDG NO. : 09L270	Date Extracted: 12/21/09 10:00
Sample ID: 20-R2-025	Date Analyzed: 12/30/09 00:44
Lab Samp ID: L270-08	Dilution Factor: 1
Lab File ID: 98L22106	Matrix : WATER
Ext Btch ID: IML020W	% Moisture : NA
Calib. Ref.: 98L22104	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	16.4	1.00	0.500
Calcium	68100	1000	200
Iron	447	200	50.0
Magnesium	107000	1000	200
Manganese	372	1.00	0.500
Potassium	7510	1000	200
Sodium^	3790000	20000	4000

^: Analyzed at DF 20 on 12/30/09 15:55 | File ID 98L23020

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/15/09
Project : CTO 20, ALAMEDA	Date Received: 12/16/09
SDG NO. : 09L270	Date Extracted: 12/21/09 10:00
Sample ID: 20-R2-024	Date Analyzed: 12/28/09 23:15
Lab Samp ID: L270-09T	Dilution Factor: 5
Lab File ID: 98L21097	Matrix : WATER
Ext Btch ID: IML020W	% Moisture : NA
Calib. Ref.: 98L21091	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	119	5.00	2.50
Calcium	13500	5000	1000
Iron^	135J	200	50.0
Magnesium	5470	5000	1000
Manganese	34.8	5.00	2.50
Potassium	6550	5000	1000
Sodium^^	3010000	20000	4000

^: Analyzed at DF 1 on 12/30/09 00:50 | File ID 98L22107
^^: Analyzed at DF 20 on 12/30/09 16:01 | File ID 98L23021

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
SDG NO.	: 09L270	Date Extracted:	12/21/09 10:00
Sample ID:	20-R2-023	Date Analyzed:	12/29/09 23:35
Lab Samp ID:	L270-10	Dilution Factor:	1
Lab File ID:	98L22095	Matrix :	WATER
Ext Btch ID:	IML020W	% Moisture :	NA
Calib. Ref.:	98L22092	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	4.59	1.00	0.500
Calcium	66700	1000	200
Iron	393	200	50.0
Magnesium	83200	1000	200
Manganese	808	1.00	0.500
Potassium	3540	1000	200
Sodium	379000	1000	200

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
SDG NO.	: 09L270	Date Extracted:	12/21/09 10:00
Sample ID:	20-R2-027	Date Analyzed:	12/29/09 23:41
Lab Samp ID:	L270-03	Dilution Factor:	1
Lab File ID:	98L22096	Matrix :	WATER
Ext Btch ID:	IML020W	% Moisture :	NA
Calib. Ref.:	98L22092	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	145J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
SDG NO.	: 09L270	Date Extracted:	12/21/09 10:00
Sample ID:	20-R2-005	Date Analyzed:	12/29/09 23:47
Lab Samp ID:	L270-05	Dilution Factor:	1
Lab File ID:	98L22097	Matrix :	WATER
Ext Btch ID:	IML020W	% Moisture :	NA
Calib. Ref.:	98L22092	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	75.7J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
SDG NO.	: 09L270	Date Extracted:	12/21/09 10:00
Sample ID:	20-R2-003	Date Analyzed:	12/29/09 23:54
Lab Samp ID:	L270-06	Dilution Factor:	1
Lab File ID:	98L22098	Matrix :	WATER
Ext Btch ID:	IML020W	% Moisture :	NA
Calib. Ref.:	98L22092	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	28500	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
SDG NO.	: 09L270	Date Extracted:	12/21/09 10:00
Sample ID:	20-R2-015	Date Analyzed:	12/30/09 00:00
Lab Samp ID:	L270-07	Dilution Factor:	1
Lab File ID:	98L22099	Matrix :	WATER
Ext Btch ID:	IML020W	% Moisture :	NA
Calib. Ref.:	98L22092	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	61.3J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
SDG NO.	: 09L270	Date Extracted:	12/21/09 10:00
Sample ID:	20-R2-025	Date Analyzed:	12/29/09 00:18
Lab Samp ID:	L270-08T	Dilution Factor:	5
Lab File ID:	98L21107	Matrix :	WATER
Ext Btch ID:	IML020W	% Moisture :	NA
Calib. Ref.:	98L21103	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
SDG NO.	: 09L270	Date Extracted:	12/21/09 10:00
Sample ID:	20-R2-024	Date Analyzed:	12/30/09 01:09
Lab Samp ID:	L270-09	Dilution Factor:	1
Lab File ID:	98L22110	Matrix :	WATER
Ext Btch ID:	IML020W	% Moisture :	NA
Calib. Ref.:	98L22104	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	144J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/15/09
Project	: CTO 20, ALAMEDA	Date Received:	12/16/09
SDG NO.	: 09L270	Date Extracted:	12/21/09 10:00
Sample ID:	20-R2-023	Date Analyzed:	12/30/09 00:06
Lab Samp ID:	L270-10	Dilution Factor:	1
Lab File ID:	98L22100	Matrix :	WATER
Ext Btch ID:	IML020W	% Moisture :	NA
Calib. Ref.:	98L22092	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	678	200	50.0

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26063

CHAIN-OF-CUSTODY RECORD

1 of 2

PROJECT NAME	PURCHASE ORDER NO.
CTO20 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AK, FS, IW	7931 0988 0830 7982 3073 7345
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: EMAY

LABORATORY ID (FOR LABORATORY): 09L297

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOCS	RSK 175 SHORT LIST	6020A DISS. CASES	6020A DISS. IRON	6020A TOTAL METALS Fe, As, Mn, Ca, Mg, K, Na	300.0 ANIONS (Cl, NO3, SO4)	SM 2320B ALKALINITY				COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-RZ-001	12/16/09	1120	9	X		W	10	X	X	X	X	X	X					* SEE BELOW	2V1-MW01A1	6	11	N
20-RZ-002	12/16/09	1120	3		X	W	10	X										*	FIELD DUP FOR 2V1-MW01A1	—	—	FD
20-RZ-007	12/16/09	920	9	X		W	10	X	X	X	X	X	X					*	2V1-MW01D	50	60	N
20-RZ-EB-003	12/16/09	1000	3	X		W	10	X										*	EQUIPTMENT BLANK	—	—	EB
20-RZ-TB-003	12/16/09	945	3	X		W	10	X										*	TRIP BLANK	—	—	TB
20-RZ-004	12/16/09	1350	27		X	W	10	X	X	X	X	X	X					*	2V1-MW01A3	20	30	MS MSD
20-RZ-017	12/16/09	1110	9		X	W	10	X	X	X	X	X	X					*	2V1-MW04A1	6	11	N
20-RZ-019	12/16/09	945	9	X		W	10	X	X	X	X	X	X					*	2V1-MW04A3	20	30	N
20-RZ-021	12/16/09	1340	9	X		W	10	X	X	X	X	X	X					*	2V1-MW04C	40	50	N
20-RZ-012	12/16/09	915	9	X		W	10	X	X	X	X	X	X					*	2V1-MW02C	40	50	N

Project Information Section
Do not submit to Laboratory

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/16/09	FEDEX
COMPANY: BTS	TIME: 1700	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260 - HCL PRES, RSK 175 - HCL PRES, 6020A DISS. IRON FIELD FILTERED, 6020A TOTAL METALS / DISS. IRON - HNO3 PRES, 300.0 ANIONS / SM 2320B - NO PRES.

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26056

CHAIN-OF-CUSTODY RECORD

2 of 2

PROJECT NAME	PURCHASE ORDER NO
CT020 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO
ALAMEDA	106-3210020
SAMPLER NAME	AIRBILL NUMBER
AK, FS, IW	7931 0988 0830 7982 3073 7345
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 092297

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B SHORT LIST VOCS	RSK-175 DISS. GASES	6020A DISS. IRON	6020A TOTAL METALS FE, AS, MN, CA, MG, K, NA	300.0 ANIONS Cl, NO3, SO4	SM 2320B ALKALINITY				COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-RZ-009	12/16/09	1040	9	X		W	10	X	X	X	X	X	X				* SEE BELOW	2V1-MW02A3	20	30	N
20-RZ-010	12/16/09	1150	9	X		W	10	X	X	X	X	X	X				*	2V1-MW02B	30	40	N
20-RZ-011	12/16/09	1200	3		X	W	10	X									*	FIELD DUP FOR 2V1-MW02B	30	40	FD
20-RZ-013	12/16/09	1400	9	X		W	10	X	X	X	X	X	X				*	2V1-MW02A2	10	20	N

Project Information Section
Do not submit to Laboratory

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/16/09	FEDEX
COMPANY: BTS	TIME: 1700	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260 HCL PRES, RSK175 - HCL PRES, 6020A DISS. IRON FIELD FILTERED, 6020A TOTAL METALS/DISS. IRON - HNO3 PRES, 300.0 ANIONS/SM 2320B - NO PRES

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/23/09 06:33
Sample ID: 20-R2-001	Date Analyzed: 12/23/09 06:33
Lab Samp ID: L297-01R	Dilution Factor: 1
Lab File ID: RLD716	Matrix : WATER
Ext Btch ID: VO94L29	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	6.8	1.0	0.20
1,1-DICHLOROETHENE	9.2	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	120E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	12	1.0	0.20
TRICHLOROETHENE	190E	1.0	0.20
VINYL CHLORIDE	70E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	112	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/23/09 17:38
Sample ID: 20-R2-001DL	Date Analyzed: 12/23/09 17:38
Lab Samp ID: L297-01T	Dilution Factor: 50
Lab File ID: RLD738	Matrix : WATER
Ext Btch ID: VO94L30	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	10J	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	730	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	11J	50	10
TRICHLOROETHENE	190	50	10
VINYL CHLORIDE	77	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	109	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/23/09 06:03
Sample ID: 20-R2-002	Date Analyzed: 12/23/09 06:03
Lab Samp ID: L297-02R	Dilution Factor: 1
Lab File ID: RLD715	Matrix : WATER
Ext Btch ID: VO94L29	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	7.3	1.0	0.20
1,1-DICHLOROETHENE	10	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	89E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	12	1.0	0.20
TRICHLOROETHENE	200E	1.0	0.20
VINYL CHLORIDE	72E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	113	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	95	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/23/09 18:09
Sample ID: 20-R2-002DL	Date Analyzed: 12/23/09 18:09
Lab Samp ID: L297-02T	Dilution Factor: 50
Lab File ID: RLD739	Matrix : WATER
Ext Btch ID: VO94L30	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	10J	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	760	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	11J	50	10
TRICHLOROETHENE	190	50	10
VINYL CHLORIDE	68	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	111	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/30/09 14:04
Sample ID: 20-R2-007	Date Analyzed: 12/30/09 14:04
Lab Samp ID: L297-03N	Dilution Factor: 1
Lab File ID: RLB442	Matrix : WATER
Ext Btch ID: VO03L27	% Moisture : NA
Calib. Ref.: RLB073	Instrument ID : T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.22J	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.35J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/19/09 11:55
Sample ID: 20-R2-EB-003	Date Analyzed: 12/19/09 11:55
Lab Samp ID: L297-04	Dilution Factor: 1
Lab File ID: RLD596	Matrix : WATER
Ext Btch ID: VO94L24	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	91	70-120
4-BROMOFLUOROBENZENE	72*	75-120
TOLUENE-D8	94	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/19/09 12:25
Sample ID: 20-R2-TB-003	Date Analyzed: 12/19/09 12:25
Lab Samp ID: L297-05	Dilution Factor: 1
Lab File ID: RLD597	Matrix : WATER
Ext Btch ID: VO94L24	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	70-120
4-BROMOFLUOROBENZENE	93	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/19/09 12:56
Sample ID: 20-R2-004	Date Analyzed: 12/19/09 12:56
Lab Samp ID: L297-06	Dilution Factor: 1
Lab File ID: RLD598	Matrix : WATER
Ext Btch ID: VO94L24	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.7	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	1.9	1.0	0.20
1,1-DICHLOROETHANE	8.1	1.0	0.20
1,1-DICHLOROETHENE	130E	1.0	0.20
1,2-DICHLOROETHANE	2.6	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	49E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	3.5	1.0	0.20
TRICHLOROETHENE	71E	1.0	0.20
VINYL CHLORIDE	9.1	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	110	70-120
4-BROMOFLUOROBENZENE	111	75-120
TOLUENE-D8	114	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/30/09 07:50
Sample ID: 20-R2-004DL	Date Analyzed: 12/30/09 07:50
Lab Samp ID: L297-06T	Dilution Factor: 25
Lab File ID: RLB429	Matrix : WATER
Ext Btch ID: VO03L27	% Moisture : NA
Calib. Ref.: RLB073	Instrument ID : T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	8.3J	25	5.0
1,1-DICHLOROETHENE	570	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	52	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	ND	25	5.0
TRICHLOROETHENE	77	25	5.0
VINYL CHLORIDE	10J	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	108	70-120
4-BROMOFLUOROBENZENE	95	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/23/09 19:40
Sample ID: 20-R2-017	Date Analyzed: 12/23/09 19:40
Lab Samp ID: L297-07N	Dilution Factor: 1
Lab File ID: RLD742	Matrix : WATER
Ext Btch ID: VO94L30	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	1.5	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	5.0	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	1.5	1.0	0.20
TRICHLOROETHENE	0.58J	1.0	0.20
VINYL CHLORIDE	17	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	116	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/29/09 22:10
Sample ID: 20-R2-019	Date Analyzed: 12/29/09 22:10
Lab Samp ID: L297-08R	Dilution Factor: 1
Lab File ID: RLB413	Matrix : WATER
Ext Btch ID: VO03L26	% Moisture : NA
Calib. Ref.: RLB073	Instrument ID : T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.46J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.35J	1.0	0.20
1,1-DICHLOROETHANE	4.6	1.0	0.20
1,1-DICHLOROETHENE	130E	1.0	0.20
1,2-DICHLOROETHANE	0.92	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	59	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	4.0	1.0	0.20
TRICHLOROETHENE	73	1.0	0.20
VINYL CHLORIDE	8.1	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	92	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/29/09 20:14
Sample ID: 20-R2-019DL	Date Analyzed: 12/29/09 20:14
Lab Samp ID: L297-08T	Dilution Factor: 25
Lab File ID: RLB409	Matrix : WATER
Ext Btch ID: VO03L26	% Moisture : NA
Calib. Ref.: RLB073	Instrument ID : T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHENE	140	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	56	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	ND	25	5.0
TRICHLOROETHENE	70	25	5.0
VINYL CHLORIDE	9.6J	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	92	75-120
TOLUENE-D8	93	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/29/09 18:46
Sample ID: 20-R2-021	Date Analyzed: 12/29/09 18:46
Lab Samp ID: L297-09N	Dilution Factor: 1
Lab File ID: RLB406	Matrix : WATER
Ext Btch ID: VO03L26	% Moisture : NA
Calib. Ref.: RLB073	Instrument ID : T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.48J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.25J	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	114	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	91	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
Batch No.	: 09L297	Date Extracted:	12/30/09 14:33
Sample ID:	20-R2-012	Date Analyzed:	12/30/09 14:33
Lab Samp ID:	L297-10N	Dilution Factor:	1
Lab File ID:	RLB443	Matrix	: WATER
Ext Btch ID:	VO03L27	% Moisture	: NA
Calib. Ref.:	RLB073	Instrument ID	: T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	2.1	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.54J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	0.29J	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	106	70-120
4-BROMOFLUOROBENZENE	95	75-120
TOLUENE-D8	93	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
Batch No.	: 09L297	Date Extracted:	12/19/09 16:29
Sample ID:	20-R2-009	Date Analyzed:	12/19/09 16:29
Lab Samp ID:	L297-11	Dilution Factor:	1
Lab File ID:	RLD605	Matrix	: WATER
Ext Btch ID:	VO94L24	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.1	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	1.3	1.0	0.20
1,1-DICHLOROETHANE	8.4	1.0	0.20
1,1-DICHLOROETHENE	160E	1.0	0.20
1,2-DICHLOROETHANE	2.6	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	66E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	26	1.0	0.20
TRICHLOROETHENE	180E	1.0	0.20
VINYL CHLORIDE	52E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	131*	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	108	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/29/09 19:45
Sample ID: 20-R2-009DL	Date Analyzed: 12/29/09 19:45
Lab Samp ID: L297-11T	Dilution Factor: 25
Lab File ID: RLB408	Matrix : WATER
Ext Btch ID: VO03L26	% Moisture : NA
Calib. Ref.: RLB073	Instrument ID : T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	8.1J	25	5.0
1,1-DICHLOROETHENE	410	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	420	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	23J	25	5.0
TRICHLOROETHENE	410	25	5.0
VINYL CHLORIDE	54	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	106	70-120
4-BROMOFLUOROBENZENE	94	75-120
TOLUENE-D8	95	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/19/09 16:59
Sample ID: 20-R2-010	Date Analyzed: 12/19/09 16:59
Lab Samp ID: L297-12	Dilution Factor: 1
Lab File ID: RLD606	Matrix : WATER
Ext Btch ID: VO94L24	% Moisture : NA
Calib. Ref.: RKD579	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.5	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.48J	1.0	0.20
1,1-DICHLOROETHANE	39	1.0	0.20
1,1-DICHLOROETHENE	160E	1.0	0.20
1,2-DICHLOROETHANE	32	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	1.2	1.0	0.20
CIS-1,2-DICHLOROETHENE	23	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	7.2	1.0	0.20
TRICHLOROETHENE	1.6	1.0	0.20
VINYL CHLORIDE	0.76	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	122*	70-120
4-BROMOFLUOROBENZENE	120	75-120
TOLUENE-D8	109	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/29/09 22:39
Sample ID: 20-R2-010DL	Date Analyzed: 12/29/09 22:39
Lab Samp ID: L297-12T	Dilution Factor: 25
Lab File ID: RLB414	Matrix : WATER
Ext Btch ID: VO03L26	% Moisture : NA
Calib. Ref.: RLB073	Instrument ID : T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	36	25	5.0
1,1-DICHLOROETHENE	3900E	25	5.0
1,2-DICHLOROETHANE	31	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	20J	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	6.6J	25	5.0
TRICHLOROETHENE	ND	25	5.0
VINYL CHLORIDE	ND	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/29/09 20:43
Sample ID: 20-R2-010DL	Date Analyzed: 12/29/09 20:43
Lab Samp ID: L297-12I	Dilution Factor: 250
Lab File ID: RLB410	Matrix : WATER
Ext Btch ID: VO03L26	% Moisture : NA
Calib. Ref.: RLB073	Instrument ID : T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	250	50
1,1,2,2-TETRACHLOROETHANE	ND	250	50
1,1,2-TRICHLOROETHANE	ND	250	50
1,1-DICHLOROETHANE	ND	250	50
1,1-DICHLOROETHENE	4300	250	50
1,2-DICHLOROETHANE	ND	120	50
CHLOROETHANE	ND	120	50
CHLOROMETHANE	ND	250	50
CIS-1,2-DICHLOROETHENE	ND	250	50
TETRACHLOROETHENE	ND	250	50
TRANS-1,2-DICHLOROETHENE	ND	250	50
TRICHLOROETHENE	ND	250	50
VINYL CHLORIDE	ND	120	50

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	91	75-120
TOLUENE-D8	94	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
Batch No.	: 09L297	Date Extracted:	12/19/09 17:30
Sample ID:	20-R2-011	Date Analyzed:	12/19/09 17:30
Lab Samp ID:	L297-13	Dilution Factor:	1
Lab File ID:	RLD607	Matrix :	WATER
Ext Btch ID:	VO94L24	% Moisture :	NA
Calib. Ref.:	RKD579	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.2	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.43J	1.0	0.20
1,1-DICHLOROETHANE	33	1.0	0.20
1,1-DICHLOROETHENE	170E	1.0	0.20
1,2-DICHLOROETHANE	32	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.91J	1.0	0.20
CIS-1,2-DICHLOROETHENE	20	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	5.8	1.0	0.20
TRICHLOROETHENE	0.97J	1.0	0.20
VINYL CHLORIDE	0.47J	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	130*	70-120
4-BROMOFLUOROBENZENE	112	75-120
TOLUENE-D8	111	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/29/09 23:08
Sample ID: 20-R2-011DL	Date Analyzed: 12/29/09 23:08
Lab Samp ID: L297-13T	Dilution Factor: 25
Lab File ID: RLB415	Matrix : WATER
Ext Btch ID: VO03L26	% Moisture : NA
Calib. Ref.: RLB073	Instrument ID : T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	37	25	5.0
1,1-DICHLOROETHENE	4100E	25	5.0
1,2-DICHLOROETHANE	30	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	19J	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	6.2J	25	5.0
TRICHLOROETHENE	ND	25	5.0
VINYL CHLORIDE	ND	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/29/09 21:12
Sample ID: 20-R2-011DL	Date Analyzed: 12/29/09 21:12
Lab Samp ID: L297-13I	Dilution Factor: 250
Lab File ID: RLB411	Matrix : WATER
Ext Btch ID: VO03L26	% Moisture : NA
Calib. Ref.: RLB073	Instrument ID : T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	250	50
1,1,2,2-TETRACHLOROETHANE	ND	250	50
1,1,2-TRICHLOROETHANE	ND	250	50
1,1-DICHLOROETHANE	ND	250	50
1,1-DICHLOROETHENE	4400	250	50
1,2-DICHLOROETHANE	ND	120	50
CHLOROETHANE	ND	120	50
CHLOROMETHANE	ND	250	50
CIS-1,2-DICHLOROETHENE	ND	250	50
TETRACHLOROETHENE	ND	250	50
TRANS-1,2-DICHLOROETHENE	ND	250	50
TRICHLOROETHENE	ND	250	50
VINYL CHLORIDE	ND	120	50

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	94	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/29/09 23:37
Sample ID: 20-R2-008	Date Analyzed: 12/29/09 23:37
Lab Samp ID: L297-14R	Dilution Factor: 1
Lab File ID: RLB416	Matrix : WATER
Ext Btch ID: VO03L26	% Moisture : NA
Calib. Ref.: RLB073	Instrument ID : T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.33J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	14	1.0	0.20
1,1-DICHLOROETHENE	89	1.0	0.20
1,2-DICHLOROETHANE	0.32J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.43J	1.0	0.20
CIS-1,2-DICHLOROETHENE	92E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	49	1.0	0.20
TRICHLOROETHENE	270E	1.0	0.20
VINYL CHLORIDE	390E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	111	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	91	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
Batch No.	: 09L297	Date Extracted:	12/29/09 21:41
Sample ID:	20-R2-008DL	Date Analyzed:	12/29/09 21:41
Lab Samp ID:	L297-14I	Dilution Factor:	100
Lab File ID:	RLB412	Matrix	: WATER
Ext Btch ID:	VO03L26	% Moisture	: NA
Calib. Ref.:	RLB073	Instrument ID	: T-O03

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	ND	100	20
1,1-DICHLOROETHENE	93J	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	2100	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	49J	100	20
TRICHLOROETHENE	2400	100	20
VINYL CHLORIDE	400	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	106	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	93	85-120

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/21/09 09:30
Sample ID: 20-R2-001	Date Analyzed: 12/21/09 14:22
Lab Samp ID: L297-01	Dilution Factor: 1
Lab File ID: FL21020A	Matrix : WATER
Ext Btch ID: DGL021W	% Moisture : NA
Calib. Ref.: FL21015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	2.4	2.0	0.60
ETHENE	2.4	2.0	0.60
METHANE	61E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
Batch No.	: 09L297	Date Extracted:	12/21/09 09:30
Sample ID:	20-R2-001DL	Date Analyzed:	12/21/09 15:27
Lab Samp ID:	L297-01T	Dilution Factor:	5
Lab File ID:	FL21026A	Matrix :	WATER
Ext Btch ID:	DGL021W	% Moisture :	NA
Calib. Ref.:	FL21015A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	10	3.0
ETHENE	ND	10	3.0
METHANE	67	10	3.0
ACETYLENE	ND	15	7.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/21/09 09:30
Sample ID: 20-R2-007	Date Analyzed: 12/21/09 14:33
Lab Samp ID: L297-03	Dilution Factor: 1
Lab File ID: FL21021A	Matrix : WATER
Ext Btch ID: DGL021W	% Moisture : NA
Calib. Ref.: FL21015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.7	2.0	0.60
ETHENE	5.3	2.0	0.60
METHANE	20	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/21/09 09:30
Sample ID: 20-R2-004	Date Analyzed: 12/21/09 11:58
Lab Samp ID: L297-06	Dilution Factor: 1
Lab File ID: FL21010A	Matrix : WATER
Ext Btch ID: DGL021W	% Moisture : NA
Calib. Ref.: FL21002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	4.1	2.0	0.60
ETHENE	8.2	2.0	0.60
METHANE	79E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/21/09 09:30
Sample ID: 20-R2-004DL	Date Analyzed: 12/21/09 13:45
Lab Samp ID: L297-06T	Dilution Factor: 5
Lab File ID: FL21017A	Matrix : WATER
Ext Btch ID: DGL021W	% Moisture : NA
Calib. Ref.: FL21015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.9J	10	3.0
ETHENE	8.2J	10	3.0
METHANE	130	10	3.0
ACETYLENE	ND	15	7.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/21/09 09:30
Sample ID: 20-R2-017	Date Analyzed: 12/21/09 14:43
Lab Samp ID: L297-07	Dilution Factor: 1
Lab File ID: FL21022A	Matrix : WATER
Ext Btch ID: DGL021W	% Moisture : NA
Calib. Ref.: FL21015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.60
ETHENE	0.89J	2.0	0.60
METHANE	69E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
Batch No.	: 09L297	Date Extracted:	12/21/09 09:30
Sample ID:	20-R2-017DL	Date Analyzed:	12/21/09 15:59
Lab Samp ID:	L297-07T	Dilution Factor:	5
Lab File ID:	FL21029A	Matrix :	WATER
Ext Btch ID:	DGL021W	% Moisture :	NA
Calib. Ref.:	FL21027A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	10	3.0
ETHENE	ND	10	3.0
METHANE	81	10	3.0
ACETYLENE	ND	15	7.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/21/09 09:30
Sample ID: 20-R2-019	Date Analyzed: 12/21/09 14:54
Lab Samp ID: L297-08	Dilution Factor: 1
Lab File ID: FL21023A	Matrix : WATER
Ext Btch ID: DGL021W	% Moisture : NA
Calib. Ref.: FL21015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.2J	2.0	0.60
ETHENE	2.4	2.0	0.60
METHANE	93E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/21/09 09:30
Sample ID: 20-R2-019DL	Date Analyzed: 12/21/09 16:22
Lab Samp ID: L297-08T	Dilution Factor: 10
Lab File ID: FL21031A	Matrix : WATER
Ext Btch ID: DGL021W	% Moisture : NA
Calib. Ref.: FL21027A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	20	6.0
ETHENE	ND	20	6.0
METHANE	190	20	6.0
ACETYLENE	ND	30	15

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/21/09 09:30
Sample ID: 20-R2-021	Date Analyzed: 12/21/09 15:05
Lab Samp ID: L297-09	Dilution Factor: 1
Lab File ID: FL21024A	Matrix : WATER
Ext Btch ID: DGL021W	% Moisture : NA
Calib. Ref.: FL21015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.7	2.0	0.60
ETHENE	2.5	2.0	0.60
METHANE	16	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/21/09 09:30
Sample ID: 20-R2-012	Date Analyzed: 12/21/09 15:16
Lab Samp ID: L297-10	Dilution Factor: 1
Lab File ID: FL21025A	Matrix : WATER
Ext Btch ID: DGL021W	% Moisture : NA
Calib. Ref.: FL21015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	8.3	2.0	0.60
ETHENE	6.2	2.0	0.60
METHANE	26	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/21/09 09:30
Sample ID: 20-R2-009	Date Analyzed: 12/21/09 16:10
Lab Samp ID: L297-11	Dilution Factor: 1
Lab File ID: FL21030A	Matrix : WATER
Ext Btch ID: DGL021W	% Moisture : NA
Calib. Ref.: FL21027A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	2.8	2.0	0.60
ETHENE	11	2.0	0.60
METHANE	110E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/21/09 09:30
Sample ID: 20-R2-009DL	Date Analyzed: 12/21/09 16:33
Lab Samp ID: L297-11T	Dilution Factor: 20
Lab File ID: FL21032A	Matrix : WATER
Ext Btch ID: DGL021W	% Moisture : NA
Calib. Ref.: FL21027A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	40	12
ETHENE	ND	40	12
METHANE	230	40	12
ACETYLENE	ND	60	30

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-010	Date Analyzed: 12/22/09 11:05
Lab Samp ID: L297-12	Dilution Factor: 1
Lab File ID: FL22009A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	16	2.0	0.60
ETHENE	ND	2.0	0.60
METHANE	41E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-010DL	Date Analyzed: 12/22/09 11:26
Lab Samp ID: L297-12T	Dilution Factor: 2
Lab File ID: FL22011A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	16	4.0	1.2
ETHENE	ND	4.0	1.2
METHANE	41	4.0	1.2
ACETYLENE	ND	6.0	3.0

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-008	Date Analyzed: 12/22/09 11:15
Lab Samp ID: L297-14	Dilution Factor: 1
Lab File ID: FL22010A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.8J	2.0	0.60
ETHENE	13	2.0	0.60
METHANE	84E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
Batch No. : 09L297	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-008DL	Date Analyzed: 12/22/09 11:38
Lab Samp ID: L297-14T	Dilution Factor: 10
Lab File ID: FL22012A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	20	6.0
ETHENE	12J	20	6.0
METHANE	150	20	6.0
ACETYLENE	ND	30	15

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-001	Date Analyzed:	12/31/09 00:31
Lab Samp ID:	L297-01	Dilution Factor:	1
Lab File ID:	98L23102	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L23095	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	27.1	1.00	0.500
Calcium	9790	1000	200
Iron	663	200	50.0
Magnesium	6330	1000	200
Manganese	275	1.00	0.500
Potassium	19200	1000	200
Sodium	105000	1000	200

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-007	Date Analyzed:	12/29/09 18:46
Lab Samp ID:	L297-03T	Dilution Factor:	5
Lab File ID:	98L22049	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L22047	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	5.00	2.50
Calcium	688000	5000	1000
Iron	2020	1000	250
Magnesium	819000	5000	1000
Manganese	10700	5.00	2.50
Potassium	15700	5000	1000
Sodium^	3780000	50000	10000

^: Analyzed at DF 50 on 12/30/09 16:07 | File ID 98L23022

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
SDG NO. : 09L297	Date Extracted: 12/22/09 11:00
Sample ID: 20-R2-004	Date Analyzed: 12/31/09 00:19
Lab Samp ID: L297-06	Dilution Factor: 1
Lab File ID: 98L23100	Matrix : WATER
Ext Btch ID: IML022W	% Moisture : NA
Calib. Ref.: 98L23095	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	4.47	1.00	0.500
Calcium	72500	1000	200
Iron	1080	200	50.0
Magnesium	87300	1000	200
Manganese	2120	1.00	0.500
Potassium	3510	1000	200
Sodium^	409000	5000	1000

^: Analyzed at DF 5 on 12/29/09 18:08 | File ID 98L22043

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-017	Date Analyzed:	12/31/09 00:38
Lab Samp ID:	L297-07	Dilution Factor:	1
Lab File ID:	98L23103	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L23095	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	12.9	1.00	0.500
Calcium	80600	1000	200
Iron	748	200	50.0
Magnesium	19200	1000	200
Manganese	555	1.00	0.500
Potassium	10000	1000	200
Sodium	106000	1000	200

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-019	Date Analyzed:	12/31/09 01:15
Lab Samp ID:	L297-08	Dilution Factor:	1
Lab File ID:	98L23109	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L23107	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	4.01	1.00	0.500
Calcium	73400	1000	200
Iron	200J	200	50.0
Magnesium	92200	1000	200
Manganese	969	1.00	0.500
Potassium	3200	1000	200
Sodium^	332000	5000	1000

^: Analyzed at DF 5 on 12/29/09 18:58 | File ID 98L22051

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-021	Date Analyzed:	12/29/09 19:05
Lab Samp ID:	L297-09T	Dilution Factor:	5
Lab File ID:	98L22052	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L22047	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.62	5.00	2.50
Calcium	193000	5000	1000
Iron	608J	1000	250
Magnesium	318000	5000	1000
Manganese	826	5.00	2.50
Potassium	12400	5000	1000
Sodium^	3690000	50000	10000

^: Analyzed at DF 50 on 12/30/09 16:14 | File ID 98L23023

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-012	Date Analyzed:	12/29/09 19:11
Lab Samp ID:	L297-10T	Dilution Factor:	5
Lab File ID:	98L22053	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L22047	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.59	5.00	2.50
Calcium	119000	5000	1000
Iron	1160	1000	250
Magnesium	220000	5000	1000
Manganese	814	5.00	2.50
Potassium	11100	5000	1000
Sodium^	4040000	50000	10000

^: Analyzed at DF 50 on 12/30/09 16:20 | File ID 98L23024

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-009	Date Analyzed:	12/31/09 01:22
Lab Samp ID:	L297-11	Dilution Factor:	1
Lab File ID:	98L23110	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L23107	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.34	1.00	0.500
Calcium	75400	1000	200
Iron	259	200	50.0
Magnesium	86900	1000	200
Manganese	480	1.00	0.500
Potassium	6920	1000	200
Sodium^	430000	5000	1000

^: Analyzed at DF 5 on 12/29/09 19:17 | File ID 98L22054

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/16/09
Project : CTO 20, ALAMEDA	Date Received: 12/17/09
SDG NO. : 09L297	Date Extracted: 12/22/09 11:00
Sample ID: 20-R2-010	Date Analyzed: 12/31/09 02:50
Lab Samp ID: L297-12	Dilution Factor: 1
Lab File ID: 98L23124	Matrix : WATER
Ext Btch ID: IML022W	% Moisture : NA
Calib. Ref.: 98L23119	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	58.1	1.00	0.500
Calcium	5280	1000	200
Iron	88.4J	200	50.0
Magnesium	760J	1000	200
Manganese	5.07	1.00	0.500
Potassium	4030	1000	200
Sodium^	1950000	20000	4000

^: Analyzed at DF 20 on 12/30/09 16:26 | File ID 98L23025

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-008	Date Analyzed:	12/31/09 01:28
Lab Samp ID:	L297-14	Dilution Factor:	1
Lab File ID:	98L23111	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L23107	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	13.4	1.00	0.500
Calcium	6610	1000	200
Iron	113J	200	50.0
Magnesium	5660	1000	200
Manganese	27.4	1.00	0.500
Potassium	2290	1000	200
Sodium^	752000	5000	1000

^: Analyzed at DF 5 on 12/29/09 19:30 | File ID 98L22056

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-001	Date Analyzed:	12/31/09 01:53
Lab Samp ID:	L297-01	Dilution Factor:	1
Lab File ID:	98L23115	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L23107	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	393	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-007	Date Analyzed:	12/29/09 20:26
Lab Samp ID:	L297-03T	Dilution Factor:	5
Lab File ID:	98L22065	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L22059	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	2080	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-004	Date Analyzed:	12/31/09 01:47
Lab Samp ID:	L297-06	Dilution Factor:	1
Lab File ID:	98L23114	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L23107	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	550	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-017	Date Analyzed:	12/31/09 03:02
Lab Samp ID:	L297-07	Dilution Factor:	1
Lab File ID:	98L23126	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L23119	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	122J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-019	Date Analyzed:	12/31/09 03:09
Lab Samp ID:	L297-08	Dilution Factor:	1
Lab File ID:	98L23127	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L23119	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	125J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-021	Date Analyzed:	12/29/09 20:45
Lab Samp ID:	L297-09T	Dilution Factor:	5
Lab File ID:	98L22068	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L22059	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	391J	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-012	Date Analyzed:	12/29/09 21:17
Lab Samp ID:	L297-10T	Dilution Factor:	5
Lab File ID:	98L22073	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L22071	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	578J	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-009	Date Analyzed:	12/31/09 03:59
Lab Samp ID:	L297-11	Dilution Factor:	1
Lab File ID:	98L23135	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L23131	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	128J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-010	Date Analyzed:	12/31/09 04:06
Lab Samp ID:	L297-12	Dilution Factor:	1
Lab File ID:	98L23136	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L23131	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/16/09
Project	: CTO 20, ALAMEDA	Date Received:	12/17/09
SDG NO.	: 09L297	Date Extracted:	12/22/09 11:00
Sample ID:	20-R2-008	Date Analyzed:	12/31/09 04:12
Lab Samp ID:	L297-14	Dilution Factor:	1
Lab File ID:	98L23137	Matrix :	WATER
Ext Btch ID:	IML022W	% Moisture :	NA
Calib. Ref.:	98L23131	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 300.0
CHLORIDE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L297

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICL049WB	ND	1	NA	0.200	0.100	12/17/0918:52	NA	AL27-38	AL27-36	ICL049W	NA	NA
LCS1W	ICL049WL	5.15	1	NA	0.200	0.100	12/17/0919:08	NA	AL27-39	AL27-36	ICL049W	NA	NA
LCD1W	ICL049WC	5.24	1	NA	0.200	0.100	12/17/0919:24	NA	AL27-40	AL27-36	ICL049W	NA	NA
20-R2-001	L297-01	14.8	1	NA	0.200	0.100	12/17/0919:40	NA	AL27-41	AL27-36	ICL049W	12/16/0911:20	12/17/09
MBLK2W	ICL057WB	ND	1	NA	0.200	0.100	12/22/0911:11	NA	AL33-03	AL33-01	ICL057W	NA	NA
LCS2W	ICL057WL	4.91	1	NA	0.200	0.100	12/22/0911:27	NA	AL33-04	AL33-01	ICL057W	NA	NA
LCD2W	ICL057WC	4.91	1	NA	0.200	0.100	12/22/0911:43	NA	AL33-05	AL33-01	ICL057W	NA	NA
20-R2-007	L297-03	9820	500	NA	100	50.0	12/22/0918:44	NA	AL33-31	AL33-25	ICL057W	12/16/0909:20	12/17/09
20-R2-017	L297-07	31.5	5	NA	1.00	0.500	12/22/0919:00	NA	AL33-32	AL33-25	ICL057W	12/16/0911:10	12/17/09
20-R2-019	L297-08	381	20	NA	4.00	2.00	12/22/0919:16	NA	AL33-33	AL33-25	ICL057W	12/16/0909:45	12/17/09
20-R2-021	L297-09	4960	200	NA	40.0	20.0	12/22/0919:32	NA	AL33-34	AL33-25	ICL057W	12/16/0913:40	12/17/09
MBLK3W	ICL059WB	ND	1	NA	0.200	0.100	12/22/0920:37	NA	AL33-38	AL33-36	ICL059W	NA	NA
LCS3W	ICL059WL	4.94	1	NA	0.200	0.100	12/22/0920:53	NA	AL33-39	AL33-36	ICL059W	NA	NA
LCD3W	ICL059WC	4.94	1	NA	0.200	0.100	12/22/0921:09	NA	AL33-40	AL33-36	ICL059W	NA	NA
20-R2-004	L297-06	488	40	NA	8.00	4.00	12/22/0921:25	NA	AL33-41	AL33-36	ICL059W	12/16/0913:50	12/17/09
20-R2-004DUP	L297-06D	488	40	NA	8.00	4.00	12/22/0921:41	NA	AL33-42	AL33-36	ICL059W	12/16/0913:50	12/17/09
20-R2-004MS	L297-06M	677	40	NA	8.00	4.00	12/22/0921:58	NA	AL33-43	AL33-36	ICL059W	12/16/0913:50	12/17/09
20-R2-004MSD	L297-06S	677	40	NA	8.00	4.00	12/22/0922:14	NA	AL33-44	AL33-36	ICL059W	12/16/0913:50	12/17/09
20-R2-012	L297-10	4710	400	NA	80.0	40.0	12/22/0922:30	NA	AL33-45	AL33-36	ICL059W	12/16/0909:15	12/17/09
20-R2-009	L297-11	431	20	NA	4.00	2.00	12/22/0922:46	NA	AL33-46	AL33-36	ICL059W	12/16/0910:40	12/17/09
20-R2-010	L297-12	2090	200	NA	40.0	20.0	12/23/0900:07	NA	AL33-51	AL33-48	ICL059W	12/16/0911:50	12/17/09
20-R2-008	L297-14	278	20	NA	4.00	2.00	12/23/0900:23	NA	AL33-52	AL33-48	ICL059W	12/16/0914:00	12/17/09

METHOD 300.0
NITRATE-N

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L297

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICL049WB	ND	1	NA	0.100	0.0500	12/17/0918:52	NA	AL27-38	AL27-36	ICL049W	NA	NA
LCS1W	ICL049WL	2.05	1	NA	0.100	0.0500	12/17/0919:08	NA	AL27-39	AL27-36	ICL049W	NA	NA
LCD1W	ICL049WC	2.07	1	NA	0.100	0.0500	12/17/0919:24	NA	AL27-40	AL27-36	ICL049W	NA	NA
20-R2-001	L297-01	ND	1	NA	0.100	0.0500	12/17/0919:40	NA	AL27-41	AL27-36	ICL049W	12/16/0911:20	12/17/09
20-R2-004	L297-06	0.0703J	1	NA	0.100	0.0500	12/17/0920:13	NA	AL27-43	AL27-36	ICL049W	12/16/0913:50	12/17/09
20-R2-004DUP	L297-06D	0.0708J	1	NA	0.100	0.0500	12/17/0920:29	NA	AL27-44	AL27-36	ICL049W	12/16/0913:50	12/17/09
20-R2-004MS	L297-06M	2.16	1	NA	0.100	0.0500	12/17/0920:45	NA	AL27-45	AL27-36	ICL049W	12/16/0913:50	12/17/09
20-R2-004MSD	L297-06S	2.16	1	NA	0.100	0.0500	12/17/0921:01	NA	AL27-46	AL27-36	ICL049W	12/16/0913:50	12/17/09
20-R2-017	L297-07	0.0507J	1	NA	0.100	0.0500	12/17/0922:06	NA	AL27-50	AL27-48	ICL049W	12/16/0911:10	12/17/09
20-R2-019	L297-08	0.0621J	1	NA	0.100	0.0500	12/17/0922:22	NA	AL27-51	AL27-48	ICL049W	12/16/0909:45	12/17/09
20-R2-009	L297-11	0.0662J	1	NA	0.100	0.0500	12/17/0923:10	NA	AL27-54	AL27-48	ICL049W	12/16/0910:40	12/17/09
20-R2-010	L297-12	2.97	1	NA	0.100	0.0500	12/17/0923:27	NA	AL27-55	AL27-48	ICL049W	12/16/0911:50	12/17/09
20-R2-008	L297-14	0.247	1	NA	0.100	0.0500	12/17/0923:43	NA	AL27-56	AL27-48	ICL049W	12/16/0914:00	12/17/09
MBLK2W	ICL051WB	ND	1	NA	0.100	0.0500	12/18/0909:45	NA	AL29-07	AL29-01	ICL051W	NA	NA
LCS2W	ICL051WL	2.09	1	NA	0.100	0.0500	12/18/0910:01	NA	AL29-08	AL29-01	ICL051W	NA	NA
LCD2W	ICL051WC	2.09	1	NA	0.100	0.0500	12/18/0910:17	NA	AL29-09	AL29-01	ICL051W	NA	NA
20-R2-007	L297-03	0.475J	5	NA	0.500	0.250	12/18/0908:56	NA	AL29-04	AL29-01	ICL051W	12/16/0909:20	12/17/09
20-R2-012	L297-10	0.241	2	NA	0.200	0.100	12/18/0908:40	NA	AL29-03	AL29-01	ICL051W	12/16/0909:15	12/17/09
20-R2-021	L297-09	0.295	2	NA	0.200	0.100	12/18/0909:13	NA	AL29-05	AL29-01	ICL051W	12/16/0913:40	12/17/09

METHOD 300.0
SULFATE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L297

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICL049WB	ND	1	NA	0.500	0.250	12/17/0918:52	NA	AL27-38	AL27-36	ICL049W	NA	NA
LCS1W	ICL049WL	5.04	1	NA	0.500	0.250	12/17/0919:08	NA	AL27-39	AL27-36	ICL049W	NA	NA
LCD1W	ICL049WC	5.06	1	NA	0.500	0.250	12/17/0919:24	NA	AL27-40	AL27-36	ICL049W	NA	NA
20-R2-017	L297-07	1.20	1	NA	0.500	0.250	12/17/0922:06	NA	AL27-50	AL27-48	ICL049W	12/16/0911:10	12/17/09
MBLK2W	ICL057WB	ND	1	NA	0.500	0.250	12/22/0911:11	NA	AL33-03	AL33-01	ICL057W	NA	NA
LCS2W	ICL057WL	4.88	1	NA	0.500	0.250	12/22/0911:27	NA	AL33-04	AL33-01	ICL057W	NA	NA
LCD2W	ICL057WC	4.88	1	NA	0.500	0.250	12/22/0911:43	NA	AL33-05	AL33-01	ICL057W	NA	NA
20-R2-001	L297-01	62.5	5	NA	2.50	1.25	12/22/0918:27	NA	AL33-30	AL33-25	ICL057W	12/16/0911:20	12/17/09
20-R2-007	L297-03	1190	500	NA	250	125	12/22/0918:44	NA	AL33-31	AL33-25	ICL057W	12/16/0909:20	12/17/09
20-R2-019	L297-08	127	20	NA	10.0	5.00	12/22/0919:16	NA	AL33-33	AL33-25	ICL057W	12/16/0909:45	12/17/09
20-R2-021	L297-09	1650	200	NA	100	50.0	12/22/0919:32	NA	AL33-34	AL33-25	ICL057W	12/16/0913:40	12/17/09
MBLK3W	ICL059WB	ND	1	NA	0.500	0.250	12/22/0920:37	NA	AL33-38	AL33-36	ICL059W	NA	NA
LCS3W	ICL059WL	4.92	1	NA	0.500	0.250	12/22/0920:53	NA	AL33-39	AL33-36	ICL059W	NA	NA
LCD3W	ICL059WC	4.91	1	NA	0.500	0.250	12/22/0921:09	NA	AL33-40	AL33-36	ICL059W	NA	NA
20-R2-004	L297-06	141	40	NA	20.0	10.0	12/22/0921:25	NA	AL33-41	AL33-36	ICL059W	12/16/0913:50	12/17/09
20-R2-004DUP	L297-06D	139	40	NA	20.0	10.0	12/22/0921:41	NA	AL33-42	AL33-36	ICL059W	12/16/0913:50	12/17/09
20-R2-004MS	L297-06M	342	40	NA	20.0	10.0	12/22/0921:58	NA	AL33-43	AL33-36	ICL059W	12/16/0913:50	12/17/09
20-R2-004MSD	L297-06S	342	40	NA	20.0	10.0	12/22/0922:14	NA	AL33-44	AL33-36	ICL059W	12/16/0913:50	12/17/09
20-R2-012	L297-10	1970	400	NA	200	100	12/22/0922:30	NA	AL33-45	AL33-36	ICL059W	12/16/0909:15	12/17/09
20-R2-009	L297-11	210	20	NA	10.0	5.00	12/22/0922:46	NA	AL33-46	AL33-36	ICL059W	12/16/0910:40	12/17/09
20-R2-010	L297-12	289	20	NA	10.0	5.00	12/22/0923:51	NA	AL33-50	AL33-48	ICL059W	12/16/0911:50	12/17/09
20-R2-008	L297-14	289	20	NA	10.0	5.00	12/23/0900:23	NA	AL33-52	AL33-48	ICL059W	12/16/0914:00	12/17/09

METHOD SM2320B
TOTAL ALKALINITY

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L297

Matrix : WATER
Instrument ID : E5

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALL009WB	ND	1	NA	5.00	1.00	12/22/0912:15	NA	E5L04003	NA	ALL009W	NA	NA
LCS1W	ALL009WL	231	1	NA	5.00	1.00	12/22/0912:23	NA	E5L04004	NA	ALL009W	NA	NA
LCD1W	ALL009WC	232	1	NA	5.00	1.00	12/22/0912:32	NA	E5L04005	NA	ALL009W	NA	NA
20-R2-004	L297-06	646	1	NA	5.00	1.00	12/22/0912:43	NA	E5L04006	NA	ALL009W	12/16/0913:50	12/17/09
20-R2-004DUP	L297-06D	641	1	NA	5.00	1.00	12/22/0912:53	NA	E5L04007	NA	ALL009W	12/16/0913:50	12/17/09
20-R2-001	L297-01	220	1	NA	5.00	1.00	12/22/0913:01	NA	E5L04008	NA	ALL009W	12/16/0911:20	12/17/09
20-R2-007	L297-03	189	1	NA	5.00	1.00	12/22/0913:09	NA	E5L04009	NA	ALL009W	12/16/0909:20	12/17/09
20-R2-017	L297-07	387	1	NA	5.00	1.00	12/22/0913:17	NA	E5L04010	NA	ALL009W	12/16/0911:10	12/17/09
20-R2-019	L297-08	663	1	NA	5.00	1.00	12/22/0913:28	NA	E5L04011	NA	ALL009W	12/16/0909:45	12/17/09
20-R2-021	L297-09	919	1	NA	5.00	1.00	12/22/0913:41	NA	E5L04012	NA	ALL009W	12/16/0913:40	12/17/09
20-R2-012	L297-10	1350	1	NA	5.00	1.00	12/22/0913:57	NA	E5L04013	NA	ALL009W	12/16/0909:15	12/17/09
20-R2-009	L297-11	718	1	NA	5.00	1.00	12/22/0914:09	NA	E5L04014	NA	ALL009W	12/16/0910:40	12/17/09
20-R2-010	L297-12	772	1	NA	5.00	1.00	12/22/0914:21	NA	E5L04015	NA	ALL009W	12/16/0911:50	12/17/09
20-R2-008	L297-14	990	1	NA	5.00	1.00	12/22/0914:34	NA	E5L04016	NA	ALL009W	12/16/0914:00	12/17/09

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26057

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AK, FS	7931 1462 7535 7931 1491 7301
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 09L321

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC'S SHORT LIST	RSK 175 DISS. GASES	6020A DISS. IRON	6020A TOTAL METALS Fe, As, Mn, Ca, Mg, Na	300.0 ANIONS (Cl, NO3, SO4)	SM 2320B ALKALINITY				COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-RZ-TB-004	12/17/09	1010	3	X		W	10	X									* SEE BELOW	TRIP BLANK	—	—	TB
20-RZ-EB-004	12/17/09	1050	3	X		W	10	X									*	EQUIPMENT BLANK	—	—	EB
20-RZ-031	12/17/09	950	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW07A2	10	20	N
20-RZ-033	12/17/09	1125	9		X	W	10	X	X	X	X	X	X				*	ZVI-MW07B	30	40	N
20-RZ-034	12/17/09	1220	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW07C	40	50	N
20-RZ-032	12/17/09	1330	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW07A3	20	30	N
20-RZ-022	12/17/09	930	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW05A2	10	20	N
20-RZ-018	12/17/09	1045	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW04A2	10	20	N
20-RZ-020	12/17/09	1225	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW04B	30	40	N
20-RZ-006	12/17/09	1350	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW01C	40	50	N

Project Information Section
Do not submit to Laboratory

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/17/09	FEDEX
COMPANY: BTS	TIME: 1700	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260B - HCL PRES, RSK 175 - HCL PRES, 6020A DISS IRON FIELD FILTERED, 6020A TOTAL METALS / DISS. IRON HNO_3 PRES, 300.0 ANIONS / SM 2320B - NO PRES.

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/22/09 21:20
Sample ID: 20-R2-TB-004	Date Analyzed: 12/22/09 21:20
Lab Samp ID: L321-01	Dilution Factor: 1
Lab File ID: RLC795	Matrix : WATER
Ext Btch ID: VO67L41	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	94	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	104	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/22/09 21:50
Sample ID: 20-R2-EB-004	Date Analyzed: 12/22/09 21:50
Lab Samp ID: L321-02	Dilution Factor: 1
Lab File ID: RLC796	Matrix : WATER
Ext Btch ID: VO67L41	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	97	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	104	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
Batch No.	: 09L321	Date Extracted:	12/22/09 23:20
Sample ID:	20-R2-031	Date Analyzed:	12/22/09 23:20
Lab Samp ID:	L321-03	Dilution Factor:	1
Lab File ID:	RLC799	Matrix	: WATER
Ext Btch ID:	VO67L41	% Moisture	: NA
Calib. Ref.:	RLC763	Instrument ID	: T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	64E	1.0	0.20
1,1-DICHLOROETHENE	76E	1.0	0.20
1,2-DICHLOROETHANE	1.7	0.50	0.20
CHLOROETHANE	2.1	0.50	0.20
CHLOROMETHANE	2.1	1.0	0.20
CIS-1,2-DICHLOROETHENE	130E	1.0	0.20
TETRACHLOROETHENE	2.5	1.0	0.20
TRANS-1,2-DICHLOROETHENE	56E	1.0	0.20
TRICHLOROETHENE	130E	1.0	0.20
VINYL CHLORIDE	180E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	120	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/30/09 05:54
Sample ID: 20-R2-031DL	Date Analyzed: 12/30/09 05:54
Lab Samp ID: L321-03T	Dilution Factor: 100
Lab File ID: RLC948	Matrix : WATER
Ext Btch ID: VO67L50	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	69J	100	20
1,1-DICHLOROETHENE	51J	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	7000E	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	250	100	20
TRICHLOROETHENE	16000E	100	20
VINYL CHLORIDE	1500	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/30/09 10:52
Sample ID: 20-R2-031DL	Date Analyzed: 12/30/09 10:52
Lab Samp ID: L321-03I	Dilution Factor: 2500
Lab File ID: RLC958	Matrix : WATER
Ext Btch ID: VO67L50	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	2500	500
1,1,2,2-TETRACHLOROETHANE	ND	2500	500
1,1,2-TRICHLOROETHANE	ND	2500	500
1,1-DICHLOROETHANE	ND	2500	500
1,1-DICHLOROETHENE	ND	2500	500
1,2-DICHLOROETHANE	ND	1200	500
CHLOROETHANE	ND	1200	500
CHLOROMETHANE	ND	2500	500
CIS-1,2-DICHLOROETHENE	13000	2500	500
TETRACHLOROETHENE	ND	2500	500
TRANS-1,2-DICHLOROETHENE	ND	2500	500
TRICHLOROETHENE	16000	2500	500
VINYL CHLORIDE	1400	1200	500

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	100	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/30/09 06:24
Sample ID: 20-R2-033	Date Analyzed: 12/30/09 06:24
Lab Samp ID: L321-04R	Dilution Factor: 1
Lab File ID: RLC949	Matrix : WATER
Ext Btch ID: VO67L50	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	6.8	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	32	1.0	0.20
1,1-DICHLOROETHANE	50E	1.0	0.20
1,1-DICHLOROETHENE	120E	1.0	0.20
1,2-DICHLOROETHANE	50E	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	2.4	1.0	0.20
CIS-1,2-DICHLOROETHENE	39	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	23	1.0	0.20
TRICHLOROETHENE	5.0	1.0	0.20
VINYL CHLORIDE	0.76	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
Batch No.	: 09L321	Date Extracted:	12/30/09 06:54
Sample ID:	20-R2-033DL	Date Analyzed:	12/30/09 06:54
Lab Samp ID:	L321-04T	Dilution Factor:	10
Lab File ID:	RLC950	Matrix :	WATER
Ext Btch ID:	VO67L50	% Moisture :	NA
Calib. Ref.:	RLC763	Instrument ID :	T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	7.3J	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	36	10	2.0
1,1-DICHLOROETHANE	57	10	2.0
1,1-DICHLOROETHENE	860E	10	2.0
1,2-DICHLOROETHANE	58	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	3.2J	10	2.0
CIS-1,2-DICHLOROETHENE	45	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	26	10	2.0
TRICHLOROETHENE	5.6J	10	2.0
VINYL CHLORIDE	ND	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/30/09 11:22
Sample ID: 20-R2-033DL	Date Analyzed: 12/30/09 11:22
Lab Samp ID: L321-04I	Dilution Factor: 500
Lab File ID: RLC959	Matrix : WATER
Ext Btch ID: VO67L50	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	500	100
1,1,2,2-TETRACHLOROETHANE	ND	500	100
1,1,2-TRICHLOROETHANE	ND	500	100
1,1-DICHLOROETHANE	ND	500	100
1,1-DICHLOROETHENE	6200	500	100
1,2-DICHLOROETHANE	ND	250	100
CHLOROETHANE	ND	250	100
CHLOROMETHANE	ND	500	100
CIS-1,2-DICHLOROETHENE	ND	500	100
TETRACHLOROETHENE	ND	500	100
TRANS-1,2-DICHLOROETHENE	ND	500	100
TRICHLOROETHENE	ND	500	100
VINYL CHLORIDE	ND	250	100

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	100	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/30/09 07:23
Sample ID: 20-R2-034	Date Analyzed: 12/30/09 07:23
Lab Samp ID: L321-05R	Dilution Factor: 1
Lab File ID: RLC951	Matrix : WATER
Ext Btch ID: VO67L50	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	2.8	1.0	0.20
1,1-DICHLOROETHANE	8.6	1.0	0.20
1,1-DICHLOROETHENE	52E	1.0	0.20
1,2-DICHLOROETHANE	9.4	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	53E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	4.8	1.0	0.20
TRICHLOROETHENE	78E	1.0	0.20
VINYL CHLORIDE	5.5	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/30/09 07:53
Sample ID: 20-R2-034DL	Date Analyzed: 12/30/09 07:53
Lab Samp ID: L321-05T	Dilution Factor: 10
Lab File ID: RLC952	Matrix : WATER
Ext Btch ID: VO67L50	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	3.1J	10	2.0
1,1-DICHLOROETHANE	9.7J	10	2.0
1,1-DICHLOROETHENE	1500E	10	2.0
1,2-DICHLOROETHANE	11	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	62	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	5.8J	10	2.0
TRICHLOROETHENE	86	10	2.0
VINYL CHLORIDE	6.5	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	106	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/30/09 11:52
Sample ID: 20-R2-034DL	Date Analyzed: 12/30/09 11:52
Lab Samp ID: L321-05I	Dilution Factor: 500
Lab File ID: RLC960	Matrix : WATER
Ext Btch ID: VO67L50	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	500	100
1,1,2,2-TETRACHLOROETHANE	ND	500	100
1,1,2-TRICHLOROETHANE	ND	500	100
1,1-DICHLOROETHANE	ND	500	100
1,1-DICHLOROETHENE	1400	500	100
1,2-DICHLOROETHANE	ND	250	100
CHLOROETHANE	ND	250	100
CHLOROMETHANE	ND	500	100
CIS-1,2-DICHLOROETHENE	ND	500	100
TETRACHLOROETHENE	ND	500	100
TRANS-1,2-DICHLOROETHENE	ND	500	100
TRICHLOROETHENE	ND	500	100
VINYL CHLORIDE	ND	250	100

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
4-BROMOFLUOROBENZENE	110	75-120
TOLUENE-D8	104	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/23/09 00:51
Sample ID: 20-R2-032	Date Analyzed: 12/23/09 00:51
Lab Samp ID: L321-06	Dilution Factor: 1
Lab File ID: RLC802	Matrix : WATER
Ext Btch ID: VO67L41	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.6	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	2.8	1.0	0.20
1,1-DICHLOROETHANE	12	1.0	0.20
1,1-DICHLOROETHENE	97E	1.0	0.20
1,2-DICHLOROETHANE	3.3	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	50E	1.0	0.20
TETRACHLOROETHENE	0.21J	1.0	0.20
TRANS-1,2-DICHLOROETHENE	18	1.0	0.20
TRICHLOROETHENE	53E	1.0	0.20
VINYL CHLORIDE	82E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	99	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/30/09 12:22
Sample ID: 20-R2-032DL	Date Analyzed: 12/30/09 12:22
Lab Samp ID: L321-06T	Dilution Factor: 100
Lab File ID: RLC961	Matrix : WATER
Ext Btch ID: VO67L50	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	ND	100	20
1,1-DICHLOROETHENE	630	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	600	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	ND	100	20
TRICHLOROETHENE	1200	100	20
VINYL CHLORIDE	77	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	110	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/30/09 08:53
Sample ID: 20-R2-022	Date Analyzed: 12/30/09 08:53
Lab Samp ID: L321-07R	Dilution Factor: 1
Lab File ID: RLC954	Matrix : WATER
Ext Btch ID: VO67L50	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	1.6	1.0	0.20
1,1-DICHLOROETHENE	1.1	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	15	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	1.2	1.0	0.20
TRICHLOROETHENE	3.1	1.0	0.20
VINYL CHLORIDE	15	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/23/09 01:51
Sample ID: 20-R2-018	Date Analyzed: 12/23/09 01:51
Lab Samp ID: L321-08	Dilution Factor: 1
Lab File ID: RLC804	Matrix : WATER
Ext Btch ID: VO67L41	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	2.8	1.0	0.20
1,1-DICHLOROETHENE	5.6	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	1.6	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	120E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	12	1.0	0.20
TRICHLOROETHENE	91E	1.0	0.20
VINYL CHLORIDE	47	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	114	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/30/09 09:23
Sample ID: 20-R2-018DL	Date Analyzed: 12/30/09 09:23
Lab Samp ID: L321-08T	Dilution Factor: 50
Lab File ID: RLC955	Matrix : WATER
Ext Btch ID: VO67L50	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	ND	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	290	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	11J	50	10
TRICHLOROETHENE	82	50	10
VINYL CHLORIDE	42	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	109	75-120
TOLUENE-D8	104	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
Batch No.	: 09L321	Date Extracted:	12/30/09 12:52
Sample ID:	20-R2-020	Date Analyzed:	12/30/09 12:52
Lab Samp ID:	L321-09R	Dilution Factor:	1
Lab File ID:	RLC962	Matrix	: WATER
Ext Btch ID:	VO67L50	% Moisture	: NA
Calib. Ref.:	RLC763	Instrument ID	: T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.3	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.71J	1.0	0.20
1,1-DICHLOROETHANE	14	1.0	0.20
1,1-DICHLOROETHENE	93E	1.0	0.20
1,2-DICHLOROETHANE	11	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.65J	1.0	0.20
CIS-1,2-DICHLOROETHENE	5.4	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	1.5	1.0	0.20
TRICHLOROETHENE	1.9	1.0	0.20
VINYL CHLORIDE	0.29J	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	116	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/30/09 09:53
Sample ID: 20-R2-020DL	Date Analyzed: 12/30/09 09:53
Lab Samp ID: L321-09T	Dilution Factor: 50
Lab File ID: RLC956	Matrix : WATER
Ext Btch ID: VO67L50	% Moisture : NA
Calib. Ref.: RLC763	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	15J	50	10
1,1-DICHLOROETHENE	700	50	10
1,2-DICHLOROETHANE	12J	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	ND	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	ND	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	106	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
Batch No.	: 09L321	Date Extracted:	12/30/09 10:22
Sample ID:	20-R2-006	Date Analyzed:	12/30/09 10:22
Lab Samp ID:	L321-10R	Dilution Factor:	1
Lab File ID:	RLC957	Matrix	: WATER
Ext Btch ID:	VO67L50	% Moisture	: NA
Calib. Ref.:	RLC763	Instrument ID	: T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	0.56J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.60J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	101	85-120

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-031	Date Analyzed: 12/22/09 12:46
Lab Samp ID: L321-03T	Dilution Factor: 20
Lab File ID: FL22018A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	130	40	12
ETHENE	330	40	12
METHANE	160	40	12
ACETYLENE	650	60	30

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-033	Date Analyzed: 12/22/09 12:57
Lab Samp ID: L321-04	Dilution Factor: 1
Lab File ID: FL22019A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.5	2.0	0.60
ETHENE	ND	2.0	0.60
METHANE	29	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-034	Date Analyzed: 12/22/09 13:08
Lab Samp ID: L321-05	Dilution Factor: 1
Lab File ID: FL22020A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	9.3	2.0	0.60
ETHENE	21	2.0	0.60
METHANE	23	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-032	Date Analyzed: 12/22/09 13:21
Lab Samp ID: L321-06	Dilution Factor: 1
Lab File ID: FL22021A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	13	2.0	0.60
ETHENE	24	2.0	0.60
METHANE	120E	2.0	0.60
ACETYLENE	3.0	3.0	1.5

E: Exceeded Calibration range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-032DL	Date Analyzed: 12/22/09 14:24
Lab Samp ID: L321-06T	Dilution Factor: 20
Lab File ID: FL22026A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	40	12
ETHENE	23J	40	12
METHANE	450	40	12
ACETYLENE	ND	60	30

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-022	Date Analyzed: 12/22/09 13:32
Lab Samp ID: L321-07	Dilution Factor: 1
Lab File ID: FL22022A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.2	2.0	0.60
ETHENE	1.3J	2.0	0.60
METHANE	76E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-022DL	Date Analyzed: 12/22/09 14:35
Lab Samp ID: L321-07T	Dilution Factor: 5
Lab File ID: FL22027A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	10	3.0
ETHENE	ND	10	3.0
METHANE	110	10	3.0
ACETYLENE	ND	15	7.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-018	Date Analyzed: 12/22/09 13:43
Lab Samp ID: L321-08	Dilution Factor: 1
Lab File ID: FL22023A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	0.65J	2.0	0.60
ETHENE	6.2	2.0	0.60
METHANE	39E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Exceeded Calibration Range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-018DL	Date Analyzed: 12/22/09 14:46
Lab Samp ID: L321-08T	Dilution Factor: 2
Lab File ID: FL22028A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	4.0	1.2
ETHENE	5.9	4.0	1.2
METHANE	39	4.0	1.2
ACETYLENE	ND	6.0	3.0

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-020	Date Analyzed: 12/22/09 13:53
Lab Samp ID: L321-09	Dilution Factor: 1
Lab File ID: FL22024A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.60
ETHENE	2.9	2.0	0.60
METHANE	8.1	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
Batch No. : 09L321	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-006	Date Analyzed: 12/22/09 14:12
Lab Samp ID: L321-10	Dilution Factor: 1
Lab File ID: FL22025A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	2.6	2.0	0.60
ETHENE	3.0	2.0	0.60
METHANE	12	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 12/17/09
Project : CTO 20, ALAMEDA	Date Received: 12/18/09
SDG NO. : 09L321	Date Extracted: 12/28/09 10:30
Sample ID: 20-R2-031	Date Analyzed: 01/04/10 20:35
Lab Samp ID: L321-03	Dilution Factor: 1
Lab File ID: 98A01058	Matrix : WATER
Ext Btch ID: IML024W	% Moisture : NA
Calib. Ref.: 98A01053	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic^	17.2	5.00	2.50
Calcium	4280	1000	200
Iron	1320	200	50.0
Magnesium	1980	1000	200
Manganese	10.0	1.00	0.500
Potassium	1890	1000	200
Sodium^	760000	5000	1000

^: Analyzed at DF 5 on 12/30/09 20:01 | File ID 98L23059

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-033	Date Analyzed:	01/04/10 20:47
Lab Samp ID:	L321-04	Dilution Factor:	1
Lab File ID:	98A01060	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01053	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	8.29	1.00	0.500
Calcium	30500	1000	200
Iron	ND	200	50.0
Magnesium	31000	1000	200
Manganese	55.0	1.00	0.500
Potassium	5610	1000	200
Sodium^	1620000	20000	4000

^: Analyzed at DF 20 on 01/04/10 17:32 | File ID 98A01029

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-034	Date Analyzed:	01/04/10 20:54
Lab Samp ID:	L321-05	Dilution Factor:	1
Lab File ID:	98A01061	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01053	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	4.80	1.00	0.500
Calcium	67400	1000	200
Iron	369	200	50.0
Magnesium	67300	1000	200
Manganese	618	1.00	0.500
Potassium	8700	1000	200
Sodium^	3020000	20000	4000

^: Analyzed at DF 20 on 01/04/10 17:38 | File ID 98A01030

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-032	Date Analyzed:	01/04/10 21:00
Lab Samp ID:	L321-06	Dilution Factor:	1
Lab File ID:	98A01062	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01053	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.85	1.00	0.500
Calcium	65800	1000	200
Iron	1310	200	50.0
Magnesium	76100	1000	200
Manganese	2330	1.00	0.500
Potassium	2730	1000	200
Sodium^	526000	5000	1000

^: Analyzed at DF 5 on 12/30/09 20:45 | File ID 98L23066

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-022	Date Analyzed:	01/04/10 21:31
Lab Samp ID:	L321-07	Dilution Factor:	1
Lab File ID:	98A01067	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01065	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	12.6	1.00	0.500
Calcium	4470	1000	200
Iron	128J	200	50.0
Magnesium	1100	1000	200
Manganese	26.8	1.00	0.500
Potassium	5920	1000	200
Sodium^	263000	5000	1000

^: Analyzed at DF 5 on 12/30/09 20:51 | File ID 98L23067

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-018	Date Analyzed:	01/04/10 21:38
Lab Samp ID:	L321-08	Dilution Factor:	1
Lab File ID:	98A01068	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01065	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	10.9	1.00	0.500
Calcium	4750	1000	200
Iron	1040	200	50.0
Magnesium	1770	1000	200
Manganese	58.0	1.00	0.500
Potassium	3750	1000	200
Sodium^	455000	5000	1000

^: Analyzed at DF 5 on 12/30/09 20:57 | File ID 98L23068

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-020	Date Analyzed:	01/04/10 21:44
Lab Samp ID:	L321-09	Dilution Factor:	1
Lab File ID:	98A01069	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01065	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	35.3	1.00	0.500
Calcium	8770	1000	200
Iron	72.0J	200	50.0
Magnesium	2680	1000	200
Manganese	9.89	1.00	0.500
Potassium	5900	1000	200
Sodium^	1900000	20000	4000

^: Analyzed at DF 20 on 01/04/10 17:45 | File ID 98A01031

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-006	Date Analyzed:	01/04/10 21:50
Lab Samp ID:	L321-10	Dilution Factor:	1
Lab File ID:	98A01070	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01065	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	8.10	1.00	0.500
Calcium	163000	1000	200
Iron	182J	200	50.0
Magnesium^	270000	20000	4000
Manganese^	1470	20.0	10.0
Potassium	9750	1000	200
Sodium^	3790000	20000	4000

^: Analyzed at DF 20 on 01/04/10 17:51 | File ID 98A01032

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-031	Date Analyzed:	01/04/10 22:09
Lab Samp ID:	L321-03	Dilution Factor:	1
Lab File ID:	98A01073	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01065	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	324	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-033	Date Analyzed:	01/04/10 22:15
Lab Samp ID:	L321-04	Dilution Factor:	1
Lab File ID:	98A01074	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01065	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-034	Date Analyzed:	01/04/10 22:47
Lab Samp ID:	L321-05	Dilution Factor:	1
Lab File ID:	98A01079	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01077	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	509	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-032	Date Analyzed:	01/04/10 22:53
Lab Samp ID:	L321-06	Dilution Factor:	1
Lab File ID:	98A01080	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01077	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	912	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-022	Date Analyzed:	01/04/10 22:59
Lab Samp ID:	L321-07	Dilution Factor:	1
Lab File ID:	98A01081	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01077	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	107J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-018	Date Analyzed:	01/04/10 23:06
Lab Samp ID:	L321-08	Dilution Factor:	1
Lab File ID:	98A01082	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01077	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	762	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-020	Date Analyzed:	01/04/10 23:12
Lab Samp ID:	L321-09	Dilution Factor:	1
Lab File ID:	98A01083	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01077	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/17/09
Project	: CTO 20, ALAMEDA	Date Received:	12/18/09
SDG NO.	: 09L321	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-006	Date Analyzed:	12/30/09 22:32
Lab Samp ID:	L321-10T	Dilution Factor:	5
Lab File ID:	98L23083	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98L23075	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 300.0
CHLORIDE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L321

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICL051WB	ND	1	NA	0.200	0.100	12/18/0909:45	NA	AL29-07	AL29-01	ICL051W	NA	NA
LCS1W	ICL051WL	5.22	1	NA	0.200	0.100	12/18/0910:01	NA	AL29-08	AL29-01	ICL051W	NA	NA
LCD1W	ICL051WC	5.23	1	NA	0.200	0.100	12/18/0910:17	NA	AL29-09	AL29-01	ICL051W	NA	NA
20-R2-022	L321-07	16.1	1	NA	0.200	0.100	12/18/0916:18	NA	AL29-31	AL29-25	ICL051W	12/17/0909:30	12/18/09
20-R2-022DUP	L321-07D	16.0	1	NA	0.200	0.100	12/18/0916:34	NA	AL29-32	AL29-25	ICL051W	12/17/0909:30	12/18/09
20-R2-022MS	L321-07M	21.0	1	NA	0.200	0.100	12/18/0916:50	NA	AL29-33	AL29-25	ICL051W	12/17/0909:30	12/18/09
20-R2-022MSD	L321-07S	21.0	1	NA	0.200	0.100	12/18/0917:06	NA	AL29-34	AL29-25	ICL051W	12/17/0909:30	12/18/09
MBLK2W	ICL065WB	ND	1	NA	0.200	0.100	12/28/0911:23	NA	AL35-03	AL35-01	ICL065W	NA	NA
LCS2W	ICL065WL	5.04	1	NA	0.200	0.100	12/28/0911:39	NA	AL35-04	AL35-01	ICL065W	NA	NA
LCD2W	ICL065WC	5.04	1	NA	0.200	0.100	12/28/0911:56	NA	AL35-05	AL35-01	ICL065W	NA	NA
20-R2-033	L321-04	1970	200	NA	40.0	20.0	12/28/0913:00	NA	AL35-09	AL35-01	ICL065W	12/17/0911:25	12/18/09
20-R2-020	L321-09	2130	100	NA	20.0	10.0	12/28/0914:37	NA	AL35-15	AL35-13	ICL065W	12/17/0912:25	12/18/09
MBLK3W	ICL061WB	ND	1	NA	0.200	0.100	12/23/0909:15	NA	AL33-62	AL33-60	ICL061W	NA	NA
LCS3W	ICL061WL	5.00	1	NA	0.200	0.100	12/23/0909:31	NA	AL33-63	AL33-60	ICL061W	NA	NA
LCD3W	ICL061WC	4.99	1	NA	0.200	0.100	12/23/0909:47	NA	AL33-64	AL33-60	ICL061W	NA	NA
20-R2-031	L321-03	263	20	NA	4.00	2.00	12/23/0913:50	NA	AL33-79	AL33-72	ICL061W	12/17/0909:50	12/18/09
MBLK4W	ICL063WB	ND	1	NA	0.200	0.100	12/23/0918:51	NA	AL33-97	AL33-95	ICL063W	NA	NA
LCS4W	ICL063WL	5.04	1	NA	0.200	0.100	12/23/0919:07	NA	AL33-98	AL33-95	ICL063W	NA	NA
LCD4W	ICL063WC	5.07	1	NA	0.200	0.100	12/23/0919:23	NA	AL33-99	AL33-95	ICL063W	NA	NA
20-R2-018	L321-08	83.9	20	NA	4.00	2.00	12/23/0920:27	NA	AL33-103	AL33-95	ICL063W	12/17/0910:45	12/18/09
20-R2-006	L321-10	4940	200	NA	40.0	20.0	12/23/0920:44	NA	AL33-104	AL33-95	ICL063W	12/17/0913:50	12/18/09
20-R2-034	L321-05	3920	200	NA	40.0	20.0	12/23/0923:09	NA	AL33-113	AL33-108	ICL063W	12/17/0912:20	12/18/09
20-R2-032	L321-06	701	50	NA	10.0	5.00	12/23/0923:25	NA	AL33-114	AL33-108	ICL063W	12/17/0913:30	12/18/09

METHOD 300.0
NITRATE-N

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L321

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICL051WB	ND	1	NA	0.100	0.0500	12/18/0909:45	NA	AL29-07	AL29-01	ICL051W	NA	NA
LCS1W	ICL051WL	2.09	1	NA	0.100	0.0500	12/18/0910:01	NA	AL29-08	AL29-01	ICL051W	NA	NA
LCD1W	ICL051WC	2.09	1	NA	0.100	0.0500	12/18/0910:17	NA	AL29-09	AL29-01	ICL051W	NA	NA
20-R2-031	L321-03	0.0959J	1	NA	0.100	0.0500	12/18/0915:13	NA	AL29-27	AL29-25	ICL051W	12/17/0909:50	12/18/09
20-R2-033	L321-04	7.52	1	NA	0.100	0.0500	12/18/0915:29	NA	AL29-28	AL29-25	ICL051W	12/17/0911:25	12/18/09
20-R2-032	L321-06	0.0954J	1	NA	0.100	0.0500	12/18/0916:01	NA	AL29-30	AL29-25	ICL051W	12/17/0913:30	12/18/09
20-R2-022	L321-07	0.0537J	1	NA	0.100	0.0500	12/18/0916:18	NA	AL29-31	AL29-25	ICL051W	12/17/0909:30	12/18/09
20-R2-022DUP	L321-07D	0.0533J	1	NA	0.100	0.0500	12/18/0916:34	NA	AL29-32	AL29-25	ICL051W	12/17/0909:30	12/18/09
20-R2-022MS	L321-07M	2.14	1	NA	0.100	0.0500	12/18/0916:50	NA	AL29-33	AL29-25	ICL051W	12/17/0909:30	12/18/09
20-R2-022MSD	L321-07S	2.14	1	NA	0.100	0.0500	12/18/0917:06	NA	AL29-34	AL29-25	ICL051W	12/17/0909:30	12/18/09
20-R2-018	L321-08	0.0590J	1	NA	0.100	0.0500	12/18/0917:22	NA	AL29-35	AL29-25	ICL051W	12/17/0910:45	12/18/09
MBLK2W	ICL053WB	ND	1	NA	0.100	0.0500	12/18/0918:27	NA	AL29-39	AL29-37	ICL053W	NA	NA
LCS2W	ICL053WL	2.09	1	NA	0.100	0.0500	12/18/0918:43	NA	AL29-40	AL29-37	ICL053W	NA	NA
LCD2W	ICL053WC	2.09	1	NA	0.100	0.0500	12/18/0918:59	NA	AL29-41	AL29-37	ICL053W	NA	NA
20-R2-020	L321-09	0.181	1	NA	0.100	0.0500	12/18/0919:15	NA	AL29-42	AL29-37	ICL053W	12/17/0912:25	12/18/09
20-R2-034	L321-05	0.395	2	NA	0.200	0.100	12/18/0922:13	NA	AL29-53	AL29-49	ICL053W	12/17/0912:20	12/18/09
20-R2-006	L321-10	0.715	2	NA	0.200	0.100	12/18/0922:46	NA	AL29-55	AL29-49	ICL053W	12/17/0913:50	12/18/09

METHOD 300.0
SULFATE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L321

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICL061WB	ND	1	NA	0.500	0.250	12/23/0909:15	NA	AL33-62	AL33-60	ICL061W	NA	NA
LCS1W	ICL061WL	4.97	1	NA	0.500	0.250	12/23/0909:31	NA	AL33-63	AL33-60	ICL061W	NA	NA
LCD1W	ICL061WC	4.97	1	NA	0.500	0.250	12/23/0909:47	NA	AL33-64	AL33-60	ICL061W	NA	NA
20-R2-031	L321-03	140	20	NA	10.0	5.00	12/23/0913:50	NA	AL33-79	AL33-72	ICL061W	12/17/0909:50	12/18/09
20-R2-022	L321-07	138	10	NA	5.00	2.50	12/23/0916:57	NA	AL33-90	AL33-84	ICL061W	12/17/0909:30	12/18/09
20-R2-022DUP	L321-07D	138	10	NA	5.00	2.50	12/23/0917:14	NA	AL33-91	AL33-84	ICL061W	12/17/0909:30	12/18/09
20-R2-022MS	L321-07M	187	10	NA	5.00	2.50	12/23/0917:30	NA	AL33-92	AL33-84	ICL061W	12/17/0909:30	12/18/09
20-R2-022MSD	L321-07S	190	10	NA	5.00	2.50	12/23/0917:46	NA	AL33-93	AL33-84	ICL061W	12/17/0909:30	12/18/09
MBLK2W	ICL063WB	ND	1	NA	0.500	0.250	12/23/0918:51	NA	AL33-97	AL33-95	ICL063W	NA	NA
LCS2W	ICL063WL	5.04	1	NA	0.500	0.250	12/23/0919:07	NA	AL33-98	AL33-95	ICL063W	NA	NA
LCD2W	ICL063WC	5.05	1	NA	0.500	0.250	12/23/0919:23	NA	AL33-99	AL33-95	ICL063W	NA	NA
20-R2-020	L321-09	408	50	NA	25.0	12.5	12/23/0920:11	NA	AL33-102	AL33-95	ICL063W	12/17/0912:25	12/18/09
20-R2-018	L321-08	448	20	NA	10.0	5.00	12/23/0920:27	NA	AL33-103	AL33-95	ICL063W	12/17/0910:45	12/18/09
20-R2-006	L321-10	1820	200	NA	100	50.0	12/23/0920:44	NA	AL33-104	AL33-95	ICL063W	12/17/0913:50	12/18/09
20-R2-034	L321-05	839	200	NA	100	50.0	12/23/0923:09	NA	AL33-113	AL33-108	ICL063W	12/17/0912:20	12/18/09
20-R2-032	L321-06	147	50	NA	25.0	12.5	12/23/0923:25	NA	AL33-114	AL33-108	ICL063W	12/17/0913:30	12/18/09
20-R2-033	L321-04	270	50	NA	25.0	12.5	12/23/0923:41	NA	AL33-115	AL33-108	ICL063W	12/17/0911:25	12/18/09

METHOD SM2320B
TOTAL ALKALINITY

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L321

Matrix : WATER
Instrument ID : E5

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALL010WB	ND	1	NA	5.00	1.00	12/22/0916:18	NA	E5L04028	NA	ALL010W	NA	NA
LCS1W	ALL010WL	233	1	NA	5.00	1.00	12/22/0916:27	NA	E5L04029	NA	ALL010W	NA	NA
LCD1W	ALL010WC	236	1	NA	5.00	1.00	12/22/0916:36	NA	E5L04030	NA	ALL010W	NA	NA
20-R2-031	L321-03	1040	1	NA	5.00	1.00	12/22/0917:42	NA	E5L04038	NA	ALL010W	12/17/0909:50	12/18/09
20-R2-033	L321-04	564	1	NA	5.00	1.00	12/22/0917:52	NA	E5L04039	NA	ALL010W	12/17/0911:25	12/18/09
20-R2-034	L321-05	595	1	NA	5.00	1.00	12/22/0918:01	NA	E5L04040	NA	ALL010W	12/17/0912:20	12/18/09
20-R2-032	L321-06	626	1	NA	5.00	1.00	12/22/0918:12	NA	E5L04041	NA	ALL010W	12/17/0913:30	12/18/09
20-R2-022	L321-07	410	1	NA	5.00	1.00	12/22/0918:20	NA	E5L04042	NA	ALL010W	12/17/0909:30	12/18/09
20-R2-018	L321-08	439	1	NA	5.00	1.00	12/22/0918:30	NA	E5L04043	NA	ALL010W	12/17/0910:45	12/18/09
20-R2-020	L321-09	789	1	NA	5.00	1.00	12/22/0918:42	NA	E5L04044	NA	ALL010W	12/17/0912:25	12/18/09
20-R2-006	L321-10	1110	1	NA	5.00	1.00	12/22/0918:56	NA	E5L04045	NA	ALL010W	12/17/0913:50	12/18/09

TT.0901

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26061

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AK	798237847527
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 09L327

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC'S SHORT LIST	RSK 175 DISS. GASES	6020A DISS. IRON	6020A TOTAL METALS FE, AS, MN, CU, MG, K, NA	300.0 ANIONS (CL, NO3, SO4)	SM 2320B ALKALINITY				COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
1	20-R2-035	12/18/09	755	9	X		W	10	X	X	X	X	X	X				* SEE BELOW	D03-04	47	57	N
2	20-R2-036	12/18/09	855	9	X		W	10	X	X	X	X	X	X				*	372-MW1	25	125	N
3	20-R2-TB-005	12/18/09	800	3	X		W	10	X									*	TRIP BLANK	—	—	TB

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
JK	12/19/09	FED EX
COMPANY: BTS	TIME: 1000	COMPANY
RELINQUISHED BY (Signature)	DATE: 12-19-09	RECEIVED BY (Signature)
COMPANY	TIME: 10:30AM	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260B - HCL, RSK 175 - HCL, 6020A DISS IRON FIELD FILTERED 6020A TOTAL METALS / DISS. IRON HNO_3 ~~300.0 ANIONS~~ / SM2320B - NON PRES

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.5 SAMPLE CONDITION: ☑ INTACT ☐ BROKEN
COOLER SEAL: ☑ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/18/09
Project : CTO 20, ALAMEDA	Date Received: 12/19/09
Batch No. : 09L327	Date Extracted: 12/22/09 22:56
Sample ID: 20-R2-035	Date Analyzed: 12/22/09 22:56
Lab Samp ID: L327-01R	Dilution Factor: 1
Lab File ID: RLW706	Matrix : WATER
Ext Btch ID: VO06L34	% Moisture : NA
Calib. Ref.: RLW243	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	4.1	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	122*	70-120
4-BROMOFLUOROBENZENE	109	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/18/09
Project : CTO 20, ALAMEDA	Date Received: 12/19/09
Batch No. : 09L327	Date Extracted: 12/22/09 23:29
Sample ID: 20-R2-036	Date Analyzed: 12/22/09 23:29
Lab Samp ID: L327-02R	Dilution Factor: 1
Lab File ID: RLW707	Matrix : WATER
Ext Btch ID: VO06L34	% Moisture : NA
Calib. Ref.: RLW243	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.22J	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	109	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	88	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 12/18/09
Project : CTO 20, ALAMEDA	Date Received: 12/19/09
Batch No. : 09L327	Date Extracted: 12/23/09 00:02
Sample ID: 20-R2-TB-005	Date Analyzed: 12/23/09 00:02
Lab Samp ID: L327-03R	Dilution Factor: 1
Lab File ID: RLW708	Matrix : WATER
Ext Btch ID: VO06L34	% Moisture : NA
Calib. Ref.: RLW243	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	118	70-120
4-BROMOFLUOROBENZENE	112	75-120
TOLUENE-D8	97	85-120

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/18/09
Project : CTO 20, ALAMEDA	Date Received: 12/19/09
Batch No. : 09L327	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-035	Date Analyzed: 12/22/09 11:49
Lab Samp ID: L327-01	Dilution Factor: 1
Lab File ID: FL22013A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.60
ETHENE	ND	2.0	0.60
METHANE	3.3	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 12/18/09
Project : CTO 20, ALAMEDA	Date Received: 12/19/09
Batch No. : 09L327	Date Extracted: 12/22/09 09:20
Sample ID: 20-R2-036	Date Analyzed: 12/22/09 12:21
Lab Samp ID: L327-02	Dilution Factor: 1
Lab File ID: FL22016A	Matrix : WATER
Ext Btch ID: DGL024W	% Moisture : NA
Calib. Ref.: FL22014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.60
ETHENE	ND	2.0	0.60
METHANE	ND	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/18/09
Project	: CTO 20, ALAMEDA	Date Received:	12/19/09
SDG NO.	: 09L327	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-035	Date Analyzed:	12/30/09 21:16
Lab Samp ID:	L327-01T	Dilution Factor:	5
Lab File ID:	98L23071	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98L23063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	5.00	2.50
Calcium	612000	5000	1000
Iron	761J	1000	250
Magnesium	751000	5000	1000
Manganese	7710	5.00	2.50
Potassium	10000	5000	1000
Sodium^	3490000	20000	4000

^: Analyzed at DF 20 on 01/04/10 17:57 | File ID 98A01033

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/18/09
Project	: CTO 20, ALAMEDA	Date Received:	12/19/09
SDG NO.	: 09L327	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-036	Date Analyzed:	01/04/10 22:03
Lab Samp ID:	L327-02	Dilution Factor:	1
Lab File ID:	98A01072	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01065	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	1.12	1.00	0.500
Calcium	42200	1000	200
Iron	ND	200	50.0
Magnesium	3310	1000	200
Manganese	21.8	1.00	0.500
Potassium	543J	1000	200
Sodium	10800	1000	200

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/18/09
Project	: CTO 20, ALAMEDA	Date Received:	12/19/09
SDG NO.	: 09L327	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-035	Date Analyzed:	12/30/09 22:38
Lab Samp ID:	L327-01T	Dilution Factor:	5
Lab File ID:	98L23084	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98L23075	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	708J	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	12/18/09
Project	: CTO 20, ALAMEDA	Date Received:	12/19/09
SDG NO.	: 09L327	Date Extracted:	12/28/09 10:30
Sample ID:	20-R2-036	Date Analyzed:	01/04/10 23:31
Lab Samp ID:	L327-02	Dilution Factor:	1
Lab File ID:	98A01086	Matrix :	WATER
Ext Btch ID:	IML024W	% Moisture :	NA
Calib. Ref.:	98A01077	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 300.0
CHLORIDE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L327

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
LCS1W	ICL034WL	5.46	1	NA	0.200	0.100	12/19/0909:02	NA	AL22-43	AL22-37	ICL034W	NA	NA
LCD1W	ICL034WC	5.36	1	NA	0.200	0.100	12/19/0909:27	NA	AL22-44	AL22-37	ICL034W	NA	NA
MBLK1W	ICL034WB	ND	1	NA	0.200	0.100	12/19/0910:17	NA	AL22-45	AL22-37	ICL034W	NA	NA
20-R2-036	L327-02	9.55	1	NA	0.200	0.100	12/19/0911:15	NA	AL22-47	AL22-37	ICL034W	12/18/0908:55	12/19/09
MBLK3W	ICL040WB	ND	1	NA	0.200	0.100	12/22/0902:26	NA	AL24-39	AL24-34	ICL040W	NA	NA
LCS2W	ICL040WL	5.38	1	NA	0.200	0.100	12/22/0902:51	NA	AL24-40	AL24-34	ICL040W	NA	NA
LCD2W	ICL040WC	5.29	1	NA	0.200	0.100	12/22/0903:17	NA	AL24-41	AL24-34	ICL040W	NA	NA
20-R2-035	L327-01	7930	1000	NA	200	100	12/22/0904:07	NA	AL24-43	AL24-34	ICL040W	12/18/0907:55	12/19/09

METHOD 300.0
NITRATE-N

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L327

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
LCS1W	ICL034WL	2.16	1	NA	0.100	0.0500	12/19/0909:02	NA	AL22-43	AL22-37	ICL034W	NA	NA
LCD1W	ICL034WC	2.12	1	NA	0.100	0.0500	12/19/0909:27	NA	AL22-44	AL22-37	ICL034W	NA	NA
MBLK1W	ICL034WB	ND	1	NA	0.100	0.0500	12/19/0910:17	NA	AL22-45	AL22-37	ICL034W	NA	NA
20-R2-036	L327-02	ND	1	NA	0.100	0.0500	12/19/0911:15	NA	AL22-47	AL22-37	ICL034W	12/18/0908:55	12/19/09
20-R2-035	L327-01	2.29	5	NA	0.500	0.250	12/19/0913:22	NA	AL22-52	AL22-49	ICL034W	12/18/0907:55	12/19/09

METHOD 300.0
SULFATE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L327

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
LCS1W	ICL034WL	5.83	1	NA	0.500	0.250	12/19/0909:02	NA	AL22-43	AL22-37	ICL034W	NA	NA
LCD1W	ICL034WC	5.36	1	NA	0.500	0.250	12/19/0909:27	NA	AL22-44	AL22-37	ICL034W	NA	NA
MBLK1W	ICL034WB	ND	1	NA	0.500	0.250	12/19/0910:17	NA	AL22-45	AL22-37	ICL034W	NA	NA
20-R2-036	L327-02	26.2	1	NA	0.500	0.250	12/19/0911:15	NA	AL22-47	AL22-37	ICL034W	12/18/0908:55	12/19/09
MBLK3W	ICL040WB	ND	1	NA	0.500	0.250	12/22/0902:26	NA	AL24-39	AL24-34	ICL040W	NA	NA
LCS2W	ICL040WL	5.29	1	NA	0.500	0.250	12/22/0902:51	NA	AL24-40	AL24-34	ICL040W	NA	NA
LCD2W	ICL040WC	5.17	1	NA	0.500	0.250	12/22/0903:17	NA	AL24-41	AL24-34	ICL040W	NA	NA
20-R2-035	L327-01	1180	200	NA	100	50.0	12/22/0903:42	NA	AL24-42	AL24-34	ICL040W	12/18/0907:55	12/19/09

METHOD SM2320B
TOTAL ALKALINITY

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 09L327

Matrix : WATER
Instrument ID : E5

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALL011WB	ND	1	NA	5.00	1.00	12/22/0920:04	NA	E5L04053	NA	ALL011W	NA	NA
LCS1W	ALL011WL	238	1	NA	5.00	1.00	12/22/0920:14	NA	E5L04054	NA	ALL011W	NA	NA
LCD1W	ALL011WC	233	1	NA	5.00	1.00	12/22/0920:22	NA	E5L04055	NA	ALL011W	NA	NA
20-R2-035	L327-01	214	1	NA	5.00	1.00	12/22/0920:29	NA	E5L04056	NA	ALL011W	12/18/0907:55	12/19/09
20-R2-035DUP	L327-01D	215	1	NA	5.00	1.00	12/22/0920:37	NA	E5L04057	NA	ALL011W	12/18/0907:55	12/19/09
20-R2-036	L327-02	119	1	NA	5.00	1.00	12/22/0920:44	NA	E5L04058	NA	ALL011W	12/18/0908:55	12/19/09

NUMBER 26058

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: CTO 20 ALAMEDA	PURCHASE ORDER NO.: 1042720
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106-3210.020
SAMPLER NAME: AK, FS, IW	AIRBILL NUMBER: 7982 3784 3360
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: MICROSEEPS

LABORATORY ID (FOR LABORATORY):

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISS. HYDROGEN AMZOGAX								COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-RZ-001	12/16/09	1120	1	X		W	10	X									ZVI-MW01A1	6	11	N
~~20-RZ-002~~																				
20-RZ-003	12/15/09	1325	1	X		W	10	X									ZVI-MW01A2	10	20	N
20-RZ-004	12/16/09	1350	1		X	W	10	X									ZVI-MW01A3	20	30	N
20-RZ-005	12/15/09	1110	1	X		W	10	X									ZVI-MW01B	30	40	N
20-RZ-006	12/17/09	1450 ~~1350~~	1	X		W	10	X									ZVI-MW01C	40	50	N
20-RZ-007	12/16/09	920	1	X		W	10	X									ZVI-MW01D	50	60	N
20-RZ-008	12/16/09	1450 ~~1440~~	1	X		W	10	X									ZVI-MW02A2	10	20	N
20-RZ-009	12/16/09	1130	1	X		W	10	X									ZVI-MW02A3	20	30	N
20-RZ-010	12/16/09	1310	1	X		W	10	X									ZVI-MW02B	30	40	N

RELINQUISHED BY (Signature): [signature]	DATE: 12/18/09	RECEIVED BY (Signature): FEDEX
COMPANY: BTS	TIME: 1200	COMPANY:
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):
COMPANY:	TIME:	COMPANY:
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):
COMPANY:	TIME:	COMPANY:

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

Project Information Section
Do not submit to Laboratory

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26059

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: CTO 20 ALAMEDA	PURCHASE ORDER NO.: 1042720 ~~10420~~ Arc
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106-3210.020
SAMPLER NAME: AK, FS, IW	AIRBILL NUMBER: 7982 3784 3360
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: MICROSEEP

LABORATORY ID (FOR LABORATORY):

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: DISS. NITROGEN AMMONIA X

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISS. NITROGEN AMMONIA	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-RZ-012	12/16/09	1015	1	X		W	10	X		2V1-MW02C	40	50	N
20-RZ-013	12/14/09	1440	1	X		W	10	X		2V1-MW03A2	10	20	N
20-RZ-014	12/14/09	1120	1		X	W	10	X		2V1-MW03A3	20	30	N
20-RZ-015	12/15/09	955	1	X		W	10	X		2V1-MW03B	30	40	N
20-RZ-016	12/14/09	1245	1	X		W	10	X		2V1-MW03C	40	50	N
20-RZ-017	12/16/09	1130	1		X	W	10	X		2V1-MW04A1	6	11	N
20-RZ-018	12/17/09	1200	1	X		W	10	X		2V1-MW04A2	10	20	N
20-RZ-019	12/16/09	1000	1	X		W	10	X		2V1-MW04A3	20	30	N
20-RZ-020	12/17/09	1320	1	X		W	10	X		2V1-MW04B	30	40	N
20-RZ-021	12/16/09	1440	1	X		W	10	X		2V1-MW04C	40	50	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/18/09	FEDEX
COMPANY: BTS	TIME: 1200	COMPANY:
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26060

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1042720
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AK, FS, IW	798237843360
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DANE SUZUKI	949-756-7584

LABORATORY NAME: MICROSEEPS

LABORATORY ID (FOR LABORATORY):

Project Information Section
Do not submit to Laboratory

ANALYSES REQUIRED: DISS HYDROGEN; AMROSAX

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISS HYDROGEN	AMROSAX	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-RZ-022	12/17/09	1030	1	X		W	10	X			2V1-MW05A2	10	20	N
20-RZ-023	12/15/09	1425	1	X		W	10	X			2V1-MW05A3	20	30	N
20-RZ-024	12/15/09	1235	1	X		W	10	X			2V1-MW05B	30	40	N
20-RZ-025	12/15/09	1135	1	X		W	10	X			2V1-MW05C	40	50	N
20-RZ-026	12/14/09	1200	1	X		W	10	X			2V1-MW06A2	10	20	N
20-RZ-027	12/15/09	925	1	X		W	10	X			2V1-MW06A3	20	30	N
20-RZ-029	12/14/09	1425	1	X		W	10	X			2V1-MW06B	30	40	N
20-RZ-030	12/14/09	1030	1	X		W	10	X			2V1-MW06C	40	50	N
20-RZ-031	12/17/09	950	1	X		W	10	X			2V1-MW07A2	10	20	N
20-RZ-032	12/17/09	1330	1	X		W	10	X			2V1-MW07A3	20	30	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/18/09	FEDEX
COMPANY: BTB	TIME: 1200	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26064

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1042720
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AIG FS, IW	7982 3784 3360
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: MICROSEEPS

LABORATORY ID (FOR LABORATORY):

ANALYSES REQUIRED: DISS. HYDROGEN; AMMO GAX

Project Information Section
Do not submit to Laboratory

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISS. HYDROGEN	AMMO GAX	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-RZ-033	12/17/09	1125	1		X	W	10	X			ZV1-MW07B	30	40	N
20-RZ-034	12/17/09	1220	1	X		W	10	X			ZV1-MW07C	40	50	N
20-RZ-035	12/18/09	755	1	X		W	10	X			D03-04	47	57	N
20-RZ-036	12/18/09	855	1	X		W	10	X			372-MW1	25	12.5	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/18/09	FEDEX
COMPANY: BTS	TIME: 1200	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26057

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AK, FS	7931 1462 7535 7931 1481 7301
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY):

Project Information Section
Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC'S SHORT LIST	RSK-175 DISS. GASES	6020A DISS. IRON	6020A TOTAL METALS FE, AS, Mn, Cu, Mg, K, Na	300.0 ANIONS (Cl, NO3, SO4)	SM 2320B ALKALINITY				COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-RZ-TB-004	12/17/09	1010	3	X		W	10	X									* SEE BELOW	TRIP BLANK	—	—	TB
20-RZ-EB-004	12/17/09	1050	3	X		W	10	X									*	EQUIPMENT BLANK	—	—	EB
20-RZ-031	12/17/09	950	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW07A2	10	20	N
20-RZ-033	12/17/09	1125	9		X	W	10	X	X	X	X	X	X				*	ZVI-MW07B	30	40	N
20-RZ-034	12/17/09	1220	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW07C	40	50	N
20-RZ-032	12/17/09	1330	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW07A3	20	30	N
20-RZ-022	12/17/09	930	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW05A2	10	20	N
20-RZ-018	12/17/09	1045	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW04A2	10	20	N
20-RZ-020	12/17/09	1225	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW04B	30	40	N
20-RZ-006	12/17/09	1350	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW01C	40	50	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/17/09	FEDEX
COMPANY: BTS	TIME: 1700	COMPANY:
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260B - HCL PRES, RSK 175 - HCL PRES, 6020A DISS IRON FIELD FILTERED, 6020A TOTAL METALS / DISS. IRON HNO3 PRES, 300.0 ANIONS / SM 2320B - NO PRES.

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26063

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CTO20 ALAMEDA	1034131-2
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106-3210.020
SAMPLER NAME: AK, FS, IW	AIRBILL NUMBER: 7931 0988 0830, 7982 3073 7345
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: EMAY

LABORATORY ID (FOR LABORATORY):

Project Information Section
Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOCS SHORT LIST	RSK 175 DISS. GASES	6020A DISS. IRON	6020A TOTAL METALS (Fe, As, Mn, Ca, Mg, K, Na)	300.0 ANIONS (Cl, NO3, SO4)	SM 2320B ALKALINITY				COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-RZ-001	12/16/09	1120	9	X		W	10	X	X	X	X	X	X				* SEE BELOW	2U1-MW01A1	6	11	N
20-RZ-002	12/16/09	1120	3		X	W	10	X									*	FIELD DUP FOR 2U1-MW01A1	—	—	FD
20-RZ-007	12/16/09	920	9	X		W	10	X	X	X	X	X	X				*	2U1-MW01D	50	60	N
20-RZ-EB-003	12/16/09	1000	3	X		W	10	X									*	EQUIPTMENT BLANK	—	—	EB
20-RZ-TB-003	12/16/09	945	3	X		W	10	X									*	TRIP BLANK	—	—	TB
20-RZ-004	12/16/09	1350	27		X	W	10	X	X	X	X	X	X				*	2U1-MW01A3	20	30	MS MSD
20-RZ-017	12/16/09	1110	9		X	W	10	X	X	X	X	X	X				*	2U1-MW04A1	6	11	N
20-RZ-019	12/16/09	945	9	X		W	10	X	X	X	X	X	X				*	2U1-MW04A3	20	30	N
20-RZ-021	12/16/09	1340	9	X		W	10	X	X	X	X	X	X				*	2U1-MW04C	40	50	N
20-RZ-012	12/16/09	915	9	X		W	10	X	X	X	X	X	X				*	2U1-MW02C	40	50	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/16/09	FEDEX
COMPANY: BTS	TIME: 1700	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260 - HCL PRES, RSK 175 - HCL PRES, 6020A DISS. IRON FIELD FILTERED, 6020A TOTAL METALS/DISS. IRON - HNO3 PRES, 300.0 ANIONS/SM 2320B - NO PRES.

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26056

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CT020 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210020
SAMPLER NAME	AIRBILL NUMBER
AIK, FS, IW	7931 0988 0830 7982 3073 7345
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY):

Project Information Section
Do not submit to Laboratory

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B SHORT LIST	RSK-175 DISS. GASES	6020A DISS. IRON	6020A TOTAL METALS Fe, As, Mn, Ca, Mg, K, Na	300.0 ANIONS Cl, NO3, SO4	SM 2320B ALKALINITY				COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-RZ-009	12/16/09	1040	9	X		W	10	X	X	X	X	X	X				* SEE BELOW	2V1-MW02A3	20	30	N
20-RZ-010	12/16/09	1150	9	X		W	10	X	X	X	X	X	X				*	2V1-MW02B	30	40	N
20-RZ-011	12/16/09	1200	3		X	W	10	X									*	FIELD DUP FOR 2V1-MW02B	30	40	FD
20-RZ-013	12/16/09	1400	9	X		W	10	X	X	X	X	X	X				*	2V1-MW02A2	10	20	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/16/09	FEDEX
COMPANY: BTS	TIME: 1700	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260 HCL PRES, RSK175 - HCL PRES, 6020A DISS. IRON FIELD FILTERED, 6020A TOTAL METALS/DISS. IRON - HNO3 PRES, 300.0 ANIONS (SM) 2320B - NO PRES

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26054

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CTO20 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AK, FS	7982 2525 5834
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY):

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B SHORT LIST	RSK 175 DISS. GASES	6020A DISS. IRON	6020A TOTAL METALS (Fe, As, Mn, Ca, As, K, Na)	300.0 ANIONS (Cl, NO3, SO4)	SM 2320B ALKALINITY				COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R2-TB-001	12/14/09	1205	3	X		W	10	X									* SEE BELOW	TRIP BLANK	—	—	TB
20-R2-EB-001	12/14/09	1305	3	X		W	10	X									*	EQUIPTMENT BLANK	—	—	EB
20-R2-014	12/14/09	1000	~~4~~ 27 (mc)		X	W	10	X	X	X	X	X	X				* MS/MSD	ZVI-MW03A3	20	30	MS/MSD
20-R2-030	12/14/09	1030	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW06C	40	50	N
20-R2-016	12/14/09	1155	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW03C	40	50	N
20-R2-026	12/14/09	1200	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW06A2	10	20	N
20-R2-013	12/14/09	1350	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW03A2	10	20	N
20-R2-029	12/14/09	1425	9	X		W	10	X	X	X	X	X	X				*	ZVI-MW06B	30	40	N

Project Information Section
Do not submit to Laboratory

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/14/09	FEDEX
COMPANY: BTS	TIME: 1700	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS * 8260B - HCL PRES. RSK175 - HCL PRES., 6020A DISS IRON - FIELD FILTERED 6020A TOTAL METALS/DISS. IRON HNO_3 PRES

COMPOSITE DESCRIPTION 300.0 ANIONS/SM 2320B - NON PRES.

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26055

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CTO20 ALAMEDA	1034431-2
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AK, FS	7982 2616 2314
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY):

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC'S SHORT LIST	RSK 175 DISS. GASES	6020A DISS. IRON	6020A TOTAL METALS (Fe, As, Mn, Ca, Mg, K, Na)	300.0 ANIONS (Cl, NO3, SO4)	SM 2320B ALKALINITY				COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-RZ-TB-002	12/15/09	900	3	X		W	10	X									* SEE BELOW	TRIP BLANK	—	—	TB
20-RZ-EB-002	12/15/09	1040	3	X		W	10	X									*	EQUIPMENT BLANK	—	—	EB
20-RZ-027	12/15/09	925	9	X		W	10	X	X	X	X	X	X				*	2V1-MW06A3	20	30	N
20-RZ-028	12/15/09	925	3		X	W	10	X									*	2V1-MW06A3	20	30	FD
20-RZ-005	12/15/09	1110	9	X		W	10	X	X	X	X	X	X				*	2V1-MW01B	30	40	N
20-RZ-003	12/15/09	1325	9	X		W	10	X	X	X	X	X	X				*	2V1-MW01A2	10	20	N
20-RZ-015	12/15/09	905	9	X		W	10	X	X	X	X	X	X				*	2V1-MW03B	30	40	N
20-RZ-025	12/15/09	1040	9	X		W	10	X	X	X	X	X	X				*	2V1-MW05C	40	50	N
20-RZ-024	12/15/09	1145	9	X		W	10	X	X	X	X	X	X				*	2V1-MW05B	30	40	N
20-RZ-023	12/15/09	1335	9	X		W	10	X	X	X	X	X	X				*	2V1-MW05A3	20	30	N

Project Information Section
Do not submit to Laboratory

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	12/15/09	FED EX
COMPANY: BTS	TIME: 1700	COMPANY:
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260B - HCL PRES., RSK 175 - HCL PRES., 6020A DISS. IRON - FIELD FILTERED, 6020A TOTAL METALS/DISS. IRON - HNO_3 PRES. 300.0 ANIONS / SM 2320B - NO PRES.

COMPOSITE DESCRIPTION

SAMPLING COMMENT:

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

LOW FLOW WELL MONITORING DATA SHEET

PG 1 OF 2

Project #: 091214AF1	Client: TETRA TECH
Sampler: AK	Date: 12/16/09
Well I.D.: 2V1- MW01A1	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 11.08	Depth to Water Pre: 4.30 Post: 5.22
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 50 ml / MIN Pump Depth: 9'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1045	13.82	8.28	1490	352	2.05	-90.1	150	4.80
1048	14.03	8.26	1254	339	2.12	-89.8	300	4.88
1051	14.18	8.21	1015	315	2.25	-84.3	450	4.98
1054	14.19	8.16	934	308	2.35	-81.8	600	5.07
1057	14.09	8.10	820	290	2.51	-75.6	750	5.18
1100	14.00	8.05	756	267	2.65	-71.4	900	5.11
1103	13.94	8.01	705	233	2.68	-67.2	1050	5.17
1106	13.97	7.98	673	191	2.68	-63.4	1200	5.17
1109	13.78	7.94	661	159	2.64	-60.2	1350	5.19
1112	13.51	7.91	646	126	2.54	-56.0	1500	5.18
1115	13.44	7.89	637	121	2.49	-53.4	1650	5.20

Did well dewater? Yes No	Amount actually evacuated: 1800 ml
Sampling Time: 1120	Sampling Date: 12/16/09
Sample I.D.: 20-R2-001	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20-R2-002 @ 1120

MICROSEED @ 1120

LOW FLOW WELL MONITORING DATA SHEET

PG 2 OF 2

Project #: 091214ANC1	Client: TETRA TECH
Sampler: ANC	Date: 12/16/09
Well I.D.: 2U1-MW01A1	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 11.08	Depth to Water Pre: 4.30 Post: 5.22
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50 ml/min Pump Depth: 9'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1118	13.51	7.88	630	118	2.42	-51.2	1800	5.22

Did well dewater? Yes No	Amount actually evacuated: 1800 ml
Sampling Time: 1120	Sampling Date: 12/16/09
Sample I.D.: 20-R2-001	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20-R2-002@

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AF1	Client: TETRA TECH
Sampler: AK	Date: 12/15/09
Well I.D.: ZV1- MW01A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 20.46	Depth to Water Pre: 5.20 Post: 7.94
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50 ml/MIN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1246	15.87	8.94	2340	>1000	0.22	-279.6	150	7.11
1249	15.93	8.94	2343	>1000	0.22	-286.9	300	7.18
1252	15.98	8.94	2347	>1000	0.22	-291.9	450	7.28
1255	16.04	8.94	2352	>1000	0.23	-296.0	600	7.33
1258	16.03	8.94	2358	>1000	0.23	-299.2	750	7.41
1301	15.99	8.94	2363	>1000	0.23	-301.8	900	7.48
1304	15.95	8.93	2367	>1000	0.22	-304.2	1050	7.52
1307	15.97	8.93	2369	>1000	0.22	-306.6	1200	7.62
1310	15.94	8.93	2373	>1000	0.22	-308.3	1350	7.68
1313	15.95	8.93	2377	>1000	0.22	-310.1	1500	7.70
1316	15.89	8.93	2381	>1000	0.21	-311.8	1650	7.77

Did well dewater? Yes No	Amount actually evacuated: 2100 ml
Sampling Time: 1325	Sampling Date: 12/15/09
Sample I.D.: 20-R2-003	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/15/09
Well I.D.: 2U1-MW01A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 20.46	Depth to Water Pre: 5.20 Post: 7.94
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____

Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1319	15.51	8.93	2390	>1000	0.21	-313.0	1800	7.83
1322	15.28	8.92	2395	>1000	0.20	-313.8	1950	7.89
1325	15.47	8.92	2394	>1000	0.20	-312.5	2100	7.94
* @ 1307 CALLED INTO CLIENT ABOUT TURBIDITY STABLE								

Did well dewater? Yes No	Amount actually evacuated: 2100 ml
Sampling Time: 1325	Sampling Date: 12/15/09
Sample I.D.: 20-R2-003	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: ~~091216~~ AN 091214A1C1	Client: TETRA TECH
Sampler: AK	Date: 12/16/09
Well I.D.: ZVI-MW01A3	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 30.57	Depth to Water Pre: 4.95 Post: 7.80
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder Pump~~
Sampling Method: Dedicated Tubing New Tubing Other _____

Flow Rate: 50 ml/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1332	17.06	7.30	4798	42	1.37	-45.0	150	6.40
1335	17.01	7.11	4185	31	0.97	-69.4	300	6.61
1338	17.04	7.04	3655	28	0.86	-75.3	450	6.93
1341	17.02	6.98	3109	27	0.93	-88.7	600	7.28
1344	17.02	6.99	2959	29	0.88	-99.3	750	7.52
1347	17.00	6.99	2921	27	0.83	-104.8	900	7.67
1350	16.99	6.99	2911	26	0.79	-106.8	1050	7.80
MICRO SEEP @ 1350								

Did well dewater? Yes No	Amount actually evacuated: 1050 ml
Sampling Time: 1350	Sampling Date: 12/16/09
Sample I.D.: 20-RZ-004 (MS/MSD)	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091215AK1	Client: TETRA TECH
Sampler: AK	Date: 12/15/09
Well I.D.: 2U1- MW01B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 39.56	Depth to Water Pre: 4.62 Post: 7.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1050	14.68	8.21	8021	44	3.06	27.0	150	5.50
1053	14.70	8.22	8033	22	2.32	26.8	300	5.65
1056	14.97	8.21	8054	29	1.39	26.4	450	5.91
1059	15.01	8.21	8053	32	0.99	25.8	600	6.28
1102	15.41	8.21	8044	35	0.71	25.2	750	6.63
1105	15.77	8.22	8041	38	0.58	24.1	900	7.00
1108	15.80	8.22	7999	40	0.51	23.6	1050	7.30
MICRO STEP SAMPLED @ 1110								

Did well dewater? Yes No	Amount actually evacuated: 1050 ml
Sampling Time: 1110	Sampling Date: 12/15/09
Sample I.D.: 20-R2-005	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214 - AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 12-17-09
Well I.D.: ZVI - MW01C	Well Diameter: 2 3 4 6 8 1 ¼"
Total Well Depth: 49.86	Depth to Water Pre: 5.80 Post: 7.40
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 100 mL/min Pump Depth: 45

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1333	14.77	7.54	17.25	8	1.97	194.5	200	5.97
1336	14.71	7.59	17.32	5	1.49	181.1	500	6.31
1339	15.39	7.61	17.36	8	1.16	174.5	800	6.63
1342	15.67	7.62	17.36	8	1.00	181.2	1100	7.01
1345	16.03	7.65	17.36	8	0.92	185.1	1400	7.40
					MICROSCOP		TAKEN	
					@	1450		

Did well dewater? Yes No Amount actually evacuated: 1400 mL
Sampling Time: 1350 Sampling Date: 12-17-09
Sample I.D.: 20-R2-006 Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC
Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AKI	Client: TETRA TECH
Sampler: AK	Date: 12/16/09
Well I.D.: ZVI-MW01D	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 59.86	Depth to Water Pre: 3.53 Post: 8.15
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing ~~New Tubing~~ Other _____

Flow Rate: 50 ml / min Pump Depth: 53'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW: Observations
904	14.52	7.04	26176	60	2.04	-85.7	150	5.95
907	14.74	7.00	28782	6	1.64	-65.0	300	6.52
910	14.69	7.01	29810	7	1.59	-65.9	450	7.11
913	14.62	7.02	29914	5	1.47	-69.3	600	7.70
916	14.37	7.02	29941	4	1.34	-72.8	750	8.15
	MICROSCOP	@ 920						

Did well dewater? Yes (No)	Amount actually evacuated: 750 ml
Sampling Time: 920	Sampling Date: 12/16/09
Sample I.D.: 20-RZ-007	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: ~~20-RZ-@~~ EB-003 Time 1000	Duplicate I.D.:

20-RZ-TB-003 @ 945

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AF1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-16-09
Well I.D.: ZVI-MW02A2	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 20.11	Depth to Water Pre: 4.90 Post: 7.25
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 mL/MIN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1335	15.80	8.87	3529	13	1.27	72.0	200	5.45
1338	15.90	8.85	3433	11	1.07	77.5	500	5.94
1341	15.89	8.84	3281	9	0.77	83.2	800	6.29
1344	15.80	8.82	3256	9	0.59	88.6	1100	6.51
1347	15.67	8.81	3200	7	0.54	97.1	1400	6.82
					MICRO 8080		TAKEN	
							@ 1450	

Did well dewater? Yes (No)	Amount actually evacuated: 1400
Sampling Time: 1400	Sampling Date: 12-16-09
Sample I.D.: 20-R2-01~~08~~ AF	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AF1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-16-09
Well I.D.: ZVI-MW02A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.02	Depth to Water Pre: 4.85 Post: 7.92
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 200 mL/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1020	15.97	7.73	3920	21	1.63	-17.7	200	5.71
1023	16.71	7.61	3352	16	0.87	-39.5	500	6.32
1026	17.12	7.58	3021	11	0.61	-52.9	800	6.94
1029	17.17	7.58	2958	12	0.53	-60.7	1100	7.20
1032	17.02	7.57	2925	11	0.57	-65.5	1400	7.64
					MICRO	SOSP	TAICON	@ 1130

Did well dewater? Yes (No) Amount actually evacuated: 1400

Sampling Time: 1043 Sampling Date: 12-16-09

Sample I.D.: 20-R2-009 Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D (Other:) SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AK1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-16-09
Well I.D.: ZVI-MW02B	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 40.39	Depth to Water Pre: 5.10 Post: 7.05
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 mL/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW Observations
1134	14.49	9.34	7844	11	1.87	55.9	200	5.51
1137	14.96	9.34	8123	11	0.85	62.9	500	5.75
1140	15.00	9.36	8126	11	0.78	63.7	800	6.05
1143	15.13	9.39	8108	12	0.70	67.0	1100	6.21
						MICRO SCEP	TAKEN	
							@ 1310	

Did well dewater? Yes (No)	Amount actually evacuated: 1100 mL
Sampling Time: 1150	Sampling Date: 12-16-09
Sample I.D.: 20-R2-010	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: RO- 20-R2-011

TAKEN @ 1200

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AF1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-16-09
Well I.D.: ZV1-MW02C	Well Diameter: 2 3 4 6 8 3/4"
Total Well Depth: 49.63	Depth to Water Pre: 3.80 Post: 9.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____

Flow Rate: 100 mL/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
900	14.92	8.07	17.06	61	2.07	14.0	200	6.35
903	15.70	8.17	18.42	65	0.81	46.0	500	6.85
906	15.30	8.17	18.40	60	0.71	48.4	800	7.48
909	15.25	8.16	18.34	54	0.65	50.1	1100	8.10
				MICRO SEEP		TAKEN @		1015

Did well dewater? Yes No	Amount actually evacuated: 1100
Sampling Time: 915	Sampling Date: 12-16-09
Sample I.D.: 20-R2-012	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214 - AK1	Client: TETRA TECH ALAMEDA PT.
Sampler: FS	Date: 12-14-09
Well I.D.: ZVI-MW03A2	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 20.16	Depth to Water Pre: 4.92 Post: 13.22
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 100 mL/MN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1332	14.20	7.93	2443	21	2.80	107.3	200	5.85
1335	15.23	7.90	2294	7	1.87	104.3	500	6.12
1338	15.43	7.88	2234	8	1.54	106.8	800	6.55
1341	15.57	7.87	2210	8	1.35	109.2	1100	6.75
1344	15.34	7.90	2200	7	1.28	108.2	1400	7.10
					MICRO 56P		TOKEN @	
								1440

Did well dewater? Yes No	Amount actually evacuated: 1400 mL
Sampling Time: 1350	Sampling Date: 12-14-09
Sample I.D.: 20-R2-013	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SE8 COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AK1	Client: TETRA TECH ALAMEDA PT
Sampler: FS	Date: 12-14-09
Well I.D.: ZVI-MW03A3	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 30.03	Depth to Water Pre: 4.91 Post: 6.03
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
942	14.37	7.53	1889	32	1.77	-40.0	200	5.06
945	14.91	7.57	1748	29	1.22	-257.1	500	5.51
948	15.19	7.60	1696	29	1.02	-266.0	800	5.58
951	15.23	7.60	1660	27	0.87	-268.4	1100	5.59
954	15.28	7.66	1628	25	0.86	-270.6	1400	5.62
					MICROSCOP		SAMPLED	@
						11:20		

Did well dewater? Yes (No)	Amount actually evacuated: 1400 mL
Sampling Time: 1000 MS/MSD	Sampling Date: 12-14-09
Sample I.D.: 20-R2-014	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE SCOPE
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AK1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-15-09
Well I.D.: ZN1-MW03B	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 40.02	Depth to Water Pre: 4.92 Post: 6.90
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 200 mL/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW. Observations
843	15.18	8.45	7465	11	4.07	186.0	200	5.32
846	15.49	8.33	7592	15	0.86	188.9	500	5.70
849	15.40	8.33	7604	19	0.74	193.5	800	5.93
852	14.74	8.36	7600	25	0.70	240.1	1100	6.08
855	14.84	8.37	7574	23	0.68	216.4	1400	6.35
858	14.71	8.39	7583	22	0.65	223.4	1700	6.57
					MICRO SEEP		TAKEN	@ 955

Did well dewater? Yes (No)	Amount actually evacuated: 1700
Sampling Time: 905	Sampling Date: 12-15-09
Sample I.D.: 20-R2-015	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AK1	Client: TETRA TECH @ ALAMEDA PT
Sampler: FS	Date: 12-14-09
Well I.D.: ZV1-MW03C	Well Diameter: 2 3 4 6 8 (3/4")
Total Well Depth: 49.68	Depth to Water Pre: 4.91 Post: 5.82
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1137	13.76	7.74	13.98	20	2.80	-274.4	200	5.00
1140	14.79	7.63	14.66	38	1.52	-252.2	500	5.45
1143	15.09	7.67	14.77	48	1.03	-249.5	800	6.84
1146	15.13	7.69	14.79	46	0.86	-252.7	1100	7.00
1149	14.31	7.69	14.87	42	0.88	-252.6	1400	7.10
						MICRO SEEP		
							SAMPLED	@ 1245
~~MICROSEEP SAMPLED @ 1155~~								

Did well dewater? Yes (No) Amount actually evacuated: 1400 mL
Sampling Time: 1155 Sampling Date: 12-14-09
Sample I.D.: 20-R2-016 Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D (Other) SEE COC
Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AK-1	Client: TETRA TECH
Sampler: IW	Date: 12/16/09
Well I.D.: ZV1-MW04A1	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 10.82	Depth to Water Pre: 3.54 Post: 3.86
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI SS6

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: Dedicated Tubing X New Tubing Other_____

Flow Rate: 50 ml/min Pump Depth: 8.5'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
1048	13.88	7.10	949	133	8.22	-49.2	200	3.65
1051	13.92	7.23	940	138	8.21	-55.8	350	3.69
1054	13.92	7.32	934	130	8.16	-59.9	500	3.74
1057	13.92	7.37	931	128	8.10	-60.0	650	3.80
1100	13.91	7.39	928	126	8.11	-61.7	800	3.86
1130	MICROSEEP		SAMPLE	TAKEN				

Did well dewater? Yes (No)	Amount actually evacuated: 800 ml
Sampling Time: 1110	Sampling Date: 12/16/09
Sample I.D.: 20-R2-017	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214 - AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 12-17-09
Well I.D.: ZV1 - MW04A2	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 20.11	Depth to Water Pre: 5.80 Post: 7.21
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1032	14.50	8.45	1714	58	1.63	74.5	200	6.35
1035	14.53	8.43	1800	59	1.15	90.9	500	6.47
1038	14.60	8.44	1816	59	1.00	98.0	800	6.61
1041	14.78	8.44	1827	59	0.92	105.3	1100	6.88
				MICRO	SOEP	TAKEN	@	1200

Did well dewater? Yes (No)	Amount actually evacuated: 1100 mL
Sampling Time: 1045	Sampling Date: 12-17-09
Sample I.D.: 20-B2-018	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-NK-1	Client: TETRA TECH
Sampler: IW	Date: 12/16/09
Well I.D.: ZVI-MW04A3	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 30.24	Depth to Water Pre: 4.91 Post: 5.11
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: Dedicated Tubing X New Tubing Other_____

Flow Rate: 50ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
0930	13.10	7.29	2627	4	9.14	-19.0	200	4.95
0933	13.21	7.28	2558	4	9.05	-40.3	350	5.01
0936	13.34	7.27	2536	4	9.02	-42.1	500	5.05
0939	13.46	7.25	2566	3	9.00	-46.0	650	5.11
MICROSEEP SAMPLE TAKEN @ 1000								

Did well dewater? Yes (No)	Amount actually evacuated: 650ml
Sampling Time: 0945	Sampling Date: 12/16/09
Sample I.D.: 20-R2-019	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214 - AFI	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 12-17-09
Well I.D.: ZV1 - MW04B	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 40.06	Depth to Water Pre: 8.33 Post: 10.18
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1206	14.66	8.87	7400	26	3.36	-61.2	200	8.20
1209	15.31	8.92	7622	10	1.06	-76.1	500	8.41
1212	15.55	8.94	7693	9	0.78	-85.8	800	8.65
1215	15.63	8.96	7766	8	0.63	-93.6	1100	8.89
1218	15.53	8.96	7777	7	0.53	-96.3	1400	9.05
					MICRO SOOP		TAKEN	
							@ 1320	

Did well dewater? Yes (No) Amount actually evacuated: 1400
Sampling Time: 1225 Sampling Date: 12-17-09
Sample I.D.: 20-22-020 Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D (Other: SEE COC)
Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-IW-1	Client: TETRA TECH
Sampler: IW	Date: 12/16/09
Well I.D.: ZVI-MW04C	Well Diameter: 2 3 4 6 8 1"
Total Well Depth: 49.25	Depth to Water Pre: 4.64 Post: ~~5.82~~ 5.96 IW
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: Dedicated Tubing X New Tubing Other _____

Flow Rate: 50ml/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
1318	16.00	7.80	17998	122	7.58	86.5	200	5.14
1321	15.98	7.82	18016	33	7.51	82.5	350	5.32
1324	16.11	7.84	18010	18	7.38	75.3	500	5.51
1327	16.20	7.85	17989	9	7.29	71.4	650	5.66
1330	16.28	7.86	17982	7	7.23	70.6	800	5.82
1333	16.30	7.86	17987	8	7.20	69.4	950	5.96
1440	MICROSEEP		SAMPLE	TAKEN.				

Did well dewater? Yes (No)	Amount actually evacuated: 950ml ~~800ml~~ IW
Sampling Time: 1340	Sampling Date: 12/16/09
Sample I.D.: 20-RZ-021	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214 - AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 12-17-09
Well I.D.: ZV1 - MW05A2	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 20.05	Depth to Water Pre: 4.60 Post: 6.57
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
904	14.28	8.13	1050	6	1.43	59.3	200	5.08
907	14.46	8.08	1051	7	1.08	80.7	500	5.34
910	14.46	8.06	1053	6	0.80	96.5	800	5.60
913	14.20	8.05	1044	6	0.66	108.5	1100	6.89
916	14.23	8.04	1041	5	0.64	116.5	1400	6.18
919	14.14	8.05	1041	6	0.62	122.5	1700	6.31
					MICROSCOP		TAKEN	
							@ 1030	

Did well dewater? Yes (No)	Amount actually evacuated: 1700 mL
Sampling Time: 0930	Sampling Date: 12-17-09
Sample I.D.: 20-B2-022	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AK1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-15-09
Well I.D.: ZV1-MW05A3	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 30.11	Depth to Water Pre: 4.76 Post: 5.70
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 200 mL/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1315	15.73	7.58	2930	11	2.48	21.0	200	5.40
1318	16.01	7.37	2850	16	1.47	0.0	500	5.42
1321	16.24	7.20	2794	14	1.06	-13.6	800	5.45
1324	16.43	7.11	2772	14	0.83	-20.9	1100	5.55
1327	16.54	7.06	2760	13	0.74	-21.5	1400	5.65
					MICROSCOP		TAKEN	@ 1425

Did well dewater? Yes (No) Amount actually evacuated: 1400

Sampling Time: 1335 Sampling Date: 12-15-09

Sample I.D.: 20-R2-023 Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D (Other:) SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091218-AK1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-15-09
Well I.D.: ZV1-MW05B	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 40.18	Depth to Water Pre: 4.75 Post: 8.06
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 200 mL/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1130	16.06	9.09	11.02	15	1.60	65.4	200	4.90
1133	16.53	9.10	12.07	14	0.76	92.0	500	5.41
1136	16.56	9.10	11.85	17	0.66	106.1	800	5.78
1139	16.54	9.11	11.73	15	0.60	110.1	1100	6.01
1142	16.44	9.11	11.62	16	0.56	111.4	1400	6.20
					MICRO SEEP		TAKEN	@
								1235

Did well dewater? Yes (No)	Amount actually evacuated: 1400 mL
Sampling Time: 1145	Sampling Date: 12-15-09
Sample I.D.: 20-R2-024	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091218-AK1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-15-09
Well I.D.: ZN1-MW05C	Well Diameter: 2 3 4 6 8 3/4"
Total Well Depth: 48.82	Depth to Water Pre: 5.20 Post: 7.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 200 mL/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1013	14.89	8.49	14995	20	1.12	-79.1	200	5.20
1016	15.39	8.41	15997	22	0.54	-26.2	500	5.75
1019	15.57	8.39	16477	20	0.86	1.3	800	6.02
1022	15.77	8.40	16630	21	0.89	18.6	1100	6.31
1025	15.36	8.38	16,699	22	0.83	33.1	1400	6.41
1028	15.45	8.38	16676	27	0.78	33.7	1700	6.85
1031	15.66	8.38	16637	28	0.75	37.6	2000	7.02
1034	15.81	8.38	16639	31	0.70	41.6	2300	7.30
					MICRO SOSP	TAKEN	@	1135

Did well dewater? Yes No	Amount actually evacuated: 2300 mL
Sampling Time: 1040	Sampling Date: 12-15-09
Sample I.D.: 20-R2-025	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRATECH
Sampler: AK	Date: 12/14/09
Well I.D.: 2V1-MW06A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 19.18	Depth to Water Pre: 4.94 Post: 7.29
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations	
1142	15.75	8.42	4890	110	8.60	-106.5	150	6.20	*
1145	16.13	8.44	4773	145	8.85	-105.6	300	6.40	*
1148	15.64	8.45	4704	160	9.10	-102.9	450	6.70	*
1151	15.42	8.46	7618	174	9.24	-101.5	600	6.78	*
1154	15.22	8.47	4604	185	9.38	-99.1	750	6.90	*
1157	15.17	8.48	4533	186	9.43	-97.6	900	7.08	
1200	15.21	8.49	4500	187	9.47	-95.8	1050	7.29	
MICROSEEP SAMPLED @ 1200									

Did well dewater? Yes No	Amount actually evacuated: 1050 ml
Sampling Time: 1200	Sampling Date: 12/14/09
Sample I.D.: 20-R2-026	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

* AIR IN WATERLINE

20-R2-TB-001 @ 1205
20-R2-EB-001 @ 1305

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AKI	Client: TETRA TECH
Sampler: AK	Date: 12/15/09
Well I.D.: ZVI- MW06A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.24	Depth to Water Pre: 4.87 Post: 5.29
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
904	12.00	7.33	5303	19	2.71	-55.8	150	5.22
907	12.33	7.48	5954	30	2.39	-7.9	300	5.20
910	12.28	7.48	5953	33	2.14	2.5	450	5.20
913	12.43	7.46	5878	36	2.01	0.2	600	5.22
916	12.78	7.44	5708	42	1.82	-16.7	750	5.30
919	12.93	7.43	5609	41	1.71	-25.3	900	5.27
922	13.21	7.43	5548	45	1.66	-35.1	1050	5.29
MICROSEEP SAMPLED @ 925								

Did well dewater? Yes (No) Amount actually evacuated: 1050 ml

Sampling Time: 925 Sampling Date: 12/15/09

Sample I.D.: 20-RZ-027 Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

Equipment Blank I.D.: 20-RZ-EB-002 @ ~~925~~ 1040 (MF) Duplicate I.D.: 20-RZ-028 @ 925

20-RZ-TB-002 @ 900

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/14/09
Well I.D.: ZVI-MW06B	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 40.09	Depth to Water Pre: 5.35 Post:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 ml / MIN Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1405	16.39	8.27	6863	81	6.60	-122.0	150	5.90
1408	16.30	8.28	7044	31	7.14	-126.9	300	6.10
1411	16.18	8.28	7069	28	7.13	-128.5	450	6.18
1414	16.13	8.28	7086	25	7.18	-128.9	600	6.10
1417	15.56	8.28	7084	23	7.63	-128.2	750	6.35
1420	15.86	8.28	7010	23	7.81	-127.2	900	6.45
1423	16.08	8.29	7099	21	7.80	-127.8	1050	6.41
MICRO	SEEP	SAMPLED	@	1425				

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 1425	Sampling Date: 12/14/09
Sample I.D.: 20-RZ-029	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214 AK1	Client: TETRA TECH
Sampler: AK	Date: 12/14/09
Well I.D.: 2V1-MW06C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 48.77	Depth to Water Pre: 3.41 Post: 9.90
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1008	16.74	7.64	16833	67	6.23	-100.6	150	8.25
1011	16.14	7.63	17093	45	6.66	-76.5	300	8.51
1014	16.65	7.63	16873	42	7.18	-72.6	450	8.82
1017	16.64	7.63	17174	41	6.93	-67.8	600	9.07
1020	16.36	7.63	17039	39	7.39	-61.6	750	9.30
1023	16.69	7.63	17023	38	7.28	-63.3	900	9.65
1026	17.15	7.63	17001	37	7.41	-65.8	1050	9.90
MICROSEEP SAMPLED @ 1030								

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 1030	Sampling Date: 12/14/09
Sample I.D.: 20-R2-030	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/17/09
Well I.D.: ZV1-MW07A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 19.93	Depth to Water Pre: 5.68 Post: 9.22
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50 ml/MIN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
923	13.15	8.56	2857	64	1.72	3.3	150	6.90
926	13.35	8.58	2862	40	1.43	-50.6	300	7.16
929	13.48	8.60	2868	32	1.18	-80.9	450	7.45
932	13.62	8.61	2869	24	1.04	-98.0	600	7.70
935	13.67	8.62	2873	19	0.98	-114.9	750	8.00
938	13.64	8.61	2876	21	0.87	-127.5	900	8.33
941	13.75	8.61	2871	20	0.81	-136.1	1050	8.63
944	13.79	8.61	2872	19	0.79	-140.1	1200	8.90
947	13.88	8.61	2870	19	0.74	-146.1	1350	9.22
MICRO SEEP		SAMPLED @		950				

Did well dewater? Yes No	Amount actually evacuated: 1350 ml
Sampling Time: ~~20~~ 950	Sampling Date: 12/17/09
Sample I.D.: 20-R2-031	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/17/09
Well I.D.: ZV1-MW07A3	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 30.02	Depth to Water Pre: 5.48 Post: 7.50
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1314	15.95	7.12	3460	48	1.34	-88.4	150	6.60
1317	15.99	7.10	3404	41	1.06	-87.5	300	6.90
1320	16.05	7.09	3374	34	0.99	-90.4	450	7.10
1323	16.16	7.07	3381	29	0.96	-93.2	600	7.22
1326	16.32	7.05	3393	27	0.91	-97.7	750	7.39
1329	16.58	7.03	3400	26	0.87	-100.5	900	7.50
MICROSEEP		@	1330					

Did well dewater? Yes (No)	Amount actually evacuated: 900 ml
Sampling Time: 1330	Sampling Date: 12/17/09
Sample I.D.: 20-RZ-032	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/17/09
Well I.D.: ZU1-MW07B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 40.27	Depth to Water Pre: 4.97 Post: 8.81
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: AM Dedicated Tubing New Tubing Other
Flow Rate: 350 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1107	16.03	8.07	7503	13	1.30	20.3	150	6.86
1110	16.30	8.00	7549	9	1.03	19.0	300	7.15
1113	16.34	8.02	7582	8	0.76	17.7	450	7.62
1116	16.35	8.03	7589	7	0.64	16.8	600	8.10
1119	16.30	8.03	7596	6	0.61	16.6	750	8.42
1122	16.46	8.03	7588	5	0.57	16.4	900	8.81
MICROSEEP SAMPLED @ 1125								

Did well dewater? Yes No	Amount actually evacuated: 900 ml
Sampling Time: 1125	Sampling Date: 12/17/09
Sample I.D.: 20-RZ-033	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/17/09
Well I.D.: ZVI-MW07C	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 50.50	Depth to Water Pre: 5.67 Post: 6.03
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____

Flow Rate: 50 ml/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	PTW: Observations
1208	17.14	8.27	13180	9	1.18	-152.9	150	6.00
1211	17.02	8.26	13268	9	0.80	-158.0	300	6.05
1214	17.28	8.22	13363	6	0.57	-157.1	450	6.02
1217	17.14	8.19	13433	5	0.50	-159.1	600	6.03
MICROSEEPS		@	1220					

Did well dewater? Yes No	Amount actually evacuated: 600 ml
Sampling Time: 1220	Sampling Date: 12/17/09
Sample I.D.: 20-RZ-034	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK-1	Client: TETRA TECH
Sampler: AK	Date: 12/18/09
Well I.D.: D03-04	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: N/A	Depth to Water Pre: 5.04 Post: 5.04
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other ____

Flow Rate: 500 ml/min Pump Depth: DEDICATED/UNKNOWN

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
728	18.16	7.49	30015	24	0.52	131.0	1500	5.04
731	18.18	7.48	29556	4	0.42	64.0	3000	5.04
734	17.97	7.48	28585	3	0.39	42.1	4500	5.04
737	18.28	7.48	28088	3	0.36	26.4	6000	5.04
740	18.13	7.49	27289	2	0.35	11.8	7500	5.04
743	18.39	7.50	25460	1	0.33	-11.8	9000	5.04
746	18.25	7.46	23786	1	0.32	-8.9	10500	5.04
749	18.35	7.41	23826	1	0.31	-12.8	12000	5.04
752	18.13	7.32	23312	1	0.31	-18.1	13500	5.04
MICRO SECT		@	755					

Did well dewater? Yes (No)	Amount actually evacuated: 13500 ml
Sampling Time: 755	Sampling Date: 12/18/09
Sample I.D.: 20-R2-035	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AKI	Client: TETRA TECH
Sampler: AK	Date: 12/18/09
Well I.D.: 372-MW1	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: N/A	Depth to Water Pre: 3.80 Post: 3.90
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump — Peristaltic Pump — (Bladder Pump)
Sampling Method: Dedicated Tubing — New (Tubing) — Other ____

Flow Rate: 500 ml/MIN — Pump Depth: DEDICATED PUMP/UNKNOWN

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
846	15.61	7.63	314	3	2.45	28.9	1500	3.90
849	15.52	7.52	313	3	2.41	31.4	3000	3.91
852	15.40	7.47	311	3	2.32	33.5	4500	3.90
855	15.24	7.45	311	3	2.27	34.4	6000	3.90
MICROSEEP	@		855					

Did well dewater? Yes (No) — Amount actually evacuated: 6000 ml

Sampling Time: 855 — Sampling Date: 12/18/09

Sample I.D.: 20-RZ-036 — Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D — Other: SEE COC

Equipment Blank I.D.: @ Time — Duplicate I.D.:

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRATECH @ ALAMEDA POINT				PROJECT NUMBER 091214-AK-1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	02D0577AI	12/16/09 0830	= 3900 µS →	= 3902 µS	YES	15.44	IW
			= 100% DO →	= 101.2 % DO	YES	15.05	IW
			= 7.00 = 10.00 pH → = 4.00	= 7.00 = 10.01 pH = 4.00	YES	15.25	IW
			= 244.0 mV @ 15.0° →	= 244.2 mV @ 15.3°	YES	15.30	IW
HACH 2100P	060300015604	12/16/09 0840	= 20.0 = 100.0 NTU → = 800.0	= 20.0 = 99.0 NTU = 801.0	YES	—	IW
YSI 556	02D0577AI	12/16/09 1200	= 3900 µS →	3903 µS	YES	16.18	IW
			= 100% DO →	99.8% DO	YES	17.10	IW
			= 7.00 = 10.00 pH → = 4.00	= 3.99 = 7.00 pH = 9.98	YES	16.86	IW
			= 245.0 mV @ 16.0° →	245.0 mV @ 16.21°	YES	16.21	IW

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26019

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO
CTO 20 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO
ALAMEDA	116-3210-020
SAMPLER NAME	AIRBILL NUMBER
AK, FS	7931 6331 3333
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SOLK	949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 10A073

ANALYSES REQUIRED: Perchlorate SW8330B; 8260B VOC; 6020A Diss Metals; 6020A Total Metals

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	Perchlorate SW8330B	8260B VOC	6020A Diss Metals	6020A Total Metals	COMMENTS
20-R3-TB-003	1/7/10	855	3	X		W	10	X				* SEE BELOW
20-R3-017	1/7/10	915	5	X		W	10	X	X	X		*
20-R3-EB-003	1/7/10	930	3	X		W	10	X				*
20-R3-009	1/7/10	1040	5	X		W	10	X	X	X		*
20-R3-007	1/7/10	1140	5	X		W	10	X	X	X		*
20-R3-016	1/7/10	1345	15		X	W	10	X	X	X		* MS/MSD
20-R3-005	1/7/10	1300	5		X	W	10	X	X	X		*
20-R3-003	1/7/10	1140	5	X		W	10	X	X	X		*
20-R3-006	1/7/10	1030	5	X		W	10	X	X	X		*
20-R3-004	1/7/10	910	5	X		W	10	X	X	X		*

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	1/7/10	[signature]
COMPANY: TTS	TIME: 1610	COMPANY:
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260B VOC = HCL VOA 6020A DISS UPON FIELD FILTERED. 6020A DISS 18 mL → TOTAL 15 mL → HNO3 PRN

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

Project Information Section
Do not submit to Laboratory

LOCATION	DEPTH START	DEPTH END	QC
TRIP BLANK	—	—	TB
2V1-MW04A3	20	30	N
EQUIPMENT BLANK	—	—	EB
2V1-MW02B	30	40	N
2V1-MW02A2	10	20	N
2V1-MW02C	40	50	MS/MSD
2V1-MW01C	40	50	N
2V1-MW01A3	20	30	N
2V1-MW01D	50	60	N
2V1-MW01B	30	40	N

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/07/10
Project : CTO 20, ALAMEDA	Date Received: 01/08/10
Batch No. : 10A073	Date Extracted: 01/15/10 14:53
Sample ID: 20-R3-TB-003	Date Analyzed: 01/15/10 14:53
Lab Samp ID: A073-01	Dilution Factor: 1
Lab File ID: RAC134	Matrix : WATER
Ext Btch ID: VO67A07	% Moisture : NA
Calib. Ref.: RAC033	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/07/10
Project : CTO 20, ALAMEDA	Date Received: 01/08/10
Batch No. : 10A073	Date Extracted: 01/16/10 10:45
Sample ID: 20-R3-017	Date Analyzed: 01/16/10 10:45
Lab Samp ID: A073-02	Dilution Factor: 1
Lab File ID: RAC170	Matrix : WATER
Ext Btch ID: VO67A09	% Moisture : NA
Calib. Ref.: RAC033	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.64J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.40J	1.0	0.20
1,1-DICHLOROETHANE	4.9	1.0	0.20
1,1-DICHLOROETHENE	170E	1.0	0.20
1,2-DICHLOROETHANE	0.79	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	66	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	4.8	1.0	0.20
TRICHLOROETHENE	85	1.0	0.20
VINYL CHLORIDE	12	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	113	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	105	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/07/10
Project : CTO 20, ALAMEDA	Date Received: 01/08/10
Batch No. : 10A073	Date Extracted: 01/18/10 06:05
Sample ID: 20-R3-017DL	Date Analyzed: 01/18/10 06:05
Lab Samp ID: A073-02T	Dilution Factor: 10
Lab File ID: RAC222	Matrix : WATER
Ext Btch ID: VO67A11	% Moisture : NA
Calib. Ref.: RAC033	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHANE	5.0J	10	2.0
1,1-DICHLOROETHENE	190	10	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	69	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	4.8J	10	2.0
TRICHLOROETHENE	86	10	2.0
VINYL CHLORIDE	13	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/07/10
Project : CTO 20, ALAMEDA	Date Received: 01/08/10
Batch No. : 10A073	Date Extracted: 01/16/10 10:13
Sample ID: 20-R3-EB-003	Date Analyzed: 01/16/10 10:13
Lab Samp ID: A073-03	Dilution Factor: 1
Lab File ID: RAC169	Matrix : WATER
Ext Btch ID: VO67A09	% Moisture : NA
Calib. Ref.: RAC033	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	106	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	110	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/07/10
Project : CTO 20, ALAMEDA	Date Received: 01/08/10
Batch No. : 10A073	Date Extracted: 01/16/10 11:17
Sample ID: 20-R3-009	Date Analyzed: 01/16/10 11:17
Lab Samp ID: A073-04	Dilution Factor: 1
Lab File ID: RAC171	Matrix : WATER
Ext Btch ID: VO67A09	% Moisture : NA
Calib. Ref.: RAC033	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.3	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.56J	1.0	0.20
1,1-DICHLOROETHANE	35	1.0	0.20
1,1-DICHLOROETHENE	68E	1.0	0.20
1,2-DICHLOROETHANE	26	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.46J	1.0	0.20
CIS-1,2-DICHLOROETHENE	19	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	6.2	1.0	0.20
TRICHLOROETHENE	0.48J	1.0	0.20
VINYL CHLORIDE	0.51	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	110	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/07/10
Project : CTO 20, ALAMEDA	Date Received: 01/08/10
Batch No. : 10A073	Date Extracted: 01/20/10 12:21
Sample ID: 20-R3-009DL	Date Analyzed: 01/20/10 12:21
Lab Samp ID: A073-04I	Dilution Factor: 100
Lab File ID: RAW493	Matrix : WATER
Ext Btch ID: VO06A24	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	35J	100	20
1,1-DICHLOROETHENE	3700	100	20
1,2-DICHLOROETHANE	23J	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	21J	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	ND	100	20
TRICHLOROETHENE	ND	100	20
VINYL CHLORIDE	ND	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	108	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/07/10
Project : CTO 20, ALAMEDA	Date Received: 01/08/10
Batch No. : 10A073	Date Extracted: 01/20/10 14:00
Sample ID: 20-R3-007	Date Analyzed: 01/20/10 14:00
Lab Samp ID: A073-05R	Dilution Factor: 1
Lab File ID: RAW496	Matrix : WATER
Ext Btch ID: VO06A24	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.30J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	13	1.0	0.20
1,1-DICHLOROETHENE	79	1.0	0.20
1,2-DICHLOROETHANE	0.28J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.39J	1.0	0.20
CIS-1,2-DICHLOROETHENE	370E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	49	1.0	0.20
TRICHLOROETHENE	490E	1.0	0.20
VINYL CHLORIDE	370E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	113	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
Batch No.	: 10A073	Date Extracted:	01/20/10 12:54
Sample ID:	20-R3-007DL	Date Analyzed:	01/20/10 12:54
Lab Samp ID:	A073-05I	Dilution Factor:	100
Lab File ID:	RAW494	Matrix :	WATER
Ext Btch ID:	VO06A24	% Moisture :	NA
Calib. Ref.:	RAW037	Instrument ID :	T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	ND	100	20
1,1-DICHLOROETHENE	89J	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	2300	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	54J	100	20
TRICHLOROETHENE	2200	100	20
VINYL CHLORIDE	360	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	99	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	105	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/07/10
Project : CTO 20, ALAMEDA	Date Received: 01/08/10
Batch No. : 10A073	Date Extracted: 01/15/10 02:49
Sample ID: 20-R3-010	Date Analyzed: 01/15/10 02:49
Lab Samp ID: A073-06	Dilution Factor: 1
Lab File ID: RAC115	Matrix : WATER
Ext Btch ID: VO67A06	% Moisture : NA
Calib. Ref.: RAC033	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	1.8	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.41J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	0.23J	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	105	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/07/10
Project : CTO 20, ALAMEDA	Date Received: 01/08/10
Batch No. : 10A073	Date Extracted: 01/18/10 05:33
Sample ID: 20-R3-005	Date Analyzed: 01/18/10 05:33
Lab Samp ID: A073-07R	Dilution Factor: 1
Lab File ID: RAC221	Matrix : WATER
Ext Btch ID: VO67A11	% Moisture : NA
Calib. Ref.: RAC033	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	0.42J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.54J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
Batch No.	: 10A073	Date Extracted:	01/18/10 07:42
Sample ID:	20-R3-003	Date Analyzed:	01/18/10 07:42
Lab Samp ID:	A073-08R	Dilution Factor:	1
Lab File ID:	RAC225	Matrix	: WATER
Ext Btch ID:	VO67A11	% Moisture	: NA
Calib. Ref.:	RAC033	Instrument ID	: T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.90J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.61J	1.0	0.20
1,1-DICHLOROETHANE	4.9	1.0	0.20
1,1-DICHLOROETHENE	110E	1.0	0.20
1,2-DICHLOROETHANE	1.1	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	76	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	4.0	1.0	0.20
TRICHLOROETHENE	66	1.0	0.20
VINYL CHLORIDE	12	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	111	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/07/10
Project : CTO 20, ALAMEDA	Date Received: 01/08/10
Batch No. : 10A073	Date Extracted: 01/20/10 11:47
Sample ID: 20-R3-003DL	Date Analyzed: 01/20/10 11:47
Lab Samp ID: A073-08T	Dilution Factor: 10
Lab File ID: RAW492	Matrix : WATER
Ext Btch ID: VO06A24	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHANE	3.5J	10	2.0
1,1-DICHLOROETHENE	87	10	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	60	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	2.3J	10	2.0
TRICHLOROETHENE	41	10	2.0
VINYL CHLORIDE	ND	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	70-120
4-BROMOFLUOROBENZENE	109	75-120
TOLUENE-D8	109	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/07/10
Project : CTO 20, ALAMEDA	Date Received: 01/08/10
Batch No. : 10A073	Date Extracted: 01/18/10 02:19
Sample ID: 20-R3-006	Date Analyzed: 01/18/10 02:19
Lab Samp ID: A073-09R	Dilution Factor: 1
Lab File ID: RAC215	Matrix : WATER
Ext Btch ID: VO67A11	% Moisture : NA
Calib. Ref.: RAC033	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	0.21J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.20J	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.43J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	120	70-120
4-BROMOFLUOROBENZENE	100	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/07/10
Project : CTO 20, ALAMEDA	Date Received: 01/08/10
Batch No. : 10A073	Date Extracted: 01/17/10 18:49
Sample ID: 20-R3-004	Date Analyzed: 01/17/10 18:49
Lab Samp ID: A073-10R	Dilution Factor: 1
Lab File ID: RAC201	Matrix : WATER
Ext Btch ID: VO67A10	% Moisture : NA
Calib. Ref.: RAC033	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	4.5	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	12	1.0	0.20
1,1-DICHLOROETHANE	23	1.0	0.20
1,1-DICHLOROETHENE	46E	1.0	0.20
1,2-DICHLOROETHANE	20	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	34	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	5.5	1.0	0.20
TRICHLOROETHENE	12	1.0	0.20
VINYL CHLORIDE	1.6	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	109	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/07/10
Project : CTO 20, ALAMEDA	Date Received: 01/08/10
Batch No. : 10A073	Date Extracted: 01/20/10 16:28
Sample ID: 20-R3-004DL	Date Analyzed: 01/20/10 16:28
Lab Samp ID: A073-10I	Dilution Factor: 50
Lab File ID: RAW500	Matrix : WATER
Ext Btch ID: VO06A24	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	10J	50	10
1,1-DICHLOROETHANE	24J	50	10
1,1-DICHLOROETHENE	2000	50	10
1,2-DICHLOROETHANE	19J	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	40J	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	18J	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	104	85-120

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-017	Date Analyzed:	01/15/10 20:41
Lab Samp ID:	A073-02	Dilution Factor:	1
Lab File ID:	98A10084	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A10082	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	162J	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-009	Date Analyzed:	01/15/10 20:47
Lab Samp ID:	A073-04	Dilution Factor:	1
Lab File ID:	98A10085	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A10082	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	468	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-007	Date Analyzed:	01/15/10 20:53
Lab Samp ID:	A073-05	Dilution Factor:	1
Lab File ID:	98A10086	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A10082	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	79.1J	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-010	Date Analyzed:	01/25/10 14:22
Lab Samp ID:	A073-06T	Dilution Factor:	2
Lab File ID:	98A15019	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A15016	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	927	400	100

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-005	Date Analyzed:	01/25/10 16:53
Lab Samp ID:	A073-07T	Dilution Factor:	5
Lab File ID:	98A15043	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A15041	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-003	Date Analyzed:	01/15/10 21:06
Lab Samp ID:	A073-08	Dilution Factor:	1
Lab File ID:	98A10088	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A10082	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	762	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-006	Date Analyzed:	01/20/10 17:20
Lab Samp ID:	A073-09T	Dilution Factor:	5
Lab File ID:	98A12030	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A12028	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	1330	1000	250

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-004	Date Analyzed:	01/15/10 21:19
Lab Samp ID:	A073-10	Dilution Factor:	1
Lab File ID:	98A10090	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A10082	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	198J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-017	Date Analyzed:	01/15/10 21:25
Lab Samp ID:	A073-02	Dilution Factor:	1
Lab File ID:	98A10091	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A10082	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	129J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-009	Date Analyzed:	01/15/10 21:56
Lab Samp ID:	A073-04	Dilution Factor:	1
Lab File ID:	98A10096	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A10094	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	78.7J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-007	Date Analyzed:	01/15/10 22:03
Lab Samp ID:	A073-05	Dilution Factor:	1
Lab File ID:	98A10097	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A10094	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-010	Date Analyzed:	01/20/10 17:58
Lab Samp ID:	A073-06W	Dilution Factor:	1
Lab File ID:	98A12036	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A12028	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	383	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-005	Date Analyzed:	01/20/10 18:35
Lab Samp ID:	A073-07T	Dilution Factor:	5
Lab File ID:	98A12042	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A12040	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-003	Date Analyzed:	01/15/10 22:34
Lab Samp ID:	A073-08	Dilution Factor:	1
Lab File ID:	98A10102	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A10094	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	697	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-006	Date Analyzed:	01/20/10 17:26
Lab Samp ID:	A073-09T	Dilution Factor:	5
Lab File ID:	98A12031	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A12028	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	1150	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/07/10
Project	: CTO 20, ALAMEDA	Date Received:	01/08/10
SDG NO.	: 10A073	Date Extracted:	01/12/10 09:35
Sample ID:	20-R3-004	Date Analyzed:	01/15/10 22:47
Lab Samp ID:	A073-10	Dilution Factor:	1
Lab File ID:	98A10104	Matrix :	WATER
Ext Btch ID:	IMA011W	% Moisture :	NA
Calib. Ref.:	98A10094	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26020

CHAIN-OF-CUSTODY RECORD

pg 1 of 2

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AK / FK	
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7564

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 10A089

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOCs SHORT LIST	6020A DISS IRON	6020A TOTAL IRON	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R3-TB-004	1/8/10	800	3	X		W	10	X			* SEE BELOW	TRIP BLANK	—	—	TB
20-R3-008	1/8/10	955	5	X		W	10	X	X	X	*	ZV1-MW02A3	20	30	N
20-R3-035	1/8/10	850	5	X		W	10	X	X	X	*	372-MW1	2.5	12.5	N
20-R3-034	1/8/10	1010	15		X	W	10	X	X	X	* MS/MSD	D03-04	47	57	MS MSD
20-R3-033	1/8/10	1115	5	X		W	10	X	X	X	*	ZV1MW07C	40	50	N
20-R3-029	1/8/10	940	5	X		W	10	X	X	X	*	ZV1-MW07A2	15	20	N
20-R3-030	1/8/10	940	~~5~~ 3		X	W	10	X	~~X~~	~~X~~	*	ZV1-MW07A2	15	20	FD
20-R3-031	1/8/10	840	5	X		W	10	X	X	X	*	ZV1-MW07A3	20	30	N
20-R3-032	1/8/10	1100	5	X		W	10	X	X	X	*	ZV1-MW07B	30	40	N
20-R3-036	1/8/10	850	~~5~~ 3		X	W	10	X	~~X~~	~~X~~	*	372-MW1	2.5	12.5	FD

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	1/8/10	[signature]
COMPANY: BTS	TIME: 1500	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260B = HCL PRES; 6020A DISS IRON FIELD FILTERED, 6020A DISS IRON & TOTAL IRON = HNO3 PRES

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26021

CHAIN-OF-CUSTODY RECORD

pg 2 of 2

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1634131-2
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210.026
SAMPLER NAME	AIRBILL NUMBER
AK / FS	
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7581

LABORATORY NAME:

LABORATORY ID (FOR LABORATORY): 10A089

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: VOC, SVOC, PEST, PCB, LIST

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOC	SVOC	PEST	PCB	LIST	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
W-FB-EB-001	1/8/10	1050	3	X		W	10	X					HCL WATER	EQUIPMENT BLANK	—	—	EB

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	1/8/10	FED EX
COMPANY: BTS	TIME: 1500	COMPANY:
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/14/10 20:16
Sample ID: 20-R3-TB-004	Date Analyzed: 01/14/10 20:16
Lab Samp ID: A089-01R	Dilution Factor: 1
Lab File ID: RAD098	Matrix : WATER
Ext Btch ID: VO94A06	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	109	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
Batch No.	: 10A089	Date Extracted:	01/14/10 23:26
Sample ID:	20-R3-008	Date Analyzed:	01/14/10 23:26
Lab Samp ID:	A089-02R	Dilution Factor:	1
Lab File ID:	RAD104	Matrix	: WATER
Ext Btch ID:	VO94A06	% Moisture	: NA
Calib. Ref.:	RAD074	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.1	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	2.4	1.0	0.20
1,1-DICHLOROETHANE	10	1.0	0.20
1,1-DICHLOROETHENE	120E	1.0	0.20
1,2-DICHLOROETHANE	4.6	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.67J	1.0	0.20
CIS-1,2-DICHLOROETHENE	180E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	14	1.0	0.20
TRICHLOROETHENE	170E	1.0	0.20
VINYL CHLORIDE	35E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	121*	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	110	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
Batch No.	: 10A089	Date Extracted:	01/21/10 21:15
Sample ID:	20-R3-008DL	Date Analyzed:	01/21/10 21:15
Lab Samp ID:	A089-02T	Dilution Factor:	10
Lab File ID:	RAD236	Matrix :	WATER
Ext Btch ID:	VO94A12	% Moisture :	NA
Calib. Ref.:	RAD074	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	2.5J	10	2.0
1,1-DICHLOROETHANE	11	10	2.0
1,1-DICHLOROETHENE	550E	10	2.0
1,2-DICHLOROETHANE	5.1	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	310	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	15	10	2.0
TRICHLOROETHENE	180	10	2.0
VINYL CHLORIDE	35	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	114	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	112	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/15/10 08:54
Sample ID: 20-R3-008DL	Date Analyzed: 01/15/10 08:54
Lab Samp ID: A089-02I	Dilution Factor: 50
Lab File ID: RAD122	Matrix : WATER
Ext Btch ID: VO94A07	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	11J	50	10
1,1-DICHLOROETHENE	460	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	280	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	13J	50	10
TRICHLOROETHENE	160	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	113	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	112	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/14/10 20:48
Sample ID: 20-R3-035	Date Analyzed: 01/14/10 20:48
Lab Samp ID: A089-03R	Dilution Factor: 1
Lab File ID: RAD099	Matrix : WATER
Ext Btch ID: VO94A06	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	109	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/19/10 14:21
Sample ID: 20-R3-034	Date Analyzed: 01/19/10 14:21
Lab Samp ID: A089-04N	Dilution Factor: 1
Lab File ID: RAD178	Matrix : WATER
Ext Btch ID: VO94A09	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	3.8	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	94	70-120
4-BROMOFLUOROBENZENE	109	75-120
TOLUENE-D8	115	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/14/10 22:54
Sample ID: 20-R3-033	Date Analyzed: 01/14/10 22:54
Lab Samp ID: A089-05R	Dilution Factor: 1
Lab File ID: RAD103	Matrix : WATER
Ext Btch ID: VO94A06	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	3.0	1.0	0.20
1,1-DICHLOROETHANE	10	1.0	0.20
1,1-DICHLOROETHENE	77E	1.0	0.20
1,2-DICHLOROETHANE	11	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	54E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	6.0	1.0	0.20
TRICHLOROETHENE	68E	1.0	0.20
VINYL CHLORIDE	6.1	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	119	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/15/10 09:25
Sample ID: 20-R3-033DL	Date Analyzed: 01/15/10 09:25
Lab Samp ID: A089-05T	Dilution Factor: 50
Lab File ID: RAD123	Matrix : WATER
Ext Btch ID: VO94A07	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	11J	50	10
1,1-DICHLOROETHENE	1800	50	10
1,2-DICHLOROETHANE	12J	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	58	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	69	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	116	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	112	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/15/10 00:30
Sample ID: 20-R3-029	Date Analyzed: 01/15/10 00:30
Lab Samp ID: A089-06	Dilution Factor: 5
Lab File ID: RAD106	Matrix : WATER
Ext Btch ID: VO94A06	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5.0	1.0
1,1,2,2-TETRACHLOROETHANE	ND	5.0	1.0
1,1,2-TRICHLOROETHANE	ND	5.0	1.0
1,1-DICHLOROETHANE	67	5.0	1.0
1,1-DICHLOROETHENE	170	5.0	1.0
1,2-DICHLOROETHANE	ND	2.5	1.0
CHLOROETHANE	ND	2.5	1.0
CHLOROMETHANE	2.9J	5.0	1.0
CIS-1,2-DICHLOROETHENE	170E	5.0	1.0
TETRACHLOROETHENE	2.3J	5.0	1.0
TRANS-1,2-DICHLOROETHENE	320E	5.0	1.0
TRICHLOROETHENE	260E	5.0	1.0
VINYL CHLORIDE	2200E	2.5	1.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	132*	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/15/10 09:57
Sample ID: 20-R3-029DL	Date Analyzed: 01/15/10 09:57
Lab Samp ID: A089-06T	Dilution Factor: 500
Lab File ID: RAD124	Matrix : WATER
Ext Btch ID: VO94A07	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	500	100
1,1,2,2-TETRACHLOROETHANE	ND	500	100
1,1,2-TRICHLOROETHANE	ND	500	100
1,1-DICHLOROETHANE	ND	500	100
1,1-DICHLOROETHENE	130J	500	100
1,2-DICHLOROETHANE	ND	250	100
CHLOROETHANE	ND	250	100
CHLOROMETHANE	ND	500	100
CIS-1,2-DICHLOROETHENE	15000	500	100
TETRACHLOROETHENE	ND	500	100
TRANS-1,2-DICHLOROETHENE	320J	500	100
TRICHLOROETHENE	19000	500	100
VINYL CHLORIDE	1900	250	100

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	118	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	111	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/15/10 01:01
Sample ID: 20-R3-030	Date Analyzed: 01/15/10 01:01
Lab Samp ID: A089-07	Dilution Factor: 5
Lab File ID: RAD107	Matrix : WATER
Ext Btch ID: VO94A06	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5.0	1.0
1,1,2,2-TETRACHLOROETHANE	ND	5.0	1.0
1,1,2-TRICHLOROETHANE	ND	5.0	1.0
1,1-DICHLOROETHANE	66	5.0	1.0
1,1-DICHLOROETHENE	140	5.0	1.0
1,2-DICHLOROETHANE	ND	2.5	1.0
CHLOROETHANE	ND	2.5	1.0
CHLOROMETHANE	3.0J	5.0	1.0
CIS-1,2-DICHLOROETHENE	200E	5.0	1.0
TETRACHLOROETHENE	2.4J	5.0	1.0
TRANS-1,2-DICHLOROETHENE	310E	5.0	1.0
TRICHLOROETHENE	300E	5.0	1.0
VINYL CHLORIDE	2100E	2.5	1.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	124*	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	108	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/19/10 18:05
Sample ID: 20-R3-030DL	Date Analyzed: 01/19/10 18:05
Lab Samp ID: A089-07T	Dilution Factor: 500
Lab File ID: RAD185	Matrix : WATER
Ext Btch ID: VO94A09	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	500	100
1,1,2,2-TETRACHLOROETHANE	ND	500	100
1,1,2-TRICHLOROETHANE	ND	500	100
1,1-DICHLOROETHANE	ND	500	100
1,1-DICHLOROETHENE	100J	500	100
1,2-DICHLOROETHANE	ND	250	100
CHLOROETHANE	ND	250	100
CHLOROMETHANE	ND	500	100
CIS-1,2-DICHLOROETHENE	16000	500	100
TETRACHLOROETHENE	ND	500	100
TRANS-1,2-DICHLOROETHENE	340J	500	100
TRICHLOROETHENE	21000	500	100
VINYL CHLORIDE	2400	250	100

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	112	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	115	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/14/10 23:58
Sample ID: 20-R3-031	Date Analyzed: 01/14/10 23:58
Lab Samp ID: A089-08R	Dilution Factor: 1
Lab File ID: RAD105	Matrix : WATER
Ext Btch ID: VO94A06	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	3.5	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	10	1.0	0.20
1,1-DICHLOROETHANE	20	1.0	0.20
1,1-DICHLOROETHENE	170E	1.0	0.20
1,2-DICHLOROETHANE	12	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	150E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	15	1.0	0.20
TRICHLOROETHENE	83E	1.0	0.20
VINYL CHLORIDE	69E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	118	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	110	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/19/10 18:37
Sample ID: 20-R3-031DL	Date Analyzed: 01/19/10 18:37
Lab Samp ID: A089-08T	Dilution Factor: 50
Lab File ID: RAD186	Matrix : WATER
Ext Btch ID: VO94A09	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	22J	50	10
1,1-DICHLOROETHENE	1600	50	10
1,2-DICHLOROETHANE	11J	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	440	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	16J	50	10
TRICHLOROETHENE	680	50	10
VINYL CHLORIDE	46	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	113	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/14/10 22:23
Sample ID: 20-R3-032	Date Analyzed: 01/14/10 22:23
Lab Samp ID: A089-09R	Dilution Factor: 1
Lab File ID: RAD102	Matrix : WATER
Ext Btch ID: VO94A06	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	4.2	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	26	1.0	0.20
1,1-DICHLOROETHANE	49	1.0	0.20
1,1-DICHLOROETHENE	95E	1.0	0.20
1,2-DICHLOROETHANE	55E	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	2.4	1.0	0.20
CIS-1,2-DICHLOROETHENE	45	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	22	1.0	0.20
TRICHLOROETHENE	2.6	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	121*	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	112	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/19/10 19:09
Sample ID: 20-R3-032DL	Date Analyzed: 01/19/10 19:09
Lab Samp ID: A089-09T	Dilution Factor: 50
Lab File ID: RAD187	Matrix : WATER
Ext Btch ID: VO94A09	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	28J	50	10
1,1-DICHLOROETHANE	57	50	10
1,1-DICHLOROETHENE	6600E	50	10
1,2-DICHLOROETHANE	65	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	53	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	23J	50	10
TRICHLOROETHENE	ND	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	121*	70-120
4-BROMOFLUOROBENZENE	109	75-120
TOLUENE-D8	113	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/19/10 17:33
Sample ID: 20-R3-032DL	Date Analyzed: 01/19/10 17:33
Lab Samp ID: A089-09I	Dilution Factor: 500
Lab File ID: RAD184	Matrix : WATER
Ext Btch ID: VO94A09	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	500	100
1,1,2,2-TETRACHLOROETHANE	ND	500	100
1,1,2-TRICHLOROETHANE	ND	500	100
1,1-DICHLOROETHANE	ND	500	100
1,1-DICHLOROETHENE	7200	500	100
1,2-DICHLOROETHANE	ND	250	100
CHLOROETHANE	ND	250	100
CHLOROMETHANE	ND	500	100
CIS-1,2-DICHLOROETHENE	ND	500	100
TETRACHLOROETHENE	ND	500	100
TRANS-1,2-DICHLOROETHENE	ND	500	100
TRICHLOROETHENE	ND	500	100
VINYL CHLORIDE	ND	250	100

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	112	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	111	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
Batch No.	: 10A089	Date Extracted:	01/14/10 21:19
Sample ID:	20-R3-036	Date Analyzed:	01/14/10 21:19
Lab Samp ID:	A089-10R	Dilution Factor:	1
Lab File ID:	RAD100	Matrix	: WATER
Ext Btch ID:	VO94A06	% Moisture	: NA
Calib. Ref.:	RAD074	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.21J	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	110	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	112	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/08/10
Project : CTO 20, ALAMEDA	Date Received: 01/09/10
Batch No. : 10A089	Date Extracted: 01/14/10 21:51
Sample ID: 20-R3-EB-004	Date Analyzed: 01/14/10 21:51
Lab Samp ID: A089-11R	Dilution Factor: 1
Lab File ID: RAD101	Matrix : WATER
Ext Btch ID: VO94A06	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	110	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	111	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: NA
Project : CTO 20, ALAMEDA	Date Received: 01/15/10
Batch No. : 10A089	Date Extracted: 01/15/10 08:23
Sample ID: MBLK2W	Date Analyzed: 01/15/10 08:23
Lab Samp ID: VO94A07B	Dilution Factor: 1
Lab File ID: RAD121	Matrix : WATER
Ext Btch ID: VO94A07	% Moisture : NA
Calib. Ref.: RAD074	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	114	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	107	85-120

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-008	Date Analyzed:	01/20/10 18:42
Lab Samp ID:	A089-02	Dilution Factor:	1
Lab File ID:	98A12043	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A12040	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	72.0J	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-035	Date Analyzed:	01/20/10 18:48
Lab Samp ID:	A089-03	Dilution Factor:	1
Lab File ID:	98A12044	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A12040	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-034	Date Analyzed:	01/22/10 20:50
Lab Samp ID:	A089-04T	Dilution Factor:	5
Lab File ID:	98A14061	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A14054	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	2080	1000	250

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-033	Date Analyzed:	01/20/10 19:13
Lab Samp ID:	A089-05	Dilution Factor:	1
Lab File ID:	98A12048	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A12040	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	145J	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-029	Date Analyzed:	01/20/10 19:19
Lab Samp ID:	A089-06	Dilution Factor:	1
Lab File ID:	98A12049	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A12040	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	1490	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-031	Date Analyzed:	01/20/10 19:51
Lab Samp ID:	A089-08	Dilution Factor:	1
Lab File ID:	98A12054	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A12052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	682	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-032	Date Analyzed:	01/20/10 19:57
Lab Samp ID:	A089-09	Dilution Factor:	1
Lab File ID:	98A12055	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A12052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-008	Date Analyzed:	01/20/10 20:03
Lab Samp ID:	A089-02	Dilution Factor:	1
Lab File ID:	98A12056	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A12052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-035	Date Analyzed:	01/20/10 20:10
Lab Samp ID:	A089-03	Dilution Factor:	1
Lab File ID:	98A12057	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A12052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-034	Date Analyzed:	01/22/10 20:31
Lab Samp ID:	A089-04T	Dilution Factor:	5
Lab File ID:	98A14058	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A14054	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	2710	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-033	Date Analyzed:	01/22/10 20:18
Lab Samp ID:	A089-05	Dilution Factor:	1
Lab File ID:	98A14056	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A14054	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	80.6J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-029	Date Analyzed:	01/20/10 21:06
Lab Samp ID:	A089-06	Dilution Factor:	1
Lab File ID:	98A12066	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A12064	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	465	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-031	Date Analyzed:	01/20/10 21:13
Lab Samp ID:	A089-08	Dilution Factor:	1
Lab File ID:	98A12067	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A12064	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	570	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/08/10
Project	: CTO 20, ALAMEDA	Date Received:	01/09/10
SDG NO.	: 10A089	Date Extracted:	01/12/10 10:00
Sample ID:	20-R3-032	Date Analyzed:	01/20/10 21:19
Lab Samp ID:	A089-09	Dilution Factor:	1
Lab File ID:	98A12068	Matrix :	WATER
Ext Btch ID:	IMA012W	% Moisture :	NA
Calib. Ref.:	98A12064	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26014

CHAIN-OF-CUSTODY RECORD

1 of 2

PROJECT NAME	PURCHASE ORDER NO
CTC 20 ALAMEDA	1034131-2
PROJECT LOCATION: ALAMEDA	PROJECT NO: 106-3210.020
SAMPLER NAME: AK / FS	AIRBILL NUMBER: 7971 5550 3730
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 10A033

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC'S + TPH-GRO LIST	6020A DISS IRON	6020A TOTAL IRON						COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R3-TB-001	1/5/10	900	3	X		W	10	X								* SEE BELOW	TRIP BLANK	—	—	TB
20-R3-024	1/5/10	925	5	X		W	10	X	X	X						*	2VI-MW05C	40	50	N
20-R3-EB-001	1/5/10	950	3	X		W	10	X								*	EQUIPTMENT BLANK	—	—	EB
20-R3-021	1/5/10	1030	5	X		W	10	X	X	X						*	2VI-MW05A3	20	30	N
20-R3-022	1/5/10	1030	5		X	W	10	X	X	X						*	2VI-MW05A3	20	30	FD
20-R3-020	1/5/10	1145	5	X		W	10	X	~~X~~	~~X~~						*	2VI-MW05A2	10	20	N
20-R3-023	1/5/10	1440	5	X		W	10	X	X	X						*	2VI-MW05B	30	40	N
20-R3-011	1/5/10	925	5	X		W	10	X	X	X						*	2VI-MW03A2	10	20	N
20-R3-012	1/5/10	1030	5	X		W	10	X	X	X						*	2VI-MW03A3	20	30	N
20-R3-014	1/5/10	1130	5	X		W	10	X	X	X						*	2VI-MW03C	40	50	N

Project Information Section
Do not submit to Laboratory

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	1/5/10	FED EX
COMPANY: BTS	TIME: 1600	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS
* 8260B - TPH VOC'S, 6020A DISS IRON = FIELD FILTERED, 6020A DISS. IRON & TOTAL IRON = TPH VOC'S ONLY

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26016

CHAIN-OF-CUSTODY RECORD

2 | 2

PROJECT NAME: CTU 20 ALAMEDA	PURCHASE ORDER NO: 1034131-2
PROJECT LOCATION: ALAMEDA	PROJECT NO: 106-3210.020
SAMPLER NAME: AK / FS	AIRBILL NUMBER: 7931 5550 3730
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 10A033

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC (SHORT LIST)	6020A DISS IRON	6020A TOTAL IRON	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R3-013	1/5/10	1240	5	X		W	10	X	X	X	* SEE BELOW	2U1-MW03B	30	40	N
20-R3-026	1/5/10	1340	5	X		W	10	X	X	X	*	2U1-MW06A3	20	30	N

RELINQUISHED BY (Signature): [signature]	DATE: 1/5/10	RECEIVED BY (Signature): FED EX	
COMPANY: TTR	TIME: 1000	COMPANY:	
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	
COMPANY:	TIME:	COMPANY:	
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	
COMPANY:	TIME:	COMPANY:	

LABORATORY INSTRUCTIONS/COMMENTS: * 8260B VOC = HCL VOAs, 6020A DISS IRON FIELD FILTERED, 6020A DISS IRON & TOTAL IRON = HNO3 PRES POLY

COMPOSITE DESCRIPTION:

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/12/10 04:24
Sample ID: 20-R3-TB-001	Date Analyzed: 01/12/10 04:24
Lab Samp ID: A033-01	Dilution Factor: 1
Lab File ID: RAW228	Matrix : WATER
Ext Btch ID: VO06A12	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	95	70-120
4-BROMOFLUOROBENZENE	109	75-120
TOLUENE-D8	109	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/12/10 05:29
Sample ID: 20-R3-024	Date Analyzed: 01/12/10 05:29
Lab Samp ID: A033-02	Dilution Factor: 1
Lab File ID: RAW230	Matrix : WATER
Ext Btch ID: VO06A12	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	2.4	1.0	0.20
1,1-DICHLOROETHENE	120E	1.0	0.20
1,2-DICHLOROETHANE	0.71	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.40J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	99	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	109	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
Batch No.	: 10A033	Date Extracted:	01/13/10 16:42
Sample ID:	20-R3-024DL	Date Analyzed:	01/13/10 16:42
Lab Samp ID:	A033-02T	Dilution Factor:	5
Lab File ID:	RAW281	Matrix :	WATER
Ext Btch ID:	VO06A14	% Moisture :	NA
Calib. Ref.:	RAW037	Instrument ID :	T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5.0	1.0
1,1,2,2-TETRACHLOROETHANE	ND	5.0	1.0
1,1,2-TRICHLOROETHANE	ND	5.0	1.0
1,1-DICHLOROETHANE	2.4J	5.0	1.0
1,1-DICHLOROETHENE	110	5.0	1.0
1,2-DICHLOROETHANE	ND	2.5	1.0
CHLOROETHANE	ND	2.5	1.0
CHLOROMETHANE	ND	5.0	1.0
CIS-1,2-DICHLOROETHENE	ND	5.0	1.0
TETRACHLOROETHENE	ND	5.0	1.0
TRANS-1,2-DICHLOROETHENE	ND	5.0	1.0
TRICHLOROETHENE	ND	5.0	1.0
VINYL CHLORIDE	ND	2.5	1.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	108	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	104	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/12/10 04:57
Sample ID: 20-R3-EB-001	Date Analyzed: 01/12/10 04:57
Lab Samp ID: A033-03	Dilution Factor: 1
Lab File ID: RAW229	Matrix : WATER
Ext Btch ID: VO06A12	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	70-120
4-BROMOFLUOROBENZENE	110	75-120
TOLUENE-D8	108	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/12/10 06:03
Sample ID: 20-R3-021	Date Analyzed: 01/12/10 06:03
Lab Samp ID: A033-04	Dilution Factor: 1
Lab File ID: RAW231	Matrix : WATER
Ext Btch ID: VO06A12	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.2	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.53J	1.0	0.20
1,1-DICHLOROETHANE	5.6	1.0	0.20
1,1-DICHLOROETHENE	290E	1.0	0.20
1,2-DICHLOROETHANE	0.92	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	25	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	3.3	1.0	0.20
TRICHLOROETHENE	67	1.0	0.20
VINYL CHLORIDE	5.4	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	100	70-120
4-BROMOFLUOROBENZENE	112	75-120
TOLUENE-D8	108	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/13/10 17:16
Sample ID: 20-R3-021DL	Date Analyzed: 01/13/10 17:16
Lab Samp ID: A033-04T	Dilution Factor: 25
Lab File ID: RAW282	Matrix : WATER
Ext Btch ID: VO06A14	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	5.4J	25	5.0
1,1-DICHLOROETHENE	290	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	25J	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	ND	25	5.0
TRICHLOROETHENE	64	25	5.0
VINYL CHLORIDE	ND	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	100	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/12/10 06:36
Sample ID: 20-R3-022	Date Analyzed: 01/12/10 06:36
Lab Samp ID: A033-05	Dilution Factor: 1
Lab File ID: RAW232	Matrix : WATER
Ext Btch ID: VO06A12	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.3	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.55J	1.0	0.20
1,1-DICHLOROETHANE	5.7	1.0	0.20
1,1-DICHLOROETHENE	300E	1.0	0.20
1,2-DICHLOROETHANE	0.93	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	26	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	3.3	1.0	0.20
TRICHLOROETHENE	68	1.0	0.20
VINYL CHLORIDE	5.5	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	109	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/13/10 17:49
Sample ID: 20-R3-022DL	Date Analyzed: 01/13/10 17:49
Lab Samp ID: A033-05T	Dilution Factor: 50
Lab File ID: RAW283	Matrix : WATER
Ext Btch ID: VO06A14	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	310	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	31J	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	78	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	110	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
Batch No.	: 10A033	Date Extracted:	01/14/10 02:42
Sample ID:	20-R3-020	Date Analyzed:	01/14/10 02:42
Lab Samp ID:	A033-06R	Dilution Factor:	1
Lab File ID:	RAW299	Matrix	: WATER
Ext Btch ID:	VO06A15	% Moisture	: NA
Calib. Ref.:	RAW037	Instrument ID	: T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	1.5	1.0	0.20
1,1-DICHLOROETHENE	0.45J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	15	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	1.1	1.0	0.20
TRICHLOROETHENE	2.9	1.0	0.20
VINYL CHLORIDE	7.4	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	70-120
4-BROMOFLUOROBENZENE	110	75-120
TOLUENE-D8	111	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/12/10 07:43
Sample ID: 20-R3-023	Date Analyzed: 01/12/10 07:43
Lab Samp ID: A033-07	Dilution Factor: 1
Lab File ID: RAW234	Matrix : WATER
Ext Btch ID: VO06A12	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.86J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.26J	1.0	0.20
1,1-DICHLOROETHANE	7.9	1.0	0.20
1,1-DICHLOROETHENE	370E	1.0	0.20
1,2-DICHLOROETHANE	4.3	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.28J	1.0	0.20
CIS-1,2-DICHLOROETHENE	3.0	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	0.68J	1.0	0.20
TRICHLOROETHENE	3.0	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	99	70-120
4-BROMOFLUOROBENZENE	111	75-120
TOLUENE-D8	108	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/13/10 18:22
Sample ID: 20-R3-023DL	Date Analyzed: 01/13/10 18:22
Lab Samp ID: A033-07T	Dilution Factor: 50
Lab File ID: RAW284	Matrix : WATER
Ext Btch ID: VO06A14	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	440	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	ND	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	ND	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/14/10 03:15
Sample ID: 20-R3-011	Date Analyzed: 01/14/10 03:15
Lab Samp ID: A033-08R	Dilution Factor: 1
Lab File ID: RAW300	Matrix : WATER
Ext Btch ID: VO06A15	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	2.4	1.0	0.20
1,1-DICHLOROETHENE	16	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	180E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	27	1.0	0.20
TRICHLOROETHENE	170E	1.0	0.20
VINYL CHLORIDE	7.5	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	94	70-120
4-BROMOFLUOROBENZENE	112	75-120
TOLUENE-D8	108	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
Batch No.	: 10A033	Date Extracted:	01/14/10 02:08
Sample ID:	20-R3-011DL	Date Analyzed:	01/14/10 02:08
Lab Samp ID:	A033-08T	Dilution Factor:	5
Lab File ID:	RAW298	Matrix	: WATER
Ext Btch ID:	VO06A15	% Moisture	: NA
Calib. Ref.:	RAW037	Instrument ID	: T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5.0	1.0
1,1,2,2-TETRACHLOROETHANE	ND	5.0	1.0
1,1,2-TRICHLOROETHANE	ND	5.0	1.0
1,1-DICHLOROETHANE	2.3J	5.0	1.0
1,1-DICHLOROETHENE	16	5.0	1.0
1,2-DICHLOROETHANE	ND	2.5	1.0
CHLOROETHANE	ND	2.5	1.0
CHLOROMETHANE	ND	5.0	1.0
CIS-1,2-DICHLOROETHENE	220	5.0	1.0
TETRACHLOROETHENE	ND	5.0	1.0
TRANS-1,2-DICHLOROETHENE	26	5.0	1.0
TRICHLOROETHENE	190	5.0	1.0
VINYL CHLORIDE	5.9	2.5	1.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	70-120
4-BROMOFLUOROBENZENE	111	75-120
TOLUENE-D8	110	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/15/10 13:48
Sample ID: 20-R3-012	Date Analyzed: 01/15/10 13:48
Lab Samp ID: A033-09N	Dilution Factor: 1
Lab File ID: RAC132	Matrix : WATER
Ext Btch ID: VO67A07	% Moisture : NA
Calib. Ref.: RAC033	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.25J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	2.8	1.0	0.20
1,1-DICHLOROETHENE	60	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	5.5	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	1.2	1.0	0.20
TRICHLOROETHENE	23	1.0	0.20
VINYL CHLORIDE	1.0	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/15/10 13:16
Sample ID: 20-R3-014	Date Analyzed: 01/15/10 13:16
Lab Samp ID: A033-10N	Dilution Factor: 1
Lab File ID: RAC131	Matrix : WATER
Ext Btch ID: VO67A07	% Moisture : NA
Calib. Ref.: RAC033	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	0.66J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	104	70-120
4-BROMOFLUOROBENZENE	100	75-120
TOLUENE-D8	105	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/12/10 09:56
Sample ID: 20-R3-013	Date Analyzed: 01/12/10 09:56
Lab Samp ID: A033-11	Dilution Factor: 1
Lab File ID: RAW238	Matrix : WATER
Ext Btch ID: VO06A12	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.4	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.26J	1.0	0.20
1,1-DICHLOROETHANE	1.9	1.0	0.20
1,1-DICHLOROETHENE	190E	1.0	0.20
1,2-DICHLOROETHANE	0.60	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.66J	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.46J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	2.2	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	108	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/15/10 10:48
Sample ID: 20-R3-013DL	Date Analyzed: 01/15/10 10:48
Lab Samp ID: A033-11T	Dilution Factor: 10
Lab File ID: RAC127	Matrix : WATER
Ext Btch ID: VO67A07	% Moisture : NA
Calib. Ref.: RAC033	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHANE	2.2J	10	2.0
1,1-DICHLOROETHENE	220	10	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	ND	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	ND	10	2.0
TRICHLOROETHENE	2.5J	10	2.0
VINYL CHLORIDE	ND	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	108	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/12/10 10:29
Sample ID: 20-R3-026	Date Analyzed: 01/12/10 10:29
Lab Samp ID: A033-12	Dilution Factor: 1
Lab File ID: RAW239	Matrix : WATER
Ext Btch ID: VO06A12	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.9	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	2.0	1.0	0.20
1,1-DICHLOROETHANE	9.0	1.0	0.20
1,1-DICHLOROETHENE	380E	1.0	0.20
1,2-DICHLOROETHANE	2.4	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	210E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	12	1.0	0.20
TRICHLOROETHENE	230E	1.0	0.20
VINYL CHLORIDE	40E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	112	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/05/10
Project : CTO 20, ALAMEDA	Date Received: 01/06/10
Batch No. : 10A033	Date Extracted: 01/15/10 12:44
Sample ID: 20-R3-026DL	Date Analyzed: 01/15/10 12:44
Lab Samp ID: A033-12T	Dilution Factor: 25
Lab File ID: RAC130	Matrix : WATER
Ext Btch ID: VO67A07	% Moisture : NA
Calib. Ref.: RAC033	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	11J	25	5.0
1,1-DICHLOROETHENE	550	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	320	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	14J	25	5.0
TRICHLOROETHENE	320	25	5.0
VINYL CHLORIDE	44	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	105	85-120

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-024	Date Analyzed:	01/14/10 17:43
Lab Samp ID:	A033-02T	Dilution Factor:	5
Lab File ID:	98A09030	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A09025	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	372J	1000	250

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-021	Date Analyzed:	01/14/10 01:01
Lab Samp ID:	A033-04	Dilution Factor:	1
Lab File ID:	98A08076	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A08074	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	136J	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-020	Date Analyzed:	01/14/10 01:08
Lab Samp ID:	A033-06	Dilution Factor:	1
Lab File ID:	98A08077	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A08074	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	205	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/15/10 09:30
Sample ID:	20-R3-023RE	Date Analyzed:	01/15/10 17:51
Lab Samp ID:	A033-07R	Dilution Factor:	1
Lab File ID:	98A10057	Matrix :	WATER
Ext Btch ID:	IMA016W	% Moisture :	NA
Calib. Ref.:	98A10055	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-011	Date Analyzed:	01/14/10 01:20
Lab Samp ID:	A033-08	Dilution Factor:	1
Lab File ID:	98A08079	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A08074	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-012	Date Analyzed:	01/14/10 01:27
Lab Samp ID:	A033-09	Dilution Factor:	1
Lab File ID:	98A08080	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A08074	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	239	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-014	Date Analyzed:	01/14/10 17:56
Lab Samp ID:	A033-10T	Dilution Factor:	5
Lab File ID:	98A09032	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A09025	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	2560	1000	250

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-013	Date Analyzed:	01/14/10 18:02
Lab Samp ID:	A033-11T	Dilution Factor:	5
Lab File ID:	98A09033	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A09025	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/15/10 09:30
Sample ID:	20-R3-026RE	Date Analyzed:	01/15/10 17:01
Lab Samp ID:	A033-12R	Dilution Factor:	1
Lab File ID:	98A10049	Matrix :	WATER
Ext Btch ID:	IMA016W	% Moisture :	NA
Calib. Ref.:	98A10043	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	324	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-024	Date Analyzed:	01/14/10 18:53
Lab Samp ID:	A033-02T	Dilution Factor:	5
Lab File ID:	98A09041	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A09036	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-021	Date Analyzed:	01/14/10 02:23
Lab Samp ID:	A033-04	Dilution Factor:	1
Lab File ID:	98A08089	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A08086	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	101J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-020	Date Analyzed:	01/14/10 02:30
Lab Samp ID:	A033-06	Dilution Factor:	1
Lab File ID:	98A08090	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A08086	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	137J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/15/10 09:30
Sample ID:	20-R3-023RE	Date Analyzed:	01/15/10 18:04
Lab Samp ID:	A033-07R	Dilution Factor:	1
Lab File ID:	98A10059	Matrix :	WATER
Ext Btch ID:	IMA016W	% Moisture :	NA
Calib. Ref.:	98A10055	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-011	Date Analyzed:	01/14/10 02:42
Lab Samp ID:	A033-08	Dilution Factor:	1
Lab File ID:	98A08092	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A08086	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-012	Date Analyzed:	01/14/10 02:49
Lab Samp ID:	A033-09	Dilution Factor:	1
Lab File ID:	98A08093	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A08086	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	197J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-014	Date Analyzed:	01/14/10 18:59
Lab Samp ID:	A033-10T	Dilution Factor:	5
Lab File ID:	98A09042	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A09036	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	2120	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/08/10 10:00
Sample ID:	20-R3-013	Date Analyzed:	01/14/10 19:05
Lab Samp ID:	A033-11T	Dilution Factor:	5
Lab File ID:	98A09043	Matrix :	WATER
Ext Btch ID:	IMA003W	% Moisture :	NA
Calib. Ref.:	98A09036	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/05/10
Project	: CTO 20, ALAMEDA	Date Received:	01/06/10
SDG NO.	: 10A033	Date Extracted:	01/15/10 09:30
Sample ID:	20-R3-026RE	Date Analyzed:	01/15/10 17:20
Lab Samp ID:	A033-12R	Dilution Factor:	1
Lab File ID:	98A10052	Matrix :	WATER
Ext Btch ID:	IMA016W	% Moisture :	NA
Calib. Ref.:	98A10043	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	228	200	50.0

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26017

CHAIN-OF-CUSTODY RECORD

pg 1 of 2

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO.
ALAMEDA	106-3210.020
SAMPLER NAME	AIRBILL NUMBER
AK / FS	7982 8043 8110
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 10A056

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC SHORT LIST	6020A DISS. IRON	6020A TOTAL IRON	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R3-TB-002	1/6/10	845	3	X		W	10	X			* SEE BELOW	TRIP BLANK	—	—	TB
20-R3-016	1/6/10	910	5	X		W	10	X	X	X	*	ZVI-MW04A2	10	20	N
20-R3-EB-002	1/6/10	950 ~~1030~~ AK	3	X		W	10	X			*	EQUIPMENT BLANK	—	—	EB
20-R3-018	1/6/10	1030	5	X		W	10	X	X	X	*	ZVI-MW04B	30	40	N
20-R3-019	1/6/10	1235	5	X		W	10	X	X	X	*	ZVI-MW04C	40	50	N
20-R3-015	1/6/10	1325	5	X		W	10	X	X	X	*	ZVI-MW04A1	6	11	N
20-R3-027	1/6/10	910	5	X		W	10	X	X	X	*	ZVI-MW06B	30	40	N
20-R3-025	1/6/10	1010	5	X		W	10	X	X	X	*	ZVI-MW06A2	10	20	N
20-R3-028	1/6/10	1105	5	X		W	10	X	X	X	*	ZVI-MW06C	40	50	N
20-R3-002	1/6/10	1240	5		X	W	10	X	X	X	*	ZVI-MW01A2	10	20	N

Project Information Section
Do not submit to Laboratory

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	1/6/10	FED EX
COMPANY: BTS	TIME: 1550	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS
* 8260B = HCL VOA'S, 6020A DISS. IRON FIELD FILTERED, 6020A DISS. IRON & TOTAL IRON = HNO3 PRES. POLY

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

CHAIN-OF-CUSTODY RECORD

NUMBER 26018

pg 2 of 2

PROJECT NAME: CTO 20 ALAMEDA	PURCHASE ORDER NO.: 1034131-2
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106-3210.020
SAMPLER NAME: AK / FS	AIRBILL NUMBER: 7982 8043 8110
PROJECT CONTACT: DANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 10A056

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOCs SHORT LIST	6020A IRON DISS.	6020A IRON TOTAL	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-23-001	1/6/10	1400	5	X		W	10	X	X	X	* SEE BELOW	2U1-MW01A1	6	11	N
											* AK				

RELINQUISHED BY (Signature): [signature]	DATE: 1/6/10	RECEIVED BY (Signature): FED EX	LABORATORY INSTRUCTIONS/COMMENTS: * 8260B VOC = HCL VOAs, 6020A DISS. IRON - FIELD FILTERED, 6020A DISS. IRON & TOTAL IRON = HNO3 PRES. POLY
COMPANY: BTS	TIME: 1550	COMPANY:	
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	COMPOSITE DESCRIPTION:
COMPANY:	TIME:	COMPANY:	
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
COMPANY:	TIME:	COMPANY:	TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-016	Date Analyzed:	01/14/10 22:13
Lab Samp ID:	A056-02	Dilution Factor:	1
Lab File ID:	98A09073	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09071	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	353	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-018	Date Analyzed:	01/15/10 18:23
Lab Samp ID:	A056-04W	Dilution Factor:	1
Lab File ID:	98A10062	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A10055	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	125J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-019	Date Analyzed:	01/15/10 18:29
Lab Samp ID:	A056-05W	Dilution Factor:	1
Lab File ID:	98A10063	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A10055	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	365	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-015	Date Analyzed:	01/14/10 22:32
Lab Samp ID:	A056-06	Dilution Factor:	1
Lab File ID:	98A09076	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09071	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	1220	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-027	Date Analyzed:	01/14/10 22:38
Lab Samp ID:	A056-07	Dilution Factor:	1
Lab File ID:	98A09077	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09071	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	93.6J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-025	Date Analyzed:	01/14/10 22:45
Lab Samp ID:	A056-08	Dilution Factor:	1
Lab File ID:	98A09078	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09071	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	850	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-028	Date Analyzed:	01/14/10 22:51
Lab Samp ID:	A056-09	Dilution Factor:	1
Lab File ID:	98A09079	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09071	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	476	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-002	Date Analyzed:	01/14/10 22:57
Lab Samp ID:	A056-10	Dilution Factor:	1
Lab File ID:	98A09080	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09071	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	30700	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-001	Date Analyzed:	01/14/10 23:03
Lab Samp ID:	A056-11	Dilution Factor:	1
Lab File ID:	98A09081	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09071	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	196J	200	50.0

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/11/10 15:05
Sample ID: 20-R3-TB-002	Date Analyzed: 01/11/10 15:05
Lab Samp ID: A056-01	Dilution Factor: 1
Lab File ID: RAW204	Matrix : WATER
Ext Btch ID: VO06A11	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	100	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	111	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/11/10 16:11
Sample ID: 20-R3-016	Date Analyzed: 01/11/10 16:11
Lab Samp ID: A056-02	Dilution Factor: 1
Lab File ID: RAW206	Matrix : WATER
Ext Btch ID: VO06A11	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	2.7	1.0	0.20
1,1-DICHLOROETHENE	11	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	220E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	14	1.0	0.20
TRICHLOROETHENE	130E	1.0	0.20
VINYL CHLORIDE	47E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	100	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	109	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/15/10 09:05
Sample ID: 20-R3-016DL	Date Analyzed: 01/15/10 09:05
Lab Samp ID: A056-02I	Dilution Factor: 5
Lab File ID: RAW345	Matrix : WATER
Ext Btch ID: VO06A17	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5.0	1.0
1,1,2,2-TETRACHLOROETHANE	ND	5.0	1.0
1,1,2-TRICHLOROETHANE	ND	5.0	1.0
1,1-DICHLOROETHANE	3.1J	5.0	1.0
1,1-DICHLOROETHENE	12	5.0	1.0
1,2-DICHLOROETHANE	ND	2.5	1.0
CHLOROETHANE	ND	2.5	1.0
CHLOROMETHANE	ND	5.0	1.0
CIS-1,2-DICHLOROETHENE	400	5.0	1.0
TETRACHLOROETHENE	ND	5.0	1.0
TRANS-1,2-DICHLOROETHENE	16	5.0	1.0
TRICHLOROETHENE	160	5.0	1.0
VINYL CHLORIDE	38	2.5	1.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/11/10 15:37
Sample ID: 20-R3-EB-002	Date Analyzed: 01/11/10 15:37
Lab Samp ID: A056-03	Dilution Factor: 1
Lab File ID: RAW205	Matrix : WATER
Ext Btch ID: VO06A11	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
Batch No.	: 10A056	Date Extracted:	01/13/10 16:09
Sample ID:	20-R3-018	Date Analyzed:	01/13/10 16:09
Lab Samp ID:	A056-04N	Dilution Factor:	1
Lab File ID:	RAW280	Matrix	: WATER
Ext Btch ID:	VO06A14	% Moisture	: NA
Calib. Ref.:	RAW037	Instrument ID	: T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	0.80J	1.0	0.20
1,1-DICHLOROETHENE	43	1.0	0.20
1,2-DICHLOROETHANE	0.50J	0.50	0.20
CHLOROETHANE	0.36J	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.48J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.22J	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/14/10 18:39
Sample ID: 20-R3-019	Date Analyzed: 01/14/10 18:39
Lab Samp ID: A056-05N	Dilution Factor: 1
Lab File ID: RAW317	Matrix : WATER
Ext Btch ID: VO06A16	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.40J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.24J	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/11/10 17:51
Sample ID: 20-R3-015	Date Analyzed: 01/11/10 17:51
Lab Samp ID: A056-06	Dilution Factor: 1
Lab File ID: RAW209	Matrix : WATER
Ext Btch ID: VO06A11	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	3.8	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	6.3	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	4.0	1.0	0.20
TRICHLOROETHENE	0.77J	1.0	0.20
VINYL CHLORIDE	56E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	109	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/12/10 20:20
Sample ID: 20-R3-015DL	Date Analyzed: 01/12/10 20:20
Lab Samp ID: A056-06T	Dilution Factor: 10
Lab File ID: RAW255	Matrix : WATER
Ext Btch ID: VO06A13	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHANE	3.9J	10	2.0
1,1-DICHLOROETHENE	ND	10	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	6.9J	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	4.0J	10	2.0
TRICHLOROETHENE	ND	10	2.0
VINYL CHLORIDE	47	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	70-120
4-BROMOFLUOROBENZENE	112	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/11/10 18:24
Sample ID: 20-R3-027	Date Analyzed: 01/11/10 18:24
Lab Samp ID: A056-07	Dilution Factor: 1
Lab File ID: RAW210	Matrix : WATER
Ext Btch ID: VO06A11	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	16	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	30	1.0	0.20
1,1-DICHLOROETHANE	40	1.0	0.20
1,1-DICHLOROETHENE	1000E	1.0	0.20
1,2-DICHLOROETHANE	34	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	1.6	1.0	0.20
CIS-1,2-DICHLOROETHENE	26	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	16	1.0	0.20
TRICHLOROETHENE	11	1.0	0.20
VINYL CHLORIDE	1.0	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/12/10 20:54
Sample ID: 20-R3-027DL	Date Analyzed: 01/12/10 20:54
Lab Samp ID: A056-07T	Dilution Factor: 100
Lab File ID: RAW256	Matrix : WATER
Ext Btch ID: VO06A13	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	24J	100	20
1,1-DICHLOROETHANE	42J	100	20
1,1-DICHLOROETHENE	4900	100	20
1,2-DICHLOROETHANE	29J	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	28J	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	ND	100	20
TRICHLOROETHENE	ND	100	20
VINYL CHLORIDE	ND	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	106	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	104	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/12/10 23:40
Sample ID: 20-R3-025	Date Analyzed: 01/12/10 23:40
Lab Samp ID: A056-08R	Dilution Factor: 1
Lab File ID: RAW261	Matrix : WATER
Ext Btch ID: VO06A13	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	71	1.0	0.20
1,1-DICHLOROETHENE	16	1.0	0.20
1,2-DICHLOROETHANE	1.6	0.50	0.20
CHLOROETHANE	0.96	0.50	0.20
CHLOROMETHANE	1.5	1.0	0.20
CIS-1,2-DICHLOROETHENE	730E	1.0	0.20
TETRACHLOROETHENE	2.3	1.0	0.20
TRANS-1,2-DICHLOROETHENE	240E	1.0	0.20
TRICHLOROETHENE	1000E	1.0	0.20
VINYL CHLORIDE	1300E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	117	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
Batch No.	: 10A056	Date Extracted:	01/12/10 21:27
Sample ID:	20-R3-025DL	Date Analyzed:	01/12/10 21:27
Lab Samp ID:	A056-08T	Dilution Factor:	100
Lab File ID:	RAW257	Matrix :	WATER
Ext Btch ID:	VO06A13	% Moisture :	NA
Calib. Ref.:	RAW037	Instrument ID :	T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	89J	100	20
1,1-DICHLOROETHENE	62J	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	13000E	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	280	100	20
TRICHLOROETHENE	13000E	100	20
VINYL CHLORIDE	1600	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	102	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/12/10 22:00
Sample ID: 20-R3-028	Date Analyzed: 01/12/10 22:00
Lab Samp ID: A056-09R	Dilution Factor: 1
Lab File ID: RAW258	Matrix : WATER
Ext Btch ID: VO06A13	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	0.39J	1.0	0.20
1,1-DICHLOROETHENE	49	1.0	0.20
1,2-DICHLOROETHANE	0.41J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	1.5	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	1.4	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	108	70-120
4-BROMOFLUOROBENZENE	105	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/11/10 20:04
Sample ID: 20-R3-002	Date Analyzed: 01/11/10 20:04
Lab Samp ID: A056-10	Dilution Factor: 1
Lab File ID: RAW213	Matrix : WATER
Ext Btch ID: VO06A11	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	32	1.0	0.20
1,1-DICHLOROETHENE	83	1.0	0.20
1,2-DICHLOROETHANE	0.27J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	350E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	45	1.0	0.20
TRICHLOROETHENE	380E	1.0	0.20
VINYL CHLORIDE	640E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	100	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
Batch No.	: 10A056	Date Extracted:	01/12/10 22:33
Sample ID:	20-R3-002DL	Date Analyzed:	01/12/10 22:33
Lab Samp ID:	A056-10T	Dilution Factor:	100
Lab File ID:	RAW259	Matrix :	WATER
Ext Btch ID:	VO06A13	% Moisture :	NA
Calib. Ref.:	RAW037	Instrument ID :	T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	33J	100	20
1,1-DICHLOROETHENE	85J	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	4200	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	46J	100	20
TRICHLOROETHENE	1700	100	20
VINYL CHLORIDE	670	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	110	75-120
TOLUENE-D8	105	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/14/10 20:51
Sample ID: 20-R3-001	Date Analyzed: 01/14/10 20:51
Lab Samp ID: A056-11R	Dilution Factor: 1
Lab File ID: RAW321	Matrix : WATER
Ext Btch ID: VO06A16	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	6.0	1.0	0.20
1,1-DICHLOROETHENE	7.4	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	260E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	9.7	1.0	0.20
TRICHLOROETHENE	110E	1.0	0.20
VINYL CHLORIDE	34E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	99	70-120
4-BROMOFLUOROBENZENE	109	75-120
TOLUENE-D8	105	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/12/10 23:07
Sample ID: 20-R3-001DL	Date Analyzed: 01/12/10 23:07
Lab Samp ID: A056-11T	Dilution Factor: 10
Lab File ID: RAW260	Matrix : WATER
Ext Btch ID: VO06A13	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHANE	6.1J	10	2.0
1,1-DICHLOROETHENE	6.5J	10	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	510	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	29	10	2.0
TRICHLOROETHENE	130	10	2.0
VINYL CHLORIDE	24	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	112	70-120
4-BROMOFLUOROBENZENE	110	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 01/06/10
Project : CTO 20, ALAMEDA	Date Received: 01/07/10
Batch No. : 10A056	Date Extracted: 01/15/10 09:39
Sample ID: 20-R3-025DL	Date Analyzed: 01/15/10 09:39
Lab Samp ID: A056-08I	Dilution Factor: 250
Lab File ID: RAW346	Matrix : WATER
Ext Btch ID: VO06A17	% Moisture : NA
Calib. Ref.: RAW037	Instrument ID : T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	250	50
1,1,2,2-TETRACHLOROETHANE	ND	250	50
1,1,2-TRICHLOROETHANE	ND	250	50
1,1-DICHLOROETHANE	69J	250	50
1,1-DICHLOROETHENE	ND	250	50
1,2-DICHLOROETHANE	ND	120	50
CHLOROETHANE	ND	120	50
CHLOROMETHANE	ND	250	50
CIS-1,2-DICHLOROETHENE	12000	250	50
TETRACHLOROETHENE	ND	250	50
TRANS-1,2-DICHLOROETHENE	250	250	50
TRICHLOROETHENE	8500	250	50
VINYL CHLORIDE	940	120	50

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	104	70-120
4-BROMOFLUOROBENZENE	107	75-120
TOLUENE-D8	103	85-120

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-016	Date Analyzed:	01/14/10 20:21
Lab Samp ID:	A056-02	Dilution Factor:	1
Lab File ID:	98A09055	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09047	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	891	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-018	Date Analyzed:	01/14/10 20:58
Lab Samp ID:	A056-04	Dilution Factor:	1
Lab File ID:	98A09061	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09059	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	217	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-019	Date Analyzed:	01/14/10 21:04
Lab Samp ID:	A056-05	Dilution Factor:	1
Lab File ID:	98A09062	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09059	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	864	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-015	Date Analyzed:	01/14/10 21:11
Lab Samp ID:	A056-06	Dilution Factor:	1
Lab File ID:	98A09063	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09059	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	1670	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-027	Date Analyzed:	01/14/10 21:17
Lab Samp ID:	A056-07	Dilution Factor:	1
Lab File ID:	98A09064	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09059	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	106J	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-025	Date Analyzed:	01/14/10 21:23
Lab Samp ID:	A056-08	Dilution Factor:	1
Lab File ID:	98A09065	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09059	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	871	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-028	Date Analyzed:	01/14/10 21:29
Lab Samp ID:	A056-09	Dilution Factor:	1
Lab File ID:	98A09066	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09059	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	1320	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-002	Date Analyzed:	01/14/10 21:36
Lab Samp ID:	A056-10	Dilution Factor:	1
Lab File ID:	98A09067	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09059	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	47200	200	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	01/06/10
Project	: CTO 20, ALAMEDA	Date Received:	01/07/10
SDG NO.	: 10A056	Date Extracted:	01/08/10 10:15
Sample ID:	20-R3-001	Date Analyzed:	01/14/10 21:42
Lab Samp ID:	A056-11	Dilution Factor:	1
Lab File ID:	98A09068	Matrix :	WATER
Ext Btch ID:	IMA004W	% Moisture :	NA
Calib. Ref.:	98A09059	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	346	200	50.0

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26096

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1042720 ~~to 53 [illegible]~~
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106.3210.02.D. 07.00 01000
SAMPLER NAME: F.S. IW	AIRBILL NUMBER: 7984 0610 6395 ~~7932 6788 4136~~
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949 756 7584

LABORATORY NAME: MICROSEEPS ~~[illegible]~~ INC.

LABORATORY ID (FOR LABORATORY):

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: Dissolved Arsenic

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	Dissolved Arsenic	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R4-026	2-15-10	1135	1	✓			10	X		ZV1-MW05C	40	50	N
20-R4-024	2-15-10	1258	1	✓			10	X		ZV1-MW05A3	20	30	N
20-R4-023	2-15-10	1455	1		✓		10	X		ZV1-MW05A2	10	20	N
20-R4-010	2-15-10	1300	1	✓			10	X		ZV1-MW02A2	20	30	N
20-R4-011	2-15-10	1500	1	✓			10	X		ZV1-MW02B	30	40	N
20-R4-012	2-15-10	1130	1	✓			10	X		ZV1-MW02C	40	50	N
20-R4-029	2-19-10	1145 ~~1125~~	1	✓			10	X	WS	ZV1-MW06B	30	40	N
20-R4-030	2-19-10	1300 ~~1200~~	1	✓			10	X	WS	ZV1-MW06C	40	50	N
20-R4-035	2-19-10	1200 ~~1110~~	1	✓			10	X	WS	DC3-04	47	57	N
20-R4-015	2-19-10	1010 ~~920~~	1	✓			10	X	WS	ZV1-MW03A3	20	30	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
~~[illegible]~~	2-18-10	FED EX
COMPANY: BTS	TIME: 1600	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26097

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: 670 20 ALAMEDA	PURCHASE ORDER NO: 10 341131-2
PROJECT LOCATION: ALAMEDA	PROJECT NO: 100-32.10-0200 (07.09.61000)
SAMPLER NAME: FS JW	AIRBILL NUMBER: 7932 6788-6890
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 10B166

Project Information Section
Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOCs (SHORT LIST)	RSK 175 DISSOLVED GAS	6020A PLUS DISSOLVED IRON	6020A TOTAL METALS: Fe, As, Mn, Cr, Mg	300.0 ANIONS (Cl, NO3, SO4)	SM 2320B ALKALINITY	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20 R4 - 026	2-15-10	1035	9	✓		W	10	X	X	X	X	X	X	* SEE BELOW	ZVI-MW05C	40	50	N
20-R4-024	2-15-10	1210	9	✓		W	10	X	X	X	X	X	X	*	ZVI-MW05A3	20	30	N
20-R4-025	2-15-10	1400	9		✓	W	10	X	X	X	X	X	X	*	ZVI-MW05A2	10	20	N
20-R4-010	2-15-10	1225	9	✓		W	10	X	X	X	X	X	X	*	ZVI-MW02A3	20	30	N
20-R4-011	2-15-10	1410	9	✓		W	10	X	X	X	X	X	X	*	ZVI-MW02B	30	40	N
20-R4-012	2-15-10	1020	9	✓		W	10	X	X	X	X	X	X	*	ZVI-MW02C	40	50	N
20-R4-013	2-15-10	1025	3		✓	W	10	X						*	ZVI-MW02C	40	50	FD
20-R4-EB-001	2-15-10	1450	3	✓		W	10	X						*	—	—	—	EB
20-R4-TB-001	2-15-10	0900	3	✓		W	10	X						*	—	—	—	TB

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	2-15-10	[signature]
COMPANY: BTS	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260B - 4 L PGRS, RSK 175 - 1 L PGRS, 6020A DISS IRON FIELD FILTERED, 6020A TOTAL METALS/DISS. IRON - 1 L PGRS, 300.0 ANIONS, SM 2320B - 1 L PGRS

COMPOSITE DESCRIPTION

SAMPLING COMMENT:

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/22/10 00:45
Sample ID: 20-R4-026	Date Analyzed: 02/22/10 00:45
Lab Samp ID: B166-01R	Dilution Factor: 1
Lab File ID: RBC661	Matrix : WATER
Ext Btch ID: VO67B30	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	2.7	1.0	0.20
1,1-DICHLOROETHENE	120E	1.0	0.20
1,2-DICHLOROETHANE	0.81	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.34J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	94	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
Batch No.	: 10B166	Date Extracted:	02/22/10 23:44
Sample ID:	20-R4-026DL	Date Analyzed:	02/22/10 23:44
Lab Samp ID:	B166-01T	Dilution Factor:	10
Lab File ID:	RBC696	Matrix :	WATER
Ext Btch ID:	VO67B32	% Moisture :	NA
Calib. Ref.:	RAC271	Instrument ID :	T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHANE	2.7J	10	2.0
1,1-DICHLOROETHENE	110	10	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	ND	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	ND	10	2.0
TRICHLOROETHENE	ND	10	2.0
VINYL CHLORIDE	ND	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	95	70-120
4-BROMOFLUOROBENZENE	95	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/22/10 01:48
Sample ID: 20-R4-024	Date Analyzed: 02/22/10 01:48
Lab Samp ID: B166-02R	Dilution Factor: 1
Lab File ID: RBC663	Matrix : WATER
Ext Btch ID: VO67B30	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.0	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.59J	1.0	0.20
1,1-DICHLOROETHANE	5.9	1.0	0.20
1,1-DICHLOROETHENE	90E	1.0	0.20
1,2-DICHLOROETHANE	1.1	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	54	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	5.3	1.0	0.20
TRICHLOROETHENE	88	1.0	0.20
VINYL CHLORIDE	5.0	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	95	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/22/10 15:51
Sample ID: 20-R4-024DL	Date Analyzed: 02/22/10 15:51
Lab Samp ID: B166-02T	Dilution Factor: 25
Lab File ID: RBC681	Matrix : WATER
Ext Btch ID: VO67B31	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	5.6J	25	5.0
1,1-DICHLOROETHENE	310	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	54	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	5.6J	25	5.0
TRICHLOROETHENE	88	25	5.0
VINYL CHLORIDE	ND	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/21/10 22:06
Sample ID: 20-R4-023	Date Analyzed: 02/21/10 22:06
Lab Samp ID: B166-03R	Dilution Factor: 1
Lab File ID: RBC652	Matrix : WATER
Ext Btch ID: VO67B30	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	1.9	1.0	0.20
1,1-DICHLOROETHENE	0.44J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	30	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	1.9	1.0	0.20
TRICHLOROETHENE	9.7	1.0	0.20
VINYL CHLORIDE	19	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	96	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
Batch No.	: 10B166	Date Extracted:	02/22/10 02:20
Sample ID:	20-R4-010	Date Analyzed:	02/22/10 02:20
Lab Samp ID:	B166-04R	Dilution Factor:	1
Lab File ID:	RBC664	Matrix	: WATER
Ext Btch ID:	VO67B30	% Moisture	: NA
Calib. Ref.:	RAC271	Instrument ID	: T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.67J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	2.0	1.0	0.20
1,1-DICHLOROETHANE	7.2	1.0	0.20
1,1-DICHLOROETHENE	77E	1.0	0.20
1,2-DICHLOROETHANE	3.4	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	140E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	8.6	1.0	0.20
TRICHLOROETHENE	140E	1.0	0.20
VINYL CHLORIDE	5.7	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	95	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/22/10 16:23
Sample ID: 20-R4-010DL	Date Analyzed: 02/22/10 16:23
Lab Samp ID: B166-04T	Dilution Factor: 25
Lab File ID: RBC682	Matrix : WATER
Ext Btch ID: VO67B31	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	7.0J	25	5.0
1,1-DICHLOROETHENE	240	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	180	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	7.9J	25	5.0
TRICHLOROETHENE	140	25	5.0
VINYL CHLORIDE	5.1J	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-120
4-BROMOFLUOROBENZENE	94	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
Batch No.	: 10B166	Date Extracted:	02/22/10 01:17
Sample ID:	20-R4-011	Date Analyzed:	02/22/10 01:17
Lab Samp ID:	B166-05R	Dilution Factor:	1
Lab File ID:	RBC662	Matrix	: WATER
Ext Btch ID:	VO67B30	% Moisture	: NA
Calib. Ref.:	RAC271	Instrument ID	: T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.70J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.31J	1.0	0.20
1,1-DICHLOROETHANE	26	1.0	0.20
1,1-DICHLOROETHENE	67E	1.0	0.20
1,2-DICHLOROETHANE	23	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.60J	1.0	0.20
CIS-1,2-DICHLOROETHENE	14	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	4.4	1.0	0.20
TRICHLOROETHENE	0.56J	1.0	0.20
VINYL CHLORIDE	0.32J	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/22/10 16:54
Sample ID: 20-R4-011DL	Date Analyzed: 02/22/10 16:54
Lab Samp ID: B166-05T	Dilution Factor: 50
Lab File ID: RBC683	Matrix : WATER
Ext Btch ID: VO67B31	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	30J	50	10
1,1-DICHLOROETHENE	2100	50	10
1,2-DICHLOROETHANE	25	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	15J	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	ND	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	70-120
4-BROMOFLUOROBENZENE	96	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/21/10 22:38
Sample ID: 20-R4-012	Date Analyzed: 02/21/10 22:38
Lab Samp ID: B166-06R	Dilution Factor: 1
Lab File ID: RBC653	Matrix : WATER
Ext Btch ID: VO67B30	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	0.40J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.24J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	70-120
4-BROMOFLUOROBENZENE	93	75-120
TOLUENE-D8	93	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
Batch No.	: 10B166	Date Extracted:	02/21/10 23:10
Sample ID:	20-R4-013	Date Analyzed:	02/21/10 23:10
Lab Samp ID:	B166-07R	Dilution Factor:	1
Lab File ID:	RBC654	Matrix	: WATER
Ext Btch ID:	VO67B30	% Moisture	: NA
Calib. Ref.:	RAC271	Instrument ID	: T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	0.35J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.23J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	100	70-120
4-BROMOFLUOROBENZENE	92	75-120
TOLUENE-D8	95	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/21/10 23:41
Sample ID: 20-R4-EB-001	Date Analyzed: 02/21/10 23:41
Lab Samp ID: B166-08R	Dilution Factor: 1
Lab File ID: RBC655	Matrix : WATER
Ext Btch ID: VO67B30	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	70-120
4-BROMOFLUOROBENZENE	95	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/22/10 00:13
Sample ID: 20-R4-TB-001	Date Analyzed: 02/22/10 00:13
Lab Samp ID: B166-09R	Dilution Factor: 1
Lab File ID: RBC656	Matrix : WATER
Ext Btch ID: VO67B30	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	96	75-120
TOLUENE-D8	98	85-120

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-026	Date Analyzed: 02/18/10 12:14
Lab Samp ID: B166-01	Dilution Factor: 1
Lab File ID: FB18006A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.7J	2.0	0.60
ETHENE	3.6	2.0	0.60
METHANE	19	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-024	Date Analyzed: 02/18/10 12:27
Lab Samp ID: B166-02	Dilution Factor: 1
Lab File ID: FB18007A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	0.73J	2.0	0.60
ETHENE	2.4	2.0	0.60
METHANE	57E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range.

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-024DL	Date Analyzed: 02/18/10 13:29
Lab Samp ID: B166-02T	Dilution Factor: 2
Lab File ID: FB18012A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	4.0	1.2
ETHENE	2.2J	4.0	1.2
METHANE	59	4.0	1.2
ACETYLENE	ND	6.0	3.0

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-023	Date Analyzed: 02/18/10 12:40
Lab Samp ID: B166-03	Dilution Factor: 1
Lab File ID: FB18008A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	4.8	2.0	0.60
ETHENE	2.9	2.0	0.60
METHANE	110E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range.

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-023DL	Date Analyzed: 02/18/10 14:50
Lab Samp ID: B166-03T	Dilution Factor: 20
Lab File ID: FB18015A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	40	12
ETHENE	ND	40	12
METHANE	330	40	12
ACETYLENE	ND	60	30

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-010	Date Analyzed: 02/18/10 12:53
Lab Samp ID: B166-04	Dilution Factor: 1
Lab File ID: FB18009A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.60
ETHENE	0.80J	2.0	0.60
METHANE	15	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-011	Date Analyzed: 02/18/10 13:05
Lab Samp ID: B166-05	Dilution Factor: 1
Lab File ID: FB18010A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	4.2	2.0	0.60
ETHENE	ND	2.0	0.60
METHANE	13	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
Batch No. : 10B166	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-012	Date Analyzed: 02/18/10 13:18
Lab Samp ID: B166-06	Dilution Factor: 1
Lab File ID: FB18011A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.9	2.0	0.60
ETHENE	2.6	2.0	0.60
METHANE	9.6	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
SDG NO.	: 10B166	Date Extracted:	02/17/10 10:00
Sample ID:	20-R4-026	Date Analyzed:	02/25/10 17:54
Lab Samp ID:	B166-01	Dilution Factor:	1
Lab File ID:	98B17043	Matrix :	WATER
Ext Btch ID:	IMB012W	% Moisture :	NA
Calib. Ref.:	98B17041	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	20.1	1.00	0.500
Calcium	46400	1000	200
Iron	240	200	50.0
Magnesium^	92600	50000	10000
Manganese^	209	50.0	25.0
Potassium	5580	1000	200
Sodium^	3610000	50000	10000

^: Analyzed at DF 50 on 02/25/10 20:38 | File ID 98B17069

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
SDG NO.	: 10B166	Date Extracted:	02/17/10 10:00
Sample ID:	20-R4-024	Date Analyzed:	02/25/10 17:16
Lab Samp ID:	B166-02	Dilution Factor:	1
Lab File ID:	98B17037	Matrix :	WATER
Ext Btch ID:	IMB012W	% Moisture :	NA
Calib. Ref.:	98B17029	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.11	1.00	0.500
Calcium	66500	1000	200
Iron	ND	200	50.0
Magnesium	85400	1000	200
Manganese	714	1.00	0.500
Potassium	2920	1000	200
Sodium^	454000	5000	1000

^: Analyzed at DF 5 on 02/25/10 20:25 | File ID 98B17067

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
SDG NO.	: 10B166	Date Extracted:	02/17/10 10:00
Sample ID:	20-R4-023	Date Analyzed:	02/25/10 18:00
Lab Samp ID:	B166-03	Dilution Factor:	1
Lab File ID:	98B17044	Matrix :	WATER
Ext Btch ID:	IMB012W	% Moisture :	NA
Calib. Ref.:	98B17041	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	12.5	1.00	0.500
Calcium	2760	1000	200
Iron	270	200	50.0
Magnesium	823J	1000	200
Manganese	25.8	1.00	0.500
Potassium	4190	1000	200
Sodium^	203000	5000	1000

^: Analyzed at DF 5 on 02/25/10 20:44 | File ID 98B17070

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 02/15/10
Project : CTO 20, ALAMEDA	Date Received: 02/16/10
SDG NO. : 10B166	Date Extracted: 02/17/10 10:00
Sample ID: 20-R4-010	Date Analyzed: 02/25/10 18:07
Lab Samp ID: B166-04	Dilution Factor: 1
Lab File ID: 98B17045	Matrix : WATER
Ext Btch ID: IMB012W	% Moisture : NA
Calib. Ref.: 98B17041	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.20	1.00	0.500
Calcium	82300	1000	200
Iron	249	200	50.0
Magnesium	95600	1000	200
Manganese	134	1.00	0.500
Potassium	5730	1000	200
Sodium^	477000	5000	1000

^: Analyzed at DF 5 on 02/25/10 20:51 | File ID 98B17071

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
SDG NO.	: 10B166	Date Extracted:	02/17/10 10:00
Sample ID:	20-R4-011	Date Analyzed:	02/25/10 18:13
Lab Samp ID:	B166-05	Dilution Factor:	1
Lab File ID:	98B17046	Matrix :	WATER
Ext Btch ID:	IMB012W	% Moisture :	NA
Calib. Ref.:	98B17041	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	55.4	1.00	0.500
Calcium	5110	1000	200
Iron	59.5J	200	50.0
Magnesium	705J	1000	200
Manganese	3.08	1.00	0.500
Potassium	5810	1000	200
Sodium^	1750000	50000	10000

^: Analyzed at DF 50 on 02/25/10 20:57 | File ID 98B17072

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
SDG NO.	: 10B166	Date Extracted:	02/17/10 10:00
Sample ID:	20-R4-012	Date Analyzed:	02/25/10 18:19
Lab Samp ID:	B166-06	Dilution Factor:	1
Lab File ID:	98B17047	Matrix :	WATER
Ext Btch ID:	IMB012W	% Moisture :	NA
Calib. Ref.:	98B17041	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	2.05	1.00	0.500
Calcium	276000	1000	200
Iron	1950	200	50.0
Magnesium^	423000	50000	10000
Manganese	1990	1.00	0.500
Potassium	18000	1000	200
Sodium^	2790000	50000	10000

^: Analyzed at DF 50 on 02/26/10 19:20 | File ID 98B18033

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
SDG NO.	: 10B166	Date Extracted:	02/17/10 10:00
Sample ID:	20-R4-026	Date Analyzed:	02/25/10 19:04
Lab Samp ID:	B166-01	Dilution Factor:	1
Lab File ID:	98B17054	Matrix :	WATER
Ext Btch ID:	IMB012W	% Moisture :	NA
Calib. Ref.:	98B17052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
SDG NO.	: 10B166	Date Extracted:	02/17/10 10:00
Sample ID:	20-R4-024	Date Analyzed:	02/25/10 19:10
Lab Samp ID:	B166-02	Dilution Factor:	1
Lab File ID:	98B17055	Matrix :	WATER
Ext Btch ID:	IMB012W	% Moisture :	NA
Calib. Ref.:	98B17052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
SDG NO.	: 10B166	Date Extracted:	02/17/10 10:00
Sample ID:	20-R4-023	Date Analyzed:	02/25/10 19:16
Lab Samp ID:	B166-03	Dilution Factor:	1
Lab File ID:	98B17056	Matrix :	WATER
Ext Btch ID:	IMB012W	% Moisture :	NA
Calib. Ref.:	98B17052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	276	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
SDG NO.	: 10B166	Date Extracted:	02/17/10 10:00
Sample ID:	20-R4-010	Date Analyzed:	02/25/10 19:22
Lab Samp ID:	B166-04	Dilution Factor:	1
Lab File ID:	98B17057	Matrix :	WATER
Ext Btch ID:	IMB012W	% Moisture :	NA
Calib. Ref.:	98B17052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
SDG NO.	: 10B166	Date Extracted:	02/17/10 10:00
Sample ID:	20-R4-011	Date Analyzed:	02/25/10 19:29
Lab Samp ID:	B166-05	Dilution Factor:	1
Lab File ID:	98B17058	Matrix :	WATER
Ext Btch ID:	IMB012W	% Moisture :	NA
Calib. Ref.:	98B17052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/15/10
Project	: CTO 20, ALAMEDA	Date Received:	02/16/10
SDG NO.	: 10B166	Date Extracted:	02/17/10 10:00
Sample ID:	20-R4-012	Date Analyzed:	02/25/10 19:35
Lab Samp ID:	B166-06	Dilution Factor:	1
Lab File ID:	98B17059	Matrix :	WATER
Ext Btch ID:	IMB012W	% Moisture :	NA
Calib. Ref.:	98B17052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	616	200	50.0

METHOD 300.0
CHLORIDE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B166

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB029WB	ND	1	NA	0.200	0.100	02/16/1011:11	NA	AB21-03	AB21-01	ICB029W	NA	NA
LCS1W	ICB029WL	4.89	1	NA	0.200	0.100	02/16/1011:26	NA	AB21-04	AB21-01	ICB029W	NA	NA
LCD1W	ICB029WC	4.86	1	NA	0.200	0.100	02/16/1011:41	NA	AB21-05	AB21-01	ICB029W	NA	NA
20-R4-023	B166-03	15.6	1	NA	0.200	0.100	02/16/1012:26	NA	AB21-08	AB21-01	ICB029W	02/15/1014:00	02/16/10
20-R4-026	B166-01	3330	200	NA	40.0	20.0	02/16/1015:13	NA	AB21-19	AB21-13	ICB029W	02/15/1010:35	02/16/10
20-R4-024	B166-02	530	20	NA	4.00	2.00	02/16/1015:28	NA	AB21-20	AB21-13	ICB029W	02/15/1012:10	02/16/10
20-R4-010	B166-04	527	40	NA	8.00	4.00	02/16/1018:00	NA	AB21-30	AB21-25	ICB029W	02/15/1012:25	02/16/10
20-R4-012	B166-06	4800	200	NA	40.0	20.0	02/16/1018:15	NA	AB21-31	AB21-25	ICB029W	02/15/1010:20	02/16/10
20-R4-011	B166-05	2000	200	NA	40.0	20.0	02/16/1018:30	NA	AB21-32	AB21-25	ICB029W	02/15/1014:10	02/16/10
20-R4-011DUP	B166-05D	2000	200	NA	40.0	20.0	02/16/1018:46	NA	AB21-33	AB21-25	ICB029W	02/15/1014:10	02/16/10
20-R4-011MS	B166-05M	2930	200	NA	40.0	20.0	02/16/1019:01	NA	AB21-34	AB21-25	ICB029W	02/15/1014:10	02/16/10
20-R4-011MSD	B166-05S	2930	200	NA	40.0	20.0	02/16/1019:16	NA	AB21-35	AB21-25	ICB029W	02/15/1014:10	02/16/10

METHOD 300.0
NITRATE-N

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B166

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB029WB	ND	1	NA	0.100	0.0500	02/16/1011:11	NA	AB21-03	AB21-01	ICB029W	NA	NA
LCS1W	ICB029WL	1.97	1	NA	0.100	0.0500	02/16/1011:26	NA	AB21-04	AB21-01	ICB029W	NA	NA
LCD1W	ICB029WC	1.95	1	NA	0.100	0.0500	02/16/1011:41	NA	AB21-05	AB21-01	ICB029W	NA	NA
20-R4-026	B166-01	0.109J	2	NA	0.200	0.100	02/16/1011:56	NA	AB21-06	AB21-01	ICB029W	02/15/1010:35	02/16/10
20-R4-024	B166-02	0.0537J	1	NA	0.100	0.0500	02/16/1012:11	NA	AB21-07	AB21-01	ICB029W	02/15/1012:10	02/16/10
20-R4-023	B166-03	ND	1	NA	0.100	0.0500	02/16/1012:26	NA	AB21-08	AB21-01	ICB029W	02/15/1014:00	02/16/10
20-R4-010	B166-04	0.0605J	1	NA	0.100	0.0500	02/16/1012:42	NA	AB21-09	AB21-01	ICB029W	02/15/1012:25	02/16/10
20-R4-011	B166-05	0.678	1	NA	0.100	0.0500	02/16/1012:57	NA	AB21-10	AB21-01	ICB029W	02/15/1014:10	02/16/10
20-R4-011DUP	B166-05D	0.677	1	NA	0.100	0.0500	02/16/1013:12	NA	AB21-11	AB21-01	ICB029W	02/15/1014:10	02/16/10
20-R4-011MS	B166-05M	2.72	1	NA	0.100	0.0500	02/16/1014:13	NA	AB21-15	AB21-13	ICB029W	02/15/1014:10	02/16/10
20-R4-011MSD	B166-05S	2.73	1	NA	0.100	0.0500	02/16/1014:28	NA	AB21-16	AB21-13	ICB029W	02/15/1014:10	02/16/10
20-R4-012	B166-06	0.0911J	1	NA	0.100	0.0500	02/16/1014:43	NA	AB21-17	AB21-13	ICB029W	02/15/1010:20	02/16/10

METHOD 300.0
SULFATE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B166

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB029WB	ND	1	NA	0.500	0.250	02/16/1011:11	NA	AB21-03	AB21-01	ICB029W	NA	NA
LCS1W	ICB029WL	4.75	1	NA	0.500	0.250	02/16/1011:26	NA	AB21-04	AB21-01	ICB029W	NA	NA
LCD1W	ICB029WC	4.71	1	NA	0.500	0.250	02/16/1011:41	NA	AB21-05	AB21-01	ICB029W	NA	NA
20-R4-026	B166-01	1310	200	NA	100	50.0	02/16/1015:13	NA	AB21-19	AB21-13	ICB029W	02/15/1010:35	02/16/10
20-R4-024	B166-02	137	20	NA	10.0	5.00	02/16/1015:28	NA	AB21-20	AB21-13	ICB029W	02/15/1012:10	02/16/10
20-R4-023	B166-03	32.7	2	NA	1.00	0.500	02/16/1015:44	NA	AB21-21	AB21-13	ICB029W	02/15/1014:00	02/16/10
20-R4-011	B166-05	163	20	NA	10.0	5.00	02/16/1015:59	NA	AB21-22	AB21-13	ICB029W	02/15/1014:10	02/16/10
20-R4-011DUP	B166-05D	164	20	NA	10.0	5.00	02/16/1016:14	NA	AB21-23	AB21-13	ICB029W	02/15/1014:10	02/16/10
20-R4-011MS	B166-05M	258	20	NA	10.0	5.00	02/16/1017:15	NA	AB21-27	AB21-25	ICB029W	02/15/1014:10	02/16/10
20-R4-011MSD	B166-05S	259	20	NA	10.0	5.00	02/16/1017:30	NA	AB21-28	AB21-25	ICB029W	02/15/1014:10	02/16/10
20-R4-010	B166-04	168	40	NA	20.0	10.0	02/16/1018:00	NA	AB21-30	AB21-25	ICB029W	02/15/1012:25	02/16/10
20-R4-012	B166-06	998	200	NA	100	50.0	02/16/1018:15	NA	AB21-31	AB21-25	ICB029W	02/15/1010:20	02/16/10

METHOD SM2320B
TOTAL ALKALINITY

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B166

Matrix : WATER
Instrument ID : E5

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALB009WB	ND	1	NA	5.00	1.00	02/18/1018:56	NA	E5B03023	NA	ALB009W	NA	NA
LCS1W	ALB009WL	232	1	NA	5.00	1.00	02/18/1019:06	NA	E5B03024	NA	ALB009W	NA	NA
LCD1W	ALB009WC	231	1	NA	5.00	1.00	02/18/1019:14	NA	E5B03025	NA	ALB009W	NA	NA
20-R4-026	B166-01	2140	1	NA	5.00	1.00	02/18/1019:51	NA	E5B03028	NA	ALB009W	02/15/1010:35	02/16/10
20-R4-024	B166-02	641	1	NA	5.00	1.00	02/18/1020:03	NA	E5B03029	NA	ALB009W	02/15/1012:10	02/16/10
20-R4-023	B166-03	373	1	NA	5.00	1.00	02/18/1020:12	NA	E5B03030	NA	ALB009W	02/15/1014:00	02/16/10
20-R4-010	B166-04	687	1	NA	5.00	1.00	02/18/1020:24	NA	E5B03031	NA	ALB009W	02/15/1012:25	02/16/10
20-R4-011	B166-05	575	1	NA	5.00	1.00	02/18/1020:34	NA	E5B03032	NA	ALB009W	02/15/1014:10	02/16/10
20-R4-012	B166-06	405	1	NA	5.00	1.00	02/18/1020:42	NA	E5B03033	NA	ALB009W	02/15/1010:20	02/16/10

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26022

CHAIN-OF-CUSTODY RECORD

p1 of 2

PROJECT NAME	PURCHASE ORDER NO
CTO 20 ALAMEDA	10 34131 - 2
PROJECT LOCATION: ALAMEDA	PROJECT NO: 106 3210.0200.07.09.01000
SAMPLER NAME: FS IW	AIRBILL NUMBER: 7952 7505 6128 7952 7619 2916
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7574

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 10B181

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOCs (+MTBE, 2-Butanone, 2-Hexanone, 4-Methyl-2-pentanone)	8260B VOCs (Dichlorodifluoromethane, Chloromethane, Vinyl chloride, Bromomethane, Chloroethane, Trichlorofluoromethane, Acetone, Carbon disulfide, Methylene chloride, Methyl tert-butyl ether, Vinyl acetate, Chloroprene, Acrylonitrile, Trichloroethylene, Methyl acrylate, Methyl methacrylate, Propionitrile, Dibromomethane, 1,2-Dichloropropane, Bromochloromethane, Tetrachloroethylene, Chlorobenzene, Ethylbenzene, Bromoform, Styrene, Isopropylbenzene, 1,1,2,2-Tetrachloroethane, 1,2,3-Trichloropropane, Bromobenzene, 2-Chlorotoluene, 4-Chlorotoluene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene, Hexachlorobutadiene, Naphthalene, 1,2,3-Trichlorobenzene)	8260B VOCs (Methyl iodide, Propionitrile, Methyl methacrylate, Propionitrile, Methacrylonitrile, Methyl methanesulfonate, Ethyl methanesulfonate, Isobutanol, Pentachloroethane, 1,1,1,2-Tetrachloroethane, 1,2-Dibromoethane, 1,1-Dichloroethane, 1,1-Dichloroethylene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,2-Dichloroethane, 1,2-Dichlorobenzene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichloropropane, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,4-Dioxane, 2-Butanone, 2-Hexanone, 4-Methyl-2-pentanone, Acetone, Acrylonitrile, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, Chloroprene, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, Methacrylonitrile, Methylene chloride, Methyl tert-butyl ether, Naphthalene, Propionitrile, Tetrachloroethylene, Toluene, trans-1,2-Dichloroethylene, trans-1,3-Dichloropropene, Trichloroethylene, Trichlorofluoromethane, Vinyl acetate, Vinyl chloride, Xylene (total))	8260B ALL ANALYTES	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R4-TB-002	2-16-10	900	3	✓		W	10	X									* See Below	—	—	—	TB
20-R4-025	2-16-10	1200	9	✓		W	10	X	X	X	X	X	X				*	ZVI-MW05B	30	40	N
20-R4-EB-002	2-16-10	1235	3	✓		W	10	X									*	—	—	—	EB
20-R4-021	2-16-10	1110	27		✓	W	10	X	X	X	X	X	X				* MS/MSD	ZVI-MW04B	30	40	MS/MSD
20-R4-019	2-16-10	1305	9	✓		W	10	X	X	X	X	X	X				*	ZVI-MW04A2	10	20	N
20-R4-022	2-16-10	1420	9	✓		W	10	X	X	X	X	X	X				*	ZVI-MW04C	40	50	N
20-R4-007	2-16-10	1120	9	✓		W	10	X	X	X	X	X	X				*	ZVI-MW01D	50	60	N
20-R4-008	2-16-10	1130	3		✓	W	10	X									*	ZVI-MW01D	50	60	FD
20-R4-004	2-16-10	1240	9	✓		W	10	X	X	X	X	X	X				*	ZVI-MW01B	30	40	N
20-R4-005	2-16-10	1250	3		✓	W	10	X									*	ZVI-MW01B	30	40	FD

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
	2-16-10	TDCX
COMPANY: BTS	TIME: 1645	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260B - ALL ANALYTES EXCEPT 8260A - FROM ALL 8260A ANALYTES EXCEPT DMSO, DMF, IRON AND TEA 8260B ANION/CATIONS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26023

CHAIN-OF-CUSTODY RECORD

p 2 of 2

PROJECT NAME	PURCHASE ORDER NO
CTO 20 ALAMEDA	[illegible]
PROJECT LOCATION	PROJECT NO
ALAMEDA	[illegible]
SAMPLER NAME	AIRBILL NUMBER
[illegible]	[illegible]
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
[illegible]	949 756 7564

LABORATORY NAME: LMDA

LABORATORY ID (FOR LABORATORY): 10B181

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC (Full)	8260B VOC (RSK 175)	6020A Fe, Mn	[illegible]	[illegible]	[illegible]				COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
[illegible]	[illegible]	[illegible]	9	V		W	5	X	X	X	X	X	X				* [illegible]	ZVI-MW02A2	10	20	N
[illegible]	[illegible]	[illegible]	9	V		W	5	X	X	X	X	X	X				*	ZVI-MW01A2	10	20	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[illegible]	2-16-10	
COMPANY: BTS	TIME: 1641	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * [illegible]

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 18:46
Sample ID: 20-R4-TB-002	Date Analyzed: 02/18/10 18:46
Lab Samp ID: B181-01	Dilution Factor: 1
Lab File ID: RBV434	Matrix : WATER
Ext Btch ID: VO01B20	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/25/10 23:12
Sample ID: 20-R4-025	Date Analyzed: 02/25/10 23:12
Lab Samp ID: B181-02N	Dilution Factor: 1
Lab File ID: RBV611	Matrix : WATER
Ext Btch ID: VO01B28	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.74J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.24J	1.0	0.20
1,1-DICHLOROETHANE	9.1	1.0	0.20
1,1-DICHLOROETHENE	300E	1.0	0.20
1,2-DICHLOROETHANE	4.1	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.54J	1.0	0.20
CIS-1,2-DICHLOROETHENE	3.5	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	0.55J	1.0	0.20
TRICHLOROETHENE	1.8	1.0	0.20
VINYL CHLORIDE	0.23J	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	70-120
4-BROMOFLUOROBENZENE	96	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/19/10 22:45
Sample ID: 20-R4-025DL	Date Analyzed: 02/19/10 22:45
Lab Samp ID: B181-02T	Dilution Factor: 100
Lab File ID: RBV481	Matrix : WATER
Ext Btch ID: VO01B22	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	ND	100	20
1,1-DICHLOROETHENE	480	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	ND	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	ND	100	20
TRICHLOROETHENE	ND	100	20
VINYL CHLORIDE	ND	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	94	70-120
4-BROMOFLUOROBENZENE	93	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 19:18
Sample ID: 20-R4-EB-002	Date Analyzed: 02/18/10 19:18
Lab Samp ID: B181-03	Dilution Factor: 1
Lab File ID: RBV435	Matrix : WATER
Ext Btch ID: VO01B20	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	91	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 19:49
Sample ID: 20-R4-021	Date Analyzed: 02/18/10 19:49
Lab Samp ID: B181-04	Dilution Factor: 1
Lab File ID: RBV436	Matrix : WATER
Ext Btch ID: VO01B20	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.7	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.58J	1.0	0.20
1,1-DICHLOROETHANE	16	1.0	0.20
1,1-DICHLOROETHENE	590E	1.0	0.20
1,2-DICHLOROETHANE	9.3	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	7.0	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	1.9	1.0	0.20
TRICHLOROETHENE	2.8	1.0	0.20
VINYL CHLORIDE	0.80	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
4-BROMOFLUOROBENZENE	92	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/19/10 22:13
Sample ID: 20-R4-021DL	Date Analyzed: 02/19/10 22:13
Lab Samp ID: B181-04T	Dilution Factor: 100
Lab File ID: RBV480	Matrix : WATER
Ext Btch ID: VO01B22	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	ND	100	20
1,1-DICHLOROETHENE	1100	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	ND	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	ND	100	20
TRICHLOROETHENE	ND	100	20
VINYL CHLORIDE	ND	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/20/10 00:50
Sample ID: 20-R4-019	Date Analyzed: 02/20/10 00:50
Lab Samp ID: B181-05R	Dilution Factor: 1
Lab File ID: RBV485	Matrix : WATER
Ext Btch ID: VO01B22	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	3.8	1.0	0.20
1,1-DICHLOROETHENE	20	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	310E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	21	1.0	0.20
TRICHLOROETHENE	150E	1.0	0.20
VINYL CHLORIDE	91E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	94	70-120
4-BROMOFLUOROBENZENE	92	75-120
TOLUENE-D8	94	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/19/10 21:42
Sample ID: 20-R4-019DL	Date Analyzed: 02/19/10 21:42
Lab Samp ID: B181-05T	Dilution Factor: 100
Lab File ID: RBV479	Matrix : WATER
Ext Btch ID: VO01B22	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	ND	100	20
1,1-DICHLOROETHENE	ND	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	670	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	22J	100	20
TRICHLOROETHENE	250	100	20
VINYL CHLORIDE	96	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	89	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
Batch No.	: 10B181	Date Extracted:	02/20/10 07:37
Sample ID:	20-R4-022	Date Analyzed:	02/20/10 07:37
Lab Samp ID:	B181-06R	Dilution Factor:	1
Lab File ID:	RBV498	Matrix	: WATER
Ext Btch ID:	VO01B23	% Moisture	: NA
Calib. Ref.:	RAV029	Instrument ID	: T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.48J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.20J	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	90	75-120
TOLUENE-D8	94	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
Batch No.	: 10B181	Date Extracted:	02/20/10 07:06
Sample ID:	20-R4-007	Date Analyzed:	02/20/10 07:06
Lab Samp ID:	B181-07R	Dilution Factor:	1
Lab File ID:	RBV497	Matrix	: WATER
Ext Btch ID:	VO01B23	% Moisture	: NA
Calib. Ref.:	RAV029	Instrument ID	: T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.56J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.20J	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	92	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/24/10 11:52
Sample ID: 20-R4-008	Date Analyzed: 02/24/10 11:52
Lab Samp ID: B181-08N	Dilution Factor: 1
Lab File ID: RBV566	Matrix : WATER
Ext Btch ID: VO01B26	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.56J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.21J	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-120
4-BROMOFLUOROBENZENE	95	75-120
TOLUENE-D8	94	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/19/10 23:47
Sample ID: 20-R4-004	Date Analyzed: 02/19/10 23:47
Lab Samp ID: B181-09R	Dilution Factor: 1
Lab File ID: RBV483	Matrix : WATER
Ext Btch ID: VO01B22	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	5.7	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	14	1.0	0.20
1,1-DICHLOROETHANE	29	1.0	0.20
1,1-DICHLOROETHENE	330E	1.0	0.20
1,2-DICHLOROETHANE	21	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	46	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	7.3	1.0	0.20
TRICHLOROETHENE	13	1.0	0.20
VINYL CHLORIDE	2.3	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	97	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/24/10 12:55
Sample ID: 20-R4-004DL	Date Analyzed: 02/24/10 12:55
Lab Samp ID: B181-09T	Dilution Factor: 100
Lab File ID: RBV568	Matrix : WATER
Ext Btch ID: VO01B26	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	30J	100	20
1,1-DICHLOROETHENE	2400	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	49J	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	ND	100	20
TRICHLOROETHENE	ND	100	20
VINYL CHLORIDE	ND	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	91	70-120
4-BROMOFLUOROBENZENE	100	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/19/10 23:16
Sample ID: 20-R4-005	Date Analyzed: 02/19/10 23:16
Lab Samp ID: B181-10R	Dilution Factor: 1
Lab File ID: RBV482	Matrix : WATER
Ext Btch ID: VO01B22	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	5.9	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	13	1.0	0.20
1,1-DICHLOROETHANE	29	1.0	0.20
1,1-DICHLOROETHENE	310E	1.0	0.20
1,2-DICHLOROETHANE	20	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	49	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	7.6	1.0	0.20
TRICHLOROETHENE	14	1.0	0.20
VINYL CHLORIDE	2.4	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	104	70-120
4-BROMOFLUOROBENZENE	96	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/24/10 12:23
Sample ID: 20-R4-005DL	Date Analyzed: 02/24/10 12:23
Lab Samp ID: B181-10T	Dilution Factor: 100
Lab File ID: RBV567	Matrix : WATER
Ext Btch ID: VO01B26	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	33J	100	20
1,1-DICHLOROETHENE	2700	100	20
1,2-DICHLOROETHANE	21J	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	56J	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	ND	100	20
TRICHLOROETHENE	ND	100	20
VINYL CHLORIDE	ND	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	95	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
Batch No.	: 10B181	Date Extracted:	02/19/10 05:51
Sample ID:	20-R4-009	Date Analyzed:	02/19/10 05:51
Lab Samp ID:	B181-11	Dilution Factor:	1
Lab File ID:	RBV455	Matrix	: WATER
Ext Btch ID:	VO01B21	% Moisture	: NA
Calib. Ref.:	RAV029	Instrument ID	: T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	15	1.0	0.20
1,1-DICHLOROETHENE	82	1.0	0.20
1,2-DICHLOROETHANE	0.29J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	1.0J	1.0	0.20
CIS-1,2-DICHLOROETHENE	130E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	54	1.0	0.20
TRICHLOROETHENE	170E	1.0	0.20
VINYL CHLORIDE	410E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/19/10 21:10
Sample ID: 20-R4-009DL	Date Analyzed: 02/19/10 21:10
Lab Samp ID: B181-11T	Dilution Factor: 100
Lab File ID: RBV478	Matrix : WATER
Ext Btch ID: VO01B22	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	ND	100	20
1,1-DICHLOROETHENE	100	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	3200	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	63J	100	20
TRICHLOROETHENE	2500	100	20
VINYL CHLORIDE	570	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	95	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
Batch No.	: 10B181	Date Extracted:	02/19/10 06:23
Sample ID:	20-R4-002	Date Analyzed:	02/19/10 06:23
Lab Samp ID:	B181-12	Dilution Factor:	1
Lab File ID:	RBV456	Matrix	: WATER
Ext Btch ID:	VO01B21	% Moisture	: NA
Calib. Ref.:	RAV029	Instrument ID	: T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	42	1.0	0.20
1,1-DICHLOROETHENE	72	1.0	0.20
1,2-DICHLOROETHANE	0.34J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	93E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	53	1.0	0.20
TRICHLOROETHENE	250E	1.0	0.20
VINYL CHLORIDE	750E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	94	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/19/10 20:39
Sample ID: 20-R4-002DL	Date Analyzed: 02/19/10 20:39
Lab Samp ID: B181-12T	Dilution Factor: 100
Lab File ID: RBV477	Matrix : WATER
Ext Btch ID: VO01B22	% Moisture : NA
Calib. Ref.: RAV029	Instrument ID : T-O01

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	44J	100	20
1,1-DICHLOROETHENE	84J	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	6100	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	59J	100	20
TRICHLOROETHENE	2000	100	20
VINYL CHLORIDE	1100	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	96	75-120
TOLUENE-D8	97	85-120

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-025	Date Analyzed: 02/18/10 15:02
Lab Samp ID: B181-02	Dilution Factor: 1
Lab File ID: FB18016A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	0.84J	2.0	0.60
ETHENE	4.6	2.0	0.60
METHANE	13	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-021	Date Analyzed: 02/18/10 15:18
Lab Samp ID: B181-04	Dilution Factor: 1
Lab File ID: FB18017A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.2J	2.0	0.60
ETHENE	6.6	2.0	0.60
METHANE	19	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-019	Date Analyzed: 02/18/10 15:55
Lab Samp ID: B181-05	Dilution Factor: 1
Lab File ID: FB18020A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.2J	2.0	0.60
ETHENE	8.0	2.0	0.60
METHANE	62E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-019DL	Date Analyzed: 02/18/10 16:22
Lab Samp ID: B181-05T	Dilution Factor: 5
Lab File ID: FB18022A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	10	3.0
ETHENE	7.8J	10	3.0
METHANE	71	10	3.0
ACETYLENE	ND	15	7.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-022	Date Analyzed: 02/18/10 16:09
Lab Samp ID: B181-06	Dilution Factor: 1
Lab File ID: FB18021A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18014A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.7J	2.0	0.60
ETHENE	3.4	2.0	0.60
METHANE	15	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-007	Date Analyzed: 02/18/10 16:51
Lab Samp ID: B181-07	Dilution Factor: 1
Lab File ID: FB18024A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18023A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.0J	2.0	0.60
ETHENE	2.5	2.0	0.60
METHANE	7.4	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-004	Date Analyzed: 02/18/10 17:05
Lab Samp ID: B181-09	Dilution Factor: 1
Lab File ID: FB18025A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18023A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.9	2.0	0.60
ETHENE	ND	2.0	0.60
METHANE	20	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-009	Date Analyzed: 02/18/10 17:20
Lab Samp ID: B181-11	Dilution Factor: 1
Lab File ID: FB18026A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18023A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	2.8	2.0	0.60
ETHENE	17	2.0	0.60
METHANE	92E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range.

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-009DL	Date Analyzed: 02/18/10 17:44
Lab Samp ID: B181-11T	Dilution Factor: 10
Lab File ID: FB18028A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18023A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	20	6.0
ETHENE	14J	20	6.0
METHANE	180	20	6.0
ACETYLENE	ND	30	15

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-002	Date Analyzed: 02/18/10 17:33
Lab Samp ID: B181-12	Dilution Factor: 1
Lab File ID: FB18027A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18023A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	33	2.0	0.60
ETHENE	47	2.0	0.60
METHANE	86E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
Batch No. : 10B181	Date Extracted: 02/18/10 10:10
Sample ID: 20-R4-002DL	Date Analyzed: 02/18/10 17:59
Lab Samp ID: B181-12T	Dilution Factor: 10
Lab File ID: FB18029A	Matrix : WATER
Ext Btch ID: DGB010W	% Moisture : NA
Calib. Ref.: FB18023A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	28	20	6.0
ETHENE	41	20	6.0
METHANE	150	20	6.0
ACETYLENE	ND	30	15

METHOD 300.0
CHLORIDE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B181

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB031WB	ND	1	NA	0.200	0.100	02/17/1009:59	NA	AB23-03	AB23-01	ICB031W	NA	NA
LCS1W	ICB031WL	4.72	1	NA	0.200	0.100	02/17/1010:14	NA	AB23-04	AB23-01	ICB031W	NA	NA
LCD1W	ICB031WC	4.86	1	NA	0.200	0.100	02/17/1010:29	NA	AB23-05	AB23-01	ICB031W	NA	NA
20-R4-025	B181-02	2250	100	NA	20.0	10.0	02/17/1015:19	NA	AB23-23	AB23-13	ICB031W	02/16/1010:00	02/17/10
20-R4-009	B181-11	259	20	NA	4.00	2.00	02/17/1018:33	NA	AB23-35	AB23-25	ICB031W	02/16/1009:40	02/17/10
20-R4-002	B181-12	133	10	NA	2.00	1.00	02/17/1014:14	NA	AB23-19	AB23-13	ICB031W	02/16/1014:10	02/17/10
MBLK2W	ICB033WB	ND	1	NA	0.200	0.100	02/17/1019:38	NA	AB23-39	AB23-37	ICB033W	NA	NA
LCS2W	ICB033WL	4.84	1	NA	0.200	0.100	02/17/1019:54	NA	AB23-40	AB23-37	ICB033W	NA	NA
LCD2W	ICB033WC	4.84	1	NA	0.200	0.100	02/17/1020:10	NA	AB23-41	AB23-37	ICB033W	NA	NA
20-R4-021	B181-04	1960	100	NA	20.0	10.0	02/17/1022:19	NA	AB23-49	AB23-47	ICB033W	02/16/1011:10	02/17/10
20-R4-021DUP	B181-04D	1960	100	NA	20.0	10.0	02/17/1022:35	NA	AB23-50	AB23-47	ICB033W	02/16/1011:10	02/17/10
20-R4-021MS	B181-04M	2400	100	NA	20.0	10.0	02/17/1022:52	NA	AB23-51	AB23-47	ICB033W	02/16/1011:10	02/17/10
20-R4-021MSD	B181-04S	2400	100	NA	20.0	10.0	02/17/1023:08	NA	AB23-52	AB23-47	ICB033W	02/16/1011:10	02/17/10
20-R4-019	B181-05	95.6	10	NA	2.00	1.00	02/17/1023:24	NA	AB23-53	AB23-47	ICB033W	02/16/1013:05	02/17/10
20-R4-022	B181-06	4860	400	NA	80.0	40.0	02/17/1023:40	NA	AB23-54	AB23-47	ICB033W	02/16/1014:20	02/17/10
20-R4-007	B181-07	7400	400	NA	80.0	40.0	02/17/1023:56	NA	AB23-55	AB23-47	ICB033W	02/16/1011:20	02/17/10
20-R4-004	B181-09	2000	80	NA	16.0	8.00	02/18/1000:12	NA	AB23-56	AB23-47	ICB033W	02/16/1012:40	02/17/10

METHOD 300.0
NITRATE-N

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B181

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB031WB	ND	1	NA	0.100	0.0500	02/17/1009:59	NA	AB23-03	AB23-01	ICB031W	NA	NA
LCS1W	ICB031WL	1.92	1	NA	0.100	0.0500	02/17/1010:14	NA	AB23-04	AB23-01	ICB031W	NA	NA
LCD1W	ICB031WC	1.98	1	NA	0.100	0.0500	02/17/1010:29	NA	AB23-05	AB23-01	ICB031W	NA	NA
20-R4-025	B181-02	0.216	1	NA	0.100	0.0500	02/17/1010:46	NA	AB23-06	AB23-01	ICB031W	02/16/1010:00	02/17/10
20-R4-021	B181-04	0.0514J	1	NA	0.100	0.0500	02/17/1011:01	NA	AB23-07	AB23-01	ICB031W	02/16/1011:10	02/17/10
20-R4-021DUP	B181-04D	0.0527J	1	NA	0.100	0.0500	02/17/1011:16	NA	AB23-08	AB23-01	ICB031W	02/16/1011:10	02/17/10
20-R4-021MS	B181-04M	2.12	1	NA	0.100	0.0500	02/17/1011:33	NA	AB23-09	AB23-01	ICB031W	02/16/1011:10	02/17/10
20-R4-021MSD	B181-04S	2.12	1	NA	0.100	0.0500	02/17/1011:49	NA	AB23-10	AB23-01	ICB031W	02/16/1011:10	02/17/10
20-R4-019	B181-05	0.0525J	1	NA	0.100	0.0500	02/17/1012:05	NA	AB23-11	AB23-01	ICB031W	02/16/1013:05	02/17/10
20-R4-022	B181-06	0.124J	2	NA	0.200	0.100	02/17/1014:47	NA	AB23-21	AB23-13	ICB031W	02/16/1014:20	02/17/10
20-R4-007	B181-07	0.148J	2	NA	0.200	0.100	02/17/1015:03	NA	AB23-22	AB23-13	ICB031W	02/16/1011:20	02/17/10
20-R4-004	B181-09	1.96	1	NA	0.100	0.0500	02/17/1013:42	NA	AB23-17	AB23-13	ICB031W	02/16/1012:40	02/17/10
20-R4-009	B181-11	0.0592J	1	NA	0.100	0.0500	02/17/1013:58	NA	AB23-18	AB23-13	ICB031W	02/16/1009:40	02/17/10
20-R4-002	B181-12	ND	10	NA	1.00	0.500	02/17/1014:14	NA	AB23-19	AB23-13	ICB031W	02/16/1014:10	02/17/10

METHOD 300.0
SULFATE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B181

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB031WB	ND	1	NA	0.500	0.250	02/17/1009:59	NA	AB23-03	AB23-01	ICB031W	NA	NA
LCS1W	ICB031WL	4.61	1	NA	0.500	0.250	02/17/1010:14	NA	AB23-04	AB23-01	ICB031W	NA	NA
LCD1W	ICB031WC	4.75	1	NA	0.500	0.250	02/17/1010:29	NA	AB23-05	AB23-01	ICB031W	NA	NA
20-R4-025	B181-02	854	100	NA	50.0	25.0	02/17/1015:19	NA	AB23-23	AB23-13	ICB031W	02/16/1010:00	02/17/10
20-R4-009	B181-11	200	20	NA	10.0	5.00	02/17/1018:33	NA	AB23-35	AB23-25	ICB031W	02/16/1009:40	02/17/10
20-R4-002	B181-12	24.1	10	NA	5.00	2.50	02/17/1014:14	NA	AB23-19	AB23-13	ICB031W	02/16/1014:10	02/17/10
MBLK2W	ICB033WB	ND	1	NA	0.500	0.250	02/17/1019:38	NA	AB23-39	AB23-37	ICB033W	NA	NA
LCS2W	ICB033WL	4.71	1	NA	0.500	0.250	02/17/1019:54	NA	AB23-40	AB23-37	ICB033W	NA	NA
LCD2W	ICB033WC	4.71	1	NA	0.500	0.250	02/17/1020:10	NA	AB23-41	AB23-37	ICB033W	NA	NA
20-R4-021	B181-04	366	100	NA	50.0	25.0	02/17/1022:19	NA	AB23-49	AB23-47	ICB033W	02/16/1011:10	02/17/10
20-R4-021DUP	B181-04D	365	100	NA	50.0	25.0	02/17/1022:35	NA	AB23-50	AB23-47	ICB033W	02/16/1011:10	02/17/10
20-R4-021MS	B181-04M	855	100	NA	50.0	25.0	02/17/1022:52	NA	AB23-51	AB23-47	ICB033W	02/16/1011:10	02/17/10
20-R4-021MSD	B181-04S	854	100	NA	50.0	25.0	02/17/1023:08	NA	AB23-52	AB23-47	ICB033W	02/16/1011:10	02/17/10
20-R4-019	B181-05	220	10	NA	5.00	2.50	02/17/1023:24	NA	AB23-53	AB23-47	ICB033W	02/16/1013:05	02/17/10
20-R4-022	B181-06	2080	400	NA	200	100	02/17/1023:40	NA	AB23-54	AB23-47	ICB033W	02/16/1014:20	02/17/10
20-R4-007	B181-07	909	400	NA	200	100	02/17/1023:56	NA	AB23-55	AB23-47	ICB033W	02/16/1011:20	02/17/10
20-R4-004	B181-09	226	80	NA	40.0	20.0	02/18/1000:12	NA	AB23-56	AB23-47	ICB033W	02/16/1012:40	02/17/10

METHOD SM2320B
TOTAL ALKALINITY

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B181

Matrix : WATER
Instrument ID : E5/53

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALB008WB	ND	1	NA	5.00	1.00	02/18/1015:42	NA	E5B03003	NA	ALB008W	NA	NA
LCS1W	ALB008WL	233	1	NA	5.00	1.00	02/18/1015:50	NA	E5B03004	NA	ALB008W	NA	NA
LCD1W	ALB008WC	234	1	NA	5.00	1.00	02/18/1015:59	NA	E5B03005	NA	ALB008W	NA	NA
20-R4-021	B181-04	915	1	NA	5.00	1.00	02/18/1016:12	NA	E5B03006	NA	ALB008W	02/16/1011:10	02/17/10
20-R4-021DUP	B181-04D	914	1	NA	5.00	1.00	02/18/1016:25	NA	E5B03007	NA	ALB008W	02/16/1011:10	02/17/10
20-R4-025	B181-02	1610	1	NA	5.00	1.00	02/18/1016:44	NA	E5B03008	NA	ALB008W	02/16/1010:00	02/17/10
20-R4-019	B181-05	561	1	NA	5.00	1.00	02/18/1016:53	NA	E5B03009	NA	ALB008W	02/16/1013:05	02/17/10
20-R4-022	B181-06	1510	1	NA	5.00	1.00	02/18/1017:11	NA	E5B03010	NA	ALB008W	02/16/1014:20	02/17/10
20-R4-007	B181-07	223	1	NA	5.00	1.00	02/18/1017:19	NA	E5B03011	NA	ALB008W	02/16/1011:20	02/17/10
20-R4-004	B181-09	573	1	NA	5.00	1.00	02/18/1017:28	NA	E5B03012	NA	ALB008W	02/16/1012:40	02/17/10
20-R4-009	B181-11	1010	1	NA	5.00	1.00	02/18/1017:41	NA	E5B03013	NA	ALB008W	02/16/1009:40	02/17/10
MBLK2W	ALB010WB	ND	1	NA	5.00	1.00	02/22/1015:05	NA	ALB010-01	NA	ALB010W	NA	NA
LCS2W	ALB010WL	234	1	NA	5.00	1.00	02/22/1015:10	NA	ALB010-02	NA	ALB010W	NA	NA
LCD2W	ALB010WC	234	1	NA	5.00	1.00	02/22/1015:11	NA	ALB010-03	NA	ALB010W	NA	NA
20-R4-002	B181-12	1220	1	NA	5.00	1.00	02/22/1017:29	NA	ALB010-11	NA	ALB010W	02/16/1014:10	02/17/10

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-025	Date Analyzed:	02/26/10 23:06
Lab Samp ID:	B181-02T	Dilution Factor:	5
Lab File ID:	98B18069	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B18062	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	111	5.00	2.50
Calcium	8470	5000	1000
Iron	ND	1000	250
Magnesium	3330J	5000	1000
Manganese	24.1	5.00	2.50
Potassium	4440J	5000	1000
Sodium^	2650000	50000	10000

^: Analyzed at DF 50 on 02/26/10 21:19 | File ID 98B18052

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
SDG NO. : 10B181	Date Extracted: 02/19/10 10:30
Sample ID: 20-R4-021	Date Analyzed: 02/26/10 22:53
Lab Samp ID: B181-04T	Dilution Factor: 5
Lab File ID: 98B18067	Matrix : WATER
Ext Btch ID: IMB017W	% Moisture : NA
Calib. Ref.: 98B18062	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	48.5	5.00	2.50
Calcium	6910	5000	1000
Iron	ND	1000	250
Magnesium	2580J	5000	1000
Manganese	21.8	5.00	2.50
Potassium	4190J	5000	1000
Sodium^	2060000	50000	10000

^: Analyzed at DF 50 on 02/26/10 20:41 | File ID 98B18046

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-019	Date Analyzed:	02/26/10 23:12
Lab Samp ID:	B181-05W	Dilution Factor:	1
Lab File ID:	98B18070	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B18062	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	12.2	1.00	0.500
Calcium	4920	1000	200
Iron	605	200	50.0
Magnesium	3370	1000	200
Manganese	44.4	1.00	0.500
Potassium	2490	1000	200
Sodium^	457000	5000	1000

^: Analyzed at DF 5 on 02/26/10 21:25 | File ID 98B18053

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-022	Date Analyzed:	02/26/10 23:50
Lab Samp ID:	B181-06T	Dilution Factor:	5
Lab File ID:	98B18076	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B18074	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	8.27	5.00	2.50
Calcium	136000	5000	1000
Iron	689J	1000	250
Magnesium	256000	5000	1000
Manganese	732	5.00	2.50
Potassium	8750	5000	1000
Sodium^	4330000	50000	10000

^: Analyzed at DF 50 on 02/26/10 21:32 | File ID 98B18054

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-007	Date Analyzed:	02/26/10 23:56
Lab Samp ID:	B181-07T	Dilution Factor:	5
Lab File ID:	98B18077	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B18074	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	5.00	2.50
Calcium	627000	5000	1000
Iron	578J	1000	250
Magnesium	748000	5000	1000
Manganese	7710	5.00	2.50
Potassium	16400	5000	1000
Sodium^	3390000	50000	10000

^: Analyzed at DF 50 on 02/26/10 21:38 | File ID 98B18055

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 02/16/10
Project : CTO 20, ALAMEDA	Date Received: 02/17/10
SDG NO. : 10B181	Date Extracted: 02/19/10 10:30
Sample ID: 20-R4-004	Date Analyzed: 02/27/10 00:02
Lab Samp ID: B181-09T	Dilution Factor: 5
Lab File ID: 98B18078	Matrix : WATER
Ext Btch ID: IMB017W	% Moisture : NA
Calib. Ref.: 98B18074	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	12.0	5.00	2.50
Calcium	19100	5000	1000
Iron	ND	1000	250
Magnesium	19300	5000	1000
Manganese	3.41J	5.00	2.50
Potassium	5460	5000	1000
Sodium^	1760000	50000	10000

^: Analyzed at DF 50 on 02/26/10 21:44 | File ID 98B18056

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-009	Date Analyzed:	02/25/10 23:21
Lab Samp ID:	B181-11	Dilution Factor:	1
Lab File ID:	98B17095	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B17088	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	12.8	1.00	0.500
Calcium	5650	1000	200
Iron	109J	200	50.0
Magnesium	4400	1000	200
Manganese	26.2	1.00	0.500
Potassium	1510	1000	200
Sodium^	744000	5000	1000

^: Analyzed at DF 5 on 02/26/10 21:50 | File ID 98B18057

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-002	Date Analyzed:	02/25/10 23:28
Lab Samp ID:	B181-12	Dilution Factor:	1
Lab File ID:	98B17096	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B17088	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	80.2	1.00	0.500
Calcium	13900	1000	200
Iron	27700	200	50.0
Magnesium	5660	1000	200
Manganese	1850	1.00	0.500
Potassium	6530	1000	200
Sodium^	683000	5000	1000

^: Analyzed at DF 5 on 02/26/10 21:57 | File ID 98B18058

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-025	Date Analyzed:	02/27/10 00:09
Lab Samp ID:	B181-02T	Dilution Factor:	5
Lab File ID:	98B18079	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B18074	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-021	Date Analyzed:	02/27/10 01:06
Lab Samp ID:	B181-04T	Dilution Factor:	5
Lab File ID:	98B18088	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B18086	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-019	Date Analyzed:	02/26/10 00:30
Lab Samp ID:	B181-05	Dilution Factor:	1
Lab File ID:	98B17106	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B17100	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	517	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-022	Date Analyzed:	02/27/10 01:18
Lab Samp ID:	B181-06T	Dilution Factor:	5
Lab File ID:	98B18090	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B18086	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-007	Date Analyzed:	02/27/10 01:24
Lab Samp ID:	B181-07T	Dilution Factor:	5
Lab File ID:	98B18091	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B18086	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	480J	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-004	Date Analyzed:	02/27/10 01:31
Lab Samp ID:	B181-09T	Dilution Factor:	5
Lab File ID:	98B18092	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B18086	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	1000	250

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-009	Date Analyzed:	02/26/10 01:33
Lab Samp ID:	B181-11	Dilution Factor:	1
Lab File ID:	98B17116	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B17112	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/16/10
Project	: CTO 20, ALAMEDA	Date Received:	02/17/10
SDG NO.	: 10B181	Date Extracted:	02/19/10 10:30
Sample ID:	20-R4-002	Date Analyzed:	02/27/10 01:43
Lab Samp ID:	B181-12T	Dilution Factor:	5
Lab File ID:	98B18094	Matrix :	WATER
Ext Btch ID:	IMB017W	% Moisture :	NA
Calib. Ref.:	98B18086	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	11400	1000	250

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26037

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
CTO 20 ALAMEDA	1034131-2
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106-3210-020.D.07.09.01005
SAMPLER NAME: FS JO	AIRBILL NUMBER: 7932 8483 8033
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: ENMAX

LABORATORY ID (FOR LABORATORY): 10B251

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: 8260B VOC SHORT LIST; RSK 175 GASES DISS.; 6020A TOTAL METALS FE, AS, MN, CR, MO, NI, ENI; 300.0 ANIONS NO2, NO3, CL; SM 2320B ALKALINITY; 6020A ~~TOTAL~~ Iron DISSOLVED METALS; 7196A CHROMIUM VALENCE

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC SHORT LIST	RSK 175 GASES DISS.	6020A TOTAL METALS FE, AS, MN, CR, MO, NI, ENI	300.0 ANIONS NO2, NO3, CL	SM 2320B ALKALINITY	6020A ~~TOTAL~~ Iron DISSOLVED METALS	7196A CHROMIUM VALENCE	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R4-TB-005	2-19-10	900	3	X		W	10	X							* SDG BELOW	TRIP BLANK	—	—	TB
20-R4-EB-005	2-19-10	1000	3	X		W	10	X							*	EQUIPMENT BLANK	—	—	EB
20-R4-015	2-19-10	930	9	X		W	10	X	X	X	X	X	X		*	ZVI-MW0343	20	30	N
20-R4-029	2-19-10	1100	9	X		W	10	X	X	X	X	X	X		*	ZVI-MW06B	30	40	N
20-R4-030	2-19-10	1200	9	X		W	10	X	X	X	X	X	X		*	ZVI-MW06C	40	50	N
20-R4-035	2-19-10	1110	9	X		W	10	X	X	X	X	X	X		*	D0304	47	57	N
~~22-042-4-1007~~	~~2-19-10~~	~~0850~~	~~2~~	~~X~~		~~W~~	~~10~~						X	X	* CANCEL	~~D03-03~~	~~40~~	~~50~~	~~N~~
22-042-9-1014	2-19-10	0950	3	X		W	10	X							* Samples logged on SDG 10B252	S9-11-MW05	40	50	N
22-042-9-1015	2-19-10	0955	3		X	W	10	X								S9-11-MW05	40	50	FD

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
	2-19-10	TID FX
COMPANY: BTS	TIME: 1600	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260B HCL PRES. RSK 175 - HCL PRES, 6020A DISS IRON FIELD FILTERED, 6020A TOTAL METALS / DISS IRON HNO3 PRES. 300.0 ANIONS / SM 2320B NO PRES.

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/19/10
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
Batch No. : 10B251	Date Extracted: 02/23/10 01:50
Sample ID: 20-R4-TB-005	Date Analyzed: 02/23/10 01:50
Lab Samp ID: B251-01	Dilution Factor: 1
Lab File ID: RBC700	Matrix : WATER
Ext Btch ID: VO67B32	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/19/10
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
Batch No. : 10B251	Date Extracted: 02/23/10 02:22
Sample ID: 20-R4-EB-005	Date Analyzed: 02/23/10 02:22
Lab Samp ID: B251-02	Dilution Factor: 1
Lab File ID: RBC701	Matrix : WATER
Ext Btch ID: VO67B32	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/19/10
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
Batch No. : 10B251	Date Extracted: 02/23/10 02:54
Sample ID: 20-R4-015	Date Analyzed: 02/23/10 02:54
Lab Samp ID: B251-03	Dilution Factor: 1
Lab File ID: RBC702	Matrix : WATER
Ext Btch ID: VO67B32	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.34J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	3.2	1.0	0.20
1,1-DICHLOROETHENE	78	1.0	0.20
1,2-DICHLOROETHANE	0.31J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	6.1	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	1.3	1.0	0.20
TRICHLOROETHENE	24	1.0	0.20
VINYL CHLORIDE	0.85	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	70-120
4-BROMOFLUOROBENZENE	93	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/19/10
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
Batch No. : 10B251	Date Extracted: 02/23/10 03:25
Sample ID: 20-R4-029	Date Analyzed: 02/23/10 03:25
Lab Samp ID: B251-04	Dilution Factor: 1
Lab File ID: RBC703	Matrix : WATER
Ext Btch ID: VO67B32	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	7.2	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	20	1.0	0.20
1,1-DICHLOROETHANE	49	1.0	0.20
1,1-DICHLOROETHENE	110E	1.0	0.20
1,2-DICHLOROETHANE	44	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	2.8	1.0	0.20
CIS-1,2-DICHLOROETHENE	31	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	13	1.0	0.20
TRICHLOROETHENE	8.2	1.0	0.20
VINYL CHLORIDE	0.90	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	104	70-120
4-BROMOFLUOROBENZENE	93	75-120
TOLUENE-D8	92	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/19/10
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
Batch No. : 10B251	Date Extracted: 02/23/10 18:29
Sample ID: 20-R4-029DL	Date Analyzed: 02/23/10 18:29
Lab Samp ID: B251-04T	Dilution Factor: 100
Lab File ID: RBC722	Matrix : WATER
Ext Btch ID: VO67B33	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	53J	100	20
1,1-DICHLOROETHENE	4700	100	20
1,2-DICHLOROETHANE	45J	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	33J	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	ND	100	20
TRICHLOROETHENE	ND	100	20
VINYL CHLORIDE	ND	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	97	70-120
4-BROMOFLUOROBENZENE	92	75-120
TOLUENE-D8	94	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/19/10
Project	: CTO 20, ALAMEDA	Date Received:	02/22/10
Batch No.	: 10B251	Date Extracted:	02/23/10 17:26
Sample ID:	20-R4-030	Date Analyzed:	02/23/10 17:26
Lab Samp ID:	B251-05R	Dilution Factor:	1
Lab File ID:	RBC720	Matrix	: WATER
Ext Btch ID:	VO67B33	% Moisture	: NA
Calib. Ref.:	RAC271	Instrument ID	: T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	0.45J	1.0	0.20
1,1-DICHLOROETHENE	46	1.0	0.20
1,2-DICHLOROETHANE	0.44J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	1.1	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.75J	1.0	0.20
VINYL CHLORIDE	0.26J	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	92	75-120
TOLUENE-D8	93	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/19/10
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
Batch No. : 10B251	Date Extracted: 02/23/10 17:57
Sample ID: 20-R4-035	Date Analyzed: 02/23/10 17:57
Lab Samp ID: B251-06R	Dilution Factor: 1
Lab File ID: RBC721	Matrix : WATER
Ext Btch ID: VO67B33	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	0.76J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	95	70-120
4-BROMOFLUOROBENZENE	90	75-120
TOLUENE-D8	94	85-120

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/19/10
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
Batch No. : 10B251	Date Extracted: 02/24/10 09:15
Sample ID: 20-R4-015	Date Analyzed: 02/24/10 10:41
Lab Samp ID: B251-03	Dilution Factor: 1
Lab File ID: FB24006A	Matrix : WATER
Ext Btch ID: DGB014W	% Moisture : NA
Calib. Ref.: FB24002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	4.0	2.0	0.60
ETHENE	6.9	2.0	0.60
METHANE	68E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range.

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/19/10
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
Batch No. : 10B251	Date Extracted: 02/24/10 09:15
Sample ID: 20-R4-015DL	Date Analyzed: 02/24/10 12:37
Lab Samp ID: B251-03T	Dilution Factor: 5
Lab File ID: FB24013A	Matrix : WATER
Ext Btch ID: DGB014W	% Moisture : NA
Calib. Ref.: FB24002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.8J	10	3.0
ETHENE	6.4J	10	3.0
METHANE	85	10	3.0
ACETYLENE	ND	15	7.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/19/10
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
Batch No. : 10B251	Date Extracted: 02/24/10 09:15
Sample ID: 20-R4-029	Date Analyzed: 02/24/10 10:57
Lab Samp ID: B251-04	Dilution Factor: 1
Lab File ID: FB24007A	Matrix : WATER
Ext Btch ID: DGB014W	% Moisture : NA
Calib. Ref.: FB24002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	5.3	2.0	0.60
ETHENE	22	2.0	0.60
METHANE	33	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/19/10
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
Batch No. : 10B251	Date Extracted: 02/24/10 09:15
Sample ID: 20-R4-030	Date Analyzed: 02/24/10 11:21
Lab Samp ID: B251-05	Dilution Factor: 1
Lab File ID: FB24008A	Matrix : WATER
Ext Btch ID: DGB014W	% Moisture : NA
Calib. Ref.: FB24002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	4.2	2.0	0.60
ETHENE	4.6	2.0	0.60
METHANE	18	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/19/10
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
Batch No. : 10B251	Date Extracted: 02/24/10 09:15
Sample ID: 20-R4-035	Date Analyzed: 02/24/10 11:34
Lab Samp ID: B251-06	Dilution Factor: 1
Lab File ID: FB24009A	Matrix : WATER
Ext Btch ID: DGB014W	% Moisture : NA
Calib. Ref.: FB24002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.60
ETHENE	ND	2.0	0.60
METHANE	3.3	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD 300.0
CHLORIDE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B251

Matrix : WATER
Instrument ID : I107

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB030WB	ND	1	NA	0.200	0.100	02/22/1011:45	NA	AB28-03	AB28-01	ICB030W	NA	NA
LCS1W	ICB030WL	4.95	1	NA	0.200	0.100	02/22/1012:09	NA	AB28-04	AB28-01	ICB030W	NA	NA
LCD1W	ICB030WC	4.98	1	NA	0.200	0.100	02/22/1012:34	NA	AB28-05	AB28-01	ICB030W	NA	NA
20-R4-015	B251-03	157	20	NA	4.00	2.00	02/22/1023:54	NA	AB28-33	AB28-31	ICB030W	02/19/1009:30	02/22/10
20-R4-029	B251-04	1900	100	NA	20.0	10.0	02/23/1000:18	NA	AB28-34	AB28-31	ICB030W	02/19/1011:00	02/22/10
20-R4-030	B251-05	4320	400	NA	80.0	40.0	02/23/1000:42	NA	AB28-35	AB28-31	ICB030W	02/19/1012:00	02/22/10
MBLK2W	ICB032WB	ND	1	NA	0.200	0.100	02/23/1012:44	NA	AB30-03	AB30-01	ICB032W	NA	NA
LCS2W	ICB032WL	4.92	1	NA	0.200	0.100	02/23/1013:08	NA	AB30-04	AB30-01	ICB032W	NA	NA
LCD2W	ICB032WC	4.96	1	NA	0.200	0.100	02/23/1013:32	NA	AB30-05	AB30-01	ICB032W	NA	NA
20-R4-035	B251-06	10100	800	NA	160	80.0	02/23/1014:45	NA	AB30-08	AB30-01	ICB032W	02/19/1011:10	02/22/10

METHOD 300.0
NITRATE-N

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B251

Matrix : WATER
Instrument ID : I107

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB030WB	ND	1	NA	0.100	0.0500	02/22/1011:45	NA	AB28-03	AB28-01	ICB030W	NA	NA
LCS1W	ICB030WL	2.03	1	NA	0.100	0.0500	02/22/1012:09	NA	AB28-04	AB28-01	ICB030W	NA	NA
LCD1W	ICB030WC	2.04	1	NA	0.100	0.0500	02/22/1012:34	NA	AB28-05	AB28-01	ICB030W	NA	NA
20-R4-015	B251-03	0.0603J	1	NA	0.100	0.0500	02/22/1012:58	NA	AB28-06	AB28-01	ICB030W	02/19/1009:30	02/22/10
20-R4-029	B251-04	0.0761J	1	NA	0.100	0.0500	02/22/1013:22	NA	AB28-07	AB28-01	ICB030W	02/19/1011:00	02/22/10
20-R4-030	B251-05	0.185J	2	NA	0.200	0.100	02/22/1014:35	NA	AB28-10	AB28-01	ICB030W	02/19/1012:00	02/22/10
20-R4-035	B251-06	0.310	2	NA	0.200	0.100	02/22/1014:59	NA	AB28-11	AB28-01	ICB030W	02/19/1011:10	02/22/10

METHOD 300.0
SULFATE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B251

Matrix : WATER
Instrument ID : I107

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB030WB	ND	1	NA	0.500	0.250	02/22/1011:45	NA	AB28-03	AB28-01	ICB030W	NA	NA
LCS1W	ICB030WL	5.03	1	NA	0.500	0.250	02/22/1012:09	NA	AB28-04	AB28-01	ICB030W	NA	NA
LCD1W	ICB030WC	5.07	1	NA	0.500	0.250	02/22/1012:34	NA	AB28-05	AB28-01	ICB030W	NA	NA
20-R4-015	B251-03	123	20	NA	10.0	5.00	02/22/1023:54	NA	AB28-33	AB28-31	ICB030W	02/19/1009:30	02/22/10
20-R4-029	B251-04	278	100	NA	50.0	25.0	02/23/1000:18	NA	AB28-34	AB28-31	ICB030W	02/19/1011:00	02/22/10
20-R4-030	B251-05	1970	400	NA	200	100	02/23/1000:42	NA	AB28-35	AB28-31	ICB030W	02/19/1012:00	02/22/10
MBLK2W	ICB032WB	ND	1	NA	0.500	0.250	02/23/1012:44	NA	AB30-03	AB30-01	ICB032W	NA	NA
LCS2W	ICB032WL	4.94	1	NA	0.500	0.250	02/23/1013:08	NA	AB30-04	AB30-01	ICB032W	NA	NA
LCD2W	ICB032WC	4.98	1	NA	0.500	0.250	02/23/1013:32	NA	AB30-05	AB30-01	ICB032W	NA	NA
20-R4-035	B251-06	1500	100	NA	50.0	25.0	02/23/1014:21	NA	AB30-07	AB30-01	ICB032W	02/19/1011:10	02/22/10

METHOD SM2320B
TOTAL ALKALINITY

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B251

Matrix : WATER
Instrument ID : E5

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALC001WB	ND	1	NA	5.00	1.00	03/01/1012:25	NA	10E5C01003	NA	ALC001W	NA	NA
LCS1W	ALC001WL	233	1	NA	5.00	1.00	03/01/1012:33	NA	10E5C01004	NA	ALC001W	NA	NA
LCD1W	ALC001WC	234	1	NA	5.00	1.00	03/01/1012:42	NA	10E5C01005	NA	ALC001W	NA	NA
20-R4-015	B251-03	555	1	NA	5.00	1.00	03/01/1015:57	NA	10E5C01022	NA	ALC001W	02/19/1009:30	02/22/10
20-R4-029	B251-04	589	1	NA	5.00	1.00	03/01/1016:08	NA	10E5C01023	NA	ALC001W	02/19/1011:00	02/22/10
20-R4-030	B251-05	1180	1	NA	5.00	1.00	03/01/1016:23	NA	10E5C01024	NA	ALC001W	02/19/1012:00	02/22/10
20-R4-035	B251-06	202	1	NA	5.00	1.00	03/01/1016:31	NA	10E5C01025	NA	ALC001W	02/19/1011:10	02/22/10

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/19/10
Project	: CTO 20, ALAMEDA	Date Received:	02/22/10
SDG NO.	: 10B251	Date Extracted:	02/24/10 09:50
Sample ID:	20-R4-015	Date Analyzed:	03/02/10 23:59
Lab Samp ID:	B251-03	Dilution Factor:	1
Lab File ID:	98C02081	Matrix :	WATER
Ext Btch ID:	IMB023W	% Moisture :	NA
Calib. Ref.:	98C02075	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.57	1.00	0.500
Calcium	45100	1000	200
Iron	489	200	50.0
Magnesium	48400	1000	200
Manganese	1860	1.00	0.500
Potassium	2360	1000	200
Sodium	240000	1000	200

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 02/19/10
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
SDG NO. : 10B251	Date Extracted: 02/24/10 09:50
Sample ID: 20-R4-029	Date Analyzed: 03/03/10 00:49
Lab Samp ID: B251-04	Dilution Factor: 1
Lab File ID: 98C02089	Matrix : WATER
Ext Btch ID: IMB023W	% Moisture : NA
Calib. Ref.: 98C02087	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	13.1	1.00	0.500
Calcium	22900	1000	200
Iron	201	200	50.0
Magnesium	24100	1000	200
Manganese	98.7	1.00	0.500
Potassium	5060	1000	200
Sodium^	1570000	50000	10000

^: Analyzed at DF 50 on 03/03/10 21:16 | File ID 98C03027

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/19/10
Project	: CTO 20, ALAMEDA	Date Received:	02/22/10
SDG NO.	: 10B251	Date Extracted:	02/24/10 09:50
Sample ID:	20-R4-030	Date Analyzed:	03/03/10 22:07
Lab Samp ID:	B251-05T	Dilution Factor:	5
Lab File ID:	98C03035	Matrix :	WATER
Ext Btch ID:	IMB023W	% Moisture :	NA
Calib. Ref.:	98C03032	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.76J	5.00	2.50
Calcium	160000	5000	1000
Iron	1630	1000	250
Magnesium	201000	5000	1000
Manganese	1950	5.00	2.50
Potassium	9000	5000	1000
Sodium^	3750000	50000	10000

^: Analyzed at DF 50 on 03/03/10 21:23 | File ID 98C03028

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 02/19/10
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
SDG NO. : 10B251	Date Extracted: 02/24/10 09:50
Sample ID: 20-R4-035	Date Analyzed: 03/03/10 22:13
Lab Samp ID: B251-06T	Dilution Factor: 5
Lab File ID: 98C03036	Matrix : WATER
Ext Btch ID: IMB023W	% Moisture : NA
Calib. Ref.: 98C03032	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	5.00	2.50
Calcium	795000	5000	1000
Iron^^	364	200	50
Magnesium^	1020000	50000	10000
Manganese	13900	5.00	2.50
Potassium	12800	5000	1000
Sodium^	4480000	50000	10000

^: Analyzed at DF 50 on 03/03/10 21:29 | File ID 98C03029
^^: Analyzed at DF 1 on 03/03/10 01:01 | File ID 98C02091

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	NA
Project	: CTO 20, ALAMEDA	Date Received:	02/24/10
SDG NO.	: 10B251	Date Extracted:	02/24/10 09:50
Sample ID:	MBLK1W	Date Analyzed:	03/02/10 23:34
Lab Samp ID:	IMB023WB	Dilution Factor:	1
Lab File ID:	98C02077	Matrix :	WATER
Ext Btch ID:	IMB023W	% Moisture :	NA
Calib. Ref.:	98C02075	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	1.00	0.500
Calcium	ND	1000	200
Iron	ND	200	50.0
Magnesium	ND	1000	200
Manganese	ND	1.00	0.500
Potassium	ND	1000	200
Sodium	261J	1000	200

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/19/10
Project	: CTO 20, ALAMEDA	Date Received:	02/22/10
SDG NO.	: 10B251	Date Extracted:	02/24/10 09:50
Sample ID:	20-R4-015	Date Analyzed:	03/03/10 01:08
Lab Samp ID:	B251-03	Dilution Factor:	1
Lab File ID:	98C02092	Matrix :	WATER
Ext Btch ID:	IMB023W	% Moisture :	NA
Calib. Ref.:	98C02087	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	218	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/19/10
Project	: CTO 20, ALAMEDA	Date Received:	02/22/10
SDG NO.	: 10B251	Date Extracted:	02/24/10 09:50
Sample ID:	20-R4-029	Date Analyzed:	03/03/10 01:14
Lab Samp ID:	B251-04	Dilution Factor:	1
Lab File ID:	98C02093	Matrix :	WATER
Ext Btch ID:	IMB023W	% Moisture :	NA
Calib. Ref.:	98C02087	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/19/10
Project	: CTO 20, ALAMEDA	Date Received:	02/22/10
SDG NO.	: 10B251	Date Extracted:	02/24/10 09:50
Sample ID:	20-R4-030	Date Analyzed:	03/03/10 01:20
Lab Samp ID:	B251-05	Dilution Factor:	1
Lab File ID:	98C02094	Matrix :	WATER
Ext Btch ID:	IMB023W	% Moisture :	NA
Calib. Ref.:	98C02087	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	323	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/19/10
Project	: CTO 20, ALAMEDA	Date Received:	02/22/10
SDG NO.	: 10B251	Date Extracted:	02/24/10 09:50
Sample ID:	20-R4-035	Date Analyzed:	03/03/10 01:27
Lab Samp ID:	B251-06	Dilution Factor:	1
Lab File ID:	98C02095	Matrix :	WATER
Ext Btch ID:	IMB023W	% Moisture :	NA
Calib. Ref.:	98C02087	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	320	200	50.0

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26026

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: CTO 20 ALAMEDA	PURCHASE ORDER NO.: 1042720
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106-3210.020-D-07.09.01000
SAMPLER NAME: FS IW	AIRBILL NUMBER: 7984 0610 6395
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: MICROBIOLOGICS

LABORATORY ID (FOR LABORATORY): P1002278

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: DISSOLVED ARSENIC

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISSOLVED ARSENIC	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R4-031	2-17-10	1510	1		✓		10	X		ZV1-MW07A2	10	20	N
20-R4-018	2-17-10	1140	1		✓		10	X		ZV1-MW04A1	6	11	N
20-R4-020	2-17-10	1020	1	✓			10	X		ZV1-MW04A3	20	30	N
20-R4-006	2-17-10	0940	1	✓			10	X		ZV1-MW01C	40	50	N
20-R4-003	2-17-10	1040	1	✓			10	X		ZV1-MW01A3	20	30	N
20-R4-001	2-17-10	1230	1	✓			10	X		ZV1-MW01A1	6	11	N
20-R4-028	2-17-10	1440	1	✓			10	X		ZV1-MW06A3	20	30	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	LABORATORY INSTRUCTIONS/COMMENTS
[signature]	2-17-10	[signature] SAMPLE CUSTODIAN	
COMPANY: BTS	TIME: 1700	COMPANY: BTS	
RELINQUISHED BY (Signature): [signature]	DATE: 2-18-10	RECEIVED BY (Signature): FED EX	COMPOSITE DESCRIPTION
COMPANY: BTS	TIME: 1600	COMPANY	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
COMPANY	TIME	COMPANY	TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

microseeps
from insight comes solutions

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 1 of 10
Lab Proj #: P1002278
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Laboratory Results

Total pages in data package: 54

Lab Sample #	Client Sample ID
P1002278-01	20-R4-031
P1002278-02	20-R4-018
P1002278-03	20-R4-020
P1002278-04	20-R4-006
P1002278-05	20-R4-003
P1002278-06	20-R4-001
P1002278-07	20-R4-028

Microseeps test results meet all the requirements of the NELAC standards or provide reasons and/or justification if they do not.

Approved By: Debbie Hallo (HH) ***Date:*** 3.9.10

Project Manager: Debbie Hallo

The analytical results reported here are reliable and usable to the precision expressed in this report. As required by some regulating authorities, a full discussion of the uncertainty in our analytical results can be obtained at our web site or through customer service. Unless otherwise specified, all results are reported on a wet weight basis.

As a valued client we would appreciate your comments on our service.
Please call customer service at (412)826-5245 or email customerservice@microseeps.com.

Case Narrative:

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 2 of 10
Lab Proj #: P1002278
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-031	Vapor	P1002278-01	17 Feb. 10 15:10	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		65000.000	1200.000	nM	AM20GAX	3/5/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 3 of 10
Lab Proj #: P1002278
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-018	Vapor	P1002278-02	17 Feb. 10 11:40	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		5.900	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 4 of 10
Lab Proj #: P1002278
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-020	Vapor	P1002278-03	17 Feb. 10 10:20	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		36.000	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 5 of 10
Lab Proj #: P1002278
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-006	Vapor	P1002278-04	17 Feb. 10 9:40	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.400	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 6 of 10
Lab Proj #: P1002278
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-003	Vapor	P1002278-05	17 Feb. 10 10:40	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.300	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 7 of 10
Lab Proj #: P1002278
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-001	Vapor	P1002278-06	17 Feb. 10 12:30	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.200	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 8 of 10
Lab Proj #: P1002278
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-028	Vapor	P1002278-07	17 Feb. 10 14:40	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.300	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 9 of 10
Lab Proj #: P1002278
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip
Analysis Method: Hydrogen by Bubble Strip

M100303029-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100303029-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	9.700	nM	9.78	99.00	75 - 125

M100303029-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	9.800	nM	9.78	100.00	75 - 125	1.03	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 10 of 10
Lab Proj #: P1002278
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip

Analysis Method: Hydrogen by Bubble Strip

M100305028-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100305028-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125

M100305028-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125	0.00	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Chain of Custody Documents

P1002278

NUMBER 26025

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: CTD 20 ALAMEDA	PURCHASE ORDER NO: 10341 31-2
PROJECT LOCATION: ALAMEDA	PROJECT NO: 106-3210, 022-3-27.01.000
SAMPLER NAME: FS IW	AIRBILL NUMBER: 7934 0610 5395
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-755-7584

LABORATORY NAME:

LABORATORY ID (FOR LABORATORY):

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	[illegible]									COMMENTS
20-24-031	2-17-10	1510	1		✓		10	X									
20-24-018	2-17-10	1410	1		✓		10	X									
20-24-020	2-17-10	1020	1	✓			10	X									
20-24-006	2-17-10	0940	1	✓			10	X									
20-24-003	2-17-10	1040	1	✓			10	X									
20-24-001	2-17-10	1230	1	✓			10	X									
20-24-028	2-17-10	1440	1	✓			10	X									

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
	2-17-10	SAMPLE CUSTODIAN
COMPANY: BTS	TIME: 1700	COMPANY: BTS
RELINQUISHED BY (Signature)	DATE: 2-18-10	RECEIVED BY (Signature): FED EX
COMPANY: BTS	TIME: 1600	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

12

Debbie — attached are the original COCs. Diane

P1002278

Suzuki, Diane

From: Suzuki, Diane
Sent: Monday, February 22, 2010 10:26 AM
To: 'Debbie Hallo'
Subject: RE: CTO 20 Alameda
Attachments: coc_micro.PDF

Hi Debbie
It seems that the field crew sent the wrong chain of custodies with the samples sent to you.

The attached is a copy of the chain of custodies for your samples. Could you mail the original chain of custodies mistakenly sent to you back to me, please? I am trying to obtain the original for your samples to send to you.

I apologize for the error.

Diane Suzuki | Chemist
Direct: 949 756.7584 | Fax 949 756.7583
Diane.Suzuki@tetratech.com

Tetra Tech EC, Inc. | Sciences
1940 E. Deere Avenue, Suite 200 | Santa Ana, CA 92705 | www.tetratech.com

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Think Green - Not every email needs to be printed.

From: Debbie Hallo [mailto:dhallo@microseeps.com]
Sent: Friday, February 19, 2010 8:28 AM
To: Suzuki, Diane
Subject: RE: CTO 20 Alameda

Thanks Diane!

Debbie Hallo
Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone 412 826 5245
Fax 412 826 3433
www. microseeps.com

CHECK OUT OUR ON-LINE BOTTLE ORDER FORM AT WWW.MICROSEEPS.COM

From: Suzuki, Diane [mailto:Diane.Suzuki@tetratech.com]
Sent: Friday, February 19, 2010 11:27 AM
To: Debbie Hallo; Heather Hauser
Subject: RE: CTO 20 Alameda

Good morning

Just wanted to send a reminder that we will be shipping off the samples for Dissolved Hydrogen today to arrive at your facility tomorrow as planned.

Please contact me if you have any questions.
tks...

Diane Suzuki | Chemist
Direct: 949.756.7584 | Fax: 949.756.7583
Diane.Suzuki@tetratech.com

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Think Green - Not every email needs to be printed.

From: Suzuki, Diane
Sent: Thursday, February 18, 2010 10:12 AM
To: 'Debbie Hallo'
Subject: CTO 20 Alameda

Good morning Debbie

We will complete the Alameda groundwater sampling event tomorrow and will be sending you the samples for Dissolved Hydrogen for Saturday, 02/20/2010, delivery.

I will let you know if there is any change to the plans.

tks...
Diane Suzuki | Chemist
Direct: 949.756.7584 | Fax: 949.756.7583
Diane.Suzuki@tetratech.com

Tetra Tech EC, Inc. | Sciences
1940 E. Deere Avenue, Suite 200 | Santa Ana, CA 92705 | www.tetratech.com

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Think Green - Not every email needs to be printed.

Hydrogen Data

Method File: BUBBLE 2278
Operator: slyon

Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Window	Standard	Int.Type	Cal.Type
1	Methane	0.645 min	0.645 min			0.200 AN	External	Area	LOff
2	Ethane	0.908 min	0.908 min			0.200 AN	External	Area	Lin
3	Ethene	1.155 min	1.155 min			0.200 AN	External	Area	Lin
4	Propane	1.785 min	1.785 min			0.200 AN	External	Area	Lin
5	*Hydrogen*	*3.149 min*			*3.149 min*	*0.200 AN*	*External*	*Area*	*Lin*
6	Propene	3.567 min	3.567 min			0.200 AN	External	Area	Lin
7	Carbon Dioxide	4.200 min		4.200 min		0.500 AN	External	Area	Lin
8	iso-Butane	4.560 min	4.560 min			0.500 AN	External	Area	Lin
9	n-Butane	5.310 min	5.310 min			0.500 AN	External	Area	Lin
10	Oxygen	5.870 min		5.870 min		0.300 AN	External	Area	Lin
11	Nitrogen	6.260 min		6.260 min		0.300 AN	External	Area	Lin
12	Acetylene	7.198 min	7.198 min			0.500 AN	External	Area	Lin
13	Methane	7.560 min		7.560 min		0.400 AN	External	Area	Lin
14	Carbon Monoxide	8.450 min		8.450 min		0.400 AN	External	Area	Lin
15	Carbon Monoxide	8.600 min			8.600 min	0.400 AN	External	Area	Lin

Method File: BUBBLE
Operator: slyon
Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Peak Type	Group	Comment
1	Methane	0.645 min	Auto		
2	Ethane	0.908 min	Auto		
3	Ethene	1.155 min	Auto		
4	Propane	1.785 min	Auto		
5	*Hydrogen*	*3.149 min*	*Auto*		
6	Propene	3.567 min	Auto		
7	Carbon Dioxide	4.200 min	Auto		
8	iso-Butane	4.560 min	Auto		
9	n-Butane	5.310 min	Auto		
10	Oxygen	5.870 min	Auto		
11	Nitrogen	6.260 min	Auto		
12	Acetylene	7.198 min	Auto		
13	Methane	7.560 min	Auto		
14	Carbon Monoxide	8.450 min	Auto		
15	Carbon Monoxide	8.600 min	Auto		

Method File: BUBBLE
Operator: slyon

Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Amount ICAL Acetylene L5	Amount ICAL Acetylene L4
1	Methane	0.645 min	0.645 min				
2	Ethane	0.908 min	0.908 min				
3	Ethene	1.155 min	1.155 min				
4	Propane	1.785 min	1.785 min				
5	*Hydrogen*	*3.149 min*			*3.149 min*		
6	Propene	3.567 min	3.567 min				
7	Carbon Dioxide	4.200 min		4.200 min			
8	iso-Butane	4.560 min	4.560 min				
9	n-Butane	5.310 min	5.310 min				
10	Oxygen	5.870 min		5.870 min			
11	Nitrogen	6.260 min		6.260 min			
12	Acetylene	7.198 min	7.198 min			0.529000	2.648000
13	Methane	7.560 min		7.560 min			
14	Carbon Monoxide	8.450 min		8.450 min			
15	Carbon Monoxide	8.600 min			8.600 min		

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL Acetylene L3	Amount ICAL Acetylene L2	Amount ICAL Acetylene L1	Amount ICAL FID L8	Amount ICAL FID L7
1	Methane	0.645 min				0.002280	0.007120
2	Ethane	0.908 min				0.005880	0.018300
3	Ethene	1.155 min				0.013800	0.043300
4	Propane	1.785 min				0.006640	0.020700
5	*Hydrogen*	*3.149 min*					
6	Propene	3.567 min				0.019800	0.062100
7	Carbon Dioxide	4.200 min					
8	iso-Butane	4.560 min				0.004950	0.015400
9	n-Butane	5.310 min				0.006190	0.019300
10	Oxygen	5.870 min					
11	Nitrogen	6.260 min					
12	Acetylene	7.198 min	13.240000	66.200000	264.800000		
13	Methane	7.560 min					
14	Carbon Monoxide	8.450 min					
15	Carbon Monoxide	8.600 min					

Method File: BUBBLE
Operator: slyon

Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL FID L6	Amount ICAL FID L5	Amount ICAL FID L4	Amount ICAL FID L3	Amount ICAL FID L2	Amount ICAL FID L1
1	Methane	0.645 min	0.028500	0.114000	0.456000	2.280000	11.402000	57.011000
2	Ethane	0.908 min	0.073500	0.294000	1.176000	5.880000	29.403000	147.016000
3	Ethene	1.155 min	0.173000	0.693000	2.774000	13.870000	69.353000	346.766000
4	Propane	1.785 min	0.083000	0.332000	1.328000	6.644000	33.220000	166.100000
5	*Hydrogen*	*3.149 min*						
6	Propene	3.567 min	0.248000	0.993000	3.975000	19.877000	99.388000	496.942000
7	Carbon Dioxide	4.200 min						
8	iso-Butane	4.560 min	0.061800	0.247000	0.990000	4.951000	24.756000	123.783000
9	n-Butane	5.310 min	0.077400	0.309000	1.238000	6.192000	30.961000	154.808000
10	Oxygen	5.870 min						
11	Nitrogen	6.260 min						
12	Acetylene	7.198 min						
13	Methane	7.560 min						
14	Carbon Monoxide	8.450 min						
15	Carbon Monoxide	8.600 min						

Method File: BUBBLE
Operator: slyon
Printed: 3/8/2010 5.40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL TCD L6	Amount ICAL TCD L5	Amount ICAL TCD L4	Amount ICAL TCD L3	Amount ICAL TCD L2	Amount ICAL TCD L1
1	Methane	0.645 min						
2	Ethane	0.908 min						
3	Ethene	1.155 min						
4	Propane	1.785 min						
5	*Hydrogen*	*3.149 min*						
6	Propene	3.567 min						
7	Carbon Dioxide	4.200 min	2.196000	5.490000	10.980000	54.900000	274.500000	549.000000
8	iso-Butane	4.560 min						
9	n-Butane	5.310 min						
10	Oxygen	5.870 min	0.015900	0.039900	0.079800	0.399200	1.996000	3.992000
11	Nitrogen	6.260 min	0.051400	0.129000	0.257000	1.286000	6.430000	12.860000
12	Acetylene	7.198 min						
13	Methane	7.560 min		23.580000	47.160000	235.800000	1179.000000	2358.000000
14	Carbon Monoxide	8.450 min		0.046900	0.093800	0.469000	2.345000	4.690000
15	Carbon Monoxide	8.600 min						

Method File: BUBBLE
Operator: slyon
Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL H2 L7	Amount ICAL H2 L6	Amount ICAL H2 L5	Amount ICAL H2 L4	Amount ICAL H2 L3	Amount ICAL H2 L2
1	Methane	0.645 min						
2	Ethane	0.908 min						
3	Ethene	1.155 min						
4	Propane	1.785 min						
5	*Hydrogen*	*3.149 min*	*0.396000*	*0.990000*	*3.960000*	*9.900000*	*19.800000*	*39.600000*
6	Propene	3.567 min						
7	Carbon Dioxide	4.200 min						
8	iso-Butane	4.560 min						
9	n-Butane	5.310 min						
10	Oxygen	5.870 min						
11	Nitrogen	6.260 min						
12	Acetylene	7.198 min						
13	Methane	7.560 min						
14	Carbon Monoxide	8.450 min						
15	Carbon Monoxide	8.600 min						

Method File: BUBBLE
Operator: slyon

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Calibration:

Calibration Mode: Total
Auto Recalibrate: On
Curve Fitting Model: Normal
Dual-Column Separate Calibration: Off

No.	Enabled	Name	Smp.No.	Pos.	Inj. Vol.	Weight	ISTD Amount	Dil. Factor	Inj. Date/Time
1	☒	ICAL Acetylene L5	1	3	20.0	1.0000	1.0000	1.0000	1/27/2010 1:45:06 PM
2	☒	ICAL Acetylene L4	2	4	20.0	1.0000	1.0000	1.0000	1/27/2010 1:57:25 PM
3	☒	ICAL Acetylene L3	3	5	20.0	1.0000	1.0000	1.0000	1/27/2010 2:11:52 PM
4	☒	ICAL Acetylene L2	4	6	20.0	1.0000	1.0000	1.0000	1/27/2010 2:24:12 PM
5	☒	ICAL Acetylene L1	5	7	20.0	1.0000	1.0000	1.0000	1/27/2010 2:40:41 PM
6	☒	ICAL FID L8	6	8	20.0	1.0000	1.0000	1.0000	1/27/2010 3:06:21 PM
7	☒	ICAL FID L7	7	9	20.0	1.0000	1.0000	1.0000	1/27/2010 3:18:35 PM
8	☒	ICAL FID L6	8	10	20.0	1.0000	1.0000	1.0000	1/27/2010 3:32:43 PM
9	☒	ICAL FID L5	9	11	20.0	1.0000	1.0000	1.0000	1/27/2010 3:45:00 PM
10	☒	ICAL FID L4	10	12	20.0	1.0000	1.0000	1.0000	1/27/2010 3:59:45 PM
11	☒	ICAL FID L3	11	13	20.0	1.0000	1.0000	1.0000	1/27/2010 4:12:06 PM
12	☒	ICAL FID L2	12	14	20.0	1.0000	1.0000	1.0000	1/27/2010 4:26:11 PM
13	☒	ICAL FID L1	13	15	20.0	1.0000	1.0000	1.0000	1/27/2010 4:39:41 PM
14	☒	ICAL TCD L6	16	18	20.0	1.0000	1.0000	1.0000	1/27/2010 5:21:50 PM
15	☒	ICAL TCD L5	17	19	20.0	1.0000	1.0000	1.0000	1/27/2010 5:35:49 PM
16	☒	ICAL TCD L4	18	20	20.0	1.0000	1.0000	1.0000	1/27/2010 5:48:02 PM
17	☒	ICAL TCD L3	19	21	20.0	1.0000	1.0000	1.0000	1/27/2010 6:01:38 PM
18	☒	ICAL TCD L2	20	22	20.0	1.0000	1.0000	1.0000	1/27/2010 6:13:53 PM
19	☒	ICAL TCD L1	21	23	20.0	1.0000	1.0000	1.0000	1/27/2010 6:27:25 PM
20	☒	ICAL H2 L7	25	1	20.0	1.0000	1.0000	1.0000	3/3/2010 11:14:07 AM
21	☒	ICAL H2 L6	26	2	20.0	1.0000	1.0000	1.0000	3/3/2010 11:26:28 AM
22	☒	ICAL H2 L5	27	3	20.0	1.0000	1.0000	1.0000	3/3/2010 11:38:40 AM
23	☒	ICAL H2 L4	28	4	20.0	1.0000	1.0000	1.0000	3/3/2010 11:56:32 AM
24	☒	ICAL H2 L3	29	5	20.0	1.0000	1.0000	1.0000	3/3/2010 12:09:53 PM
25	☒	*ICAL H2 L2*	*30*	*6*	*20.0*	*1.0000*	*1.0000*	*1.0000*	*3/3/2010 12:24:07 PM*

Hydrogen

Method AM20GAX

3/3/2010

No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square %	Offset	Slope	Curve
1	3.14	Hydrogen	Lin	6	99.993	0.00000	3.74144	0.00000

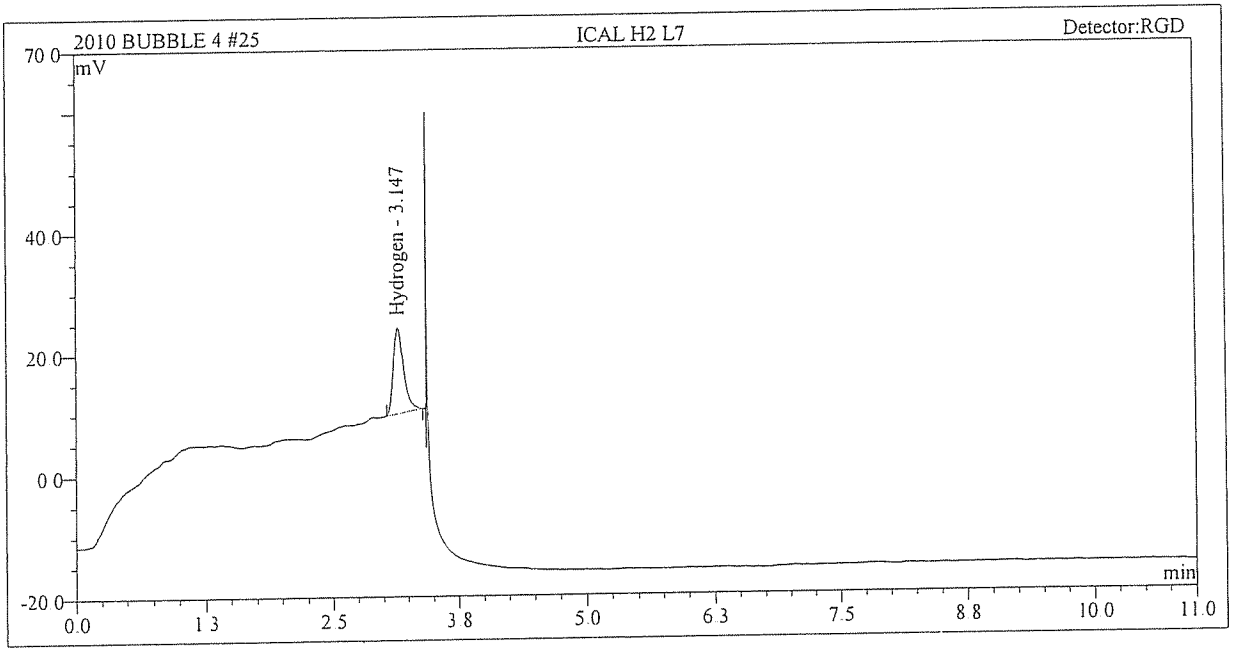
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L7	**Sequence No:**	25
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 11:14 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.147	1.681	14.241	BMB	0.4494

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



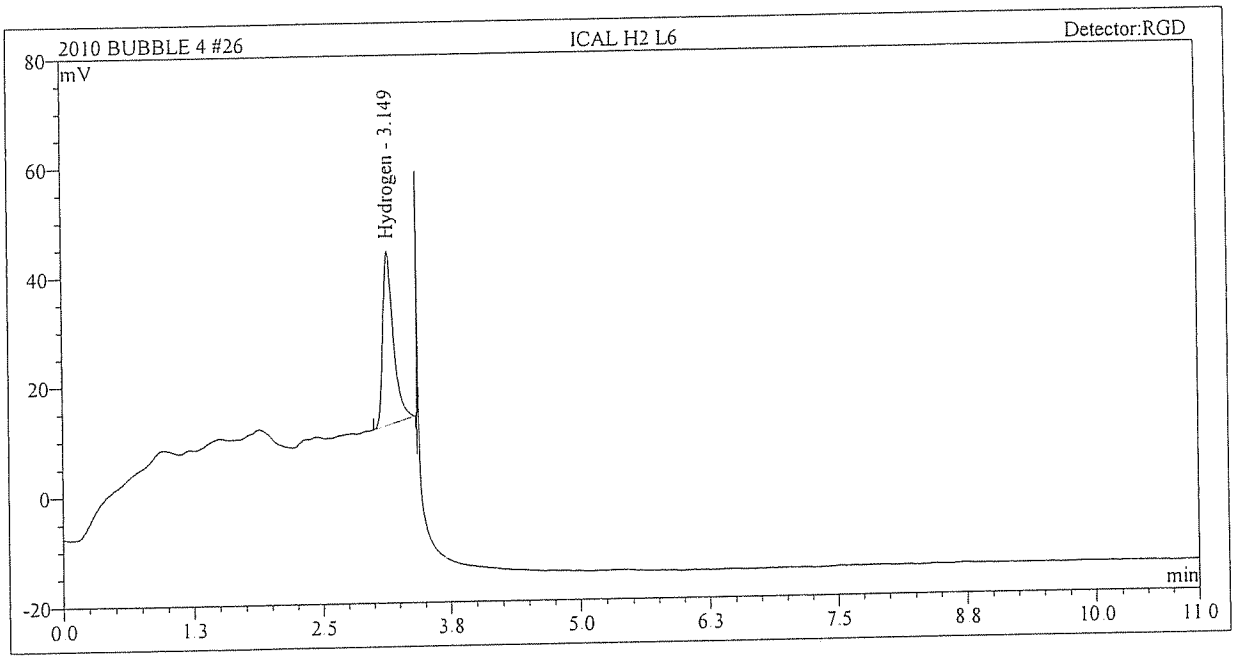
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L6	**Sequence No:**	26
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 11:26 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.149	3.830	31.832	BMB	1.0237

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



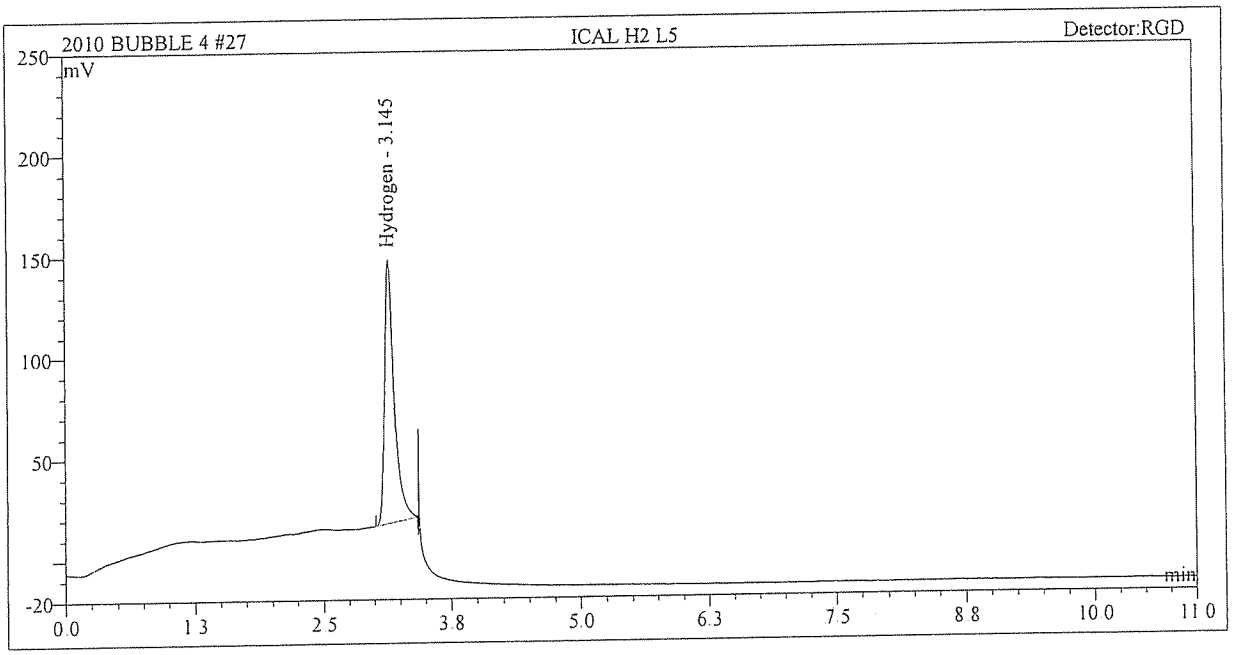
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L5	**Sequence No:**	27
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 11:38 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.145	14.495	130.097	BMB	3.8740

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



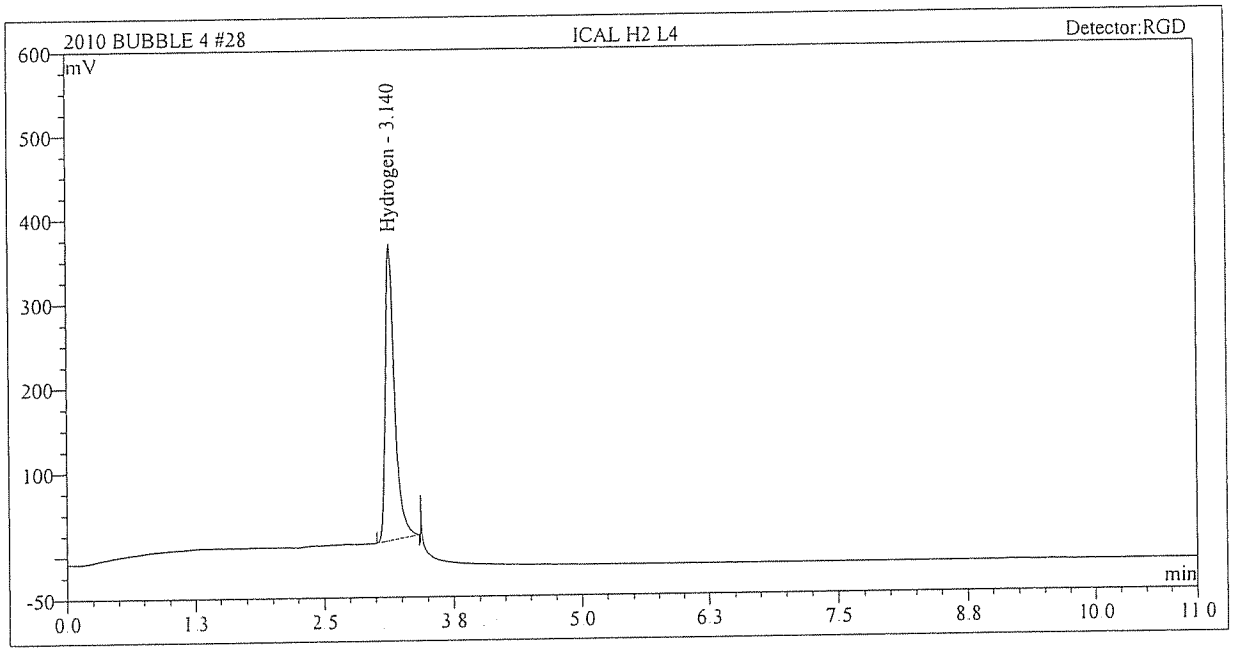
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L4	**Sequence No:**	28
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 11:56 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.140	36.435	350.662	BMB	9.7382

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



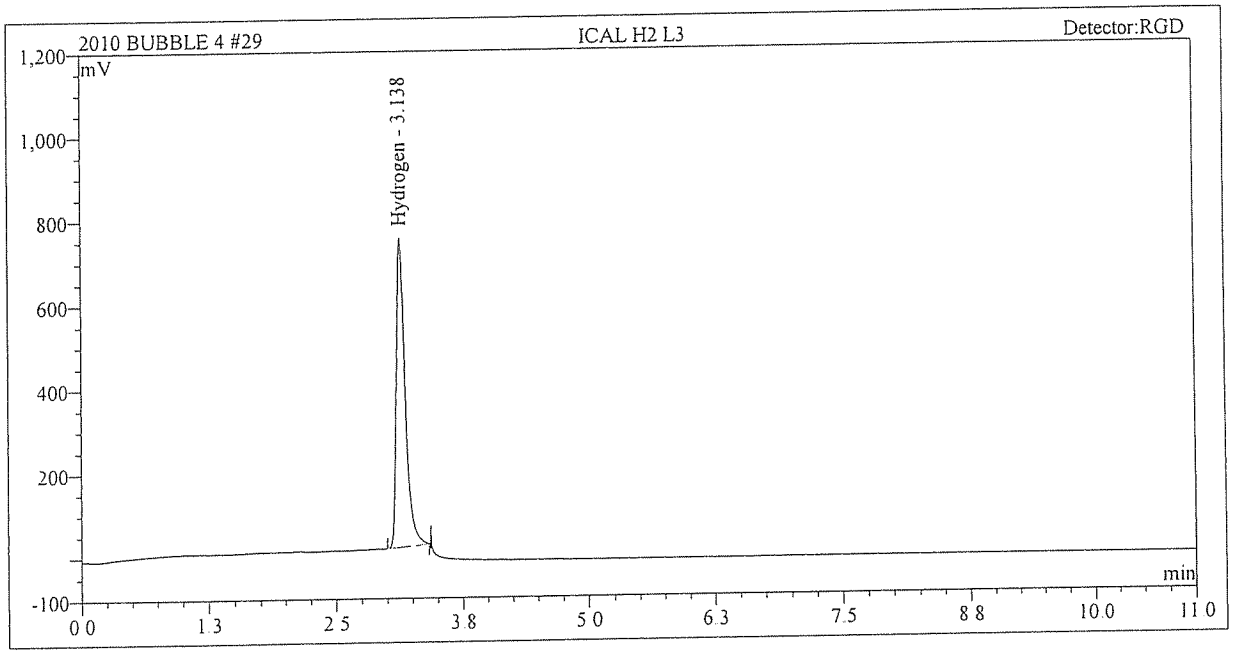
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L3	**Sequence No:**	29
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:09 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.138	74.806	734.291	BMB	19.9939

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



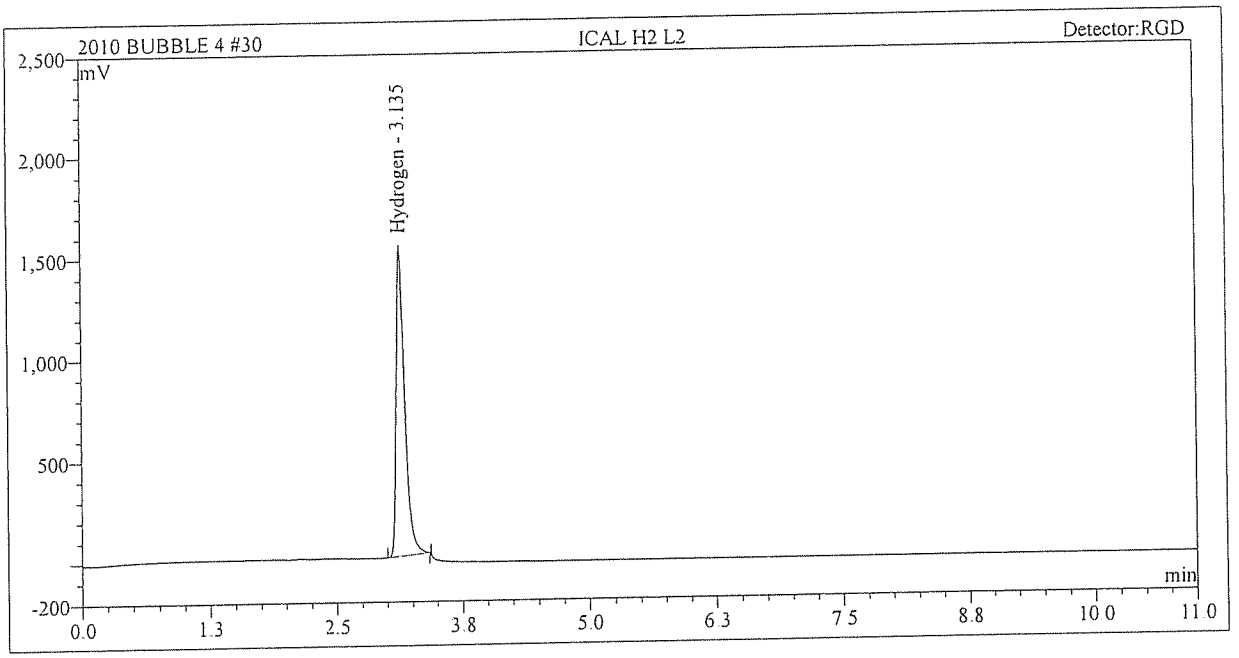
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L2	**Sequence No:**	30
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:24 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.135	147.977	1531.099	BMB	39.5507

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



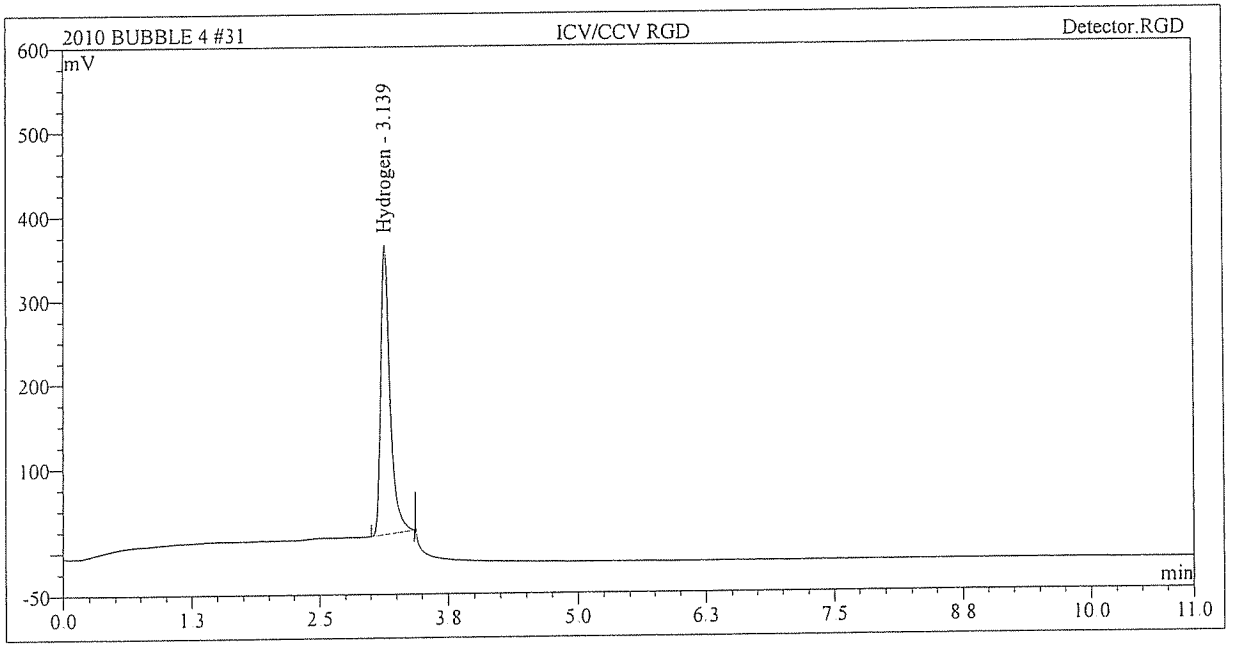
MICROSEEPS

Sample Analysis Report

Sample Name:	ICV/CCV RGD	**Sequence No:**	31
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:37 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.139	36.198	343.693	BMB	10-296	9.6749

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



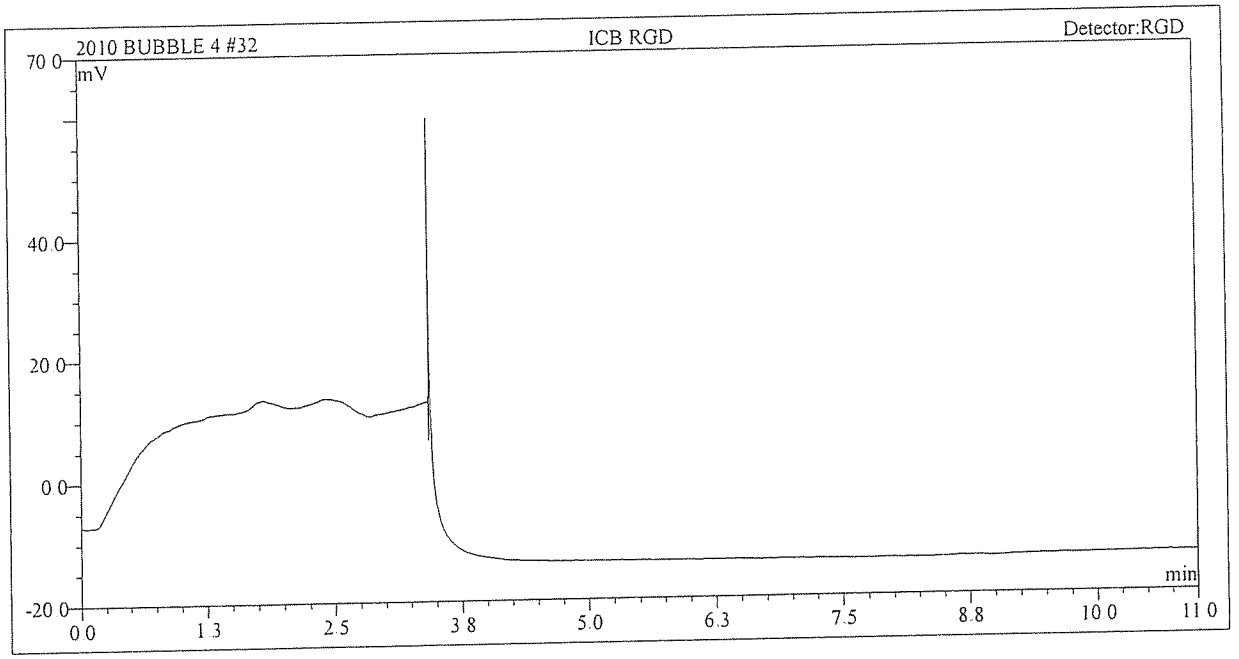
MICROSEEPS

Sample Analysis Report

Sample Name:	ICB RGD	**Sequence No:**	32
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:57 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100303029- H2

Original Run Date: 3-3-10

Matrix: Bubble Strip

Sample numbers:
P1002276-(1-5) FDP
P1002277-(1-8) FDP
P1002278-(1-7) FDP

Out of Control Event: (attach another page, if necessary)
1) P1002277-(1) Low pressure in vial
2) P1002277-(8), P1002278-(1) Require dilutions for H2

Corrective Action Taken:
1) Added 2cc UHP N2 and analyzed as 2x DIL
2) None

Result:
1) Report as 2x DIL
2) Report H2 on a future batch

Observations to support use of data: (Note any occurrences of manual integration here)

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. Date

Analyzed & Reviewed by: [illegible] Date: 3-3-10
Manual Integration Conducted? YES (NO)
(Circle One)
Reviewed by: [illegible] Date: 030910
Reviewed & Entered by: [illegible] Date: 3-5-10
Reviewed by: _____ Date: _____
Corrected by: _____ Date: _____

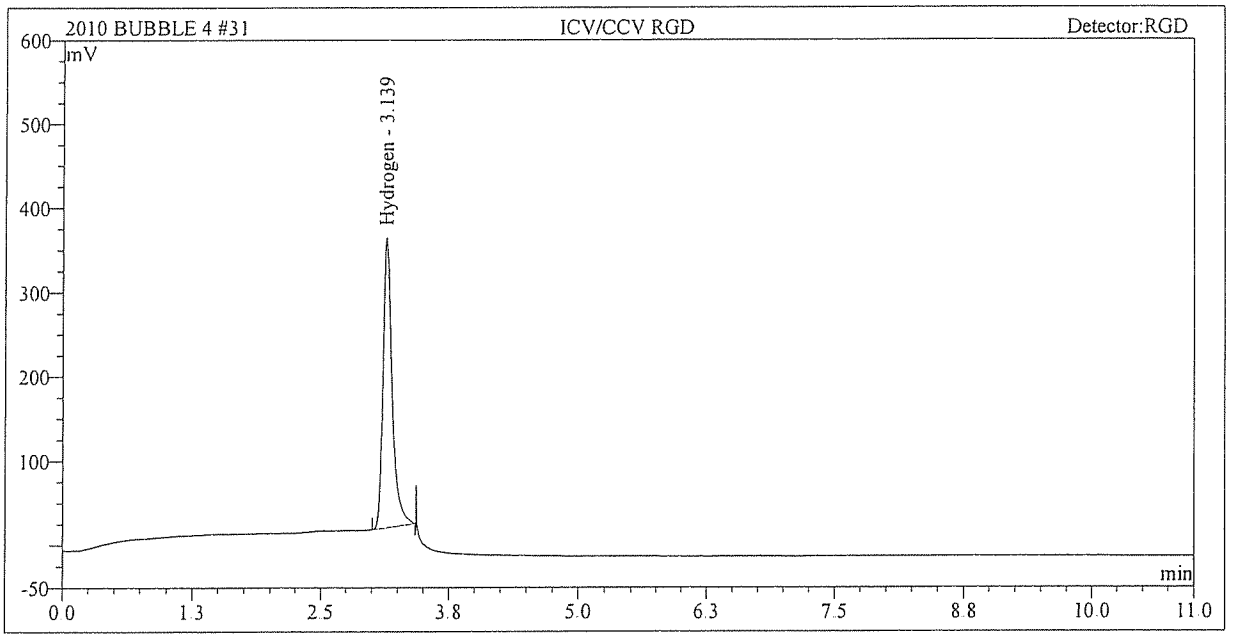
MICROSEEPS

Sample Analysis Report

Sample Name:	ICV/CCV RGD	**Sequence No:**	31
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:37 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.139	36.198	343.693	BMB	10.296	9.6749

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



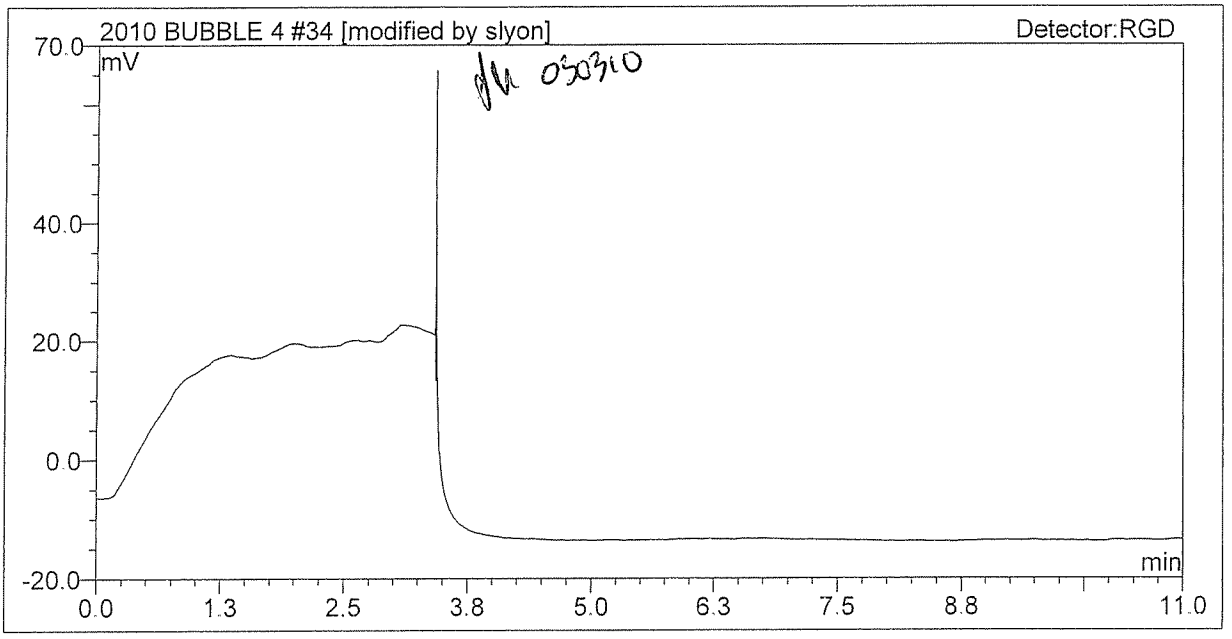
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 030310	**Sequence No:**	34
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 1:42 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



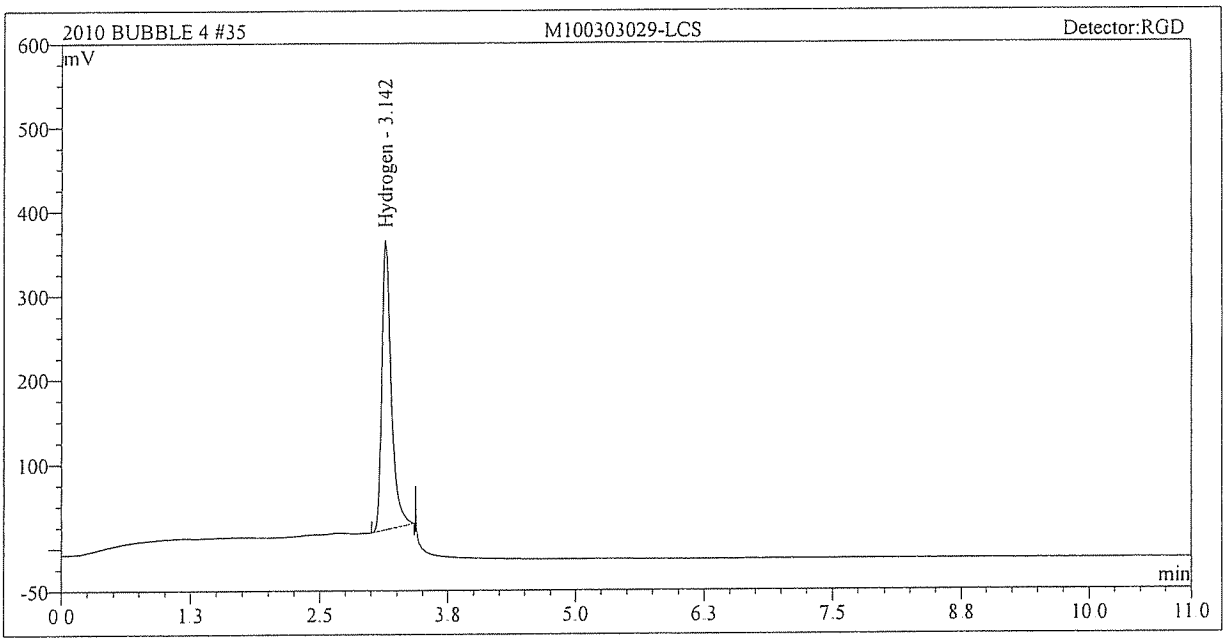
MICROSEEPS

Sample Analysis Report

Sample Name:	M100303029-LCS	**Sequence No:**	35
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 1:57 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.142	36.242	343.477	BMB	9.742	9.6866

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



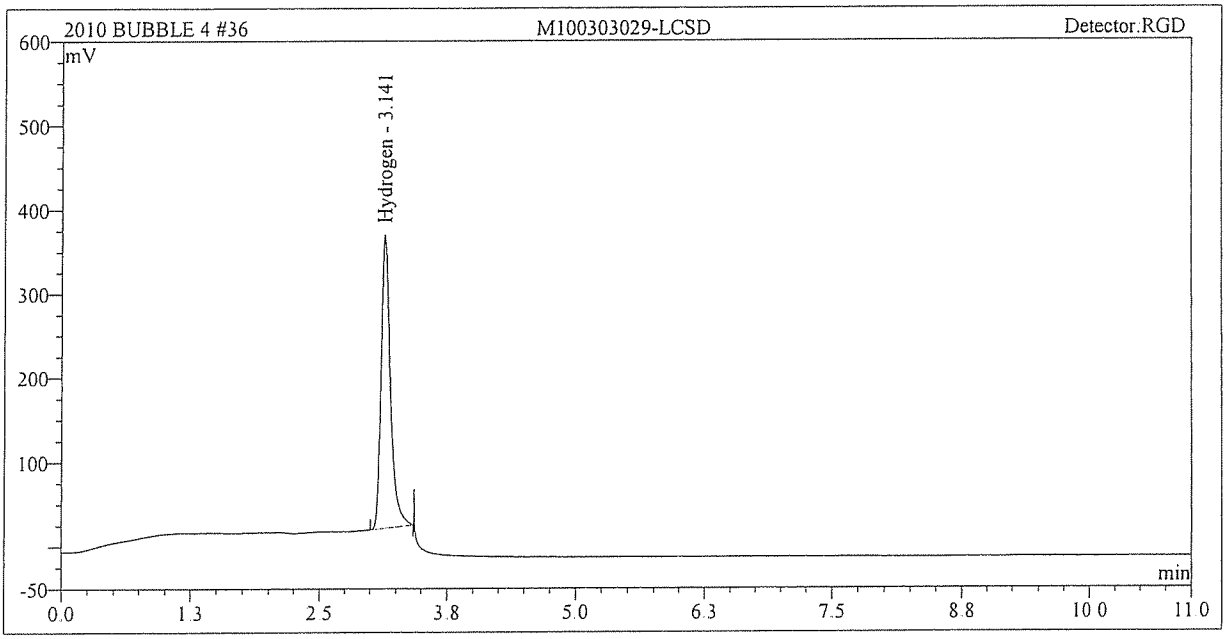
MICROSEEPS

Sample Analysis Report

Sample Name:	M100303029-LCSD	**Sequence No:**	36
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 2:10 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.141	36.712	348.532	BMB	9.752	9.8124

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



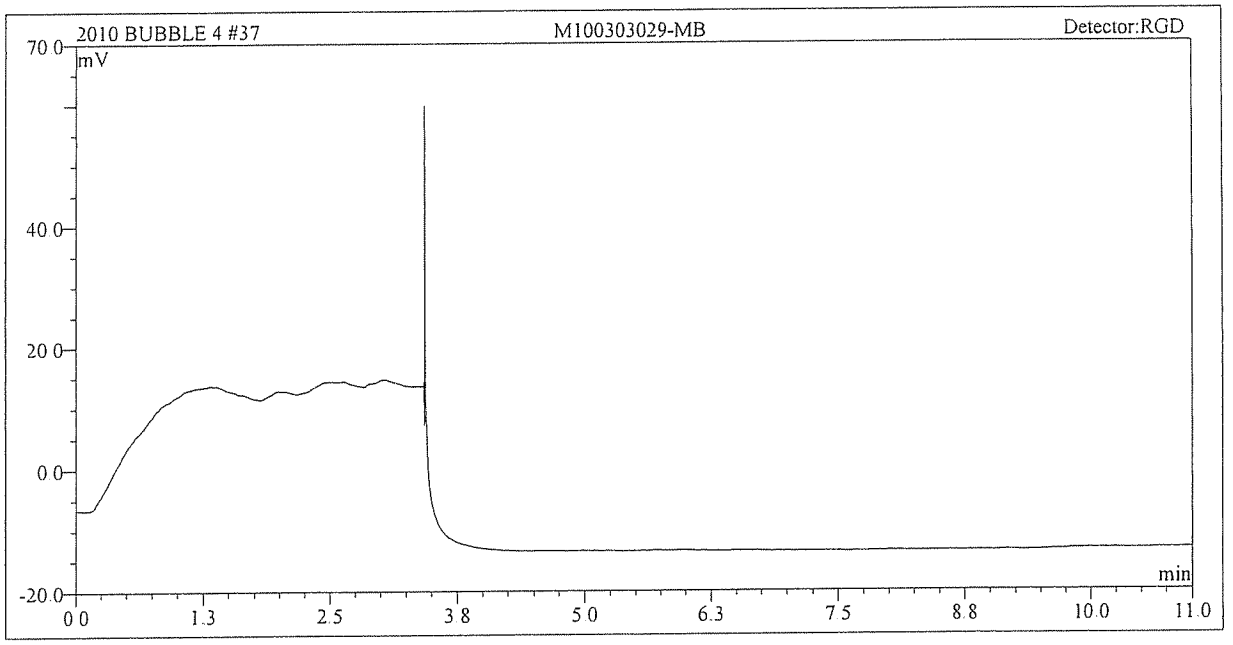
MICROSEEPS

Sample Analysis Report

Sample Name:	M100303029-MB	**Sequence No:**	37
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 2:28 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



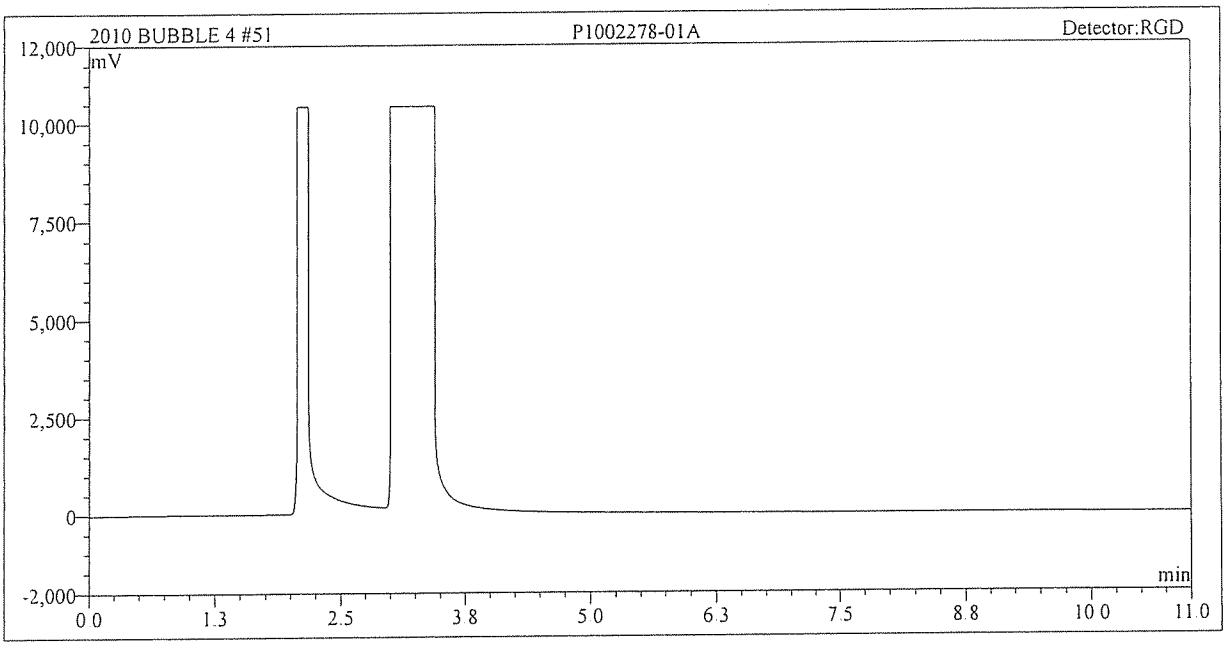
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002278-01A	**Sequence No:**	51
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 5:30 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



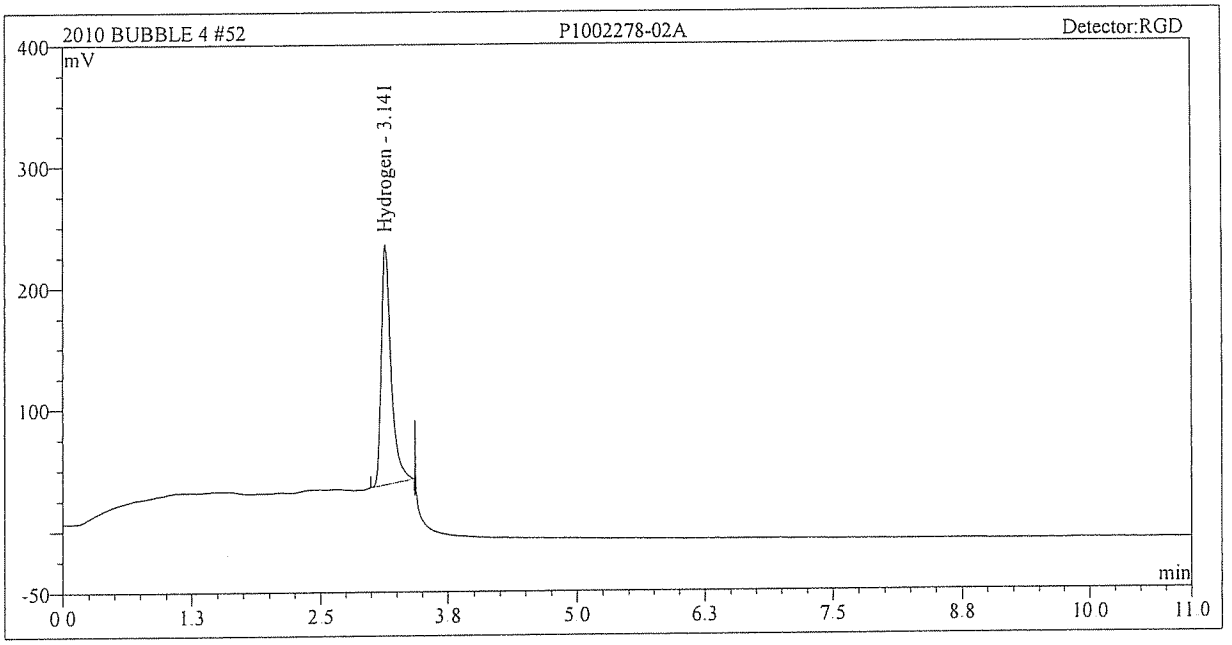
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002278-02A	**Sequence No:**	52
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 5:43 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.141	22.003	197.377	BMB	5.8810

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



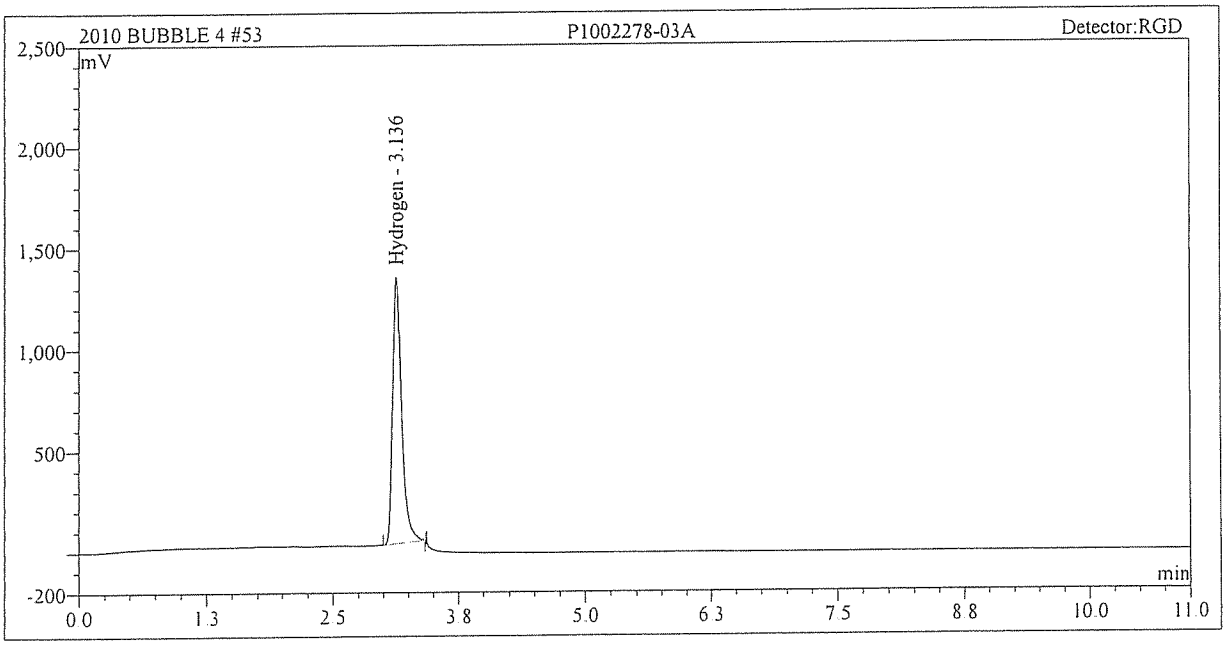
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002278-03A	**Sequence No:**	53
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 5:55 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.136	134.581	1315.916	BMB	35.9703

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



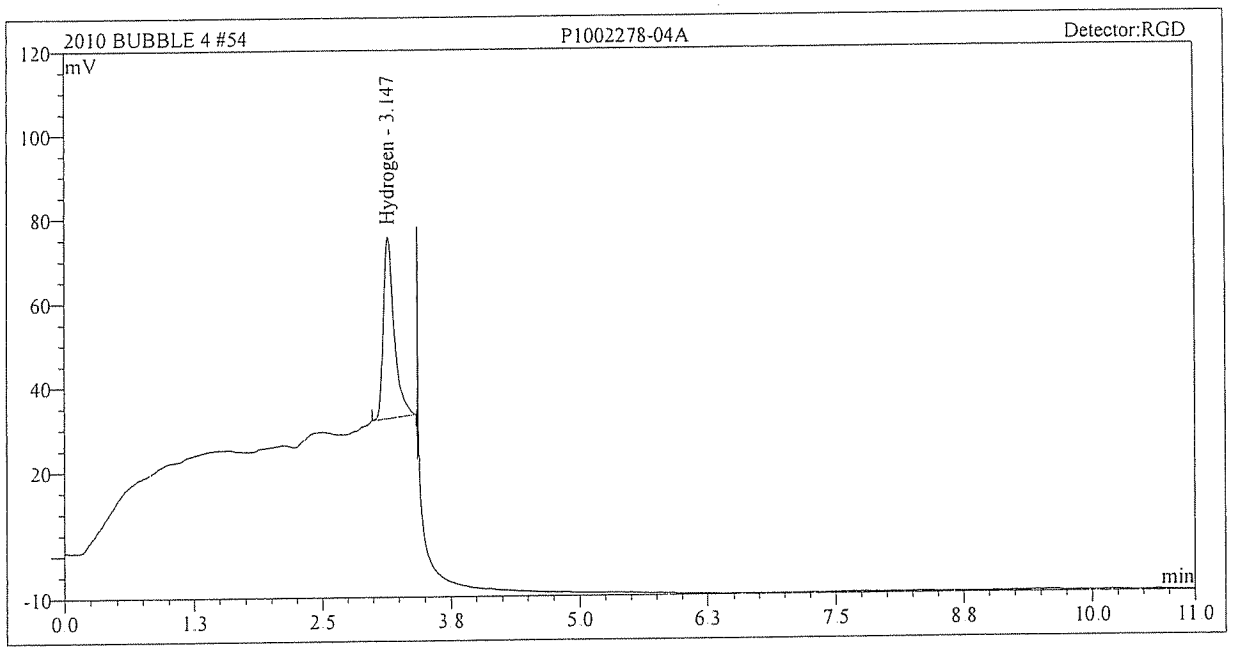
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002278-04A	**Sequence No:**	54
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 6:07 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.147	5.218	43.087	BMB	1.3947

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



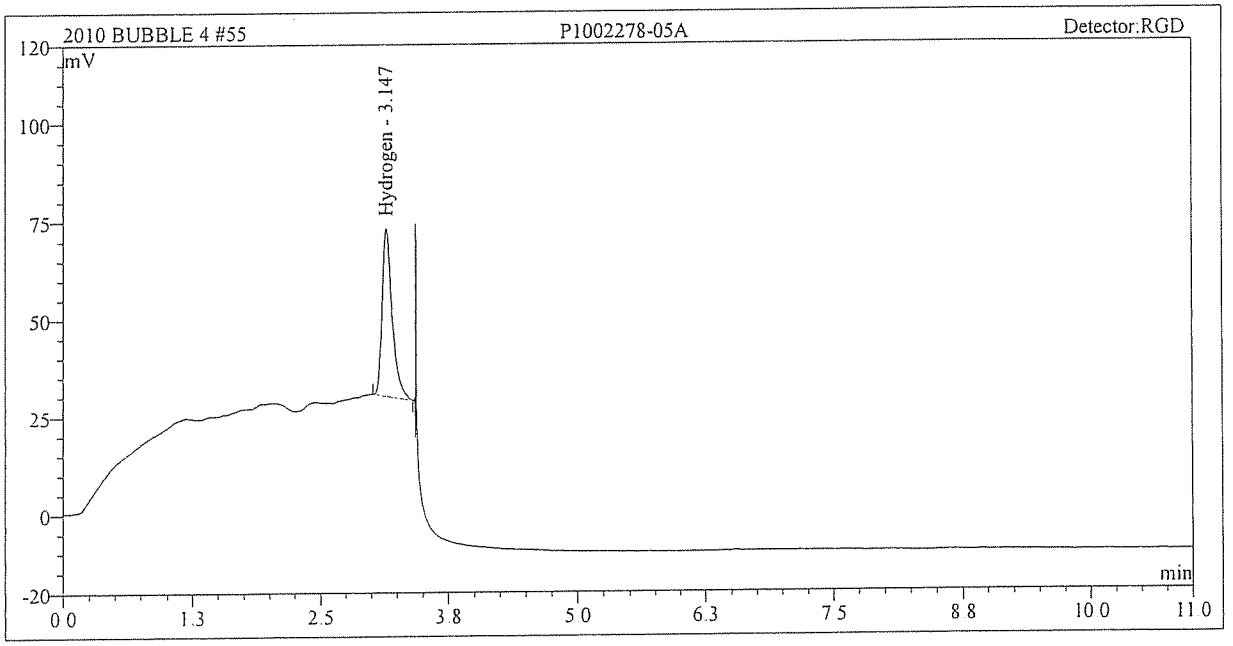
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002278-05A	**Sequence No:**	55
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 6:19 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.147	5.011	43.150	BMB	1.3393

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



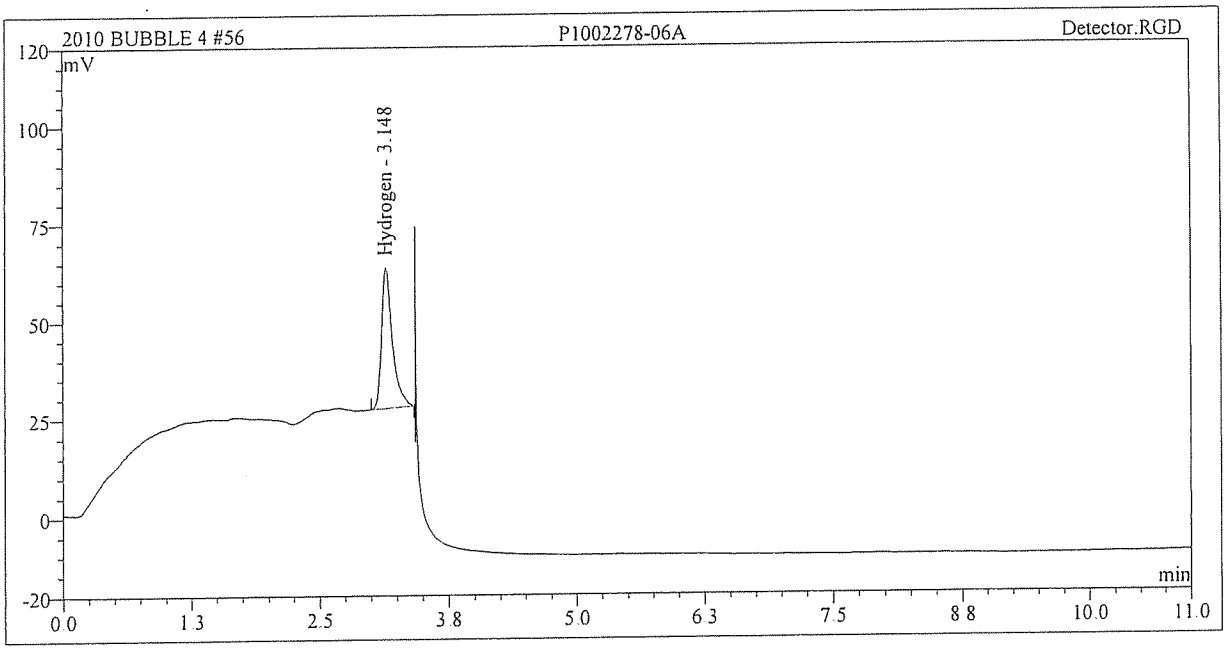
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002278-06A	**Sequence No:**	56
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 6:31 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.148	4.445	36.169	BMB	1.1880

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



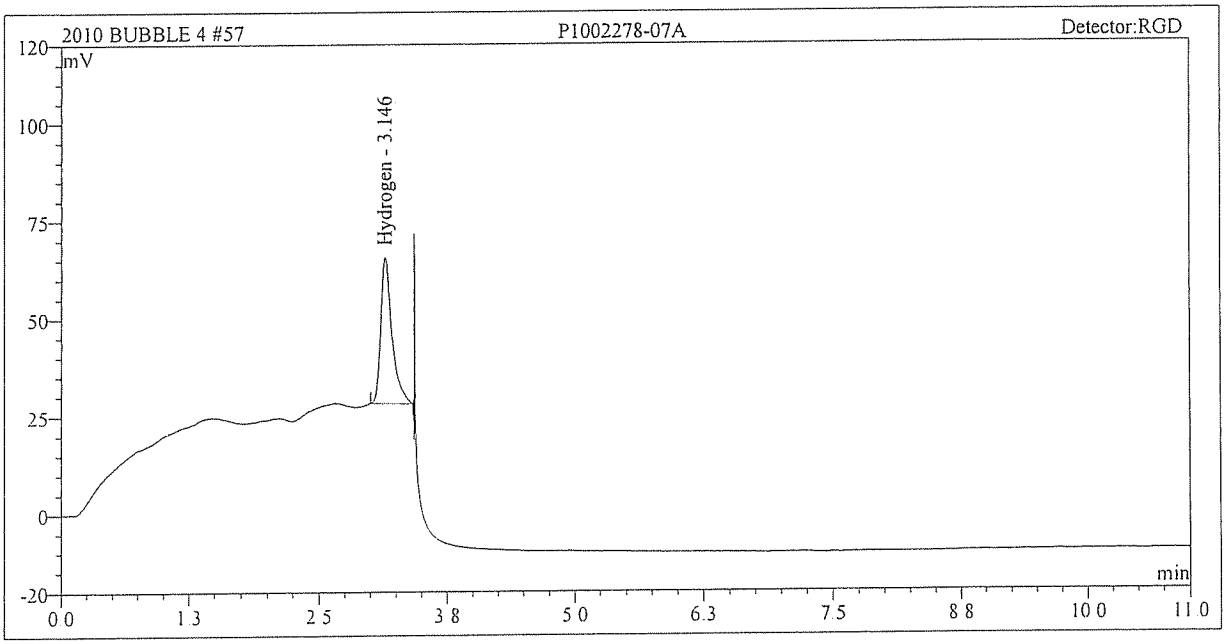
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002278-07A	**Sequence No:**	57
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 6:44 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.146	4.775	37.476	BMB	1.2762

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



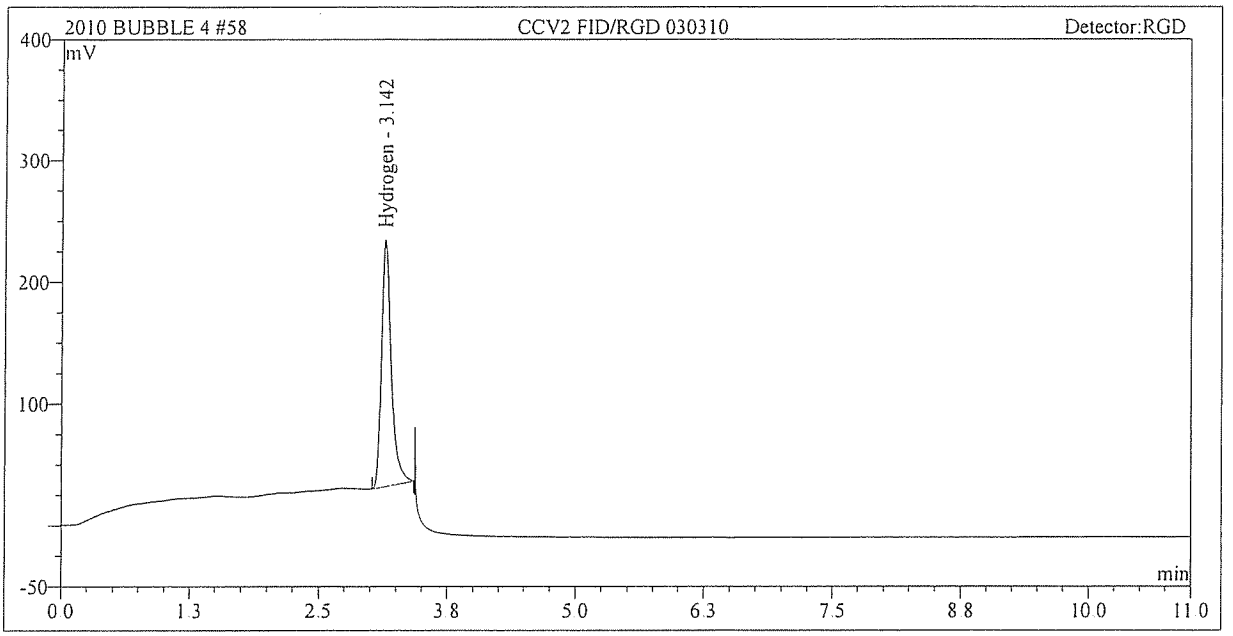
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 030310	**Sequence No:**	58
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 6:56 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.142	22.044	202.352	BMB	5.148	5.8918

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100305028 - Hz

Original Run Date: 3-5-10

Matrix: Bubble Strip

Sample numbers:
P1002271-(1-3) DIL's
P1002276-(6-8)
P1002277-(8) DIL
P1002278-(1) DIL
P1002279-(1,4,8) DIL's

Out of Control Event: (attach another page, if necessary)
P1002276-(6) Required a dilution for Hc

Corrective Action Taken:
DIL - same Batch

Result:
Report Dilution

Observations to support use of data: (Note any occurrences of manual integration here)

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. _____ Date _____

Analyzed & Reviewed by: [illegible] Date: 030510
Manual Integration Conducted? YES (NO)
(Circle One)
Reviewed by: [illegible] Date: 030910
Reviewed & Entered by: Upload Date: 030810
Reviewed by: _____ Date: _____
Corrected by: _____ Date: _____

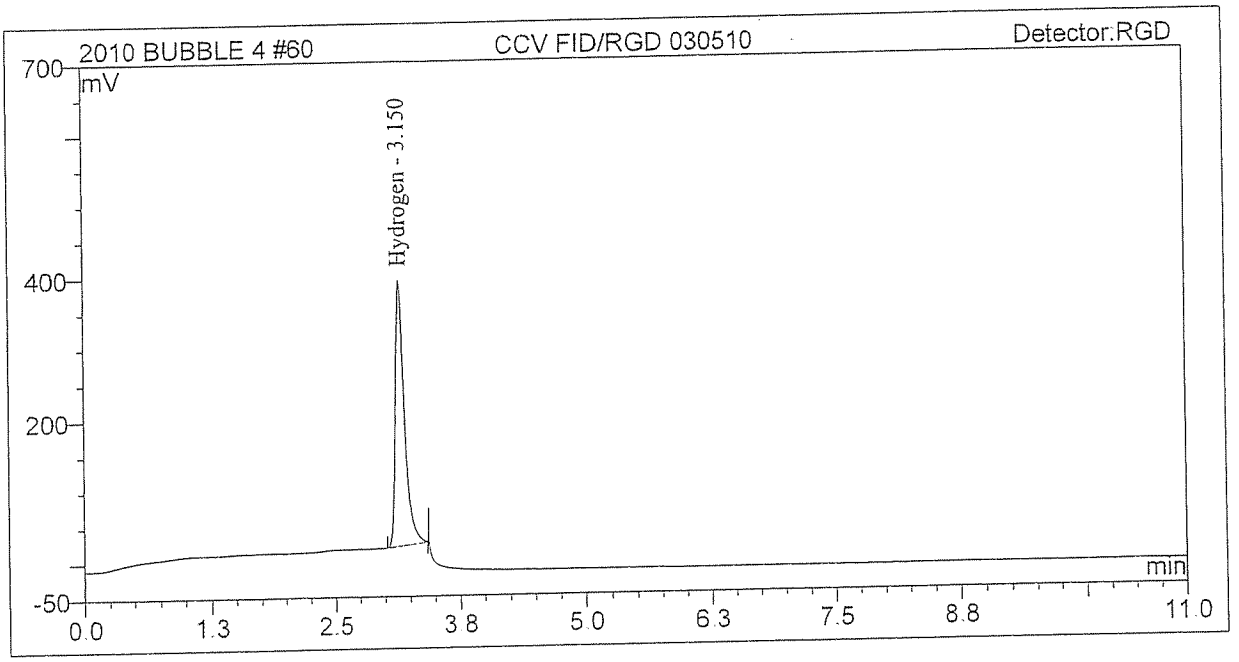
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 030510	**Sequence No:**	60
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 10:42 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.150	38.979	372.431	BMB	10.296	10.4182

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



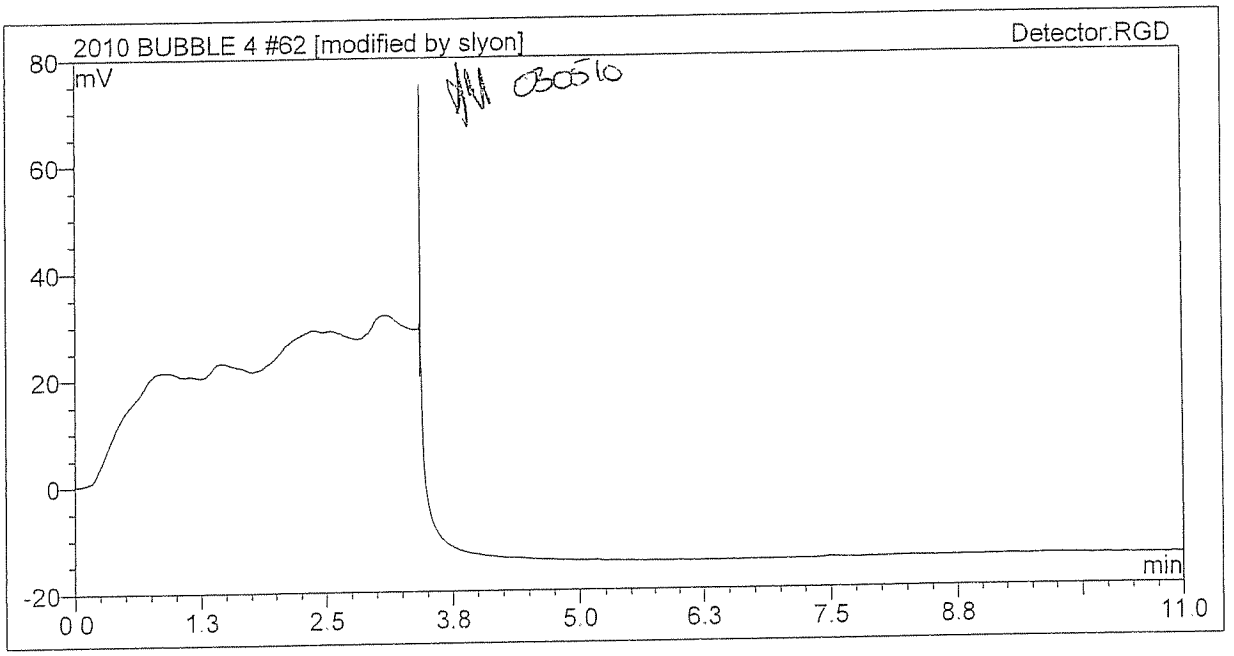
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 030510	Sequence No:	62
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/5/2010 11:15 AM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



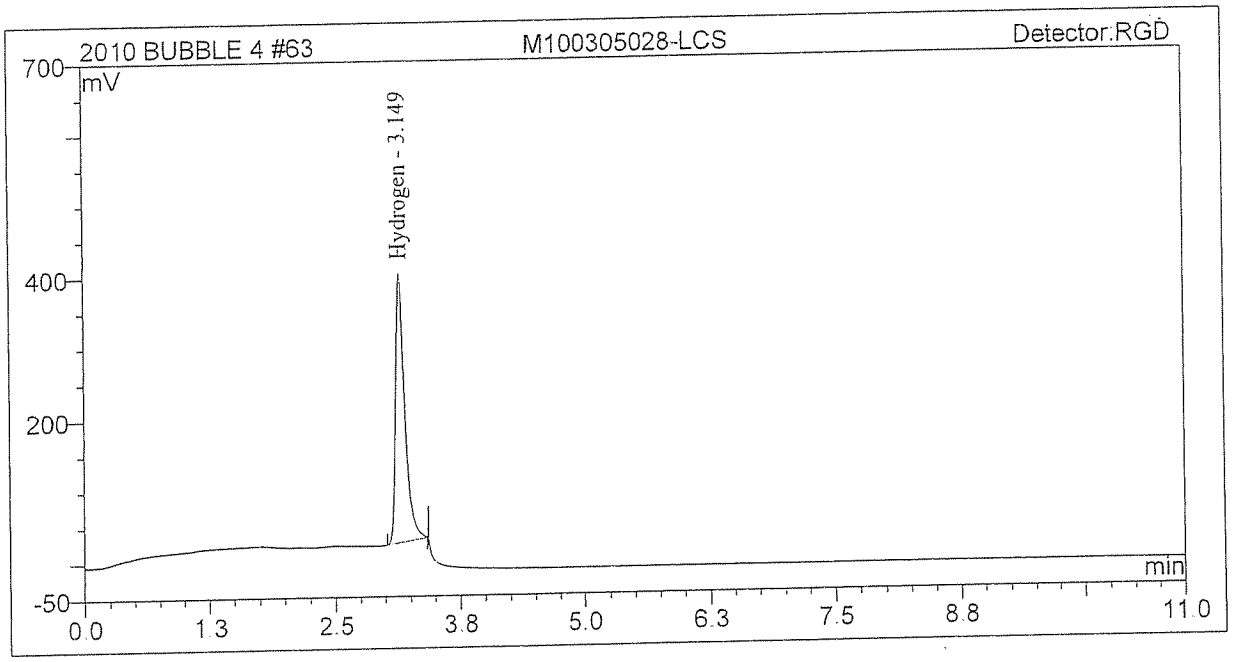
MICROSEEPS

Sample Analysis Report

Sample Name:	M100305028-LCS	**Sequence No:**	63
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 11:29 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV
1	Hydrogen	3.149	39.752	376.935	BMB	9.752 10.6249

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



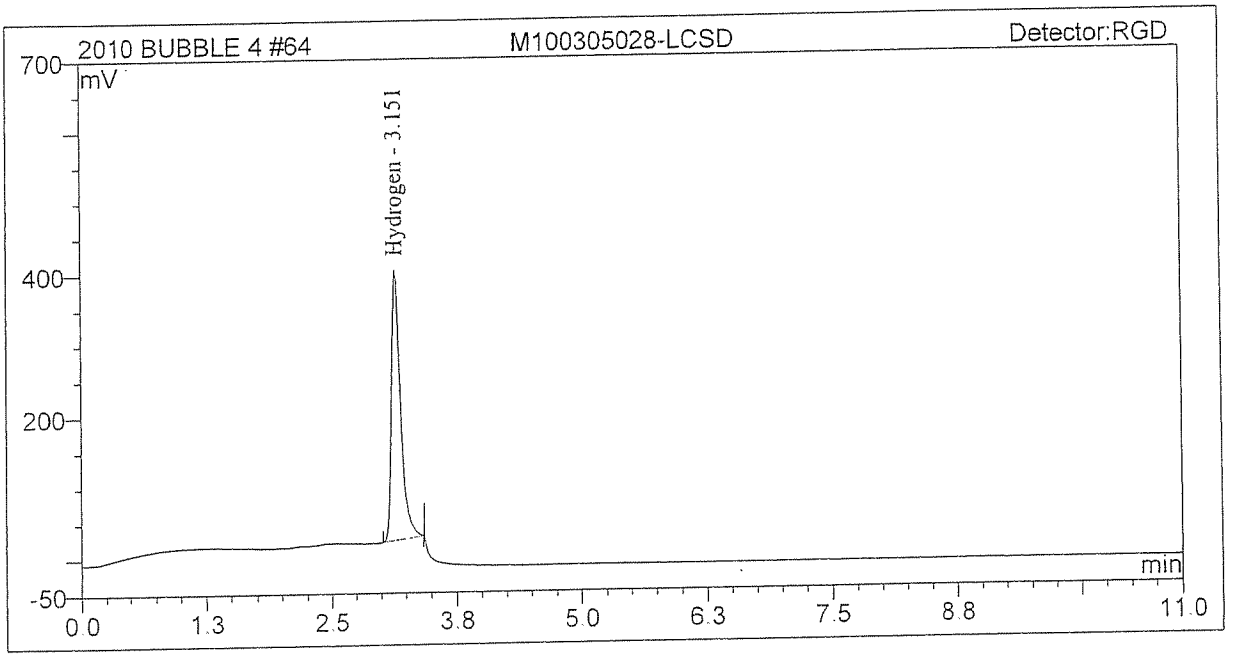
MICROSEEPS

Sample Analysis Report

Sample Name:	M100305028-LCSD	Sequence No:	64
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/5/2010 11:53 AM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV
1	Hydrogen	3.151	39.967	379.792	BMB	9.782 10.6823

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



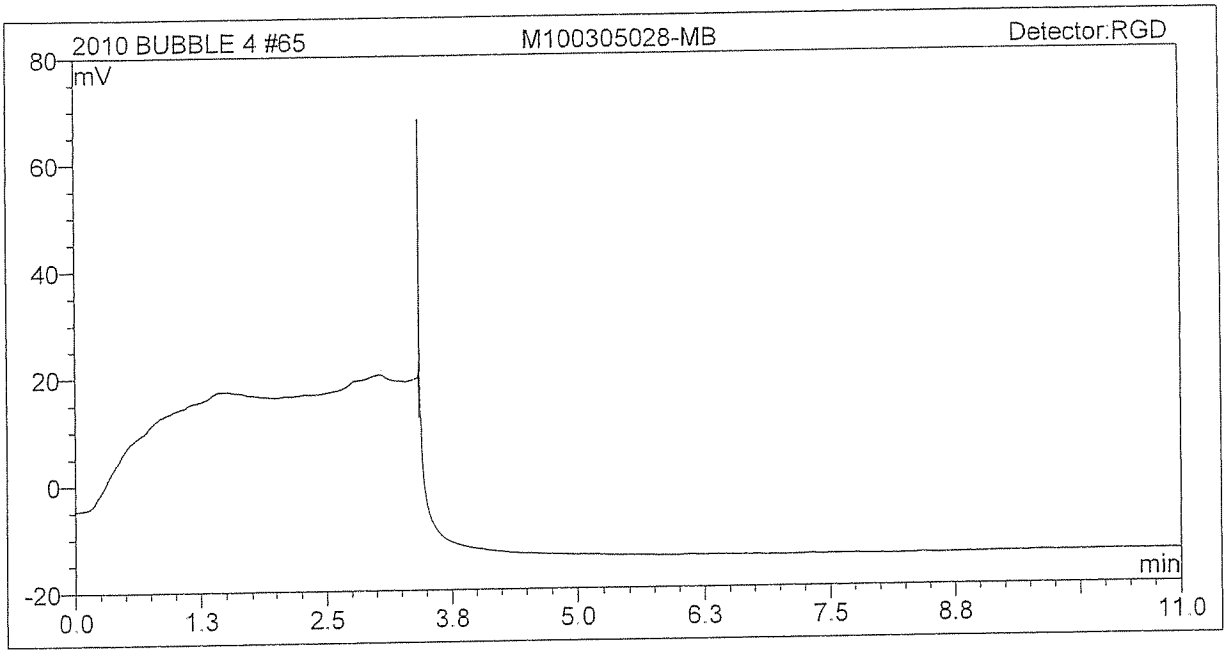
MICROSEEPS

Sample Analysis Report

Sample Name:	M100305028-MB	Sequence No:	65
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/5/2010 12:07 PM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



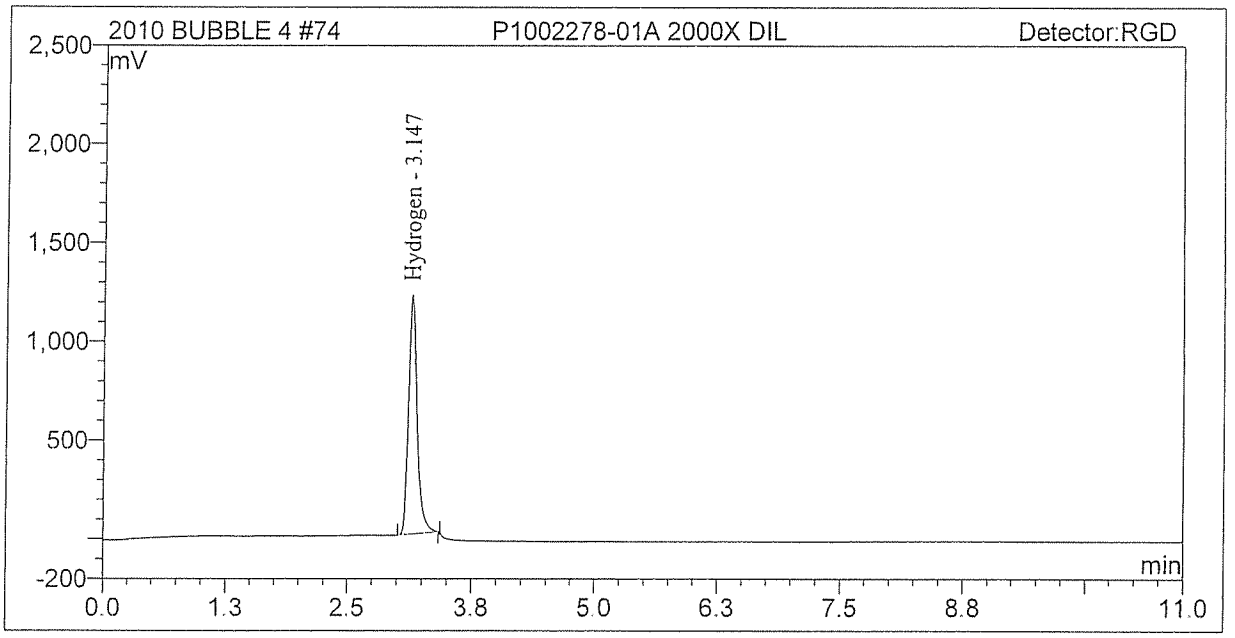
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002278-01A 2000X DIL	**Sequence No:**	74
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 2:34 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.147	121.847	1211.601	BMB	32.5670 x 2000

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



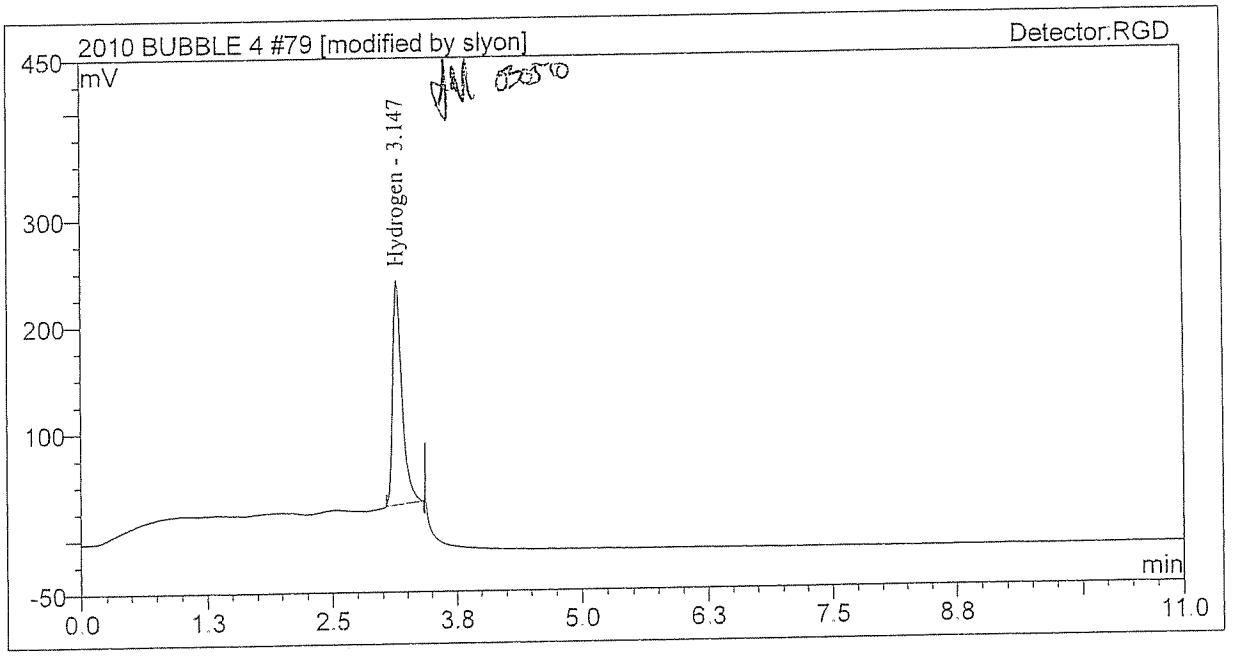
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 030510	Sequence No:	79
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/5/2010 7:57 PM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV		
1	Hydrogen	3.147	22.882	209.705	BMB*	5.1448	6.1157	119 %

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26027

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.	LABORATORY NAME
CTO-20-ALAMEDA	104 2720	MICROSEEPS INC
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106 3210 020 D0709 01000	
SAMPLER NAME: IW FS	AIRBILL NUMBER: 7984 0610 6395	LABORATORY ID (FOR LABORATORY): P1002276
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949 756 7584	

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: DISSOLVED HYDROGEN GAS

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISSOLVED HYDROGEN GAS	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-24-016	2-18-10	1000	1	✓			10	X		ZV1-MW03B	30	40	N
20-24-014	2-18-10	1120	1	✓			10	X		ZV1-MW03A2	10	20	N
20-24-036	2-18-10	1445	1	✓			10	X		372-MW1	25	12.5	N
20-24-017	2-18-10	1300	1	✓			10	X		ZV1-MW03C	40	50	N
20-24-033	2-18-10	1110	1	✓			10	X		ZV1-MW07B	30	40	N
20-24-027	2-18-10	1500	1	✓			10	X		ZV1-MW06A2	10	20	N
20-24-032	2-18-10	1230	1	✓			10	X		ZV1-MW07A3	20	30	N
20-24-034	2-18-10	1000	1	✓			10	X		ZV1-MW07C	40	50	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	LABORATORY INSTRUCTIONS/COMMENTS
[signature]	2-18-10	[signature] / Samples cust. Dian	
COMPANY: BTS	TIME: 1900	COMPANY: BTS	
RELINQUISHED BY (Signature): [signature]	DATE: 2-19-10	RECEIVED BY (Signature): FED EX	COMPOSITE DESCRIPTION
COMPANY: BTS	TIME: 1600	COMPANY	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
COMPANY	TIME	COMPANY	TEMPERATURE: ____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

microseeps
from insight comes solutions

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 1 of 11
Lab Proj #: P1002276
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Laboratory Results

Total pages in data package: 56

Lab Sample #	Client Sample ID
P1002276-01	20-R4-016
P1002276-02	20-R4-014
P1002276-03	20-R4-036
P1002276-04	20-R4-017
P1002276-05	20-R4-033
P1002276-06	20-R4-027
P1002276-07	20-R4-032
P1002276-08	20-R4-034

Microseeps test results meet all the requirements of the NELAC standards or provide reasons and/or justification if they do not.

Approved By: Debbie Hallo (HH) ***Date:*** 3·9·10

Project Manager: Debbie Hallo

The analytical results reported here are reliable and usable to the precision expressed in this report. As required by some regulating authorities, a full discussion of the uncertainty in our analytical results can be obtained at our web site or through customer service. Unless otherwise specified, all results are reported on a wet weight basis.

As a valued client we would appreciate your comments on our service.
Please call customer service at (412)826-5245 or email customerservice@microseeps.com.

Case Narrative:

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 2 of 11
Lab Proj #: P1002276
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-016	Vapor	P1002276-01	18 Feb. 10 10:00	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.000	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 3 of 11
Lab Proj #: P1002276
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-014	Vapor	P1002276-02	18 Feb. 10 11:20	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		0.800	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 4 of 11
Lab Proj #: P1002276
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-036	Vapor	P1002276-03	18 Feb. 10 14:45	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		0.830	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 5 of 11
Lab Proj #: P1002276
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-017	Vapor	P1002276-04	18 Feb. 10 13:00	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.000	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 6 of 11
Lab Proj #: P1002276
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-033	Vapor	P1002276-05	18 Feb. 10 11:10	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.000	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Lab Proj #: P1002276
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

nple Description	Matrix	Lab Sample #	Sampled Date/Time	Received
R4-027	Vapor	P1002276-06	18 Feb. 10 15:00	23 Feb. 10 13:29

alyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
skAnalysis							
Hydrogen		2400.000	60.000	nM	AM20GAX	3/5/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 8 of 11
Lab Proj #: P1002276
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-032	Vapor	P1002276-07	18 Feb. 10 12:30	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.300	0.600	nM	AM20GAX	3/5/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 9 of 11
Lab Proj #: P1002276
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-034	Vapor	P1002276-08	18 Feb. 10 10:00	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.000	0.600	nM	AM20GAX	3/5/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 10 of 11
Lab Proj #: P1002276
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip
Analysis Method: Hydrogen by Bubble Strip

M100303029-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100303029-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	9.700	nM	9.78	99.00	75 - 125

M100303029-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	9.800	nM	9.78	100.00	75 - 125	1.03	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Lab Proj #: P1002276
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip
Analysis Method: Hydrogen by Bubble Strip

M100305028-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100305028-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125

M100305028-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125	0.00	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Chain of Custody Documents

P/30 2-2-10

NUMBER 26027 P1002276

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.	LABORATORY NAME
CTO-20 - ALAMEDA	104 2720	MICROSEEPS INC
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106 3210 020 D0709 C1000	LABORATORY ID (FOR LABORATORY)
SAMPLER NAME: IW FS	AIRBILL NUMBER: 7984 0610 6395	
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949 756 7584	

ANALYSES REQUIRED: DISSOLVED HYDROGEN

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 2	LEVEL 4	TYPE	TAT	DISSOLVED HYDROGEN	COMMENTS
20-24-016	2-18-10	1000	1	✓			10	X	
20-24-014	2-18-10	1120	1	✓			10	X	
20-24-036	2-18-10	1445	1	✓			10	X	
20-24-017	2-18-10	1300	1	✓			10	X	
20-24-033	2-18-10	1110	1	✓			10	X	
20-24-027	2-18-10	1500	1	✓			10	X	
20-24-032	2-18-10	1230	1	✓			10	X	
20-24-034	2-18-10	1000	1	✓			10	X	

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	LABORATORY INSTRUCTIONS/COMMENTS
	2-18-10	(SAMPLES CUSTODY)	
COMPANY: BTS	TIME: 1700	COMPANY: BTS	
RELINQUISHED BY (Signature)	DATE: 2-19-10	RECEIVED BY (Signature): FED EX	COMPOSITE DESCRIPTION
COMPANY: BTS	TIME: 1600	COMPANY	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
COMPANY	TIME	COMPANY	TEMPERATURE: SAMPLE CONDITION: ☐ INTACT ☐ BRO COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

Debbie — attached are the original COCs / Diane

P1002276

Suzuki, Diane

From: Suzuki, Diane
Sent: Monday, February 22, 2010 10:26 AM
To: 'Debbie Hallo'
Subject: RE: CTO 20 Alameda
Attachments: coc_micro.PDF

Hi Debbie
It seems that the field crew sent the wrong chain of custodies with the samples sent to you.

The attached is a copy of the chain of custodies for your samples. Could you mail the original chain of custodies mistakenly sent to you back to me, please? I am trying to obtain the original for your samples to send to you.

I apologize for the error.

Diane Suzuki | Chemist
Direct: 949.756.7584 | Fax: 949.756.7583
Diane.Suzuki@tetratech.com

Tetra Tech EC, Inc. | Sciences
1940 E. Deere Avenue, Suite 200 | Santa Ana, CA 92705 | www.tetratech.com

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Think Green - Not every email needs to be printed.

From: Debbie Hallo [mailto:dhallo@microseeps.com]
Sent: Friday, February 19, 2010 8:28 AM
To: Suzuki, Diane
Subject: RE: CTO 20 Alameda

Thanks Diane!

Debbie Hallo
Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone 412 826 5245
Fax 412 826 3433
www. microseeps.com

CHECK OUT OUR ON-LINE BOTTLE ORDER FORM AT WWW.MICROSEEPS.COM

From: Suzuki, Diane [mailto:Diane.Suzuki@tetratech.com]
Sent: Friday, February 19, 2010 11:27 AM
To: Debbie Hallo; Heather Hauser
Subject: RE: CTO 20 Alameda

Good morning

Just wanted to send a reminder that we will be shipping off the samples for Dissolved Hydrogen today to arrive at your facility tomorrow as planned.

Please contact me if you have any questions.
tks…

Diane Suzuki | Chemist
Direct: 949.756.7584 | Fax: 949.756.7583
Diane.Suzuki@tetratech.com

Tetra Tech EC, Inc. | Sciences
1940 E. Deere Avenue, Suite 200 | Santa Ana, CA 92705 | www.tetratech.com

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Think Green - Not every email needs to be printed.

From: Suzuki, Diane
Sent: Thursday, February 18, 2010 10:12 AM
To: 'Debbie Hallo'
Subject: CTO 20 Alameda

Good morning Debbie

We will complete the Alameda groundwater sampling event tomorrow and will be sending you the samples for Dissolved Hydrogen for Saturday, 02/20/2010, delivery.

I will let you know if there is any change to the plans.

tks…

Diane Suzuki | Chemist
Direct: 949.756.7584 | Fax: 949.756.7583
Diane.Suzuki@tetratech.com

Tetra Tech EC, Inc. | Sciences
1940 E. Deere Avenue, Suite 200 | Santa Ana, CA 92705 | www.tetratech.com

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Hydrogen Data

Method File: BUBBLE
Operator: slyon 2276

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Window	Standard	Int.Type	Cal.Type
1	Methane	0.645 min	0.645 min			0.200 AN	External	Area	LOff
2	Ethane	0.908 min	0.908 min			0.200 AN	External	Area	Lin
3	Ethene	1.155 min	1.155 min			0.200 AN	External	Area	Lin
4	Propane	1.785 min	1.785 min			0.200 AN	External	Area	Lin
5	*Hydrogen*	*3.149 min*			*3.149 min*	*0.200 AN*	*External*	*Area*	*Lin*
6	Propene	3.567 min	3.567 min			0.200 AN	External	Area	Lin
7	Carbon Dioxide	4.200 min		4.200 min		0.500 AN	External	Area	Lin
8	iso-Butane	4.560 min	4.560 min			0.500 AN	External	Area	Lin
9	n-Butane	5.310 min	5.310 min			0.500 AN	External	Area	Lin
10	Oxygen	5.870 min		5.870 min		0.300 AN	External	Area	Lin
11	Nitrogen	6.260 min		6.260 min		0.300 AN	External	Area	Lin
12	Acetylene	7.198 min	7.198 min			0.500 AN	External	Area	Lin
13	Methane	7.560 min		7.560 min		0.400 AN	External	Area	Lin
14	Carbon Monoxide	8.450 min		8.450 min		0.400 AN	External	Area	Lin
15	Carbon Monoxide	8.600 min			8.600 min	0.400 AN	External	Area	Lin

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Peak Type	Group	Comment
1	Methane	0.645 min	Auto		
2	Ethane	0.908 min	Auto		
3	Ethene	1.155 min	Auto		
4	Propane	1.785 min	Auto		
5	*Hydrogen*	*3.149 min*	*Auto*		
6	Propene	3.567 min	Auto		
7	Carbon Dioxide	4.200 min	Auto		
8	iso-Butane	4.560 min	Auto		
9	n-Butane	5.310 min	Auto		
10	Oxygen	5.870 min	Auto		
11	Nitrogen	6.260 min	Auto		
12	Acetylene	7.198 min	Auto		
13	Methane	7.560 min	Auto		
14	Carbon Monoxide	8.450 min	Auto		
15	Carbon Monoxide	8.600 min	Auto		

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Amount ICAL Acetylene L5	Amount ICAL Acetylene L4
1	Methane	0.645 min	0.645 min				
2	Ethane	0.908 min	0.908 min				
3	Ethene	1.155 min	1.155 min				
4	Propane	1.785 min	1.785 min				
5	*Hydrogen*	*3.149 min*			*3.149 min*		
6	Propene	3.567 min	3.567 min				
7	Carbon Dioxide	4.200 min		4.200 min			
8	iso-Butane	4.560 min	4.560 min				
9	n-Butane	5.310 min	5.310 min				
10	Oxygen	5.870 min		5.870 min			
11	Nitrogen	6.260 min		6.260 min			
12	Acetylene	7.198 min	7.198 min			0.529000	2.648000
13	Methane	7.560 min		7.560 min			
14	Carbon Monoxide	8.450 min		8.450 min			
15	Carbon Monoxide	8.600 min			8.600 min		

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL Acetylene L3	Amount ICAL Acetylene L2	Amount ICAL Acetylene L1	Amount ICAL FID L8	Amount ICAL FID L7
1	Methane	0.645 min				0.002280	0.007120
2	Ethane	0.908 min				0.005880	0.018300
3	Ethene	1.155 min				0.013800	0.043300
4	Propane	1.785 min				0.006640	0.020700
5	*Hydrogen*	*3.149 min*					
6	Propene	3.567 min				0.019800	0.062100
7	Carbon Dioxide	4.200 min					
8	iso-Butane	4.560 min				0.004950	0.015400
9	n-Butane	5.310 min				0.006190	0.019300
10	Oxygen	5.870 min					
11	Nitrogen	6.260 min					
12	Acetylene	7.198 min	13.240000	66.200000	264.800000		
13	Methane	7.560 min					
14	Carbon Monoxide	8.450 min					
15	Carbon Monoxide	8.600 min					

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL FID L6	Amount ICAL FID L5	Amount ICAL FID L4	Amount ICAL FID L3	Amount ICAL FID L2	Amount ICAL FID L1
1	Methane	0.645 min	0.028500	0.114000	0.456000	2.280000	11.402000	57.011000
2	Ethane	0.908 min	0.073500	0.294000	1.176000	5.880000	29.403000	147.016000
3	Ethene	1.155 min	0.173000	0.693000	2.774000	13.870000	69.353000	346.766000
4	Propane	1.785 min	0.083000	0.332000	1.328000	6.644000	33.220000	166.100000
5	*Hydrogen*	*3.149 min*						
6	Propene	3.567 min	0.248000	0.993000	3.975000	19.877000	99.388000	496.942000
7	Carbon Dioxide	4.200 min						
8	iso-Butane	4.560 min	0.061800	0.247000	0.990000	4.951000	24.756000	123.783000
9	n-Butane	5.310 min	0.077400	0.309000	1.238000	6.192000	30.961000	154.808000
10	Oxygen	5.870 min						
11	Nitrogen	6.260 min						
12	Acetylene	7.198 min						
13	Methane	7.560 min						
14	Carbon Monoxide	8.450 min						
15	Carbon Monoxide	8.600 min						

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL TCD L6	Amount ICAL TCD L5	Amount ICAL TCD L4	Amount ICAL TCD L3	Amount ICAL TCD L2	Amount ICAL TCD L1
1	Methane	0.645 min						
2	Ethane	0.908 min						
3	Ethene	1.155 min						
4	Propane	1.785 min						
5	*Hydrogen*	*3.149 min*						
6	Propene	3.567 min						
7	Carbon Dioxide	4.200 min	2.196000	5.490000	10.980000	54.900000	274.500000	549.000000
8	iso-Butane	4.560 min						
9	n-Butane	5.310 min						
10	Oxygen	5.870 min	0.015900	0.039900	0.079800	0.399200	1.996000	3.992000
11	Nitrogen	6.260 min	0.051400	0.129000	0.257000	1.286000	6.430000	12.860000
12	Acetylene	7.198 min						
13	Methane	7.560 min		23.580000	47.160000	235.800000	1179.000000	2358.000000
14	Carbon Monoxide	8.450 min		0.046900	0.093800	0.469000	2.345000	4.690000
15	Carbon Monoxide	8.600 min						

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL H2 L7	Amount ICAL H2 L6	Amount ICAL H2 L5	Amount ICAL H2 L4	Amount ICAL H2 L3	Amount ICAL H2 L2
1	Methane	0.645 min						
2	Ethane	0.908 min						
3	Ethene	1.155 min						
4	Propane	1.785 min						
5	*Hydrogen*	*3.149 min*	*0.396000*	*0.990000*	*3.960000*	*9.900000*	*19.800000*	*39.600000*
6	Propene	3.567 min						
7	Carbon Dioxide	4.200 min						
8	iso-Butane	4.560 min						
9	n-Butane	5.310 min						
10	Oxygen	5.870 min						
11	Nitrogen	6.260 min						
12	Acetylene	7.198 min						
13	Methane	7.560 min						
14	Carbon Monoxide	8.450 min						
15	Carbon Monoxide	8.600 min						

Method File: BUBBLE
Operator: slyon

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Calibration:

Calibration Mode: Total
Auto Recalibrate: On
Curve Fitting Model: Normal
Dual-Column Separate Calibration: Off

No.	Enabled	Name	Smp.No.	Pos.	Inj. Vol.	Weight	ISTD Amount	Dil. Factor	Inj. Date/Time
1	☒	ICAL Acetylene L5	1	3	20.0	1.0000	1.0000	1.0000	1/27/2010 1:45:06 PM
2	☒	ICAL Acetylene L4	2	4	20.0	1.0000	1.0000	1.0000	1/27/2010 1:57:25 PM
3	☒	ICAL Acetylene L3	3	5	20.0	1.0000	1.0000	1.0000	1/27/2010 2:11:52 PM
4	☒	ICAL Acetylene L2	4	6	20.0	1.0000	1.0000	1.0000	1/27/2010 2:24:12 PM
5	☒	ICAL Acetylene L1	5	7	20.0	1.0000	1.0000	1.0000	1/27/2010 2:40:41 PM
6	☒	ICAL FID L8	6	8	20.0	1.0000	1.0000	1.0000	1/27/2010 3:06:21 PM
7	☒	ICAL FID L7	7	9	20.0	1.0000	1.0000	1.0000	1/27/2010 3:18:35 PM
8	☒	ICAL FID L6	8	10	20.0	1.0000	1.0000	1.0000	1/27/2010 3:32:43 PM
9	☒	ICAL FID L5	9	11	20.0	1.0000	1.0000	1.0000	1/27/2010 3:45:00 PM
10	☒	ICAL FID L4	10	12	20.0	1.0000	1.0000	1.0000	1/27/2010 3:59:45 PM
11	☒	ICAL FID L3	11	13	20.0	1.0000	1.0000	1.0000	1/27/2010 4:12:06 PM
12	☒	ICAL FID L2	12	14	20.0	1.0000	1.0000	1.0000	1/27/2010 4:26:11 PM
13	☒	ICAL FID L1	13	15	20.0	1.0000	1.0000	1.0000	1/27/2010 4:39:41 PM
14	☒	ICAL TCD L6	16	18	20.0	1.0000	1.0000	1.0000	1/27/2010 5:21:50 PM
15	☒	ICAL TCD L5	17	19	20.0	1.0000	1.0000	1.0000	1/27/2010 5:35:49 PM
16	☒	ICAL TCD L4	18	20	20.0	1.0000	1.0000	1.0000	1/27/2010 5:48:02 PM
17	☒	ICAL TCD L3	19	21	20.0	1.0000	1.0000	1.0000	1/27/2010 6:01:38 PM
18	☒	ICAL TCD L2	20	22	20.0	1.0000	1.0000	1.0000	1/27/2010 6:13:53 PM
19	☒	ICAL TCD L1	21	23	20.0	1.0000	1.0000	1.0000	1/27/2010 6:27:25 PM
20	☒	ICAL H2 L7	25	1	20.0	1.0000	1.0000	1.0000	3/3/2010 11:14:07 AM
21	☒	ICAL H2 L6	26	2	20.0	1.0000	1.0000	1.0000	3/3/2010 11:26:28 AM
22	☒	ICAL H2 L5	27	3	20.0	1.0000	1.0000	1.0000	3/3/2010 11:38:40 AM
23	☒	ICAL H2 L4	28	4	20.0	1.0000	1.0000	1.0000	3/3/2010 11:56:32 AM
24	☒	ICAL H2 L3	29	5	20.0	1.0000	1.0000	1.0000	3/3/2010 12:09:53 PM
25	☒	*ICAL H2 L2*	*30*	*6*	*20.0*	*1.0000*	*1.0000*	*1.0000*	*3/3/2010 12:24:07 PM*

Hydrogen

Method AM20GAX

3/3/2010

No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square %	Offset	Slope	Curve
1	3.14	Hydrogen	Lin	6	99.993	0.00000	3.74144	0.00000

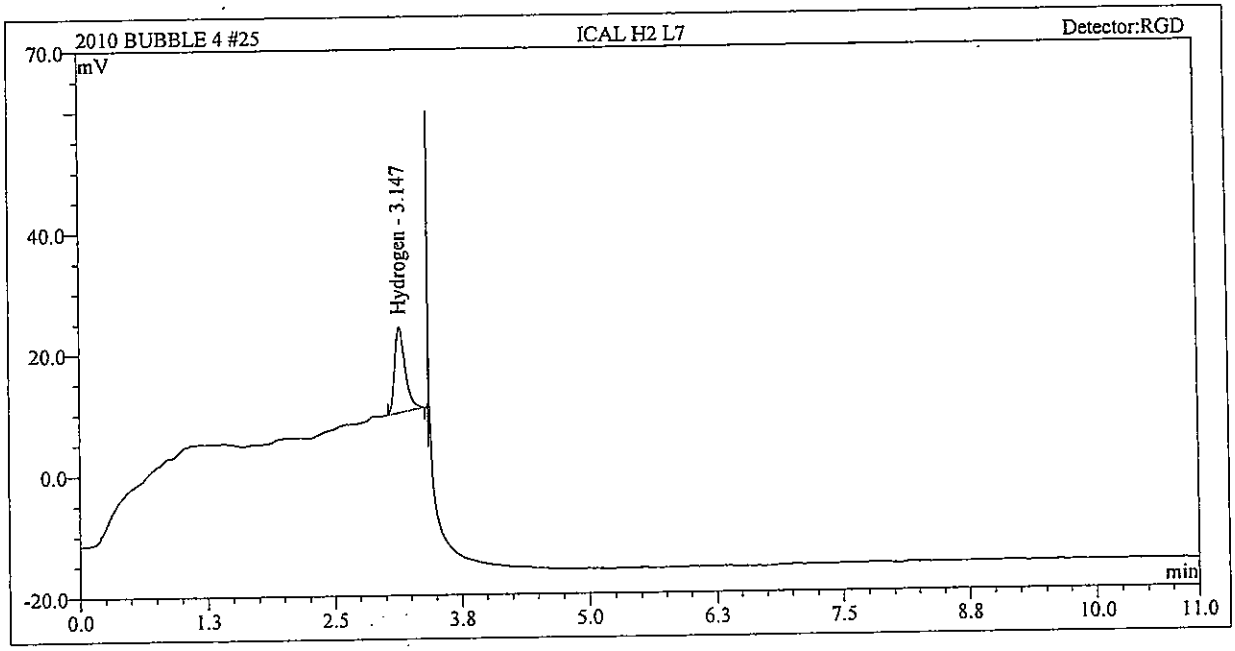
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L7	**Sequence No:**	25
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 11:14 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.147	1.681	14.241	BMB	0.4494

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



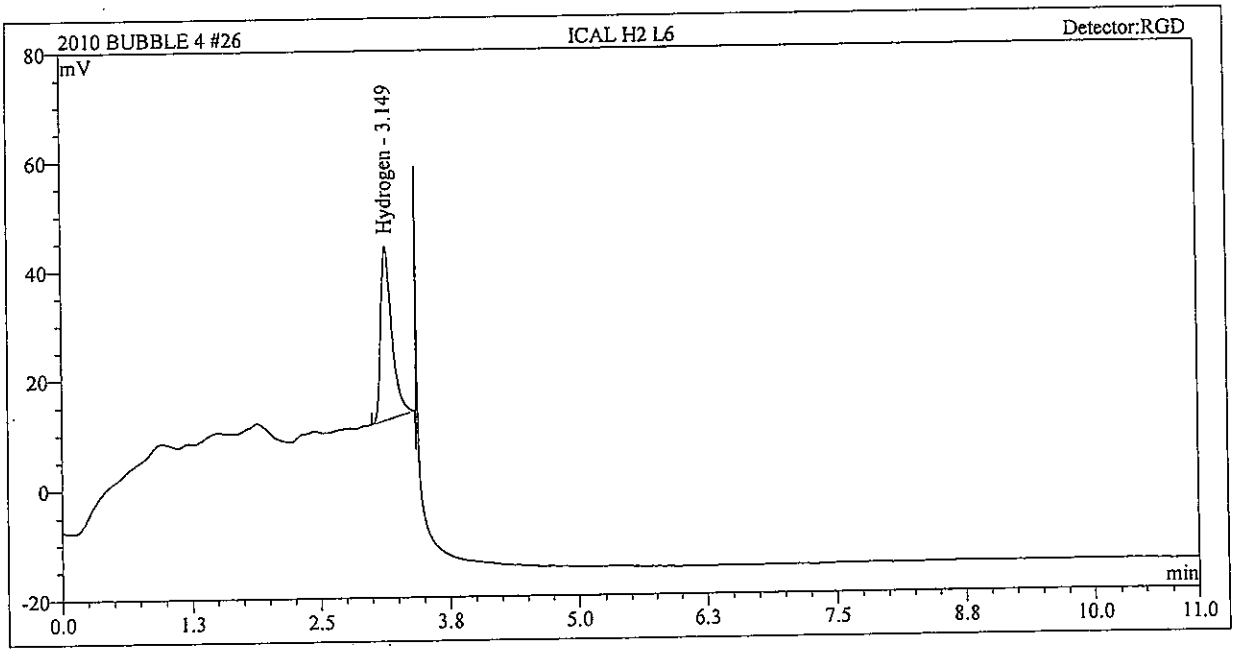
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L6	**Sequence No:**	26
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 11:26 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.149	3.830	31.832	BMB	1.0237

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



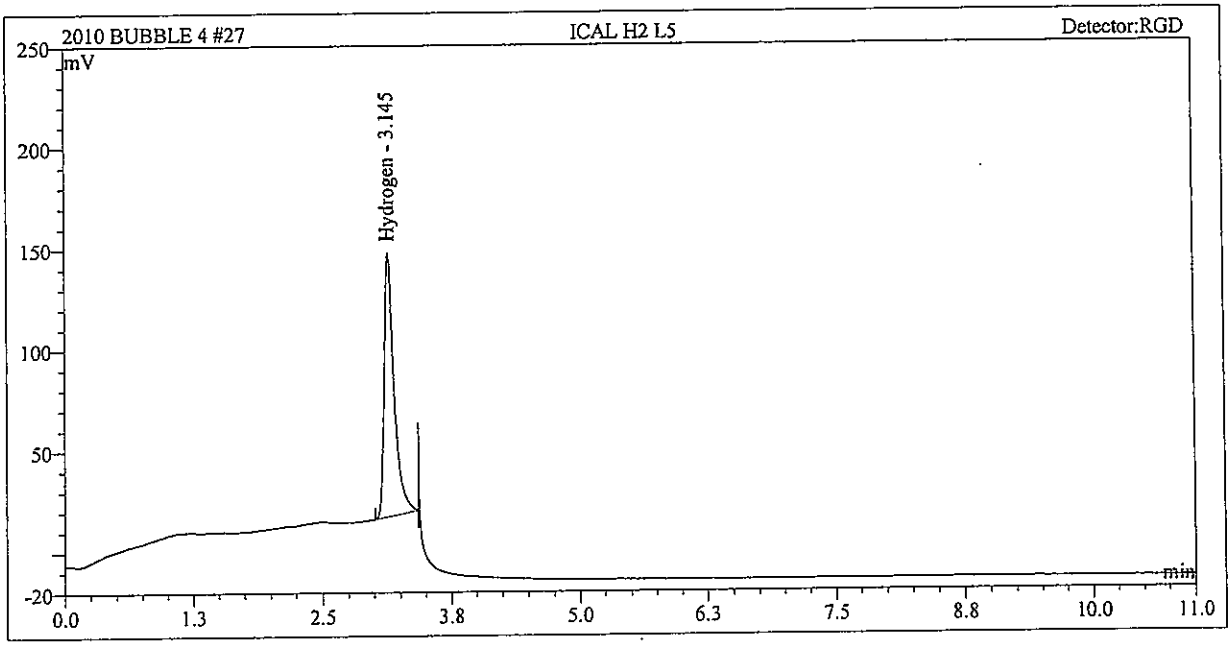
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L5	**Sequence No:**	27
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 11:38 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.145	14.495	130.097	BMB	3.8740

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



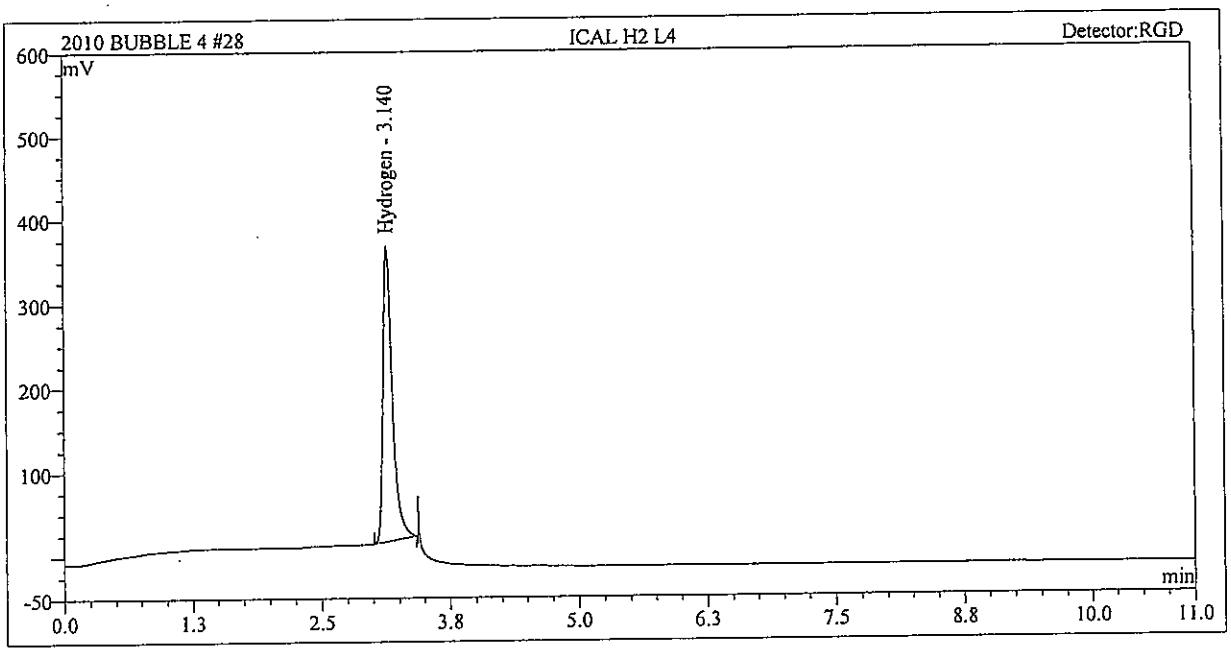
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L4	**Sequence No:**	28
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 11:56 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.140	36.435	350.662	BMB	9.7382

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



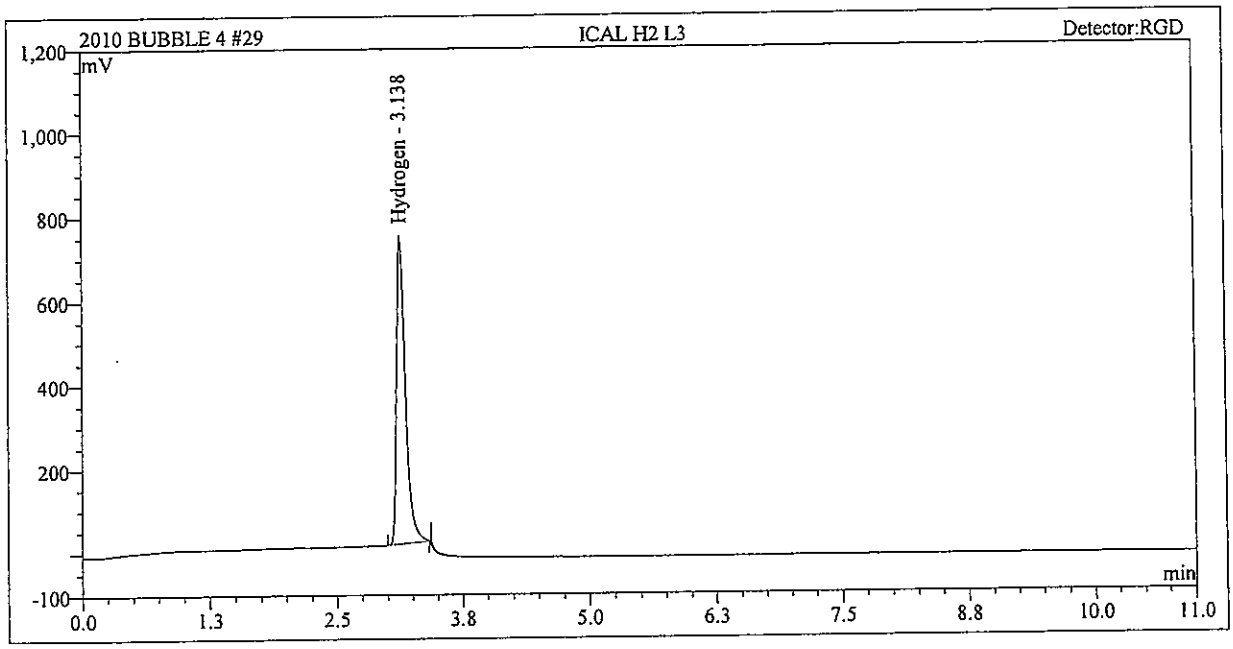
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L3	**Sequence No:**	29
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:09 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.138	74.806	734.291	BMB	19.9939

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



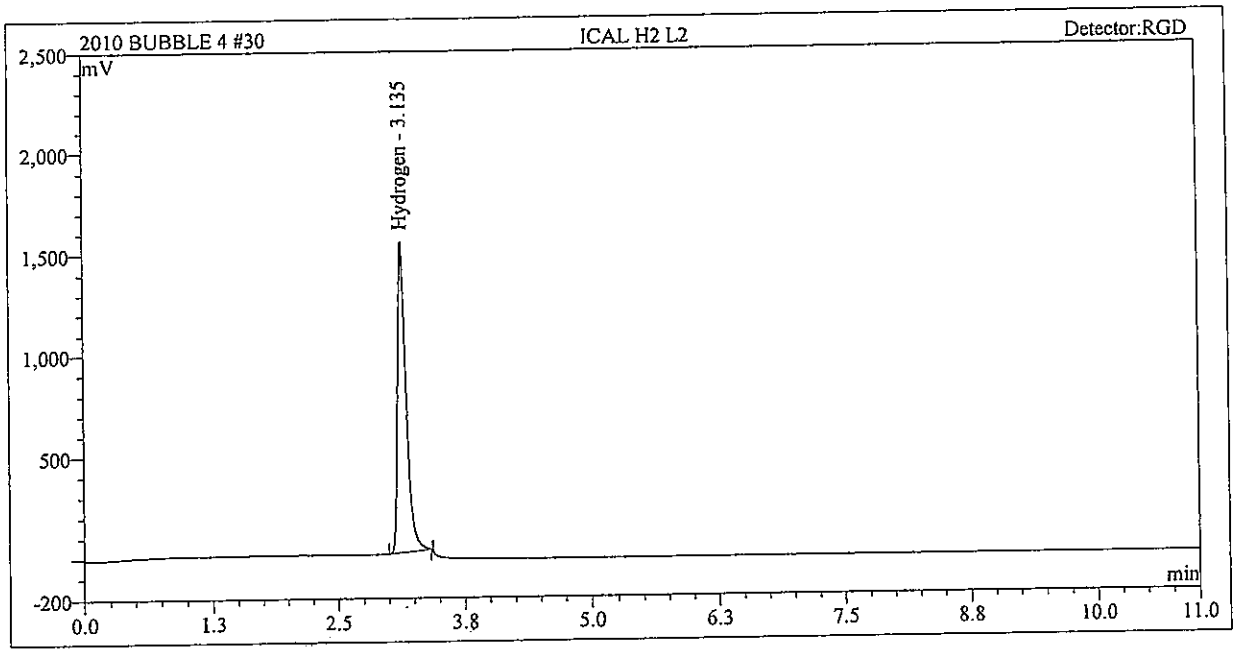
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L2	**Sequence No:**	30
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:24 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.135	147.977	1531.099	BMB	39.5507

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



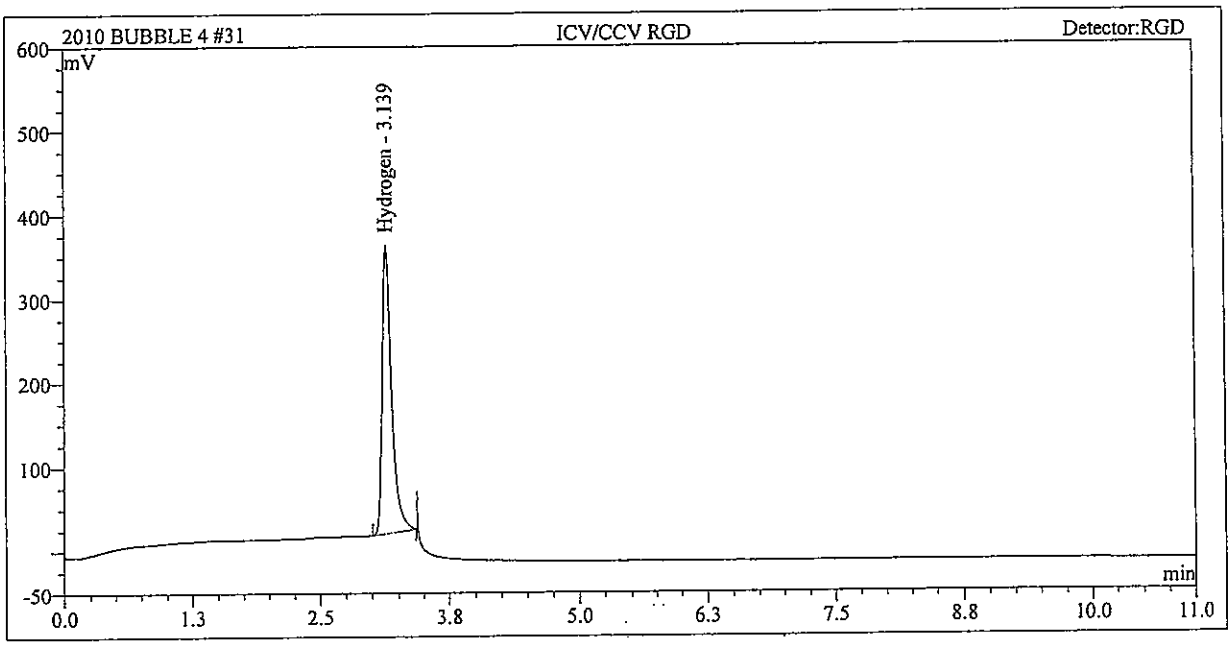
MICROSEEPS

Sample Analysis Report

Sample Name:	ICV/CCV RGD	**Sequence No:**	31
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:37 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV
1	Hydrogen	3.139	36.198	343.693	BMB	10-2-06 9.6749

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



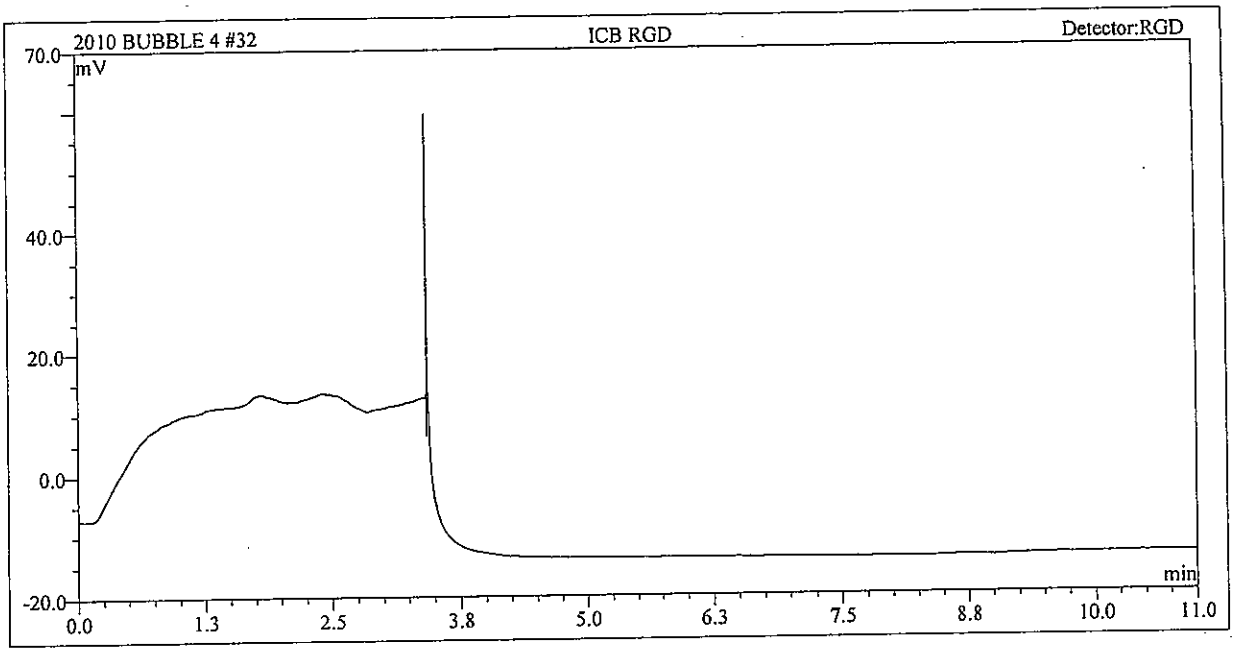
MICROSEEPS

Sample Analysis Report

Sample Name:	ICB RGD	**Sequence No:**	32
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:57 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100303029- H2

Original Run Date: 3-3-10

Matrix: Bubble Strip

Sample numbers:
P1002276-(1-5) FDP
P1002277-(1-8) FDP
P1002278-(1-7) FDP

Out of Control Event: (attach another page, if necessary)
1) P1002277-(1) Low pressure in vial
2) P1002277-(8), P1002278-(1) Require dilutions for H2

Corrective Action Taken:
1) Added 2ice UHP N2 and analyzed as 2X DIL
2) None

Result:
1) Report as 2X DIL
2) Report H2 on a future batch

Observations to support use of data: (Note any occurrences of manual integration here)

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. Date

Analyzed & Reviewed by: [illegible] Date: 3-3-10
Manual Integration Conducted? YES (NO)
(Circle One)
Reviewed by: [illegible] Date: 030910
Reviewed & Entered by: [illegible] Date: 3-5-10
Reviewed by: _____ Date: _____
Corrected by: _____ Date: _____

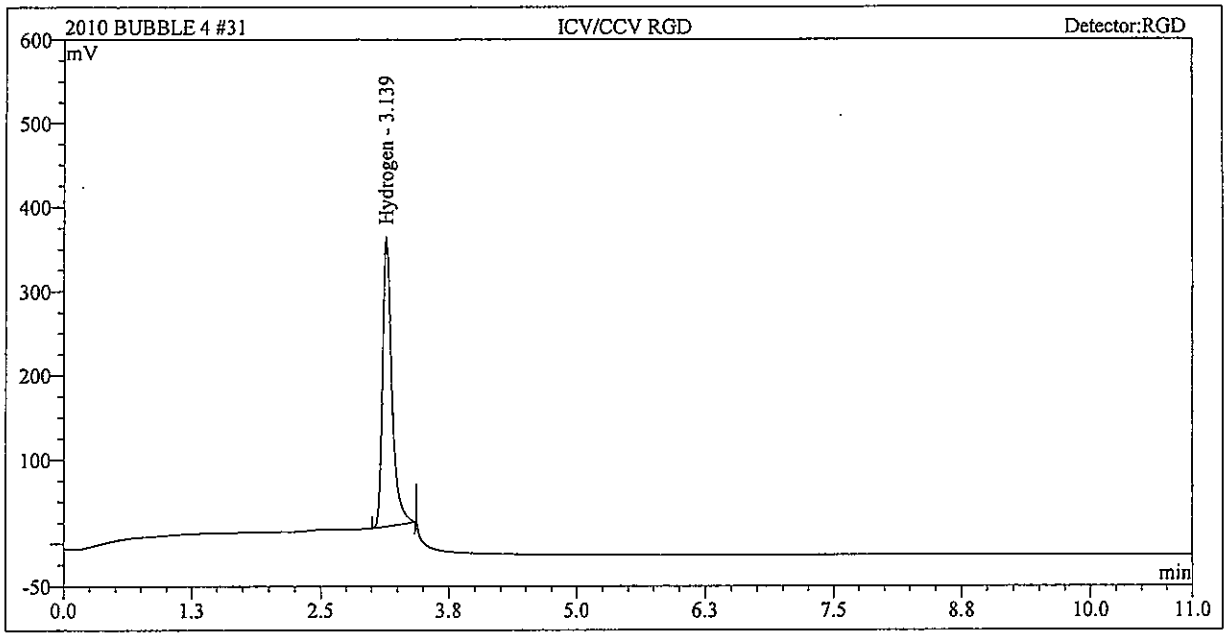
MICROSEEPS

Sample Analysis Report

Sample Name:	ICV/CCV RGD	**Sequence No:**	31
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:37 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.139	36.198	343.693	BMB	10.296	9.6749

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



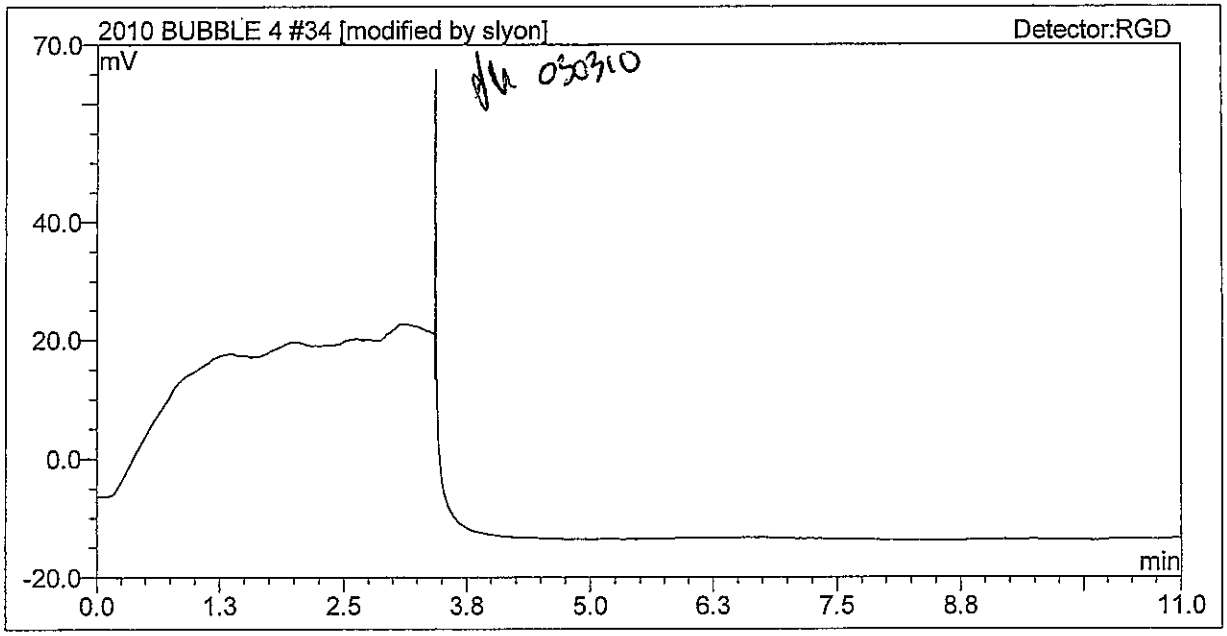
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 030310	**Sequence No:**	34
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 1:42 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



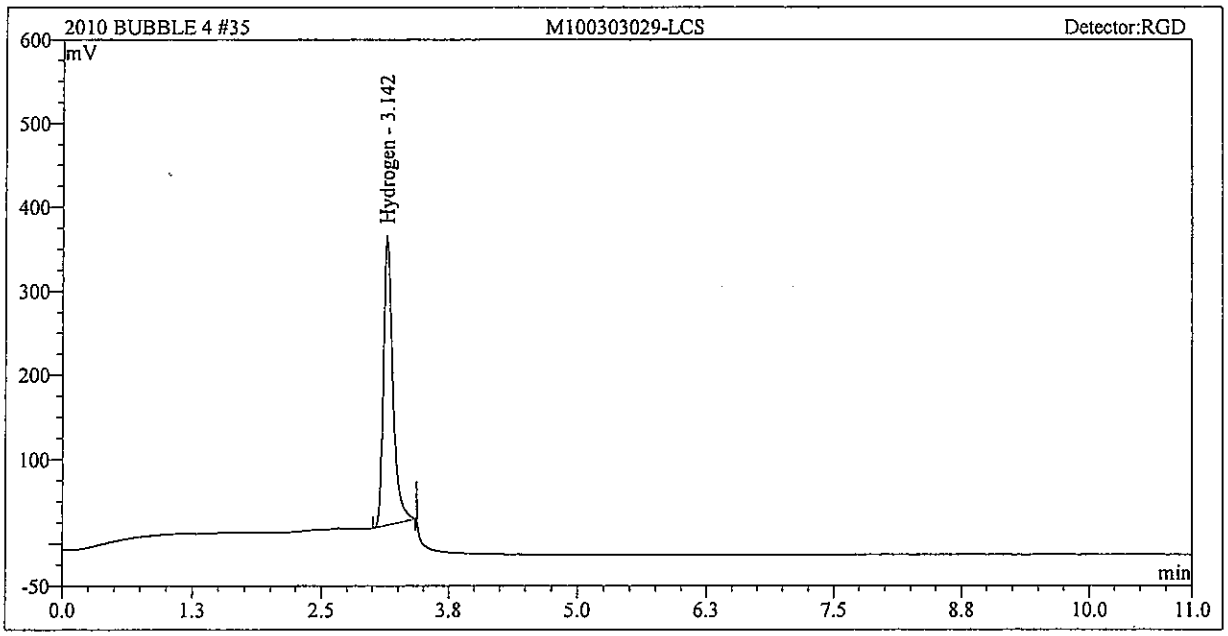
MICROSEEPS

Sample Analysis Report

Sample Name:	M100303029-LCS	**Sequence No:**	35
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 1:57 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.142	36.242	343.477	BMB	9.782	9.6866

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



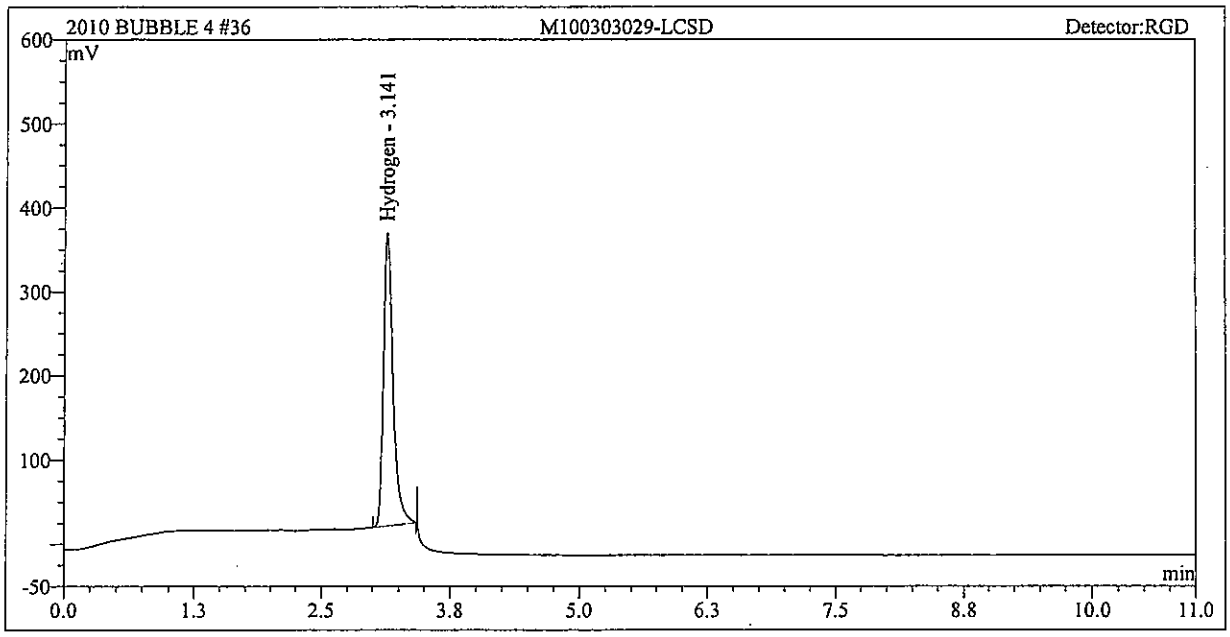
MICROSEEPS

Sample Analysis Report

Sample Name:	M100303029-LCSD	**Sequence No:**	36
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 2:10 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.141	36.712	348.532	BMB	9.782	9.8124

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



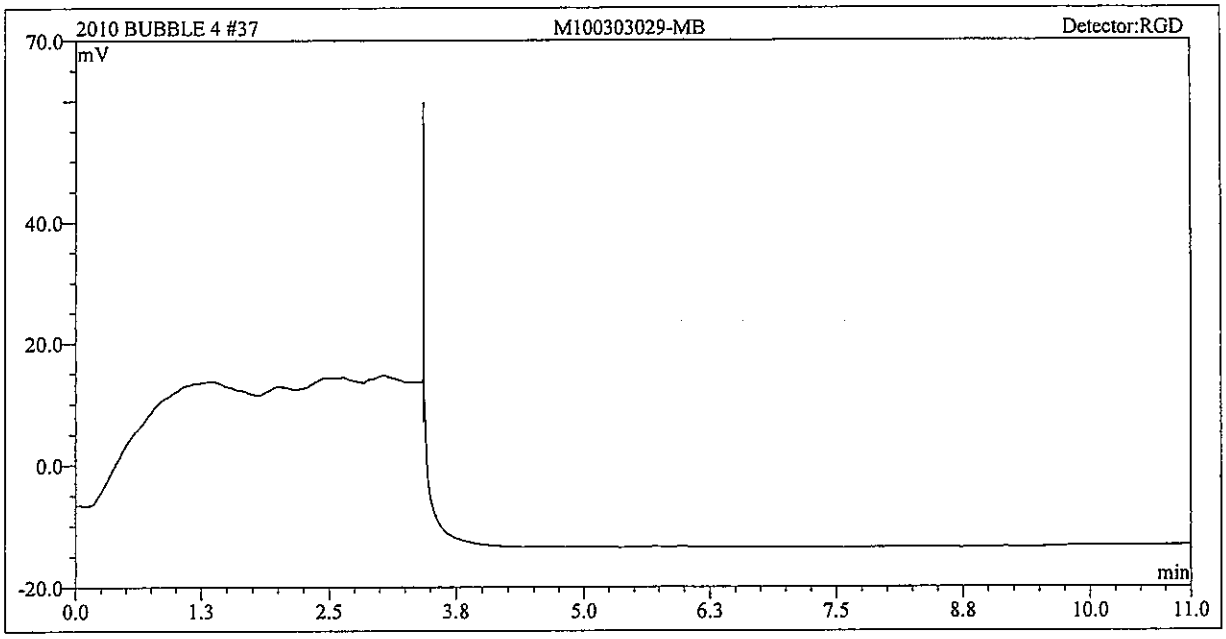
MICROSEEPS

Sample Analysis Report

Sample Name:	M100303029-MB	**Sequence No:**	37
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 2:28 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



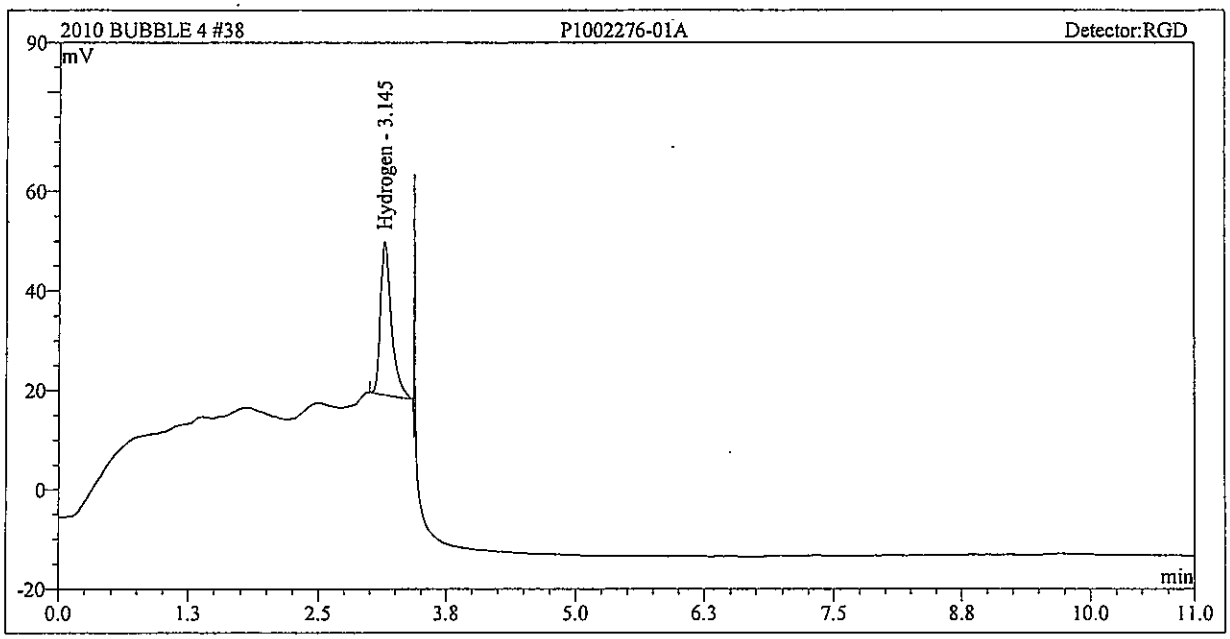
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002276-01A	**Sequence No:**	38
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 2:41 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.145	3.773	30.779	BMB	1.0085

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



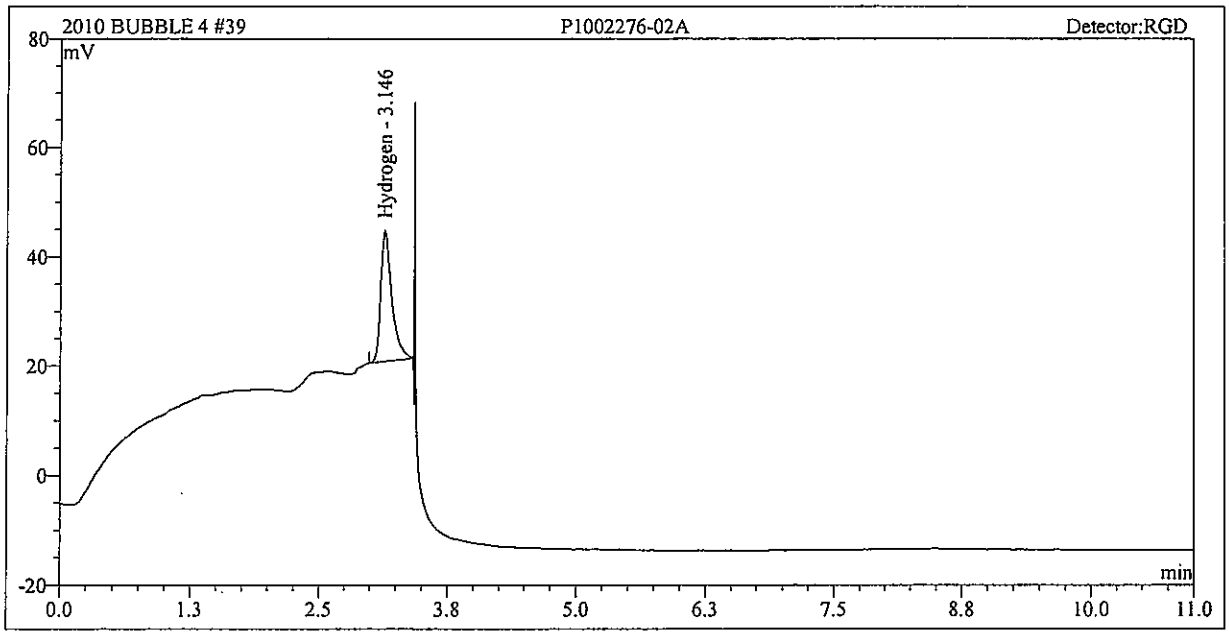
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002276-02A	**Sequence No:**	39
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 2:53 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.146	3.007	24.050	BMB	0.8038

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



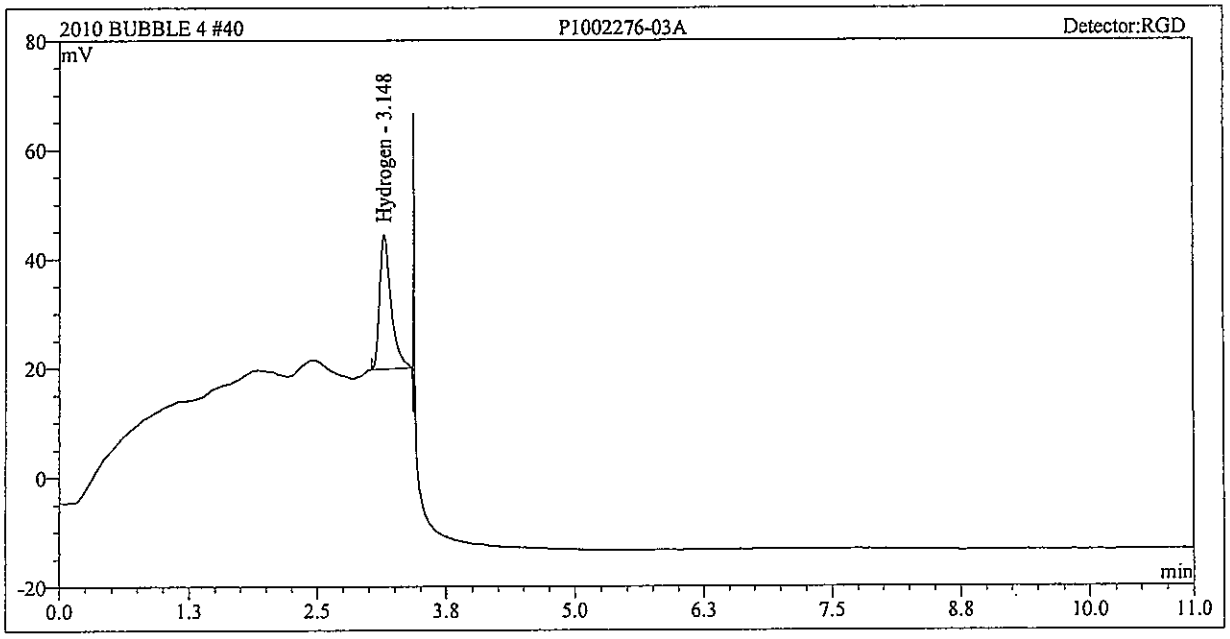
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002276-03A	**Sequence No:**	40
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 3:05 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.148	3.095	24.664	BMB	0.8272

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



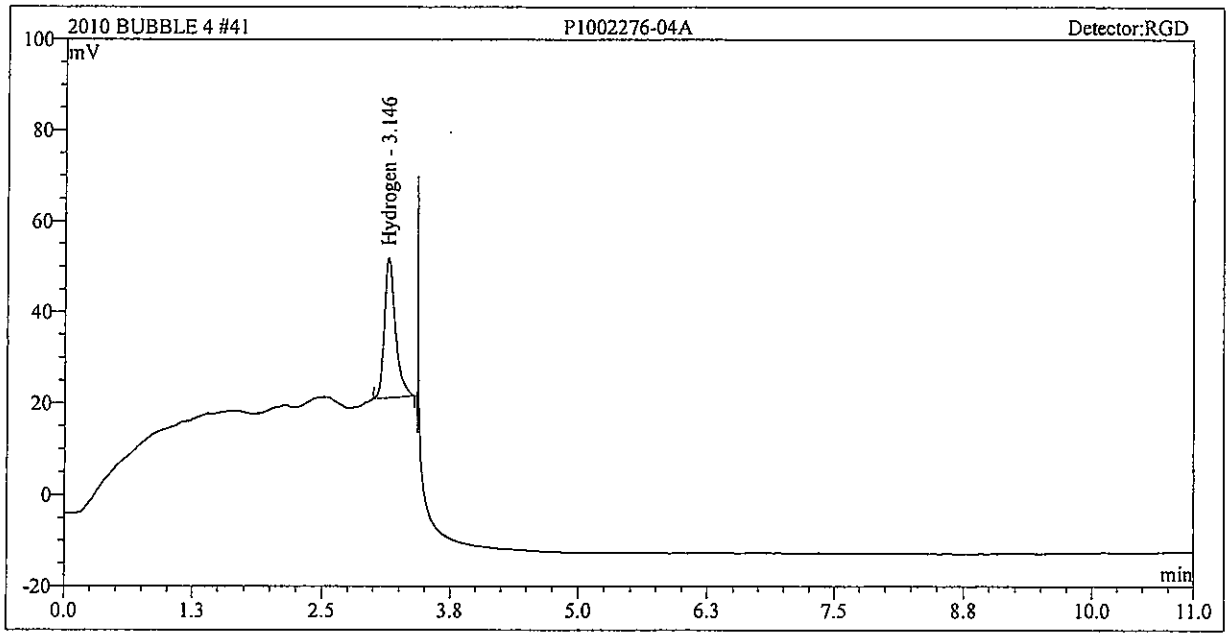
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002276-04A	**Sequence No:**	41
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 3:17 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.146	3.782	30.724	BMB	1.0109

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



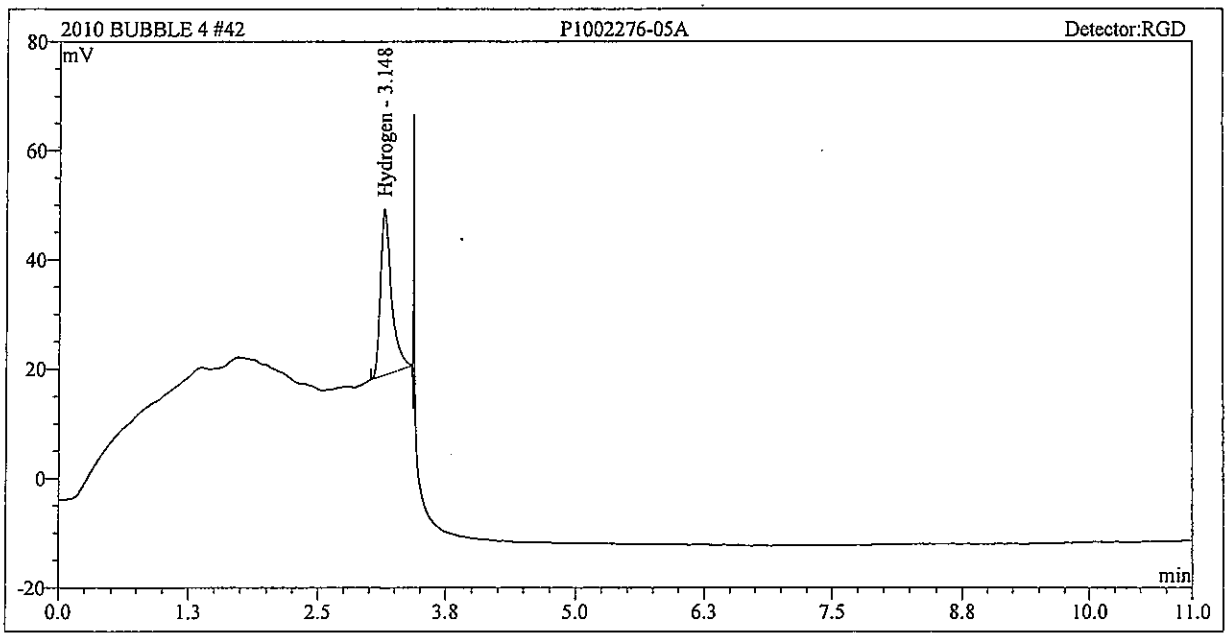
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002276-05A	**Sequence No:**	42
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 3:30 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.148	3.825	30.517	BMB	1.0224

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



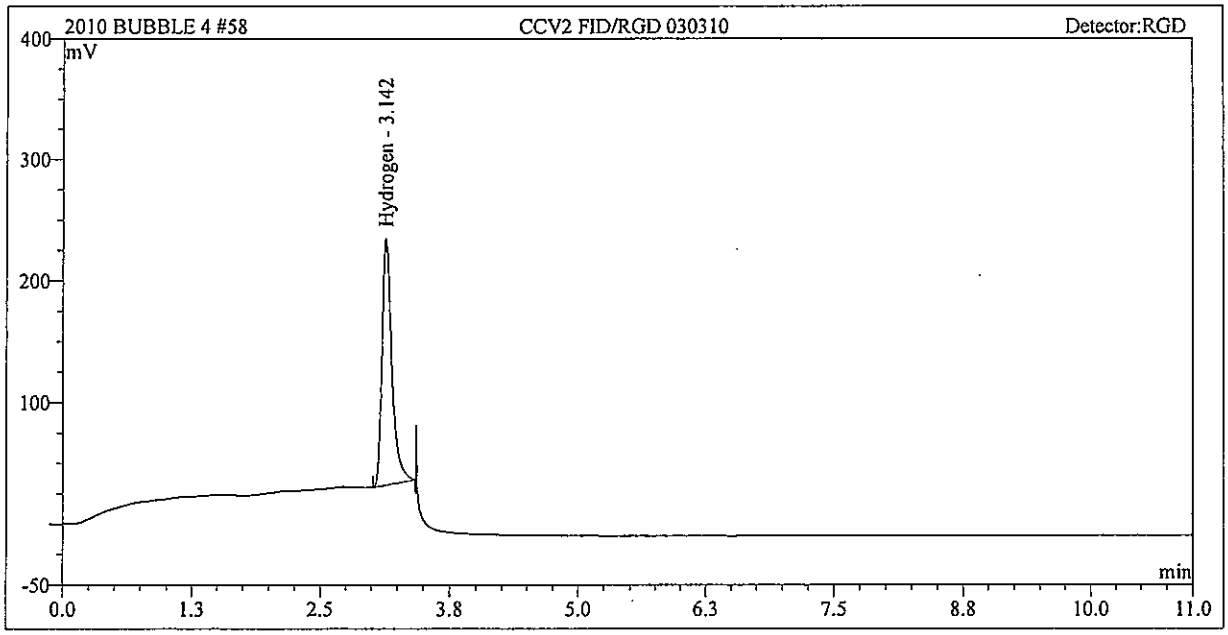
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 030310	**Sequence No:**	58
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 6:56 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.142	22.044	202.352	BMB	5.148	5.8918

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100305028-Hz

Original Run Date: 3-5-10

Sample numbers:
P1002271-(1-3) DIL's
P1002276-(6-8)
P1002277-(8) DIL
P1002278-(1) DIL
P1002279-(1,4,8) DIL's

Matrix: Bubble Strip

Out of Control Event: (attach another page, if necessary)
P1002276-(6) Required a dilution for Hc

Corrective Action Taken:
DIL - same Batch

Result:
Report Dilution

Observations to support use of data: (Note any occurrences of manual integration here)

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. _____ Date _____

Analyzed & Reviewed by: [signature] Date: 030510
Manual Integration Conducted? YES (NO)
(Circle One)
Reviewed by: [signature] Date: 030910
Reviewed & Entered by: Upland Date: 030910
Reviewed by: _____ Date: _____
Corrected by: _____ Date: _____

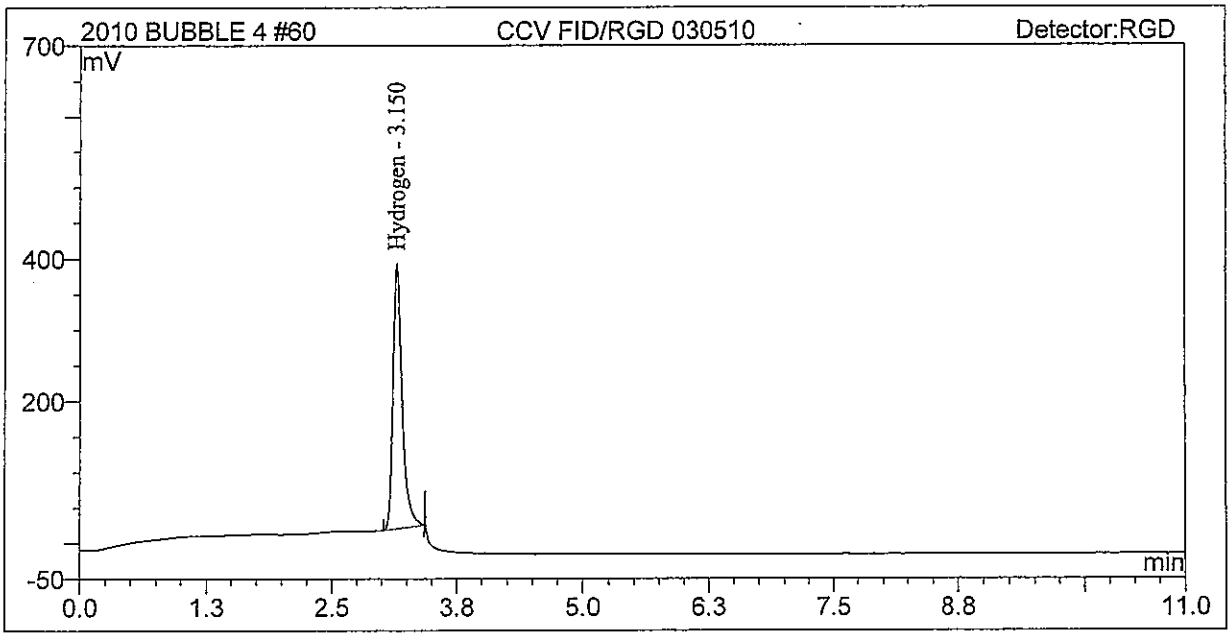
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 030510	**Sequence No:**	60
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 10:42 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.150	38.979	372.431	BMB	10.296	10.4182

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



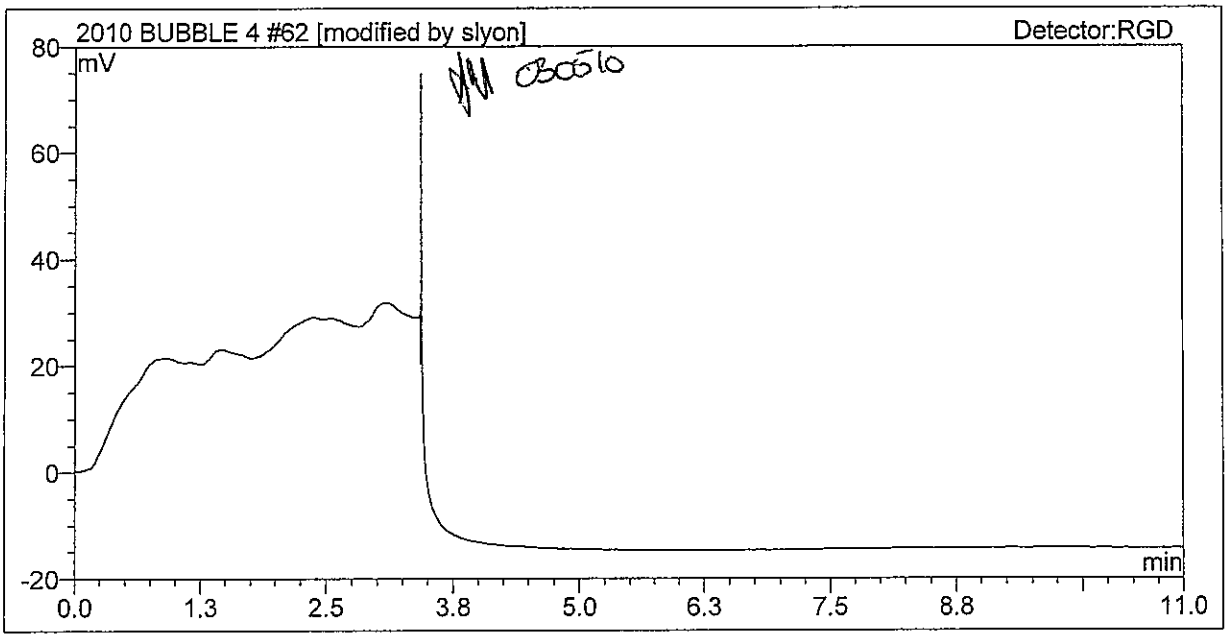
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 030510	**Sequence No:**	62
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 11:15 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



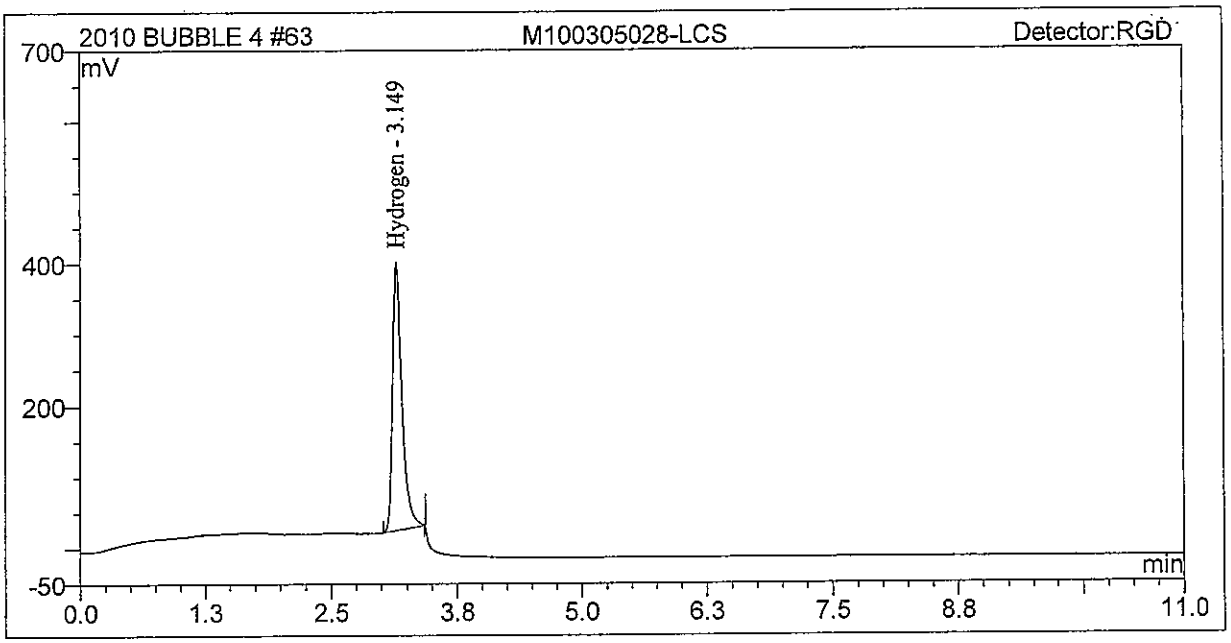
MICROSEEPS

Sample Analysis Report

Sample Name:	M100305028-LCS	**Sequence No:**	63
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 11:29 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV
1	Hydrogen	3.149	39.752	376.935	BMB	9.782 10.6249

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



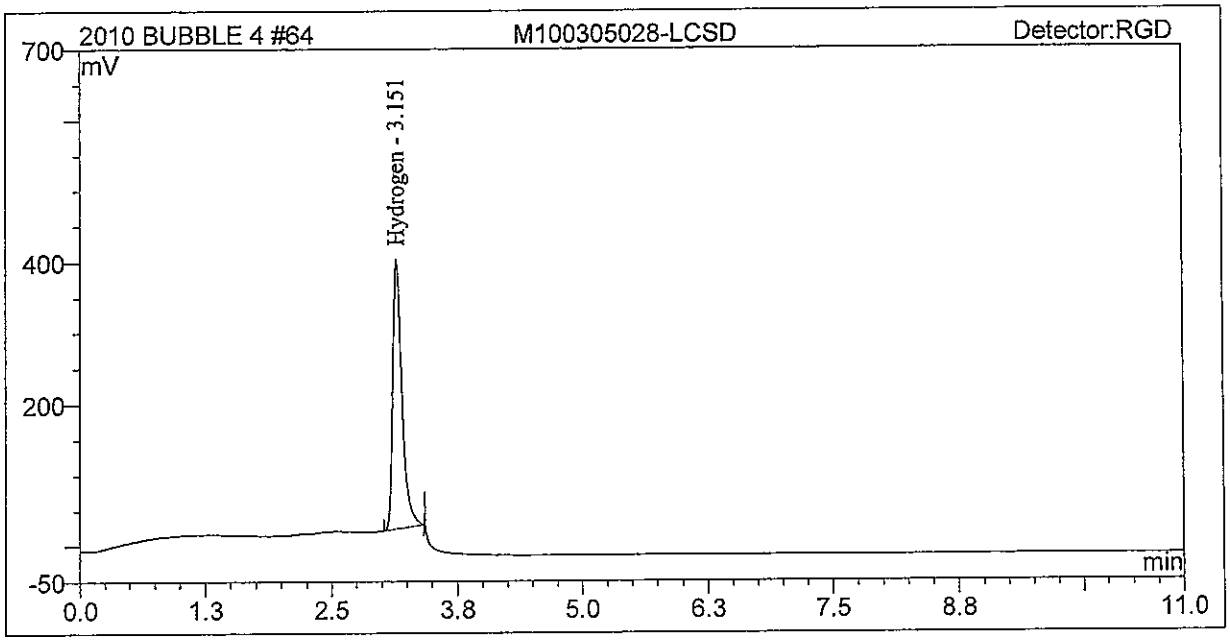
MICROSEEPS

Sample Analysis Report

Sample Name:	M100305028-LCSD	**Sequence No:**	64
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 11:53 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV
1	Hydrogen	3.151	39.967	379.792	BMB	9.782 10.6823

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



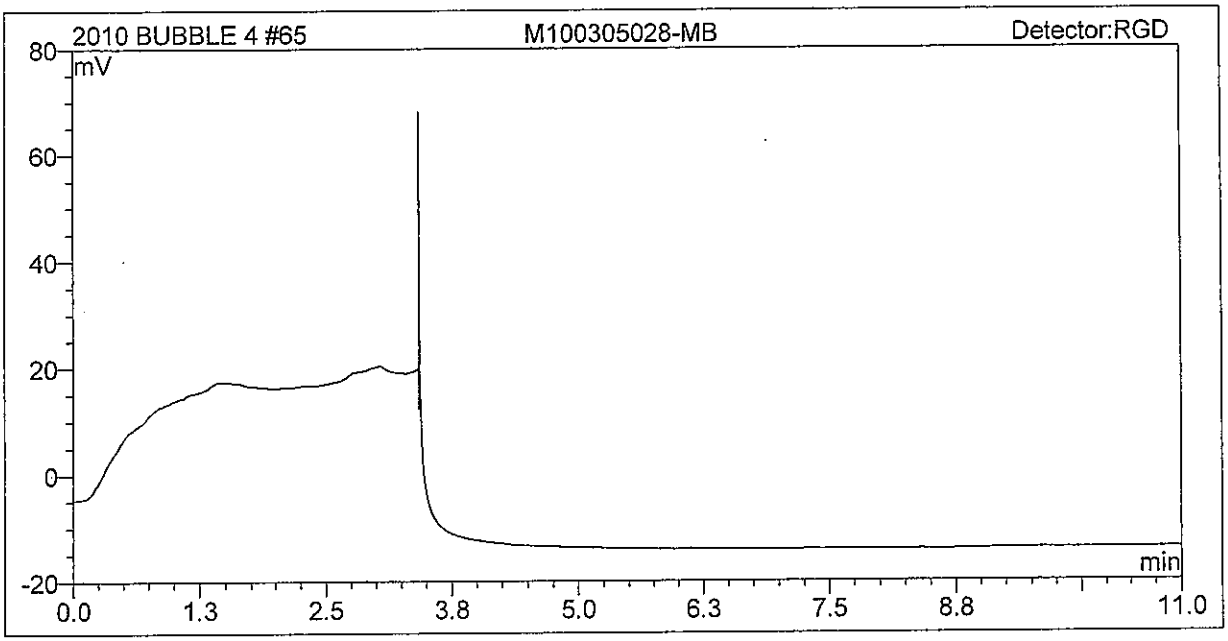
MICROSEEPS

Sample Analysis Report

Sample Name:	M100305028-MB	**Sequence No:**	65
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 12:07 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



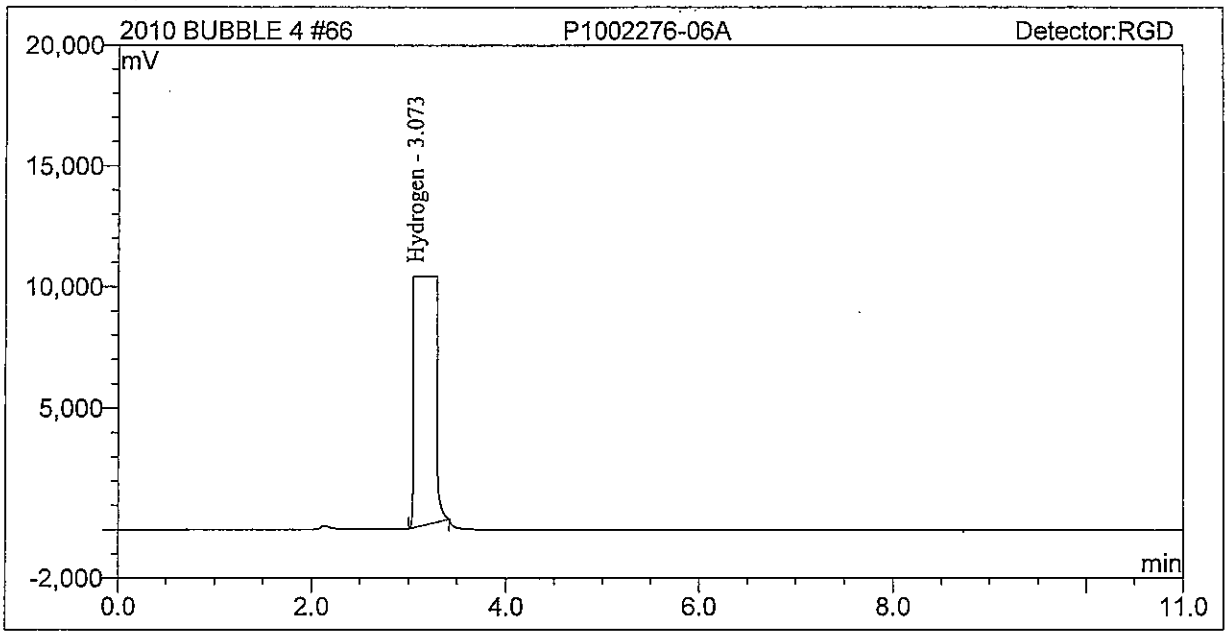
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002276-06A	**Sequence No:**	66
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 12:38 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.073	2634.365	10338.859	BMB	~~704.1042~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



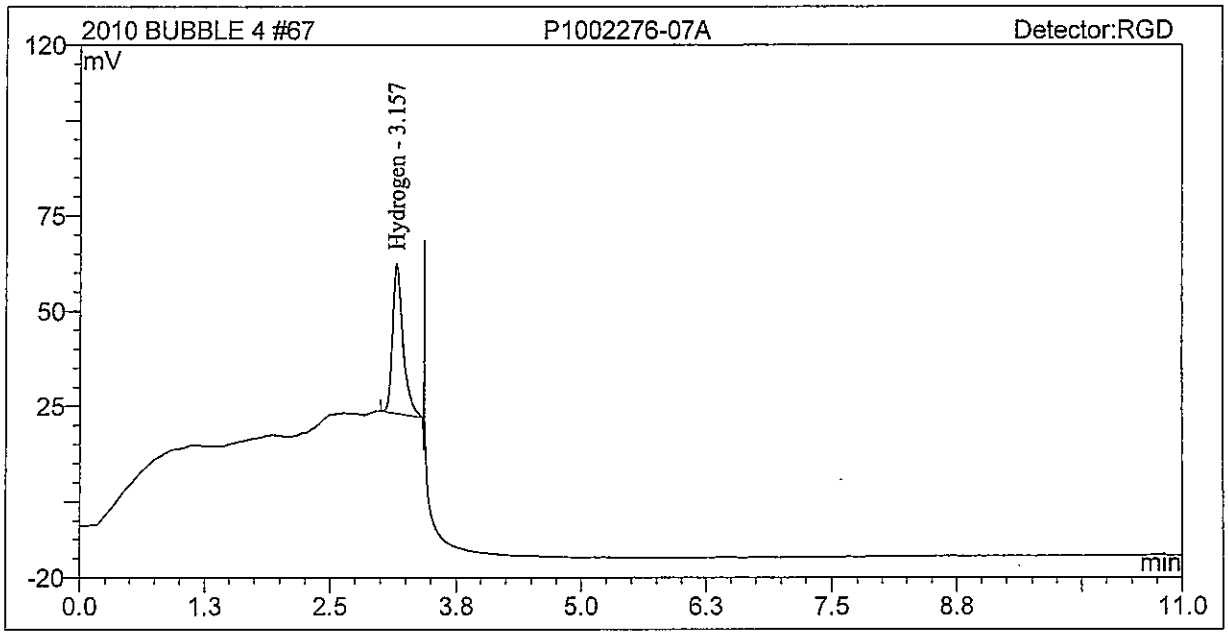
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002276-07A	**Sequence No:**	67
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 12:51 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.157	4.765	39.308	BMB	1.2736

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



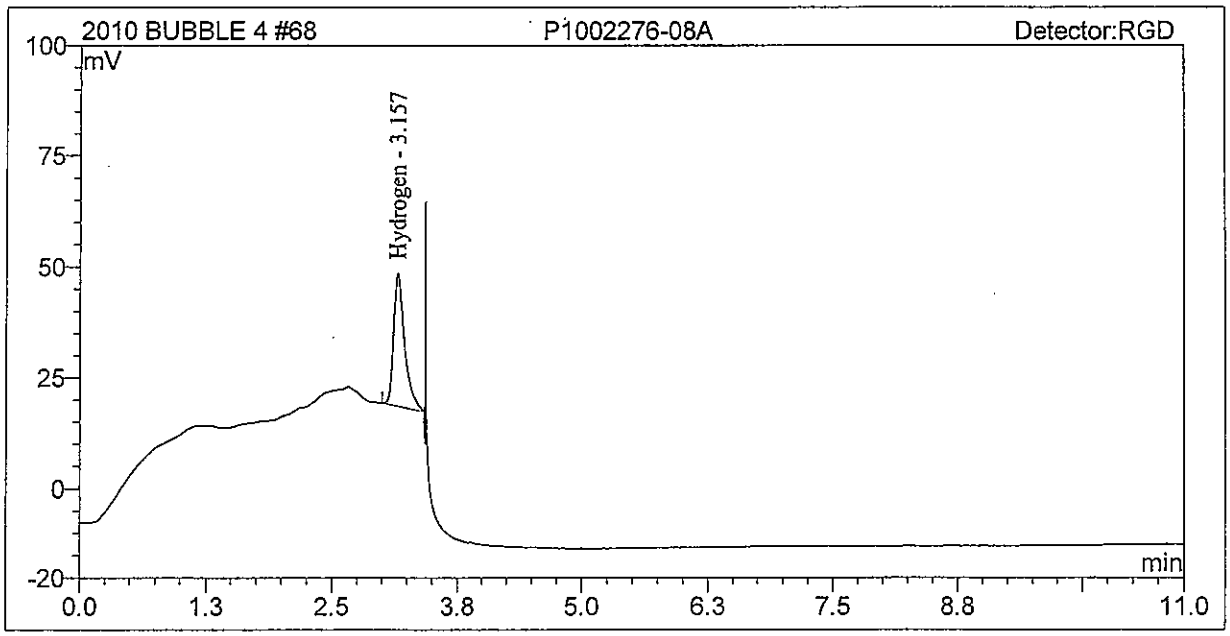
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002276-08A	**Sequence No:**	68
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 1:10 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.157	3.808	30.073	BMB	1.0179

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



MICROSEEPS

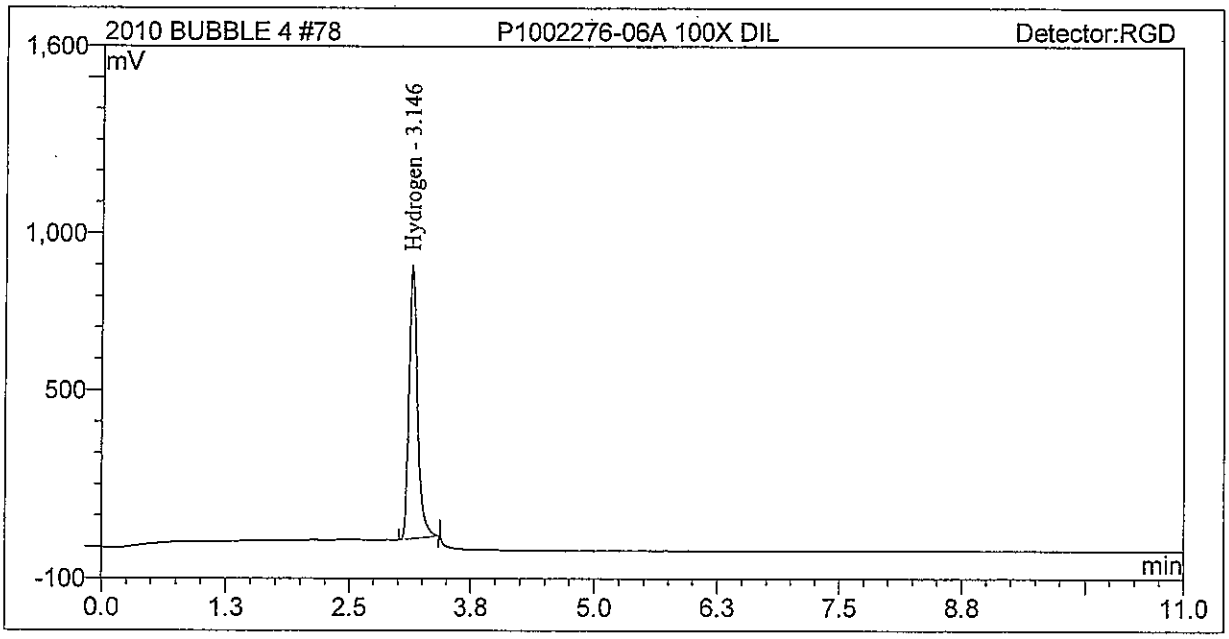
Sample Analysis Report

Sample Name:	P1002276-06A 100X DIL	**Sequence No:**	78
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 3:30 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.146	89.455	874.730	BMB	23.9092

x100

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



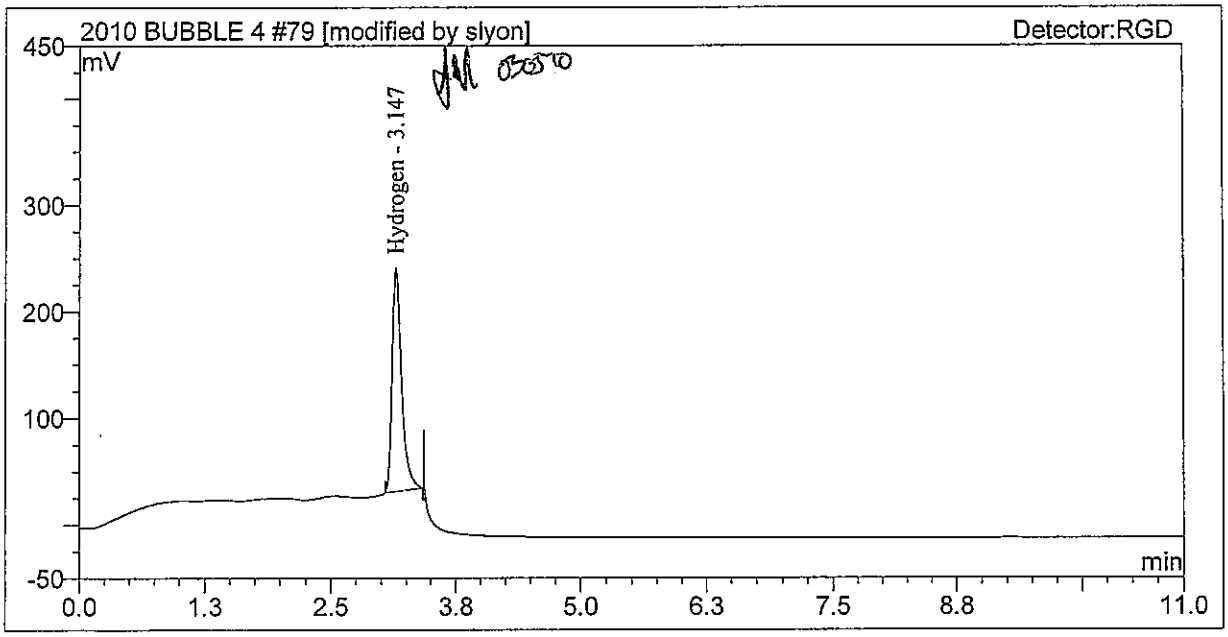
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 030510	**Sequence No:**	79
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 7:57 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV		
1	Hydrogen	3.147	22.882	209.705	BMB*	5.148	6.1157	119 %

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26096

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: CTO 20 ALAMEDA	PURCHASE ORDER NO.: 1042720 ~~to 5347392~~
PROJECT LOCATION: ALAMEDA	PROJECT NO.: 106.32.10.02.D. 07.09.01000
SAMPLER NAME: F.S. IW	AIRBILL NUMBER: 7984 0610 6395 ~~7932 6788 4136~~
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949 756 7584

LABORATORY NAME: MICROSELPS ~~[illegible]~~ INC.

LABORATORY ID (FOR LABORATORY): P1002279

ANALYSES REQUIRED: DISSOLVED HYDROGEN AMMONIA

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISSOLVED HYDROGEN AMMONIA	COMMENTS
20-R4-026	2-15-10	1135	1	✓			10	X	
20-R4-024	2-15-10	1258	1	✓			10	X	
20-R4-023	2-15-10	1455	1		✓		10	X	
20-R4-010	2-15-10	1300	1	✓			10	X	
20-R4-011	2-15-10	1500	1	✓			10	X	
20-R4-012	2-15-10	1130	1	✓			10	X	
20-R4-029	2-19-10	1145 ~~1150~~	1	✓			10	X	WS
20-R4-030	2-19-10	1300 ~~1200~~	1	✓			10	X	WS
20-R4-035	2-19-10	1200 ~~1110~~	1	✓			10	X	WS
20-R4-015	2-19-10	1010 ~~930~~	1	✓			10	X	WS

LOCATION	DEPTH START	DEPTH END	QC
ZVI-MW05C	40	50	N
ZVI-MW05A3	20	30	N
ZVI-MW05A2	10	20	N
ZVI-MW02A2	20	30	N
ZVI-MW02B	30	40	N
ZVI-MW02C	40	50	N
ZVI-MW06B	30	40	N
ZVI-MW06C	40	50	N
DC3-04	47	57	N
ZVI-MW03A3	20	30	N

Project Information Section
Do not submit to Laboratory

SAMPLING COMMENT:

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[illegible]	2-18-10	FED EX
COMPANY: CTS	TIME: 1600	COMPANY:
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

microseeps
from insight comes solutions

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 1 of 13
Lab Proj #: P1002279
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Laboratory Results

Total pages in data package: 78

Lab Sample #	Client Sample ID
P1002279-01	20-R4-026
P1002279-02	20-R4-024
P1002279-03	20-R4-023
P1002279-04	20-R4-010
P1002279-05	20-R4-011
P1002279-06	20-R4-012
P1002279-07	20-R4-029
P1002279-08	20-R4-030
P1002279-09	20-R4-035
P1002279-10	20-R4-015

Microseeps test results meet all the requirements of the NELAC standards or provide reasons and/or justification if they do not.

Approved By: Debbie Hallo (HH) ***Date:*** 3.9.10

Project Manager: Debbie Hallo

The analytical results reported here are reliable and usable to the precision expressed in this report. As required by some regulating authorities, a full discussion of the uncertainty in our analytical results can be obtained at our web site or through customer service. Unless otherwise specified, all results are reported on a wet weight basis.

As a valued client we would appreciate your comments on our service.
Please call customer service at (412)826-5245 or email customerservice@microseeps.com.

Case Narrative:

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 2 of 13
Lab Proj #: P1002279
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-026	Vapor	P1002279-01	15 Feb. 10 11:35	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen	J	0.530	0.600	nM	AM20GAX	2/25/10	sl

Data Qualifiers. J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 3 of 13
Lab Proj #: P1002279
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-024	Vapor	P1002279-02	15 Feb. 10 12:58	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen	J	0.590	0.600	nM	AM20GAX	2/25/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 4 of 13
Lab Proj #: P1002279
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-023	Vapor	P1002279-03	15 Feb. 10 14:55	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen	J	0.590	0.600	nM	AM20GAX	2/25/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 5 of 13
Lab Proj #: P1002279
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-010	Vapor	P1002279-04	15 Feb. 10 13:00	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		81.000	12.000	nM	AM20GAX	3/5/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 6 of 13
Lab Proj #: P1002279
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-011	Vapor	P1002279-05	15 Feb. 10 15:00	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		2.600	0.600	nM	AM20GAX	2/25/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 7 of 13
Lab Proj #: P1002279
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-012	Vapor	P1002279-06	15 Feb. 10 11:30	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		2.100	0.600	nM	AM20GAX	2/25/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 8 of 13
Lab Proj #: P1002279
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-029	Vapor	P1002279-07	19 Feb. 10 11:45	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		0.960	0.600	nM	AM20GAX	2/25/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 9 of 13
Lab Proj #: P1002279
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-030	Vapor	P1002279-08	19 Feb. 10 13:00	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		570.000	30.000	nM	AM20GAX	3/5/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 10 of 13
Lab Proj #: P1002279
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-035	Vapor	P1002279-09	19 Feb. 10 12:00	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		0.880	0.600	nM	AM20GAX	2/25/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 11 of 13
Lab Proj #: P1002279
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-015	Vapor	P1002279-10	19 Feb. 10 10:10	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		0.670	0.600	nM	AM20GAX	2/25/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 12 of 13
Lab Proj #: P1002279
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip
Analysis Method: Hydrogen by Bubble Strip

M100225013-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100225013-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	9.800	nM	9.78	100.00	75 - 125

M100225013-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	9.800	nM	9.78	100.00	75 - 125	0.00	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 13 of 13
Lab Proj #: P1002279
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip
Analysis Method: Hydrogen by Bubble Strip

M100305028-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100305028-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125

M100305028-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125	0.00	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Chain of Custody Documents

P1002279

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

CHAIN-OF-CUSTODY RECORD

NUMBER 25096

PROJECT NAME: CTO 20 ALAMEDA	PURCHASE ORDER NO. 1042770
PROJECT LOCATION: ALAMEDA	PROJECT NO. 106.32.16.02.9D. 07.05.01000
SAMPLER NAME: T.S. LW	AIRBILL NUMBER 7984 0610 6395
PROJECT CONTACT: Diane Sowick	PROJECT CONTACT PHONE NUMBER 949.756.7584

ANALYSES REQUIRED: HYDROCARBONS (X); DISSOLVED METALS (X)

LABORATORY NAME: MICRO SELECT

LABORATORY ID (FOR LABORATORY):

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	HYDROCARBONS	DISSOLVED METALS	COMMENTS
20-RA-026	2-15-10	1135	1	✓			10	X		
20-RA-024	2-15-10	1258	1	✓			10	X		
20-RA-023	2-15-10	1455	1		✓		10	X		
20-RA-010	2-15-10	1300	1	✓			10	X		
20-RA-018	2-15-10	1500	1	✓			10	X		
20-RA-012	2-15-10	1130	1	✓			10	X		
20-RA-023	2-19-10	1145	1	✓			10	X		WS
20-RA-030	2-19-10	1300	1	✓			10	X		WS
20-RA-035	2-19-10	1200	1	✓			10	X		WS
20-RA-019	2-19-10	1010	1	✓			10	X		WS

RELINQUISHED BY (Signature)	DATE 2-19-10	RECEIVED BY (Signature) FED EX	LABORATORY INSTRUCTIONS/COMMENTS
COMPANY TTS	TIME 1600	COMPANY	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	COMPOSITE DESCRIPTION
COMPANY	TIME	COMPANY	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
COMPANY	TIME	COMPANY 2/23/10	TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

Debbie Hallo

From: Suzuki, Diane [Diane.Suzuki@tetratech.com]
Sent: Wednesday, February 24, 2010 12:18 PM
To: Debbie Hallo
Subject: RE: Alameda
Attachments: coc_26096.PDF

Good morning Debbie
It looks like the container labels are correct.
Attached is the revised chain of custody.

Thank you..

Diane Suzuki | Chemist
Direct: 949.756.7584 | Fax: 949.756.7583
Diane.Suzuki@tetratech.com

Tetra Tech EC, Inc. | Sciences
1940 E. Deere Avenue, Suite 200 | Santa Ana, CA 92705 | www.tetratech.com

PLEASE NOTE: This message, including any attachments, may include confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

Think Green - Not every email needs to be printed.

From: Suzuki, Diane
Sent: Tuesday, February 23, 2010 1:41 PM
To: 'Debbie Hallo'
Subject: RE: Alameda

Hi Debbie
I am getting the time information for you from the field crew.
There is only one coc that needs to be mailed to me.
tks…diane

From: Debbie Hallo [mailto:dhallo@microseeps.com]
Sent: Tuesday, February 23, 2010 12:38 PM
To: Suzuki, Diane
Subject: Alameda

Hi Diane
See attached
The times on the coc differ from what is on the vials. Which times should we use?
Also, is there only one coc that you need me to mail to you? Samples 20-R4-7B-005 through 22-042-9-1015?

Debbie Hallo
Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone 412 826 5245

P1002279

Date: 2/23/10 Time of Receipt: _____ Receiver: DD

Client: Tetra

REASON FOR NON-CONFORMANCE:

Rec	20-R4-029	2/19/10	1145
	20-R4-030	2/19/10	1300
	20-R4-35	2/19/10	1200
	20-R4-015	2/19/10	1010

ACTION TAKEN:

Client name: Diane Suzuki Date: 2/23 Time: 3:38

email to Diane

Times above are correct per email attached

Customer Service Initials: _____ Date: _____

Hydrogen Data

Method File: BUBBLE 2279
Operator: slyon

Printed: 2/5/2010 4:00:03 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 3 SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 2/1/2010 2:36:45 PM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Window	Standard	Int.Type	Cal.Type
1	Methane	0.645 min	0.645 min			0.200 AN	External	Area	LOff
2	Ethane	0.908 min	0.908 min			0.200 AN	External	Area	Lin
3	Ethene	1.155 min	1.155 min			0.200 AN	External	Area	Lin
4	Propane	1.785 min	1.785 min			0.200 AN	External	Area	Lin
5	*Hydrogen*	*3.149 min*			*3.149 min*	*0.200 AN*	*External*	*Area*	*Lin*
6	Propene	3.567 min	3.567 min			0.200 AN	External	Area	Lin
7	Carbon Dioxide	4.200 min		4.200 min		0.500 AN	External	Area	Lin
8	iso-Butane	4.560 min	4.560 min			0.500 AN	External	Area	Lin
9	n-Butane	5.310 min	5.310 min			0.500 AN	External	Area	Lin
10	Oxygen	5.870 min		5.870 min		0.300 AN	External	Area	Lin
11	Nitrogen	6.260 min		6.260 min		0.300 AN	External	Area	Lin
12	Acetylene	7.198 min	7.198 min			0.500 AN	External	Area	Lin
13	Methane	7.560 min		7.560 min		0.400 AN	External	Area	Lin
14	Carbon Monoxide	8.450 min		8.450 min		0.400 AN	External	Area	Lin
15	Carbon Monoxide	8.600 min			8.600 min	0.400 AN	External	Area	Lin

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 3.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 2/1/2010 2:36:45 PM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Peak Type	Group	Comment
1	Methane	0.645 min	Auto		
2	Ethane	0.908 min	Auto		
3	Ethene	1.155 min	Auto		
4	Propane	1.785 min	Auto		
5	*Hydrogen*	*3.149 min*	*Auto*		
6	Propene	3.567 min	Auto		
7	Carbon Dioxide	4.200 min	Auto		
8	iso-Butane	4.560 min	Auto		
9	n-Butane	5.310 min	Auto		
10	Oxygen	5.870 min	Auto		
11	Nitrogen	6.260 min	Auto		
12	Acetylene	7.198 min	Auto		
13	Methane	7.560 min	Auto		
14	Carbon Monoxide	8.450 min	Auto		
15	Carbon Monoxide	8.600 min	Auto		

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 3 SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 2/1/2010 2:36:45 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Amount ICAL Acetylene L5	Amount ICAL Acetylene L4
1	Methane	0.645 min	0.645 min				
2	Ethane	0.908 min	0.908 min				
3	Ethene	1.155 min	1.155 min				
4	Propane	1.785 min	1.785 min				
5	*Hydrogen*	*3.149 min*			*3.149 min*		
6	Propene	3.567 min	3.567 min				
7	Carbon Dioxide	4.200 min		4.200 min			
8	iso-Butane	4.560 min	4.560 min				
9	n-Butane	5.310 min	5.310 min				
10	Oxygen	5.870 min		5.870 min			
11	Nitrogen	6.260 min		6.260 min			
12	Acetylene	7.198 min	7.198 min			0.529000	2.648000
13	Methane	7.560 min		7.560 min			
14	Carbon Monoxide	8.450 min		8.450 min			
15	Carbon Monoxide	8.600 min			8.600 min		

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 3.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 2/1/2010 2:36:45 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL Acetylene L3	Amount ICAL Acetylene L2	Amount ICAL Acetylene L1	Amount ICAL FID L8	Amount ICAL FID L7
1	Methane	0.645 min				0.002280	0.007120
2	Ethane	0.908 min				0.005880	0.018300
3	Ethene	1.155 min				0.013800	0.043300
4	Propane	1.785 min				0.006640	0.020700
5	*Hydrogen*	*3.149 min*					
6	Propene	3.567 min				0.019800	0.062100
7	Carbon Dioxide	4.200 min					
8	iso-Butane	4.560 min				0.004950	0.015400
9	n-Butane	5.310 min				0.006190	0.019300
10	Oxygen	5.870 min					
11	Nitrogen	6.260 min					
12	Acetylene	7.198 min	13.240000	66.200000	264.800000		
13	Methane	7.560 min					
14	Carbon Monoxide	8.450 min					
15	Carbon Monoxide	8.600 min					

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 3.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 2/1/2010 2:36:45 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL FID L6	Amount ICAL FID L5	Amount ICAL FID L4	Amount ICAL FID L3	Amount ICAL FID L2	Amount ICAL FID L1	Amount ICAL H2 L7
1	Methane	0.645 min	0.028500	0.114000	0.456000	2.280000	11.402000	57.011000	
2	Ethane	0.908 min	0.073500	0.294000	1.176000	5.880000	29.403000	147.016000	
3	Ethene	1.155 min	0.173000	0.693000	2.774000	13.870000	69.353000	346.766000	
4	Propane	1.785 min	0.083000	0.332000	1.328000	6.644000	33.220000	166.100000	
5	*Hydrogen*	*3.149 min*							*0.396000*
6	Propene	3.567 min	0.248000	0.993000	3.975000	19.877000	99.388000	496.942000	
7	Carbon Dioxide	4.200 min							
8	iso-Butane	4.560 min	0.061800	0.247000	0.990000	4.951000	24.756000	123.783000	
9	n-Butane	5.310 min	0.077400	0.309000	1.238000	6.192000	30.961000	154.808000	
10	Oxygen	5.870 min							
11	Nitrogen	6.260 min							
12	Acetylene	7.198 min							
13	Methane	7.560 min							
14	Carbon Monoxide	8.450 min							
15	Carbon Monoxide	8.600 min							

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 3.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 2/1/2010 2:36:45 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL H2 L6	Amount ICAL H2 L5	Amount ICAL H2 L4	Amount ICAL H2 L3	Amount ICAL RGD CO L3	Amount ICAL RGD CO L2
1	Methane	0.645 min						
2	Ethane	0.908 min						
3	Ethene	1.155 min						
4	Propane	1.785 min						
5	*Hydrogen*	*3.149 min*	*0.990000*	*3.960000*	*9.900000*	*19.800000*		
6	Propene	3.567 min						
7	Carbon Dioxide	4.200 min						
8	iso-Butane	4.560 min						
9	n-Butane	5.310 min						
10	Oxygen	5.870 min						
11	Nitrogen	6.260 min						
12	Acetylene	7.198 min						
13	Methane	7.560 min						
14	Carbon Monoxide	8.450 min						
15	Carbon Monoxide	8.600 min					0.100000	0.500000

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 3 SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 2/1/2010 2:36:45 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL RGD CO L1	Amount ICAL RGD CO L1A	Amount ICAL TCD L6	Amount ICAL TCD L5	Amount ICAL TCD L4
1	Methane	0.645 min					
2	Ethane	0.908 min					
3	Ethene	1.155 min					
4	Propane	1.785 min					
5	*Hydrogen*	*3.149 min*					
6	Propene	3.567 min					
7	Carbon Dioxide	4.200 min			2.196000	5.490000	10.980000
8	iso-Butane	4.560 min					
9	n-Butane	5.310 min					
10	Oxygen	5.870 min			0.015900	0.039900	0.079800
11	Nitrogen	6.260 min			0.051400	0.129000	0.257000
12	Acetylene	7.198 min					
13	Methane	7.560 min				23.580000	47.160000
14	Carbon Monoxide	8.450 min				0.046900	0.093800
15	Carbon Monoxide	8.600 min	2.000000	10.000000			

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 3.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 2/1/2010 2:36:45 PM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 28
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL TCD L3	Amount ICAL TCD L2	Amount ICAL TCD L1
1	Methane	0.645 min			
2	Ethane	0.908 min			
3	Ethene	1.155 min			
4	Propane	1.785 min			
5	*Hydrogen*	*3.149 min*			
6	Propene	3.567 min			
7	Carbon Dioxide	4.200 min	54.900000	274.500000	549.000000
8	iso-Butane	4.560 min			
9	n-Butane	5.310 min			
10	Oxygen	5.870 min	0.399200	1.996000	3.992000
11	Nitrogen	6.260 min	1.286000	6.430000	12.860000
12	Acetylene	7.198 min			
13	Methane	7.560 min	235.800000	1179.000000	2358.000000
14	Carbon Monoxide	8.450 min	0.469000	2.345000	4.690000
15	Carbon Monoxide	8.600 min			

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 3.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 2/1/2010 2:36:45 PM by slyon

Calibration:

Calibration Mode: Total
Auto Recalibrate: On
Curve Fitting Model: Normal
Dual-Column Separate Calibration: Off

No.	Enabled	Name	Smp.No.	Pos.	Inj. Vol.	Weight	ISTD Amount	Dil. Factor	Inj. Date/Time
1	☒	ICAL Acetylene L5	1	3	20.0	1.0000	1.0000	1.0000	1/27/2010 1:45:06 PM
2	☒	ICAL Acetylene L4	2	4	20.0	1.0000	1.0000	1.0000	1/27/2010 1:57:25 PM
3	☒	ICAL Acetylene L3	3	5	20.0	1.0000	1.0000	1.0000	1/27/2010 2:11:52 PM
4	☒	ICAL Acetylene L2	4	6	20.0	1.0000	1.0000	1.0000	1/27/2010 2:24:12 PM
5	☒	ICAL Acetylene L1	5	7	20.0	1.0000	1.0000	1.0000	1/27/2010 2:40:41 PM
6	☒	ICAL FID L8	6	8	20.0	1.0000	1.0000	1.0000	1/27/2010 3:06:21 PM
7	☒	ICAL FID L7	7	9	20.0	1.0000	1.0000	1.0000	1/27/2010 3:18:35 PM
8	☒	ICAL FID L6	8	10	20.0	1.0000	1.0000	1.0000	1/27/2010 3:32:43 PM
9	☒	ICAL FID L5	9	11	20.0	1.0000	1.0000	1.0000	1/27/2010 3:45:00 PM
10	☒	ICAL FID L4	10	12	20.0	1.0000	1.0000	1.0000	1/27/2010 3:59:45 PM
11	☒	ICAL FID L3	11	13	20.0	1.0000	1.0000	1.0000	1/27/2010 4:12:06 PM
12	☒	ICAL FID L2	12	14	20.0	1.0000	1.0000	1.0000	1/27/2010 4:26:11 PM
13	☒	ICAL FID L1	13	15	20.0	1.0000	1.0000	1.0000	1/27/2010 4:39:41 PM
14	☒	ICAL TCD L6	16	18	20.0	1.0000	1.0000	1.0000	1/27/2010 5:21:50 PM
15	☒	ICAL TCD L5	17	19	20.0	1.0000	1.0000	1.0000	1/27/2010 5:35:49 PM
16	☒	ICAL TCD L4	18	20	20.0	1.0000	1.0000	1.0000	1/27/2010 5:48:02 PM
17	☒	ICAL TCD L3	19	21	20.0	1.0000	1.0000	1.0000	1/27/2010 6:01:38 PM
18	☒	ICAL TCD L2	20	22	20.0	1.0000	1.0000	1.0000	1/27/2010 6:13:53 PM
19	☒	ICAL TCD L1	21	23	20.0	1.0000	1.0000	1.0000	1/27/2010 6:27:25 PM
20	☒	ICAL H2 L7	25	2	20.0	1.0000	1.0000	1.0000	2/1/2010 12:03:32 PM
21	☒	*ICAL H2 L6*	*26*	*3*	*20.0*	*1.0000*	*1.0000*	*1.0000*	*2/1/2010 12:16:55 PM*
22	☒	ICAL H2 L5	27	4	20.0	1.0000	1.0000	1.0000	2/1/2010 12:45:15 PM
23	☒	ICAL H2 L4	28	5	20.0	1.0000	1.0000	1.0000	2/1/2010 1:02:32 PM
24	☒	ICAL H2 L3	29	6	20.0	1.0000	1.0000	1.0000	2/1/2010 1:17:45 PM

Hydrogen

Method AM20GAX

2/1/2010

No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square %	Offset	Slope	Curve
1	3.15	Hydrogen	Lin	5	99.986	0.00000	4.26616	0.00000

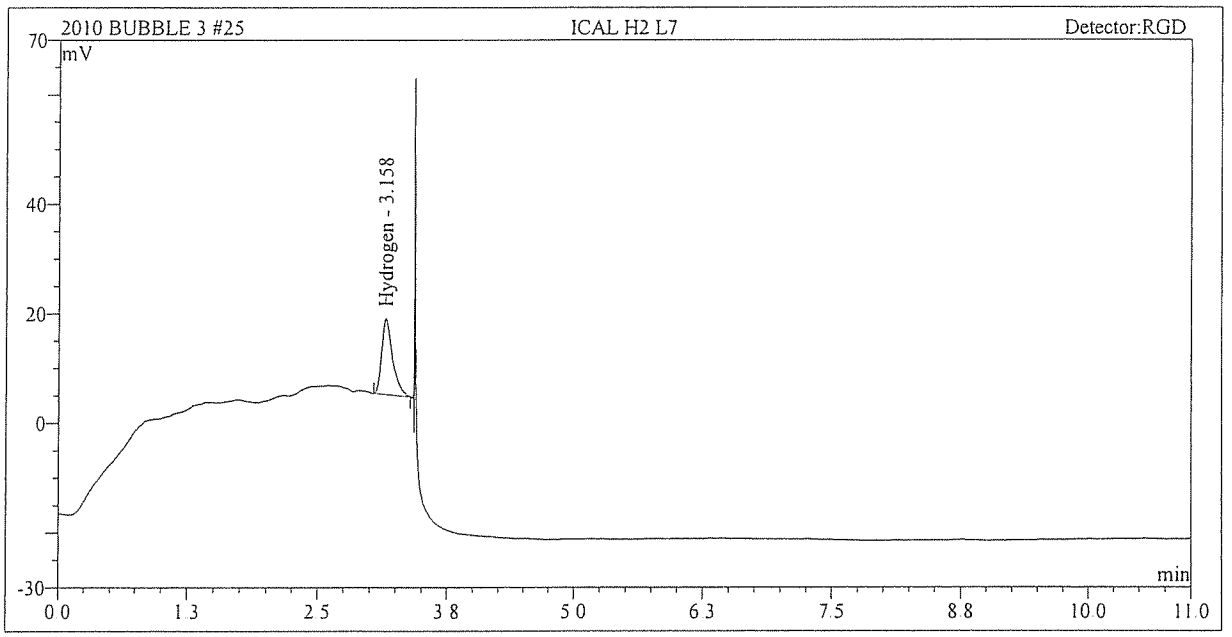
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L7	**Sequence No:**	25
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/1/2010 12:03 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.158	1.703	13.896	BMB	0.3991

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



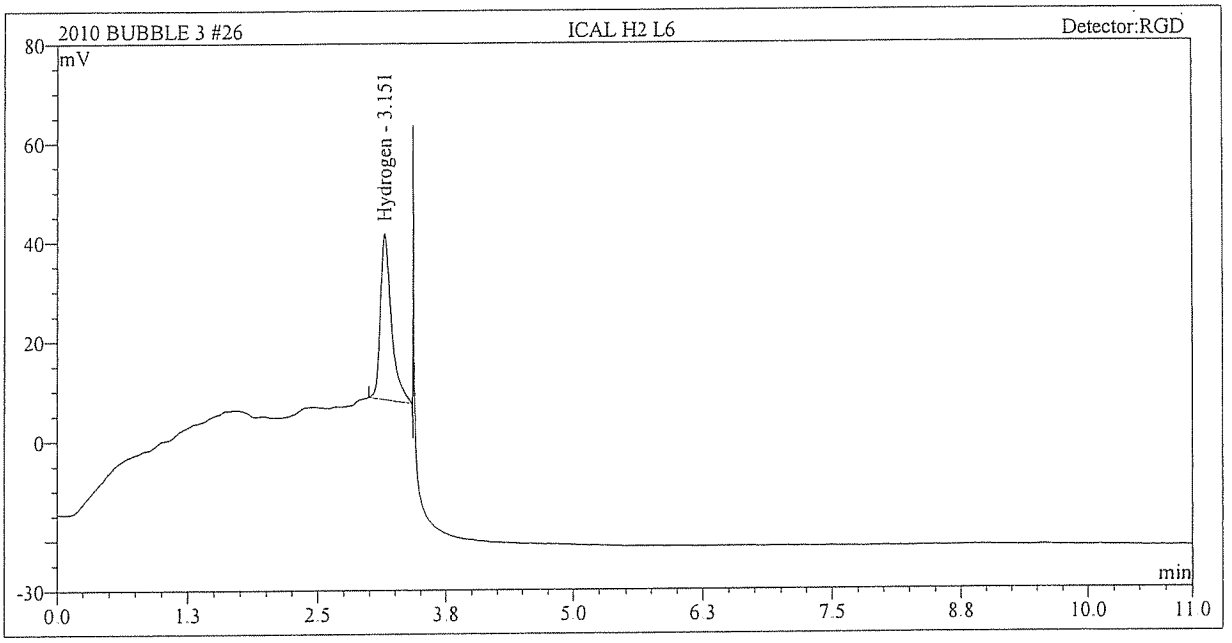
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L6	**Sequence No:**	26
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/1/2010 12:16 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.151	4.168	33.365	BMB	0.9769

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



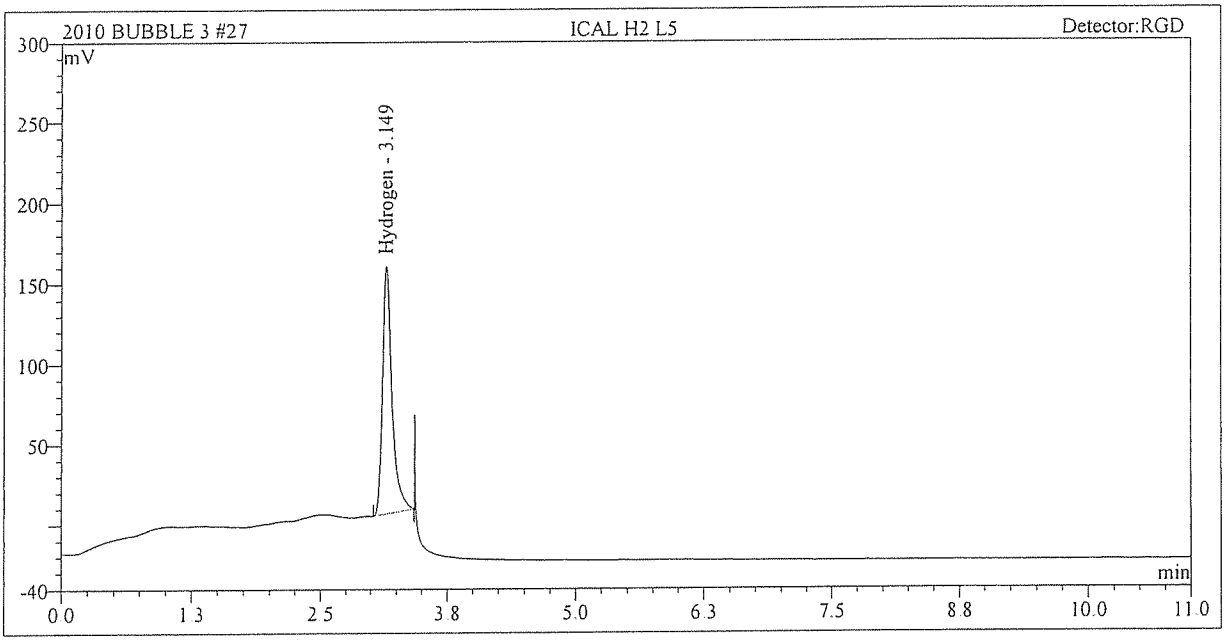
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L5	**Sequence No:**	27
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/1/2010 12:45 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.149	16.878	154.096	BMB	3.9562

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



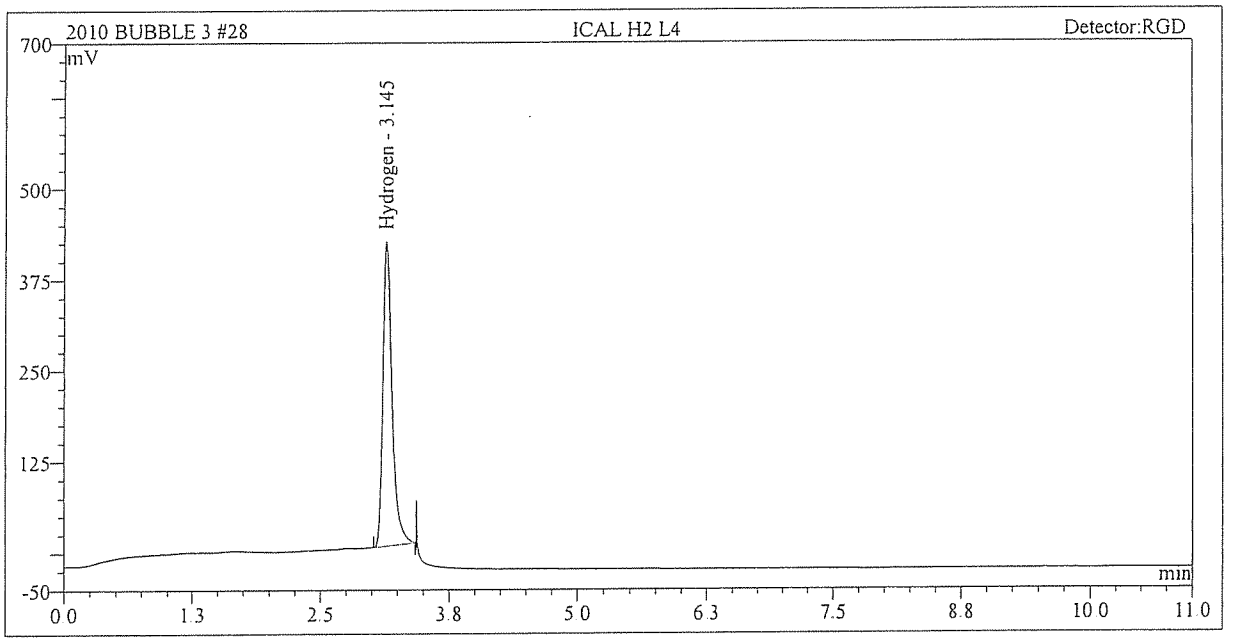
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L4	**Sequence No:**	28
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/1/2010 1:02 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.145	42.965	417.468	BMB	10.0711

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



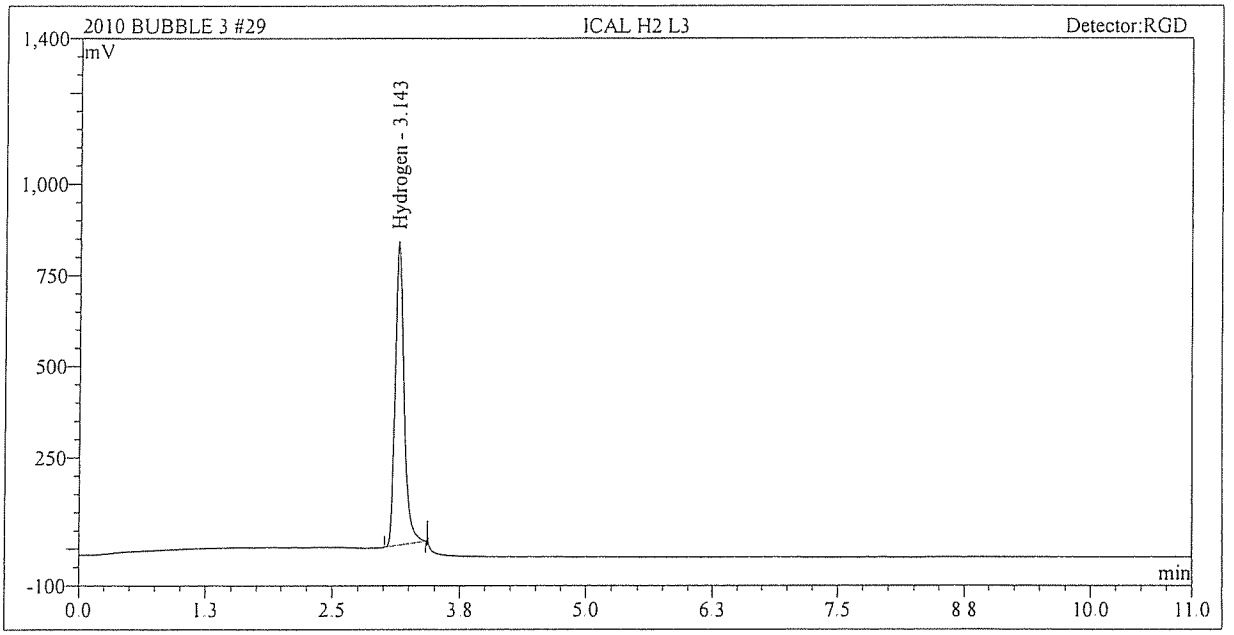
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L3	**Sequence No:**	29
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/1/2010 1:17 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.143	84.111	832.818	BMB	19.7158

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



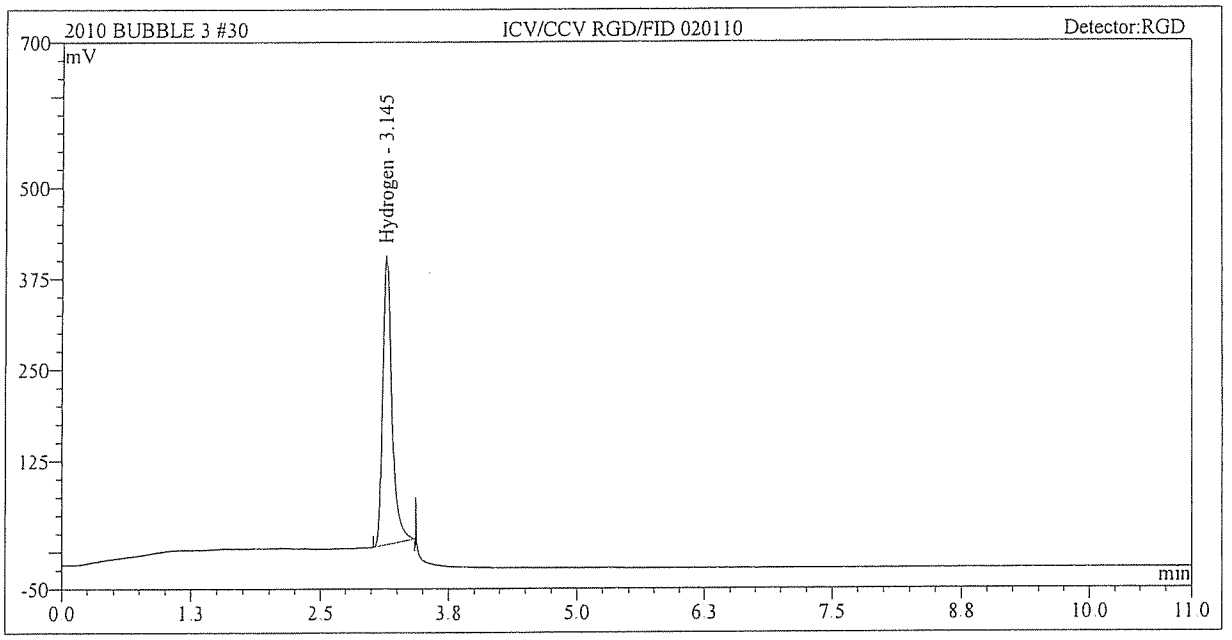
MICROSEEPS

Sample Analysis Report

Sample Name:	ICV/CCV RGD/FID 020110	**Sequence No:**	30
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/1/2010 1:33 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.145	41.182	396.874	BMB	10.296	9.6533

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



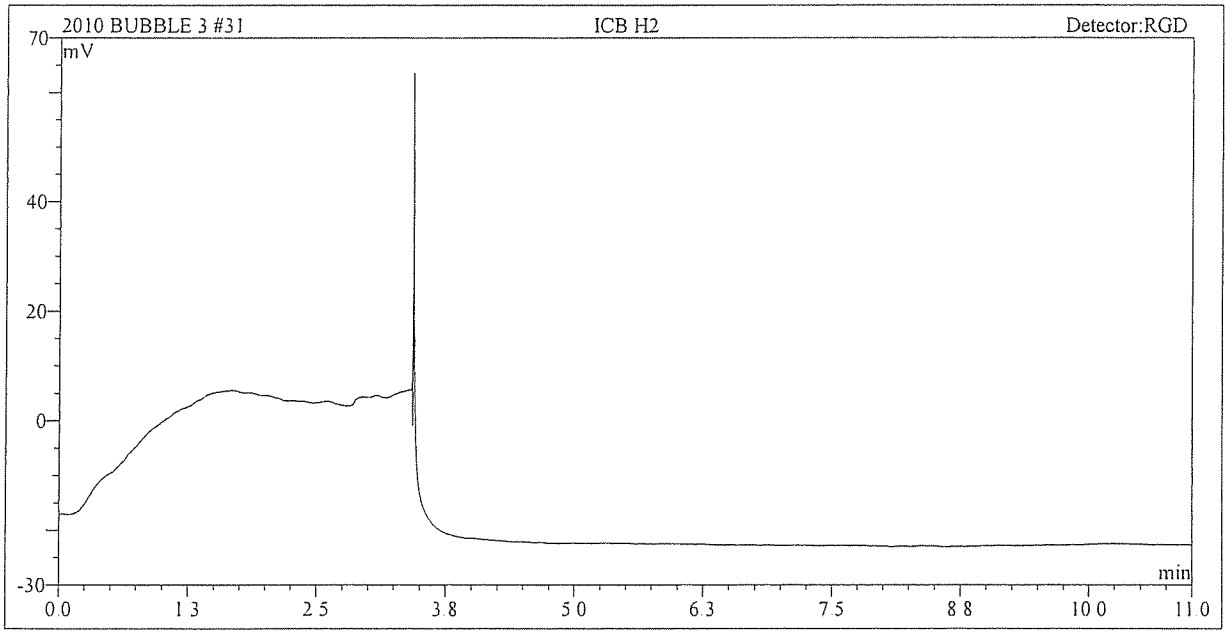
MICROSEEPS

Sample Analysis Report

Sample Name:	ICB H2	**Sequence No:**	31
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/1/2010 1:53 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100225013- H2
014- LHC

Original Run Date: 2-25-10

Matrix: 3-1-10

Sample numbers:
P1002248-(6)
P1002279-(1-10)
P1002271-(1-3)
P1002275-(1-6)

Out of Control Event: (attach another page, if necessary)
P1002279-(4,8), P1002271-(1-3) Require dilutions for Hr

Corrective Action Taken:
None

Result:
Report Hr on a future batch

Observations to support use of data: (Note any occurrences of manual integration here)
The samples listed below required Manual integration to repair baseline inaccuracies.

P1002248-(6)
P1002279-(8)
P1002271-(1)

Manual Integration Checklist and Approval

- Manual Integration approved? Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. 030210 Date

Analyzed & Reviewed by: [illegible] Date: 022510
Manual Integration Conducted? YES NO
(Circle One)
Reviewed by: [illegible] Date: 030210
Reviewed & Entered by: Upload Date: 030110
Reviewed by: RW Date: 3/2/10
Corrected by: _____ Date: _____

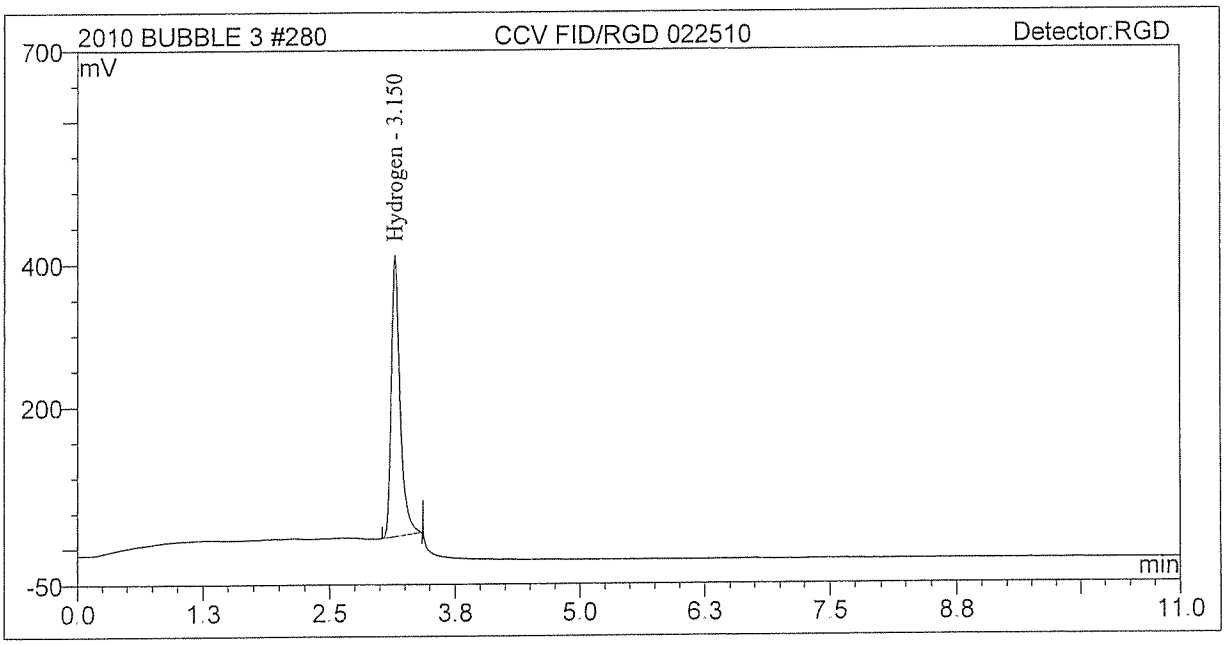
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 022510	**Sequence No:**	280
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 10:51 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.150	40.945	394.703	BMB	10.296	9.5977

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



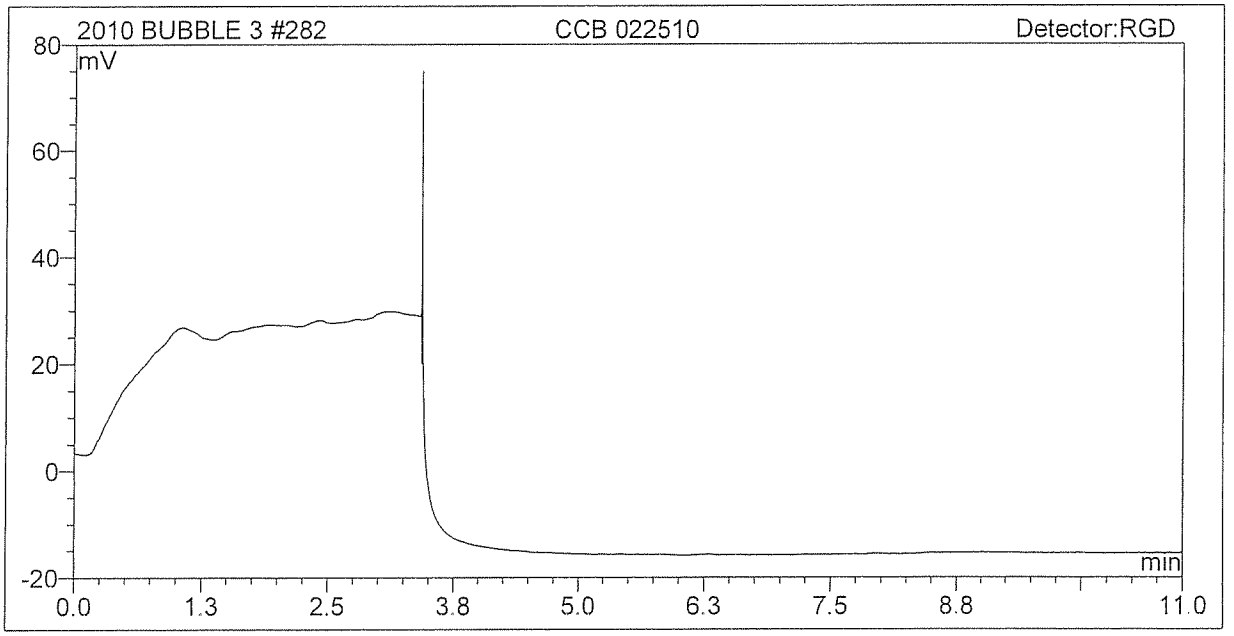
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 022510	**Sequence No:**	282
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 11:24 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



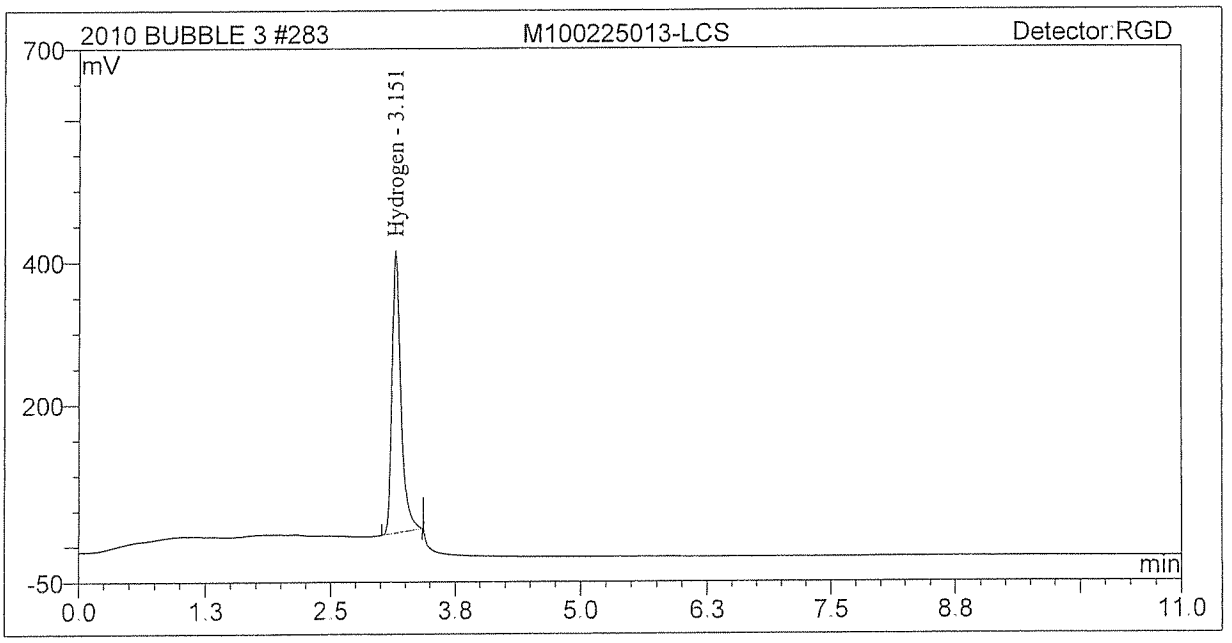
MICROSEEPS

Sample Analysis Report

Sample Name:	M100225013-LCS	**Sequence No:**	283
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 11:42 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.151	41.606	396.941	BMB	9.752	9.7525

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



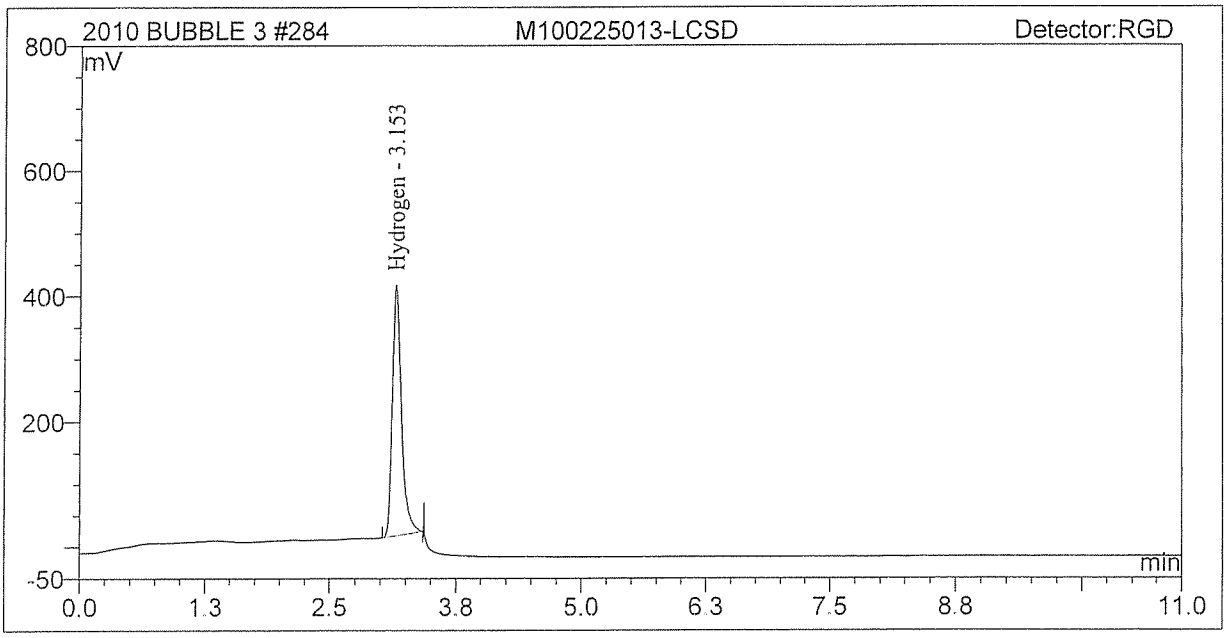
MICROSEEPS

Sample Analysis Report

Sample Name:	M100225013-LCSD	**Sequence No:**	284
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 12:05 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.153	41.689	400.391	BMB	9.752	9.7720

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



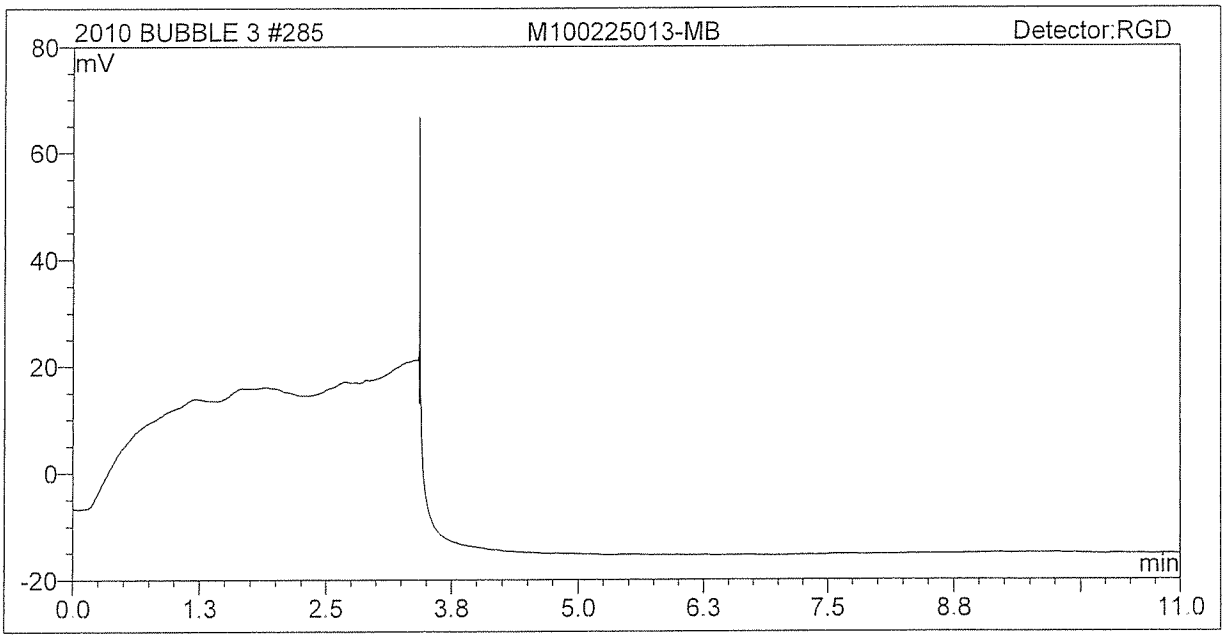
MICROSEEPS

Sample Analysis Report

Sample Name:	M100225013-MB	**Sequence No:**	285
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 12:18 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



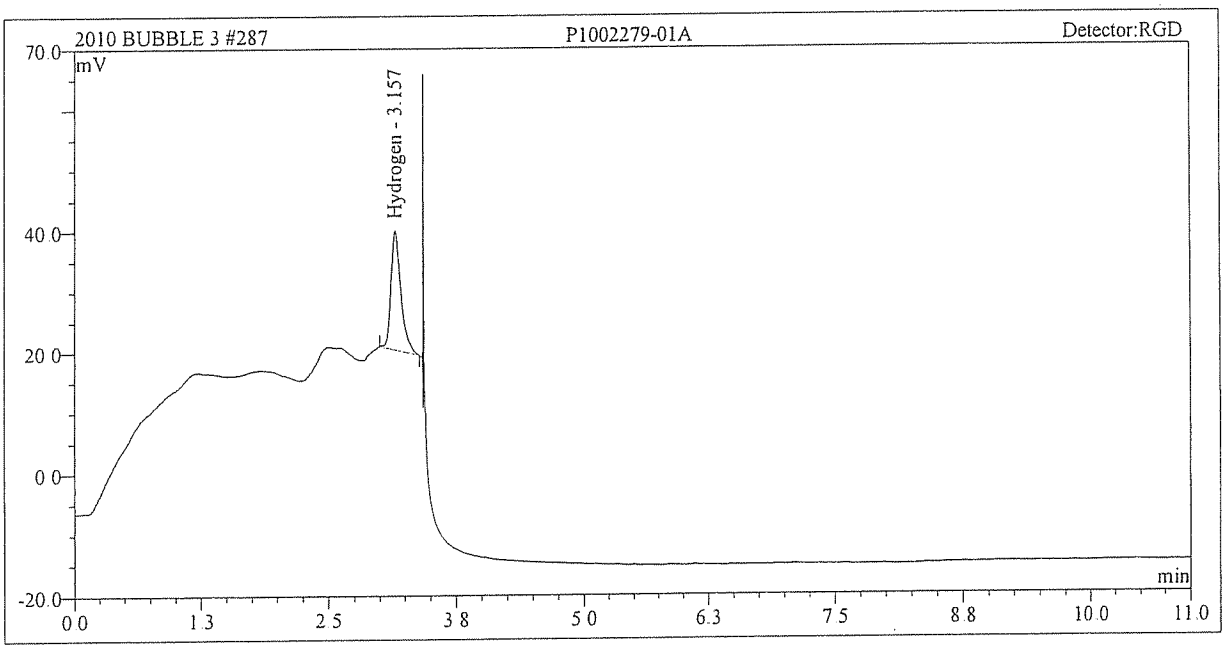
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002279-01A	**Sequence No:**	287
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 12:46 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.157	2.271	19.687	BMB	0.5323

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



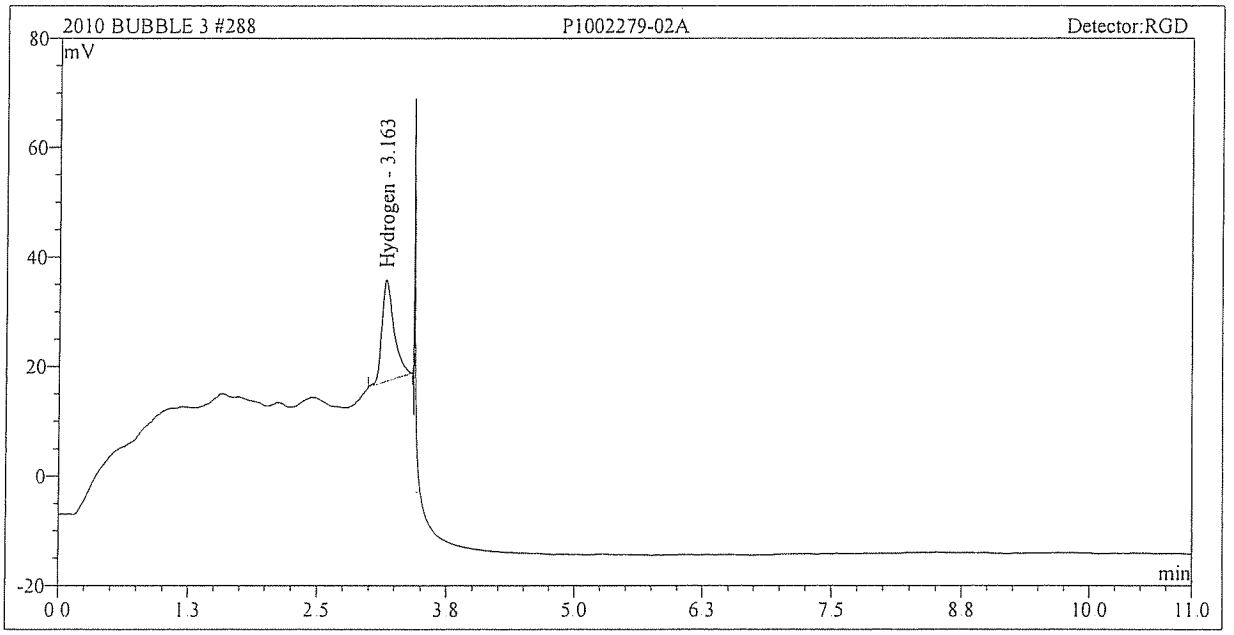
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002279-02A	**Sequence No:**	288
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 1:05 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.163	2.521	18.620	BMB	0.5909

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



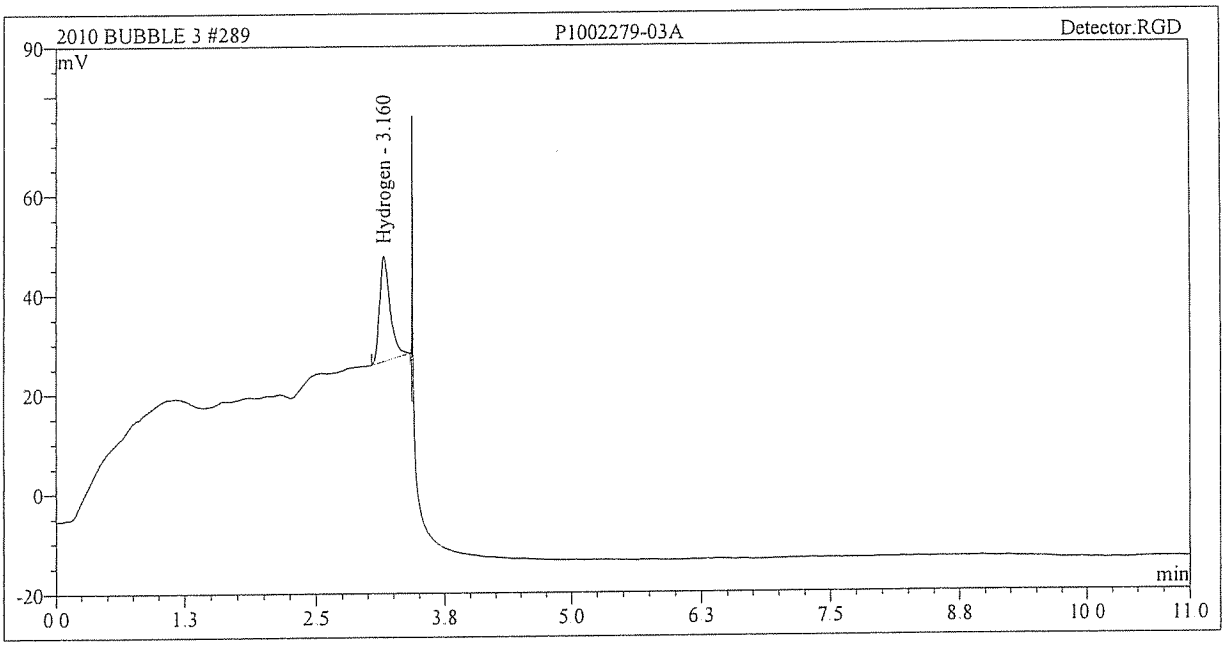
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002279-03A	**Sequence No:**	289
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 1:17 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.160	2.534	21.239	BMB	0.5940

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



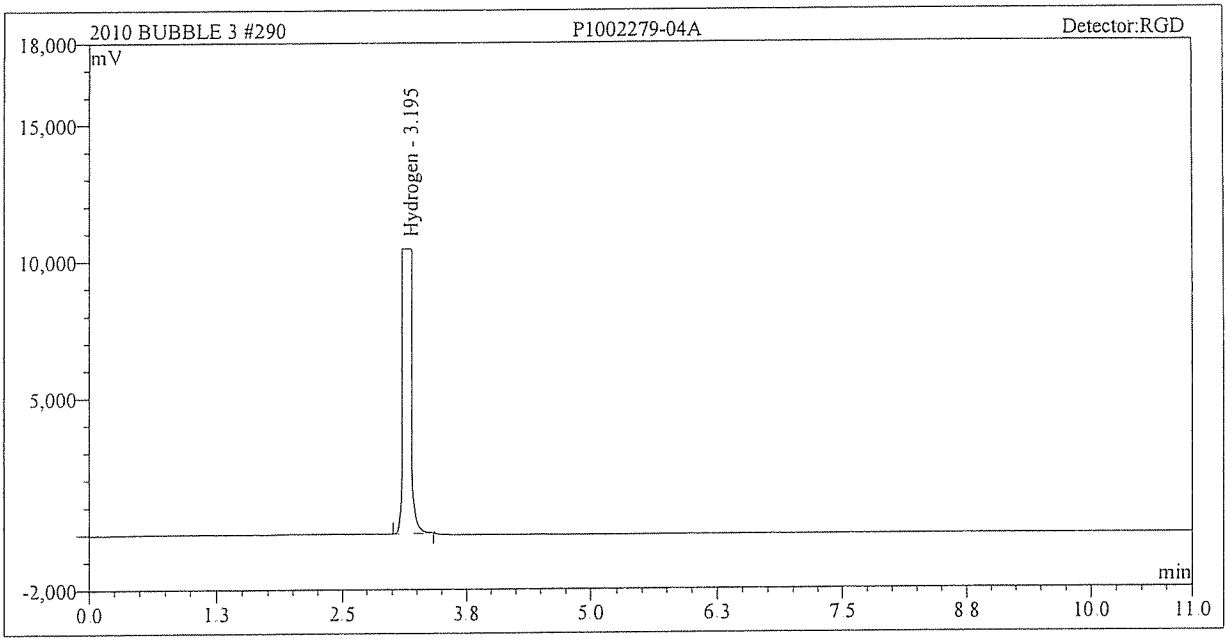
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002279-04A	**Sequence No:**	290
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 1:29 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.195	1108.111	10391.899	BMB	~~259.7441~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



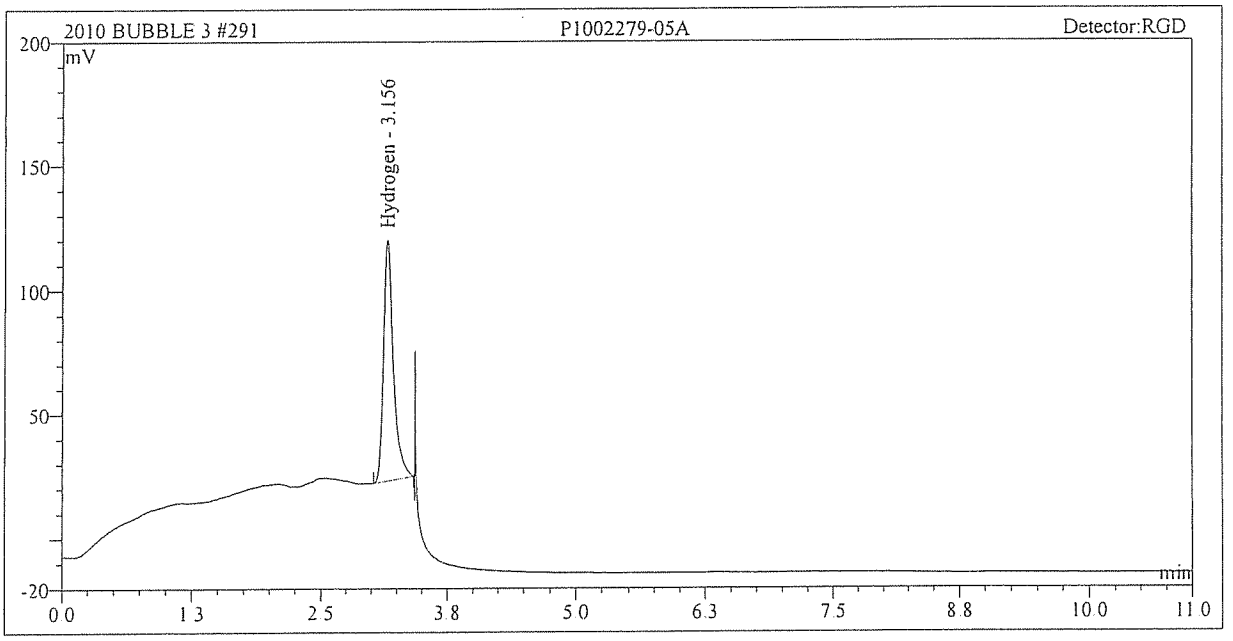
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002279-05A	**Sequence No:**	291
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 1:47 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.156	11.044	96.872	BMB	2.5887

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



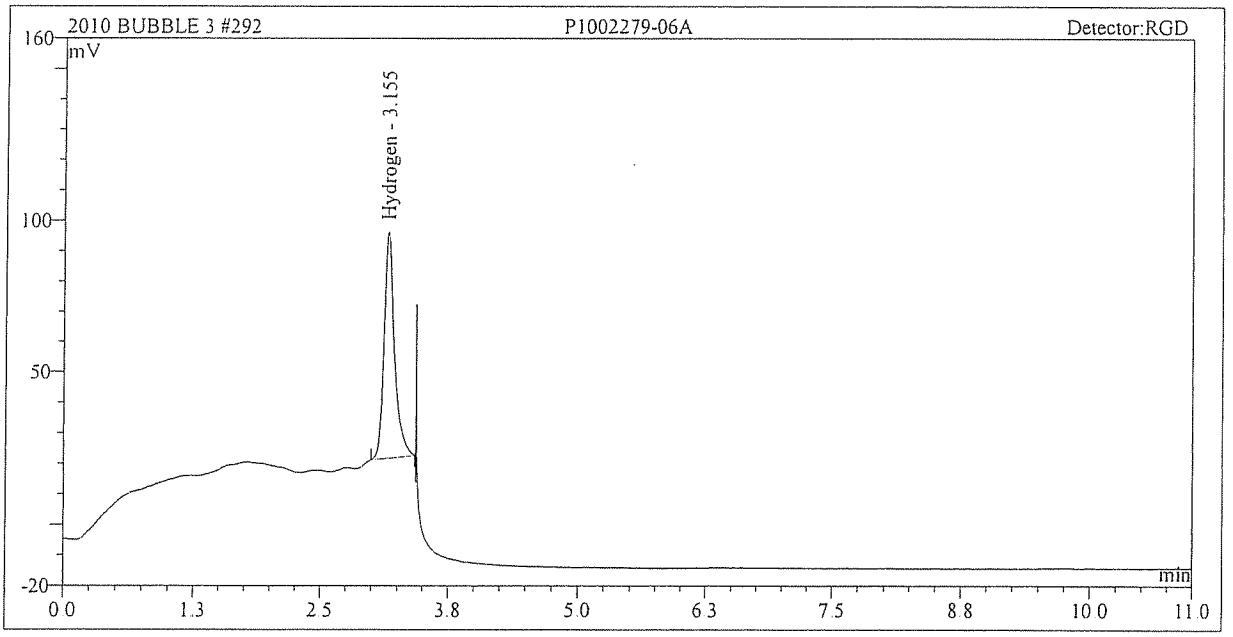
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002279-06A	**Sequence No:**	292
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 1:59 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.155	8.776	74.468	BMB	2.0572

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



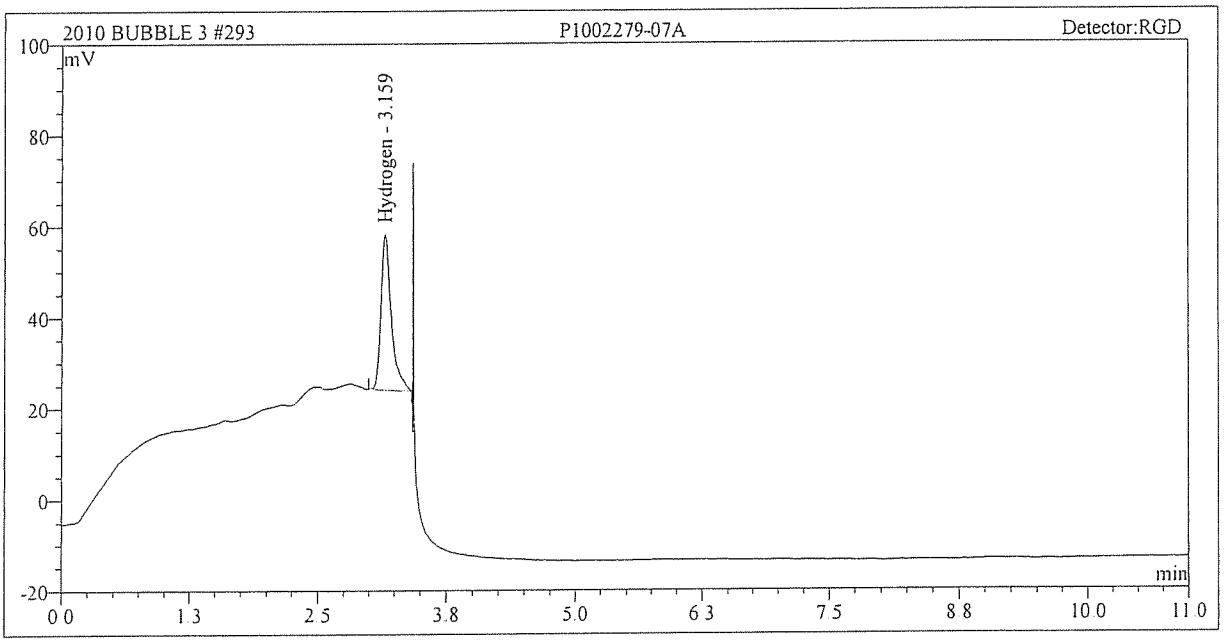
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002279-07A	**Sequence No:**	293
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 2:12 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.159	4.115	34.097	BMB	0.9645

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



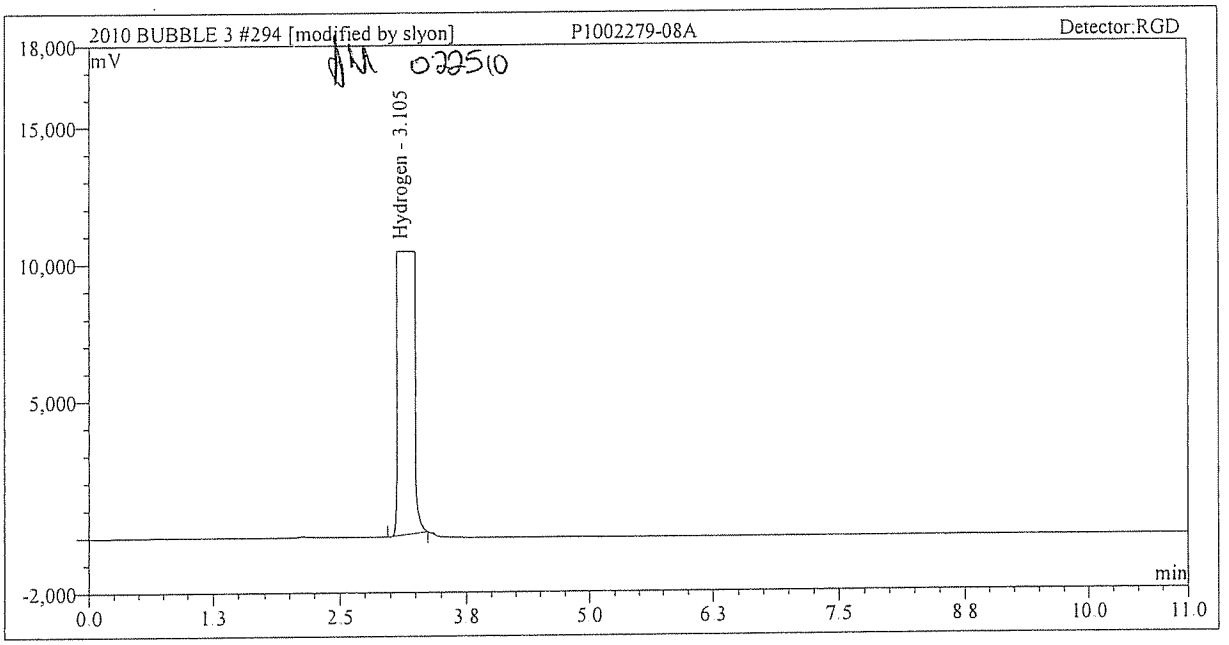
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002279-08A	**Sequence No:**	294
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 2:25 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.105	1946.868	10346.686	BMB*	~~456.3511~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



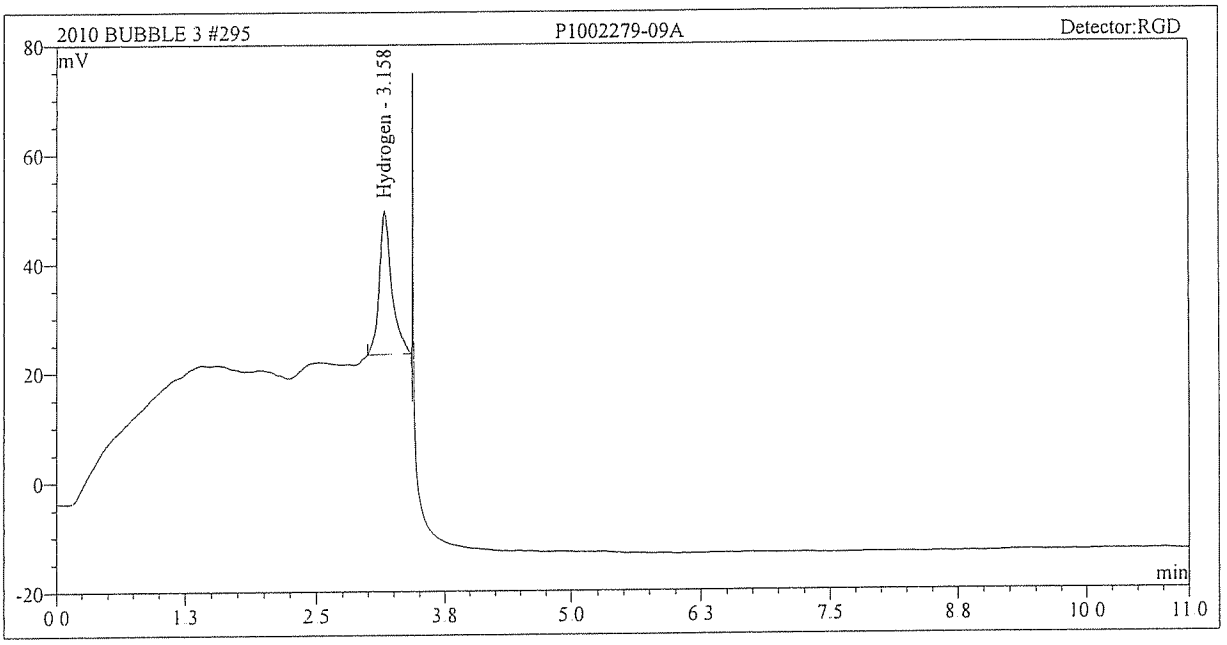
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002279-09A	**Sequence No:**	295
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 2:42 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.158	3.744	26.405	BMB	0.8775

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



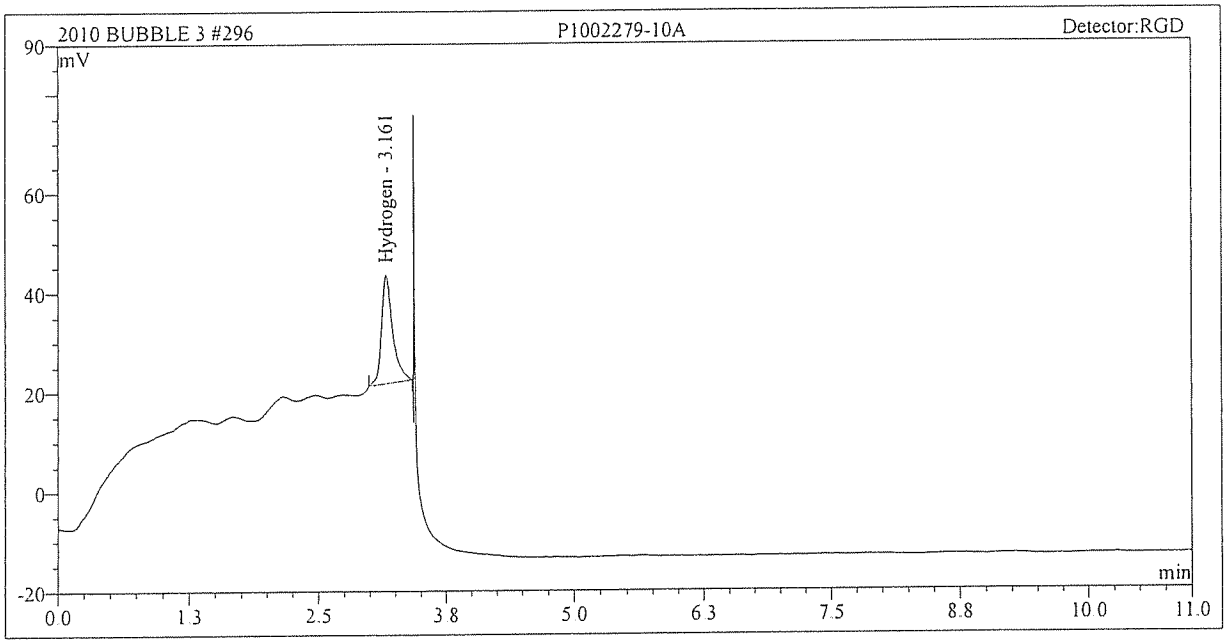
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002279-10A	**Sequence No:**	296
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 3:01 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.161	2.843	21.840	BMB	0.6664

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



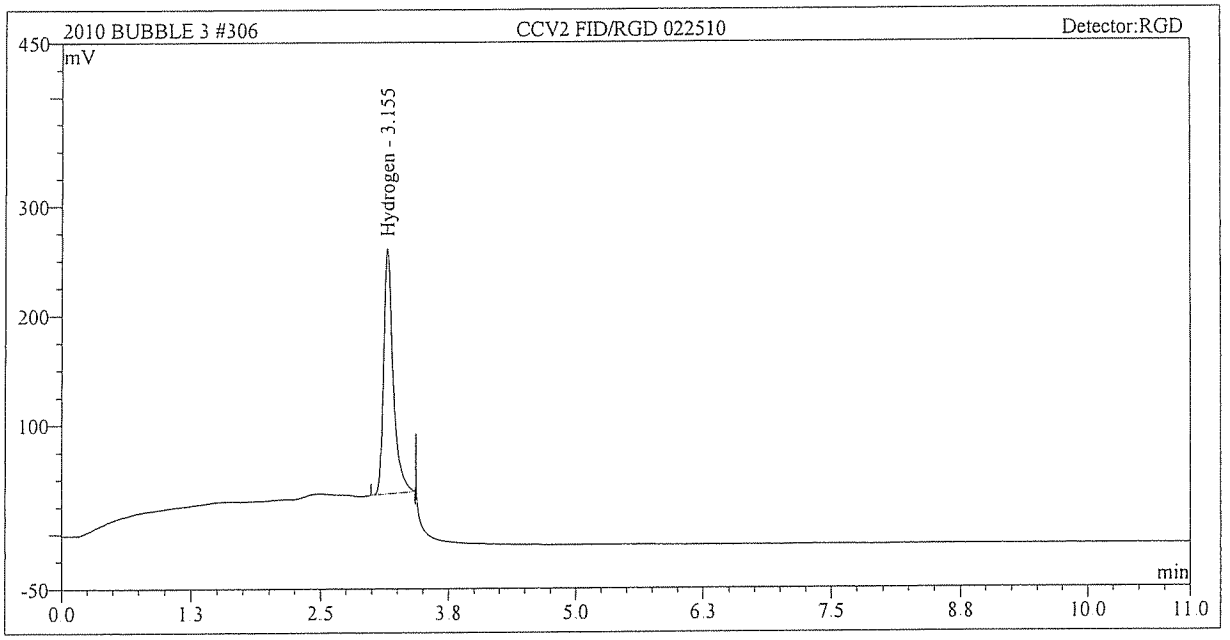
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 022510	**Sequence No:**	306
Sequence Name:	2010 BUBBLE 3	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	2/25/2010 5:25 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.155	24.629	223.807	BMB	5.148	5.7732

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Method File: BUBBLE
Operator: slyon 2279

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Window	Standard	Int.Type	Cal.Type
1	Methane	0.645 min	0.645 min			0.200 AN	External	Area	LOff
2	Ethane	0.908 min	0.908 min			0.200 AN	External	Area	Lin
3	Ethene	1.155 min	1.155 min			0.200 AN	External	Area	Lin
4	Propane	1.785 min	1.785 min			0.200 AN	External	Area	Lin
5	*Hydrogen*	*3.149 min*			*3.149 min*	*0.200 AN*	*External*	*Area*	*Lin*
6	Propene	3.567 min	3.567 min			0.200 AN	External	Area	Lin
7	Carbon Dioxide	4.200 min		4.200 min		0.500 AN	External	Area	Lin
8	iso-Butane	4.560 min	4.560 min			0.500 AN	External	Area	Lin
9	n-Butane	5.310 min	5.310 min			0.500 AN	External	Area	Lin
10	Oxygen	5.870 min		5.870 min		0.300 AN	External	Area	Lin
11	Nitrogen	6.260 min		6.260 min		0.300 AN	External	Area	Lin
12	Acetylene	7.198 min	7.198 min			0.500 AN	External	Area	Lin
13	Methane	7.560 min		7.560 min		0.400 AN	External	Area	Lin
14	Carbon Monoxide	8.450 min		8.450 min		0.400 AN	External	Area	Lin
15	Carbon Monoxide	8.600 min			8.600 min	0.400 AN	External	Area	Lin

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Method File: BUBBLE
Operator: slyon
Printed: 3/8/2010 5 40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45 44 PM by bcarnicelli
Last Update: 3/3/2010 10:58.29 AM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Peak Type	Group	Comment
1	Methane	0.645 min	Auto		
2	Ethane	0.908 min	Auto		
3	Ethene	1.155 min	Auto		
4	Propane	1.785 min	Auto		
5	*Hydrogen*	*3.149 min*	*Auto*		
6	Propene	3.567 min	Auto		
7	Carbon Dioxide	4.200 min	Auto		
8	iso-Butane	4.560 min	Auto		
9	n-Butane	5.310 min	Auto		
10	Oxygen	5.870 min	Auto		
11	Nitrogen	6.260 min	Auto		
12	Acetylene	7.198 min	Auto		
13	Methane	7.560 min	Auto		
14	Carbon Monoxide	8.450 min	Auto		
15	Carbon Monoxide	8.600 min	Auto		

Method File: BUBBLE
Operator: slyon

Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Amount ICAL Acetylene L5	Amount ICAL Acetylene L4
1	Methane	0.645 min	0.645 min				
2	Ethane	0.908 min	0.908 min				
3	Ethene	1.155 min	1.155 min				
4	Propane	1.785 min	1.785 min				
5	*Hydrogen*	*3.149 min*			*3.149 min*		
6	Propene	3.567 min	3.567 min				
7	Carbon Dioxide	4.200 min		4.200 min			
8	iso-Butane	4.560 min	4.560 min				
9	n-Butane	5.310 min	5.310 min				
10	Oxygen	5.870 min		5.870 min			
11	Nitrogen	6.260 min		6.260 min			
12	Acetylene	7.198 min	7.198 min			0.529000	2.648000
13	Methane	7.560 min		7.560 min			
14	Carbon Monoxide	8.450 min		8.450 min			
15	Carbon Monoxide	8.600 min			8.600 min		

Method File: BUBBLE
Operator: slyon
Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL Acetylene L3	Amount ICAL Acetylene L2	Amount ICAL Acetylene L1	Amount ICAL FID L8	Amount ICAL FID L7
1	Methane	0.645 min				0.002280	0.007120
2	Ethane	0.908 min				0.005880	0.018300
3	Ethene	1.155 min				0.013800	0.043300
4	Propane	1.785 min				0.006640	0.020700
5	*Hydrogen*	*3.149 min*					
6	Propene	3.567 min				0.019800	0.062100
7	Carbon Dioxide	4.200 min					
8	iso-Butane	4.560 min				0.004950	0.015400
9	n-Butane	5.310 min				0.006190	0.019300
10	Oxygen	5.870 min					
11	Nitrogen	6.260 min					
12	Acetylene	7.198 min	13.240000	66.200000	264.800000		
13	Methane	7.560 min					
14	Carbon Monoxide	8.450 min					
15	Carbon Monoxide	8.600 min					

Method File: BUBBLE
Operator: slyon

Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL FID L6	Amount ICAL FID L5	Amount ICAL FID L4	Amount ICAL FID L3	Amount ICAL FID L2	Amount ICAL FID L1
1	Methane	0.645 min	0.028500	0.114000	0.456000	2.280000	11.402000	57.011000
2	Ethane	0.908 min	0.073500	0.294000	1.176000	5.880000	29.403000	147.016000
3	Ethene	1.155 min	0.173000	0.693000	2.774000	13.870000	69.353000	346.766000
4	Propane	1.785 min	0.083000	0.332000	1.328000	6.644000	33.220000	166.100000
5	*Hydrogen*	*3.149 min*						
6	Propene	3.567 min	0.248000	0.993000	3.975000	19.877000	99.388000	496.942000
7	Carbon Dioxide	4.200 min						
8	iso-Butane	4.560 min	0.061800	0.247000	0.990000	4.951000	24.756000	123.783000
9	n-Butane	5.310 min	0.077400	0.309000	1.238000	6.192000	30.961000	154.808000
10	Oxygen	5.870 min						
11	Nitrogen	6.260 min						
12	Acetylene	7.198 min						
13	Methane	7.560 min						
14	Carbon Monoxide	8.450 min						
15	Carbon Monoxide	8.600 min						

Method File: BUBBLE
Operator: slyon
Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL TCD L6	Amount ICAL TCD L5	Amount ICAL TCD L4	Amount ICAL TCD L3	Amount ICAL TCD L2	Amount ICAL TCD L1
1	Methane	0.645 min						
2	Ethane	0.908 min						
3	Ethene	1.155 min						
4	Propane	1.785 min						
5	*Hydrogen*	*3.149 min*						
6	Propene	3.567 min						
7	Carbon Dioxide	4.200 min	2.196000	5.490000	10.980000	54.900000	274.500000	549.000000
8	iso-Butane	4.560 min						
9	n-Butane	5.310 min						
10	Oxygen	5.870 min	0.015900	0.039900	0.079800	0.399200	1.996000	3.992000
11	Nitrogen	6.260 min	0.051400	0.129000	0.257000	1.286000	6.430000	12.860000
12	Acetylene	7.198 min						
13	Methane	7.560 min		23.580000	47.160000	235.800000	1179.000000	2358.000000
14	Carbon Monoxide	8.450 min		0.046900	0.093800	0.469000	2.345000	4.690000
15	Carbon Monoxide	8.600 min						

Method File: BUBBLE
Operator: slyon

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL H2 L7	Amount ICAL H2 L6	Amount ICAL H2 L5	Amount ICAL H2 L4	Amount ICAL H2 L3	Amount ICAL H2 L2
1	Methane	0.645 min						
2	Ethane	0.908 min						
3	Ethene	1.155 min						
4	Propane	1.785 min						
5	*Hydrogen*	*3.149 min*	*0.396000*	*0.990000*	*3.960000*	*9.900000*	*19.800000*	*39.600000*
6	Propene	3.567 min						
7	Carbon Dioxide	4.200 min						
8	iso-Butane	4.560 min						
9	n-Butane	5.310 min						
10	Oxygen	5.870 min						
11	Nitrogen	6.260 min						
12	Acetylene	7.198 min						
13	Methane	7.560 min						
14	Carbon Monoxide	8.450 min						
15	Carbon Monoxide	8.600 min						

Method File: BUBBLE
Operator: slyon

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Calibration:

Calibration Mode: Total
Auto Recalibrate: On
Curve Fitting Model: Normal
Dual-Column Separate Calibration: Off

No.	Enabled	Name	Smp.No.	Pos.	Inj. Vol.	Weight	ISTD Amount	Dil. Factor	Inj. Date/Time
1	☒	ICAL Acetylene L5	1	3	20.0	1.0000	1.0000	1.0000	1/27/2010 1:45:06 PM
2	☒	ICAL Acetylene L4	2	4	20.0	1.0000	1.0000	1.0000	1/27/2010 1:57:25 PM
3	☒	ICAL Acetylene L3	3	5	20.0	1.0000	1.0000	1.0000	1/27/2010 2:11:52 PM
4	☒	ICAL Acetylene L2	4	6	20.0	1.0000	1.0000	1.0000	1/27/2010 2:24:12 PM
5	☒	ICAL Acetylene L1	5	7	20.0	1.0000	1.0000	1.0000	1/27/2010 2:40:41 PM
6	☒	ICAL FID L8	6	8	20.0	1.0000	1.0000	1.0000	1/27/2010 3:06:21 PM
7	☒	ICAL FID L7	7	9	20.0	1.0000	1.0000	1.0000	1/27/2010 3:18:35 PM
8	☒	ICAL FID L6	8	10	20.0	1.0000	1.0000	1.0000	1/27/2010 3:32:43 PM
9	☒	ICAL FID L5	9	11	20.0	1.0000	1.0000	1.0000	1/27/2010 3:45:00 PM
10	☒	ICAL FID L4	10	12	20.0	1.0000	1.0000	1.0000	1/27/2010 3:59:45 PM
11	☒	ICAL FID L3	11	13	20.0	1.0000	1.0000	1.0000	1/27/2010 4:12:06 PM
12	☒	ICAL FID L2	12	14	20.0	1.0000	1.0000	1.0000	1/27/2010 4:26:11 PM
13	☒	ICAL FID L1	13	15	20.0	1.0000	1.0000	1.0000	1/27/2010 4:39:41 PM
14	☒	ICAL TCD L6	16	18	20.0	1.0000	1.0000	1.0000	1/27/2010 5:21:50 PM
15	☒	ICAL TCD L5	17	19	20.0	1.0000	1.0000	1.0000	1/27/2010 5:35:49 PM
16	☒	ICAL TCD L4	18	20	20.0	1.0000	1.0000	1.0000	1/27/2010 5:48:02 PM
17	☒	ICAL TCD L3	19	21	20.0	1.0000	1.0000	1.0000	1/27/2010 6:01:38 PM
18	☒	ICAL TCD L2	20	22	20.0	1.0000	1.0000	1.0000	1/27/2010 6:13:53 PM
19	☒	ICAL TCD L1	21	23	20.0	1.0000	1.0000	1.0000	1/27/2010 6:27:25 PM
20	☒	ICAL H2 L7	25	1	20.0	1.0000	1.0000	1.0000	3/3/2010 11:14:07 AM
21	☒	ICAL H2 L6	26	2	20.0	1.0000	1.0000	1.0000	3/3/2010 11:26:28 AM
22	☒	ICAL H2 L5	27	3	20.0	1.0000	1.0000	1.0000	3/3/2010 11:38:40 AM
23	☒	ICAL H2 L4	28	4	20.0	1.0000	1.0000	1.0000	3/3/2010 11:56:32 AM
24	☒	ICAL H2 L3	29	5	20.0	1.0000	1.0000	1.0000	3/3/2010 12:09:53 PM
25	☒	*ICAL H2 L2*	*30*	*6*	*20.0*	*1.0000*	*1.0000*	*1.0000*	*3/3/2010 12:24:07 PM*

Hydrogen

Method AM20GAX

3/3/2010

No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square %	Offset	Slope	Curve
1	3.14	Hydrogen	Lin	6	99.993	0.00000	3.74144	0.00000

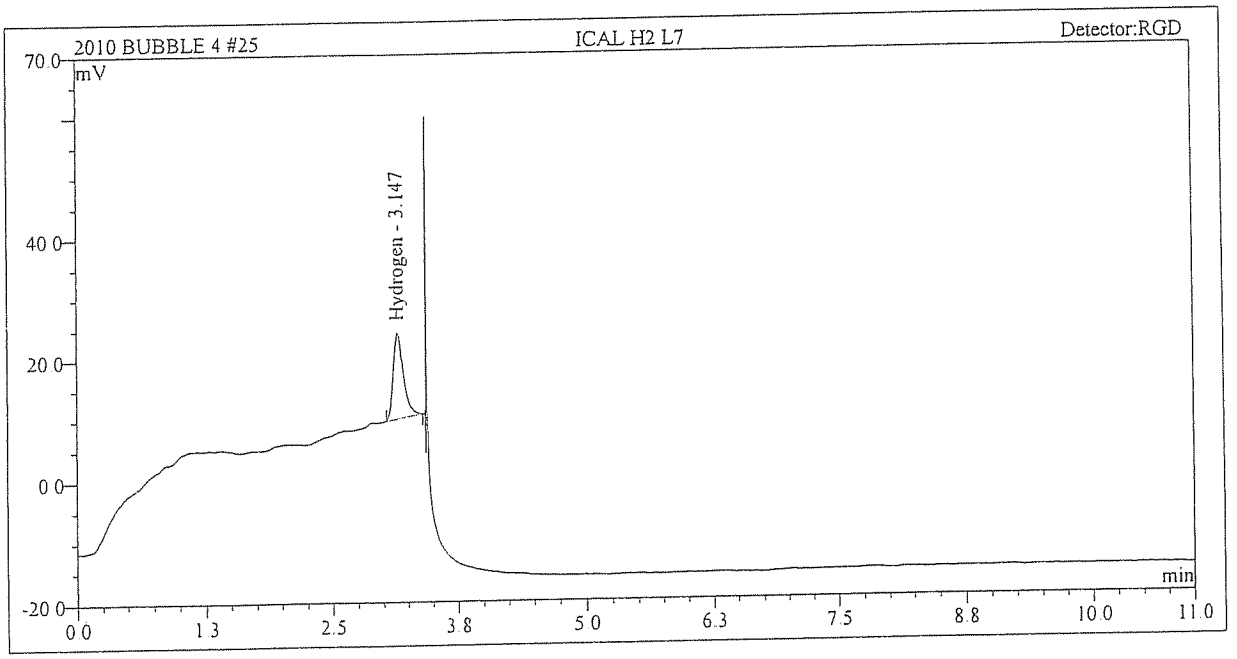
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L7	Sequence No:	25
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/3/2010 11:14 AM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.147	1.681	14.241	BMB	0.4494

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



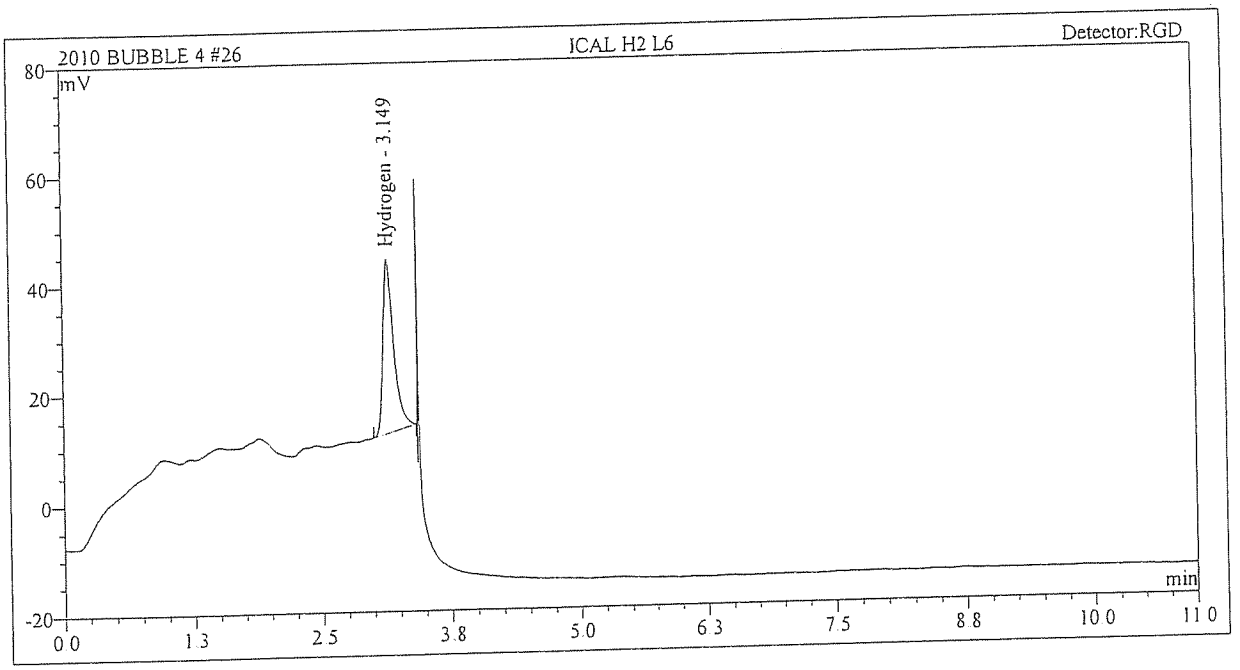
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L6	Sequence No:	26
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/3/2010 11:26 AM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.149	3.830	31.832	BMB	1.0237

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



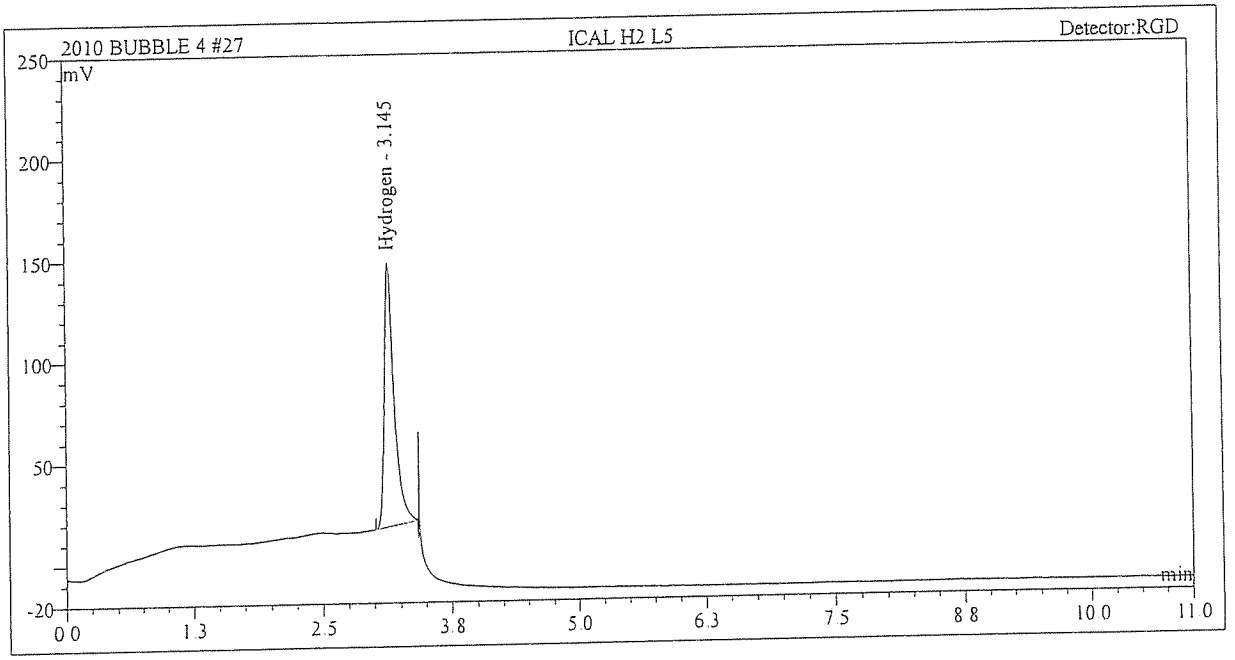
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L5	Sequence No:	27
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/3/2010 11:38 AM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.145	14.495	130.097	BMB	3.8740

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



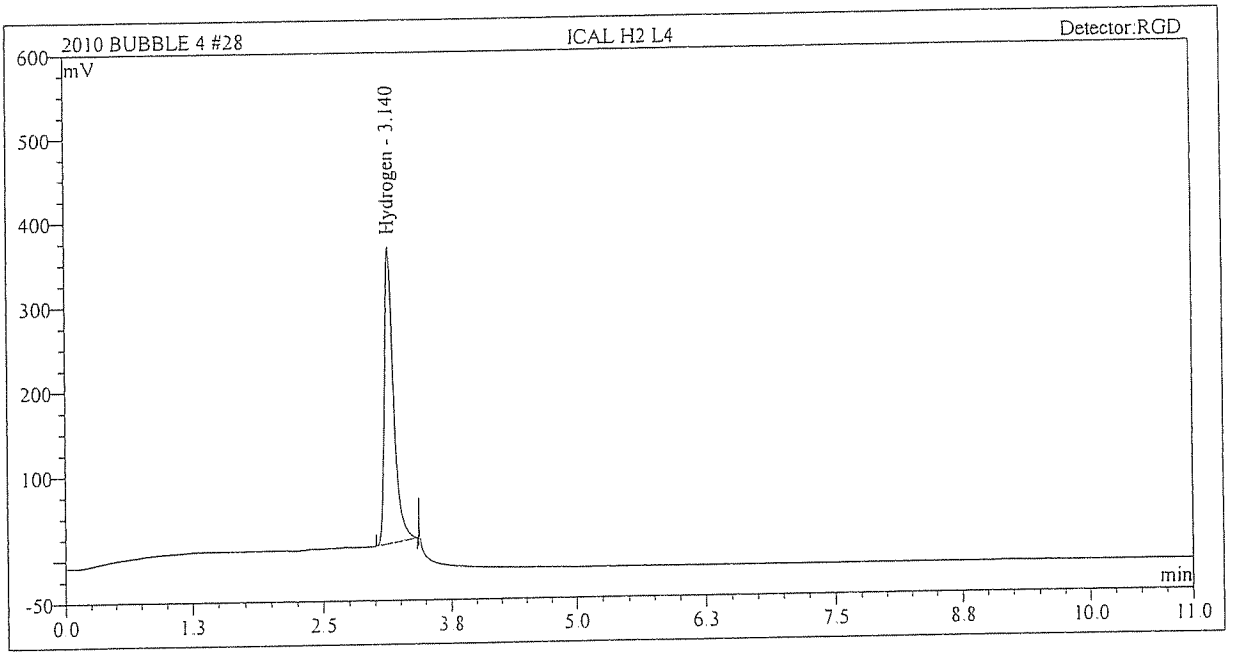
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L4	Sequence No:	28
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/3/2010 11:56 AM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.140	36.435	350.662	BMB	9.7382

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



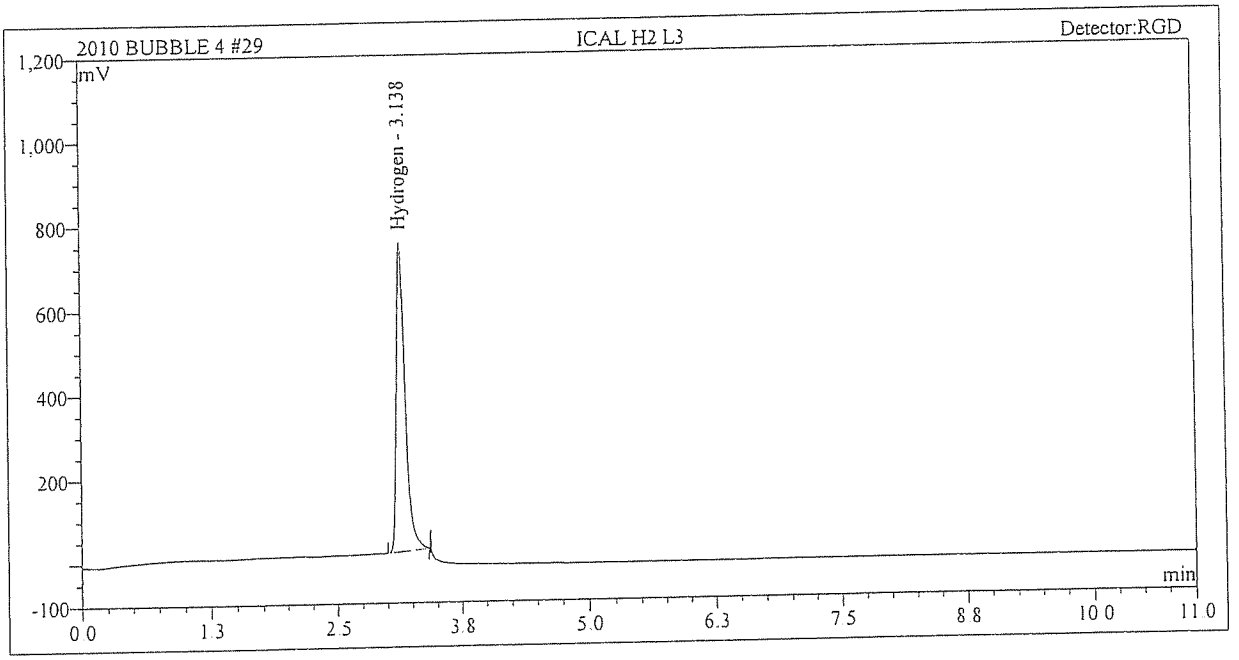
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L3	Sequence No:	29
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/3/2010 12:09 PM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.138	74.806	734.291	BMB	19.9939

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



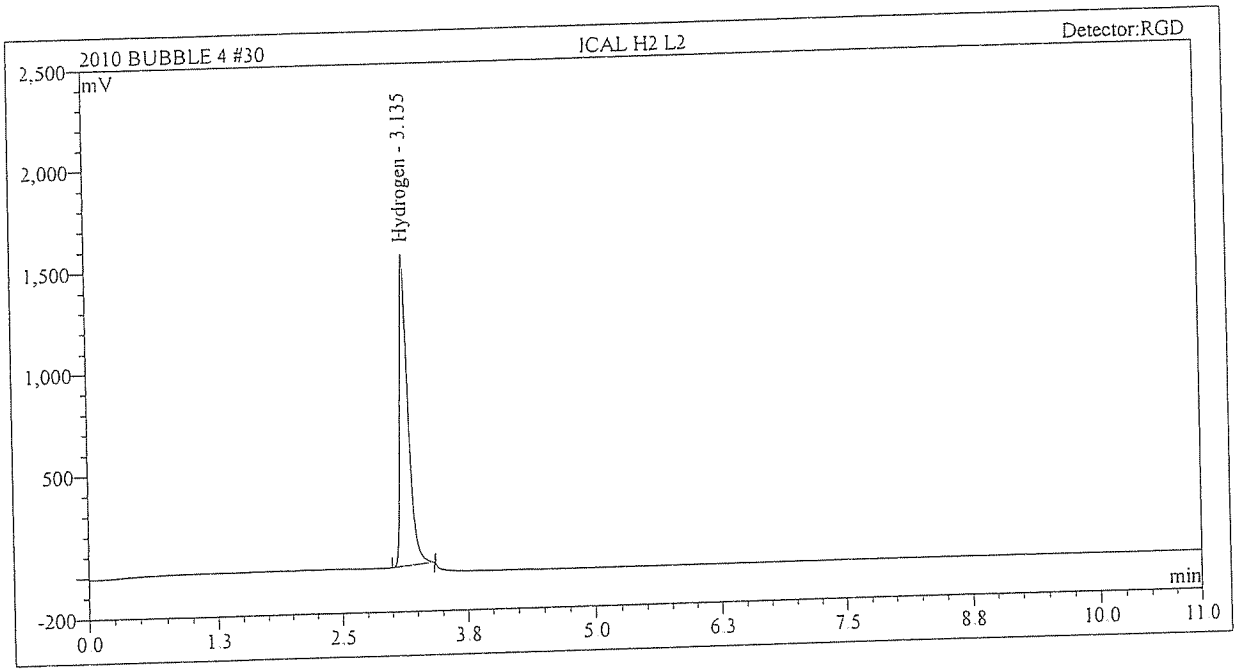
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L2	Sequence No:	30
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/3/2010 12:24 PM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.135	147.977	1531.099	BMB	39.5507

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



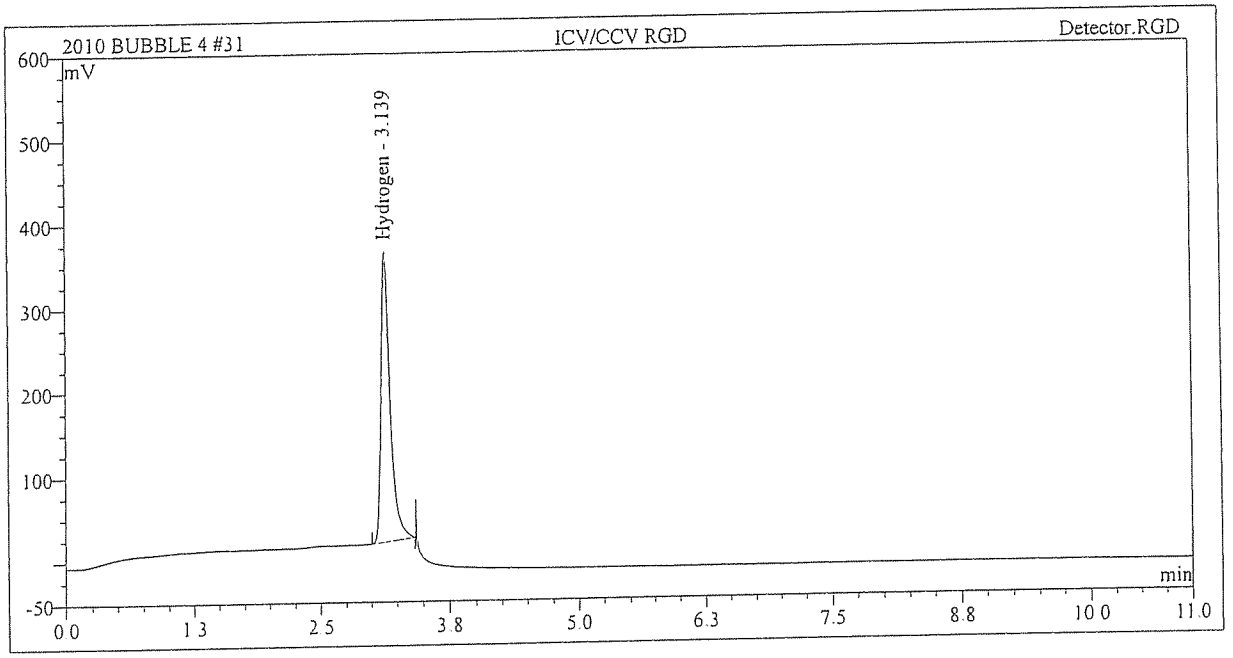
MICROSEEPS

Sample Analysis Report

Sample Name:	ICV/CCV RGD	Sequence No:	31
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/3/2010 12:37 PM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.139	36.198	343.693	BMB	10-296	9.6749

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



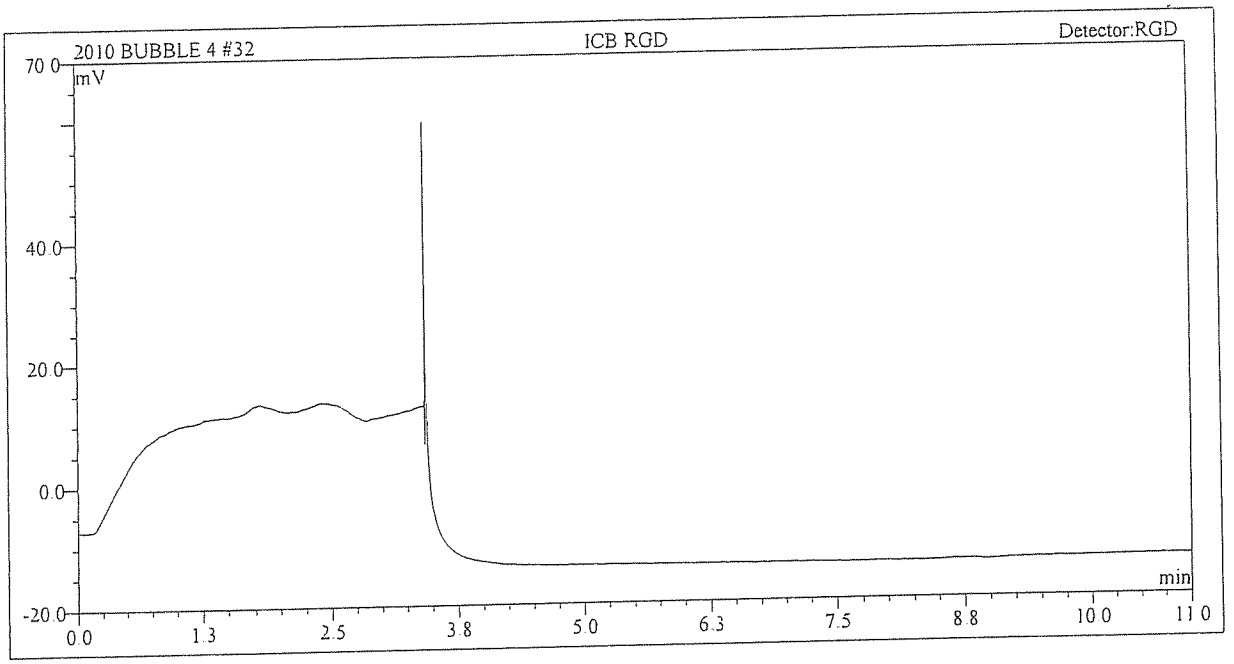
MICROSEEPS

Sample Analysis Report

Sample Name:	ICB RGD	Sequence No:	32
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/3/2010 12:57 PM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100305028 - Hz

Original Run Date: 3-5-10

Matrix: Bubble Strip

Sample numbers:
P1002271-(1-3) DIL's
P1002276-(6-8)
P1002277-(8) DIL
P1002278-(1) DIL
P1002279-(3,4,8) DIL's

Out of Control Event: (attach another page, if necessary)
P1002276-(6) Required a dilution for Hz

Corrective Action Taken:
DIL - Same Batch

Result:
Report Dilution

Observations to support use of data: (Note any occurrences of manual integration here)

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. Date

Analyzed & Reviewed by: [signature] Date: 030510
Manual Integration Conducted? YES (NO)
(Circle One)
Reviewed by: [signature] Date: 030910
Reviewed & Entered by: Upload Date: 030810
Reviewed by: _____ Date: _____
Corrected by: _____ Date: _____

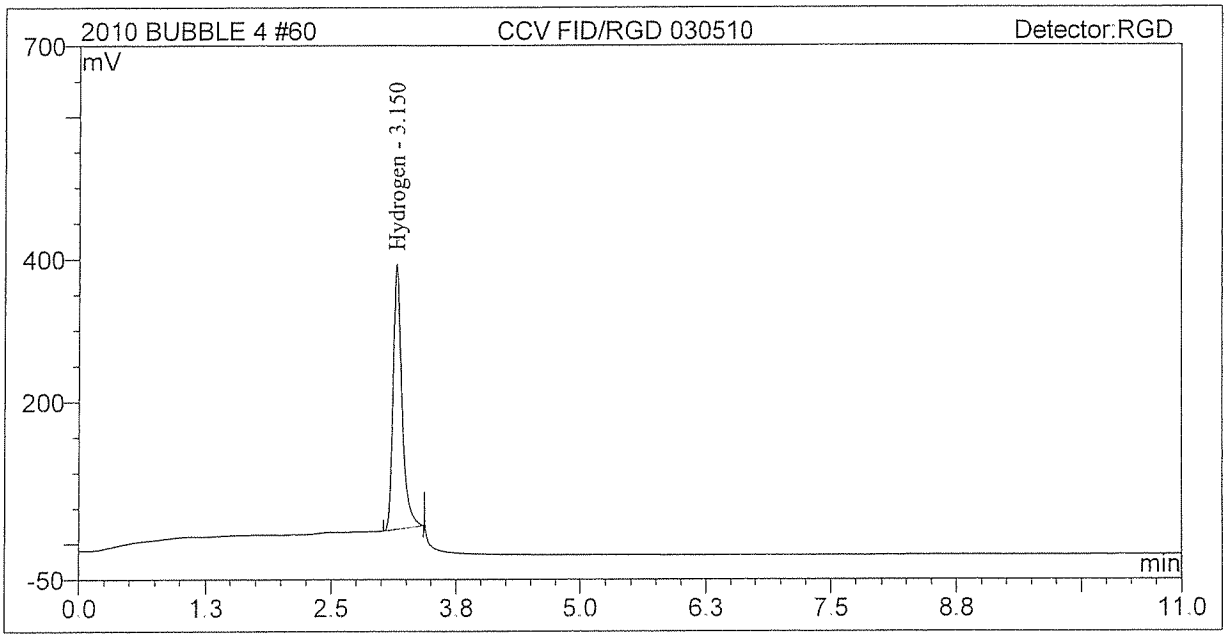
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 030510	**Sequence No:**	60
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 10:42 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.150	38.979	372.431	BMB	10.296	10.4182

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



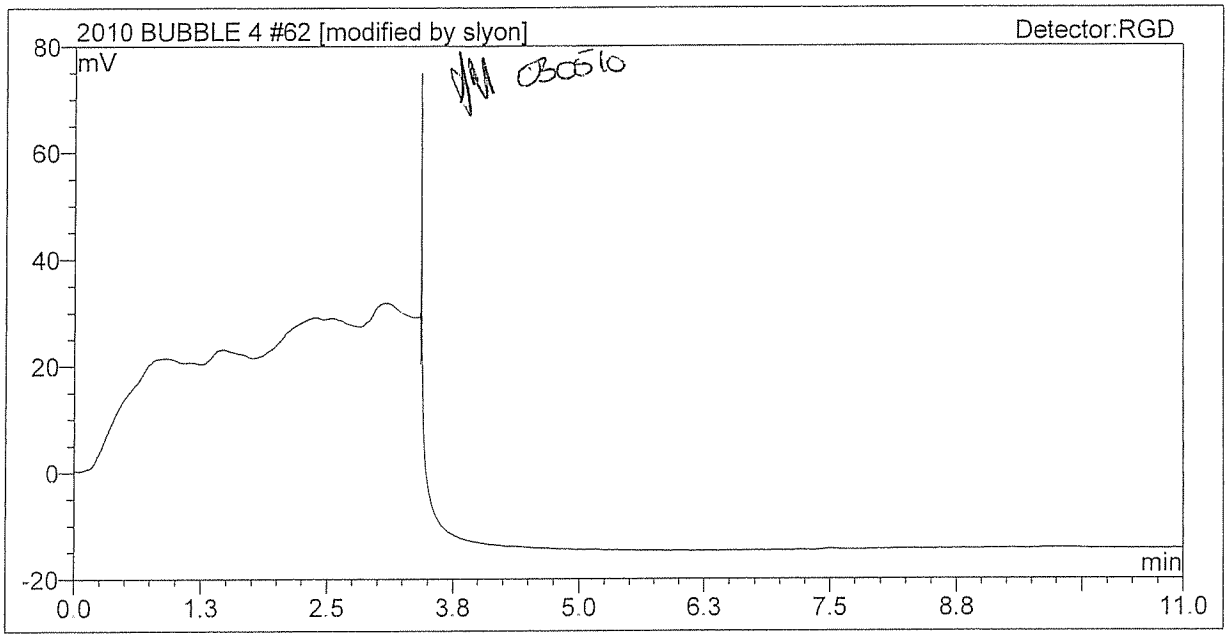
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 030510	**Sequence No:**	62
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 11:15 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



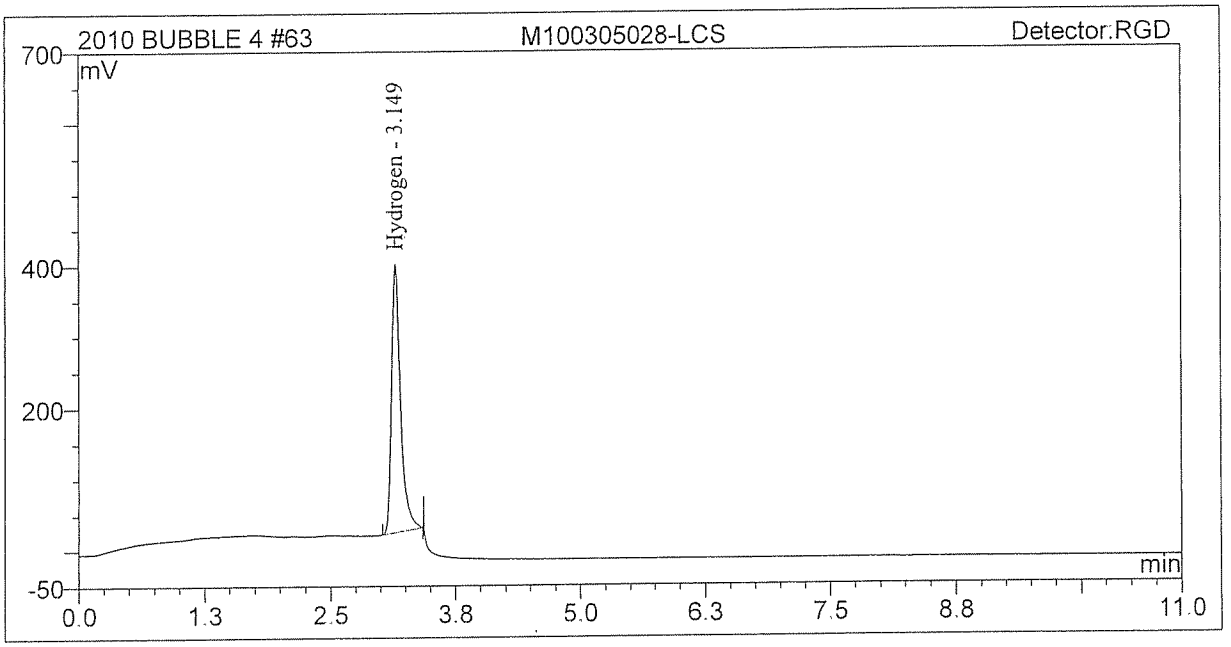
MICROSEEPS

Sample Analysis Report

Sample Name:	M100305028-LCS	**Sequence No:**	63
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 11:29 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV
1	Hydrogen	3.149	39.752	376.935	BMB	9.752 10.6249

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



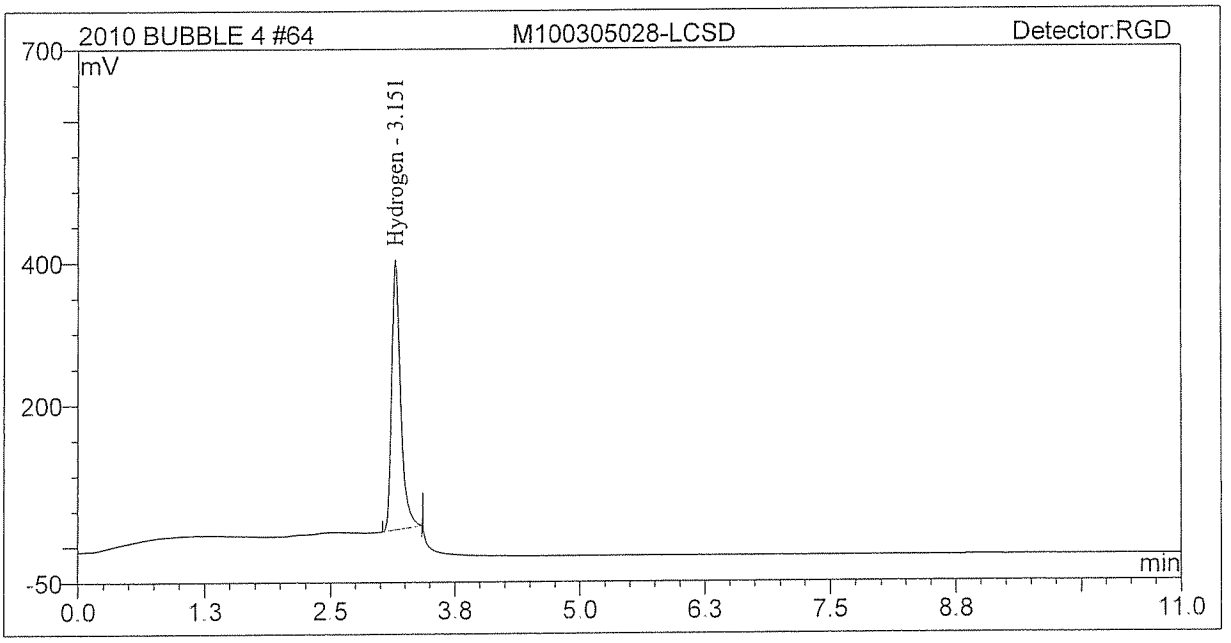
MICROSEEPS

Sample Analysis Report

Sample Name:	M100305028-LCSD	**Sequence No:**	64
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 11:53 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV
1	Hydrogen	3.151	39.967	379.792	BMB	9.782 10.6823

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



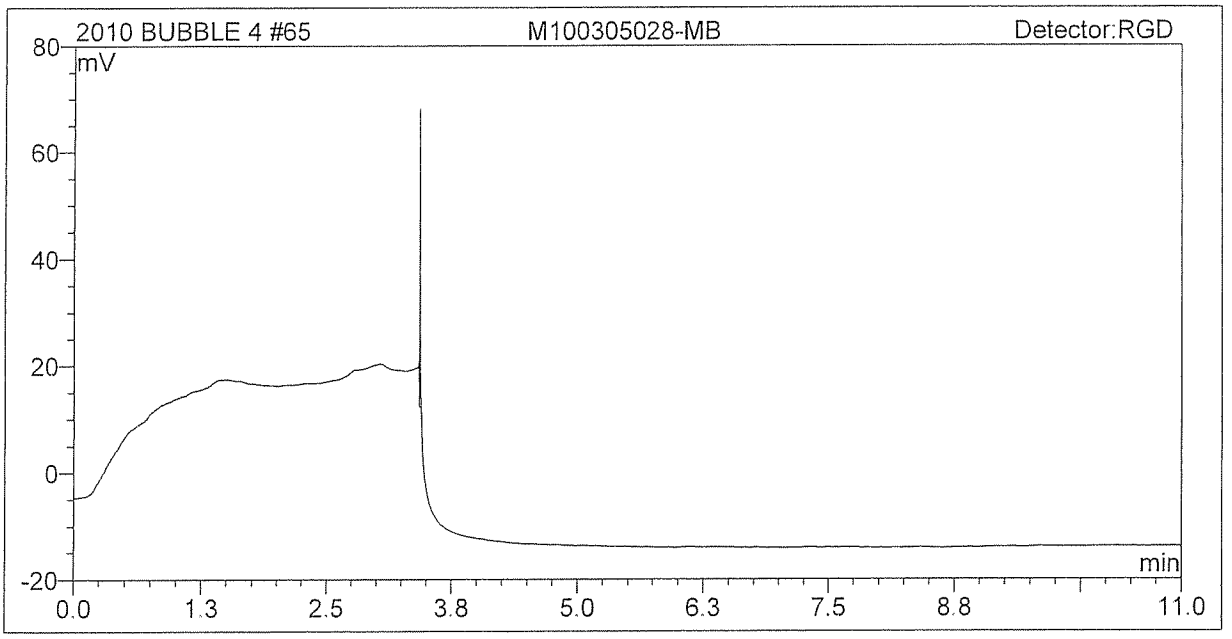
MICROSEEPS

Sample Analysis Report

Sample Name:	M100305028-MB	**Sequence No:**	65
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 12:07 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



MICROSEEPS

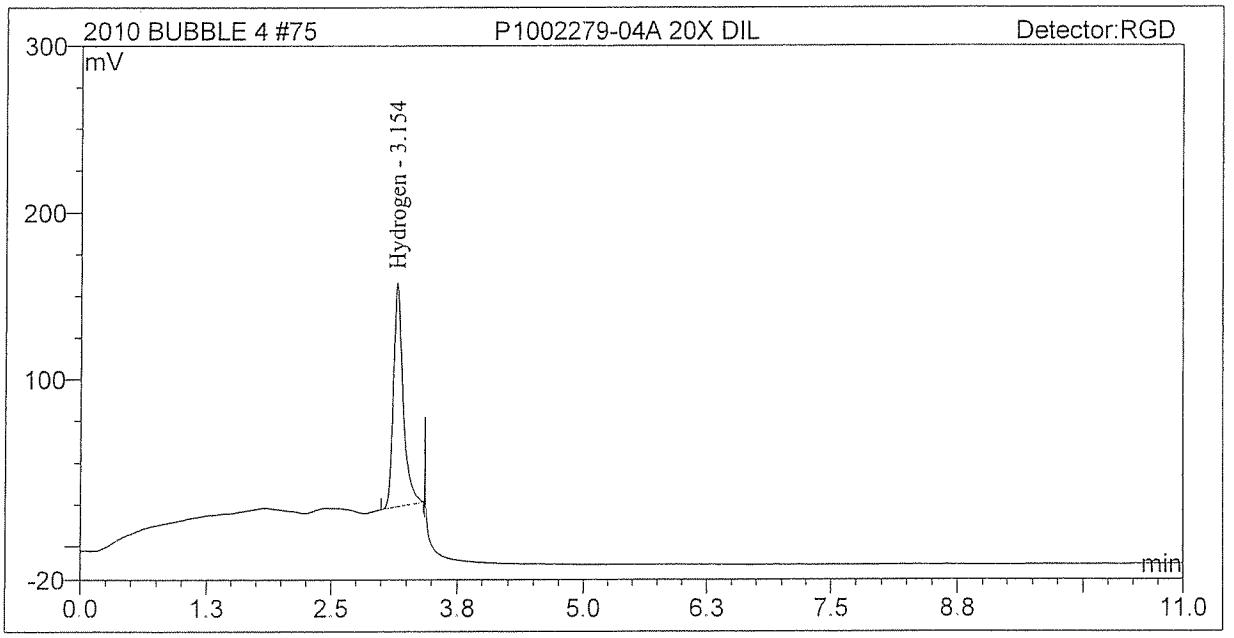
Sample Analysis Report

Sample Name:	P1002279-04A 20X DIL	**Sequence No:**	75
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 2:48 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.154	15.113	134.437	BMB	4.0393

X20

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



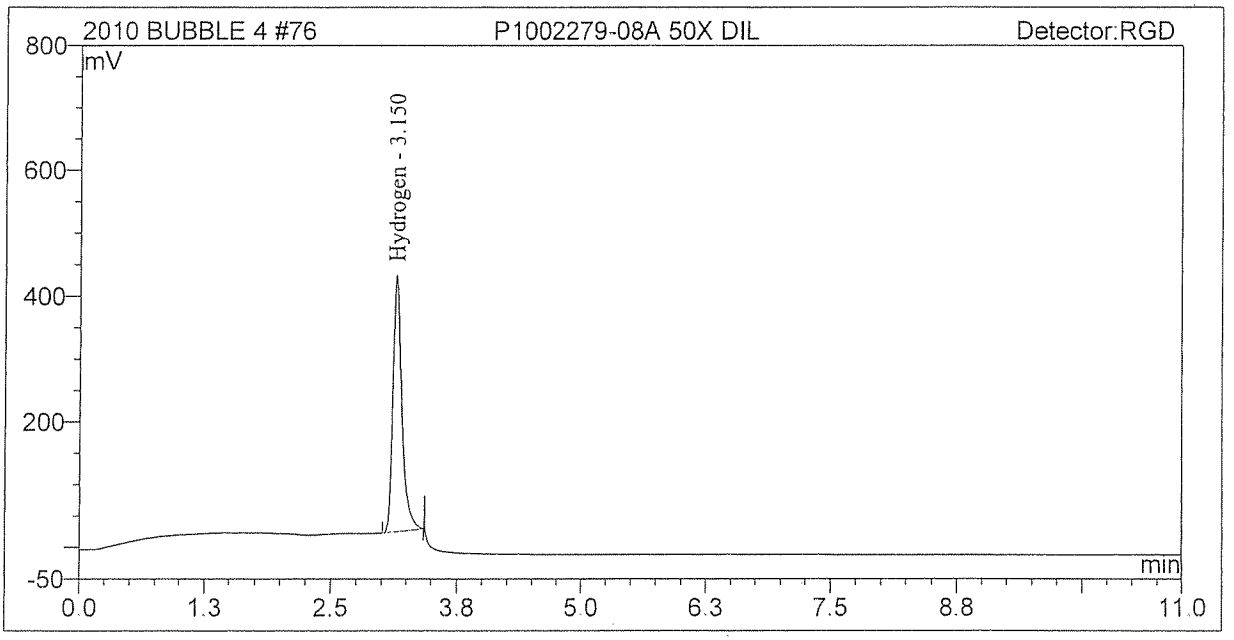
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002279-08A 50X DIL	**Sequence No:**	76
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 3:05 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.150	42.771	407.738	BMB	11.4317 x 50

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



MICROSEEPS

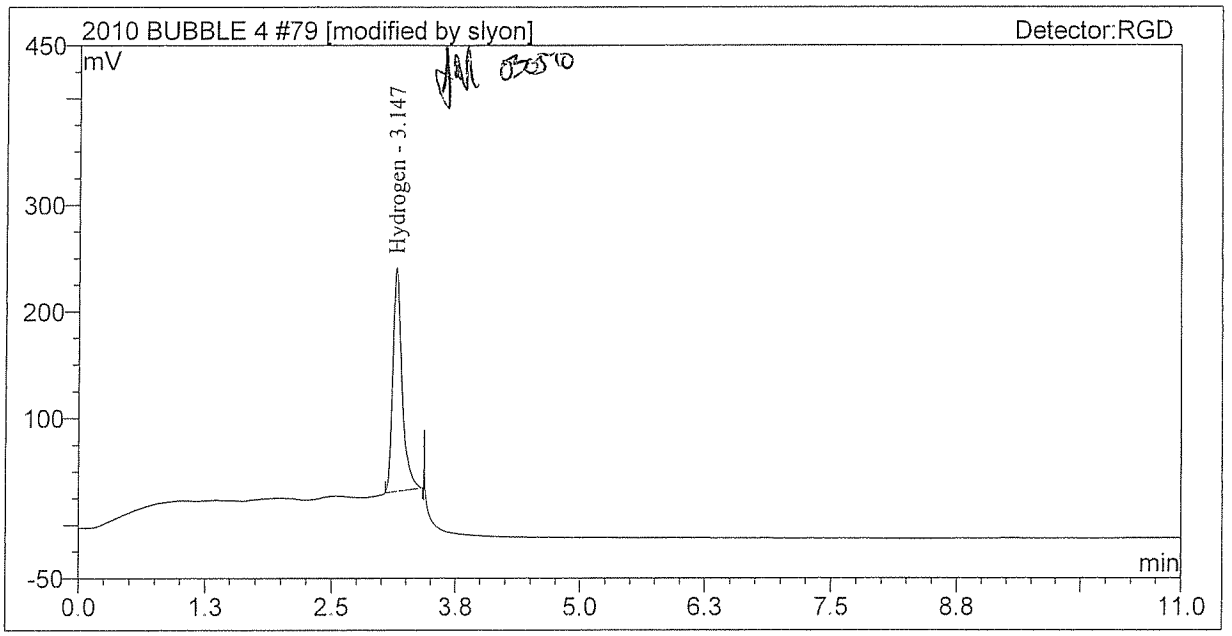
Sample Analysis Report

Sample Name:	CCV2 FID/RGD 030510	**Sequence No:**	79
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 7:57 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.147	22.882	209.705	BMB*	5.148	6.1157

119 %

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26024

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	CTO 20 ALAMEDA
PROJECT LOCATION	ALAMEDA
SAMPLER NAME	FS IW
PROJECT CONTACT	DIANE SUZUKI
PURCHASE ORDER NO.	1042720
PROJECT NO.	106.3210.620. D.07.09.01000
AIRBILL NUMBER	7984 0610 6395
PROJECT CONTACT PHONE NUMBER	949 756 7584
LABORATORY NAME	MICROBEPS
LABORATORY ID (FOR LABORATORY)	P1002277

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: DISSOLVED ETHANE; DISSOLVED ETHENE

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	DISSOLVED ETHANE	DISSOLVED ETHENE	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R4-025	2-16-10	1050	1	X			10		X		ZV1-MW05B	30	40	N
20-R4-021	2-16-10	1245	1		X		10		X		ZV1-MW04B	30	40	N
20-R4-019	2-16-10	1400	1	X			10		X		ZV1-MW04A2	10	20	N
20-R4-022	2-16-10	1515	1	X			10		X		ZV1-MW04C	40	50	N
20-R4-009	2-16-10	1020	1	X			10		X		ZV1-MW02A2	10	20	N
20-R4-00~~X~~7	2-16-10	1220	1	X			10		X		ZV1-MW01D	50	60	N
20-R4-004	2-16-10	1320	1	X			10		X		ZV1-MW01B	30	40	N
20-R4-002	2-16-10	1450	1	X			10		X		ZV1-MW01A2	10	20	N

RELINQUISHED BY (Signature)	DATE 2-16-10	RECEIVED BY (Signature)	
COMPANY BTS	TIME 1700	COMPANY BTS	
RELINQUISHED BY (Signature)	DATE 2-19-10	RECEIVED BY (Signature) TED EX	
COMPANY BTS	TIME 1600	COMPANY	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	
COMPANY	TIME	COMPANY	

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

microseeps
from insight comes solutions

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 1 of 11
Lab Proj #: P1002277
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Laboratory Results

Total pages in data package: 56

Lab Sample #	Client Sample ID
P1002277-01	20-R4-025
P1002277-02	20-R4-021
P1002277-03	20-R4-019
P1002277-04	20-R4-022
P1002277-05	20-R4-009
P1002277-06	20-R4-007
P1002277-07	20-R4-004
P1002277-08	20-R4-002

Microseeps test results meet all the requirements of the NELAC standards or provide reasons and/or justification if they do not.

Approved By: Debbie Hallo (HH) ***Date:*** 3-9-10

Project Manager: Debbie Hallo

The analytical results reported here are reliable and usable to the precision expressed in this report. As required by some regulating authorities, a full discussion of the uncertainty in our analytical results can be obtained at our web site or through customer service. Unless otherwise specified, all results are reported on a wet weight basis.

As a valued client we would appreciate your comments on our service.
Please call customer service at (412)826-5245 or email customerservice@microseeps.com.

Case Narrative:

220 William Pitt Way • Pittsburgh, PA 15238 • Tel 412-826-5245 • Fax 412-826-3433
website www.microseeps.com email info@microseeps.com

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 2 of 11
Lab Proj #: P1002277
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-025	Vapor	P1002277-01	16 Feb. 10 10:50	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		2.500	1.200	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 3 of 11
Lab Proj #: P1002277
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-021	Vapor	P1002277-02	16 Feb. 10 12:45	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		2.000	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers. J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 4 of 11
Lab Proj #: P1002277
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-019	Vapor	P1002277-03	16 Feb. 10 14:00	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.300	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 5 of 11
Lab Proj #: P1002277
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-022	Vapor	P1002277-04	16 Feb. 10 15:15	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		0.810	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 6 of 11
Lab Proj #: P1002277
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-009	Vapor	P1002277-05	16 Feb. 10 10:20	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		0.920	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 7 of 11
Lab Proj #: P1002277
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-007	Vapor	P1002277-06	16 Feb. 10 12:20	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		1.700	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 8 of 11
Lab Proj #: P1002277
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-004	Vapor	P1002277-07	16 Feb. 10 13:20	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		0.960	0.600	nM	AM20GAX	3/3/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 9 of 11
Lab Proj #: P1002277
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
20-R4-002	Vapor	P1002277-08	16 Feb. 10 14:50	23 Feb. 10 13:29

Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis							
N Hydrogen		380.000	12.000	nM	AM20GAX	3/5/10	sl

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 10 of 11
Lab Proj #: P1002277
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip
Analysis Method: Hydrogen by Bubble Strip

M100303029-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100303029-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	9.700	nM	9.78	99.00	75 - 125

M100303029-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	9.800	nM	9.78	100.00	75 - 125	1.03	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Client Name: Tetra Tech
Contact: Diane Suzuki
Address: 1940 E. Deere Avenue
Suite 200
Santa Ana, CA 92705

Page: Page 11 of 11
Lab Proj #: P1002277
Report Date: 03/09/10
Client Proj Name: Alameda
Client Proj #: CTO 20

Prep Method: Hydrogen by Bubble Strip
Analysis Method: Hydrogen by Bubble Strip

M100305028-MB

	Result		TrueSpikeConc.	RDL	%Recovery	Ctl Limits
Hydrogen	< 0.600	nM		0.600		- NA

M100305028-LCS

	Result		TrueSpikeConc.	%Recovery	Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125

M100305028-LCSD

	Result		TrueSpikeConc.	%Recovery	Ctl Limits	RPD	RPD Ctl Limits
Hydrogen	11.000	nM	9.78	112.00	75 - 125	0.00	0 - 20

Outlined Results indicate results outside of Control limits

Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

Chain of Custody Documents

P1002277

P10227

NUMBER 26024

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO	LABORATORY NAME
CTO 20 ALAMEDA	10 34131 2	
PROJECT LOCATION: ALAMEDA	PROJECT NO: 106.32.10.020 D.07.09.01.005	
SAMPLER NAME: FS IW	AIRBILL NUMBER: 7934 2610 6395	LABORATORY ID (FOR LABORATORY)
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949 756 7584	

ANALYSES REQUIRED: 8260B, 8270C, 8082, 8151A, 8015B, 8015M, 8021B, 8310, 8330

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B	8270C	8082	8151A	8015B	8015M	8021B	8310	8330	COMMENTS
20-R4-025	2-16-10	1050	1	X			10		X								
20-R4-021	2-16-10	1245	1		X		10		X								
20-R4-019	2-16-10	1400	1	X			10		X								
20-R4-022	2-16-10	1515	1	X			10		X								
20-R4-009	2-16-10	1020	1	X			10		X								
20-R4-005	2-16-10	1220	1	X			10		X								
20-R4-004	2-16-10	1320	1	X			10		X								
20-R4-002	2-16-10	1450	1	X			10		X								

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	LABORATORY INSTRUCTIONS/COMMENTS
	2-16-10		
COMPANY: BTS	TIME: 1700	COMPANY: BTS	
RELINQUISHED BY (Signature)	DATE: 2-19-10	RECEIVED BY (Signature): FED EX	COMPOSITE DESCRIPTION
COMPANY: BTS	TIME: 1600	COMPANY	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
COMPANY	TIME	COMPANY	TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

Debbie, attached are the original COCs. Diane

P1002277

Suzuki, Diane

From: Suzuki, Diane
Sent: Monday, February 22, 2010 10:26 AM
To: 'Debbie Hallo'
Subject: RE: CTO 20 Alameda
Attachments: coc_micro.PDF

Hi Debbie
It seems that the field crew sent the wrong chain of custodies with the samples sent to you.

The attached is a copy of the chain of custodies for your samples. Could you mail the original chain of custodies mistakenly sent to you back to me, please? I am trying to obtain the original for your samples to send to you.

I apologize for the error.

Diane Suzuki | Chemist
Direct: 949 756 7584 | Fax 949.756 7583
Diane.Suzuki@tetratech.com

Tetra Tech EC, Inc. | Sciences
1940 E. Deere Avenue, Suite 200 | Santa Ana, CA 92705 | www.tetratech.com

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Think Green - Not every email needs to be printed.

From: Debbie Hallo [mailto:dhallo@microseeps.com]
Sent: Friday, February 19, 2010 8:28 AM
To: Suzuki, Diane
Subject: RE: CTO 20 Alameda

Thanks Diane!

Debbie Hallo
Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone 412 826 5245
Fax 412 826 3433
www. microseeps.com

CHECK OUT OUR ON-LINE BOTTLE ORDER FORM AT WWW.MICROSEEPS.COM

From: Suzuki, Diane [mailto:Diane.Suzuki@tetratech.com]
Sent: Friday, February 19, 2010 11:27 AM
To: Debbie Hallo; Heather Hauser
Subject: RE: CTO 20 Alameda

Good morning

Just wanted to send a reminder that we will be shipping off the samples for Dissolved Hydrogen today to arrive at your facility tomorrow as planned.

Please contact me if you have any questions.
tks...

Diane Suzuki | Chemist
Direct: 949.756.7584 | Fax: 949.756.7583
Diane.Suzuki@tetratech.com

Tetra Tech EC, Inc. | Sciences
1940 E. Deere Avenue, Suite 200 | Santa Ana, CA 92705 | www.tetratech.com

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Think Green - Not every email needs to be printed.

From: Suzuki, Diane
Sent: Thursday, February 18, 2010 10:12 AM
To: 'Debbie Hallo'
Subject: CTO 20 Alameda

Good morning Debbie

We will complete the Alameda groundwater sampling event tomorrow and will be sending you the samples for Dissolved Hydrogen for Saturday, 02/20/2010, delivery.

I will let you know if there is any change to the plans.

tks...

Diane Suzuki | Chemist
Direct: 949.756.7584 | Fax: 949.756.7583
Diane.Suzuki@tetratech.com

Tetra Tech EC, Inc. | Sciences
1940 E. Deere Avenue, Suite 200 | Santa Ana, CA 92705 | www.tetratech.com

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Hydrogen Data

Method File: BUBBLE
Operator: slyon 2277

Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Window	Standard	Int.Type	Cal.Type
1	Methane	0.645 min	0.645 min			0.200 AN	External	Area	LOff
2	Ethane	0.908 min	0.908 min			0.200 AN	External	Area	Lin
3	Ethene	1.155 min	1.155 min			0.200 AN	External	Area	Lin
4	Propane	1.785 min	1.785 min			0.200 AN	External	Area	Lin
5	*Hydrogen*	*3.149 min*			*3.149 min*	*0.200 AN*	*External*	*Area*	*Lin*
6	Propene	3.567 min	3.567 min			0.200 AN	External	Area	Lin
7	Carbon Dioxide	4.200 min		4.200 min		0.500 AN	External	Area	Lin
8	iso-Butane	4.560 min	4.560 min			0.500 AN	External	Area	Lin
9	n-Butane	5.310 min	5.310 min			0.500 AN	External	Area	Lin
10	Oxygen	5.870 min		5.870 min		0.300 AN	External	Area	Lin
11	Nitrogen	6.260 min		6.260 min		0.300 AN	External	Area	Lin
12	Acetylene	7.198 min	7.198 min			0.500 AN	External	Area	Lin
13	Methane	7.560 min		7.560 min		0.400 AN	External	Area	Lin
14	Carbon Monoxide	8.450 min		8.450 min		0.400 AN	External	Area	Lin
15	Carbon Monoxide	8.600 min			8.600 min	0.400 AN	External	Area	Lin

Method File: BUBBLE
Operator: slyon

Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Peak Type	Group	Comment
1	Methane	0.645 min	Auto		
2	Ethane	0.908 min	Auto		
3	Ethene	1.155 min	Auto		
4	Propane	1.785 min	Auto		
5	*Hydrogen*	*3.149 min*	*Auto*		
6	Propene	3.567 min	Auto		
7	Carbon Dioxide	4.200 min	Auto		
8	iso-Butane	4.560 min	Auto		
9	n-Butane	5.310 min	Auto		
10	Oxygen	5.870 min	Auto		
11	Nitrogen	6.260 min	Auto		
12	Acetylene	7.198 min	Auto		
13	Methane	7.560 min	Auto		
14	Carbon Monoxide	8.450 min	Auto		
15	Carbon Monoxide	8.600 min	Auto		

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Ret.Time FID	Ret.Time TCD	Ret.Time RGD	Amount ICAL Acetylene L5	Amount ICAL Acetylene L4
1	Methane	0.645 min	0.645 min				
2	Ethane	0.908 min	0.908 min				
3	Ethene	1.155 min	1.155 min				
4	Propane	1.785 min	1.785 min				
5	*Hydrogen*	*3.149 min*			*3.149 min*		
6	Propene	3.567 min	3.567 min				
7	Carbon Dioxide	4.200 min		4.200 min			
8	iso-Butane	4.560 min	4.560 min				
9	n-Butane	5.310 min	5.310 min				
10	Oxygen	5.870 min		5.870 min			
11	Nitrogen	6.260 min		6.260 min			
12	Acetylene	7.198 min	7.198 min			0.529000	2.648000
13	Methane	7.560 min		7.560 min			
14	Carbon Monoxide	8.450 min		8.450 min			
15	Carbon Monoxide	8.600 min			8.600 min		

Method File: BUBBLE
Operator: slyon

Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL Acetylene L3	Amount ICAL Acetylene L2	Amount ICAL Acetylene L1	Amount ICAL FID L8	Amount ICAL FID L7
1	Methane	0.645 min				0.002280	0.007120
2	Ethane	0.908 min				0.005880	0.018300
3	Ethene	1.155 min				0.013800	0.043300
4	Propane	1.785 min				0.006640	0.020700
5	*Hydrogen*	*3.149 min*					
6	Propene	3.567 min				0.019800	0.062100
7	Carbon Dioxide	4.200 min					
8	iso-Butane	4.560 min				0.004950	0.015400
9	n-Butane	5.310 min				0.006190	0.019300
10	Oxygen	5.870 min					
11	Nitrogen	6.260 min					
12	Acetylene	7.198 min	13.240000	66.200000	264.800000		
13	Methane	7.560 min					
14	Carbon Monoxide	8.450 min					
15	Carbon Monoxide	8.600 min					

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL FID L6	Amount ICAL FID L5	Amount ICAL FID L4	Amount ICAL FID L3	Amount ICAL FID L2	Amount ICAL FID L1
1	Methane	0.645 min	0.028500	0.114000	0.456000	2.280000	11.402000	57.011000
2	Ethane	0.908 min	0.073500	0.294000	1.176000	5.880000	29.403000	147.016000
3	Ethene	1.155 min	0.173000	0.693000	2.774000	13.870000	69.353000	346.766000
4	Propane	1.785 min	0.083000	0.332000	1.328000	6.644000	33.220000	166.100000
5	*Hydrogen*	*3.149 min*						
6	Propene	3.567 min	0.248000	0.993000	3.975000	19.877000	99.388000	496.942000
7	Carbon Dioxide	4.200 min						
8	iso-Butane	4.560 min	0.061800	0.247000	0.990000	4.951000	24.756000	123.783000
9	n-Butane	5.310 min	0.077400	0.309000	1.238000	6.192000	30.961000	154.808000
10	Oxygen	5.870 min						
11	Nitrogen	6.260 min						
12	Acetylene	7.198 min						
13	Methane	7.560 min						
14	Carbon Monoxide	8.450 min						
15	Carbon Monoxide	8.600 min						

Method File: BUBBLE
Operator: slyon

Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL TCD L6	Amount ICAL TCD L5	Amount ICAL TCD L4	Amount ICAL TCD L3	Amount ICAL TCD L2	Amount ICAL TCD L1
1	Methane	0.645 min						
2	Ethane	0.908 min						
3	Ethene	1.155 min						
4	Propane	1.785 min						
5	*Hydrogen*	*3.149 min*						
6	Propene	3.567 min						
7	Carbon Dioxide	4.200 min	2.196000	5.490000	10.980000	54.900000	274.500000	549.000000
8	iso-Butane	4.560 min						
9	n-Butane	5.310 min						
10	Oxygen	5.870 min	0.015900	0.039900	0.079800	0.399200	1.996000	3.992000
11	Nitrogen	6.260 min	0.051400	0.129000	0.257000	1.286000	6.430000	12.860000
12	Acetylene	7.198 min						
13	Methane	7.560 min		23.580000	47.160000	235.800000	1179.000000	2358.000000
14	Carbon Monoxide	8.450 min		0.046900	0.093800	0.469000	2.345000	4.690000
15	Carbon Monoxide	8.600 min						

Method File: BUBBLE
Operator: slyon
Printed: 3/8/2010 5:40:17 PM

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ
Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Amount Table:

Dimension of Amounts:
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 25
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount ICAL H2 L7	Amount ICAL H2 L6	Amount ICAL H2 L5	Amount ICAL H2 L4	Amount ICAL H2 L3	Amount ICAL H2 L2
1	Methane	0.645 min						
2	Ethane	0.908 min						
3	Ethene	1.155 min						
4	Propane	1.785 min						
5	*Hydrogen*	*3.149 min*	*0.396000*	*0.990000*	*3.960000*	*9.900000*	*19.800000*	*39.600000*
6	Propene	3.567 min						
7	Carbon Dioxide	4.200 min						
8	iso-Butane	4.560 min						
9	n-Butane	5.310 min						
10	Oxygen	5.870 min						
11	Nitrogen	6.260 min						
12	Acetylene	7.198 min						
13	Methane	7.560 min						
14	Carbon Monoxide	8.450 min						
15	Carbon Monoxide	8.600 min						

Method File: BUBBLE
Operator: slyon

Title: Dissolved Gases AM20GAx
Datasource: BIOREM11_local
Location: BIOREM14\2010 BUBBLE 4.SEQ

Created: 5/5/2004 12:45:44 PM by bcarnicelli
Last Update: 3/3/2010 10:58:29 AM by slyon

Calibration:

Calibration Mode: Total
Auto Recalibrate: On
Curve Fitting Model: Normal
Dual-Column Separate Calibration: Off

No.	Enabled	Name	Smp.No.	Pos.	Inj. Vol.	Weight	ISTD Amount	Dil. Factor	Inj. Date/Time
1	☒	ICAL Acetylene L5	1	3	20.0	1.0000	1.0000	1.0000	1/27/2010 1:45:06 PM
2	☒	ICAL Acetylene L4	2	4	20.0	1.0000	1.0000	1.0000	1/27/2010 1:57:25 PM
3	☒	ICAL Acetylene L3	3	5	20.0	1.0000	1.0000	1.0000	1/27/2010 2:11:52 PM
4	☒	ICAL Acetylene L2	4	6	20.0	1.0000	1.0000	1.0000	1/27/2010 2:24:12 PM
5	☒	ICAL Acetylene L1	5	7	20.0	1.0000	1.0000	1.0000	1/27/2010 2:40:41 PM
6	☒	ICAL FID L8	6	8	20.0	1.0000	1.0000	1.0000	1/27/2010 3:06:21 PM
7	☒	ICAL FID L7	7	9	20.0	1.0000	1.0000	1.0000	1/27/2010 3:18:35 PM
8	☒	ICAL FID L6	8	10	20.0	1.0000	1.0000	1.0000	1/27/2010 3:32:43 PM
9	☒	ICAL FID L5	9	11	20.0	1.0000	1.0000	1.0000	1/27/2010 3:45:00 PM
10	☒	ICAL FID L4	10	12	20.0	1.0000	1.0000	1.0000	1/27/2010 3:59:45 PM
11	☒	ICAL FID L3	11	13	20.0	1.0000	1.0000	1.0000	1/27/2010 4:12:06 PM
12	☒	ICAL FID L2	12	14	20.0	1.0000	1.0000	1.0000	1/27/2010 4:26:11 PM
13	☒	ICAL FID L1	13	15	20.0	1.0000	1.0000	1.0000	1/27/2010 4:39:41 PM
14	☒	ICAL TCD L6	16	18	20.0	1.0000	1.0000	1.0000	1/27/2010 5:21:50 PM
15	☒	ICAL TCD L5	17	19	20.0	1.0000	1.0000	1.0000	1/27/2010 5:35:49 PM
16	☒	ICAL TCD L4	18	20	20.0	1.0000	1.0000	1.0000	1/27/2010 5:48:02 PM
17	☒	ICAL TCD L3	19	21	20.0	1.0000	1.0000	1.0000	1/27/2010 6:01:38 PM
18	☒	ICAL TCD L2	20	22	20.0	1.0000	1.0000	1.0000	1/27/2010 6:13:53 PM
19	☒	ICAL TCD L1	21	23	20.0	1.0000	1.0000	1.0000	1/27/2010 6:27:25 PM
20	☒	ICAL H2 L7	25	1	20.0	1.0000	1.0000	1.0000	3/3/2010 11:14:07 AM
21	☒	ICAL H2 L6	26	2	20.0	1.0000	1.0000	1.0000	3/3/2010 11:26:28 AM
22	☒	ICAL H2 L5	27	3	20.0	1.0000	1.0000	1.0000	3/3/2010 11:38:40 AM
23	☒	ICAL H2 L4	28	4	20.0	1.0000	1.0000	1.0000	3/3/2010 11:56:32 AM
24	☒	ICAL H2 L3	29	5	20.0	1.0000	1.0000	1.0000	3/3/2010 12:09:53 PM
25	☒	*ICAL H2 L2*	*30*	*6*	*20.0*	*1.0000*	*1.0000*	*1.0000*	*3/3/2010 12:24:07 PM*

Hydrogen

Method AM20GAX

3/3/2010

No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square %	Offset	Slope	Curve
1	3.14	Hydrogen	Lin	6	99.993	0.00000	3.74144	0.00000

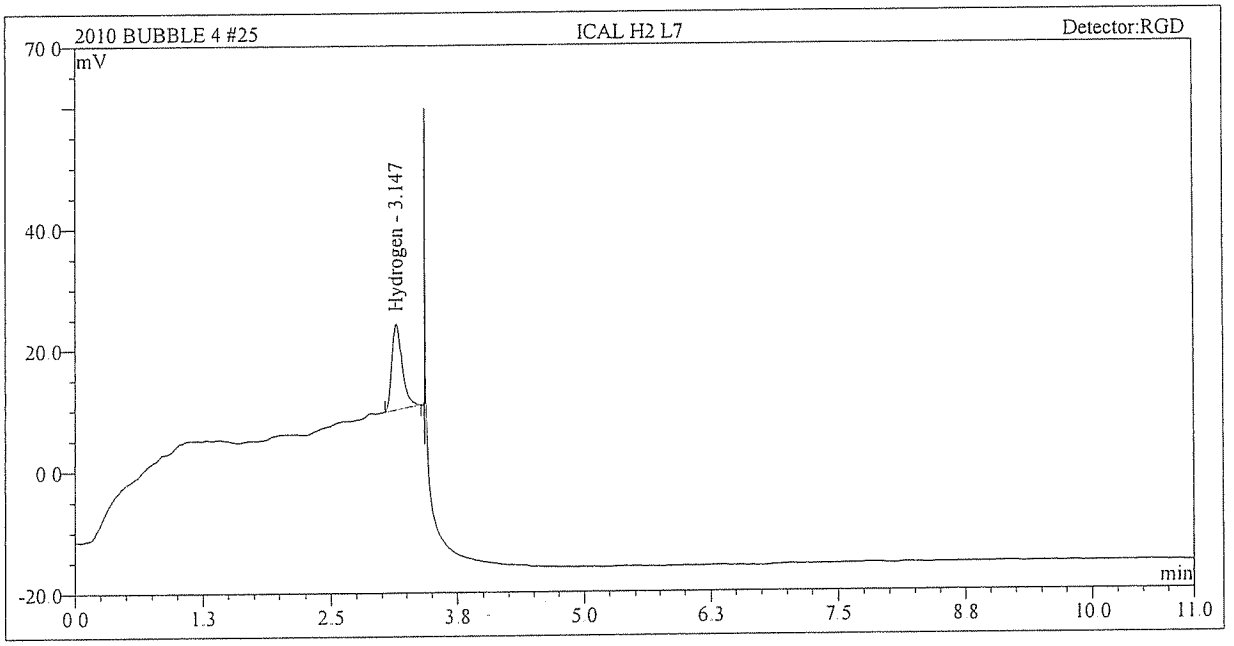
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L7	**Sequence No:**	25
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 11:14 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.147	1.681	14.241	BMB	0.4494

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



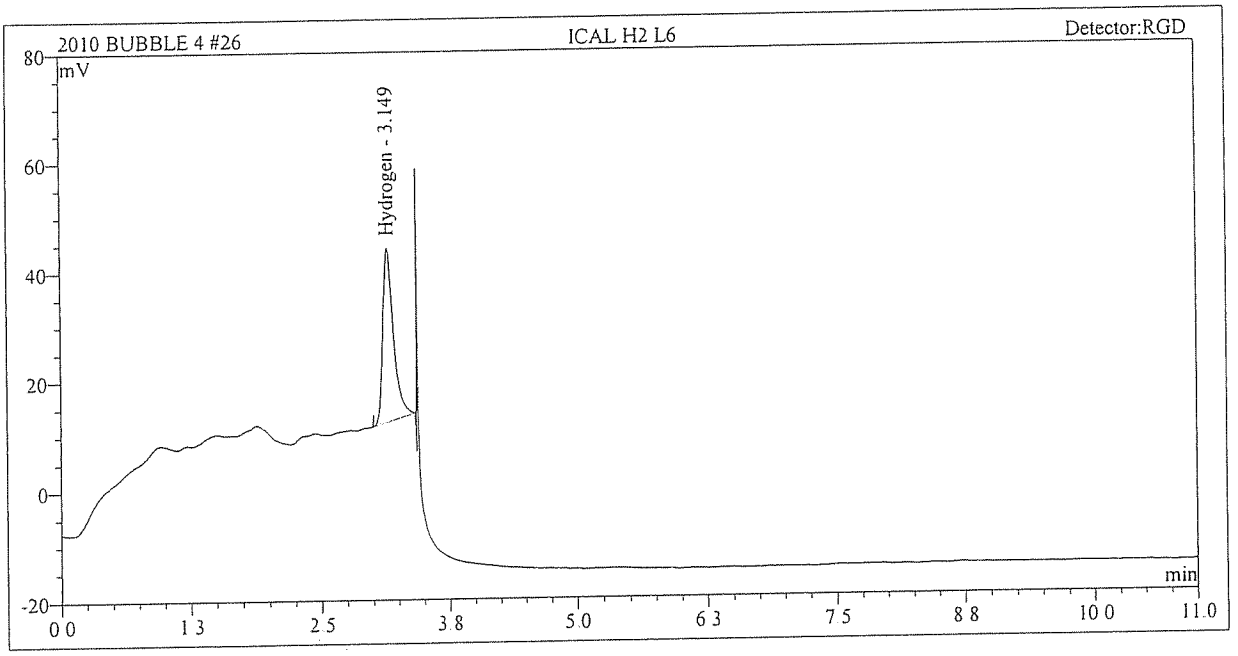
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L6	**Sequence No:**	26
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 11:26 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.149	3.830	31.832	BMB	1.0237

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



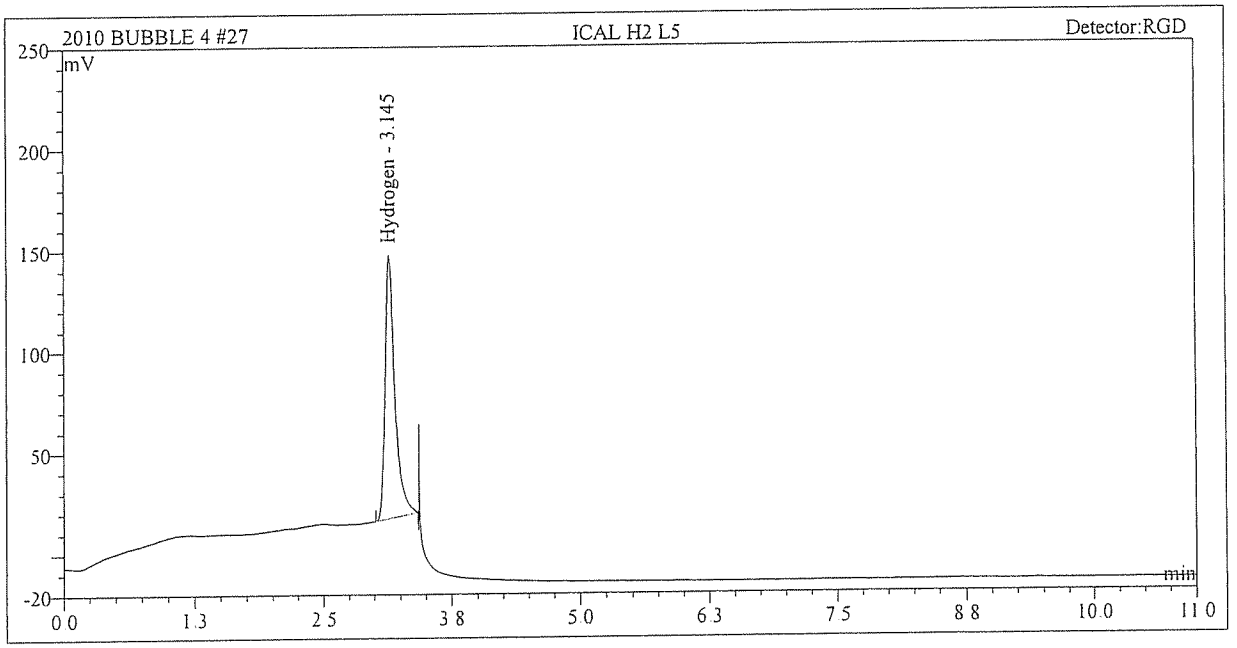
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L5	**Sequence No:**	27
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 11:38 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.145	14.495	130.097	BMB	3.8740

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



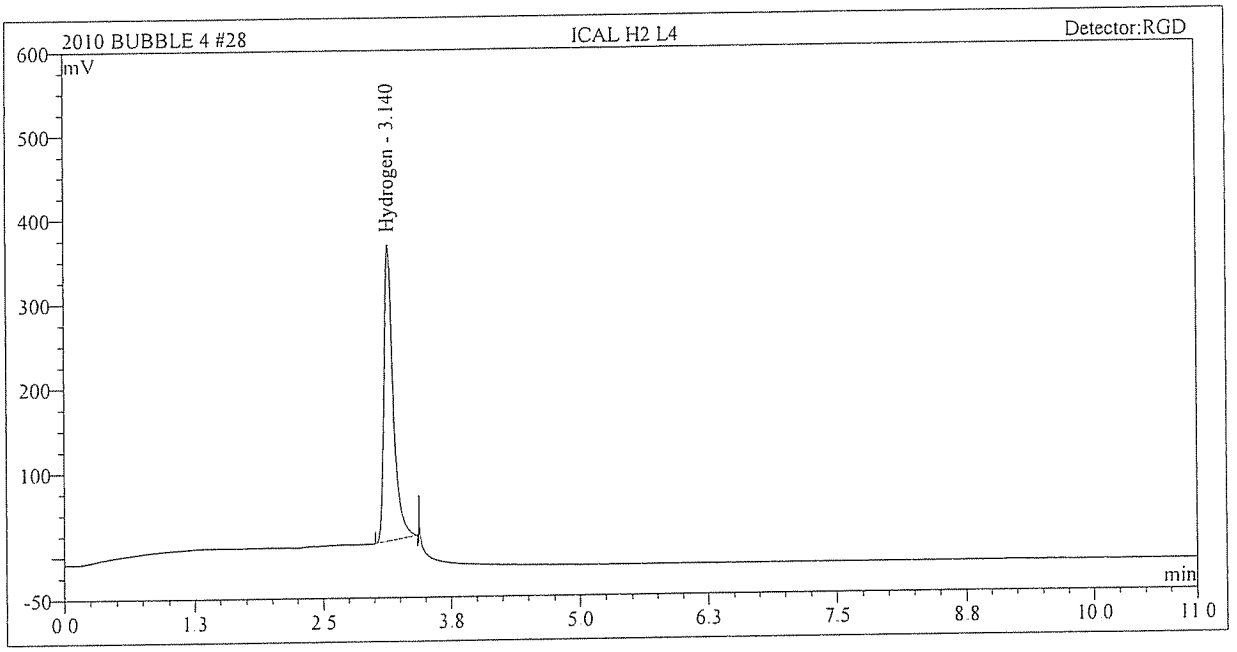
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L4	**Sequence No:**	28
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 11:56 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.140	36.435	350.662	BMB	9.7382

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



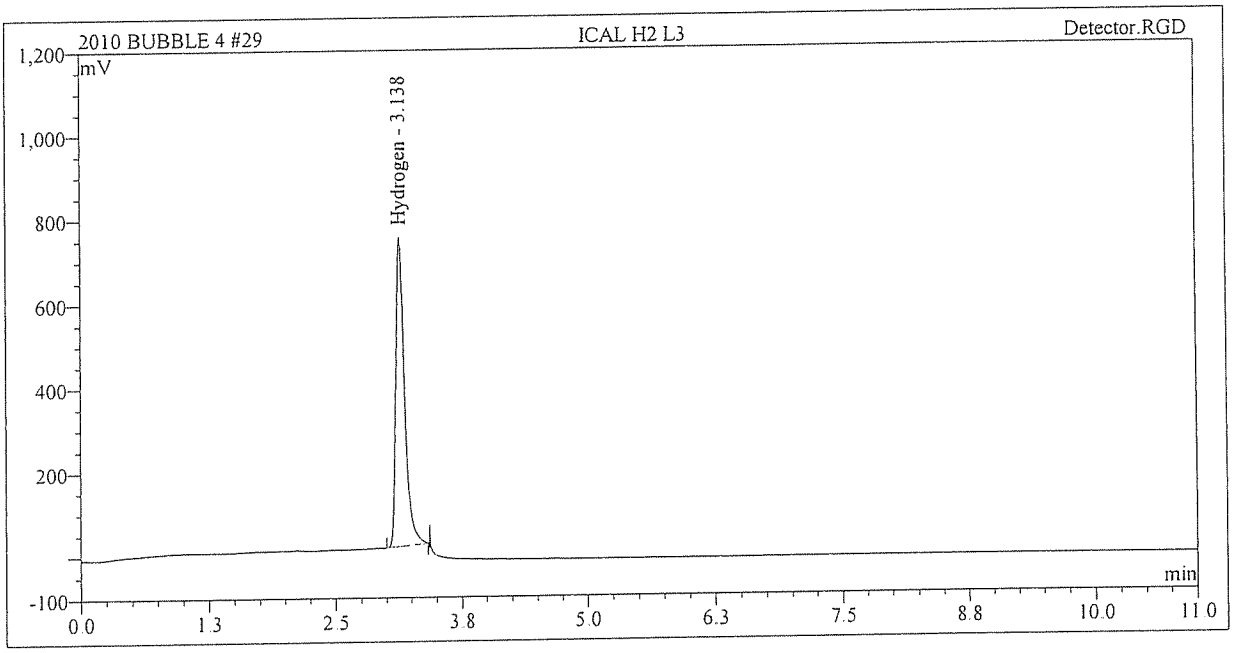
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L3	**Sequence No:**	29
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:09 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.138	74.806	734.291	BMB	19.9939

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



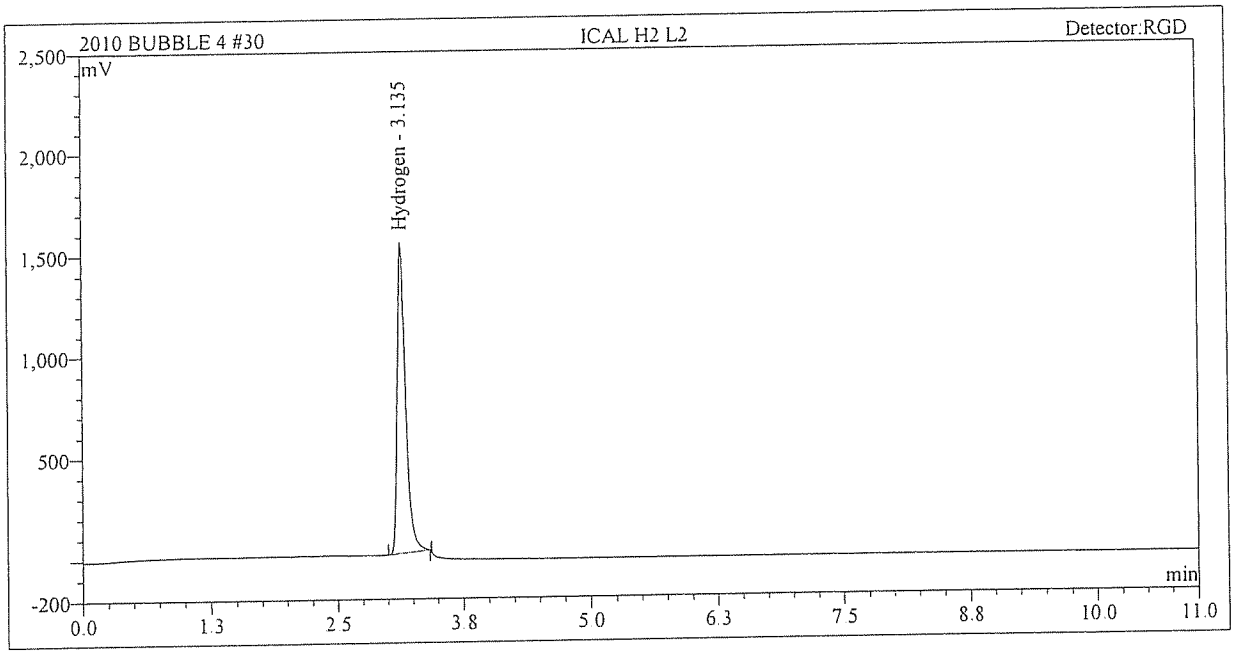
MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL H2 L2	**Sequence No:**	30
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:24 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.135	147.977	1531.099	BMB	39.5507

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



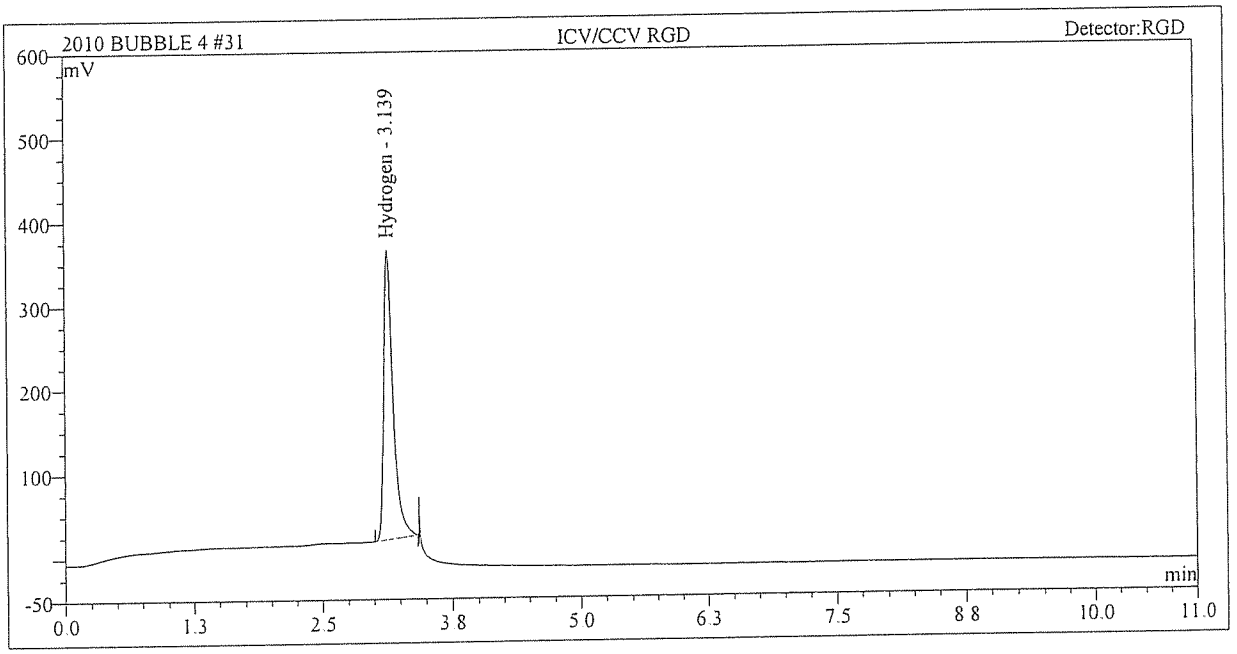
MICROSEEPS

Sample Analysis Report

Sample Name:	ICV/CCV RGD	**Sequence No:**	31
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:37 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.139	36.198	343.693	BMB	10-296	9.6749

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



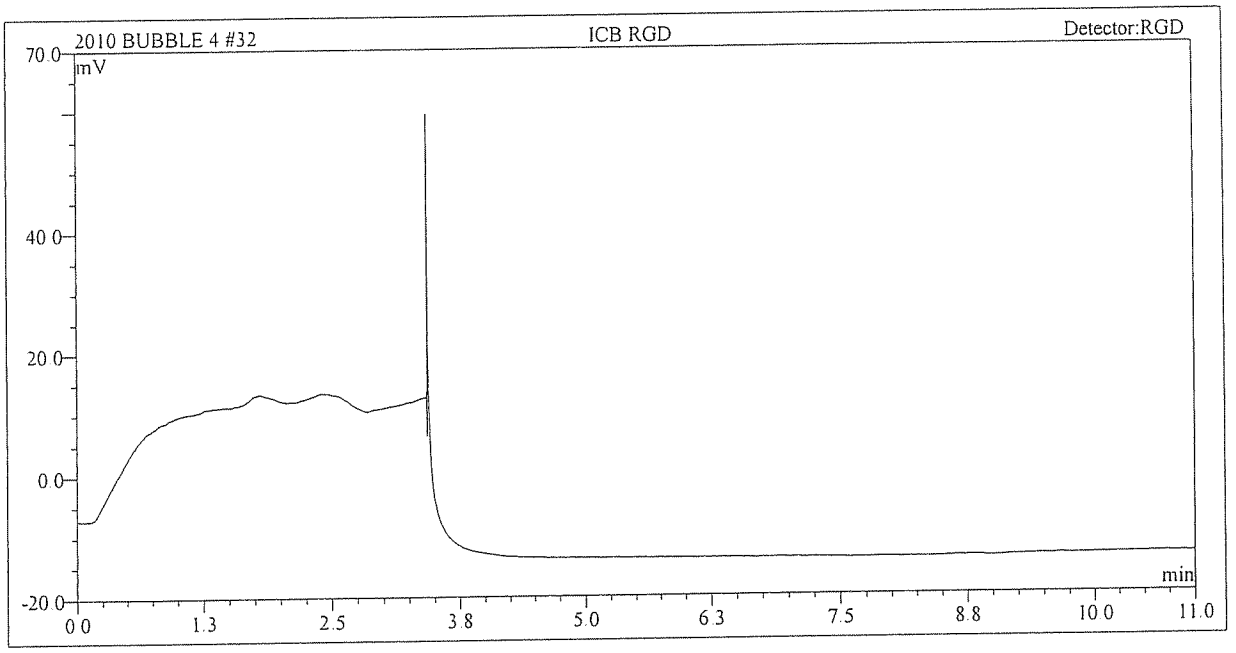
MICROSEEPS

Sample Analysis Report

Sample Name:	ICB RGD	**Sequence No:**	32
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:57 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100303029- H2

Original Run Date: 3-3-10

Matrix: Bubble Strip

Sample numbers:
P1002276-(1-5) FDP
P1002277-(1-8) FDP
P1002278-(1-7) FDP

Out of Control Event: (attach another page, if necessary)
1) P1002277-(1) Low pressure in vial
2) P1002277-(8), P1002278-(1) Require dilutions for H2

Corrective Action Taken:
1) Added 2cc UHP N2 and analyzed as 2x DIL
2) None

Result:
1) Report as 2x DIL
2) Report H2 on a future batch

Observations to support use of data: (Note any occurrences of manual integration here)

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. Date

Analyzed & Reviewed by: [signature] Date: 3-3-10
Manual Integration Conducted? YES (NO)
(Circle One)
Reviewed by: [signature] Date: 030910
Reviewed & Entered by: [signature] Date: 3-5-10
Reviewed by: _____ Date: _____
Corrected by: _____ Date: _____

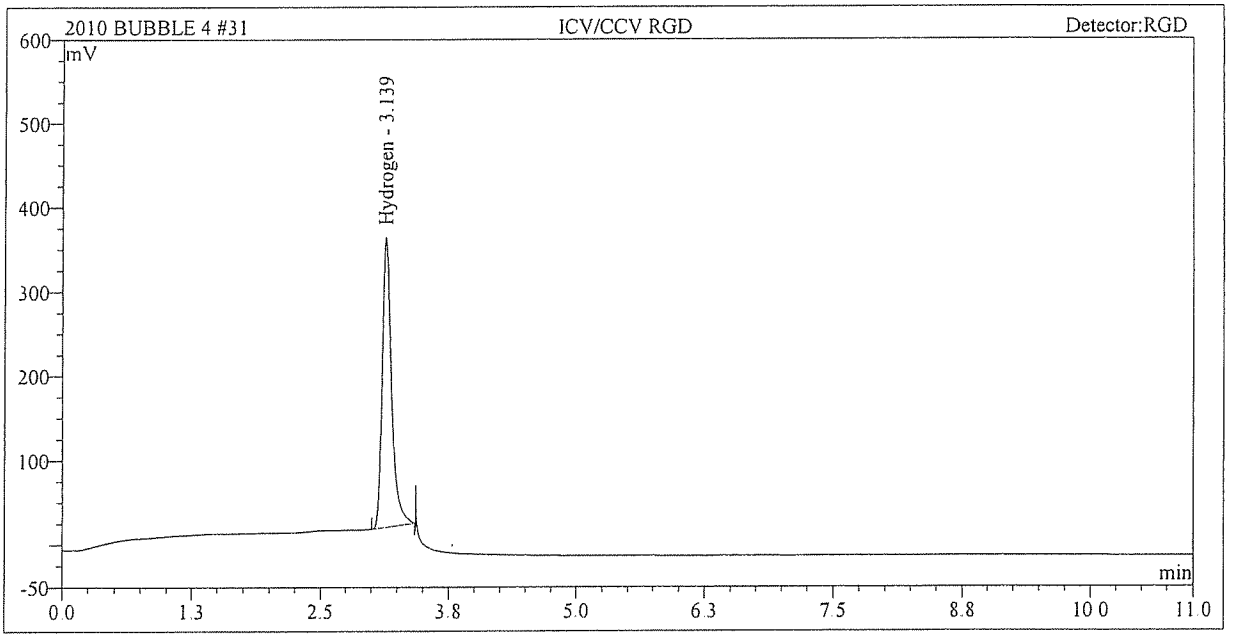
MICROSEEPS

Sample Analysis Report

Sample Name:	ICV/CCV RGD	**Sequence No:**	31
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 12:37 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.139	36.198	343.693	BMB	10.296	9.6749

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



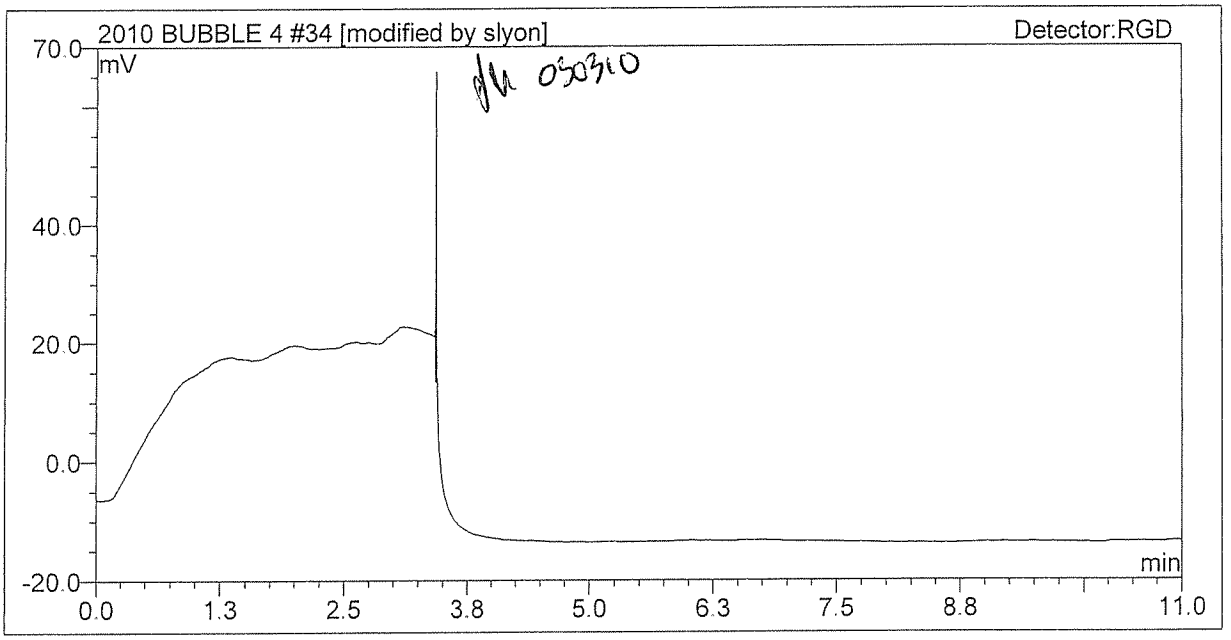
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 030310	**Sequence No:**	34
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 1:42 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



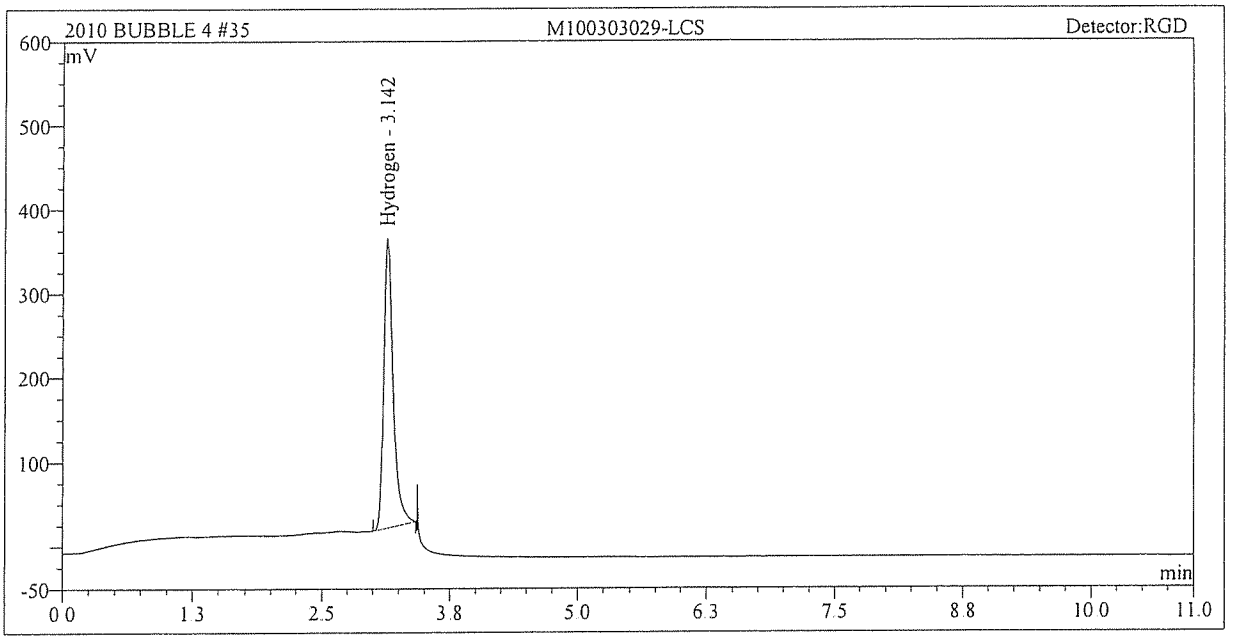
MICROSEEPS

Sample Analysis Report

Sample Name:	M100303029-LCS	**Sequence No:**	35
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 1:57 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.142	36.242	343.477	BMB	9.782	9.6866

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



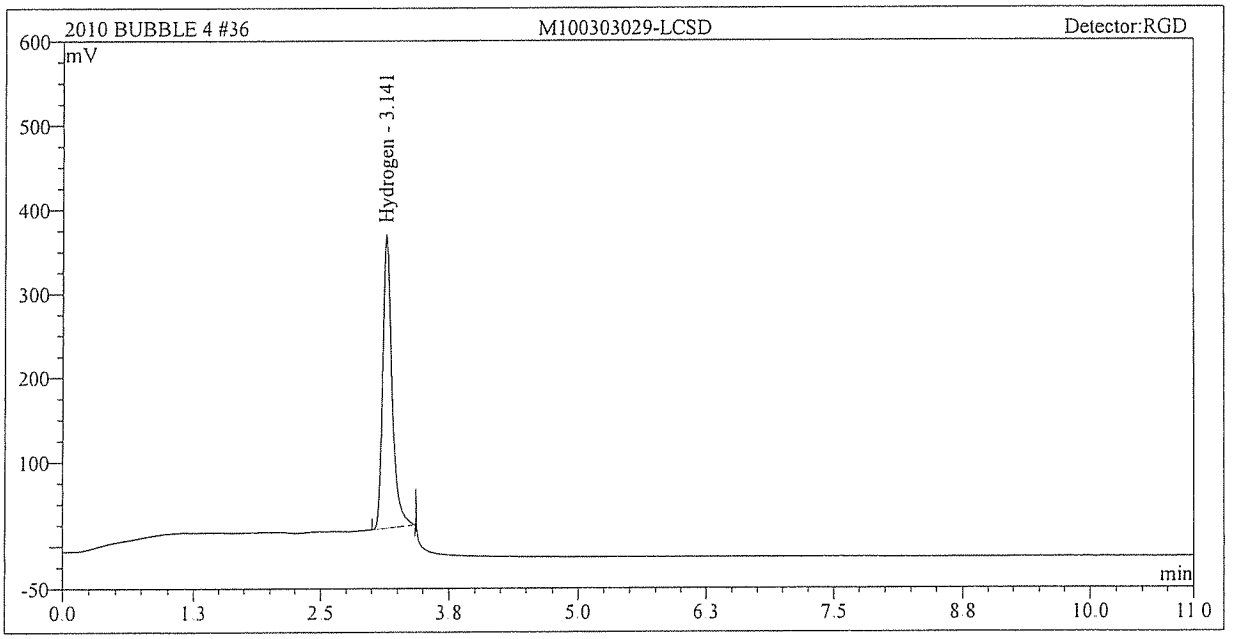
MICROSEEPS

Sample Analysis Report

Sample Name:	M100303029-LCSD	**Sequence No:**	36
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 2:10 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.141	36.712	348.532	BMB	9.752	9.8124

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



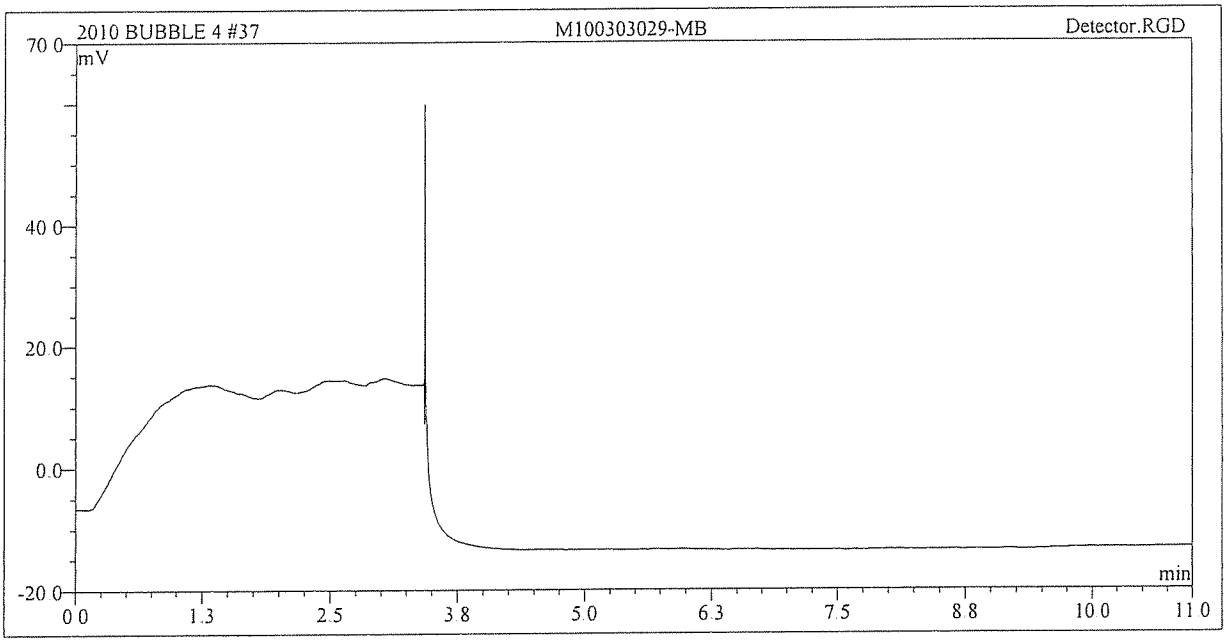
MICROSEEPS

Sample Analysis Report

Sample Name:	M100303029-MB	**Sequence No:**	37
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 2:28 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



MICROSEEPS

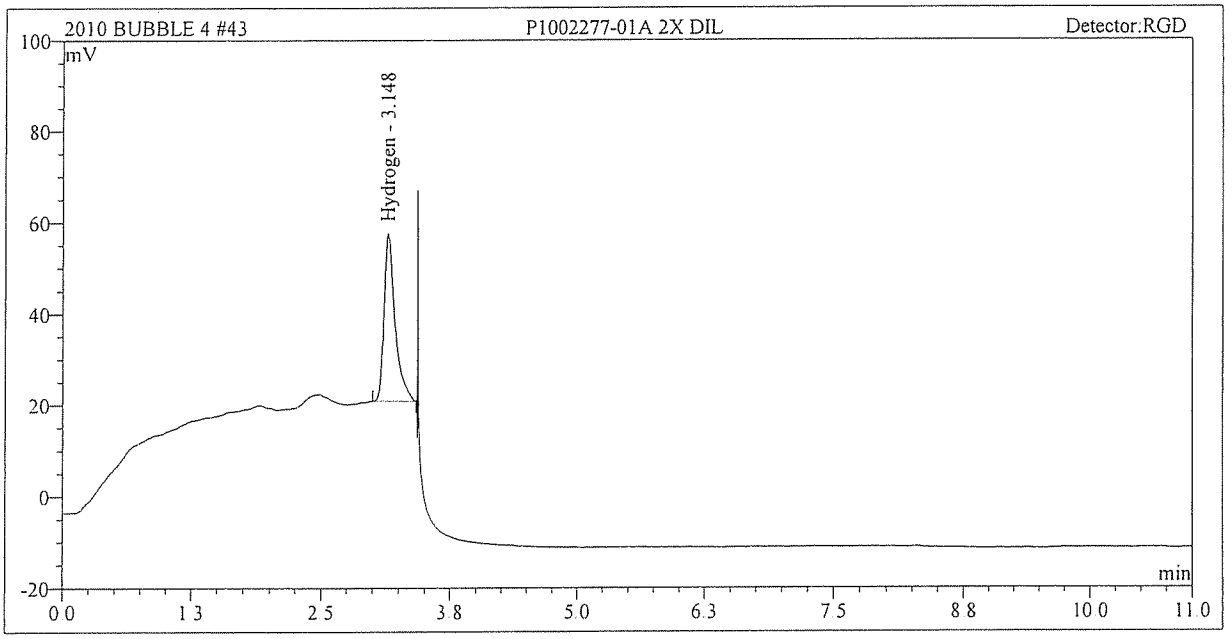
Sample Analysis Report

Sample Name:	P1002277-01A 2X DIL	**Sequence No:**	43
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 3:45 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.148	4.624	36.710	BMB	1.2360

x2

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



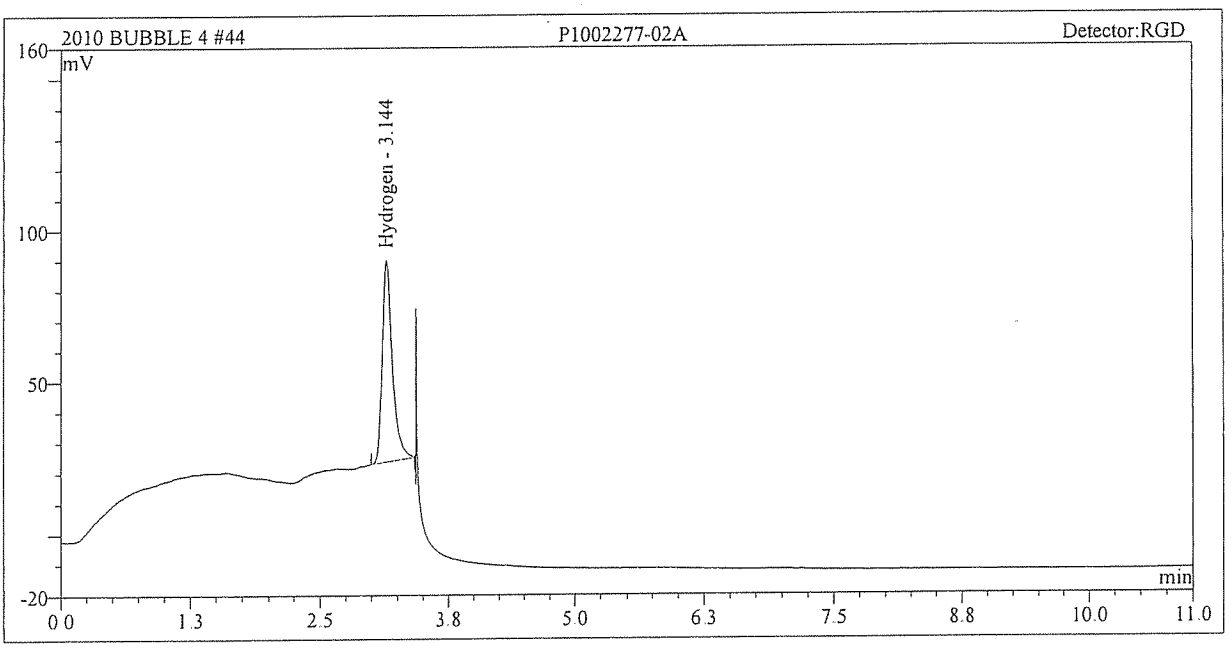
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002277-02A	**Sequence No:**	44
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 3:57 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.144	7.640	66.415	BMB	2.0419

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



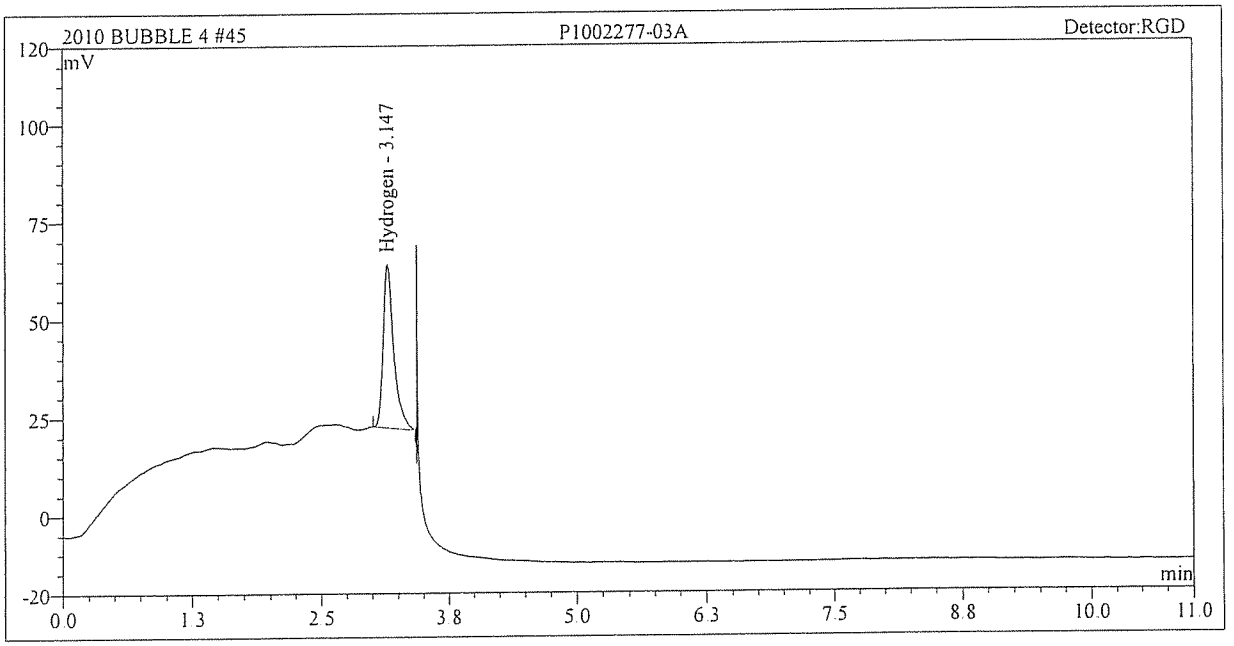
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002277-03A	**Sequence No:**	45
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 4:11 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.147	5.021	41.671	BMB	1.3421

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



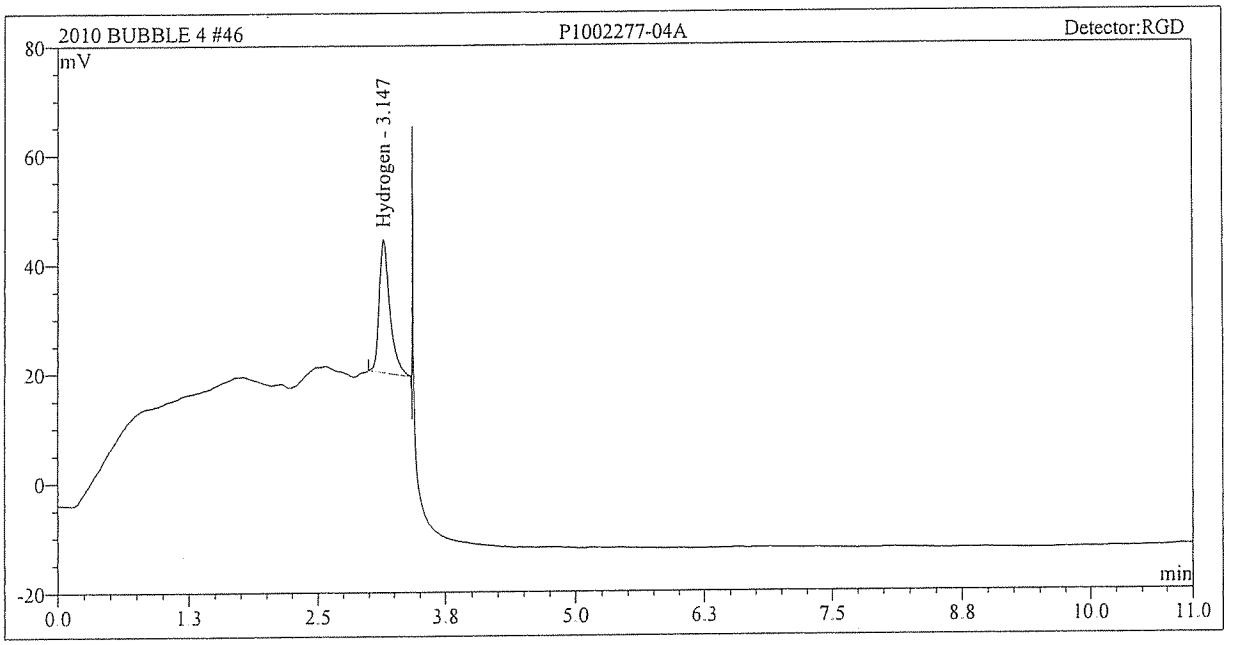
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002277-04A	**Sequence No:**	46
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 4:24 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.147	3.039	24.372	BMB	0.8123

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



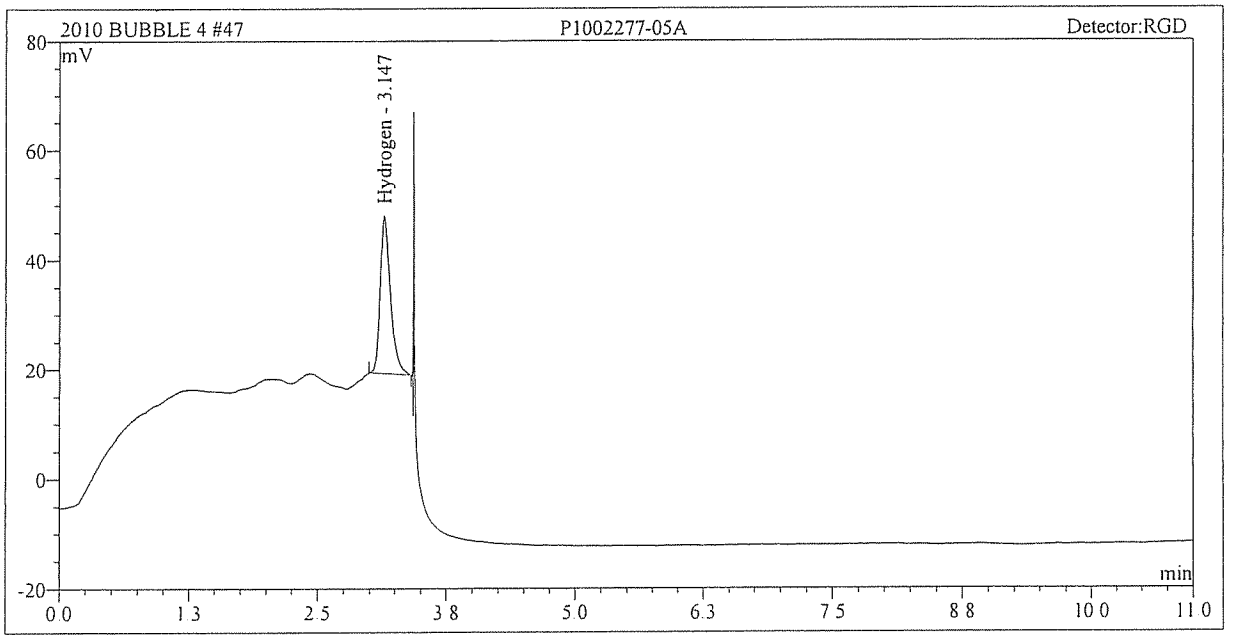
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002277-05A	**Sequence No:**	47
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 4:41 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.147	3.443	28.775	BMB	0.9201

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



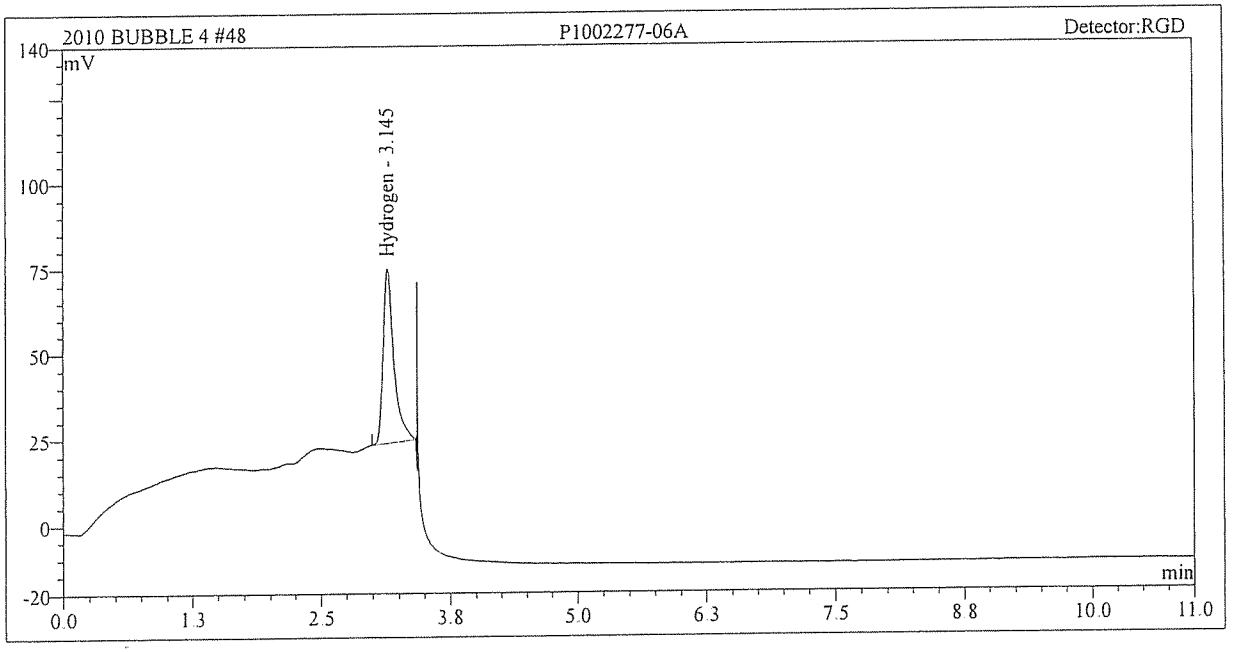
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002277-06A	**Sequence No:**	48
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 4:53 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.145	6.187	51.075	BMB	1.6537

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



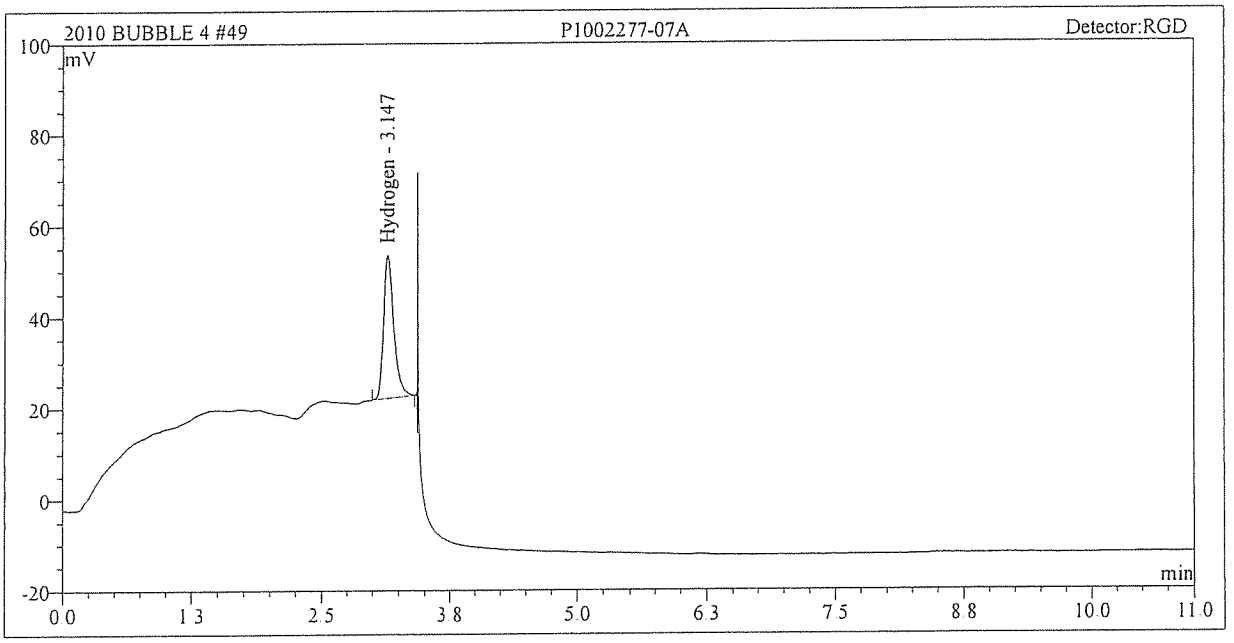
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002277-07A	**Sequence No:**	49
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 5:05 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.147	3.576	31.350	BMB	0.9559

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



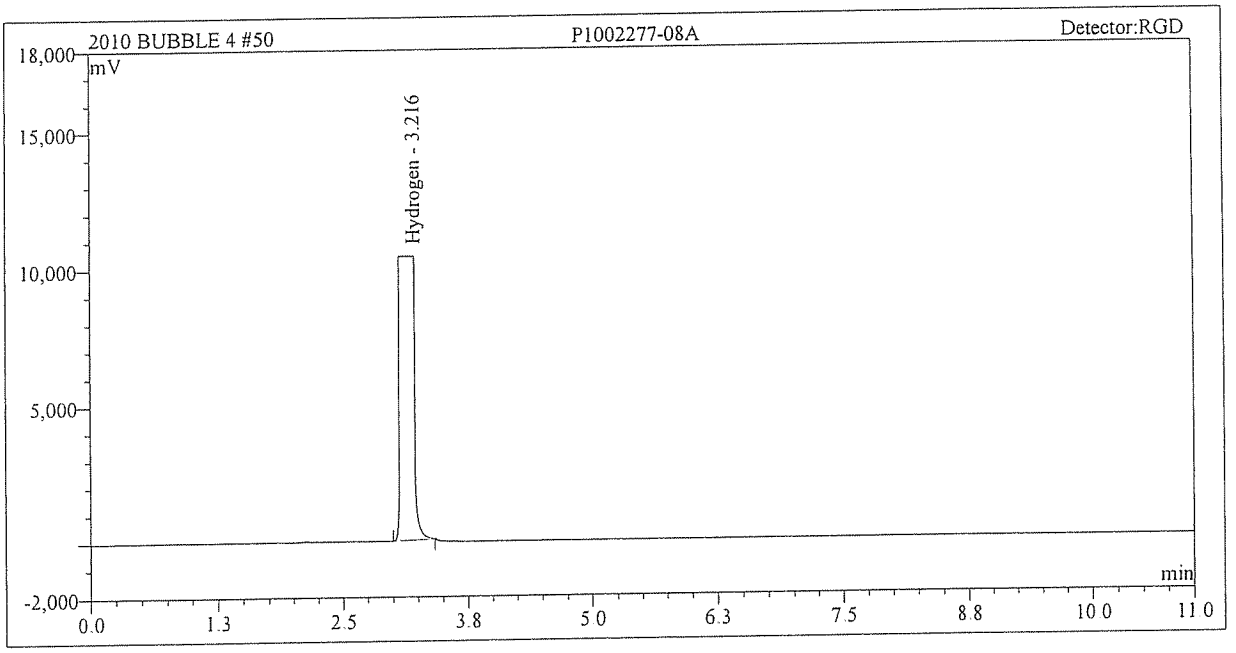
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002277-08A	**Sequence No:**	50
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 5:17 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.216	1699.158	10374.225	BMB	~~454.1453~~

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



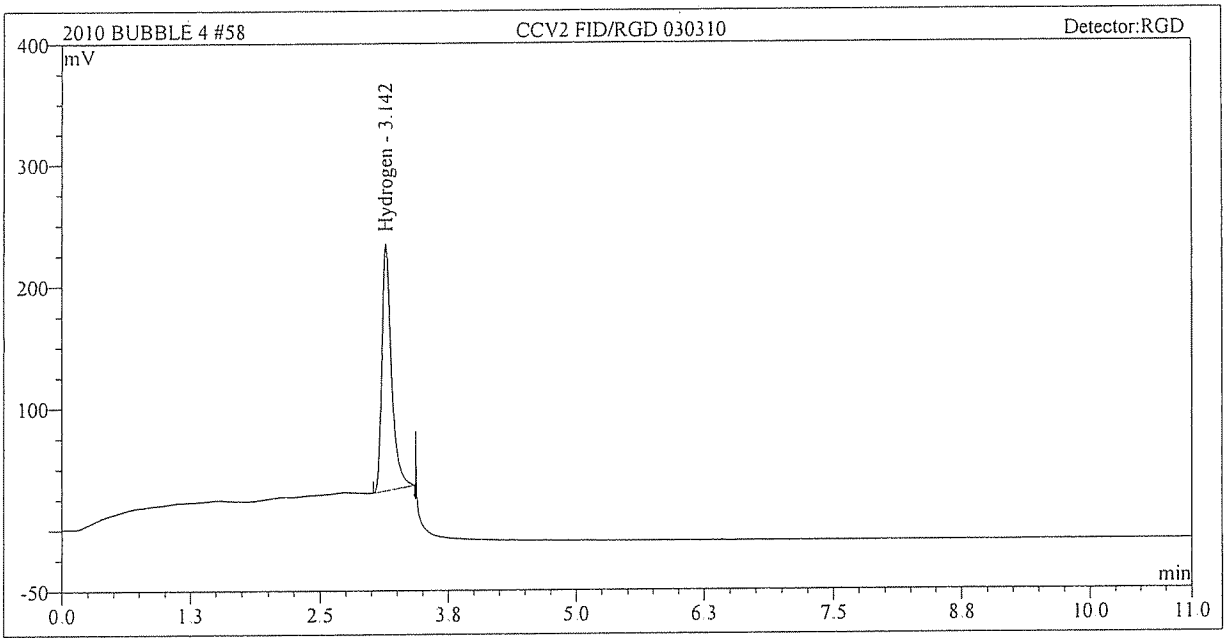
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID/RGD 030310	**Sequence No:**	58
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/3/2010 6:56 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.142	22.044	202.352	BMB	5.148	5.8918

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



Risk Department
Case Narrative

Batch number: M100305028 - Hz

Original Run Date: 3-5-10

Matrix: Bubble Strip

Sample numbers:
P1002271-(1-3) DIL's
P1002276-(6-8)
P1002277-(8) DIL
P1002278-(1) DIL
P1002279-(1,4,8) DIL's

Out of Control Event: (attach another page, if necessary)
P1002276-(6) Required a dilution for Hz

Corrective Action Taken:
DIL - Same Batch

Result:
Report Dilution

Observations to support use of data: (Note any occurrences of manual integration here)

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. Date

Analyzed & Reviewed by: [illegible] Date: 030510
Manual Integration Conducted? YES (NO)
(Circle One)
Reviewed by: [illegible] Date: 030910
Reviewed & Entered by: Upload Date: 030810
Reviewed by: _____ Date: _____
Corrected by: _____ Date: _____

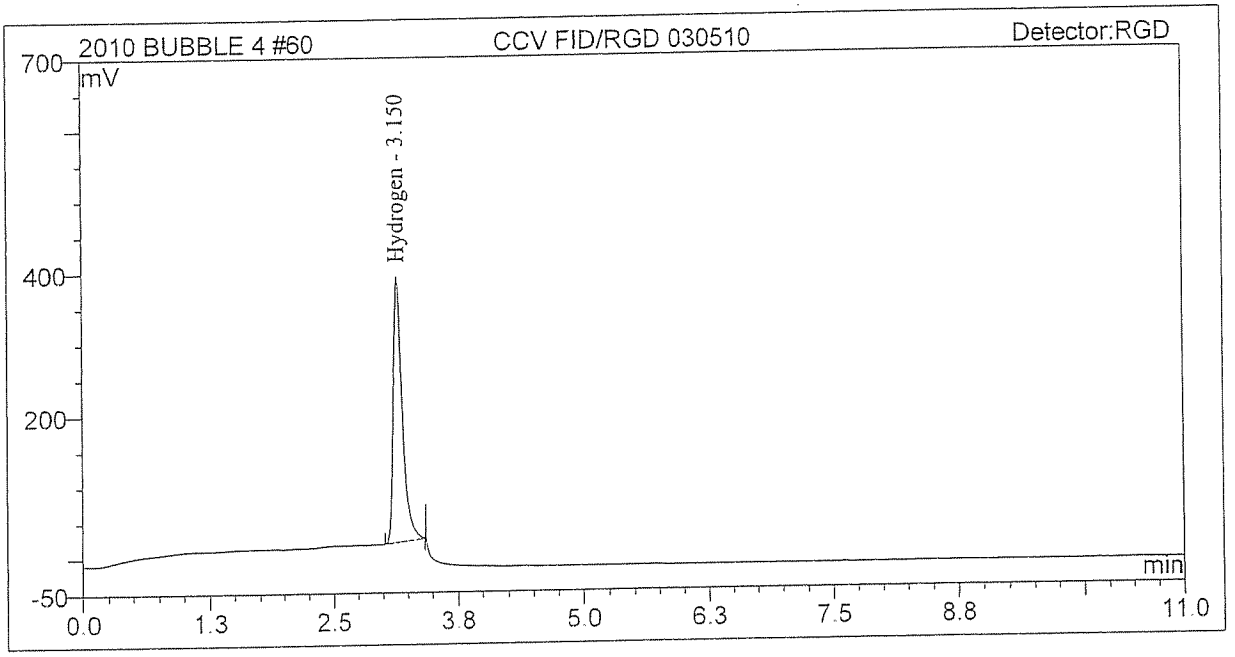
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID/RGD 030510	**Sequence No:**	60
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 10:42 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.150	38.979	372.431	BMB	10.296	10.4182

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



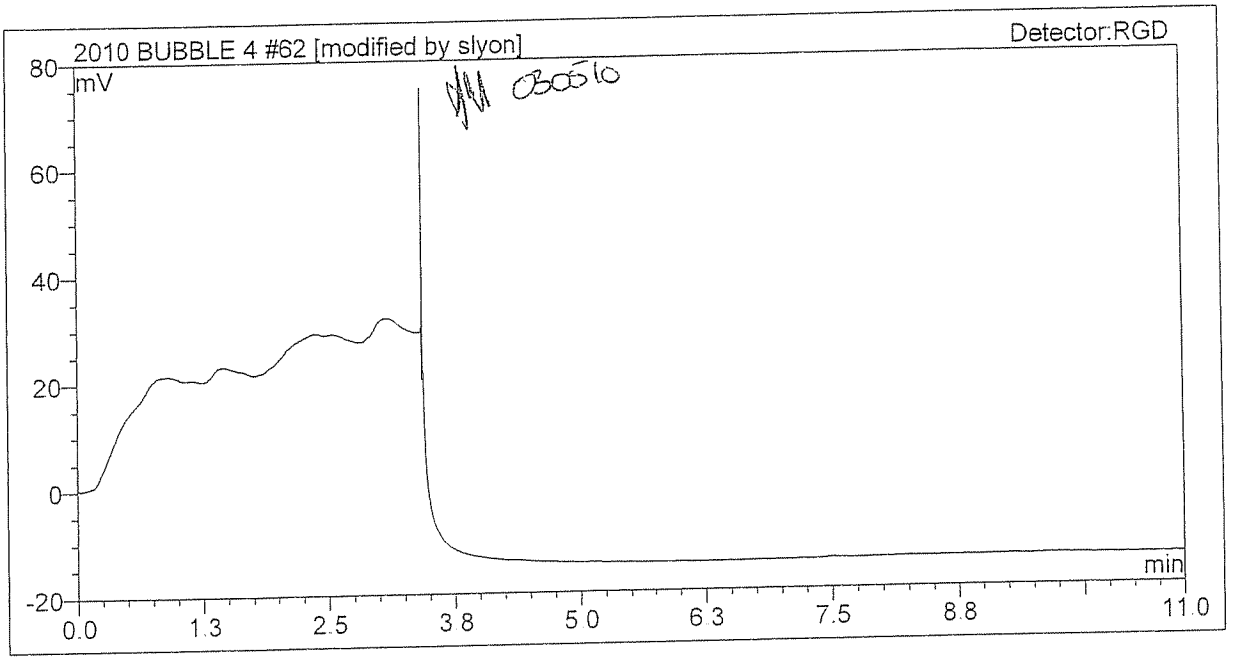
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 030510	Sequence No:	62
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/5/2010 11:15 AM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



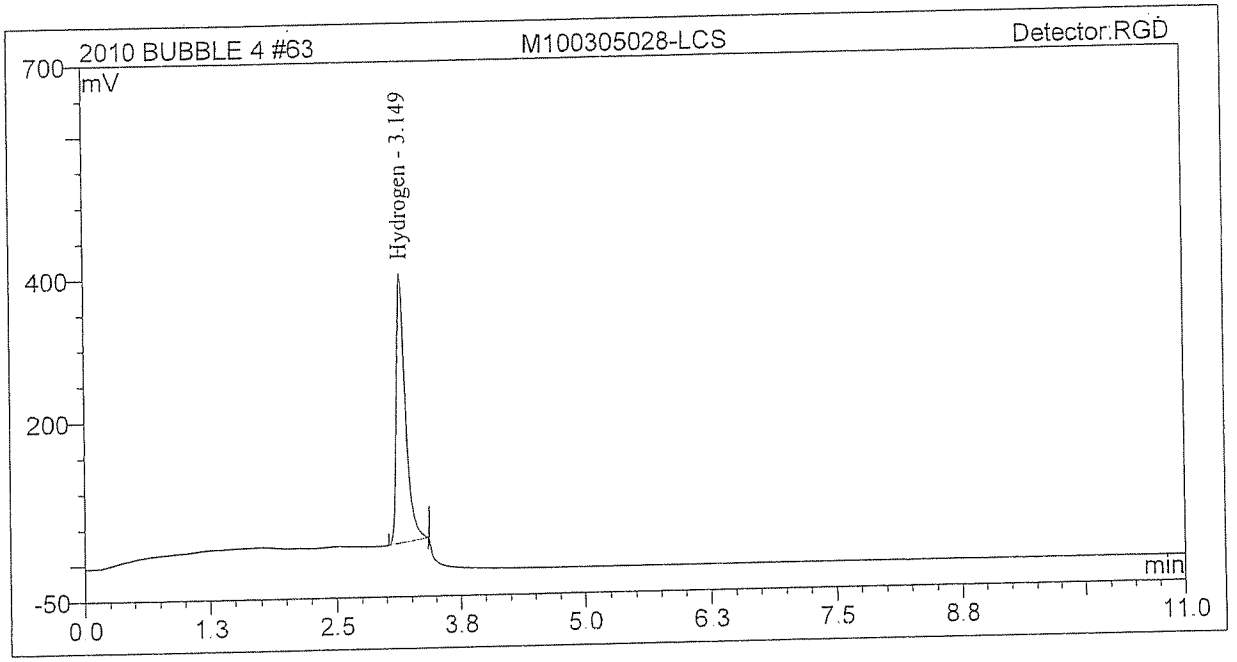
MICROSEEPS

Sample Analysis Report

Sample Name:	M100305028-LCS	**Sequence No:**	63
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 11:29 AM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.149	39.752	376.935	BMB	9.752	10.6249

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



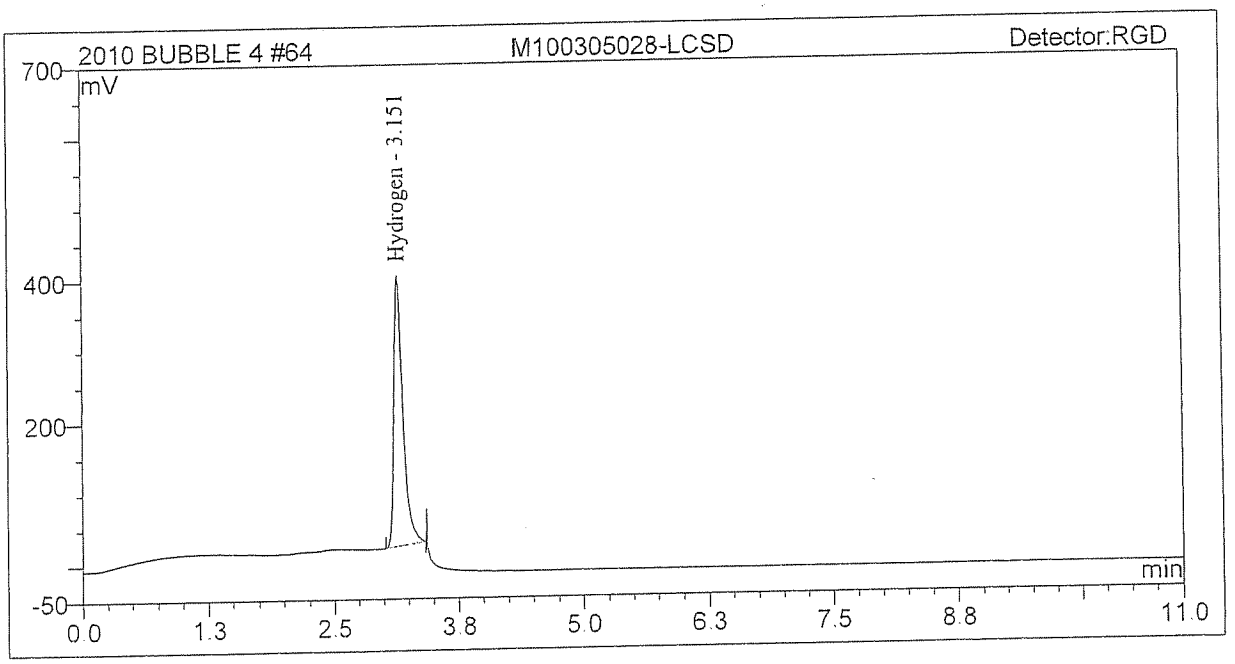
MICROSEEPS

Sample Analysis Report

Sample Name:	M100305028-LCSD	Sequence No:	64
Sequence Name:	2010 BUBBLE 4	Instrument ID:	BIOREM14
Program Method:	BIOREM14AM20	Injection vol.:	20.0
Quantitation Method:	BUBBLE	Dilution Factor:	1.0000
Date Time Collected:	3/5/2010 11:53 AM	Analytical Method:	AM20GAx/SM9
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.151	39.967	379.792	BMB	9.782	10.6823

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



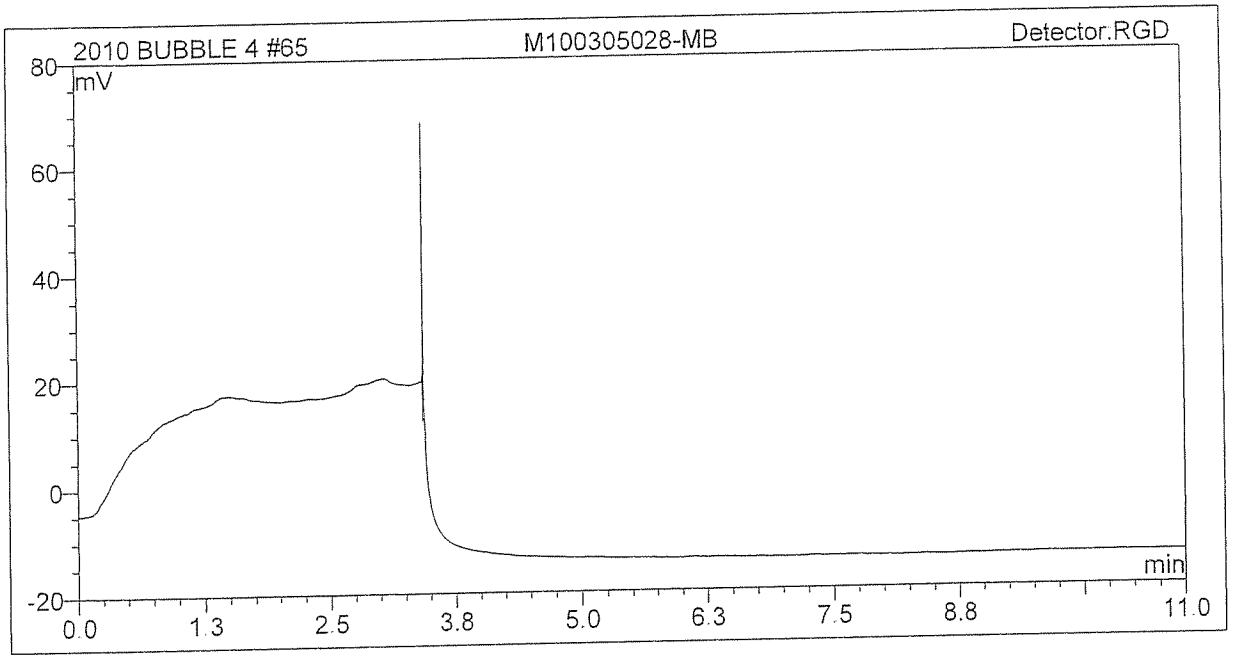
MICROSEEPS

Sample Analysis Report

Sample Name:	M100305028-MB	**Sequence No:**	65
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 12:07 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



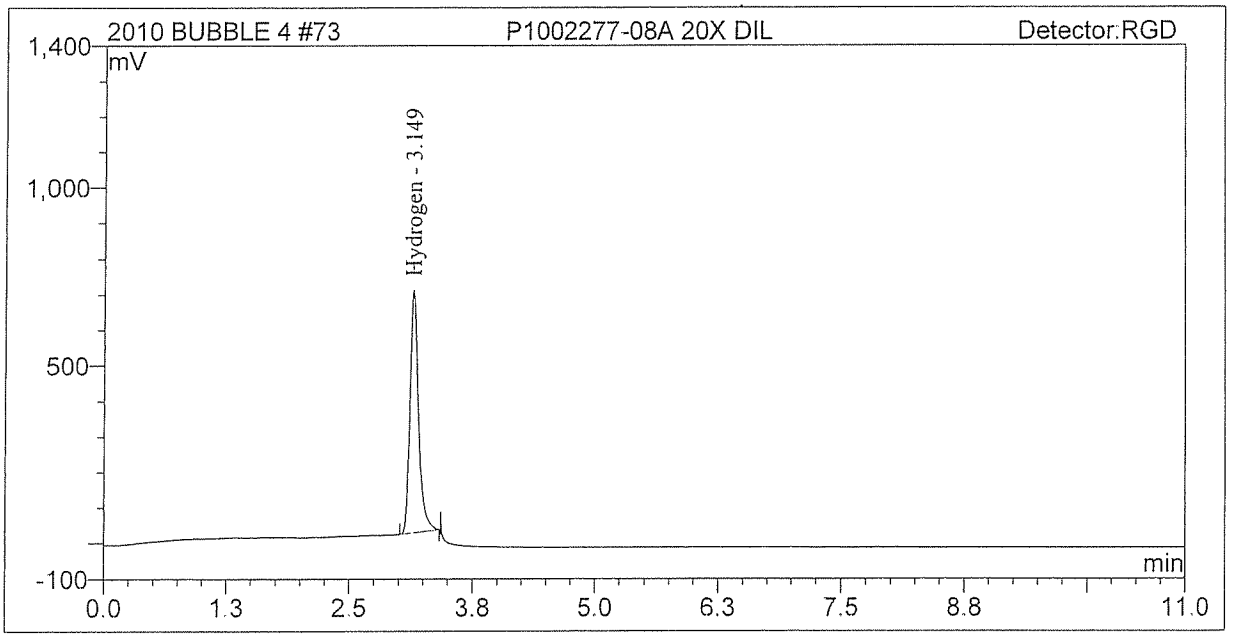
MICROSEEPS

Sample Analysis Report

Sample Name:	P1002277-08A 20X DIL	**Sequence No:**	73
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 2:18 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount
1	Hydrogen	3.149	70.789	684.713	BMB	18.9203 x 20

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



MICROSEEPS

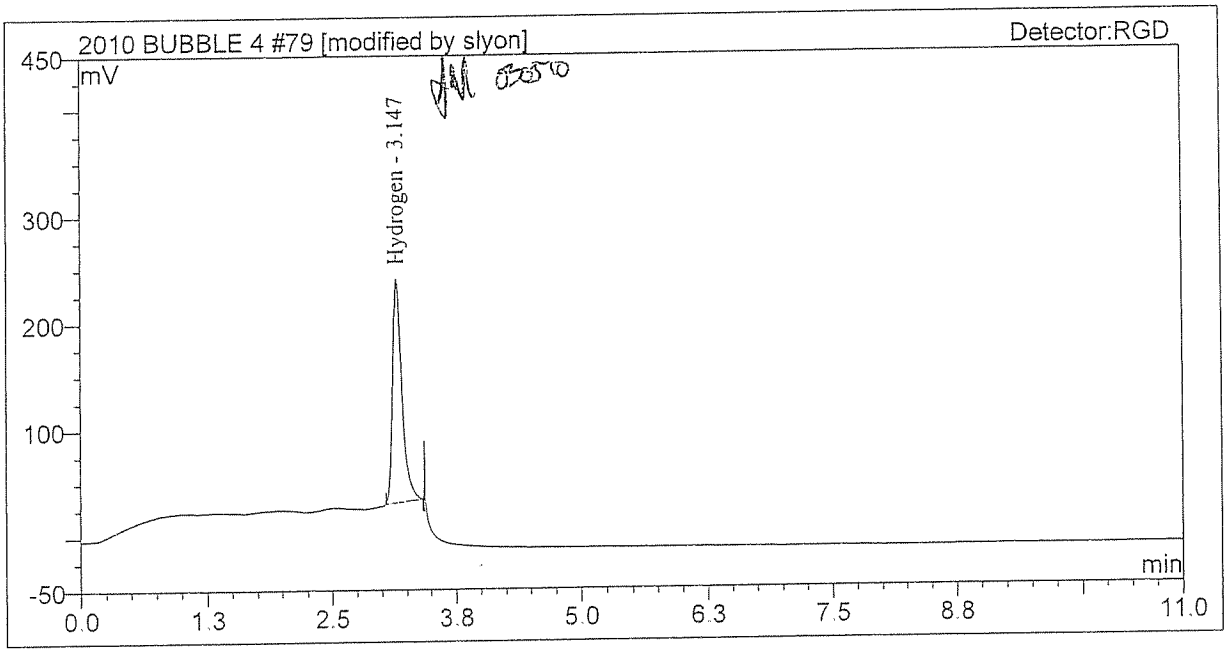
Sample Analysis Report

Sample Name:	CCV2 FID/RGD 030510	**Sequence No:**	79
Sequence Name:	2010 BUBBLE 4	**Instrument ID:**	BIOREM14
Program Method:	BIOREM14AM20	**Injection vol.:**	20.0
Quantitation Method:	BUBBLE	**Dilution Factor:**	1.0000
Date Time Collected:	3/5/2010 7:57 PM	**Analytical Method:**	AM20GAx/SM9
System Operator:	slyon	**Comment:**	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount TV	
1	Hydrogen	3.147	22.882	209.705	BMB*	5.148	6.1157

119 %

FID UNITS (Methane thru Acetylene ug/L)
TCD UNITS (Methane ug/L, CO2, O2, N2, CO mg/L)
RGD UNITS (Hydrogen nM)



TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26025

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: CTO 20 ALAMEDA	PURCHASE ORDER NO: 1034131-2
PROJECT LOCATION: ALAMEDA	PROJECT NO: 106-3210.020.D 07 09 01000
SAMPLER NAME: FS IW	AIRBILL NUMBER: 7932-7813-6860
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 10B206

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: 8260B VOC + SHORT LIST; RSK 175 DISS. GASSES; 6020A DISS. METALS; 6020A TOTAL METALS; 300.0 ANIONS; SM 2320B ALKALINITY

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC + SHORT LIST	RSK 175 DISS. GASSES	6020A DISS. METALS	6020A TOTAL METALS	300.0 ANIONS	SM 2320B ALKALINITY				COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R4-TB003	2-17-10	900	3	✓		W	10	X									* SEE BELOW	TRIP BLANK	–	–	TB
20-R4-EB003	2-17-10	945	3	✓		W	10	X									*	EQUIPMENT BLANK	–	–	EB
20-R4-031	2-17-10	1310	27		✓	W	10	X	X	X	X	X	X				* MS/MSD	ZVI-MW07A2	10	20	MS/MSD
20-R4-018	2-17-10	1040	9		✓	W	10	X	X	X	X	X	X				*	ZVI-MW04A1	6	11	N
20-R4-020	2-17-10	930	9	✓		W	10	X	X	X	X	X	X				*	ZVI-MW04A3	20	30	N
20-R4-006	2-17-10	850	9	✓		W	10	X	X	X	X	X	X				*	ZVI-MW01C	40	50	N
20-R4-003	2-17-10	1000	9	✓		W	10	X	X	X	X	X	X				*	ZVI-MW01A3	20	30	N
20-R4-001	2-17-10	1120	9	✓		W	10	X	X	X	X	X	X				*	ZVI-MW01A1	6	11	N
20-R4-028	2-17-10	1340	9	✓		W	10	X	X	X	X	X	X				*	ZVI-MW06A3	20	30	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
	2-17-10	FED EX
COMPANY: BTS	TIME: 1645	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: * 8260B - HCL PRES, RSK 175 - HCL PRES, 6020A DISS. IRON FIELD FILTERED, 6020A TOTAL METALS/DISS. IRON HNO3 PRES, 300 ANIONS/SM 2320B - NO PRES

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/18/10 22:56
Sample ID: 20-R4-TB003	Date Analyzed: 02/18/10 22:56
Lab Samp ID: B206-01	Dilution Factor: 1
Lab File ID: RBD385	Matrix : WATER
Ext Btch ID: VO94B18	% Moisture : NA
Calib. Ref.: RBD007	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	99	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	94	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/18/10 23:29
Sample ID: 20-R4-EB003	Date Analyzed: 02/18/10 23:29
Lab Samp ID: B206-02	Dilution Factor: 1
Lab File ID: RBD386	Matrix : WATER
Ext Btch ID: VO94B18	% Moisture : NA
Calib. Ref.: RBD007	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
4-BROMOFLUOROBENZENE	103	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/19/10 03:20
Sample ID: 20-R4-031	Date Analyzed: 02/19/10 03:20
Lab Samp ID: B206-03	Dilution Factor: 1
Lab File ID: RBD393	Matrix : WATER
Ext Btch ID: VO94B18	% Moisture : NA
Calib. Ref.: RBD007	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	73E	1.0	0.20
1,1-DICHLOROETHENE	78E	1.0	0.20
1,2-DICHLOROETHANE	1.8	0.50	0.20
CHLOROETHANE	2.1	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	100E	1.0	0.20
TETRACHLOROETHENE	2.0	1.0	0.20
TRANS-1,2-DICHLOROETHENE	150E	1.0	0.20
TRICHLOROETHENE	96E	1.0	0.20
VINYL CHLORIDE	160E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	125*	70-120
4-BROMOFLUOROBENZENE	90	75-120
TOLUENE-D8	93	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
Batch No.	: 10B206	Date Extracted:	02/23/10 00:25
Sample ID:	20-R4-031DL	Date Analyzed:	02/23/10 00:25
Lab Samp ID:	B206-03T	Dilution Factor:	50
Lab File ID:	RBD469	Matrix :	WATER
Ext Btch ID:	VO94B22	% Moisture :	NA
Calib. Ref.:	RBD007	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	78	50	10
1,1-DICHLOROETHENE	76	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	2800E	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	340	50	10
TRICHLOROETHENE	9600E	50	10
VINYL CHLORIDE	2700E	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	123*	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	95	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 21:40
Sample ID: 20-R4-031DL	Date Analyzed: 02/22/10 21:40
Lab Samp ID: B206-03I	Dilution Factor: 500
Lab File ID: RBD464	Matrix : WATER
Ext Btch ID: VO94B22	% Moisture : NA
Calib. Ref.: RBD007	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	500	100
1,1,2,2-TETRACHLOROETHANE	ND	500	100
1,1,2-TRICHLOROETHANE	ND	500	100
1,1-DICHLOROETHANE	ND	500	100
1,1-DICHLOROETHENE	ND	500	100
1,2-DICHLOROETHANE	ND	250	100
CHLOROETHANE	ND	250	100
CHLOROMETHANE	ND	500	100
CIS-1,2-DICHLOROETHENE	17000	500	100
TETRACHLOROETHENE	ND	500	100
TRANS-1,2-DICHLOROETHENE	310J	500	100
TRICHLOROETHENE	18000	500	100
VINYL CHLORIDE	2500	250	100

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	113	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/19/10 00:02
Sample ID: 20-R4-018	Date Analyzed: 02/19/10 00:02
Lab Samp ID: B206-04	Dilution Factor: 1
Lab File ID: RBD387	Matrix : WATER
Ext Btch ID: VO94B18	% Moisture : NA
Calib. Ref.: RBD007	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	4.2	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	2.0	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	4.6	1.0	0.20
TRICHLOROETHENE	0.38J	1.0	0.20
VINYL CHLORIDE	24	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
Batch No.	: 10B206	Date Extracted:	02/19/10 00:34
Sample ID:	20-R4-020	Date Analyzed:	02/19/10 00:34
Lab Samp ID:	B206-05	Dilution Factor:	1
Lab File ID:	RBD388	Matrix	: WATER
Ext Btch ID:	VO94B18	% Moisture	: NA
Calib. Ref.:	RBD007	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.1	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	1.6	1.0	0.20
1,1-DICHLOROETHANE	8.7	1.0	0.20
1,1-DICHLOROETHENE	180E	1.0	0.20
1,2-DICHLOROETHANE	3.2	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.75J	1.0	0.20
CIS-1,2-DICHLOROETHENE	84E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	5.0	1.0	0.20
TRICHLOROETHENE	62E	1.0	0.20
VINYL CHLORIDE	13	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	112	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	95	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 23:53
Sample ID: 20-R4-020DL	Date Analyzed: 02/22/10 23:53
Lab Samp ID: B206-05T	Dilution Factor: 50
Lab File ID: RBD468	Matrix : WATER
Ext Btch ID: VO94B22	% Moisture : NA
Calib. Ref.: RBD007	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	380	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	86	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	63	50	10
VINYL CHLORIDE	14J	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	118	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 21:07
Sample ID: 20-R4-006	Date Analyzed: 02/22/10 21:07
Lab Samp ID: B206-06N	Dilution Factor: 1
Lab File ID: RBD463	Matrix : WATER
Ext Btch ID: VO94B22	% Moisture : NA
Calib. Ref.: RBD007	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	0.20J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.83J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	119	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	97	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/19/10 01:41
Sample ID: 20-R4-003	Date Analyzed: 02/19/10 01:41
Lab Samp ID: B206-07	Dilution Factor: 1
Lab File ID: RBD390	Matrix : WATER
Ext Btch ID: VO94B18	% Moisture : NA
Calib. Ref.: RBD007	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.84J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.73J	1.0	0.20
1,1-DICHLOROETHANE	5.3	1.0	0.20
1,1-DICHLOROETHENE	150E	1.0	0.20
1,2-DICHLOROETHANE	1.3	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	88E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	4.6	1.0	0.20
TRICHLOROETHENE	61E	1.0	0.20
VINYL CHLORIDE	14	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	110	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 22:13
Sample ID: 20-R4-003DL	Date Analyzed: 02/22/10 22:13
Lab Samp ID: B206-07T	Dilution Factor: 25
Lab File ID: RBD465	Matrix : WATER
Ext Btch ID: VO94B22	% Moisture : NA
Calib. Ref.: RBD007	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	5.6J	25	5.0
1,1-DICHLOROETHENE	260	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	91	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	ND	25	5.0
TRICHLOROETHENE	69	25	5.0
VINYL CHLORIDE	16	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	114	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
Batch No.	: 10B206	Date Extracted:	02/23/10 00:58
Sample ID:	20-R4-001	Date Analyzed:	02/23/10 00:58
Lab Samp ID:	B206-08N	Dilution Factor:	1
Lab File ID:	RBD470	Matrix	: WATER
Ext Btch ID:	VO94B22	% Moisture	: NA
Calib. Ref.:	RBD007	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	4.9	1.0	0.20
1,1-DICHLOROETHENE	5.6	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	48E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	6.9	1.0	0.20
TRICHLOROETHENE	87E	1.0	0.20
VINYL CHLORIDE	56E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	116	70-120
4-BROMOFLUOROBENZENE	104	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 22:47
Sample ID: 20-R4-001DL	Date Analyzed: 02/22/10 22:47
Lab Samp ID: B206-08T	Dilution Factor: 25
Lab File ID: RBD466	Matrix : WATER
Ext Btch ID: VO94B22	% Moisture : NA
Calib. Ref.: RBD007	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	5.4J	25	5.0
1,1-DICHLOROETHENE	8.3J	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	510	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	7.3J	25	5.0
TRICHLOROETHENE	88	25	5.0
VINYL CHLORIDE	59	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	103	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/19/10 02:47
Sample ID: 20-R4-028	Date Analyzed: 02/19/10 02:47
Lab Samp ID: B206-09	Dilution Factor: 1
Lab File ID: RBD392	Matrix : WATER
Ext Btch ID: VO94B18	% Moisture : NA
Calib. Ref.: RBD007	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.2	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	1.4	1.0	0.20
1,1-DICHLOROETHANE	7.6	1.0	0.20
1,1-DICHLOROETHENE	100E	1.0	0.20
1,2-DICHLOROETHANE	2.0	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	85E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	17	1.0	0.20
TRICHLOROETHENE	200E	1.0	0.20
VINYL CHLORIDE	76E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	112	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 23:20
Sample ID: 20-R4-028DL	Date Analyzed: 02/22/10 23:20
Lab Samp ID: B206-09T	Dilution Factor: 50
Lab File ID: RBD467	Matrix : WATER
Ext Btch ID: VO94B22	% Moisture : NA
Calib. Ref.: RBD007	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	350	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	500	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	19J	50	10
TRICHLOROETHENE	360	50	10
VINYL CHLORIDE	75	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	120	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	101	85-120

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-031	Date Analyzed: 02/22/10 11:59
Lab Samp ID: B206-03	Dilution Factor: 1
Lab File ID: FB22006A	Matrix : WATER
Ext Btch ID: DGB011W	% Moisture : NA
Calib. Ref.: FB22002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	150E	2.0	0.60
ETHENE	290E	2.0	0.60
METHANE	93E	2.0	0.60
ACETYLENE	860E	3.0	1.5

E: Out of calibration range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-031DL	Date Analyzed: 02/22/10 12:50
Lab Samp ID: B206-03T	Dilution Factor: 20
Lab File ID: FB22010A	Matrix : WATER
Ext Btch ID: DGB011W	% Moisture : NA
Calib. Ref.: FB22002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	130	40	12
ETHENE	380	40	12
METHANE	190	40	12
ACETYLENE	780	60	30

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-018	Date Analyzed: 02/22/10 13:05
Lab Samp ID: B206-04	Dilution Factor: 1
Lab File ID: FB22011A	Matrix : WATER
Ext Btch ID: DGB011W	% Moisture : NA
Calib. Ref.: FB22002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	2.4	2.0	0.60
ETHENE	39	2.0	0.60
METHANE	230E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-018DL	Date Analyzed: 02/22/10 13:21
Lab Samp ID: B206-04T	Dilution Factor: 100
Lab File ID: FB22012A	Matrix : WATER
Ext Btch ID: DGB011W	% Moisture : NA
Calib. Ref.: FB22002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	200	60
ETHENE	ND	200	60
METHANE	2000	200	60
ACETYLENE	ND	300	150

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-020	Date Analyzed: 02/22/10 13:49
Lab Samp ID: B206-05	Dilution Factor: 1
Lab File ID: FB22014A	Matrix : WATER
Ext Btch ID: DGB011W	% Moisture : NA
Calib. Ref.: FB22013A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.3J	2.0	0.60
ETHENE	4.0	2.0	0.60
METHANE	78E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-020DL	Date Analyzed: 02/22/10 14:39
Lab Samp ID: B206-05T	Dilution Factor: 10
Lab File ID: FB22015A	Matrix : WATER
Ext Btch ID: DGB011W	% Moisture : NA
Calib. Ref.: FB22013A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	20	6.0
ETHENE	ND	20	6.0
METHANE	110	20	6.0
ACETYLENE	ND	30	15

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-006	Date Analyzed: 02/22/10 14:55
Lab Samp ID: B206-06	Dilution Factor: 1
Lab File ID: FB22016A	Matrix : WATER
Ext Btch ID: DGB011W	% Moisture : NA
Calib. Ref.: FB22013A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.2	2.0	0.60
ETHENE	1.7J	2.0	0.60
METHANE	11	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-003	Date Analyzed: 02/22/10 15:10
Lab Samp ID: B206-07	Dilution Factor: 1
Lab File ID: FB22017A	Matrix : WATER
Ext Btch ID: DGB011W	% Moisture : NA
Calib. Ref.: FB22013A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	2.5	2.0	0.60
ETHENE	5.7	2.0	0.60
METHANE	53E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-003DL	Date Analyzed: 02/22/10 15:48
Lab Samp ID: B206-07T	Dilution Factor: 2
Lab File ID: FB22020A	Matrix : WATER
Ext Btch ID: DGB011W	% Moisture : NA
Calib. Ref.: FB22013A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	2.5J	4.0	1.2
ETHENE	5.8	4.0	1.2
METHANE	59	4.0	1.2
ACETYLENE	ND	6.0	3.0

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-001	Date Analyzed: 02/22/10 15:23
Lab Samp ID: B206-08	Dilution Factor: 1
Lab File ID: FB22018A	Matrix : WATER
Ext Btch ID: DGB011W	% Moisture : NA
Calib. Ref.: FB22013A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.60
ETHENE	0.95J	2.0	0.60
METHANE	26	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-028	Date Analyzed: 02/22/10 15:36
Lab Samp ID: B206-09	Dilution Factor: 1
Lab File ID: FB22019A	Matrix : WATER
Ext Btch ID: DGB011W	% Moisture : NA
Calib. Ref.: FB22013A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.2	2.0	0.60
ETHENE	10	2.0	0.60
METHANE	99E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
Batch No. : 10B206	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-028DL	Date Analyzed: 02/22/10 16:05
Lab Samp ID: B206-09T	Dilution Factor: 10
Lab File ID: FB22021A	Matrix : WATER
Ext Btch ID: DGB011W	% Moisture : NA
Calib. Ref.: FB22013A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	20	6.0
ETHENE	9.1J	20	6.0
METHANE	220	20	6.0
ACETYLENE	ND	30	15

METHOD 300.0
CHLORIDE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B206

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB035WB	ND	1	NA	0.200	0.100	02/18/1010:58	NA	AB25-03	AB25-01	ICB035W	NA	NA
LCS1W	ICB035WL	4.92	1	NA	0.200	0.100	02/18/1011:14	NA	AB25-04	AB25-01	ICB035W	NA	NA
LCD1W	ICB035WC	4.94	1	NA	0.200	0.100	02/18/1011:30	NA	AB25-05	AB25-01	ICB035W	NA	NA
20-R4-018	B206-04	23.6	1	NA	0.200	0.100	02/18/1015:33	NA	AB25-20	AB25-13	ICB035W	02/17/1010:40	02/18/10
20-R4-001	B206-08	13.8	1	NA	0.200	0.100	02/18/1017:26	NA	AB25-27	AB25-24	ICB035W	02/17/1011:20	02/18/10
MBLK2W	ICB039WB	ND	1	NA	0.200	0.100	02/19/1018:51	NA	AB27-38	AB27-36	ICB039W	NA	NA
LCS2W	ICB039WL	4.86	1	NA	0.200	0.100	02/19/1019:06	NA	AB27-39	AB27-36	ICB039W	NA	NA
LCD2W	ICB039WC	4.87	1	NA	0.200	0.100	02/19/1019:21	NA	AB27-40	AB27-36	ICB039W	NA	NA
20-R4-031	B206-03	283	20	NA	4.00	2.00	02/19/1023:39	NA	AB27-57	AB27-48	ICB039W	02/17/1013:10	02/18/10
20-R4-031DUP	B206-03D	283	20	NA	4.00	2.00	02/19/1023:54	NA	AB27-58	AB27-48	ICB039W	02/17/1013:10	02/18/10
20-R4-031MS	B206-03M	376	20	NA	4.00	2.00	02/20/1000:55	NA	AB27-62	AB27-60	ICB039W	02/17/1013:10	02/18/10
20-R4-031MSD	B206-03S	375	20	NA	4.00	2.00	02/20/1001:10	NA	AB27-63	AB27-60	ICB039W	02/17/1013:10	02/18/10
20-R4-020	B206-05	477	20	NA	4.00	2.00	02/20/1001:25	NA	AB27-64	AB27-60	ICB039W	02/17/1009:30	02/18/10
20-R4-006	B206-06	4850	200	NA	40.0	20.0	02/20/1001:41	NA	AB27-65	AB27-60	ICB039W	02/17/1008:50	02/18/10
20-R4-003	B206-07	427	20	NA	4.00	2.00	02/20/1001:56	NA	AB27-66	AB27-60	ICB039W	02/17/1010:00	02/18/10
20-R4-028	B206-09	504	20	NA	4.00	2.00	02/20/1002:26	NA	AB27-68	AB27-60	ICB039W	02/17/1013:40	02/18/10

METHOD 300.0
NITRATE-N

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B206

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB035WB	ND	1	NA	0.100	0.0500	02/18/1010:58	NA	AB25-03	AB25-01	ICB035W	NA	NA
LCS1W	ICB035WL	2.01	1	NA	0.100	0.0500	02/18/1011:14	NA	AB25-04	AB25-01	ICB035W	NA	NA
LCD1W	ICB035WC	2.02	1	NA	0.100	0.0500	02/18/1011:30	NA	AB25-05	AB25-01	ICB035W	NA	NA
20-R4-031	B206-03	0.0652J	1	NA	0.100	0.0500	02/18/1014:28	NA	AB25-16	AB25-13	ICB035W	02/17/1013:10	02/18/10
20-R4-031DUP	B206-03D	0.0652J	1	NA	0.100	0.0500	02/18/1014:44	NA	AB25-17	AB25-13	ICB035W	02/17/1013:10	02/18/10
20-R4-031MS	B206-03M	2.06	1	NA	0.100	0.0500	02/18/1015:00	NA	AB25-18	AB25-13	ICB035W	02/17/1013:10	02/18/10
20-R4-031MSD	B206-03S	2.06	1	NA	0.100	0.0500	02/18/1015:17	NA	AB25-19	AB25-13	ICB035W	02/17/1013:10	02/18/10
20-R4-018	B206-04	ND	1	NA	0.100	0.0500	02/18/1015:33	NA	AB25-20	AB25-13	ICB035W	02/17/1010:40	02/18/10
20-R4-020	B206-05	0.214	1	NA	0.100	0.0500	02/18/1015:49	NA	AB25-21	AB25-13	ICB035W	02/17/1009:30	02/18/10
20-R4-006	B206-06	3.24	1	NA	0.100	0.0500	02/18/1016:05	NA	AB25-22	AB25-13	ICB035W	02/17/1008:50	02/18/10
20-R4-003	B206-07	ND	1	NA	0.100	0.0500	02/18/1017:10	NA	AB25-26	AB25-24	ICB035W	02/17/1010:00	02/18/10
20-R4-001	B206-08	0.0880J	1	NA	0.100	0.0500	02/18/1017:26	NA	AB25-27	AB25-24	ICB035W	02/17/1011:20	02/18/10
20-R4-028	B206-09	ND	1	NA	0.100	0.0500	02/18/1017:42	NA	AB25-28	AB25-24	ICB035W	02/17/1013:40	02/18/10

METHOD 300.0
SULFATE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B206

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB035WB	ND	1	NA	0.500	0.250	02/18/1010:58	NA	AB25-03	AB25-01	ICB035W	NA	NA
LCS1W	ICB035WL	4.88	1	NA	0.500	0.250	02/18/1011:14	NA	AB25-04	AB25-01	ICB035W	NA	NA
LCD1W	ICB035WC	4.90	1	NA	0.500	0.250	02/18/1011:30	NA	AB25-05	AB25-01	ICB035W	NA	NA
20-R4-018	B206-04	0.869	1	NA	0.500	0.250	02/18/1015:33	NA	AB25-20	AB25-13	ICB035W	02/17/1010:40	02/18/10
MBLK2W	ICB039WB	ND	1	NA	0.500	0.250	02/19/1018:51	NA	AB27-38	AB27-36	ICB039W	NA	NA
LCS2W	ICB039WL	4.75	1	NA	0.500	0.250	02/19/1019:06	NA	AB27-39	AB27-36	ICB039W	NA	NA
LCD2W	ICB039WC	4.76	1	NA	0.500	0.250	02/19/1019:21	NA	AB27-40	AB27-36	ICB039W	NA	NA
20-R4-031	B206-03	150	20	NA	10.0	5.00	02/19/1023:39	NA	AB27-57	AB27-48	ICB039W	02/17/1013:10	02/18/10
20-R4-031DUP	B206-03D	149	20	NA	10.0	5.00	02/19/1023:54	NA	AB27-58	AB27-48	ICB039W	02/17/1013:10	02/18/10
20-R4-031MS	B206-03M	250	20	NA	10.0	5.00	02/20/1000:55	NA	AB27-62	AB27-60	ICB039W	02/17/1013:10	02/18/10
20-R4-031MSD	B206-03S	249	20	NA	10.0	5.00	02/20/1001:10	NA	AB27-63	AB27-60	ICB039W	02/17/1013:10	02/18/10
20-R4-020	B206-05	87.1	20	NA	10.0	5.00	02/20/1001:25	NA	AB27-64	AB27-60	ICB039W	02/17/1009:30	02/18/10
20-R4-006	B206-06	1660	200	NA	100	50.0	02/20/1001:41	NA	AB27-65	AB27-60	ICB039W	02/17/1008:50	02/18/10
20-R4-003	B206-07	130	20	NA	10.0	5.00	02/20/1001:56	NA	AB27-66	AB27-60	ICB039W	02/17/1010:00	02/18/10
20-R4-001	B206-08	34.9	2	NA	1.00	0.500	02/20/1002:11	NA	AB27-67	AB27-60	ICB039W	02/17/1011:20	02/18/10
20-R4-028	B206-09	68.6	20	NA	10.0	5.00	02/20/1002:26	NA	AB27-68	AB27-60	ICB039W	02/17/1013:40	02/18/10

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
SDG NO. : 10B206	Date Extracted: 02/22/10 09:45
Sample ID: 20-R4-031	Date Analyzed: 03/01/10 17:43
Lab Samp ID: B206-03	Dilution Factor: 1
Lab File ID: 98C01024	Matrix : WATER
Ext Btch ID: IMB018W	% Moisture : NA
Calib. Ref.: 98C01016	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic^	34.9	5.00	2.50
Calcium	4310	1000	200
Iron	1740	200	50.0
Magnesium	1760	1000	200
Manganese	13.7	1.00	0.500
Potassium	1470	1000	200
Sodium^	825000	5000	1000

^: Analyzed at DF 5 on 03/02/10 17:42 | File ID 98C02021

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
SDG NO.	: 10B206	Date Extracted:	02/22/10 09:45
Sample ID:	20-R4-018	Date Analyzed:	03/01/10 18:21
Lab Samp ID:	B206-04	Dilution Factor:	1
Lab File ID:	98C01030	Matrix :	WATER
Ext Btch ID:	IMB018W	% Moisture :	NA
Calib. Ref.:	98C01028	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	24.9	1.00	0.500
Calcium	154000	1000	200
Iron	2120	200	50.0
Magnesium	30400	1000	200
Manganese	1240	1.00	0.500
Potassium	10200	1000	200
Sodium	128000	1000	200

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: 02/17/10
Project : CTO 20, ALAMEDA	Date Received: 02/18/10
SDG NO. : 10B206	Date Extracted: 02/22/10 09:45
Sample ID: 20-R4-020	Date Analyzed: 03/01/10 18:27
Lab Samp ID: B206-05	Dilution Factor: 1
Lab File ID: 98C01031	Matrix : WATER
Ext Btch ID: IMB018W	% Moisture : NA
Calib. Ref.: 98C01028	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	9.15	1.00	0.500
Calcium	69800	1000	200
Iron	706	200	50.0
Magnesium	89000	1000	200
Manganese	1230	1.00	0.500
Potassium	3070	1000	200
Sodium^	409000	5000	1000

^: Analyzed at DF 5 on 03/02/10 17:55 | File ID 98C02023

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
SDG NO.	: 10B206	Date Extracted:	02/22/10 09:45
Sample ID:	20-R4-006	Date Analyzed:	03/01/10 18:34
Lab Samp ID:	B206-06	Dilution Factor:	1
Lab File ID:	98C01032	Matrix :	WATER
Ext Btch ID:	IMB018W	% Moisture :	NA
Calib. Ref.:	98C01028	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.45	1.00	0.500
Calcium	222000	1000	200
Iron	209	200	50.0
Magnesium^	330000	50000	10000
Manganese	1850	1.00	0.500
Potassium	9730	1000	200
Sodium^	3700000	50000	10000

^: Analyzed at DF 50 on 03/02/10 18:39 | File ID 98C02030

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
SDG NO.	: 10B206	Date Extracted:	02/22/10 09:45
Sample ID:	20-R4-003	Date Analyzed:	03/01/10 18:40
Lab Samp ID:	B206-07	Dilution Factor:	1
Lab File ID:	98C01033	Matrix :	WATER
Ext Btch ID:	IMB018W	% Moisture :	NA
Calib. Ref.:	98C01028	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	5.15	1.00	0.500
Calcium	73200	1000	200
Iron	1030	200	50.0
Magnesium	88200	1000	200
Manganese	2070	1.00	0.500
Potassium	3380	1000	200
Sodium^	365000	5000	1000

^: Analyzed at DF 5 on 03/02/10 18:07 | File ID 98C02025

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
SDG NO.	: 10B206	Date Extracted:	02/22/10 09:45
Sample ID:	20-R4-001	Date Analyzed:	03/01/10 18:46
Lab Samp ID:	B206-08	Dilution Factor:	1
Lab File ID:	98C01034	Matrix :	WATER
Ext Btch ID:	IMB018W	% Moisture :	NA
Calib. Ref.:	98C01028	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	26.3	1.00	0.500
Calcium	9460	1000	200
Iron	724	200	50.0
Magnesium	6320	1000	200
Manganese	356	1.00	0.500
Potassium	18300	1000	200
Sodium	105000	1000	200

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
SDG NO.	: 10B206	Date Extracted:	02/22/10 09:45
Sample ID:	20-R4-028	Date Analyzed:	03/01/10 18:52
Lab Samp ID:	B206-09	Dilution Factor:	1
Lab File ID:	98C01035	Matrix :	WATER
Ext Btch ID:	IMB018W	% Moisture :	NA
Calib. Ref.:	98C01028	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	7.11	1.00	0.500
Calcium	77400	1000	200
Iron	716	200	50.0
Magnesium	94200	1000	200
Manganese	1890	1.00	0.500
Potassium	5440	1000	200
Sodium^	362000	5000	1000

^: Analyzed at DF 5 on 03/02/10 18:13 | File ID 98C02026

METHOD 6020A
METALS BY ICP-MS

Client : TETRA TECH EC, INC.	Date Collected: NA
Project : CTO 20, ALAMEDA	Date Received: 02/22/10
SDG NO. : 10B206	Date Extracted: 02/22/10 09:45
Sample ID: MBLK1W	Date Analyzed: 03/01/10 17:06
Lab Samp ID: IMB018WB	Dilution Factor: 1
Lab File ID: 98C01018	Matrix : WATER
Ext Btch ID: IMB018W	% Moisture : NA
Calib. Ref.: 98C01016	Instrument ID : EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	1.00	0.500
Calcium	ND	1000	200
Iron	ND	200	50.0
Magnesium	ND	1000	200
Manganese	ND	1.00	0.500
Potassium	ND	1000	200
Sodium	ND	1000	200

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
SDG NO.	: 10B206	Date Extracted:	02/22/10 09:45
Sample ID:	20-R4-031	Date Analyzed:	03/01/10 18:59
Lab Samp ID:	B206-03	Dilution Factor:	1
Lab File ID:	98C01036	Matrix :	WATER
Ext Btch ID:	IMB018W	% Moisture :	NA
Calib. Ref.:	98C01028	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	151J	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
SDG NO.	: 10B206	Date Extracted:	02/22/10 09:45
Sample ID:	20-R4-018	Date Analyzed:	03/01/10 19:49
Lab Samp ID:	B206-04	Dilution Factor:	1
Lab File ID:	98C01044	Matrix :	WATER
Ext Btch ID:	IMB018W	% Moisture :	NA
Calib. Ref.:	98C01040	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	1570	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
SDG NO.	: 10B206	Date Extracted:	02/22/10 09:45
Sample ID:	20-R4-020	Date Analyzed:	03/01/10 19:55
Lab Samp ID:	B206-05	Dilution Factor:	1
Lab File ID:	98C01045	Matrix :	WATER
Ext Btch ID:	IMB018W	% Moisture :	NA
Calib. Ref.:	98C01040	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	397	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
SDG NO.	: 10B206	Date Extracted:	02/22/10 09:45
Sample ID:	20-R4-006	Date Analyzed:	03/01/10 20:01
Lab Samp ID:	B206-06	Dilution Factor:	1
Lab File ID:	98C01046	Matrix :	WATER
Ext Btch ID:	IMB018W	% Moisture :	NA
Calib. Ref.:	98C01040	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
SDG NO.	: 10B206	Date Extracted:	02/22/10 09:45
Sample ID:	20-R4-003	Date Analyzed:	03/01/10 20:07
Lab Samp ID:	B206-07	Dilution Factor:	1
Lab File ID:	98C01047	Matrix :	WATER
Ext Btch ID:	IMB018W	% Moisture :	NA
Calib. Ref.:	98C01040	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	272	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
SDG NO.	: 10B206	Date Extracted:	02/22/10 09:45
Sample ID:	20-R4-001	Date Analyzed:	03/01/10 20:14
Lab Samp ID:	B206-08	Dilution Factor:	1
Lab File ID:	98C01048	Matrix :	WATER
Ext Btch ID:	IMB018W	% Moisture :	NA
Calib. Ref.:	98C01040	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	464	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/17/10
Project	: CTO 20, ALAMEDA	Date Received:	02/18/10
SDG NO.	: 10B206	Date Extracted:	02/22/10 09:45
Sample ID:	20-R4-028	Date Analyzed:	03/01/10 20:20
Lab Samp ID:	B206-09	Dilution Factor:	1
Lab File ID:	98C01049	Matrix :	WATER
Ext Btch ID:	IMB018W	% Moisture :	NA
Calib. Ref.:	98C01040	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	474	200	50.0

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 26036

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO
CTO 20 ALAMEDA	1034131-2
PROJECT LOCATION: ALAMEDA	PROJECT NO: 106-3216-020.D.07.09.0100
SAMPLER NAME: FS IW	AIRBILL NUMBER: 7932 8324 4172
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: (949) 756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 10B221

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B VOC'S	RSK 175 SHORT LIST	6020A DISSOLVED GASSES	6020A DISS. (FE)	6020A TOTAL METALS (FE, AS, MN, CR, MO, NI)	300.0 ANIONS (CL, NO3, SO4)	SM 2320B ALKALINITY				COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-R4-TB-004	2-18-10	900	3	✓		W	10	X										* SEE BELOW	TRIP BLANK	—	—	TB
20-R4-EB-004	2-18-10	930	3	✓		W	10	X										*	EQUIPMENT BLANK	—	—	EB
20-R4-014	2-18-10	1010	9	✓		W	10	X	X	X	X	X	X					*	ZVI-MW03A2	10	20	N
20-R4-016	2-18-10	905	9	✓		W	10	X	X	X	X	X	X					*	ZVI-MW03B	30	40	N
20-R4-036	2-18-10	1310	9	✓		W	10	X	X	X	X	X	X					*	~~ZVI~~ 372-MW1	—	—	N
20-R4-017	2-18-10	1200	9	✓		W	10	X	X	X	X	X	X					*	ZVI-MW03C	40	50	N
20-R4-033	2-18-10	1030	9	✓		W	10	X	X	X	X	X	X					*	ZVI-MW07B	30	40	N
20-R4-027	2-18-10	1340	9	✓		W	10	X	X	X	X	X	X					*	ZVI-MW06A2	10	20	N
20-R4-032	2-18-10	1150	9	✓		W	10	X	X	X	X	X	X					*	ZVI-MW07A3	20	30	N
20-R4-034	2-18-10	0920	9	✓		W	10	X	X	X	X	X	X					*	ZVI-MW07C	40	50	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	2-18-10	FED EX
COMPANY: BTS	TIME: 1645	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: *8260B - HCL PRES, RSK 175 - HCL PRES, 6020A DISS IRON FIELD FILTERED 6020A TOTAL METALS/DISS. IRON HNO3 PRES, 300.0 ANIONS / SM 2320B - NO PRES.

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/23/10 15:18
Sample ID: 20-R4-TB-004	Date Analyzed: 02/23/10 15:18
Lab Samp ID: B221-01N	Dilution Factor: 1
Lab File ID: RBC716	Matrix : WATER
Ext Btch ID: VO67B33	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	89	70-120
4-BROMOFLUOROBENZENE	92	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/23/10 15:50
Sample ID: 20-R4-EB-004	Date Analyzed: 02/23/10 15:50
Lab Samp ID: B221-02N	Dilution Factor: 1
Lab File ID: RBC717	Matrix : WATER
Ext Btch ID: VO67B33	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	70-120
4-BROMOFLUOROBENZENE	96	75-120
TOLUENE-D8	95	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/23/10 20:05
Sample ID: 20-R4-014	Date Analyzed: 02/23/10 20:05
Lab Samp ID: B221-03R	Dilution Factor: 1
Lab File ID: RBC725	Matrix : WATER
Ext Btch ID: VO67B33	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	2.4	1.0	0.20
1,1-DICHLOROETHENE	15	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	78E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	32	1.0	0.20
TRICHLOROETHENE	180E	1.0	0.20
VINYL CHLORIDE	11	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-120
4-BROMOFLUOROBENZENE	94	75-120
TOLUENE-D8	94	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/23/10 19:33
Sample ID: 20-R4-014DL	Date Analyzed: 02/23/10 19:33
Lab Samp ID: B221-03T	Dilution Factor: 50
Lab File ID: RBC724	Matrix : WATER
Ext Btch ID: VO67B33	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	22J	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	280	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	33J	50	10
TRICHLOROETHENE	190	50	10
VINYL CHLORIDE	14J	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	70-120
4-BROMOFLUOROBENZENE	91	75-120
TOLUENE-D8	92	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
Batch No.	: 10B221	Date Extracted:	02/23/10 04:49
Sample ID:	20-R4-016	Date Analyzed:	02/23/10 04:49
Lab Samp ID:	B221-04R	Dilution Factor:	1
Lab File ID:	RBD477	Matrix	: WATER
Ext Btch ID:	VO94B22	% Moisture	: NA
Calib. Ref.:	RBD007	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.1	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	1.9	1.0	0.20
1,1-DICHLOROETHENE	150E	1.0	0.20
1,2-DICHLOROETHANE	0.60	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	1.9	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.53J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.95J	1.0	0.20
VINYL CHLORIDE	0.21J	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	118	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/23/10 04:16
Sample ID: 20-R4-016DL	Date Analyzed: 02/23/10 04:16
Lab Samp ID: B221-04T	Dilution Factor: 25
Lab File ID: RBD476	Matrix : WATER
Ext Btch ID: VO94B22	% Moisture : NA
Calib. Ref.: RBD007	Instrument ID : T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHENE	160	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	ND	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	ND	25	5.0
TRICHLOROETHENE	ND	25	5.0
VINYL CHLORIDE	ND	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	118	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/23/10 19:02
Sample ID: 20-R4-036	Date Analyzed: 02/23/10 19:02
Lab Samp ID: B221-05N	Dilution Factor: 1
Lab File ID: RBC723	Matrix : WATER
Ext Btch ID: VO67B33	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	94	70-120
4-BROMOFLUOROBENZENE	95	75-120
TOLUENE-D8	95	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
Batch No.	: 10B221	Date Extracted:	02/25/10 13:58
Sample ID:	20-R4-017	Date Analyzed:	02/25/10 13:58
Lab Samp ID:	B221-06N	Dilution Factor:	1
Lab File ID:	RBC784	Matrix	: WATER
Ext Btch ID:	VO67B36	% Moisture	: NA
Calib. Ref.:	RAC271	Instrument ID	: T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	0.94J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.21J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	90	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/23/10 21:09
Sample ID: 20-R4-033	Date Analyzed: 02/23/10 21:09
Lab Samp ID: B221-07	Dilution Factor: 1
Lab File ID: RBC727	Matrix : WATER
Ext Btch ID: VO67B33	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	6.0	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	36	1.0	0.20
1,1-DICHLOROETHANE	52	1.0	0.20
1,1-DICHLOROETHENE	150E	1.0	0.20
1,2-DICHLOROETHANE	55	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.96J	1.0	0.20
CIS-1,2-DICHLOROETHENE	37	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	19	1.0	0.20
TRICHLOROETHENE	3.8	1.0	0.20
VINYL CHLORIDE	0.49J	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	97	70-120
4-BROMOFLUOROBENZENE	92	75-120
TOLUENE-D8	93	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/25/10 12:54
Sample ID: 20-R4-033DL	Date Analyzed: 02/25/10 12:54
Lab Samp ID: B221-07T	Dilution Factor: 100
Lab File ID: RBC782	Matrix : WATER
Ext Btch ID: VO67B36	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	30J	100	20
1,1-DICHLOROETHANE	54J	100	20
1,1-DICHLOROETHENE	4800	100	20
1,2-DICHLOROETHANE	48J	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	43J	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	22J	100	20
TRICHLOROETHENE	ND	100	20
VINYL CHLORIDE	ND	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	82	70-120
4-BROMOFLUOROBENZENE	96	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/23/10 21:41
Sample ID: 20-R4-027	Date Analyzed: 02/23/10 21:41
Lab Samp ID: B221-08	Dilution Factor: 1
Lab File ID: RBC728	Matrix : WATER
Ext Btch ID: VO67B33	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	74	1.0	0.20
1,1-DICHLOROETHENE	62	1.0	0.20
1,2-DICHLOROETHANE	2.4	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	96E	1.0	0.20
TETRACHLOROETHENE	1.0	1.0	0.20
TRANS-1,2-DICHLOROETHENE	210E	1.0	0.20
TRICHLOROETHENE	110E	1.0	0.20
VINYL CHLORIDE	210E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	84	75-120
TOLUENE-D8	89	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/24/10 17:35
Sample ID: 20-R4-027DL	Date Analyzed: 02/24/10 17:35
Lab Samp ID: B221-08T	Dilution Factor: 50
Lab File ID: RBC746	Matrix : WATER
Ext Btch ID: VO67B34	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	79	50	10
1,1-DICHLOROETHENE	74	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	2800E	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	230	50	10
TRICHLOROETHENE	11000E	50	10
VINYL CHLORIDE	2000E	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-120
4-BROMOFLUOROBENZENE	94	75-120
TOLUENE-D8	93	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/24/10 15:59
Sample ID: 20-R4-027DL	Date Analyzed: 02/24/10 15:59
Lab Samp ID: B221-08I	Dilution Factor: 1000
Lab File ID: RBC743	Matrix : WATER
Ext Btch ID: VO67B34	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1000	200
1,1,2,2-TETRACHLOROETHANE	ND	1000	200
1,1,2-TRICHLOROETHANE	ND	1000	200
1,1-DICHLOROETHANE	ND	1000	200
1,1-DICHLOROETHENE	270J	1000	200
1,2-DICHLOROETHANE	ND	500	200
CHLOROETHANE	ND	500	200
CHLOROMETHANE	ND	1000	200
CIS-1,2-DICHLOROETHENE	31000	1000	200
TETRACHLOROETHENE	ND	1000	200
TRANS-1,2-DICHLOROETHENE	240J	1000	200
TRICHLOROETHENE	12000	1000	200
VINYL CHLORIDE	2200	500	200

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	95	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
Batch No.	: 10B221	Date Extracted:	02/23/10 22:13
Sample ID:	20-R4-032	Date Analyzed:	02/23/10 22:13
Lab Samp ID:	B221-09	Dilution Factor:	1
Lab File ID:	RBC729	Matrix	: WATER
Ext Btch ID:	VO67B33	% Moisture	: NA
Calib. Ref.:	RAC271	Instrument ID	: T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	2.8	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	14	1.0	0.20
1,1-DICHLOROETHANE	22	1.0	0.20
1,1-DICHLOROETHENE	69E	1.0	0.20
1,2-DICHLOROETHANE	12	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	90E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	18	1.0	0.20
TRICHLOROETHENE	120E	1.0	0.20
VINYL CHLORIDE	55E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	86	70-120
4-BROMOFLUOROBENZENE	91	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/24/10 14:23
Sample ID: 20-R4-032DL	Date Analyzed: 02/24/10 14:23
Lab Samp ID: B221-09T	Dilution Factor: 25
Lab File ID: RBC740	Matrix : WATER
Ext Btch ID: VO67B34	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	12J	25	5.0
1,1-DICHLOROETHANE	21J	25	5.0
1,1-DICHLOROETHENE	1500	25	5.0
1,2-DICHLOROETHANE	13	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	790	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	19J	25	5.0
TRICHLOROETHENE	390	25	5.0
VINYL CHLORIDE	62	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	95	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
Batch No.	: 10B221	Date Extracted:	02/24/10 18:07
Sample ID:	20-R4-034	Date Analyzed:	02/24/10 18:07
Lab Samp ID:	B221-10R	Dilution Factor:	1
Lab File ID:	RBC747	Matrix	: WATER
Ext Btch ID:	VO67B34	% Moisture	: NA
Calib. Ref.:	RAC271	Instrument ID	: T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	3.5	1.0	0.20
1,1-DICHLOROETHANE	11	1.0	0.20
1,1-DICHLOROETHENE	59E	1.0	0.20
1,2-DICHLOROETHANE	11	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	42	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	5.7	1.0	0.20
TRICHLOROETHENE	54	1.0	0.20
VINYL CHLORIDE	3.4	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	97	70-120
4-BROMOFLUOROBENZENE	92	75-120
TOLUENE-D8	93	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/25/10 13:26
Sample ID: 20-R4-034DL	Date Analyzed: 02/25/10 13:26
Lab Samp ID: B221-10T	Dilution Factor: 50
Lab File ID: RBC783	Matrix : WATER
Ext Btch ID: VO67B36	% Moisture : NA
Calib. Ref.: RAC271	Instrument ID : T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	11J	50	10
1,1-DICHLOROETHENE	1600	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	42J	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	ND	50	10
TRICHLOROETHENE	58	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	84	70-120
4-BROMOFLUOROBENZENE	96	75-120
TOLUENE-D8	98	85-120

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-014	Date Analyzed: 02/22/10 12:32
Lab Samp ID: B221-03	Dilution Factor: 1
Lab File ID: TB22006A	Matrix : WATER
Ext Btch ID: DGB012W	% Moisture : NA
Calib. Ref.: TB22002A	Instrument ID : GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	0.70J	2.0	0.60
ETHENE	3.2	2.0	0.60
METHANE	67E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range.

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-014DL	Date Analyzed: 02/22/10 13:53
Lab Samp ID: B221-03T	Dilution Factor: 5
Lab File ID: TB22011A	Matrix : WATER
Ext Btch ID: DGB012W	% Moisture : NA
Calib. Ref.: TB22002A	Instrument ID : GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	10	3.0
ETHENE	ND	10	3.0
METHANE	64	10	3.0
ACETYLENE	ND	15	7.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-016	Date Analyzed: 02/22/10 12:51
Lab Samp ID: B221-04	Dilution Factor: 1
Lab File ID: TB22007A	Matrix : WATER
Ext Btch ID: DGB012W	% Moisture : NA
Calib. Ref.: TB22002A	Instrument ID : GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	2.6	2.0	0.60
ETHENE	11	2.0	0.60
METHANE	63E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range.

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-016DL	Date Analyzed: 02/22/10 14:38
Lab Samp ID: B221-04T	Dilution Factor: 5
Lab File ID: TB22012A	Matrix : WATER
Ext Btch ID: DGB012W	% Moisture : NA
Calib. Ref.: TB22002A	Instrument ID : GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	10	3.0
ETHENE	9.7J	10	3.0
METHANE	60	10	3.0
ACETYLENE	ND	15	7.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-036	Date Analyzed: 02/22/10 13:06
Lab Samp ID: B221-05	Dilution Factor: 1
Lab File ID: TB22008A	Matrix : WATER
Ext Btch ID: DGB012W	% Moisture : NA
Calib. Ref.: TB22002A	Instrument ID : GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.60
ETHENE	ND	2.0	0.60
METHANE	0.75J	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-017	Date Analyzed: 02/22/10 13:22
Lab Samp ID: B221-06	Dilution Factor: 1
Lab File ID: TB22009A	Matrix : WATER
Ext Btch ID: DGB012W	% Moisture : NA
Calib. Ref.: TB22002A	Instrument ID : GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.9	2.0	0.60
ETHENE	5.0	2.0	0.60
METHANE	39E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range.

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-017DL	Date Analyzed: 02/22/10 15:38
Lab Samp ID: B221-06T	Dilution Factor: 2
Lab File ID: TB22016A	Matrix : WATER
Ext Btch ID: DGB012W	% Moisture : NA
Calib. Ref.: TB22013A	Instrument ID : GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	3.7J	4.0	1.2
ETHENE	4.8	4.0	1.2
METHANE	38	4.0	1.2
ACETYLENE	ND	6.0	3.0

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-033	Date Analyzed: 02/22/10 13:39
Lab Samp ID: B221-07	Dilution Factor: 1
Lab File ID: TB22010A	Matrix : WATER
Ext Btch ID: DGB012W	% Moisture : NA
Calib. Ref.: TB22002A	Instrument ID : GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	2.0	2.0	0.60
ETHENE	ND	2.0	0.60
METHANE	16	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-027	Date Analyzed: 02/22/10 15:10
Lab Samp ID: B221-08	Dilution Factor: 1
Lab File ID: TB22014A	Matrix : WATER
Ext Btch ID: DGB012W	% Moisture : NA
Calib. Ref.: TB22013A	Instrument ID : GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	35	2.0	0.60
ETHENE	140E	2.0	0.60
METHANE	150E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range.

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-027DL	Date Analyzed: 02/22/10 15:24
Lab Samp ID: B221-08T	Dilution Factor: 10
Lab File ID: TB22015A	Matrix : WATER
Ext Btch ID: DGB012W	% Moisture : NA
Calib. Ref.: TB22013A	Instrument ID : GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	32	20	6.0
ETHENE	140	20	6.0
METHANE	290	20	6.0
ACETYLENE	ND	30	15

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-032	Date Analyzed: 02/22/10 15:54
Lab Samp ID: B221-09	Dilution Factor: 1
Lab File ID: TB22017A	Matrix : WATER
Ext Btch ID: DGB012W	% Moisture : NA
Calib. Ref.: TB22013A	Instrument ID : GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	6.9	2.0	0.60
ETHENE	16	2.0	0.60
METHANE	130E	2.0	0.60
ACETYLENE	ND	3.0	1.5

E: Out of calibration range.

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-032DL	Date Analyzed: 02/22/10 16:33
Lab Samp ID: B221-09T	Dilution Factor: 10
Lab File ID: TB22019A	Matrix : WATER
Ext Btch ID: DGB012W	% Moisture : NA
Calib. Ref.: TB22013A	Instrument ID : GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	6.1J	20	6.0
ETHENE	15J	20	6.0
METHANE	200	20	6.0
ACETYLENE	ND	30	15

METHOD RSK-175
DISSOLVED GASES

Client : TETRA TECH EC, INC.	Date Collected: 02/18/10
Project : CTO 20, ALAMEDA	Date Received: 02/19/10
Batch No. : 10B221	Date Extracted: 02/22/10 09:50
Sample ID: 20-R4-034	Date Analyzed: 02/22/10 16:07
Lab Samp ID: B221-10	Dilution Factor: 1
Lab File ID: TB22018A	Matrix : WATER
Ext Btch ID: DGB012W	% Moisture : NA
Calib. Ref.: TB22013A	Instrument ID : GCT050

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	2.7	2.0	0.60
ETHENE	8.6	2.0	0.60
METHANE	9.2	2.0	0.60
ACETYLENE	ND	3.0	1.5

METHOD 300.0
CHLORIDE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B221

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB037WB	ND	1	NA	0.200	0.100	02/19/1009:32	NA	AB27-03	AB27-01	ICB037W	NA	NA
LCS1W	ICB037WL	4.95	1	NA	0.200	0.100	02/19/1009:48	NA	AB27-04	AB27-01	ICB037W	NA	NA
LCD1W	ICB037WC	4.94	1	NA	0.200	0.100	02/19/1010:05	NA	AB27-05	AB27-01	ICB037W	NA	NA
20-R4-036	B221-05	6.66	1	NA	0.200	0.100	02/19/1012:45	NA	AB27-15	AB27-13	ICB037W	02/18/1013:10	02/19/10
MBLK2W	ICB039WB	ND	1	NA	0.200	0.100	02/19/1018:51	NA	AB27-38	AB27-36	ICB039W	NA	NA
LCS2W	ICB039WL	4.86	1	NA	0.200	0.100	02/19/1019:06	NA	AB27-39	AB27-36	ICB039W	NA	NA
LCD2W	ICB039WC	4.87	1	NA	0.200	0.100	02/19/1019:21	NA	AB27-40	AB27-36	ICB039W	NA	NA
20-R4-014	B221-03	130	10	NA	2.00	1.00	02/19/1020:37	NA	AB27-45	AB27-36	ICB039W	02/18/1010:10	02/19/10
20-R4-016	B221-04	2140	100	NA	20.0	10.0	02/19/1021:53	NA	AB27-50	AB27-48	ICB039W	02/18/1009:05	02/19/10
20-R4-017	B221-06	4310	200	NA	40.0	20.0	02/19/1022:08	NA	AB27-51	AB27-48	ICB039W	02/18/1012:00	02/19/10
20-R4-033	B221-07	1930	100	NA	20.0	10.0	02/19/1022:23	NA	AB27-52	AB27-48	ICB039W	02/18/1010:30	02/19/10
20-R4-027	B221-08	212	20	NA	4.00	2.00	02/19/1022:39	NA	AB27-53	AB27-48	ICB039W	02/18/1013:40	02/19/10
20-R4-032	B221-09	841	50	NA	10.0	5.00	02/19/1023:09	NA	AB27-55	AB27-48	ICB039W	02/18/1011:50	02/19/10
20-R4-034	B221-10	3700	200	NA	40.0	20.0	02/19/1023:24	NA	AB27-56	AB27-48	ICB039W	02/18/1009:20	02/19/10

METHOD 300.0
NITRATE-N

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B221

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB037WB	ND	1	NA	0.100	0.0500	02/19/1009:32	NA	AB27-03	AB27-01	ICB037W	NA	NA
LCS1W	ICB037WL	2.02	1	NA	0.100	0.0500	02/19/1009:48	NA	AB27-04	AB27-01	ICB037W	NA	NA
LCD1W	ICB037WC	2.02	1	NA	0.100	0.0500	02/19/1010:05	NA	AB27-05	AB27-01	ICB037W	NA	NA
20-R4-014	B221-03	0.0516J	1	NA	0.100	0.0500	02/19/1011:25	NA	AB27-10	AB27-01	ICB037W	02/18/1010:10	02/19/10
20-R4-016	B221-04	0.120	1	NA	0.100	0.0500	02/19/1011:41	NA	AB27-11	AB27-01	ICB037W	02/18/1009:05	02/19/10
20-R4-036	B221-05	ND	1	NA	0.100	0.0500	02/19/1012:45	NA	AB27-15	AB27-13	ICB037W	02/18/1013:10	02/19/10
20-R4-017	B221-06	0.0781J	1	NA	0.100	0.0500	02/19/1013:01	NA	AB27-16	AB27-13	ICB037W	02/18/1012:00	02/19/10
20-R4-033	B221-07	4.26	1	NA	0.100	0.0500	02/19/1013:17	NA	AB27-17	AB27-13	ICB037W	02/18/1010:30	02/19/10
20-R4-027	B221-08	0.0532J	1	NA	0.100	0.0500	02/19/1013:34	NA	AB27-18	AB27-13	ICB037W	02/18/1013:40	02/19/10
20-R4-032	B221-09	1.06	1	NA	0.100	0.0500	02/19/1013:50	NA	AB27-19	AB27-13	ICB037W	02/18/1011:50	02/19/10
20-R4-034	B221-10	0.0683J	1	NA	0.100	0.0500	02/19/1014:06	NA	AB27-20	AB27-13	ICB037W	02/18/1009:20	02/19/10

METHOD 300.0
SULFATE

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B221

Matrix : WATER
Instrument ID : I100

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICB037WB	ND	1	NA	0.500	0.250	02/19/1009:32	NA	AB27-03	AB27-01	ICB037W	NA	NA
LCS1W	ICB037WL	4.87	1	NA	0.500	0.250	02/19/1009:48	NA	AB27-04	AB27-01	ICB037W	NA	NA
LCD1W	ICB037WC	4.87	1	NA	0.500	0.250	02/19/1010:05	NA	AB27-05	AB27-01	ICB037W	NA	NA
20-R4-036	B221-05	13.8	1	NA	0.500	0.250	02/19/1012:45	NA	AB27-15	AB27-13	ICB037W	02/18/1013:10	02/19/10
MBLK2W	ICB039WB	ND	1	NA	0.500	0.250	02/19/1018:51	NA	AB27-38	AB27-36	ICB039W	NA	NA
LCS2W	ICB039WL	4.75	1	NA	0.500	0.250	02/19/1019:06	NA	AB27-39	AB27-36	ICB039W	NA	NA
LCD2W	ICB039WC	4.76	1	NA	0.500	0.250	02/19/1019:21	NA	AB27-40	AB27-36	ICB039W	NA	NA
20-R4-014	B221-03	147	10	NA	5.00	2.50	02/19/1020:37	NA	AB27-45	AB27-36	ICB039W	02/18/1010:10	02/19/10
20-R4-016	B221-04	249	20	NA	10.0	5.00	02/19/1020:52	NA	AB27-46	AB27-36	ICB039W	02/18/1009:05	02/19/10
20-R4-017	B221-06	1350	200	NA	100	50.0	02/19/1022:08	NA	AB27-51	AB27-48	ICB039W	02/18/1012:00	02/19/10
20-R4-033	B221-07	232	100	NA	50.0	25.0	02/19/1022:23	NA	AB27-52	AB27-48	ICB039W	02/18/1010:30	02/19/10
20-R4-027	B221-08	307	20	NA	10.0	5.00	02/19/1022:39	NA	AB27-53	AB27-48	ICB039W	02/18/1013:40	02/19/10
20-R4-032	B221-09	56.8	5	NA	2.50	1.25	02/19/1022:54	NA	AB27-54	AB27-48	ICB039W	02/18/1011:50	02/19/10
20-R4-034	B221-10	720	200	NA	100	50.0	02/19/1023:24	NA	AB27-56	AB27-48	ICB039W	02/18/1009:20	02/19/10

METHOD SM2320B
TOTAL ALKALINITY

Client : TETRA TECH EC, INC.
Project : CTO 20, ALAMEDA
Batch No. : 10B221

Matrix : WATER
Instrument ID : E5

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALC001WB	ND	1	NA	5.00	1.00	03/01/1012:25	NA	10E5C01003	NA	ALC001W	NA	NA
LCS1W	ALC001WL	233	1	NA	5.00	1.00	03/01/1012:33	NA	10E5C01004	NA	ALC001W	NA	NA
LCD1W	ALC001WC	234	1	NA	5.00	1.00	03/01/1012:42	NA	10E5C01005	NA	ALC001W	NA	NA
20-R4-014	B221-03	865	1	NA	5.00	1.00	03/01/1014:28	NA	10E5C01014	NA	ALC001W	02/18/1010:10	02/19/10
20-R4-016	B221-04	561	1	NA	5.00	1.00	03/01/1014:39	NA	10E5C01015	NA	ALC001W	02/18/1009:05	02/19/10
20-R4-036	B221-05	94.6	1	NA	5.00	1.00	03/01/1014:46	NA	10E5C01016	NA	ALC001W	02/18/1013:10	02/19/10
20-R4-017	B221-06	744	1	NA	5.00	1.00	03/01/1014:56	NA	10E5C01017	NA	ALC001W	02/18/1012:00	02/19/10
20-R4-033	B221-07	585	1	NA	5.00	1.00	03/01/1015:08	NA	10E5C01018	NA	ALC001W	02/18/1010:30	02/19/10
20-R4-027	B221-08	1380	1	NA	5.00	1.00	03/01/1015:25	NA	10E5C01019	NA	ALC001W	02/18/1013:40	02/19/10
20-R4-032	B221-09	700	1	NA	5.00	1.00	03/01/1015:37	NA	10E5C01020	NA	ALC001W	02/18/1011:50	02/19/10
20-R4-034	B221-10	590	1	NA	5.00	1.00	03/01/1015:48	NA	10E5C01021	NA	ALC001W	02/18/1009:20	02/19/10

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-014	Date Analyzed:	03/03/10 23:35
Lab Samp ID:	B221-03W	Dilution Factor:	1
Lab File ID:	98C03049	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C03041	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	8.49	1.00	0.500
Calcium	15700	1000	200
Iron	52.0J	200	50.0
Magnesium	13500	1000	200
Manganese	98.0	1.00	0.500
Potassium	2030	1000	200
Sodium^	522000	5000	1000

^ : Analyzed @ DF 5 on 03/02/10 19:04 | File ID 98C02034

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-016	Date Analyzed:	03/03/10 23:47
Lab Samp ID:	B221-04W	Dilution Factor:	1
Lab File ID:	98C03051	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C03041	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	10.0	1.00	0.500
Calcium	12400	1000	200
Iron	ND	200	50.0
Magnesium	8150	1000	200
Manganese	73.3	1.00	0.500
Potassium	3820	1000	200
Sodium^	1730000	5000	1000

^ : Analyzed @ DF 5 on 03/02/10 19:16 | File ID 98C02036

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-036	Date Analyzed:	03/02/10 19:22
Lab Samp ID:	B221-05W	Dilution Factor:	1
Lab File ID:	98C02037	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02028	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	0.587J	1.00	0.500
Calcium	33200	1000	200
Iron	ND	200	50.0
Magnesium	2550	1000	200
Manganese	80.4	1.00	0.500
Potassium	540J	1000	200
Sodium	8140	1000	200

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-017	Date Analyzed:	03/02/10 20:00
Lab Samp ID:	B221-06T	Dilution Factor:	5
Lab File ID:	98C02043	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02040	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.99J	5.00	2.50
Calcium	300000	5000	1000
Iron	2510	1000	250
Magnesium	344000	5000	1000
Manganese	4830	5.00	2.50
Potassium	10800	5000	1000
Sodium^	2920000	50000	10000

^ : Analyzed @ DF 50 on 03/02/10 19:54 | File ID 98C02042

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-033	Date Analyzed:	03/02/10 21:09
Lab Samp ID:	B221-07	Dilution Factor:	1
Lab File ID:	98C02054	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	7.74	1.00	0.500
Calcium	33100	1000	200
Iron	120J	200	50.0
Magnesium	36500	1000	200
Manganese	61.8	1.00	0.500
Potassium	5470	1000	200
Sodium^	1540000	50000	10000

^ : Analyzed @ DF 50 on 03/03/10 19:04 | File ID 98C03025

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-027	Date Analyzed:	03/02/10 21:15
Lab Samp ID:	B221-08	Dilution Factor:	1
Lab File ID:	98C02055	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	116	1.00	0.500
Calcium	7890	1000	200
Iron	582	200	50.0
Magnesium	2250	1000	200
Manganese	57.6	1.00	0.500
Potassium	1450	1000	200
Sodium^	816000	5000	1000

^ : Analyzed @ DF 5 on 03/02/10 20:13 | File ID 98C02045

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-032	Date Analyzed:	03/02/10 21:22
Lab Samp ID:	B221-09	Dilution Factor:	1
Lab File ID:	98C02056	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	8.92	1.00	0.500
Calcium	67500	1000	200
Iron	565	200	50.0
Magnesium	82200	1000	200
Manganese	1950	1.00	0.500
Potassium	3650	1000	200
Sodium^	668000	5000	1000

^ : Analyzed @ DF 5 on 03/02/10 20:19 | File ID 98C02046

METHOD 6020A
METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-034	Date Analyzed:	03/02/10 21:28
Lab Samp ID:	B221-10	Dilution Factor:	1
Lab File ID:	98C02057	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.83	1.00	0.500
Calcium	39000	1000	200
Iron	755	200	50.0
Magnesium	44900	1000	200
Manganese	415	1.00	0.500
Potassium	6550	1000	200
Sodium^	2900000	5000	1000

^ : Analyzed @ DF 5 on 03/03/10 21:10 | File ID 98C03026

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-014	Date Analyzed:	03/02/10 21:34
Lab Samp ID:	B221-03	Dilution Factor:	1
Lab File ID:	98C02058	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-016	Date Analyzed:	03/02/10 21:41
Lab Samp ID:	B221-04	Dilution Factor:	1
Lab File ID:	98C02059	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02052	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-036	Date Analyzed:	03/02/10 22:18
Lab Samp ID:	B221-05	Dilution Factor:	1
Lab File ID:	98C02065	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-017	Date Analyzed:	03/02/10 22:24
Lab Samp ID:	B221-06	Dilution Factor:	1
Lab File ID:	98C02066	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	1660	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-033	Date Analyzed:	03/02/10 22:31
Lab Samp ID:	B221-07	Dilution Factor:	1
Lab File ID:	98C02067	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	ND	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-027	Date Analyzed:	03/02/10 22:37
Lab Samp ID:	B221-08	Dilution Factor:	1
Lab File ID:	98C02068	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	611	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-032	Date Analyzed:	03/02/10 22:43
Lab Samp ID:	B221-09	Dilution Factor:	1
Lab File ID:	98C02069	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	295	200	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TETRA TECH EC, INC.	Date Collected:	02/18/10
Project	: CTO 20, ALAMEDA	Date Received:	02/19/10
SDG NO.	: 10B221	Date Extracted:	02/23/10 10:30
Sample ID:	20-R4-034	Date Analyzed:	03/02/10 22:50
Lab Samp ID:	B221-10	Dilution Factor:	1
Lab File ID:	98C02070	Matrix :	WATER
Ext Btch ID:	IMB021W	% Moisture :	NA
Calib. Ref.:	98C02063	Instrument ID :	EMAXTI98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Iron	128J	200	50.0

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 25913

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	ONS 165 [illegible]
PROJECT LOCATION	MAMEDA CA
SAMPLER NAME	M. O'HARA
PROJECT CONTACT	[illegible]
PURCHASE ORDER NO.	10[illegible]2
PROJECT NO.	3210 020
AIRBILL NUMBER	[illegible]
PROJECT CONTACT PHONE NUMBER	[illegible]

ANALYSES REQUIRED: [illegible]

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY):

Project Information Section Do not submit to Laboratory

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	[illegible]	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-AC-002	8/10/09	0810	3	X		W	10	X	Preserved	S4-HP-MIPX	6'	11'	N
20-AC-003	8/10/09	1130	3	X		W	10	X	unpres	S4-HP-MIPX	17'	22'	N
20-AC-004	8/10/09	1325	3		X	W	10	X	unpres	S4-HP-MIPX	27'	32'	N
20-AC-005	8/10/09	1400	3		X	W	10	X	unpres	S4-HP-MIP13	28'	33'	N
20-TB-001	8/10/09	N/A	1	X		W	10	X	unpres	Trip Blank	—	—	TB
~~20-TBM-001~~	~~8/10/09~~	~~N/A~~	~~1~~	~~X~~		~~W~~		~~X~~					

Q 08-13-09

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[illegible]	[illegible]	[illegible]
COMPANY: TTECI	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

p.2
510/489/51
ttEC
06:53a

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 25956

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
OWS-163 ALAMEDA	CREDIT CARD
PROJECT LOCATION: ALAMEDA CA	PROJECT NO.: 3210-020
SAMPLER NAME: M. O'HARE	AIRBILL NUMBER: 8622 9345 7636
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: MICROBIAL INSIGHTS

LABORATORY ID (FOR LABORATORY): OLLGH ~~039GH~~

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	OPCB (DHC)	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-AC-022	8/17/09	1008	1	X		S	10	X	UNPRES	S4-OWS163-HP13	15'	20'	N

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	8/17/09	FEDEX
COMPANY: TTECI	TIME: 1645	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

2340 Stock Creek Blvd.
Rockford TN 37853-3044
Phone: (865) 573-8188
Fax: (865) 573-8133
Email: info@microbe.com

Client: Diane Suzuki
Tetra Tech , Inc.
1230 Columbia St
Suite 750
San Diego, CA 92101

Phone: 949.756.7584

Fax:

Identifier: 044GH **Date Rec:** 08/18/2009 **Report Date:** 08/20/2009

Client Project #: 3210-020 **Client Project Name:** Alameda OWS-163

Purchase Order #:

Analysis Requested: CENSUS

Comments:

Reviewed By:

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

NUMBER 25956

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.	LABORATORY NAME
OWS-163 ALAMEDA	CREDIT CARD	MICROBIAL INSIGHTS
PROJECT LOCATION: ALAMEDA CA	PROJECT NO.: 3210-020	LABORATORY ID (FOR LABORATORY)
SAMPLER NAME: M. O'HARE	AIRBILL NUMBER: 8622 9395 7636	
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584	

ANALYSES REQUIRED: QPCR (DHC)

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	QPCR (DHC)	COMMENTS
1	20-AC-022	8/17/09	1008	1	X		S	10	X	UNPRES

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	LABORATORY INSTRUCTIONS/COMMENTS
[signature]	8/17/09	FEDEX	
COMPANY: TTECI	TIME: 1645	COMPANY	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	COMPOSITE DESCRIPTION
COMPANY	TIME	COMPANY: MI 8/18/09	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
COMPANY	TIME	COMPANY	TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

MICROBIAL INSIGHTS, INC.

2340 Stock Creek Blvd. Rockford, TN 37853-3044
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **Tetra Tech , Inc.**
Project: Alameda OWS-163

MI Project Number: **044GH**
Date Received: 08/18/2009

Sample Information

Client Sample ID:	**20-AC-022**
Sample Date:	08/17/2009
Units:	cells/g
Analyst:	ab

Dechlorinating Bacteria

Dehalococcoides spp.	DHC	**6.35E+02 (J)**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

TETRA TECH
[illegible] Columbia Street, Suite 600
San Diego, CA 92101 (619) 234-[illegible]

NUMBER 25945

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	OWS 163 ZVI
PROJECT LOCATION	ALAMEDA CA
SAMPLER NAME	L DUDUS
PROJECT CONTACT	DIANE SUZUKI
PURCHASE ORDER NO.	103431-2
PROJECT NO.	3210.20
AIRBILL NUMBER	8622 9395 7577
PROJECT CONTACT PHONE NUMBER	949 756 7584
LABORATORY NAME	EMAX
LABORATORY ID (FOR LABORATORY)	09G283

ANALYSES REQUIRED: VOCs 8260B

Project Information Section Do not submit to Laboratory

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs 8260B	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-TB-001	7/28/09	0800	3	X		W	10	X	TRIP BLANK	TB	\	\	TB
20-AC-001	7/28/09	1340	3	X		W	10	X	NO HCL	S4-CC5	5	10	[illegible]

RELINQUISHED BY (Signature)	DATE 7/28/09	RECEIVED BY (Signature)	LABORATORY INSTRUCTIONS/COMMENTS
COMPANY TETRA	TIME 1800	COMPANY	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	COMPOSITE DESCRIPTION
COMPANY	TIME	COMPANY	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
COMPANY	TIME	COMPANY	TEMPERATURE: ____ SAMPLE CONDITION ☐ INTACT ☐ BROKEN COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT
CONTINUOUS CORE
HYDROPUNCH
SAMPLING

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	07/28/09
Project	: CTO 20, ALAMEDA	Date Received:	07/29/09
Batch No.	: 09G283	Date Extracted:	07/30/09 12:33
Sample ID	: 20-TB-001	Date Analyzed:	07/30/09 12:33
Lab Samp ID	: G283-01	Dilution Factor:	1
Lab File ID	: RGD532	Matrix	: WATER
Ext Btch ID	: VO94G25	% Moisture	: NA
Calib. Ref.	: RGD007	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	70-120
4-BROMOFLUOROBENZENE	111	75-120
TOLUENE-D8	113	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	07/28/09
Project	: CTO 20, ALAMEDA	Date Received:	07/29/09
Batch No.	: 09G283	Date Extracted:	07/30/09 14:34
Sample ID:	20-AC-001	Date Analyzed:	07/30/09 14:34
Lab Samp ID:	G283-02R	Dilution Factor:	1
Lab File ID:	RGD536	Matrix :	WATER
Ext Btch ID:	VO94G25	% Moisture :	NA
Calib. Ref.:	RGD007	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	0.68J	1.0	0.20
1,1-DICHLOROETHENE	0.74J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.50J	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	0.99J	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	10	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	70-120
4-BROMOFLUOROBENZENE	113	75-120
TOLUENE-D8	118	85-120

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 25946

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: ALAMEDA OWS-163	PURCHASE ORDER NO.: 1034131-2
PROJECT LOCATION: ALAMEDA CA	PROJECT NO.: 3216-020
SAMPLER NAME: M. O'HARE	AIRBILL NUMBER: 8622 9395 7603
PROJECT CONTACT: DIANE SUZUKI	PROJECT CONTACT PHONE NUMBER: 949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 0944151

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B/5030 VOC'S SHORT LIST	8260B/5035 VOC'S SHORT LIST	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-AC-006	8/13/09	0902	9		X	W	10	X		UNPRES	54-HP-MIP07	20'	25'	MS
20-AC-007	8/13/09	1136	3	X		W	10	X		UNPRES	54-HP-MIP14	17'	22'	N
20-AC-008	8/13/09	1209	3	X		W	10	X		UNPRES	54-HP-MIP14	24'	29'	N
20-AC-009	8/13/09	1425	3	X		W	10	X		UNPRES	54-HP-MIP07	44'	49'	N
20-AC-010	8/13/09	0849	2	X		S	10		X	UNPRES	1 8OZ JAR 1 Encor Alboy 3X5g UNPRES	54-SS-MIP13	5.2'	6.0'	N
20-AC-012	8/13/09	1656	2	X		S	10		X	UNPRES	1 8OZ GLASS JAR 1 ENCOR Al Jar 3X5g UNPRES	54-SS-MIP13	16'	21'	N
20-TB-003	8/13/09	0800	1	X		W	10	X		HCL	TRIP BLANK	—	—	TB

RELINQUISHED BY (Signature): [signature]	DATE: 8/13/09	RECEIVED BY (Signature): FEDEX	LABORATORY INSTRUCTIONS/COMMENTS
COMPANY: TTECI	TIME: 1930	COMPANY:	
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	COMPOSITE DESCRIPTION
COMPANY:	TIME:	COMPANY:	
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
COMPANY:	TIME:	COMPANY:	TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/14/09 18:36
Sample ID:	20-AC-006	Date Analyzed:	08/14/09 18:36
Lab Samp ID:	H151-01	Dilution Factor:	1
Lab File ID:	RHD305	Matrix :	WATER
Ext Btch ID:	VO94H14	% Moisture :	NA
Calib. Ref.:	RHD035	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	2.9	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.28J	1.0	0.20
1,1-DICHLOROETHANE	8.7	1.0	0.20
1,1-DICHLOROETHENE	120E	1.0	0.20
1,2-DICHLOROETHANE	0.81	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	80E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	23	1.0	0.20
TRICHLOROETHENE	190E	1.0	0.20
VINYL CHLORIDE	40	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	111	70-120
4-BROMOFLUOROBENZENE	111	75-120
TOLUENE-D8	110	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/17/09 13:26
Sample ID	: 20-AC-006DL	Date Analyzed:	08/17/09 13:26
Lab Samp ID	: H151-01T	Dilution Factor:	25
Lab File ID	: RHD329	Matrix	: WATER
Ext Btch ID	: VO94H15	% Moisture	: NA
Calib. Ref.	: RHD035	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	8.4J	25	5.0
1,1-DICHLOROETHENE	540	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	330	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	30	25	5.0
TRICHLOROETHENE	290	25	5.0
VINYL CHLORIDE	49	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	114	70-120
4-BROMOFLUOROBENZENE	111	75-120
TOLUENE-D8	110	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/14/09 19:06
Sample ID:	20-AC-007	Date Analyzed:	08/14/09 19:06
Lab Samp ID:	H151-02	Dilution Factor:	1
Lab File ID:	RHD306	Matrix :	WATER
Ext Btch ID:	VO94H14	% Moisture :	NA
Calib. Ref.:	RHD035	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.23J	1.0	0.20
1,1-DICHLOROETHANE	14	1.0	0.20
1,1-DICHLOROETHENE	160E	1.0	0.20
1,2-DICHLOROETHANE	0.43J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	86E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	100E	1.0	0.20
TRICHLOROETHENE	55E	1.0	0.20
VINYL CHLORIDE	230E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	116	70-120
4-BROMOFLUOROBENZENE	117	75-120
TOLUENE-D8	106	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/17/09 12:56
Sample ID:	20-AC-007DL	Date Analyzed:	08/17/09 12:56
Lab Samp ID:	H151-02T	Dilution Factor:	25
Lab File ID:	RHD328	Matrix :	WATER
Ext Btch ID:	VO94H15	% Moisture :	NA
Calib. Ref.:	RHD035	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	15J	25	5.0
1,1-DICHLOROETHENE	140	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	2500E	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	110	25	5.0
TRICHLOROETHENE	1200	25	5.0
VINYL CHLORIDE	320	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	118	70-120
4-BROMOFLUOROBENZENE	113	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/17/09 14:54
Sample ID:	20-AC-007DL	Date Analyzed:	08/17/09 14:54
Lab Samp ID:	H151-02I	Dilution Factor:	100
Lab File ID:	RHD332	Matrix :	WATER
Ext Btch ID:	VO94H15	% Moisture :	NA
Calib. Ref.:	RHD035	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	ND	100	20
1,1-DICHLOROETHENE	140	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	2500	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	110	100	20
TRICHLOROETHENE	1300	100	20
VINYL CHLORIDE	320	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-120
4-BROMOFLUOROBENZENE	112	75-120
TOLUENE-D8	110	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/14/09 19:35
Sample ID:	20-AC-008	Date Analyzed:	08/14/09 19:35
Lab Samp ID:	H151-03	Dilution Factor:	1
Lab File ID:	RHD307	Matrix :	WATER
Ext Btch ID:	VO94H14	% Moisture :	NA
Calib. Ref.:	RHD035	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.75J	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	1.9	1.0	0.20
1,1-DICHLOROETHANE	15	1.0	0.20
1,1-DICHLOROETHENE	180E	1.0	0.20
1,2-DICHLOROETHANE	2.2	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	45E	1.0	0.20
TETRACHLOROETHENE	0.24J	1.0	0.20
TRANS-1,2-DICHLOROETHENE	94E	1.0	0.20
TRICHLOROETHENE	65E	1.0	0.20
VINYL CHLORIDE	210E	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	118	70-120
4-BROMOFLUOROBENZENE	117	75-120
TOLUENE-D8	111	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/17/09 12:26
Sample ID	: 20-AC-008DL	Date Analyzed:	08/17/09 12:26
Lab Samp ID	: H151-03T	Dilution Factor:	25
Lab File ID	: RHD327	Matrix	: WATER
Ext Btch ID	: VO94H15	% Moisture	: NA
Calib. Ref.	: RHD035	Instrument ID	: T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	19J	25	5.0
1,1-DICHLOROETHENE	800	25	5.0
1,2-DICHLOROETHANE	6.0J	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	1900E	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	81	25	5.0
TRICHLOROETHENE	1400E	25	5.0
VINYL CHLORIDE	180	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	116	70-120
4-BROMOFLUOROBENZENE	108	75-120
TOLUENE-D8	107	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/17/09 14:24
Sample ID:	20-AC-008DL	Date Analyzed:	08/17/09 14:24
Lab Samp ID:	H151-03I	Dilution Factor:	100
Lab File ID:	RHD331	Matrix :	WATER
Ext Btch ID:	VO94H15	% Moisture :	NA
Calib. Ref.:	RHD035	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	ND	100	20
1,1-DICHLOROETHENE	850	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	1900	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	85J	100	20
TRICHLOROETHENE	1500	100	20
VINYL CHLORIDE	190	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	114	70-120
4-BROMOFLUOROBENZENE	117	75-120
TOLUENE-D8	108	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/17/09 15:53
Sample ID:	20-AC-009	Date Analyzed:	08/17/09 15:53
Lab Samp ID:	H151-04R	Dilution Factor:	1
Lab File ID:	RHD334	Matrix :	WATER
Ext Btch ID:	VO94H15	% Moisture :	NA
Calib. Ref.:	RHD035	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	0.83J	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	69E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	1.2	1.0	0.20
TRICHLOROETHENE	94E	1.0	0.20
VINYL CHLORIDE	2.7	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	124*	70-120
4-BROMOFLUOROBENZENE	109	75-120
TOLUENE-D8	105	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/17/09 16:57
Sample ID:	20-AC-009DL	Date Analyzed:	08/17/09 16:57
Lab Samp ID:	H151-04T	Dilution Factor:	10
Lab File ID:	RHD336	Matrix :	WATER
Ext Btch ID:	VO94H15	% Moisture :	NA
Calib. Ref.:	RHD035	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHENE	ND	10	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	57	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	ND	10	2.0
TRICHLOROETHENE	85	10	2.0
VINYL CHLORIDE	2.7J	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	119	70-120
4-BROMOFLUOROBENZENE	113	75-120
TOLUENE-D8	105	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/14/09 17:37
Sample ID:	20-TB-003	Date Analyzed:	08/14/09 17:37
Lab Samp ID:	H151-07	Dilution Factor:	1
Lab File ID:	RHD303	Matrix :	WATER
Ext Btch ID:	VO94H14	% Moisture :	NA
Calib. Ref.:	RHD035	Instrument ID :	T-O94

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	100	70-120
4-BROMOFLUOROBENZENE	109	75-120
TOLUENE-D8	111	85-120

METHOD 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/26/09 00:34
Sample ID:	20-AC-010	Date Analyzed:	08/26/09 00:34
Lab Samp ID:	H151-05T	Dilution Factor:	390
Lab File ID:	RHB639	Matrix :	SOIL
Ext Btch ID:	VO03H34	% Moisture :	16.3
Calib. Ref.:	RHB292	Instrument ID :	T-O03

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	2300	930
1,1,2,2-TETRACHLOROETHANE	ND	2300	930
1,1,2-TRICHLOROETHANE	ND	2300	930
1,1-DICHLOROETHANE	ND	2300	930
1,1-DICHLOROETHENE	ND	2300	930
1,2-DICHLOROETHANE	ND	2300	930
CHLOROETHANE	ND	2300	930
CHLOROMETHANE	ND	4700	930
CIS-1,2-DICHLOROETHENE	26000	2300	930
TETRACHLOROETHENE	ND	2300	930
TRANS-1,2-DICHLOROETHENE	1800J	2300	930
TRICHLOROETHENE	200000E	2300	930
VINYL CHLORIDE	2200J	2300	930

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	100	70-140
4-BROMOFLUOROBENZENE	141*	85-120
TOLUENE-D8	103	85-115

Methanol Extraction Date: 08/13/09 19:40

METHOD 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/26/09 00:04
Sample ID:	20-AC-010DL	Date Analyzed:	08/26/09 00:04
Lab Samp ID:	H151-05I	Dilution Factor:	7800
Lab File ID:	RHB638	Matrix :	SOIL
Ext Btch ID:	VO03H34	% Moisture :	16.3
Calib. Ref.:	RHB292	Instrument ID :	T-O03

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	47000	19000
1,1,2,2-TETRACHLOROETHANE	ND	47000	19000
1,1,2-TRICHLOROETHANE	ND	47000	19000
1,1-DICHLOROETHANE	ND	47000	19000
1,1-DICHLOROETHENE	ND	47000	19000
1,2-DICHLOROETHANE	ND	47000	19000
CHLOROETHANE	ND	47000	19000
CHLOROMETHANE	ND	93000	19000
CIS-1,2-DICHLOROETHENE	25000J	47000	19000
TETRACHLOROETHENE	ND	47000	19000
TRANS-1,2-DICHLOROETHENE	ND	47000	19000
TRICHLOROETHENE	210000	47000	19000
VINYL CHLORIDE	ND	47000	19000

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	DO	70-140
4-BROMOFLUOROBENZENE	DO	85-120
TOLUENE-D8	DO	85-115

DO: Diluted Out

METHOD 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/26/09 12:41
Sample ID:	20-AC-012	Date Analyzed:	08/26/09 12:41
Lab Samp ID:	H151-06R	Dilution Factor:	0.83
Lab File ID:	RHC613	Matrix :	SOIL
Ext Btch ID:	VO67H31	% Moisture :	17.1
Calib. Ref.:	RHC233	Instrument ID :	T-O67

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.0	2.0
1,1,2,2-TETRACHLOROETHANE	ND	5.0	2.0
1,1,2-TRICHLOROETHANE	ND	5.0	2.0
1,1-DICHLOROETHANE	4.3J	5.0	2.0
1,1-DICHLOROETHENE	23	5.0	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	620E	5.0	2.0
TETRACHLOROETHENE	ND	5.0	2.0
TRANS-1,2-DICHLOROETHENE	29	5.0	2.0
TRICHLOROETHENE	440E	5.0	2.0
VINYL CHLORIDE	92	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-140
4-BROMOFLUOROBENZENE	94	85-120
TOLUENE-D8	91	85-115

Preservation Date: 08/14/09 17:30

METHOD 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/13/09
Project	: CTO 20, ALAMEDA	Date Received:	08/14/09
Batch No.	: 09H151	Date Extracted:	08/27/09 17:30
Sample ID:	20-AC-012DL	Date Analyzed:	08/27/09 17:30
Lab Samp ID:	H151-06T	Dilution Factor:	45
Lab File ID:	RHP491	Matrix :	SOIL
Ext Btch ID:	VO02H28	% Moisture :	17.1
Calib. Ref.:	RGP259	Instrument ID :	T-O02

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	270	110
1,1,2,2-TETRACHLOROETHANE	ND	270	110
1,1,2-TRICHLOROETHANE	ND	270	110
1,1-DICHLOROETHANE	ND	270	110
1,1-DICHLOROETHENE	ND	270	110
1,2-DICHLOROETHANE	ND	270	110
CHLOROETHANE	ND	270	110
CHLOROMETHANE	ND	540	110
CIS-1,2-DICHLOROETHENE	780	270	110
TETRACHLOROETHENE	ND	270	110
TRANS-1,2-DICHLOROETHENE	ND	270	110
TRICHLOROETHENE	1200	270	110
VINYL CHLORIDE	ND	270	110

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	94	70-140
4-BROMOFLUOROBENZENE	106	85-120
TOLUENE-D8	90	85-115

Methanol Extraction Date: 08/13/09 19:40

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 25947

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: ALAMEDA OWS-163
PROJECT LOCATION: ALAMEDA CA
SAMPLER NAME: M O'HARE
PROJECT CONTACT: DIANE SUZUKI
PURCHASE ORDER NO.: 1034131-2
PROJECT NO.: 3210-020
AIRBILL NUMBER: 8622 9395 7647
PROJECT CONTACT PHONE NUMBER: 949-756-7584
LABORATORY NAME: EMAX
LABORATORY ID (FOR LABORATORY): 09H164

ANALYSES REQUIRED: 8260B/5030 VOCs SHORT LIST; 8260B/5035 VOCs SHORT LIST

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B/5030 VOCs SHORT LIST	8260B/5035 VOCs SHORT LIST	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-AC-013	8/14/09	0802	3	X		W	10	X		UNPRES	~~S4-SS~~ MS01 S4-HP-MIP14	31'	36'	N
20-AC-014	8/14/09	0846	3	X		W	10	X		UNPRES	S4-HP-MIP14	44'	49'	N
20-AC-015	8/14/09	0941	2	X		S	10		X	1 8OZ GLASS JAR, 1 AI BAG W/ 3X5g ENVIORS	S4-SS-MIP07	11'	16'	N
20-AC-016	8/14/09	1020	6		X	S	10		X	3 8OZ GLASS JARS, 3 X AI BAGS W/ 3X5g ENVIORSM. MS/MSD	S4-SS-MIP14	10'	15'	MS
20-AC-017	8/14/09	1225	2	X	~~X~~ JASON	S	10		X	1 8OZ GLASS JAR, 1 AI BAG W/ 3X5g ENVIORS	S4-OWS163-HP13	10'	15'	N
20-AC-018	8/14/09	1247	3	X		W	10	X		UNPRES	S4-OWS163-HP13	17'	22'	N
20-AC-019	8/14/09	1341	3	X		W	10	X		UNPRES	S4-OWS163-HP13	24'	29'	N
20-AC-020	8/14/09	1443	3	X		W	10	X		UNPRES	S4-OWS163-HP13	31'	36'	N
20-TB-004	8/14/09	0730 ~~N/A~~	1	X		W	10	X		HCL	TRIP BLANK	—	—	TB

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	8/14/09	FEDEX
COMPANY: TETRA TECH	TIME: 1830	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

Project Information Section
Do not submit to Laboratory

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/18/09 21:37
Sample ID:	20-AC-013	Date Analyzed:	08/18/09 21:37
Lab Samp ID:	H164-01	Dilution Factor:	1
Lab File ID:	RHQ504	Matrix :	WATER
Ext Btch ID:	VO05H22	% Moisture :	NA
Calib. Ref.:	RHQ258	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	1.4	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	32	1.0	0.20
1,1-DICHLOROETHANE	57E	1.0	0.20
1,1-DICHLOROETHENE	97E	1.0	0.20
1,2-DICHLOROETHANE	83E	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	88E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	56E	1.0	0.20
TRICHLOROETHENE	14	1.0	0.20
VINYL CHLORIDE	1.9	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	104	70-120
4-BROMOFLUOROBENZENE	106	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/20/09 04:26
Sample ID:	20-AC-013DL	Date Analyzed:	08/20/09 04:26
Lab Samp ID:	H164-01T	Dilution Factor:	50
Lab File ID:	RHQ568	Matrix :	WATER
Ext Btch ID:	VO05H24	% Moisture :	NA
Calib. Ref.:	RHQ258	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	30J	50	10
1,1-DICHLOROETHANE	65	50	10
1,1-DICHLOROETHENE	12000E	50	10
1,2-DICHLOROETHANE	91	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	95	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	63	50	10
TRICHLOROETHENE	15J	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	100	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/20/09 03:29
Sample ID:	20-AC-013DL	Date Analyzed:	08/20/09 03:29
Lab Samp ID:	H164-01I	Dilution Factor:	1000
Lab File ID:	RHQ566	Matrix :	WATER
Ext Btch ID:	VO05H24	% Moisture :	NA
Calib. Ref.:	RHQ258	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1000	200
1,1,2,2-TETRACHLOROETHANE	ND	1000	200
1,1,2-TRICHLOROETHANE	ND	1000	200
1,1-DICHLOROETHANE	ND	1000	200
1,1-DICHLOROETHENE	11000	1000	200
1,2-DICHLOROETHANE	ND	500	200
CHLOROETHANE	ND	500	200
CHLOROMETHANE	ND	1000	200
CIS-1,2-DICHLOROETHENE	ND	1000	200
TETRACHLOROETHENE	ND	1000	200
TRANS-1,2-DICHLOROETHENE	ND	1000	200
TRICHLOROETHENE	ND	1000	200
VINYL CHLORIDE	ND	500	200

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	100	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/21/09 06:57
Sample ID:	20-AC-014	Date Analyzed:	08/21/09 06:57
Lab Samp ID:	H164-02N	Dilution Factor:	1
Lab File ID:	RHQ623	Matrix :	WATER
Ext Btch ID:	VO05H26	% Moisture :	NA
Calib. Ref.:	RHQ258	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	0.32J	1.0	0.20
1,1-DICHLOROETHENE	1.2	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	56E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	1.5	1.0	0.20
TRICHLOROETHENE	62E	1.0	0.20
VINYL CHLORIDE	3.4	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
4-BROMOFLUOROBENZENE	102	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/20/09 11:18
Sample ID:	20-AC-014DL	Date Analyzed:	08/20/09 11:18
Lab Samp ID:	H164-02T	Dilution Factor:	10
Lab File ID:	RHQ582	Matrix :	WATER
Ext Btch ID:	VO05H25	% Moisture :	NA
Calib. Ref.:	RHQ258	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	10	2.0
1,1,2,2-TETRACHLOROETHANE	ND	10	2.0
1,1,2-TRICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHANE	ND	10	2.0
1,1-DICHLOROETHENE	ND	10	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	56	10	2.0
TETRACHLOROETHENE	ND	10	2.0
TRANS-1,2-DICHLOROETHENE	ND	10	2.0
TRICHLOROETHENE	60	10	2.0
VINYL CHLORIDE	3.7J	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/18/09 22:36
Sample ID	: 20-AC-018	Date Analyzed:	08/18/09 22:36
Lab Samp ID	: H164-06	Dilution Factor:	1
Lab File ID	: RHQ506	Matrix	: WATER
Ext Btch ID	: VO05H22	% Moisture	: NA
Calib. Ref.	: RHQ258	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	0.32J	1.0	0.20
1,1-DICHLOROETHANE	3.6	1.0	0.20
1,1-DICHLOROETHENE	110E	1.0	0.20
1,2-DICHLOROETHANE	0.24J	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	110E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	13	1.0	0.20
TRICHLOROETHENE	15	1.0	0.20
VINYL CHLORIDE	4.4	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	106	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/21/09 01:36
Sample ID	: 20-AC-018DL	Date Analyzed:	08/21/09 01:36
Lab Samp ID	: H164-06T	Dilution Factor:	50
Lab File ID	: RHQ612	Matrix	: WATER
Ext Btch ID	: VO05H26	% Moisture	: NA
Calib. Ref.	: RHQ258	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	980	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	120	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	14J	50	10
TRICHLOROETHENE	18J	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	100	75-120
TOLUENE-D8	101	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/18/09 23:04
Sample ID:	20-AC-019	Date Analyzed:	08/18/09 23:04
Lab Samp ID:	H164-07	Dilution Factor:	1
Lab File ID:	RHQ507	Matrix :	WATER
Ext Btch ID:	VO05H22	% Moisture :	NA
Calib. Ref.:	RHQ258	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	4.8	1.0	0.20
1,1-DICHLOROETHANE	8.3	1.0	0.20
1,1-DICHLOROETHENE	130E	1.0	0.20
1,2-DICHLOROETHANE	6.7	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	62E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	13	1.0	0.20
TRICHLOROETHENE	14	1.0	0.20
VINYL CHLORIDE	2.5	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/20/09 03:58
Sample ID:	20-AC-019DL	Date Analyzed:	08/20/09 03:58
Lab Samp ID:	H164-07T	Dilution Factor:	50
Lab File ID:	RHQ567	Matrix :	WATER
Ext Btch ID:	VO05H24	% Moisture :	NA
Calib. Ref.:	RHQ258	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	50	10
1,1,2,2-TETRACHLOROETHANE	ND	50	10
1,1,2-TRICHLOROETHANE	ND	50	10
1,1-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	1600	50	10
1,2-DICHLOROETHANE	ND	25	10
CHLOROETHANE	ND	25	10
CHLOROMETHANE	ND	50	10
CIS-1,2-DICHLOROETHENE	69	50	10
TETRACHLOROETHENE	ND	50	10
TRANS-1,2-DICHLOROETHENE	14J	50	10
TRICHLOROETHENE	15J	50	10
VINYL CHLORIDE	ND	25	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	109	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	100	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/18/09 23:33
Sample ID	: 20-AC-020	Date Analyzed:	08/18/09 23:33
Lab Samp ID	: H164-08	Dilution Factor:	1
Lab File ID	: RHQ508	Matrix	: WATER
Ext Btch ID	: VO05H22	% Moisture	: NA
Calib. Ref.	: RHQ258	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	8.4	1.0	0.20
1,1-DICHLOROETHANE	16	1.0	0.20
1,1-DICHLOROETHENE	57E	1.0	0.20
1,2-DICHLOROETHANE	17	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	31	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	18	1.0	0.20
TRICHLOROETHENE	4.2	1.0	0.20
VINYL CHLORIDE	1.8	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	113	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/20/09 02:32
Sample ID:	20-AC-020DL	Date Analyzed:	08/20/09 02:32
Lab Samp ID:	H164-08T	Dilution Factor:	250
Lab File ID:	RHQ564	Matrix :	WATER
Ext Btch ID:	VO05H24	% Moisture :	NA
Calib. Ref.:	RHQ258	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	250	50
1,1,2,2-TETRACHLOROETHANE	ND	250	50
1,1,2-TRICHLOROETHANE	ND	250	50
1,1-DICHLOROETHANE	ND	250	50
1,1-DICHLOROETHENE	3100	250	50
1,2-DICHLOROETHANE	ND	120	50
CHLOROETHANE	ND	120	50
CHLOROMETHANE	ND	250	50
CIS-1,2-DICHLOROETHENE	ND	250	50
TETRACHLOROETHENE	ND	250	50
TRANS-1,2-DICHLOROETHENE	ND	250	50
TRICHLOROETHENE	ND	250	50
VINYL CHLORIDE	ND	120	50

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	107	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	99	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/18/09 21:08
Sample ID	: 20-TB-004	Date Analyzed:	08/18/09 21:08
Lab Samp ID	: H164-09	Dilution Factor:	1
Lab File ID	: RHQ503	Matrix	: WATER
Ext Btch ID	: VO05H22	% Moisture	: NA
Calib. Ref.	: RHQ258	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
4-BROMOFLUOROBENZENE	99	75-120
TOLUENE-D8	101	85-120

METHOD 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/26/09 18:33
Sample ID:	20-AC-015	Date Analyzed:	08/26/09 18:33
Lab Samp ID:	H164-03	Dilution Factor:	0.83
Lab File ID:	RHC624	Matrix :	SOIL
Ext Btch ID:	VO67H31	% Moisture :	16.1
Calib. Ref.:	RHC233	Instrument ID :	T-O67

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	4.9	2.0
1,1,2,2-TETRACHLOROETHANE	ND	4.9	2.0
1,1,2-TRICHLOROETHANE	ND	4.9	2.0
1,1-DICHLOROETHANE	8.0	4.9	2.0
1,1-DICHLOROETHENE	5.0	4.9	2.0
1,2-DICHLOROETHANE	ND	4.9	2.0
CHLOROETHANE	ND	4.9	2.0
CHLOROMETHANE	ND	9.9	2.0
CIS-1,2-DICHLOROETHENE	230E	4.9	2.0
TETRACHLOROETHENE	ND	4.9	2.0
TRANS-1,2-DICHLOROETHENE	24	4.9	2.0
TRICHLOROETHENE	210E	4.9	2.0
VINYL CHLORIDE	310E	4.9	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	70-140
4-BROMOFLUOROBENZENE	82*	85-120
TOLUENE-D8	90	85-115

Presevation Date: 08/15/09 11:50

METHOD 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/27/09 19:35
Sample ID:	20-AC-015DL	Date Analyzed:	08/27/09 19:35
Lab Samp ID:	H164-03T	Dilution Factor:	40
Lab File ID:	RHP495	Matrix :	SOIL
Ext Btch ID:	VO02H28	% Moisture :	16.1
Calib. Ref.:	RGP259	Instrument ID :	T-O02

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	240	95
1,1,2,2-TETRACHLOROETHANE	ND	240	95
1,1,2-TRICHLOROETHANE	ND	240	95
1,1-DICHLOROETHANE	ND	240	95
1,1-DICHLOROETHENE	ND	240	95
1,2-DICHLOROETHANE	ND	240	95
CHLOROETHANE	ND	240	95
CHLOROMETHANE	ND	480	95
CIS-1,2-DICHLOROETHENE	3600	240	95
TETRACHLOROETHENE	ND	240	95
TRANS-1,2-DICHLOROETHENE	ND	240	95
TRICHLOROETHENE	14000	240	95
VINYL CHLORIDE	320	240	95

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	95	70-140
4-BROMOFLUOROBENZENE	102	85-120
TOLUENE-D8	93	85-115

Methanol Extraction Date: 08/15/09 12:15

METHOD 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/26/09 19:37
Sample ID:	20-AC-016	Date Analyzed:	08/26/09 19:37
Lab Samp ID:	H164-04	Dilution Factor:	0.82
Lab File ID:	RHC626	Matrix :	SOIL
Ext Btch ID:	VO67H31	% Moisture :	15.7
Calib. Ref.:	RHC233	Instrument ID :	T-O67

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	4.9	1.9
1,1,2,2-TETRACHLOROETHANE	ND	4.9	1.9
1,1,2-TRICHLOROETHANE	ND	4.9	1.9
1,1-DICHLOROETHANE	12	4.9	1.9
1,1-DICHLOROETHENE	5.8	4.9	1.9
1,2-DICHLOROETHANE	ND	4.9	1.9
CHLOROETHANE	ND	4.9	1.9
CHLOROMETHANE	ND	9.7	1.9
CIS-1,2-DICHLOROETHENE	280E	4.9	1.9
TETRACHLOROETHENE	2.7J	4.9	1.9
TRANS-1,2-DICHLOROETHENE	28	4.9	1.9
TRICHLOROETHENE	260E	4.9	1.9
VINYL CHLORIDE	380E	4.9	1.9

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	70-140
4-BROMOFLUOROBENZENE	88	85-120
TOLUENE-D8	90	85-115

Preservation Date: 08/15/09 11:50

METHOD 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/27/09 19:04
Sample ID:	20-AC-016DL	Date Analyzed:	08/27/09 19:04
Lab Samp ID:	H164-04T	Dilution Factor:	41
Lab File ID:	RHP494	Matrix :	SOIL
Ext Btch ID:	VO02H28	% Moisture :	15.7
Calib. Ref.:	RGP259	Instrument ID :	T-O02

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	240	97
1,1,2,2-TETRACHLOROETHANE	ND	240	97
1,1,2-TRICHLOROETHANE	ND	240	97
1,1-DICHLOROETHANE	ND	240	97
1,1-DICHLOROETHENE	ND	240	97
1,2-DICHLOROETHANE	ND	240	97
CHLOROETHANE	ND	240	97
CHLOROMETHANE	ND	490	97
CIS-1,2-DICHLOROETHENE	3500	240	97
TETRACHLOROETHENE	ND	240	97
TRANS-1,2-DICHLOROETHENE	ND	240	97
TRICHLOROETHENE	9100	240	97
VINYL CHLORIDE	250	240	97

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	81	70-140
4-BROMOFLUOROBENZENE	90	85-120
TOLUENE-D8	79*	85-115

Methanol Extraction Date: 08/15/09 12:15

METHOD 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/14/09
Project	: CTO 20, ALAMEDA	Date Received:	08/15/09
Batch No.	: 09H164	Date Extracted:	08/27/09 12:57
Sample ID:	20-AC-017	Date Analyzed:	08/27/09 12:57
Lab Samp ID:	H164-05R	Dilution Factor:	0.85
Lab File ID:	RHC652	Matrix :	SOIL
Ext Btch ID:	VO67H33	% Moisture :	16.7
Calib. Ref.:	RHC233	Instrument ID :	T-O67

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.1	2.0
1,1,2,2-TETRACHLOROETHANE	ND	5.1	2.0
1,1,2-TRICHLOROETHANE	ND	5.1	2.0
1,1-DICHLOROETHANE	ND	5.1	2.0
1,1-DICHLOROETHENE	13	5.1	2.0
1,2-DICHLOROETHANE	ND	5.1	2.0
CHLOROETHANE	ND	5.1	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	ND	5.1	2.0
TETRACHLOROETHENE	ND	5.1	2.0
TRANS-1,2-DICHLOROETHENE	ND	5.1	2.0
TRICHLOROETHENE	ND	5.1	2.0
VINYL CHLORIDE	ND	5.1	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	70-140
4-BROMOFLUOROBENZENE	96	85-120
TOLUENE-D8	93	85-115

Preservation Date: 08/15/09 11:50

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 25955

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
OWS-163 ALAMEDA	1034131-2
PROJECT LOCATION	PROJECT NO.
ALAMEDA CA	3210-020
SAMPLER NAME	AIRBILL NUMBER
M. O'HARE	8622939576 58
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
DIANE SUZUKI	949-756-7584

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY): 09H172

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED: 8260B/5030 VOCs SHORT LIST

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B/5030 VOCs SHORT LIST	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
20-AC-021	8/17/09	1040	3	X		W	10	X	NONPRESERVED	S4-OWS163-HP13	44'	49'	N
20-TB-005	8/17/09	1000	1	X		W	10	X	HCL ~~NONPRESERVED~~	TRIP BLANK	–	–	TB

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
MS	8/17/09	FEDEX
COMPANY: TTECI	TIME: 1645	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/17/09
Project	: CTO 20, ALAMEDA	Date Received:	08/18/09
Batch No.	: 09H172	Date Extracted:	08/20/09 02:20
Sample ID:	20-AC-021	Date Analyzed:	08/20/09 02:20
Lab Samp ID:	H172-01	Dilution Factor:	1
Lab File ID:	RHC441	Matrix :	WATER
Ext Btch ID:	VO67H22	% Moisture :	NA
Calib. Ref.:	RHC213	Instrument ID :	T-O67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	0.96J	1.0	0.20
1,1-DICHLOROETHENE	87E	1.0	0.20
1,2-DICHLOROETHANE	0.38J	0.50	0.20
CHLOROETHANE	0.28J	0.50	0.20
CHLOROMETHANE	0.24J	1.0	0.20
CIS-1,2-DICHLOROETHENE	58E	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	27	1.0	0.20
TRICHLOROETHENE	6.4	1.0	0.20
VINYL CHLORIDE	5.3	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	70-120
4-BROMOFLUOROBENZENE	101	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/17/09
Project	: CTO 20, ALAMEDA	Date Received:	08/18/09
Batch No.	: 09H172	Date Extracted:	08/21/09 03:00
Sample ID:	20-AC-021DL	Date Analyzed:	08/21/09 03:00
Lab Samp ID:	H172-01T	Dilution Factor:	25
Lab File ID:	RHW558	Matrix :	WATER
Ext Btch ID:	VO06H27	% Moisture :	NA
Calib. Ref.:	RHW095	Instrument ID :	T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	5.0
1,1,2,2-TETRACHLOROETHANE	ND	25	5.0
1,1,2-TRICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHANE	ND	25	5.0
1,1-DICHLOROETHENE	2500E	25	5.0
1,2-DICHLOROETHANE	ND	12	5.0
CHLOROETHANE	ND	12	5.0
CHLOROMETHANE	ND	25	5.0
CIS-1,2-DICHLOROETHENE	54	25	5.0
TETRACHLOROETHENE	ND	25	5.0
TRANS-1,2-DICHLOROETHENE	24J	25	5.0
TRICHLOROETHENE	5.2J	25	5.0
VINYL CHLORIDE	ND	12	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	102	70-120
4-BROMOFLUOROBENZENE	98	75-120
TOLUENE-D8	96	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/17/09
Project	: CTO 20, ALAMEDA	Date Received:	08/18/09
Batch No.	: 09H172	Date Extracted:	08/21/09 13:54
Sample ID:	20-AC-021DL	Date Analyzed:	08/21/09 13:54
Lab Samp ID:	H172-01I	Dilution Factor:	100
Lab File ID:	RHW577	Matrix :	WATER
Ext Btch ID:	VO06H28	% Moisture :	NA
Calib. Ref.:	RHW095	Instrument ID :	T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	100	20
1,1,2,2-TETRACHLOROETHANE	ND	100	20
1,1,2-TRICHLOROETHANE	ND	100	20
1,1-DICHLOROETHANE	ND	100	20
1,1-DICHLOROETHENE	2700	100	20
1,2-DICHLOROETHANE	ND	50	20
CHLOROETHANE	ND	50	20
CHLOROMETHANE	ND	100	20
CIS-1,2-DICHLOROETHENE	55J	100	20
TETRACHLOROETHENE	ND	100	20
TRANS-1,2-DICHLOROETHENE	23J	100	20
TRICHLOROETHENE	ND	100	20
VINYL CHLORIDE	ND	50	20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	106	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	98	85-120

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TETRA TECH EC, INC.	Date Collected:	08/17/09
Project	: CTO 20, ALAMEDA	Date Received:	08/18/09
Batch No.	: 09H172	Date Extracted:	08/20/09 16:22
Sample ID	: 20-TB-005	Date Analyzed:	08/20/09 16:22
Lab Samp ID	: H172-02	Dilution Factor:	1
Lab File ID	: RHW538	Matrix	: WATER
Ext Btch ID	: VO06H26	% Moisture	: NA
Calib. Ref.	: RHW095	Instrument ID	: T-O06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.20
CHLOROMETHANE	0.23J	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TETRACHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-120
4-BROMOFLUOROBENZENE	97	75-120
TOLUENE-D8	94	85-120

APPENDIX C

CONTINUOUS CORE LITHOLOGIC LOGS
(on CD only)

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TETRA TECH EC, INC

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 20 3210
LOCATION: NORTH OF OWS163 EXCAVATION
BORING ID: S4-CC1
GEOLOGIST: DUDUS / O'HARE

DATE DRILLED: 7/28/09 : 0-6' / 7/29/09 : 6-20'
DRILLING COMPANY: COLUMBIA / WDC HAND AUGER / GEOPROBE DPT
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
1				0848	0	/			SM / 0.6'-1.5'	TR	80	20	N	F-M	/	/	P	10YR 3/4	DAMP		7" CONCRETE CORED AT SFC; 1' SHELL FRAGS (TRACE)
1.5									1.5'-3.5'	— AS ABOVE								10YR 6/4	DAMP		1.5' COLOR CHANGE; TR SHELLS TO LT YELLOWISH BR. (10YR 6/4)
2				0851	0	/															TRACE SHELLS TO 3.5'
2.5																					
3				0857	0	/			3.5'-3.7'	AS ABOVE								10GY 4/1 10YR 3/1	M		
3.5				0901	0.9	/			3.7'-4.2'	CONCRETE											
4				1457	3.2	/			CL / 4.2'-4.5'	/	40	60	M	F	—	—	P	10GY 2.5/N 10YR 3/3	MOIST M	—	3'8" REFUSAL: CORED THROUGH 0.5' CONCRETE SLAB
4.5									SM / 4.5'-5.0'	/	70	30	N	F-M	/	/	P				
5				1606	4.9	/			5.0'-6.0'	— AS ABOVE								10YR 5/2	MOIST		RED PAINT ON SOIL BENEATH SLAB
6			6-8'	0913 7/29	2.4	/			SM / 6'-9.2'	/	80	20	N	F-M	/	/	P	10YR 4/2	WET		MOISTURE AT BOTTOM OF HOLE DUE TO USE OF WATER TO COLD CONCRETE SLAB ON 7/28
7																					
8			8-10'	0914 7/29	23.5	/															PHOTOS #2 OF CUTTINGS
9									SM / 9.2'-10.0'	/	70	30	— AS ABOVE								> 6-20' CORED WITH GEOPROBE
10																					

Notes:

From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi / Med / Low / Non	F / M / C	F / C	Inches	Well / Poor	Color Chart	Dry / Moist / Wet	A / Sa / Sr / R	Odor, Staining, Mineralogy, Structure, etc.

TETRA TECH EC, INC

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 20
LOCATION: ALAMEDA
BORING ID: SH-CC1 (cont'd)
GEOLOGIST: DUDUS IOWARE

DATE DRILLED: 7/29/08
DRILLING COMPANY: COLUMBIA / WDC
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
10			10-12'	0919	144	/			SM / 10-11'	/	75	25	N	F				ASABOVE		MOIST	SATURATED @ 6'
11																					
12			12-14'	0920	179	/			SM / 11-13'	/	80	20	N	F				10YR 4/4		WET	DK. YELLOWISH BROWN
13									SM / 13-14'	/	70	30	N	F				10YR 6/1		WET	GREY
14			14-15'	0921	140	/			SM / 14-15'	/	80	20	N	F				10YR 4/4		WET	
15			15-17'	0926	172	/			15-17		ASABOVE										
16																					
17			17-20'	0927	351	/			SM / 17-20	/	80	20	N	F-M				10YR 4/4		WET	
18																					
19																					
20																					TD = 20'

Notes:

From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi Med Low Non	F M C	F C	Inches	Well Poor	Color Chart	Dry Moist Wet	A Sa Sr R	Odor, Staining, Mineralogy, Structure, etc.

TETRA TECH EC, INC.

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 20. 3210
LOCATION: SW CORNER INSIDE BLDG 163
BORING ID: S4 CC-2
GEOLOGIST: DUDUS / O'HARE

DATE DRILLED: 7/28/09 - 7/29/09
DRILLING COMPANY: COLUMBIA / WDC
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
1				0958	4.8	/			SC / 1-2	30	50	20	MOD	F-C		1"	7.5YR 4/6		M	SR-A	7" CONCRETE CORE HAND AUGERED TO 6'
2				1003	5.3	/			SC / 2-3	30	40	30	MOD	F-C		1.5"	AS ABOVE		M	SR-A	
3				1005	9.8	/			SC / 3-3.8'	5	65	30	MOD	F-C		1.0	AS ABOVE		M	SR-A	3.8' REFUSAL
3.8									3.8-5.0'	—	CONCRETE										CORED THROUGH CONCRETE SLAB TO 5.0' (1.2' thick)
5				1628	8.2	/															
5.5									SM / 5-6	/	80	20	N	F-M			10YR 4/2		W		MOISTURE IN HOLE DUE TO USE OF WATER TO CORE CONCRETE
6			G-8	1255 7/29	0.7	/															
7									SM / 6-8		85	15	N	F-M			10YR 3/1		WET		— V. DK. GREY 1 PHOTO OF CUTTINGS 1 PHOTO OF CONCRETE CORES
8			8-10	1256 7/29	25.5	/															
9									SM / 8-9.4		85	15	N	F-M			10YR 2/1				CONTINUOUS CORE FROM 6 to 20' BROWN
10									SM / 9.4-10		75	25	N	F-M			10YR 2/1				

Notes:

From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi / Med / Low / Non	F / M / C	F / C	Inches	Well / Poor	Color Chart	Dry / Moist / Wet	A / Sa / Sr / R	Odor, Staining, Mineralogy, Structure, etc.

LOGGING ~~WAS~~ INSIDE UNDER FLUORESCENT LIGHT

TETRA TECH EC, INC.

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 20 3210
LOCATION: INSIDE 163
BORING ID: S4 - CC2
GEOLOGIST: O'HARE - DUDUS

DATE DRILLED: 7/29/09
DRILLING COMPANY: COLUMBIA/WDC
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
10									SM/ 10-11.6		75	25	N	FM				10YR 5/3	W		COLOR CHANGE @ 10
11		10-12'		1258	179	/			SM/ 11.6-15		80	20	N	F-M		A:	ABOVE				BROWN
12		12-14'		1259	161	/															
13																					
14		14'		1300	158	/															
15																					
16		15-17'		1302	35.9	/			SM/ 15-18' LIKELY GLOUCK		80	20	N	F				10YR 5/4			YELLOWISH BROWN
17																					
18		17-19'		1303	97.2	/															
19		20'		1304	80.4	/															
20																					TD 20
																					PHOTO OF CORE XS

Notes:

From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi Med Low Non	F M C	F C	Inches	Well Poor	Color Chart	Dry Moist Wet	A Sa Sr R	Odor, Staining, Mineralogy, Structure, etc.

TETRA TECH EC, INC

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 20. 3210
LOCATION: OUTSIDE SW CORNER BLDG 163
BORING ID: 54 CC3
GEOLOGIST: DUDUS / O'HARE

DATE DRILLED: 7/28/09 - 7/29/09
DRILLING COMPANY: COLUMBIA / WDC
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
																					7" CONCRETE CORE AT SFC
1				0918	Ø	/			SM / 1.0-1.5	TR	80	20	N	F-M				10YR 3/4	M		
1.5									SP-SM / 1.5-2.0	/	90	10	N	F-M				10YR 5/4	M		1.5' TR SHELL FRAGS
2				0920	Ø	/			SM / 2.0-3.2	/	80	20	AS ABOVE								2.5' GLASS SHARD
																					TR SHELL FRAGS TO 3.0'
3				0921	2.8	/	7/28														
3.2									SP-SM / 3.2-4.2	/	90	10	N	AS ABOVE			1ALFY	10YR 3/1	M		
4				0924	3.0	/			CL / 4.2-5.5	TR	40	60	MOD	-	-	-	1ALFY	2.5/N	M		4.2' TR SHELL FRAGS, WOOD FRAGS,
4.2				0928	2.3	/															TR CERP. BRICK FRAGS
5				0930	1.3	/															4.5' NAIL WOOD FRAG, WHITE CALC NODS
5.5									CL / 5.5-6.0		40	60	N	F-M			10YR	2/1	M		5.0' LARGE NAIL
6				0939	1.5	/															
7		6-8	7/29	1050	2.0	/			SM / 6-9.8'		80	20	N	F-M			10YR	4/2	WET		CONTINUOUS CORE WITH
																					NO PROBE FROM 6.0'
8		8-10	7/29	1051	169	/															
9									SM / 9.8-10'		95	25	N	F-M			10YR	4/2	WET		
10																					

Notes:	From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi Med Low Non	F M C	F C	Inches	Well Poor	Color Chart	Dry Moist Wet	A Sa Sr R	Odor, Staining, Mineralogy, Structure, etc

TETRA TECH EC, INC

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 20
LOCATION: SW CORNER OUTSIDE BLDG 1603
BORING ID: S4-CC3
GEOLOGIST: DUDUS / O'HARE

DATE DRILLED: 7/29/09
DRILLING COMPANY: WPC
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
									10 - 11.2	- A.	ABOVE							10YR 4/4	WET		
11		10-12		1055	47.4	/			SM / 11.2 - 15		70	30		F-M		MOTTLED		10YR 6/1 10YR 4/4	WITH		GREY WITH OR. YELLOWISH BROWN
12		12-14		1056	151	/															
13																					
14		14-15		1057	114	/															
15									SP-SM / 15 - 20'		90	10		F-M			10YR 4/6		WET		
16		15	17'	1106	410.1	/															
17		17 -	19'	1107	51.7	/															
18			20'	1108	6.2	/															5x PHOTOS OF 6-20' CORE
19																					
20																					TD = 20'

Notes:

From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi Med Low Non	F M C	F C	Inches	Well Poor	Color Chart	Dry Moist Wet	A Sa Sr R	Odor, Staining, Mineralogy, Structure, etc.

TETRA TECH

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 20.3210
LOCATION: WEST OF OUS163 EXCAVATION
BORING ID: S4-CC4
GEOLOGIST: DUDUS / O'HARE

DATE DRILLED: 7/28 - 7/29/09
DRILLING COMPANY: COLUMBIA / WDC
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
									0 - 7"	CONCRETE											7" CONCRETE CORED AT SFC
1			1'	0812	0.0	-			7" - 1.5' / SP-SM	10	80	10	N	F-M	-		P	10YR 3/4	M		
2									1.5 - 2.5'	TR			AS	ABOVE				10YR 6/4			
			2.5'	0816	0.0		7/28/09														
3			3.0'	0819	0.0				2.5 - 3.5' / SP-SM	TR	90	10	N	F-M	-	-	P	10YR 6/4	M		3.0' TR SHELL FRAGS
			3.5'	0826	0.0				3.5 - 3.6' / SM	-	80	20	N	F-M	-	-	P	10YR 6/4	M		
4			4.2	1457	16.2				3.6 - 4.1'	CONCRETE								1GLEY 10Y 3/1			CORED THROUGH 6" CONCRETE SLAB. SOIL > 3.6' WET DUE TO SPRING WATER
5			5.0	1514	8.5				4.2 - 5.0' / SM	-	80	20	N	F-M	-	-	P	10YR 3/2	W		
6			6-8'	7/29 1002	7.3	-			6.0 - 9.7' / SM	-	80	20	N	F-M	-	-	P	10YR 4/2	W		> 6' CORED WITH GEOPROBE
7																					
8																					
9			8-10'	7/29 1004	35.4	-															
10																					

Notes:

From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi / Med / Low / Non	F / M / C	F / C	Inches	Well / Poor	Color Chart	Dry / Moist / Wet	A / Sa / Sr / R	Odor, Staining, Mineralogy, Structure, etc.

TETRA TECH

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 20
LOCATION: WEST OF DWS163 EXCAVATION
BORING ID: S4-CC4
GEOLOGIST: DUDUS / O'HARE

DATE DRILLED: 7/29/09
DRILLING COMPANY: COLUMBIA / WDC
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
									10 - 11.2'	— AS ABOVE —											
11			10-12'	1008	60.5	—															
									11.2 - 13.0' / SM	—	80	20	N	F	—	—	P	10YR 4/4	W		
12																					
			12-14'	1010	77.9	—															
13									13 - 13.8' / SM	—	70	30	N	F	—	—	P	10YR 6/1	W		
									13.8 - 15' / SM	—	80	20	N	F	—	—	P	10YR 4/4	W		
14			14-15'	1011	80.4	—															
15																					
									15 - 17.0'	— AS ABOVE —											
16			15-17'	1014	37.9	—															
17									17 - 17.8' / SM	—	80	20	N	F-M	—	—	P	10YR 4/4	W		
			17-19'	1016	25.4	—															
18									17.8 - 19.0'	AS ABOVE								MOTTLED W/ 10YR 6/1			10YR 4/4 MOTTLED W/ 10YR 6/1
19																					
			19-20'	1017	23.6	—			19 - 20.0' / SM	—	80	20	N	F-M	—	—	P	10YR 4/4	W	—	
20																					
																					TD = 20'

Notes:

From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi Med Low Non	F M C	F C	Inches	Well Poor	Color Chart	Dry Moist Wet	A Sa Sr R	Odor, Staining, Mineralogy, Structure, etc.

TETRA TECH

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 26
LOCATION: ~3' S of S4-CC4
BORING ID: S4-CC4A USED TO COMPLETE S4-CC4 20-50' INTERVAL
GEOLOGIST: O'HARE

DATE DRILLED: 8/3/2009
DRILLING COMPANY: TTECI / WDC HAND AUGER
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
1									0-0.7'		CONCRETE										CORED THROUGH 8" CONCRETE
2									0.7-1' / SM	/	80	20	N	F-C	/	/	P	10YR 4/2	W	/	SOIL WET FROM WATER USED IN CORING
									1'-3'	— AS ABOVE								10YR 5/2		—	TR SHELL FRAGS, 1 LARGE SHELL FRAG (~1.5")
3									3'-3.5' / SM	/	80	20	N	F-M	/	/	P	10YR 5/1	M	/	NOTES:
4									3.5'-4.2' / SM	/	80	20	N	F-M	/	/	P	10YR 4/2	W	/	ATTEMPTED TO CORE THROUGH OBSTRUCTION WITH CORING MACHINE AT 3.5' NO RECOVERY
									4.2'-4.5'	— CONCRETE											
5									4.5'-6.0 / SM	/	80	20	N	F-M	/	/	P	10YR 4/2	W	/	SOIL > 3.5' BGS WET FROM WATER USED IN CORING ATTEMPT
6																					CORED THROUGH 3.5" CONCRETE AT 4.2'
			6-20' NOT LOGGED							SEE S4-CC4 LOG											
																					BORE HOLE USED TO COMPLETE S4-CC4 20-50' INTERVAL AT NEW LOCATION S4-CC4A

Notes:

From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi Med Low None	F M C	F C	Inches	Well Poor	Color Chart	Dry Moist Wet	A Sa Sr R	Odor, Staining, Mineralogy, Structure, etc.

TETRA TECH

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 26
LOCATION: NEAR S4 CC4
BORING ID: S4 - CC4 A (CONT'D)
GEOLOGIST: WARE

DATE DRILLED: 8/11/2009
DRILLING COMPANY: NDC DPT (GEOPROBE)
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
20									20-24'/SP-SM	/	90	10	N	F-C	/	/	P	10YR 5/4	W	/	
21			20-22	1343	3.8																
22																					
23			22-24	1345	2.8																
24									24-25'	—	AS ABOVE										MOTTLED WITH 10YR 5/6 SAME PROPERTIES
25			24-25'	1346	4.8																
26			25-27	1506	7.1				25-26.3'/SP-SM	/	90	10	N	F-C	/	/	P	10YR 5/4	W	/	
									26.3'-27.5'/SM	/	90	20	N	F-C	/	/	P	10YR 5/4	W	/	→ MOTTLED WITH 10YR 5/1 SAME PROPERTIES
28			27-29	1507	14.6				27.5'-30'/SP-SM	/	90	10	N	F-C	/	/	P	10YR 5/4	W	/	
29																					
30			29-30	1509	1.3																

Notes:

From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi Med Low Non	F M C	F C	Inches	Well Poor	Color Chart	Dry Moist Wet	A Sa Sr R	Odor, Staining, Mineralogy, Structure, etc.

TETRA TECH

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 20
LOCATION: NEAR S4-CC4
BORING ID: S4-CC4A (CONT'D)
GEOLOGIST: O'HARE

DATE DRILLED: 8/11/2009
DRILLING COMPANY: WDC GEOPROBE DPT
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
30									30-32.6	— SLOUGH											SLOUGH: PRECEEDING 5' CORE WAS STUCK IN OUTER CASING
31																					
32			32-34'	1628	7.6				32.6-35'/SP-SM	/	90	10	N	F-C	/	/	P	10YR 4/4	W	/	
33																					
34			34-35'	1629	3.7																
35																					
36			35-37'	1639	18.3				35-40'/SP-SM	/	90	10	N	F-C	/	/	P	10YR 5/4	W	/	
37																					
38			37-39'	1640	31.0																
39			39-40'	1642	30.2																
40																					

Notes:

From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi Med Low Non	F M C	F C	Inches	Well Poor	Color Chart	Dry Moist Wet	A Sa Sr R	Odor, Staining, Mineralogy, Structure, etc.

TETRA TECH

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 20
LOCATION: NEAR S4-CC4
BORING ID: S4-CC4A (CONT'D)
GEOLOGIST: O'HARE

DATE DRILLED: 8/11/09
DRILLING COMPANY: WDC GEOPROBE DPT
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
40																					
41			40-42'	1648	66.5				40-43.4'/SP-SM	1	90	10	N	F-C	1	1	P	10YR 5/4	W	1	
42			42-44'	1649	68.8																
43									43.4-44.4'/SM	1	80	20	N	F-C	1	1	P	10YR 5/4	W	1	
44			44-45'	1650	50.1																
44.5									44.4-45'/SP-SM	1	90	10	N	F-C	1	1	P	10YR 5/4	W	1	
46			45-47'	1719	12.2				45'-45.2'	—	AS ABOVE	—									
									45.2-46.1'/SC	1	60	40	M	F-M	1	1	P	10YR 5/4	W	1	→ MOTTLED WITH 10YR 5/6 / FINES ARE MIXED CLAY & SILT
47			47-49'	1720	2.6				46.1-47.9'/SM	1	80	20	N	F-M	1	1	P	10YR 5/2	W	1	
48																					
49			49-50'	1721	3.8				47.9-50.0'/SP-SM	1	90	10	N	F-C	1	1	P	10YR 5/4	W	1	
50																					

TD = 50.0'
BACKFILLED WITH BENTONITE GROUT TO 0.5' THEN CONCRETE 0.5' TO SFC

Notes:

From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi Med Low Non	F M C	F C	Inches	Well Poor	Color Chart	Dry Moist Wet	A Sa Sr R	Odor, Staining, Mineralogy, Structure, etc.

TETRA TECH EC, INC

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 20 . 3210
LOCATION: EAST SIDE BLDG 163
BORING ID: S4 - CC5
GEOLOGIST: DUDUS / O'HANE

DATE DRILLED: 7/28/09 (0-6') / 7/29/09 (6-20')
DRILLING COMPANY: COLUMBIA / WOC HAND AUGER / GEOPROBE DPT
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
1				1043	0.0	/			SM / 0.6'-1.5	5	60	35	N	F-C		0.5"	10YR	5/8		SRSA	7" CONCRETE CORED AT SFC
									SP-SM / 1.5-3.2'	/	90	10	N	F-M			10YR	6/4			
2				1046	0.0	/															
3				1105	0.0	/															
									3.2-3.5	TR		A	ABOVE				10YR	5/4			
4				1118	1.8	/			SP-SM / 3.5-3.8	10	80	10		F-C		2"	AS ABOVE			R-SR	>4 DK BROWN GRAVELS ; NAIL
									SP-SM / 3.8 - 5'	30	60	10	N	F-C	F-C	2.5"	10YR	4/4		R-SR	→ INCREASING GRAVELS
5				1130	1.5	/															
									SP-SM / 5-6	TR	90	10	N	F-M			10YR	3/1	W		SATURATED @ 5.5'
6			5-6'	1140	1.3	/															COLOR CHANGE @ 5.5
7			6-8'	1505 7/29	2.3	/			SP-SM / 6-7.7		90	10	N	F-M			10YR	3/1	W		V. DK. GRAY
									7.7 - 9.5								10YR	4/2	W		
8																					
9			8-10'	1506 7/29	2.8	/			SM / 9.5-10		85	15	N	F-M			10YR	4/2	W		3 PHOTOS
																					① SHEEN W/ SOIL
10																					② GRAVEL @ 3.8-5
																					③ SATURATED @ 5.5-6
																					CORED IN 4" GEOPROBE FROM 6.0'

Notes:

From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi / Med / Low / Non	F / M / C	F / C	Inches	Well / Poor	Color Chart	Dry / Moist / Wet	A / Sa / Sr / R	Odor, Staining, Mineralogy, Structure, etc.

TETRA TECH EC, INC

SOIL BORING LOG

CLIENT: NAVY
PROJECT NUMBER: CTO 20
LOCATION: BETWEEN BLDG 163 & BLDG 360
BORING ID: SB-CC5
GEOLOGIST: O'HARE

DATE DRILLED: 7/29/09
DRILLING COMPANY: WDC GEOPROBE DPT
NORTHING:
EASTING:
SURFACE ELEVATION:

Depth (ft)	Sample Recovery	Blow Counts	Sample ID	Time	FID/PID Soil (ppm)	FID/PID Breathing Zone (ppm)	Lithologic Contact (ft bgs)	Group Symbol	Group Name	% Gravel	% Sand	% Fines	Plasticity	Sand Size Range	Gravel Size Range	Max Grain Size	Grading	Color	Moisture	Angularity	Modifiers
10									SM / 10-15'	/	85	15	N	F-M	/	/	P	10YR 4/4	WET		DK. YELLOWISH BROWN W/
11			10-12'	1511	1.5	/										with	MINOR	10YR 5/2			GRAYISH BROWN
12			12-14'	1512	4.2	/															
13																					
14			15'	1513	3.7	/															
15																					
16			15-17'	1520	1.8	/			SM / 15-18.5'	/	70	30	N	F-M	/	/	P	10YR 4/4	W	/	
17			17-19	1521	0.0	/															
18																					
19			20'	1522	34.4	/			18.5-19'	—	AS ABOVE				—	—	10YR 6/1		WET		
									19-20'	—	AS ABOVE				—	—	7.5YR 4/6		WET		
20																					TD = 20.0'
																					BACKFILLED WITH BENTONITE GROUT
																					TO 0.5' THEN CONCRETE 0.5' TO SFC
																					CORE PHOTOS X5

Notes:																					
								From USCS Flow Chart	See USCS Flow Charts <5%=trace, 5-10%=few, 15-25%=little, 30-45%=some, 50+%= mostly (cobbles only)	1/4 in - 3 in	visible - 1/4 in	not visible	Hi Med Low Non	F M C	F C	Inches	Well Poor	Color Chart	Dry Moist Wet	A Sa Sr R	Odor, Staining, Mineralogy, Structure, etc.

APPENDIX D

MEMBRANE INTERFACE PROBE DATA
(on CD only)

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SmartData Solutions®

Subsurface Characterization Using Membrane Interface Probe (MIP) and Soil Conductivity (SC) Technologies Alameda Point Torrance, California

PREPARED FOR

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November 16, 2009

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FIGURES

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Figure 2.... Plan View, FID Response >3.5E+05uV

Figure 3.... Oblique View Relative Azimuth 195°, Looking Northeast, FID Response >4.5E+05uV, with Soil Conductivity >100mS

Figure 4.... Transect View Relative Azimuth 180°, Looking North, FID Response >4.5E+05uV, with Soil Conductivity >100mS

Figure 5.... Transect View Relative Azimuth 270°, Looking East, FID Response >4.5E+05uV, with Soil Conductivity >100mS

Figure 6.... Transect View Relative Azimuth 0°, Looking South, FID Response >4.5E+05uV, with Soil Conductivity >100mS

Figure 7 ... Transect View Relative Azimuth 90°, Looking West, FID Response >4.5E+05uV, with Soil Conductivity >100mS

Figure 8.... Plan View, ECD Response >1.0E+06uV

Figure 9.... Oblique View Relative Azimuth 195°, Looking Northeast, ECD Response >1.0E+06uV, with Soil Conductivity >100mS

Figure 10.. Transect View Relative Azimuth 180°, Looking North, ECD Response >1.0E+06uV, with Soil Conductivity >100mS

Figure 11.. Transect View Relative Azimuth 270°, Looking East, ECD Response >1.0E+06uV, with Soil Conductivity >100mS

Figure 12.. Transect View Relative Azimuth 0°, Looking South, ECD Response >1.0E+06uV, with Soil Conductivity >100mS

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Figure 13 . Transect View Relative Azimuth 90°, Looking West, ECD Response >1.0E+06uV, with Soil Conductivity >100mS

APPENDICES

Appendix A: MIP Logs (Best Fit Scale)

Appendix B: MIP Logs (Collective Scale)

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Introduction

Tetra Tech EC, Inc. (Client) contracted **COLUMBIA Technologies, LLC (COLUMBIA)** to conduct an investigation of subsurface contamination at the Alameda Point site, located in Torrance, California. This investigation involved delineating the depth and horizontal extent of dissolved phase volatile organic compound (VOC) contamination using Membrane Interface Probe (MIP) technology and characterizing soil electrical conductivity using Soil Conductivity (SC) technology.

The investigation was conducted July 30, 2009 through August 6, 2009, and consisted of 17 MIP/SC locations to depths ranging from 38.7 feet to 50.45 below ground surface (bgs). A Geoprobe Direct Push Technology (DPT) drilling rig was used to advance the locations.

Objectives

The objectives of the MIP/SC investigation were to:

- Collect high density data sets of the dissolved phase VOC contamination distribution throughout the investigation area as well as detailed information concerning soil electrical conductivity properties.
- Delineate the vertical and horizontal extent of dissolved phase VOC contamination in the investigation area.
- Develop 2D and 3D graphics of the collected data and incorporate these graphics into a model that can be used to determine the location and depths for future field activities, including sampling, well installations, and remediation remedies.

MIP Equipment Description

The MIP/SC probe is approximately 12-inches (30 cm) in length and 1.5-inches (3.8 cm) in diameter. The probe is driven into the ground at the nominal rate of one foot per minute using a direct push rig.

Soil conductivity, the inverse of soil resistivity, is measured using a dipole arrangement. In this process, an alternating electrical current is transmitted through the soil from the center, isolated pin of the probe. This current is then passed back to the probe body. The voltage response of the imposed current to the soil is measured across these same two points. Conductivity is measured in Siemens/meter, and due to the low conductivity of earth materials, the SC probe uses milliSiemens/meter (mS/m). The probe is reasonably accurate in the range of

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5 to 400 mS/m. In general, at a given location, lower conductivity values are generally characteristic of larger particles such as sands, while higher conductivities are characteristic of finer sized particles such as silts and clays.

The MIP portion of the probe was developed and patented by Geoprobe Systems, Inc. The operating principle is based on heating the soil and/or water around a semi-permeable polymer membrane to 121ºC, which allows VOCs to partition across this membrane. The MIP can be used in saturated or unsaturated soils, as water does not pass through the membrane. Nitrogen is used as a inert carrier gas, and travels from a surface supply down a transfer tubing which sweeps across the back of the membrane and returns any captured VOCs to the installed detectors at the surface. It takes approximately 37 seconds for the nitrogen gas stream to travel through 100 feet of inert tubing and reach the detectors.

COLUMBIA utilizes three detectors: a Photo Ionization Detector (PID), a Flame Ionization Detector (FID) and an Electron Capture Detector (ECD), mounted on a laboratory grade Shimadzu Model 14A gas chromatograph. The output signal from the detectors is captured by a MIP data logging system installed on a MIP Field Computer or laptop computer. Conductivity, speed, detector data and temperature are displayed continuously in real time during each push of the probe.

The PID detector consists of a special UV lamp mounted on a thermostatically controlled, low volume, flow-through cell. The temperature is adjustable from ambient temperature to 250ºC. The 10.2 electron volt (eV) UV lamp emits energy at a wavelength of 120 nanometers, which is sufficient to ionize most aromatics (benzene, toluene, xylene, etc.) and many other molecules (e.g. H_2S, hexane, ethanol) whose ionization potential is below 10.2 eV. The PID also emits a lower response for chlorinated compounds such as TCE and PCE. Methanol and water, which have ionization potentials greater than 10.2 eV, do not respond on the PID. Detection limits for aromatics are in the low picogram range at the detector. Since the PID is non-destructive, it is often run first in series with other detectors for multiple analyses from a single injection. Use of the PID is mandated in several EPA methods (8021, TO-14 etc.) because of its sensitivity and selectivity.

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The most commonly used GC detector is the FID, which responds linearly over several orders of magnitude from its minimum detectable quantity of about 100 picograms. The FID response is very stable from day to day, and is not susceptible to contamination from dirty samples or column bleed. This detector responds to any molecule with a carbon-hydrogen bond, but poorly to compounds such as H_2S, CCl_4, or NH_3. The carrier gas effluent from the GC column is mixed with hydrogen and burned. Hydrogen supports a flame and ionizes the analyte molecules. A collector electrode attracts the negative ions to the electrometer amplifier, producing an analog signal, which is directed to the data system input.

The ECD detector consists of a sealed stainless steel cylinder containing radioactive Nickel-63. The Nickel-63 emits beta particles (electrons), which collide with the carrier gas molecules, ionizing them in the process. This forms a stable cloud of free electrons in the ECD cell. When electro-negative compounds (especially chlorinated, fluorinated or brominated molecules) such as carbon tetrachloride or TCE enter the cell, they immediately combine with the free electrons, temporarily reducing the number remaining in the electron cloud. The detector electronics, which maintain a constant current of about 1 nanoampere through the electron cloud, are forced to pulse at a faster rate to compensate for the decreased number of free electrons. The pulse rate is converted to an analog output, which is transmitted to the data system.

Immediately upon completion of each location, the dataset is wirelessly delivered to **COLUMBIA's** remote servers for Quality Assurance/Quality Control (QA/QC) review and upload to a password secure website using Columbia's patented ***SmartData Solutions®*** technology.

MIP System Performance Test

As a quality control check, the MIP system response is evaluated prior to and upon completion of each MIP location. An aqueous phase performance test is performed using specific compounds designed to evaluate the sensitivity of the particular probe, transfer line and detector suite to be used. The resulting values are recorded and compared to predetermined values.

Investigation Methods

A total of 17 MIP/SC locations were completed at the Alameda Point site. Each location was selected by Tetra Tech EC, Inc.'s representative onsite, and the termination depth of each

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location was also determined by Tetra Tech EC, Inc.'s representative onsite. The results from each location are shown at individual scale, and collective scale, respectively, in Appendices A and B. Maps and 2D/3D graphics of the site have been prepared for easier visualization of the subsurface.

MIP Log Interpretation

Each MIP log includes six separate graphs of data. The first graph displays the temperature of the probe as it is advanced in the subsurface. This graph can be useful to determine where groundwater is encountered. The next three graphs are measures of chemical detector response: ECD, FID, and PID, measured in microvolts (uV). These graphs are a linear scale, and give relative concentrations of contamination. The fifth graph is the rate of penetration (speed of the probe) and is measured in feet/min. This information can be used to determine how resistant the subsurface is to the direct push and/or percussion. The last graph is electrical conductivity and is measured in millisiemens per meter (mS/m). In general, lower conductivities are indicative of coarser grained particles, such as sands and silty sands, and higher conductivities are indicative of finer grained particles, such as clays and silty clays.

Correlating MIP Results to Sampling or Laboratory Analyses

Generalized correlation between MIP response and laboratory sample results can be inferred, but cannot be viewed as a linear comparison. MIP response and laboratory results are collected, analyzed and reported in different units and by different procedures, so correlation is not a fair "apples to apples" comparison. The MIP process uses a membrane extraction process from a heated zone of varying subsurface matrix of soil, water, and/or vapor. Soil and groundwater results involve the collection of a sample, extraction of sub-sample at the surface, and then transporting them to a laboratory for further extraction and analysis. These two processes are different by definition.

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SmartData Solutions®

COLUMBIA's *SmartData Solutions*® is a patented process (U.S. Patent No, 7,058,509) that enables the rapid processing of field data into easy to understand 2D/3D visualizations posted to a password protected website. This process includes QA/QC review, formatting and rapid visualization of the data for the project team and enables a complete check of the dataset prior to completion of fieldwork.

Delineation and Volume

The *SmartData Solutions*® graphics display a 3-dimensional view of the contamination plume. These plumes are calculated by extrapolating data in three dimensions between measured data points, and the plumes are only calculated within the bounds of the outermost measured points. A plume is considered to be unbounded when it extends to the bounds of those outermost measured points. A fully bounded plume will exist entirely within the confines of the outermost measured points.

The *SmartData Solutions*® graphics also display a plume volume calculation in the heading title, located in the upper left-hand corner of each graphic. This volume is based on the minimum response level listed in the heading. Volume is calculated by using the scale of the map provided. As a result, the plume calculation is only as accurate as the scale and details of the map. It is important to note that the plume volume calculation reflects only the portion of the plume that exists within the outermost measured points. The volume reported of an unbounded plume may be greatly understated. In any case, the volumes reported are intended for general planning purposes only and may vary from actual volumes.

3-Dimensional Orientation

The *SmartData Solutions*® graphics use a relative azimuth system to describe map orientation as a map may not be oriented with true North at the top of the map. The relative azimuth system uses a 360° compass to describe the position *from which* the graphic is being viewed. For example, a viewer "looking east" on a North oriented map would have a relative azimuth of 270°., i.e. the viewer would be standing on the "western" 270° azimuth point looking through the center to the "east".

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The header also describes elevation. Elevation is the number of degrees that the graphic is tilted on the vertical Z axis. A plan view has an elevation of 90°; a transect view has an elevation of 0°.

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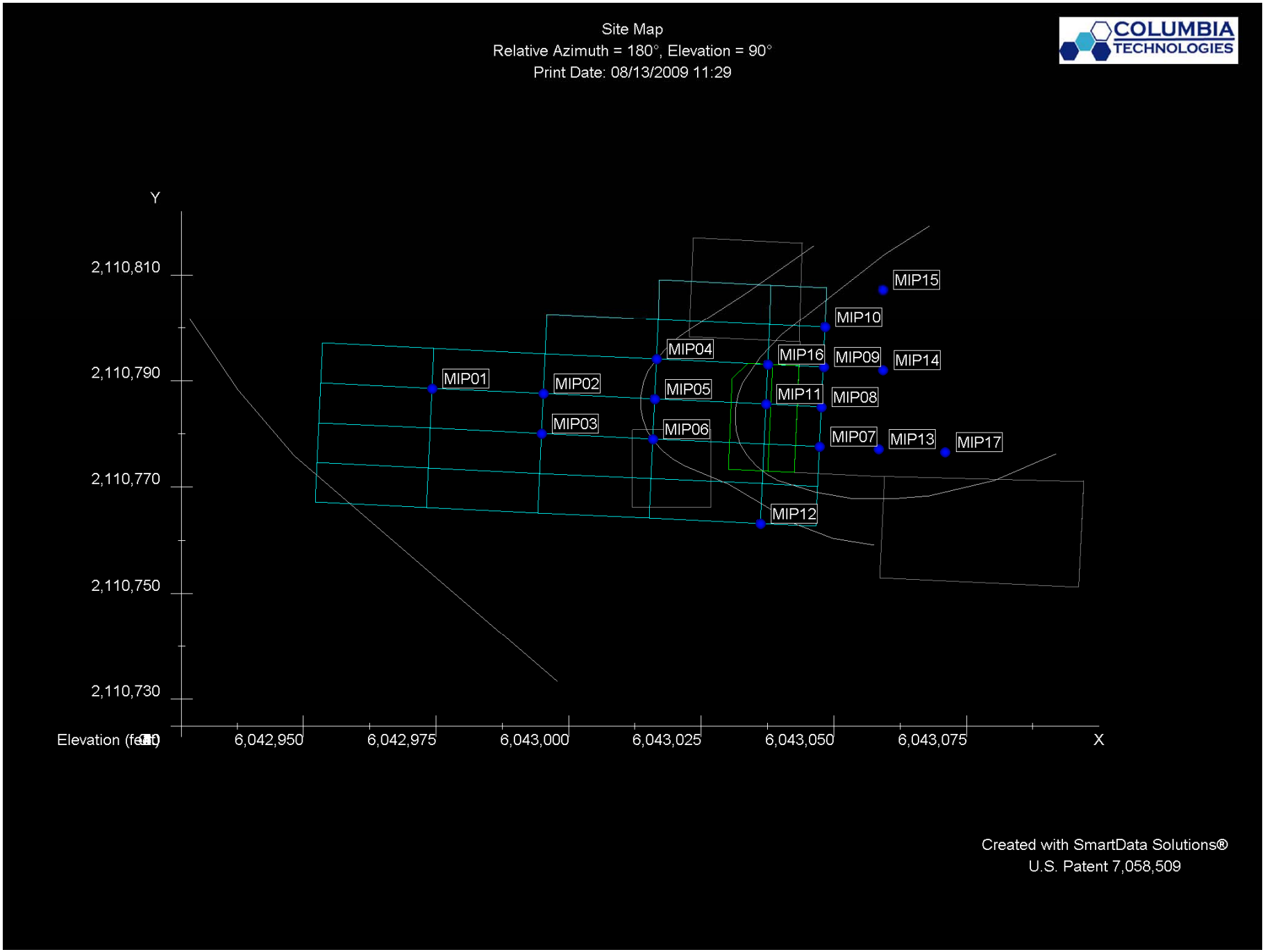

Figure 1 Sitemap and MIP Locations
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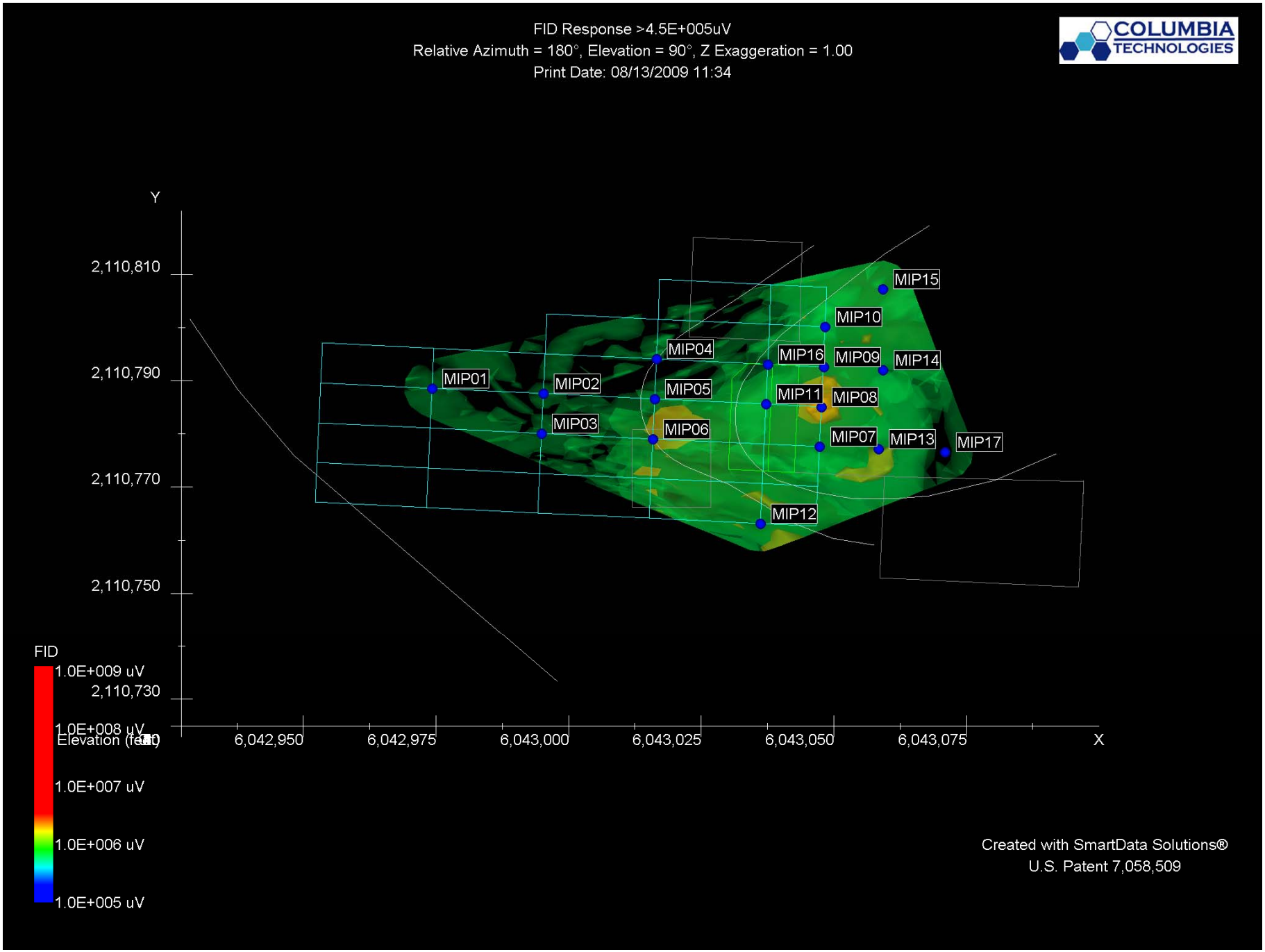

Figure 2 Plan View, FID Response >4.5E+05uV
July 30, 2009 – August 6, 2009

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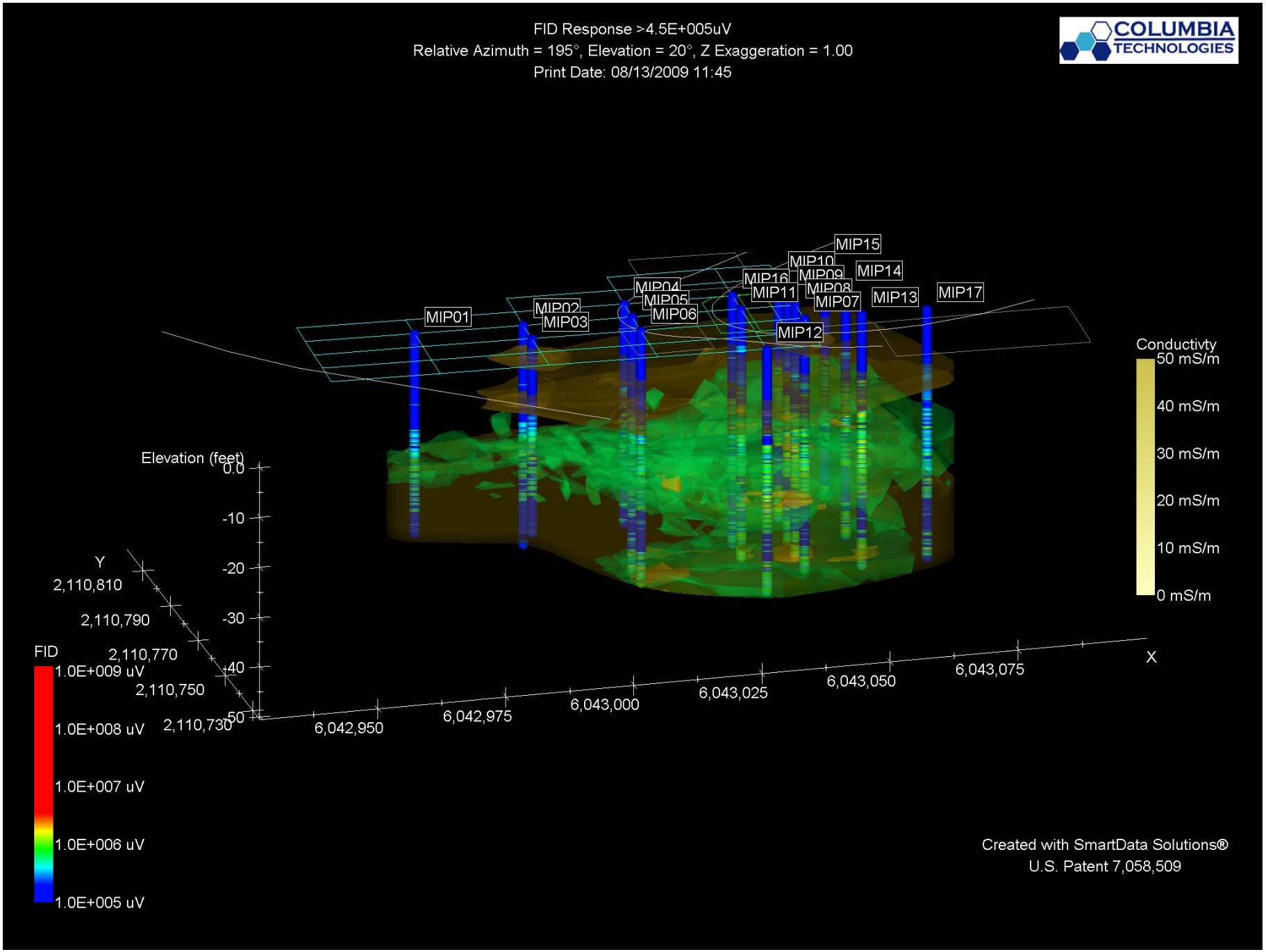

Figure 3 Oblique View Looking Northeast, FID Response >4.5E+05uV,
With Soil Conductivity >100mS
July 30, 2009 – August 6, 2009

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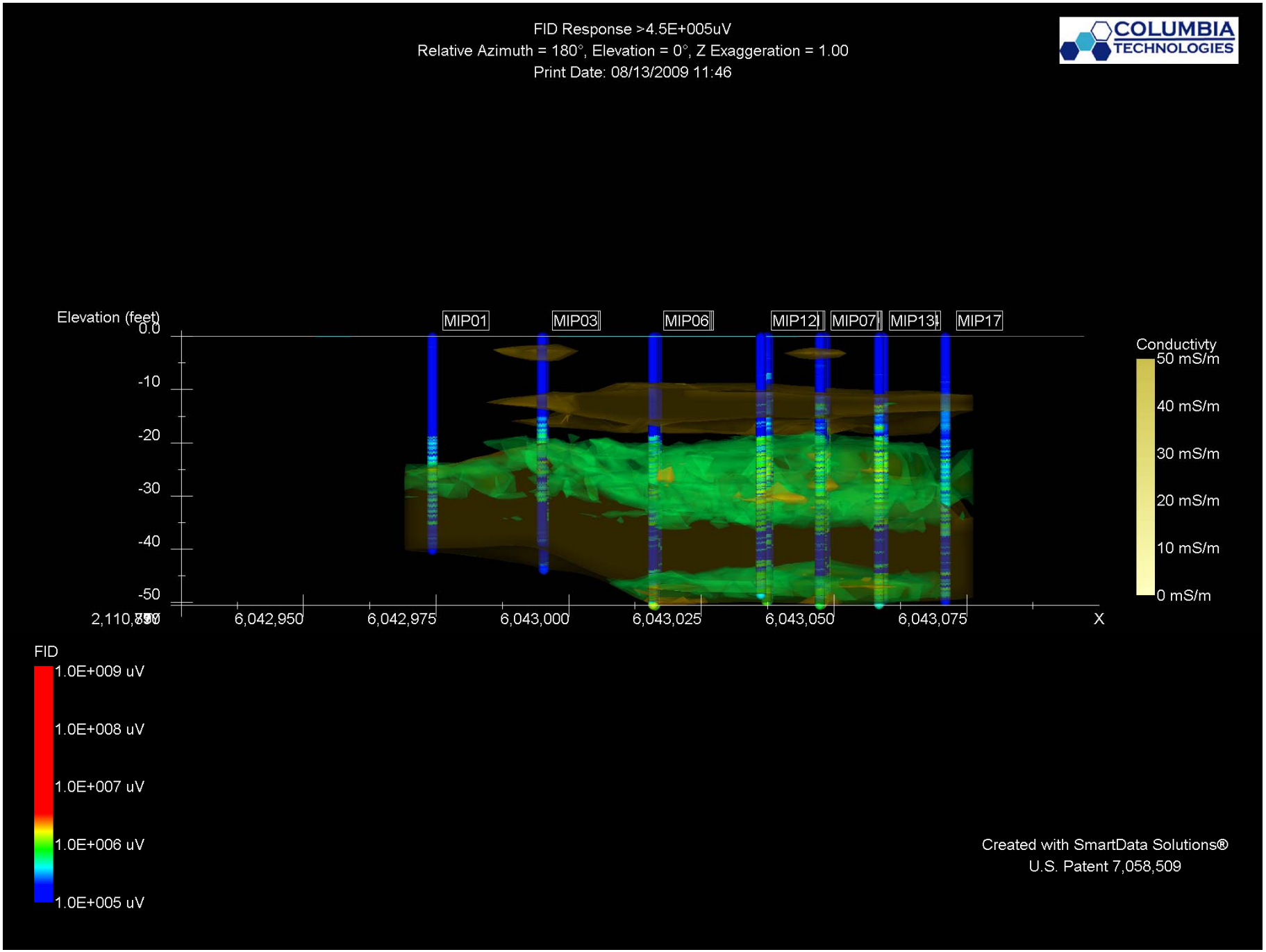

Figure 4 Transect View Looking North, FID Response >4.5E+05uV,
With Soil Conductivity >100mS
July 30, 2009 – August 6, 2009

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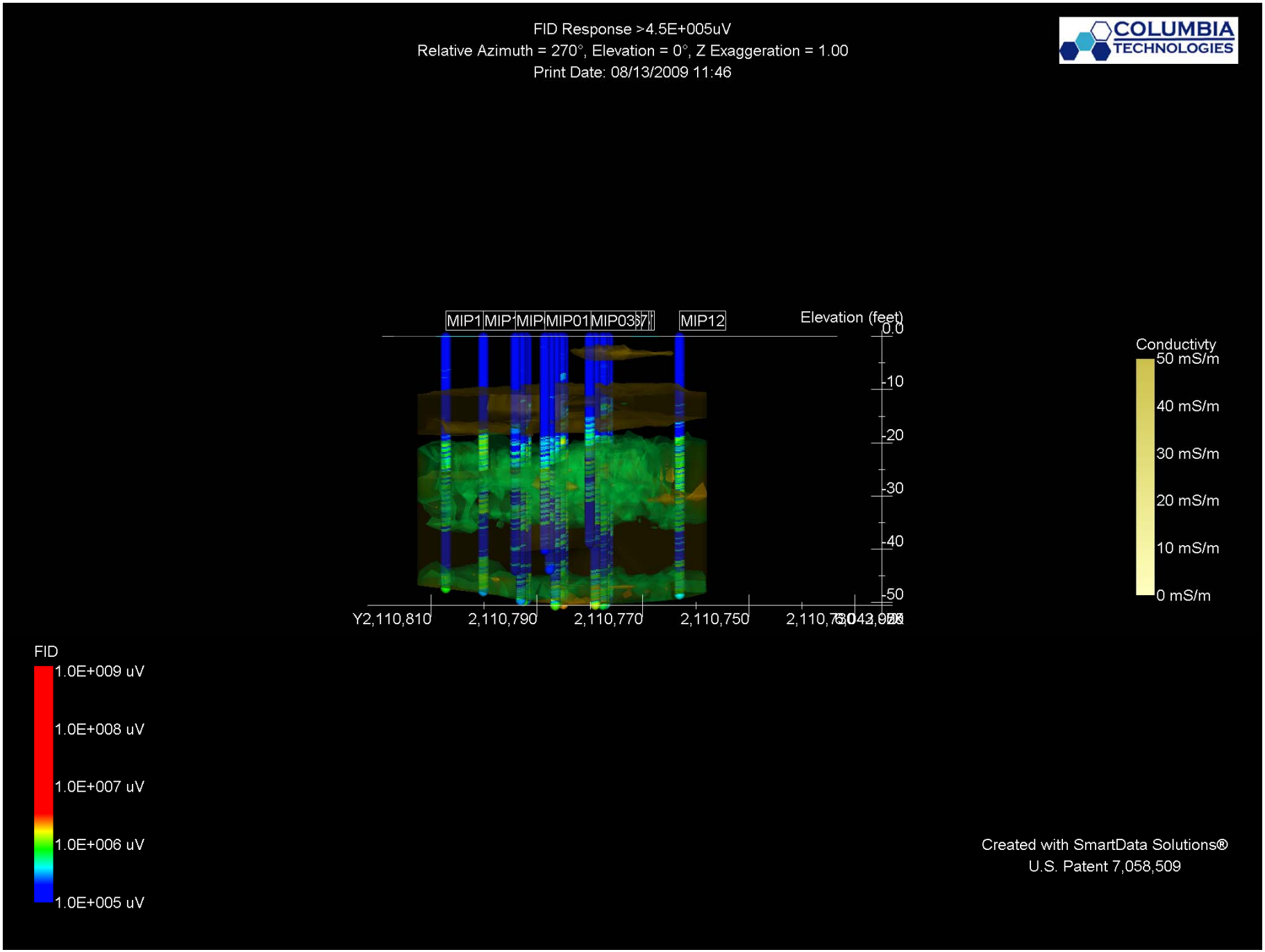

Figure 5 Transect View Looking East, FID Response >4.5E+05uV,
With Soil Conductivity >100mS
July 30, 2009 – August 6, 2009

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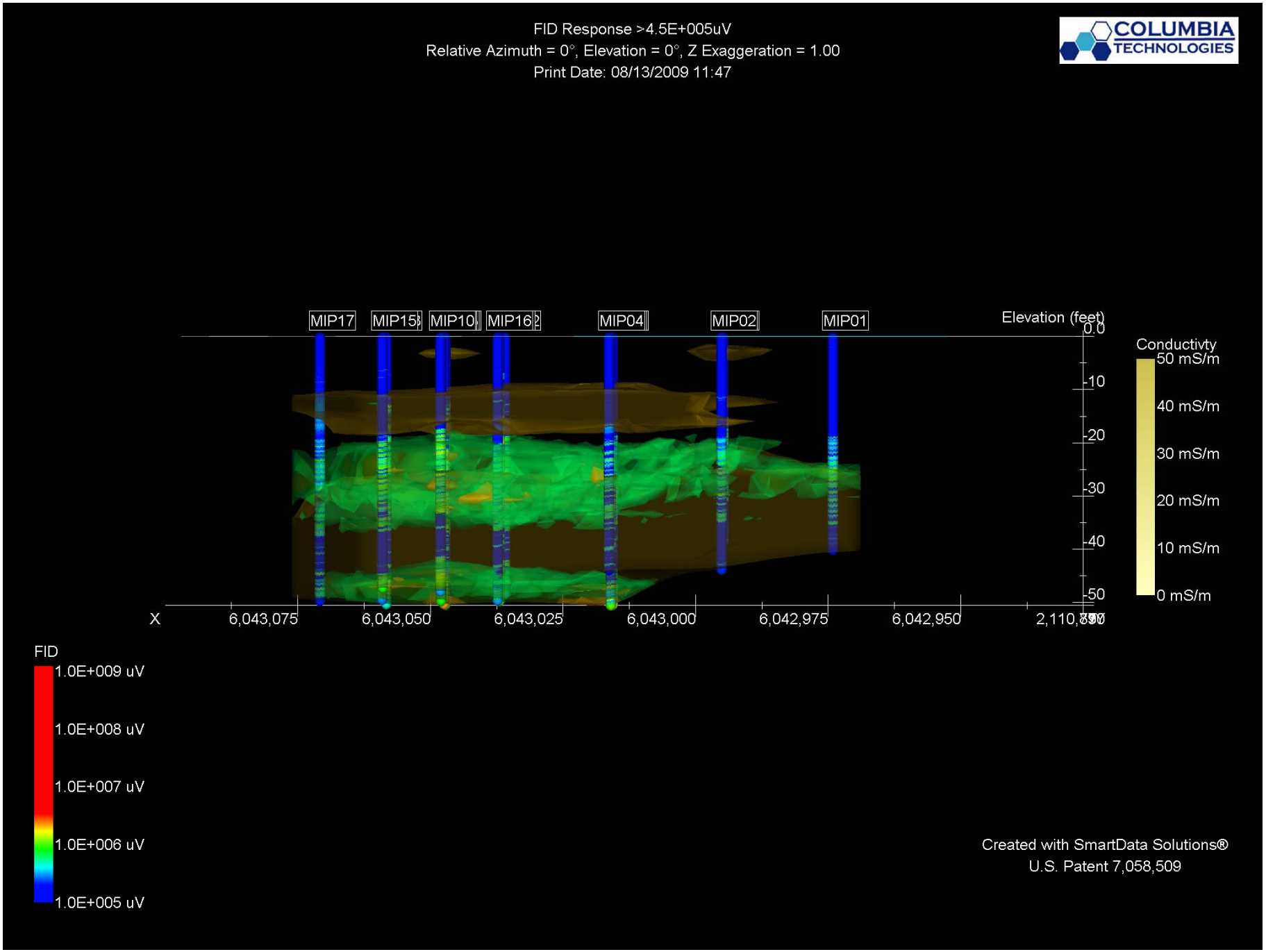

Figure 6 Transect View Looking South, FID Response >4.5E+05uV,
With Soil Conductivity >100mS
July 30, 2009 – August 6, 2009

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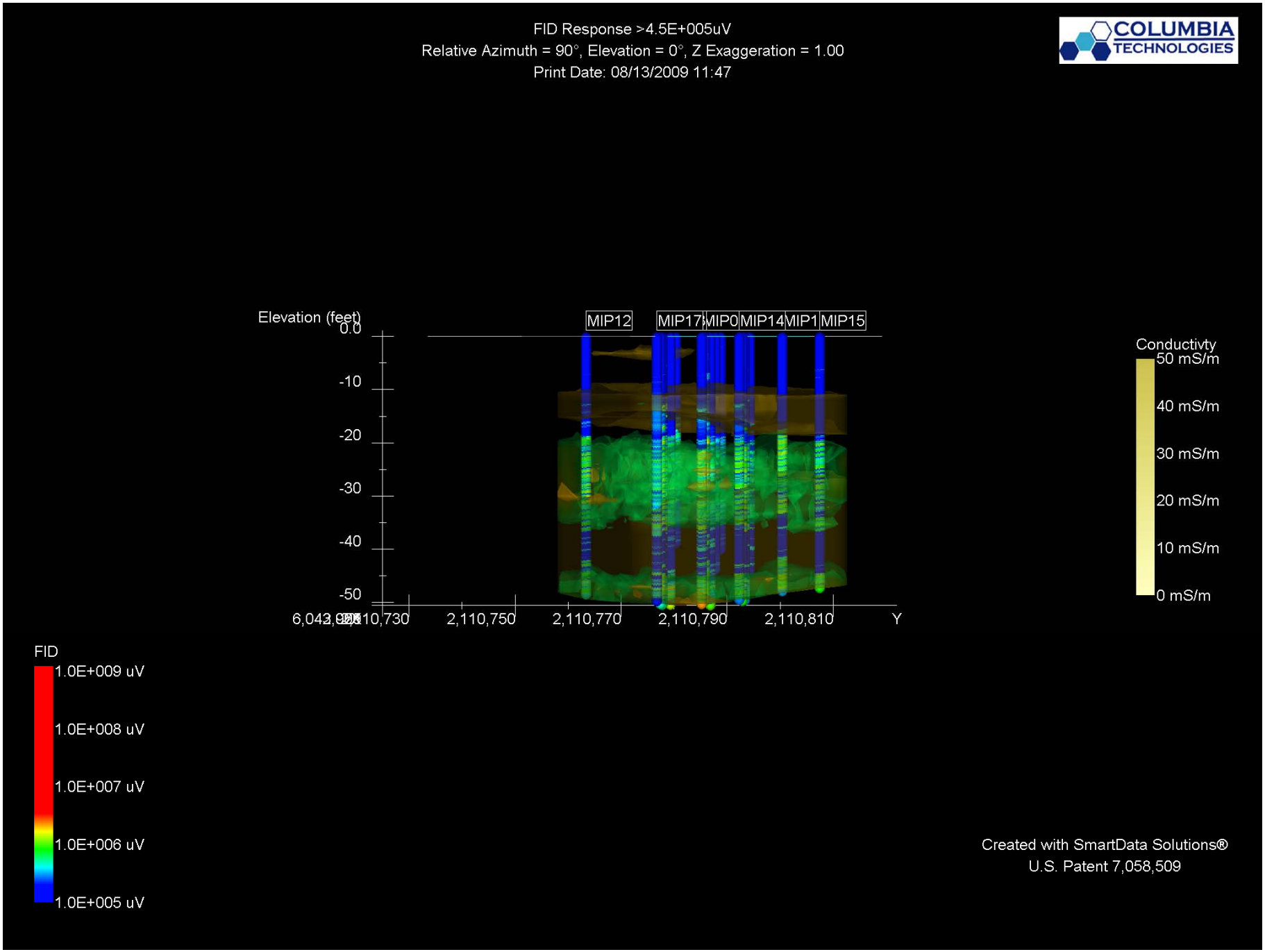

Figure 7 Transect View Looking West, FID Response >4.5E+05uV,
With Soil Conductivity >100mS
July 30, 2009 – August 6, 2009

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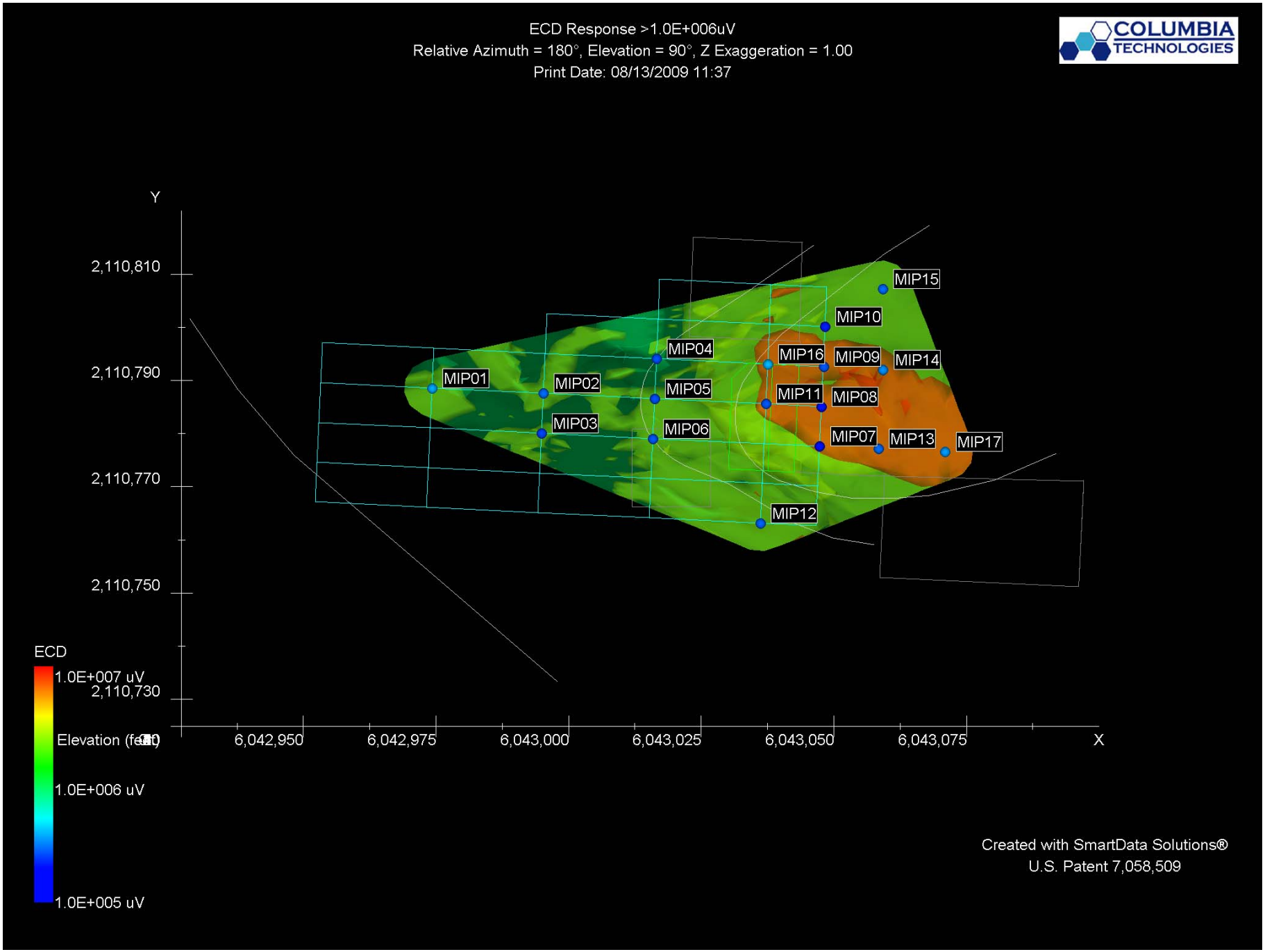

Figure 8 Plan View, ECD Response >1.0E+06uV
July 30, 2009 – August 6, 2009

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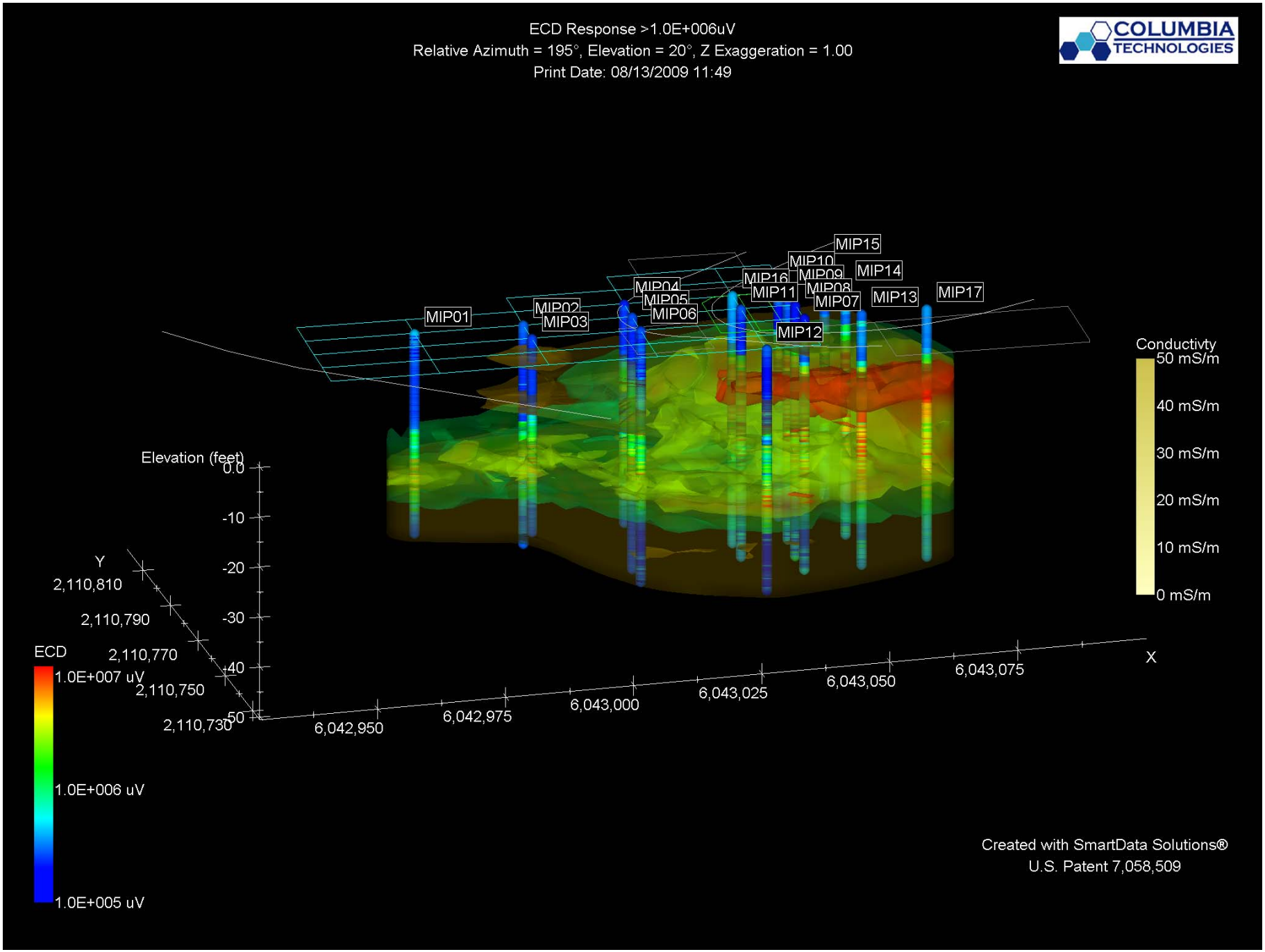

Figure 9 Oblique View Looking Northeast, ECD Response >1.0E+06uV,
With Soil Conductivity >100mS
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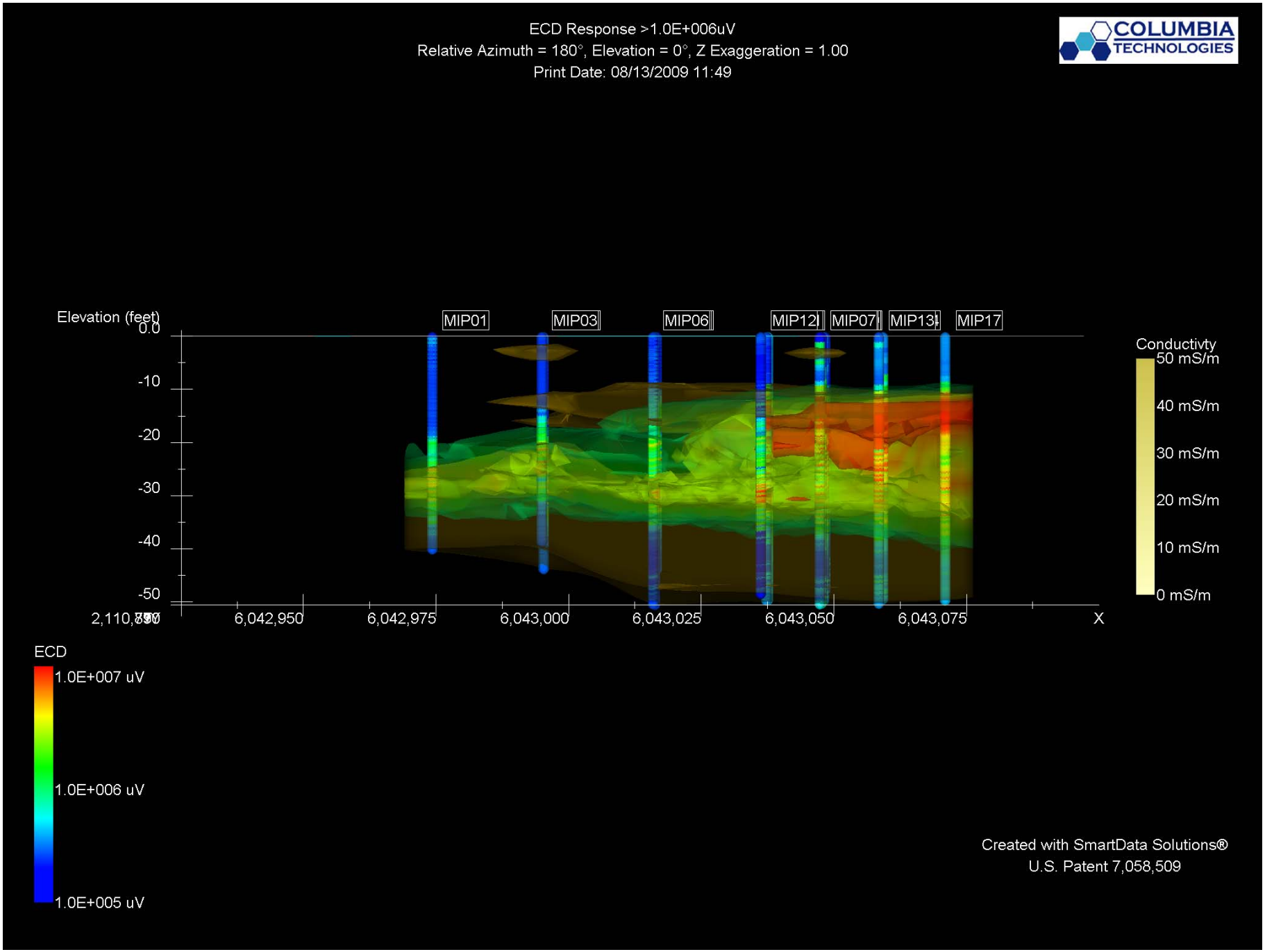

Figure 10 Transect View Looking North, ECD Response >1.0E+06uV,
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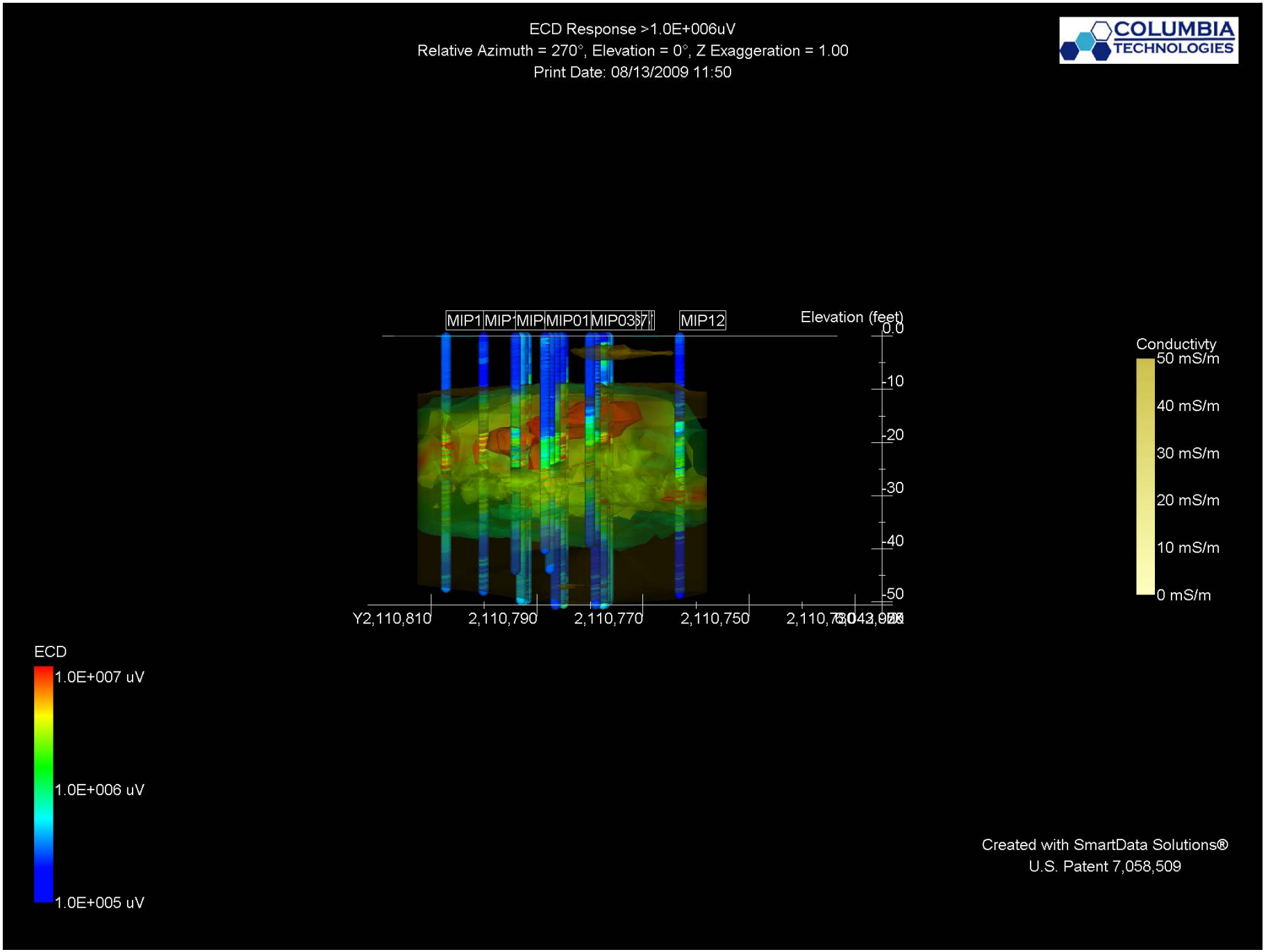

Figure 11 Transect View Looking East, ECD Response >1.0E+06uV,
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July 30, 2009 – August 6, 2009

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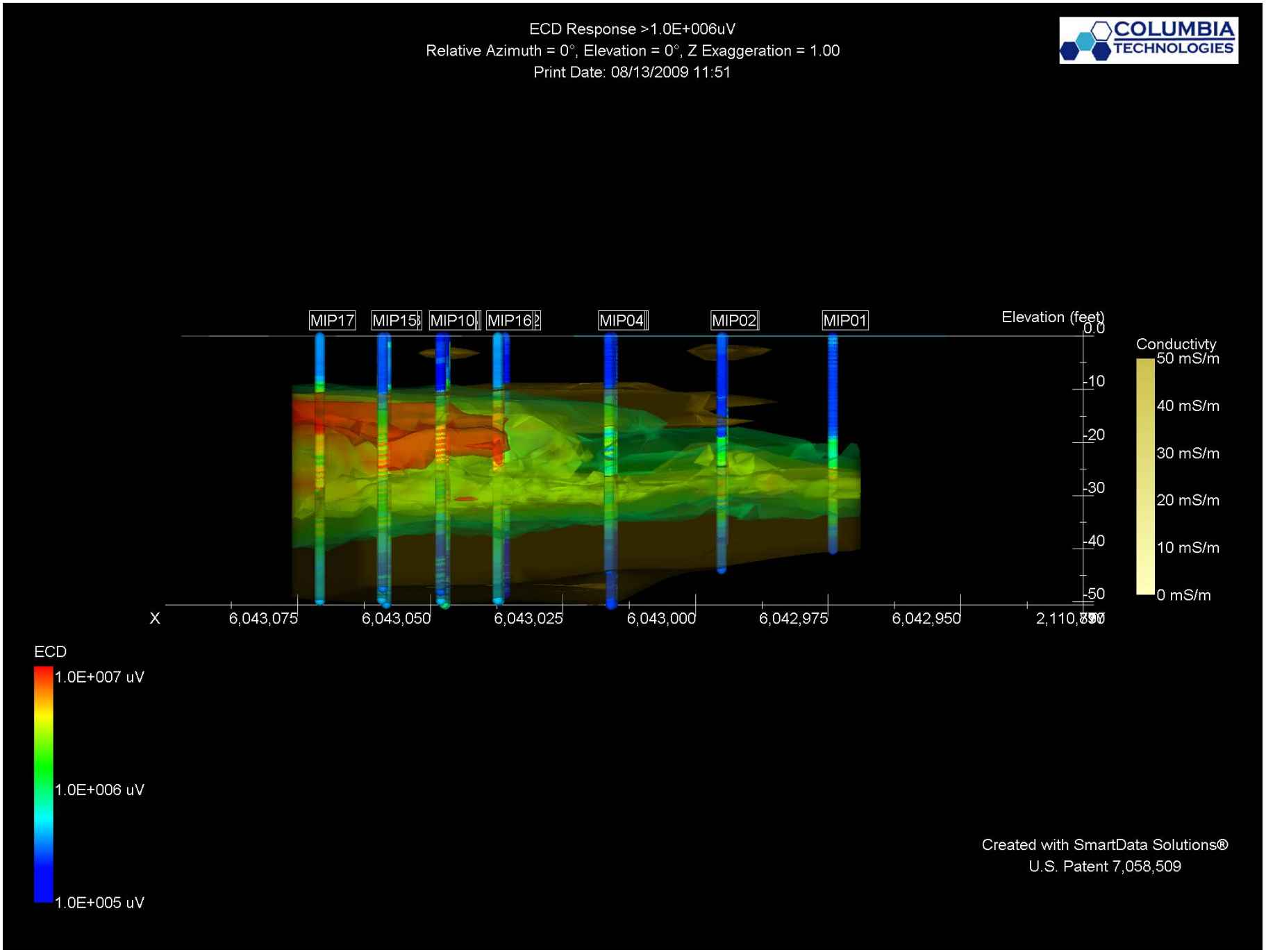

Figure 12 Transect View Looking South, ECD Response >1.0E+06uV,
With Soil Conductivity >100mS
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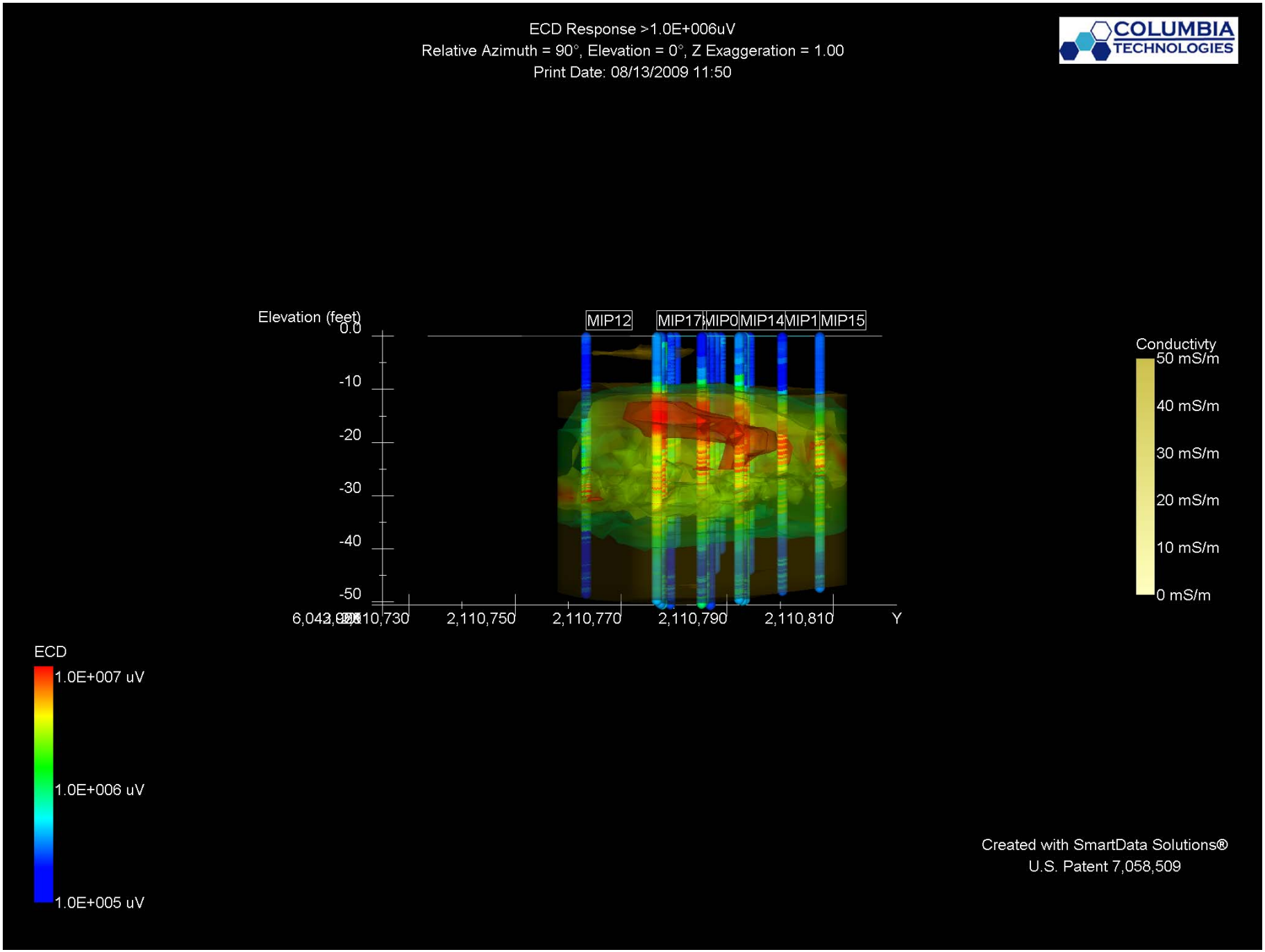

Figure 13 Transect View Looking West, ECD Response >1.0E+06uV,
With Soil Conductivity >100mS
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APPENDIX A

MIP Logs (Best Fit Scale)

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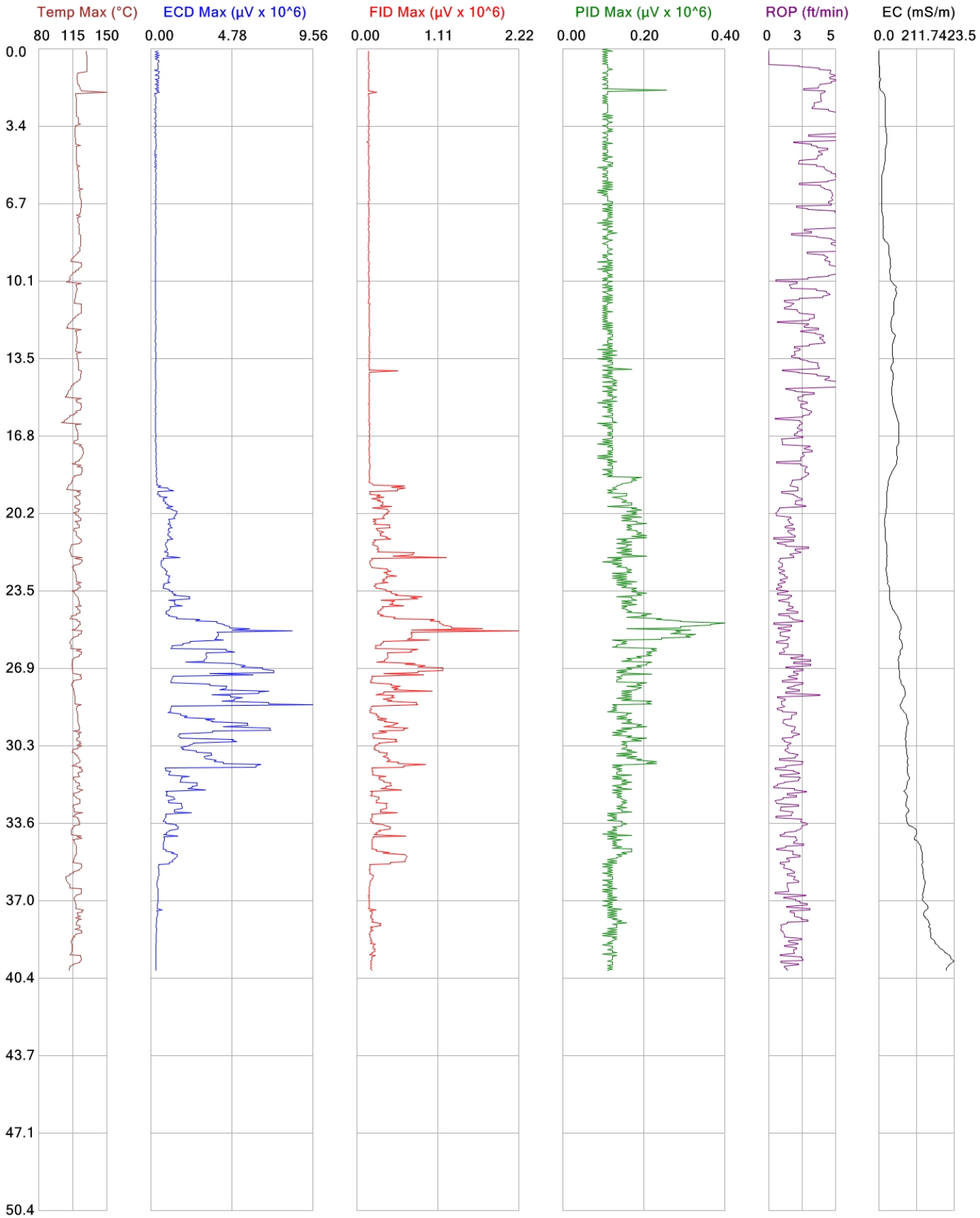

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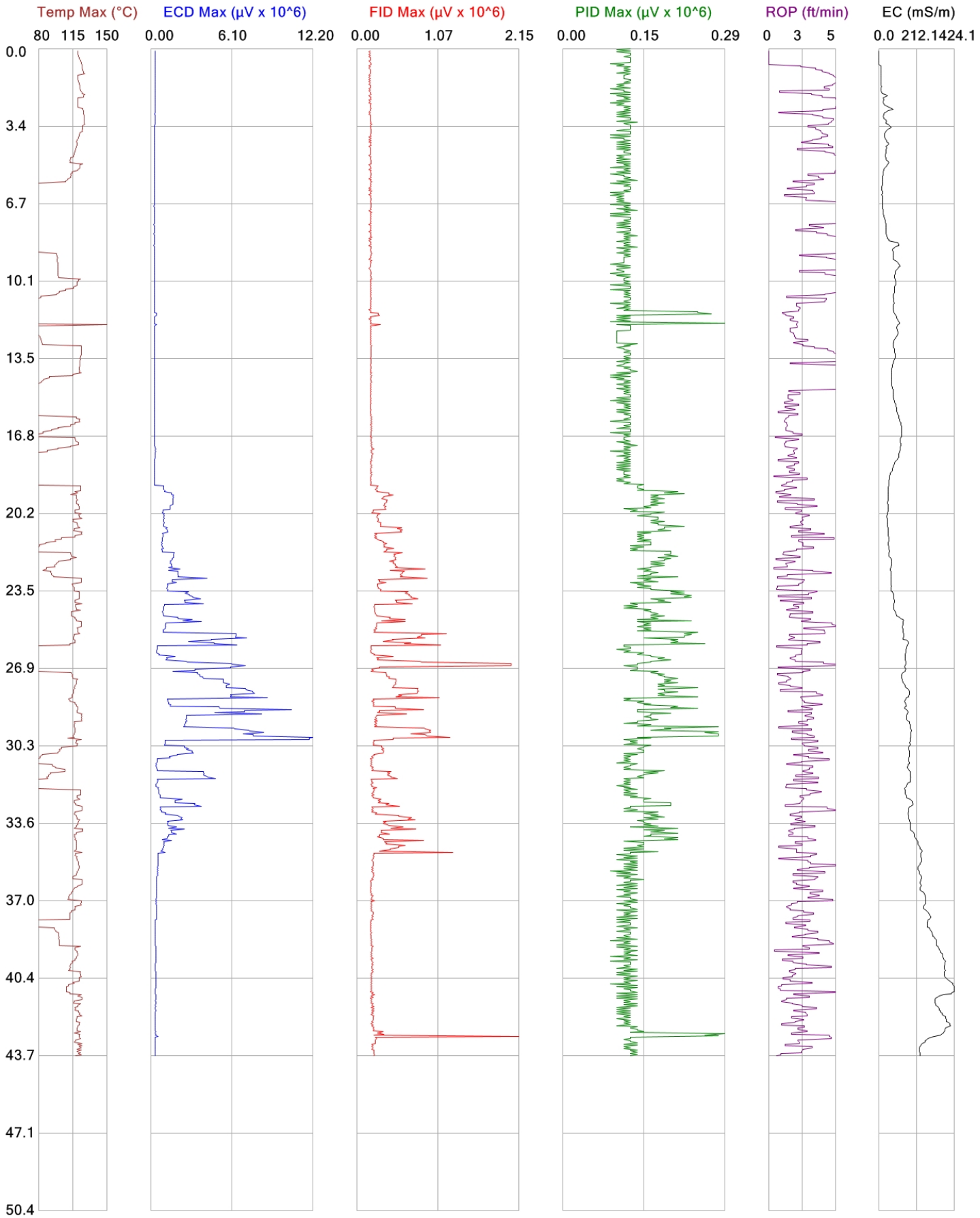

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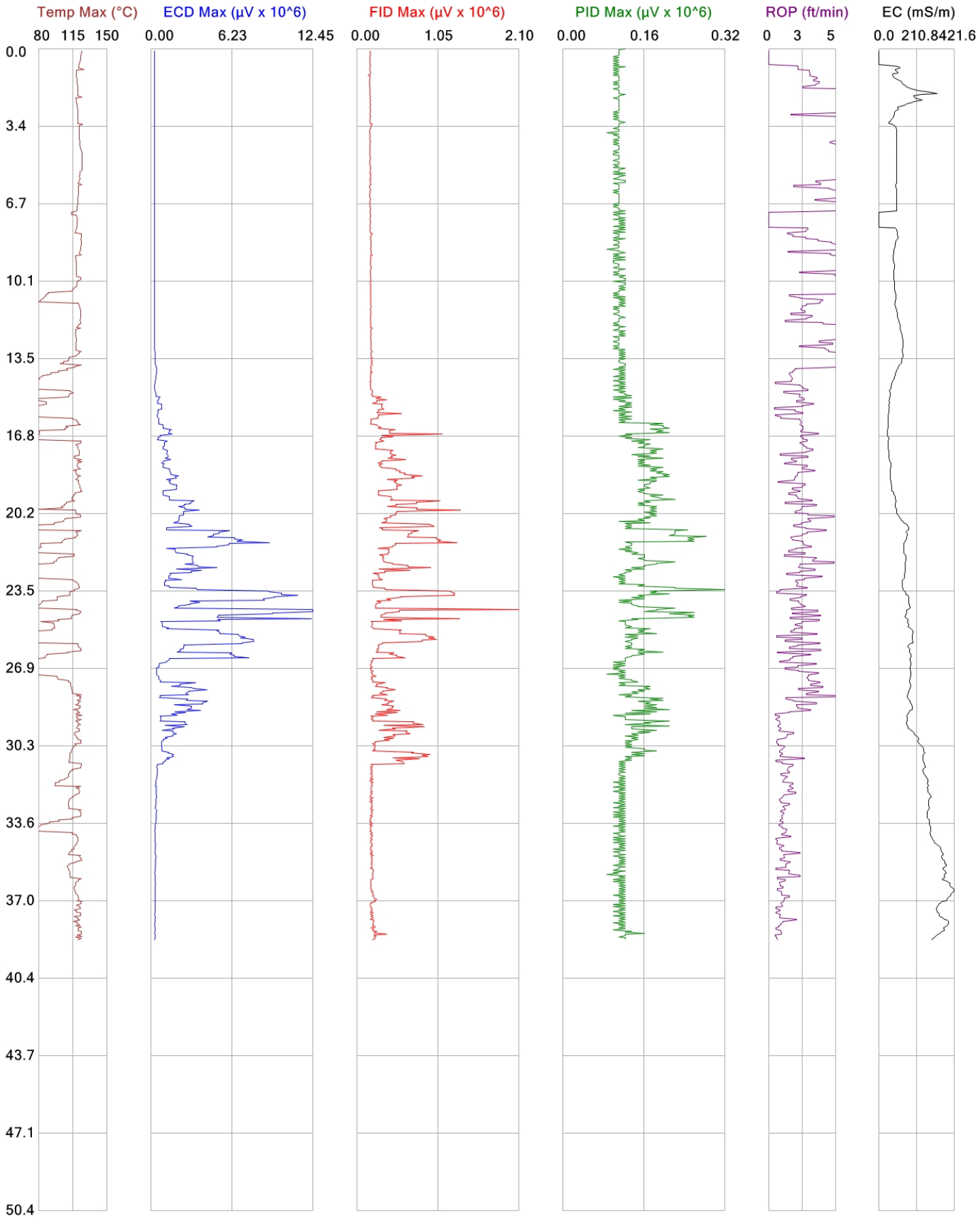

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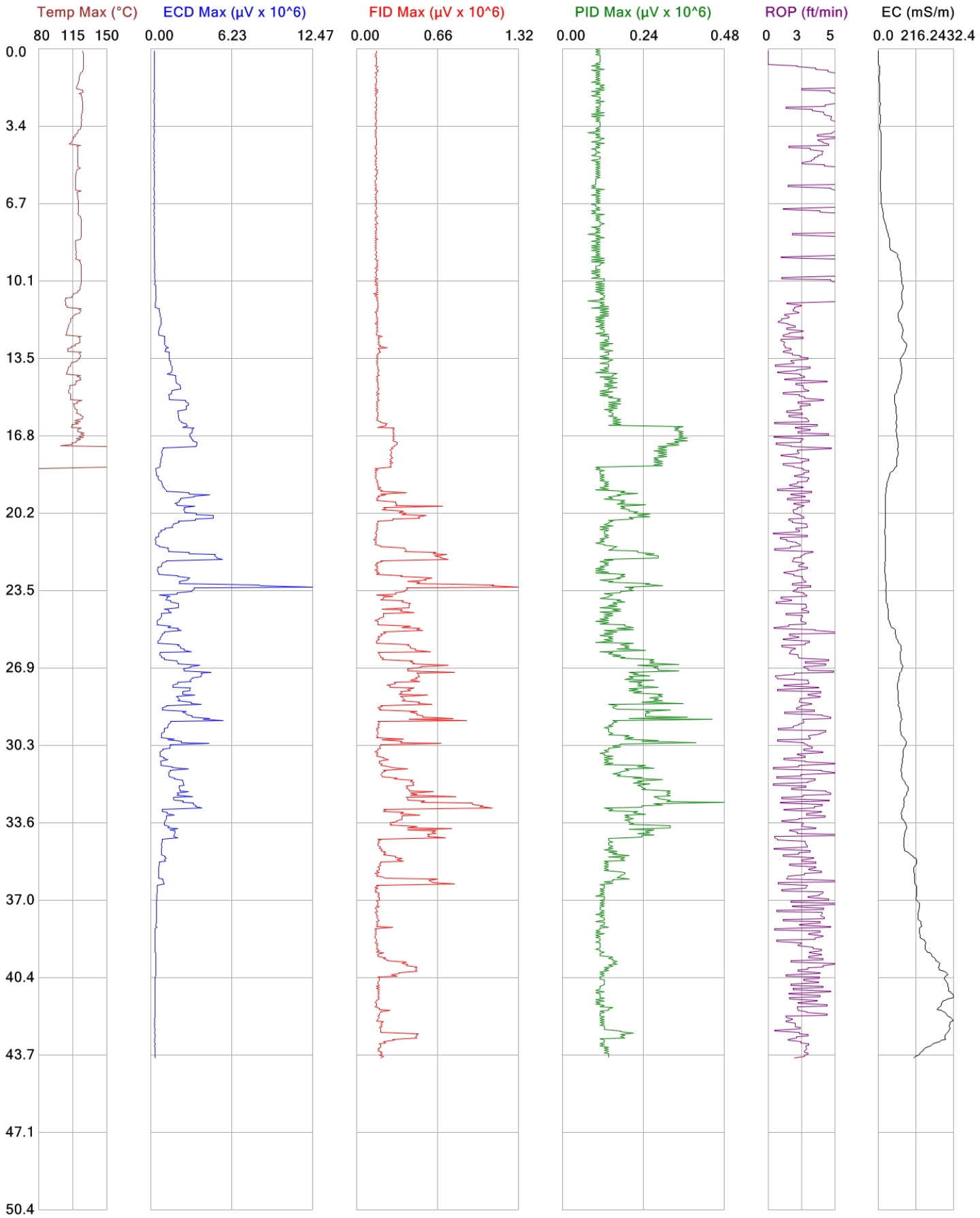

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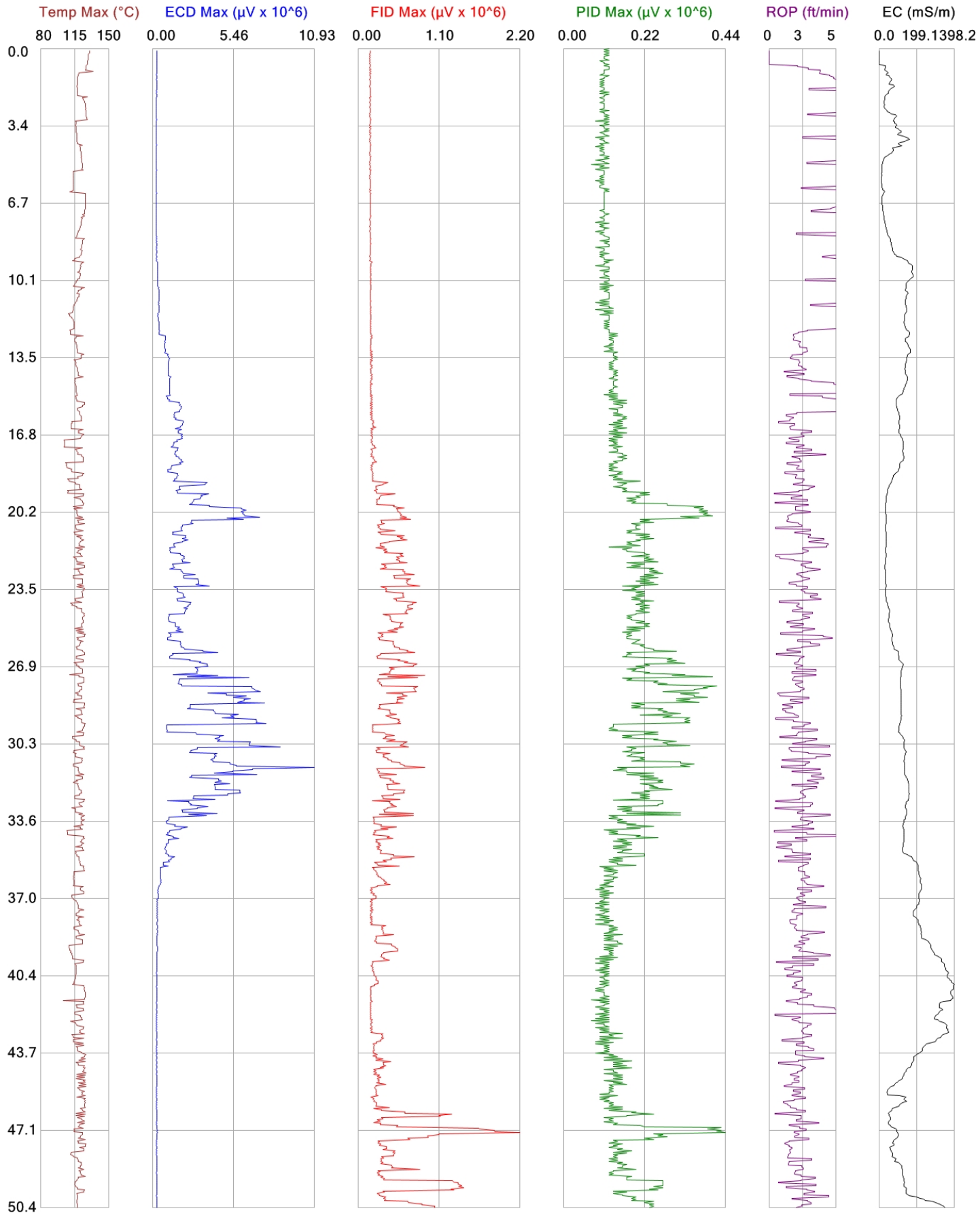

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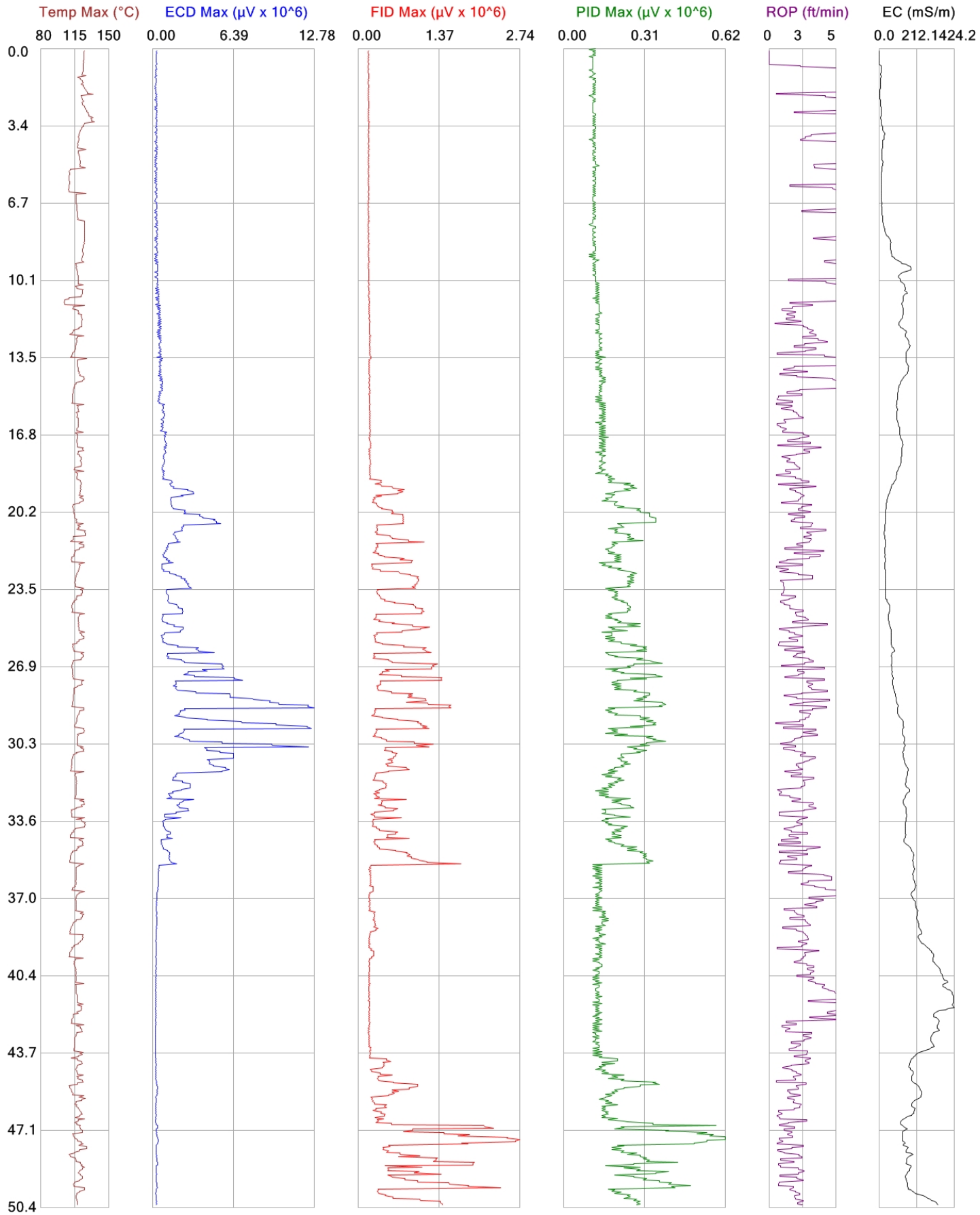

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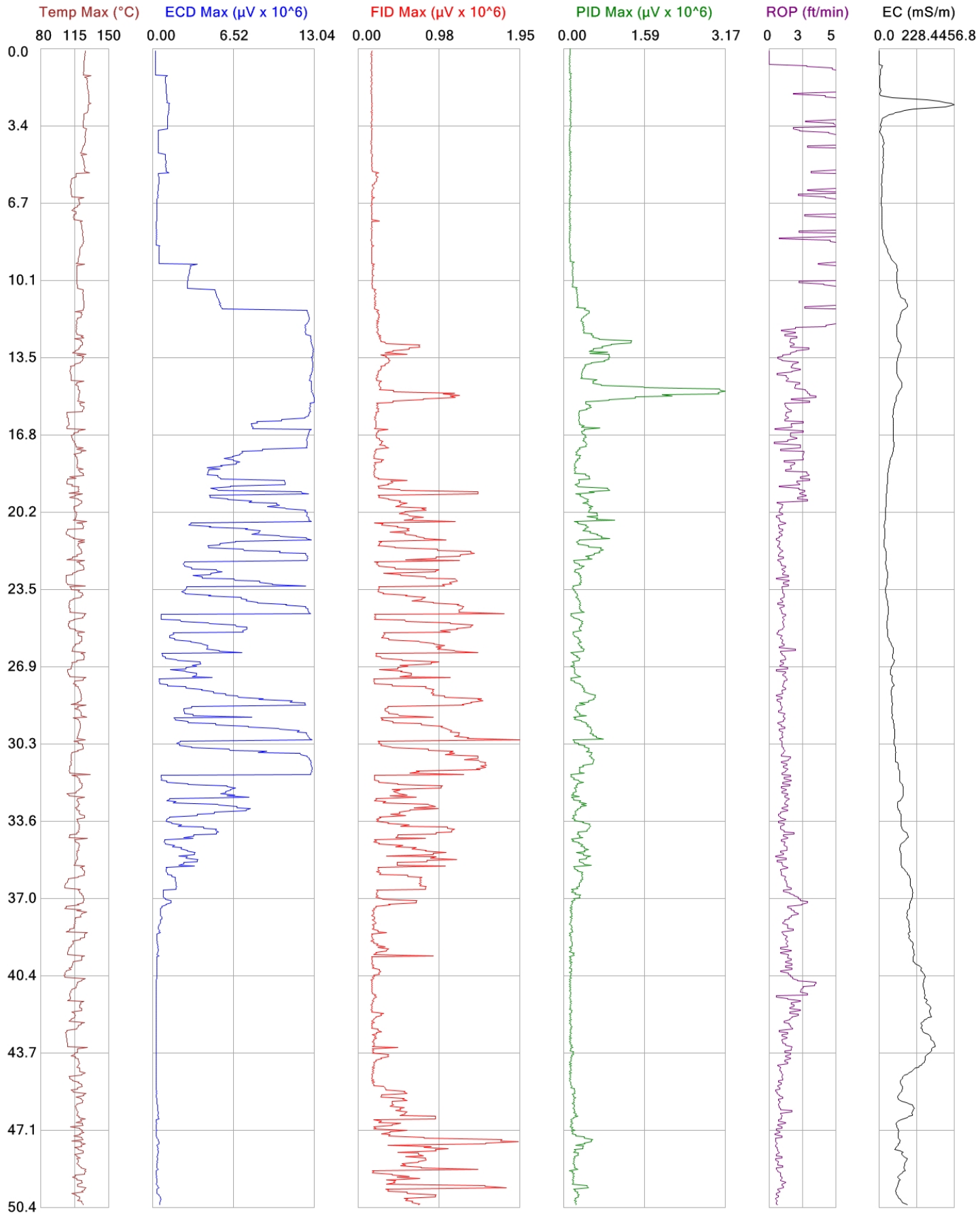

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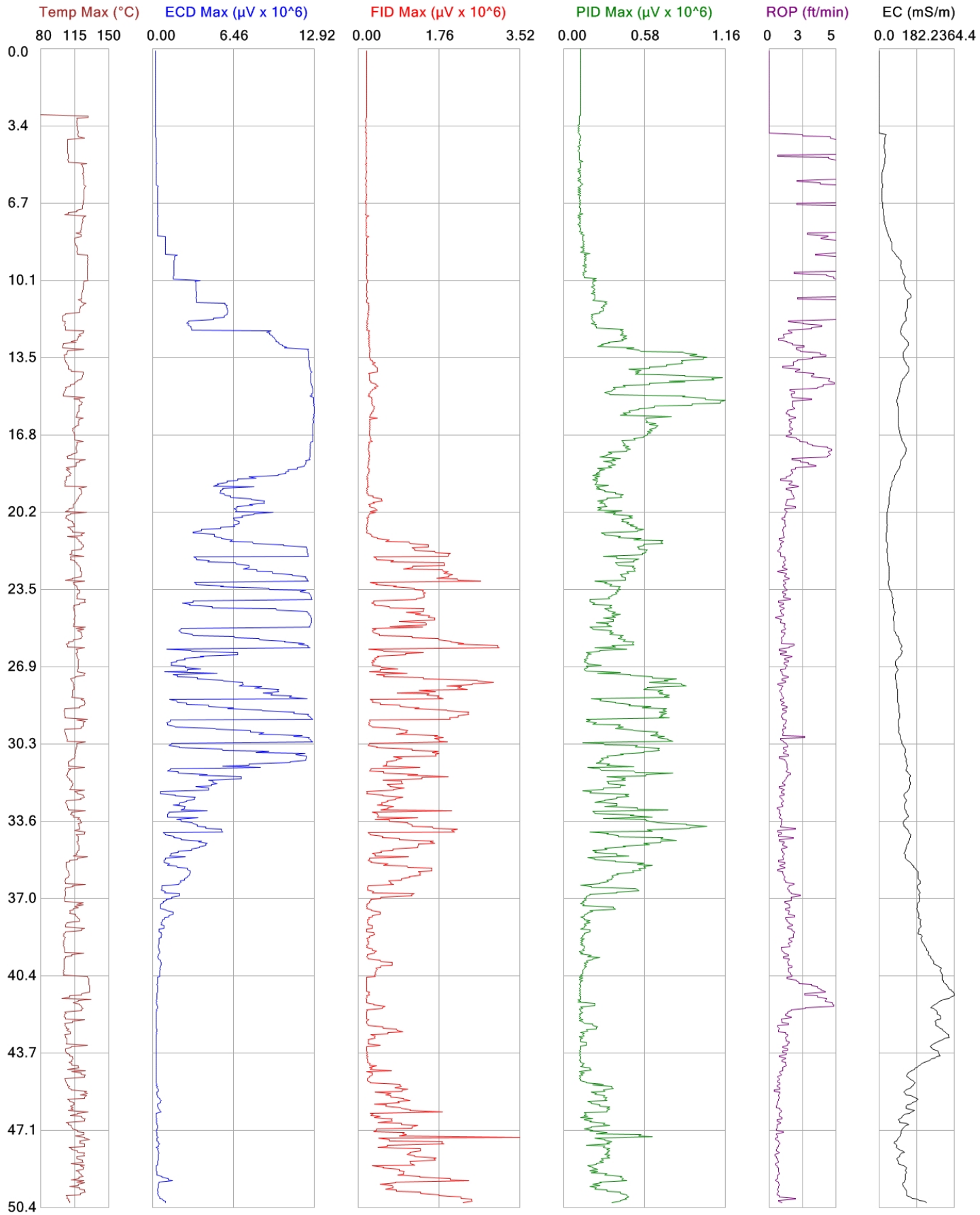

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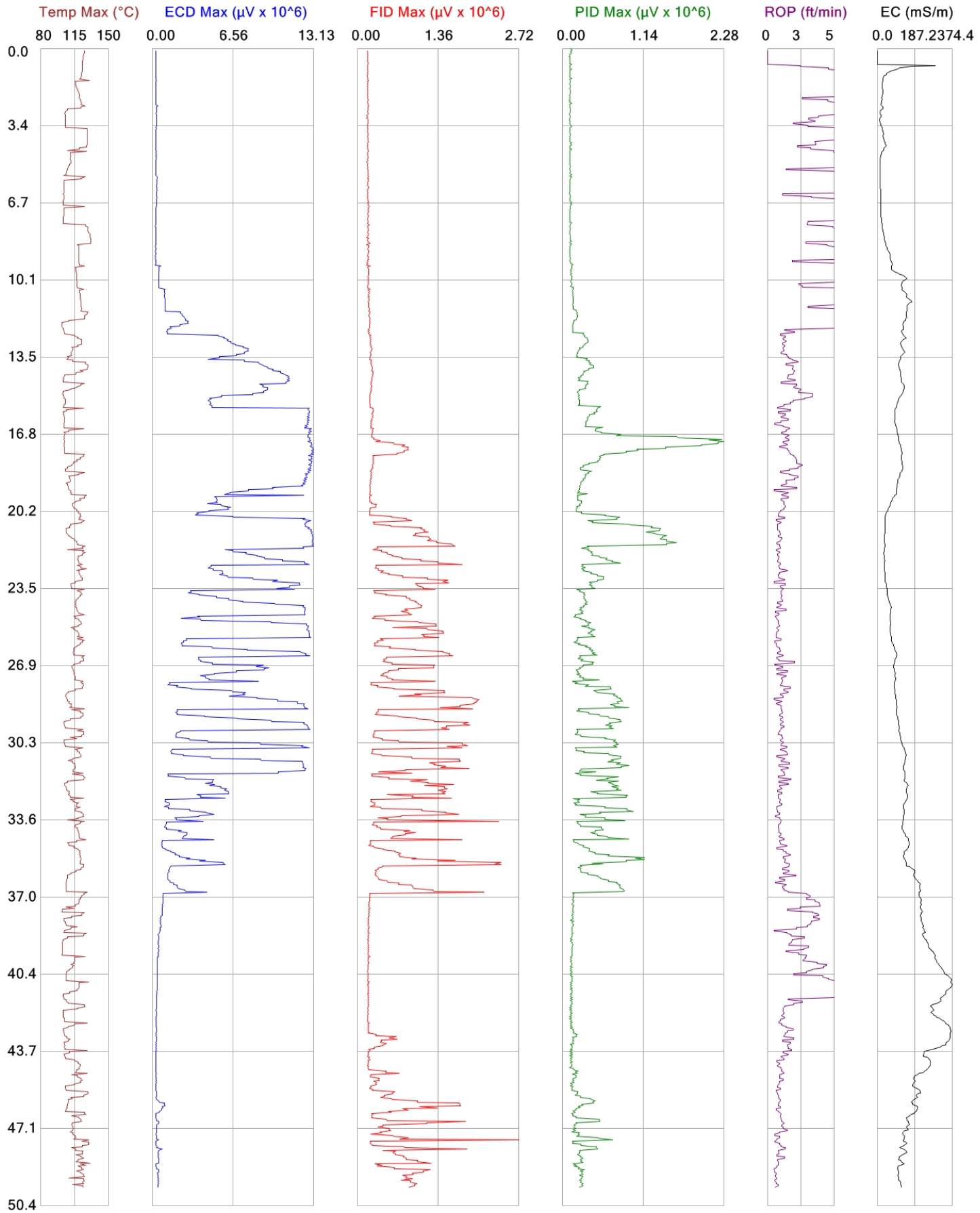

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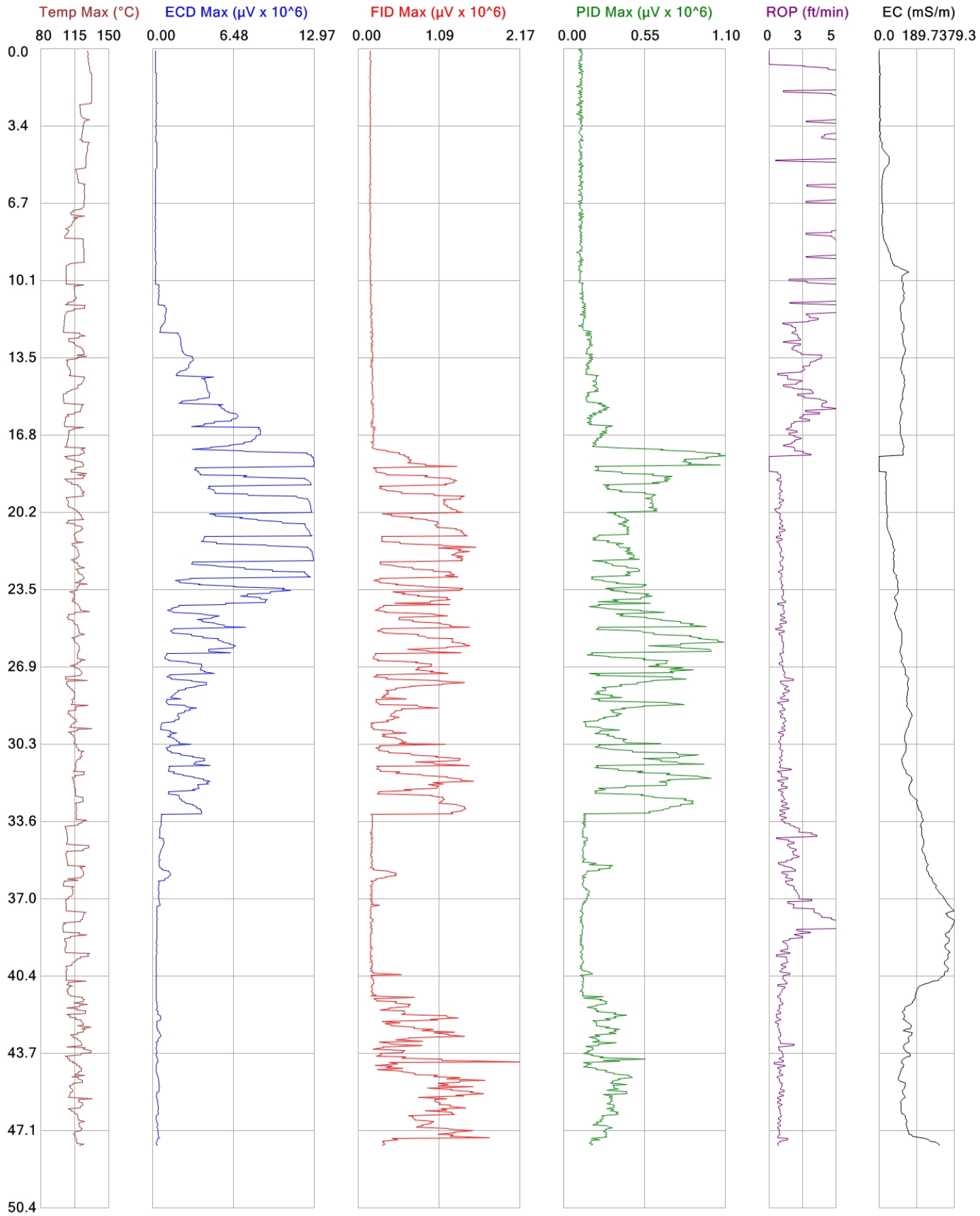

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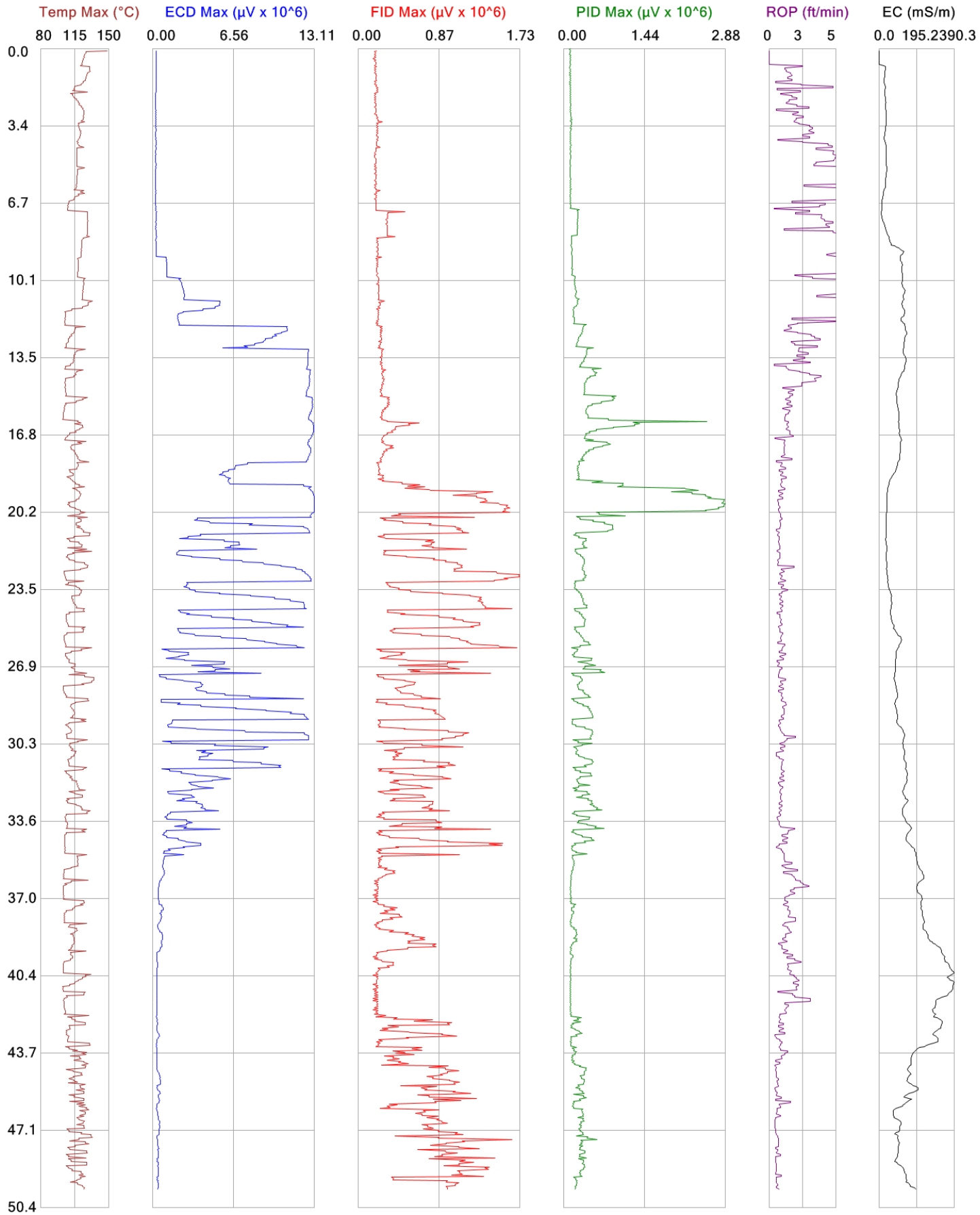

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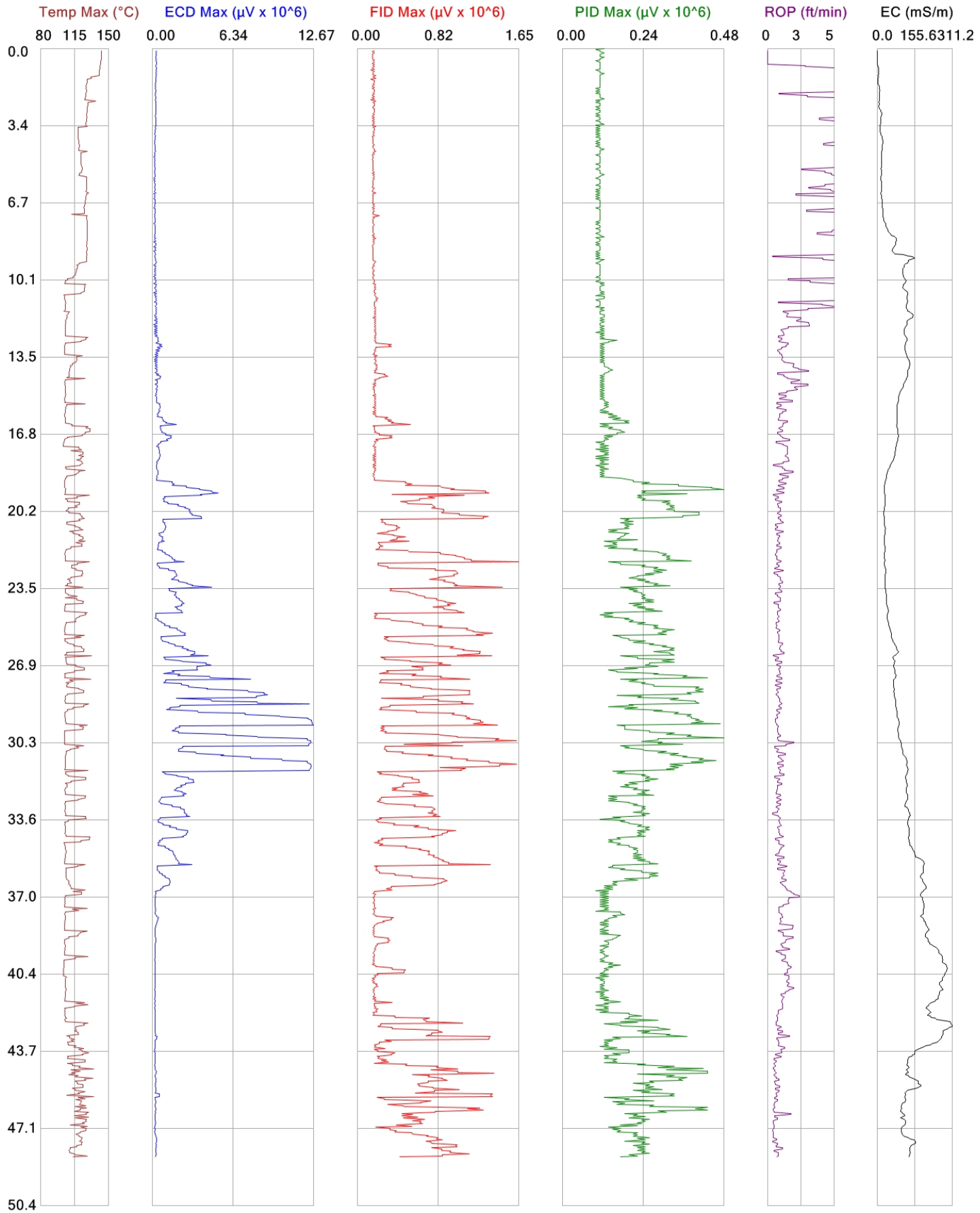

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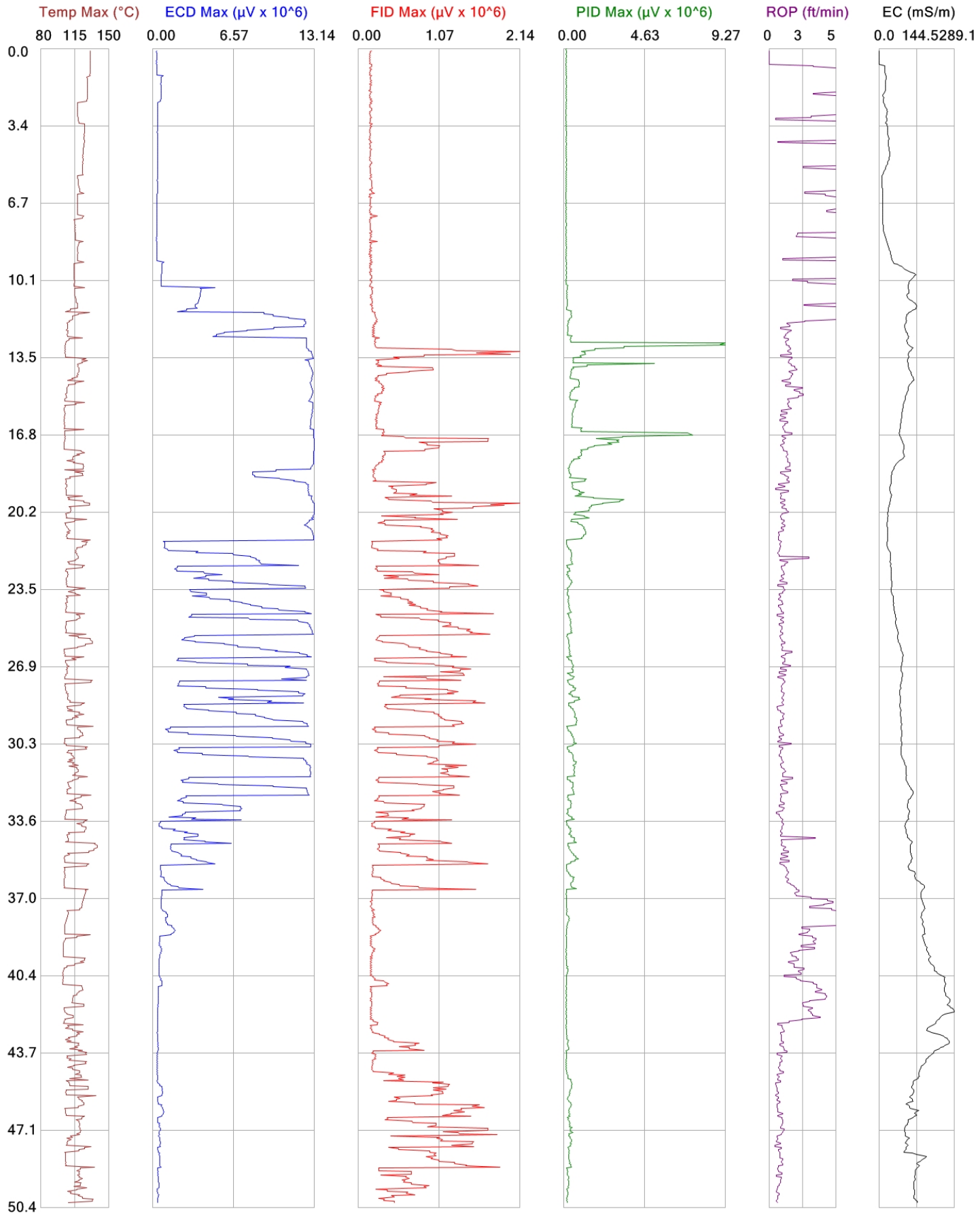

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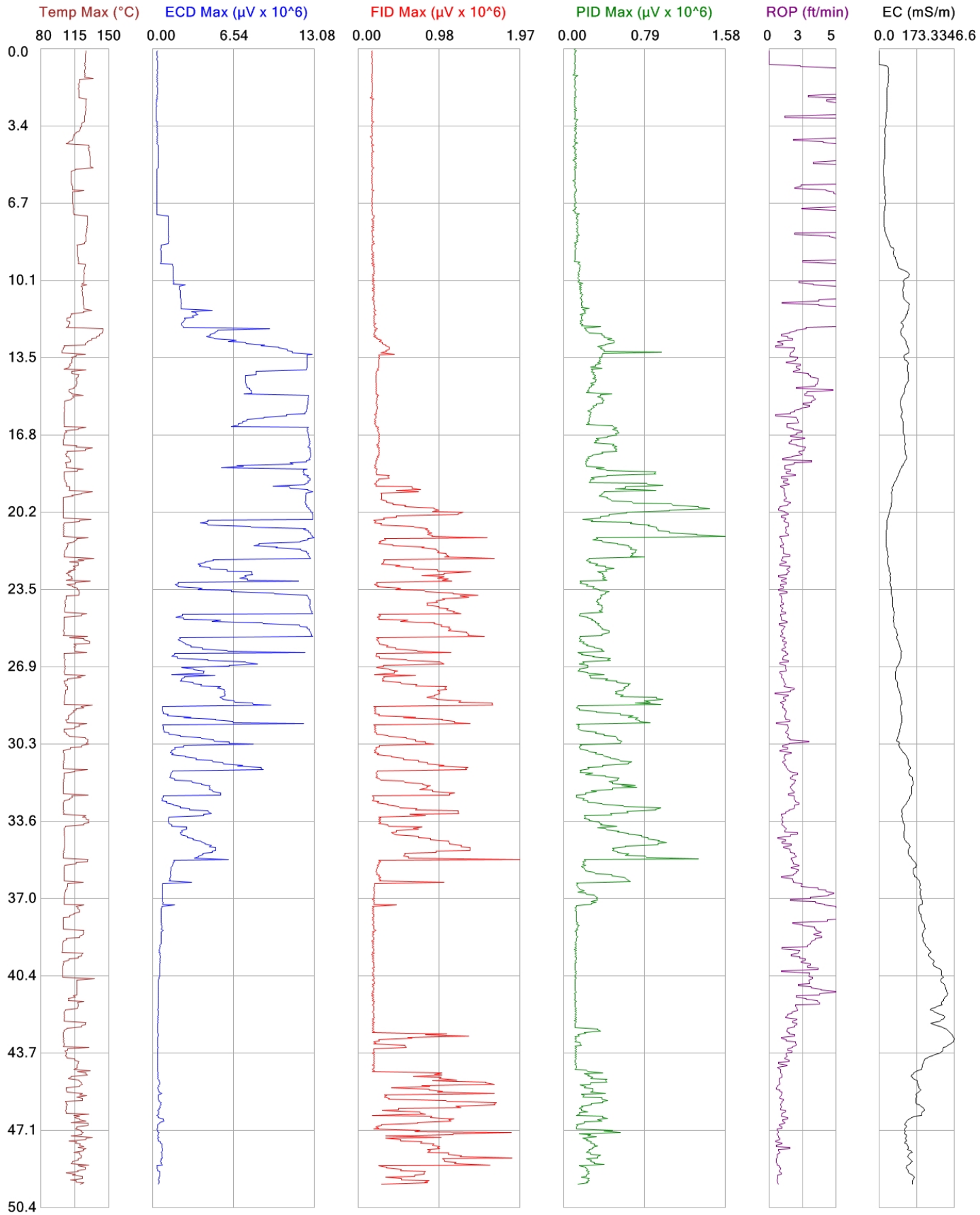

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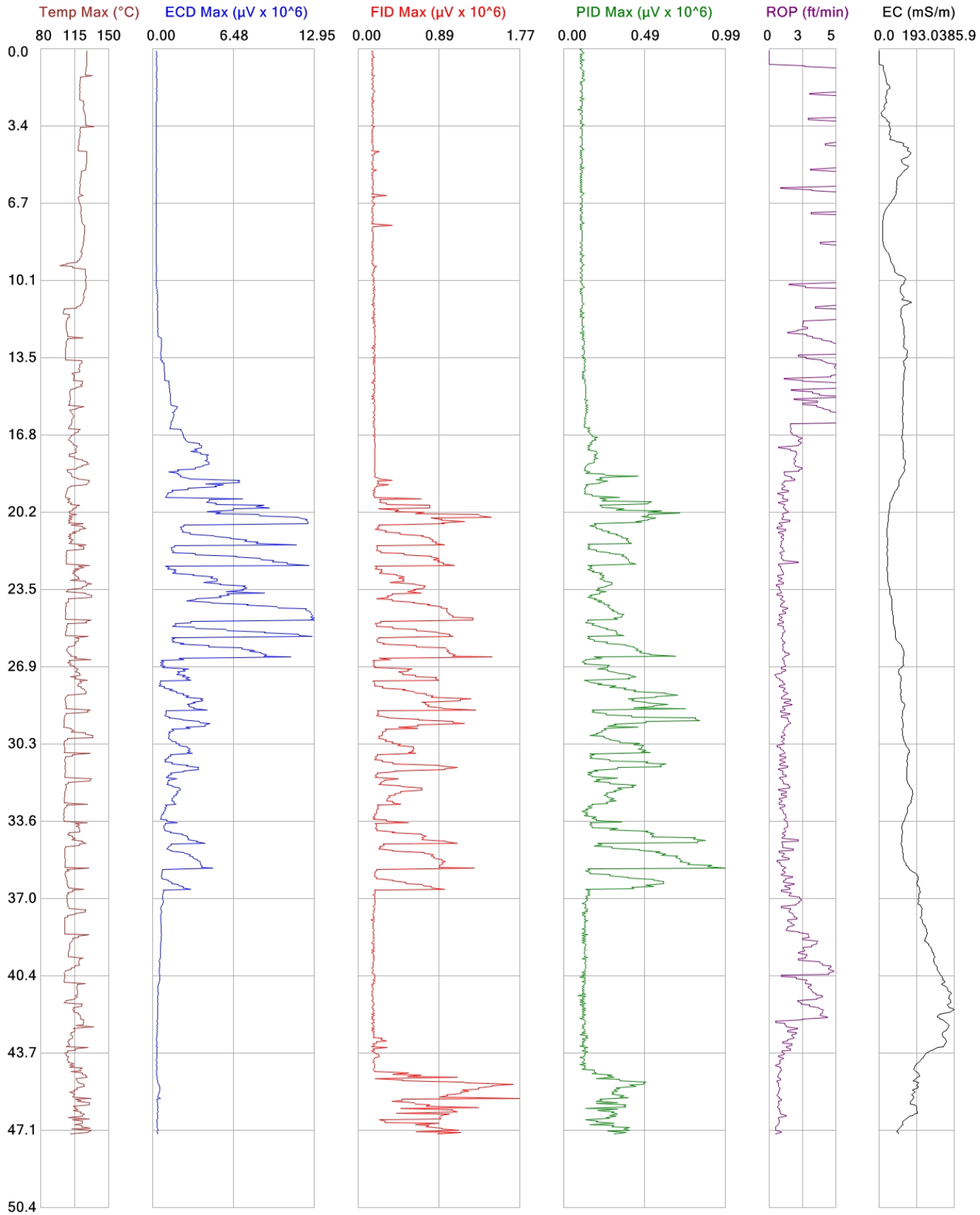

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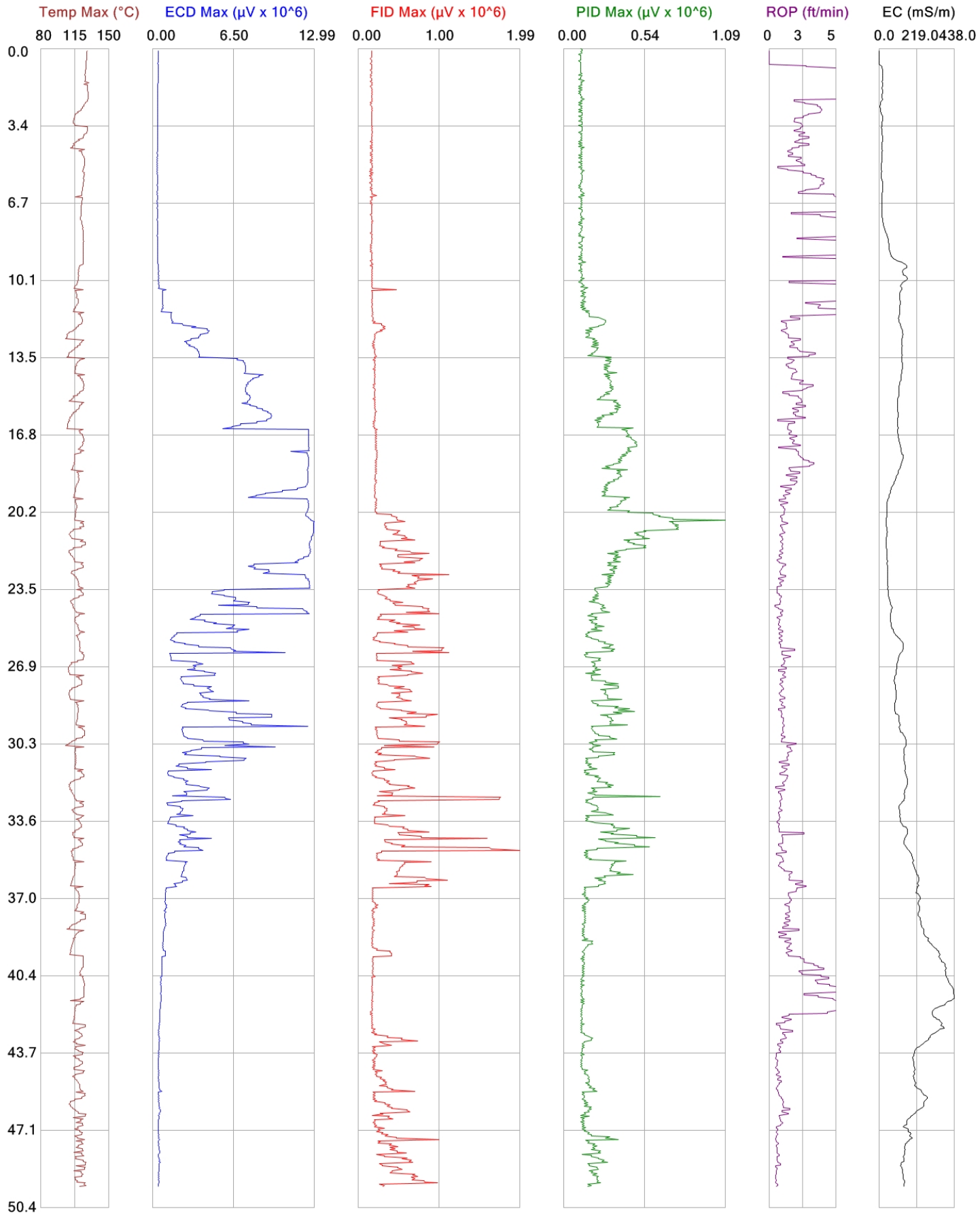

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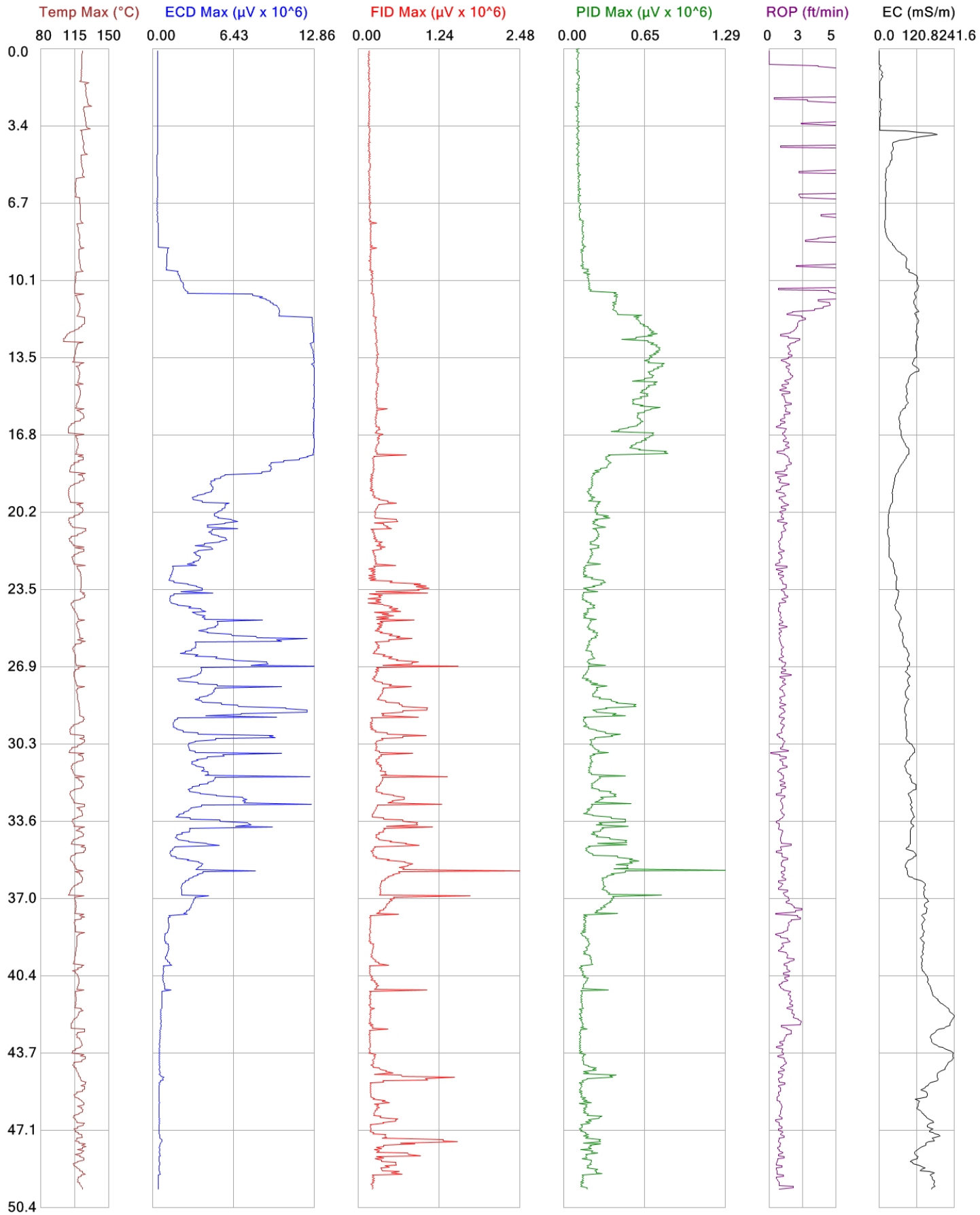

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APPENDIX B

MIP Logs (Collective Scale)

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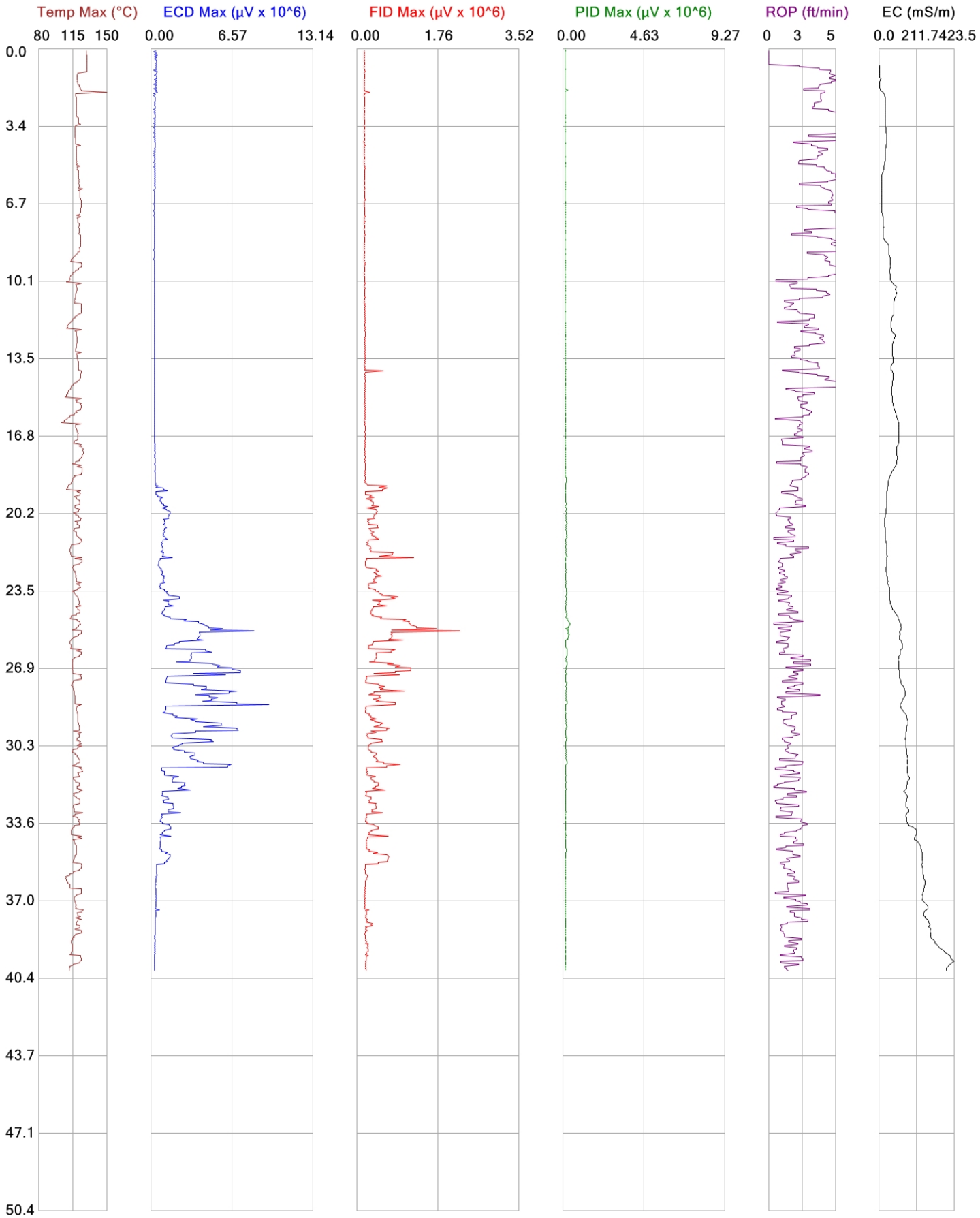

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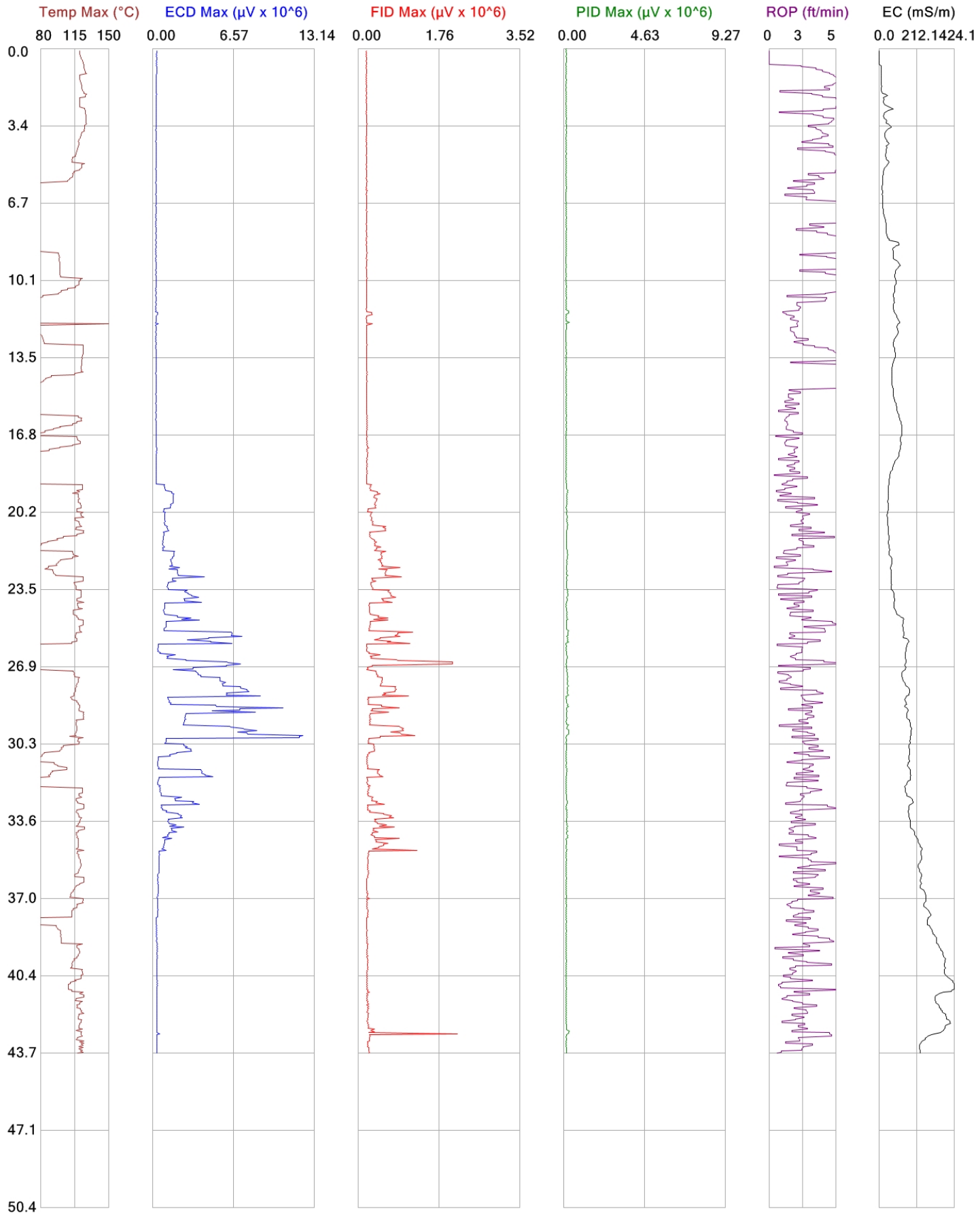

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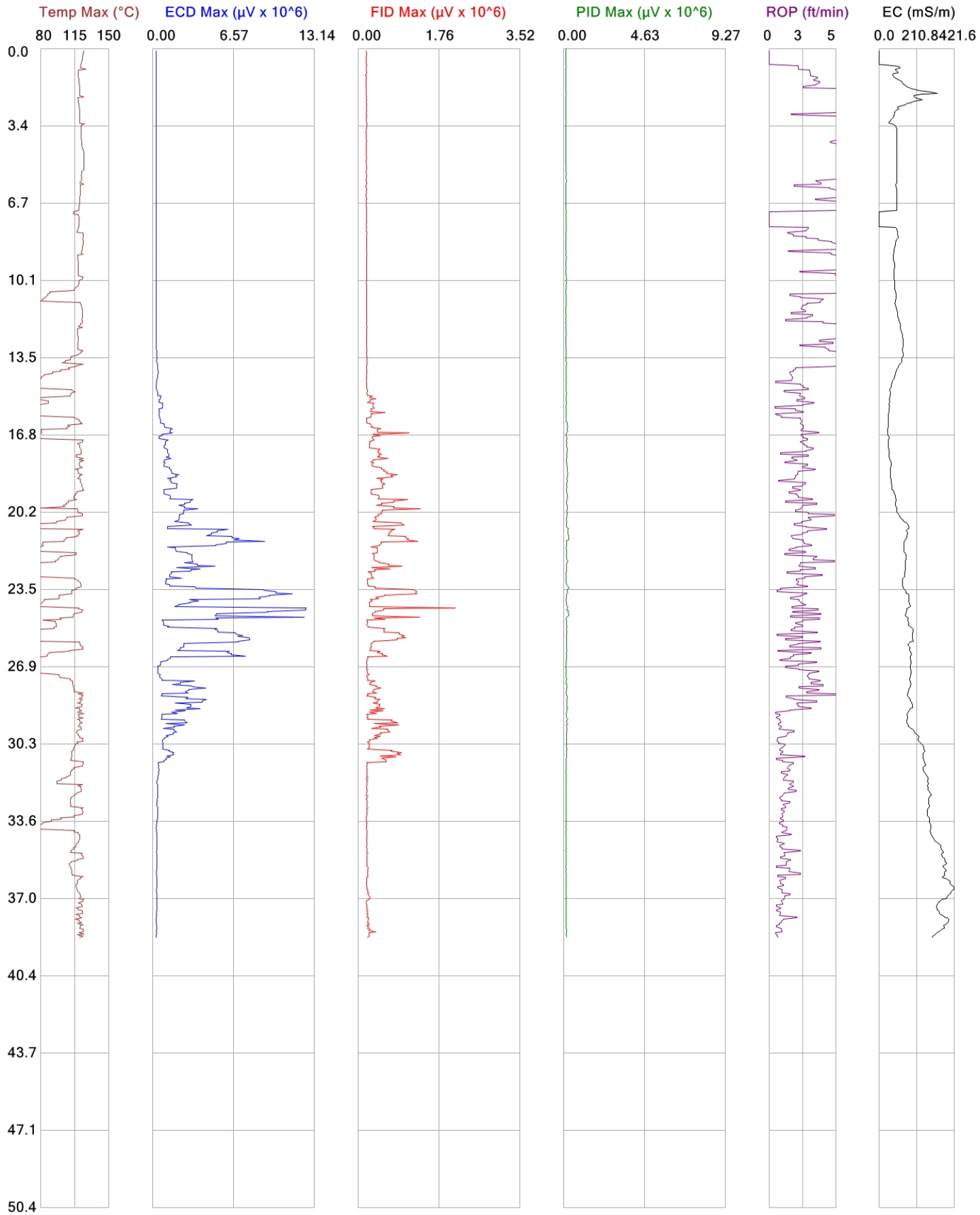

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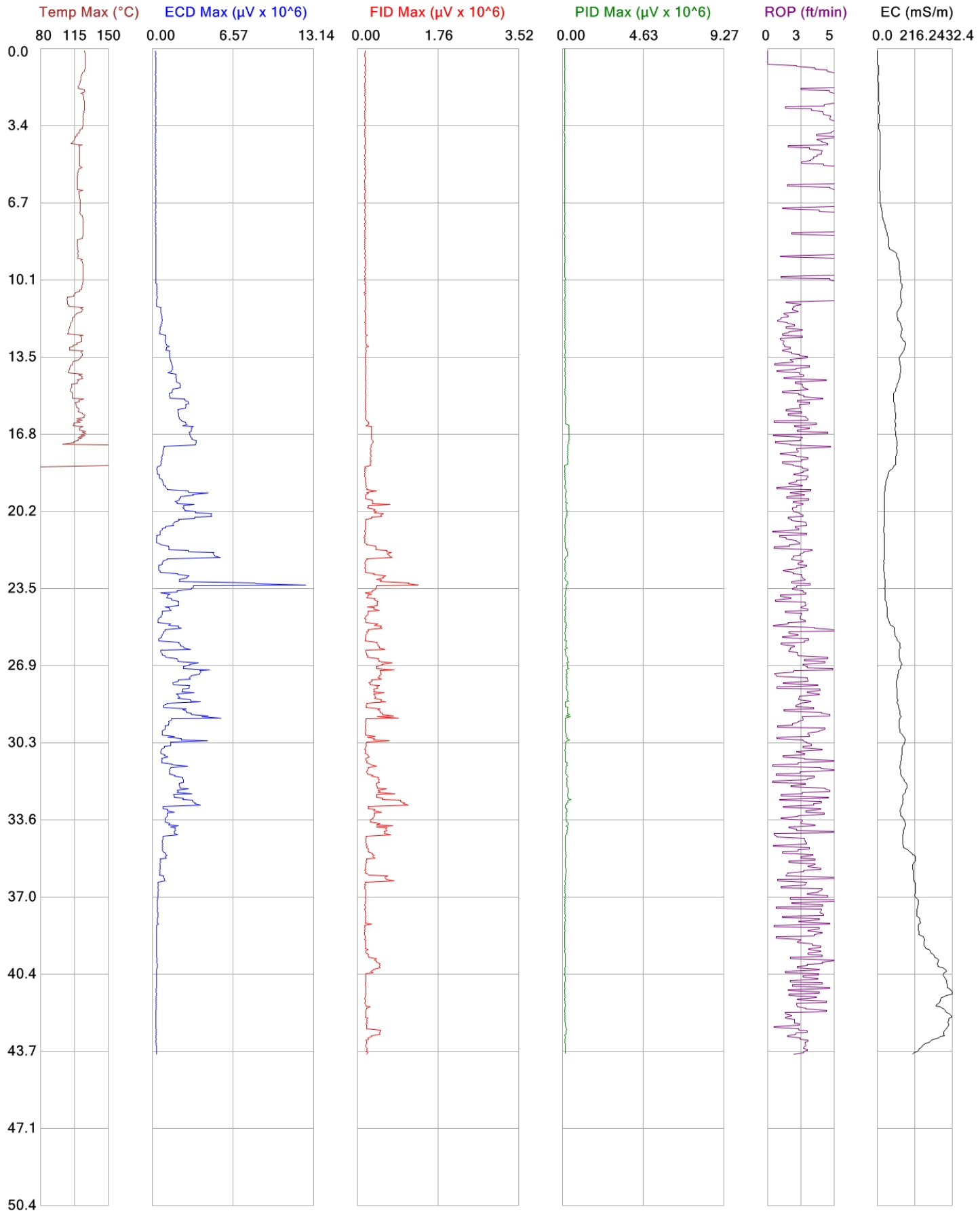
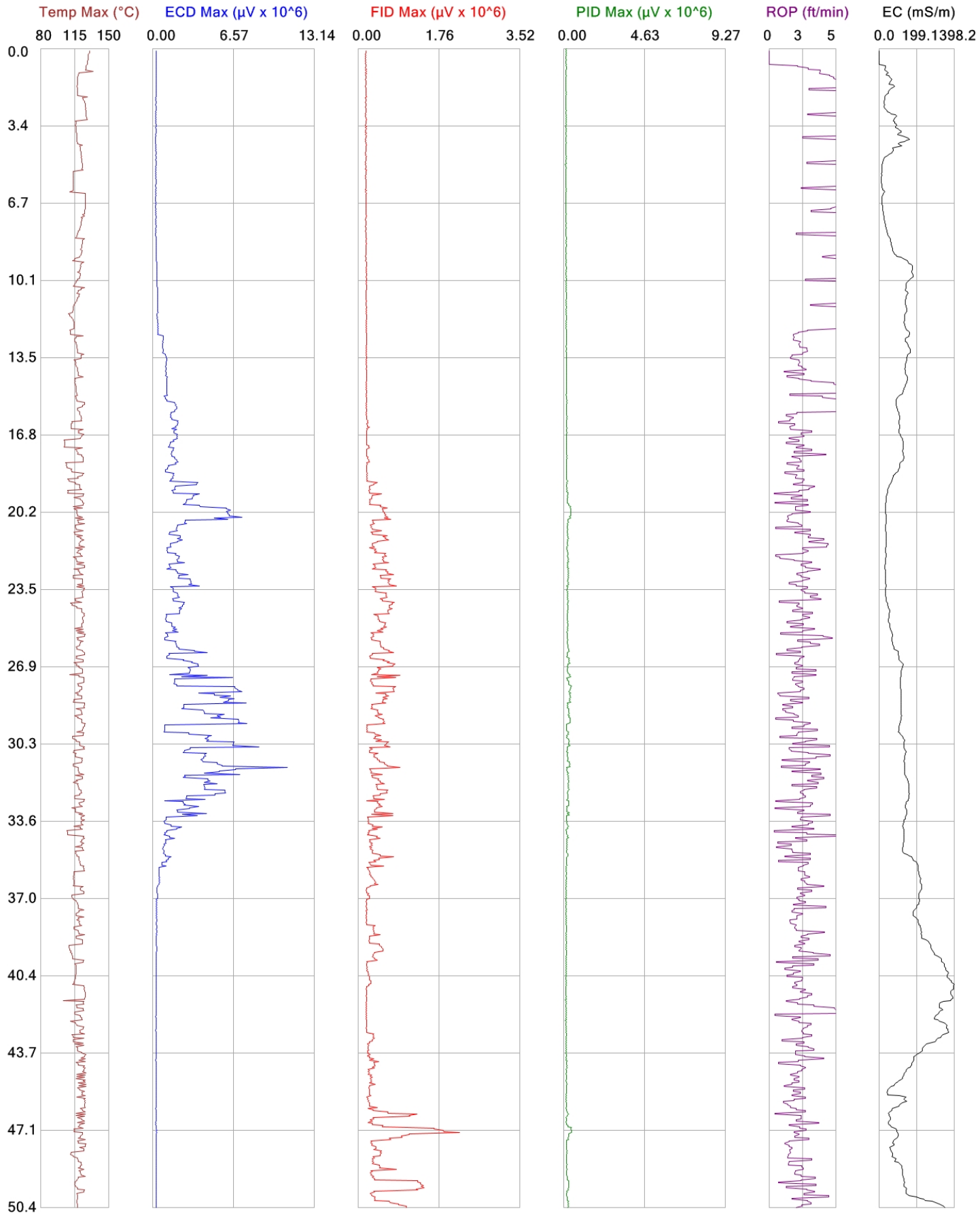
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



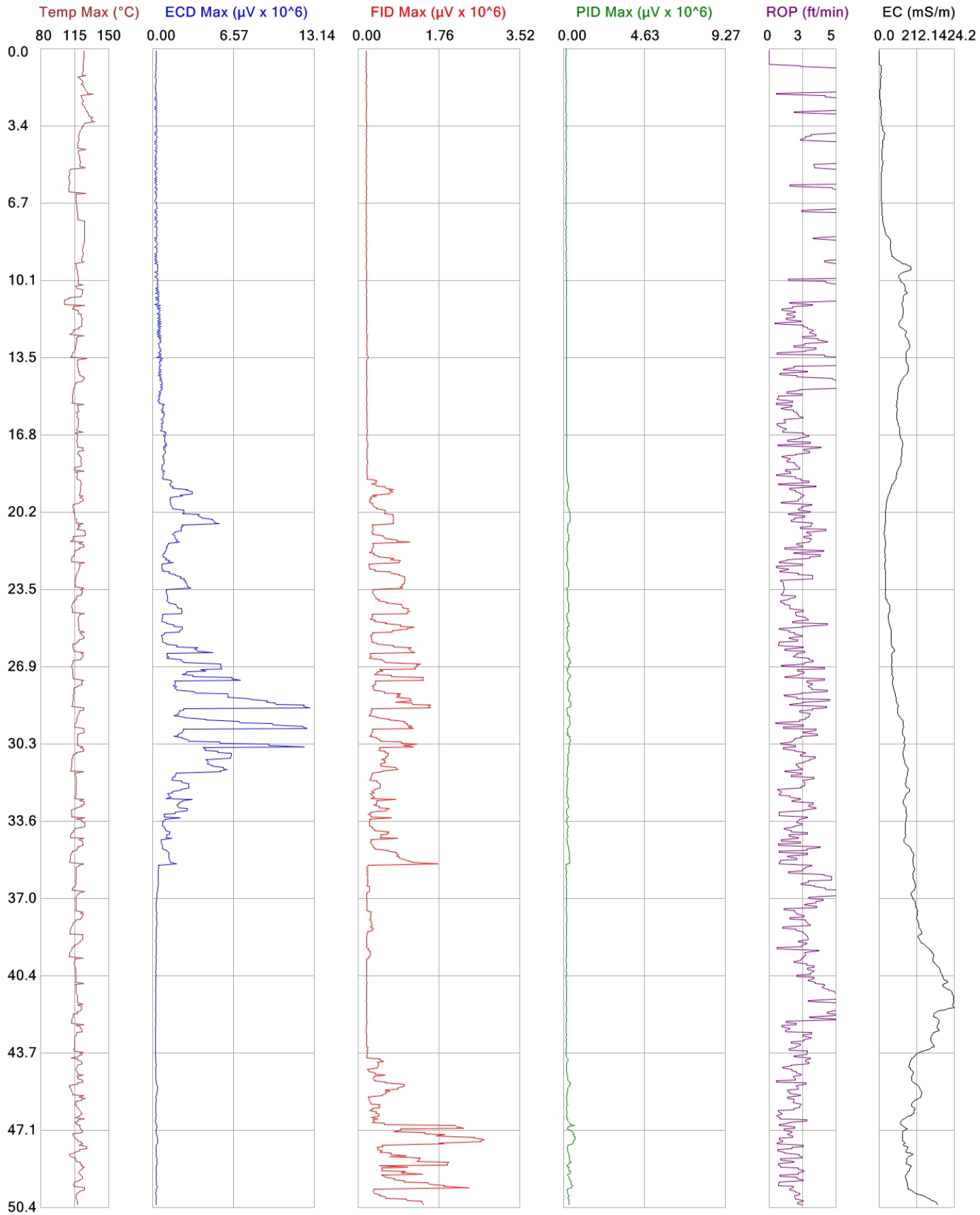
	File: MIP04
Client: Tetra Tech EC, Inc.	Date: 7/31/2009
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



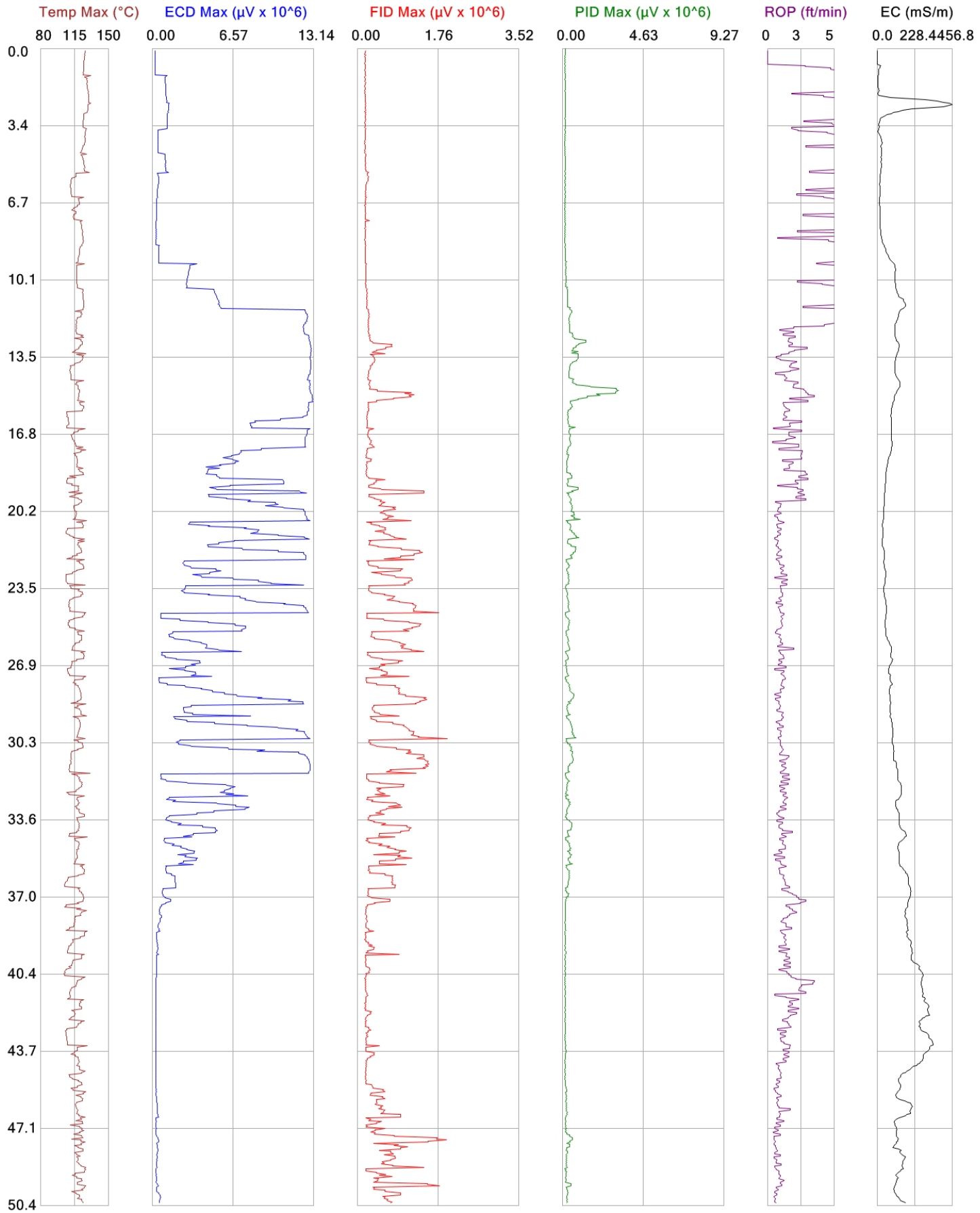
	File: MIP05
Client: Tetra Tech EC, Inc.	Date: 7/31/2009
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



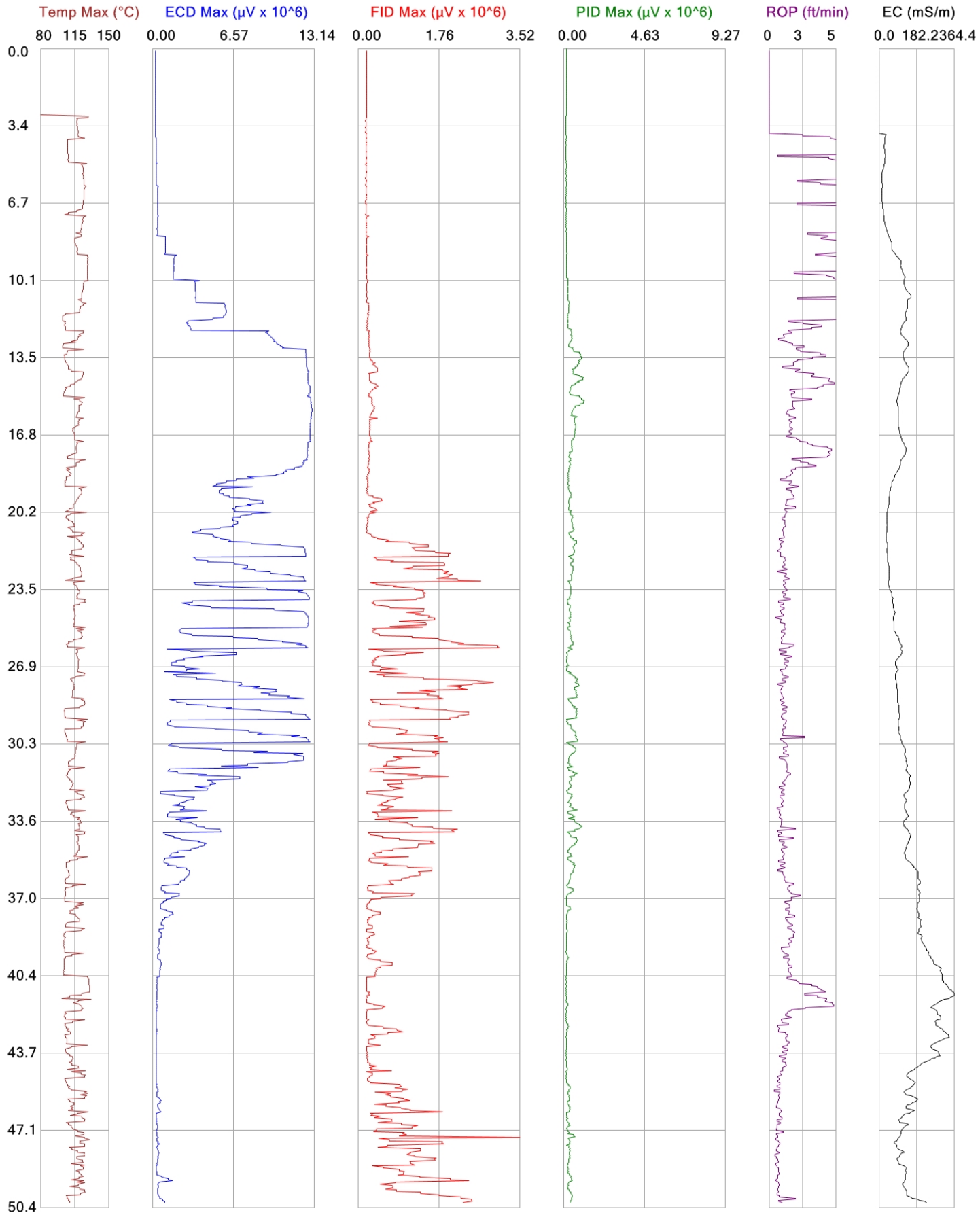
	File: MIP06
Client: Tetra Tech EC, Inc.	Date: 8/3/2009
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



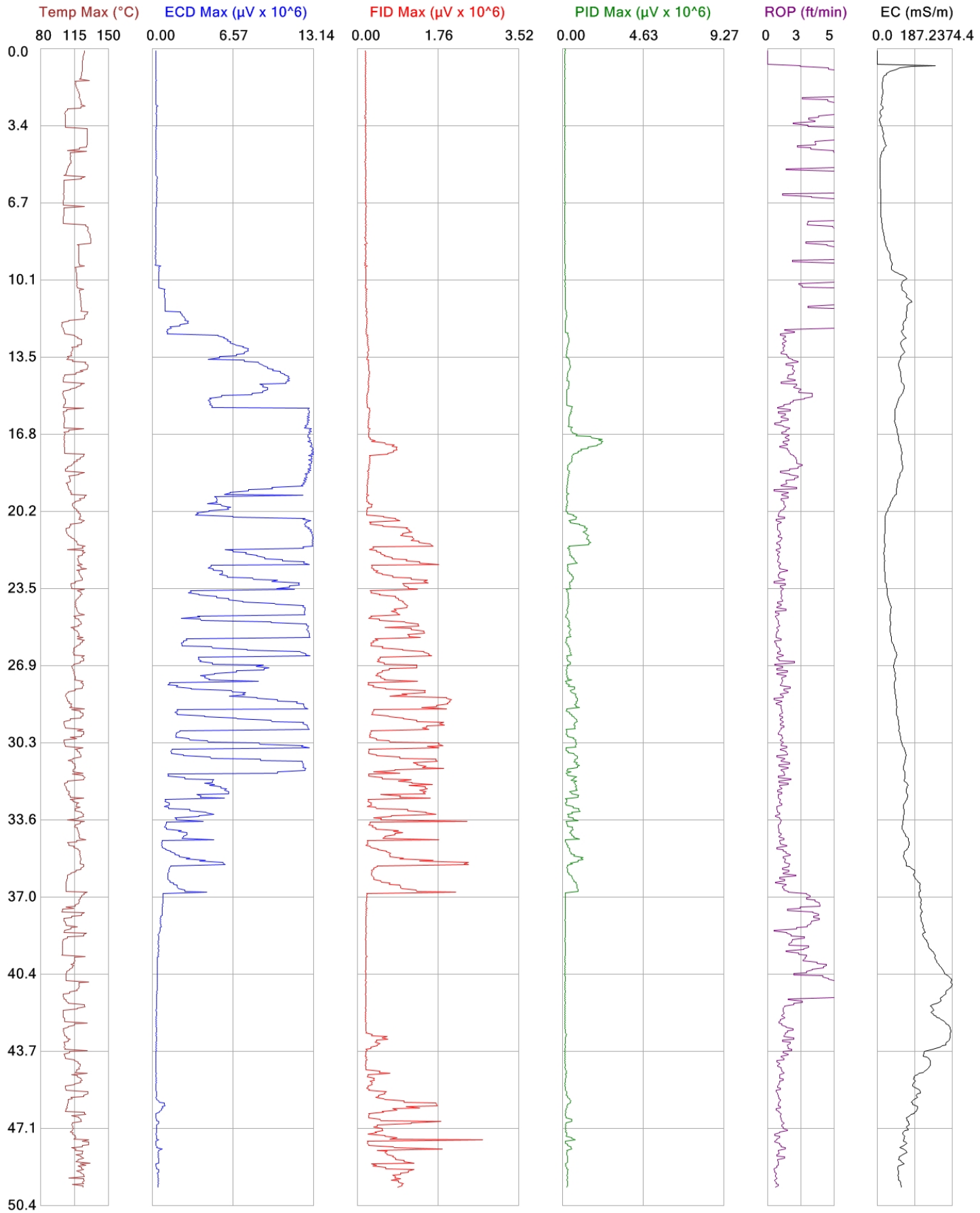
	File: MIP07
Client: Tetra Tech EC, Inc.	Date: 8/3/2009
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



	File: MIP08
Client: Tetra Tech EC, Inc.	Date: 8/3/2009
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



	File: MIP09
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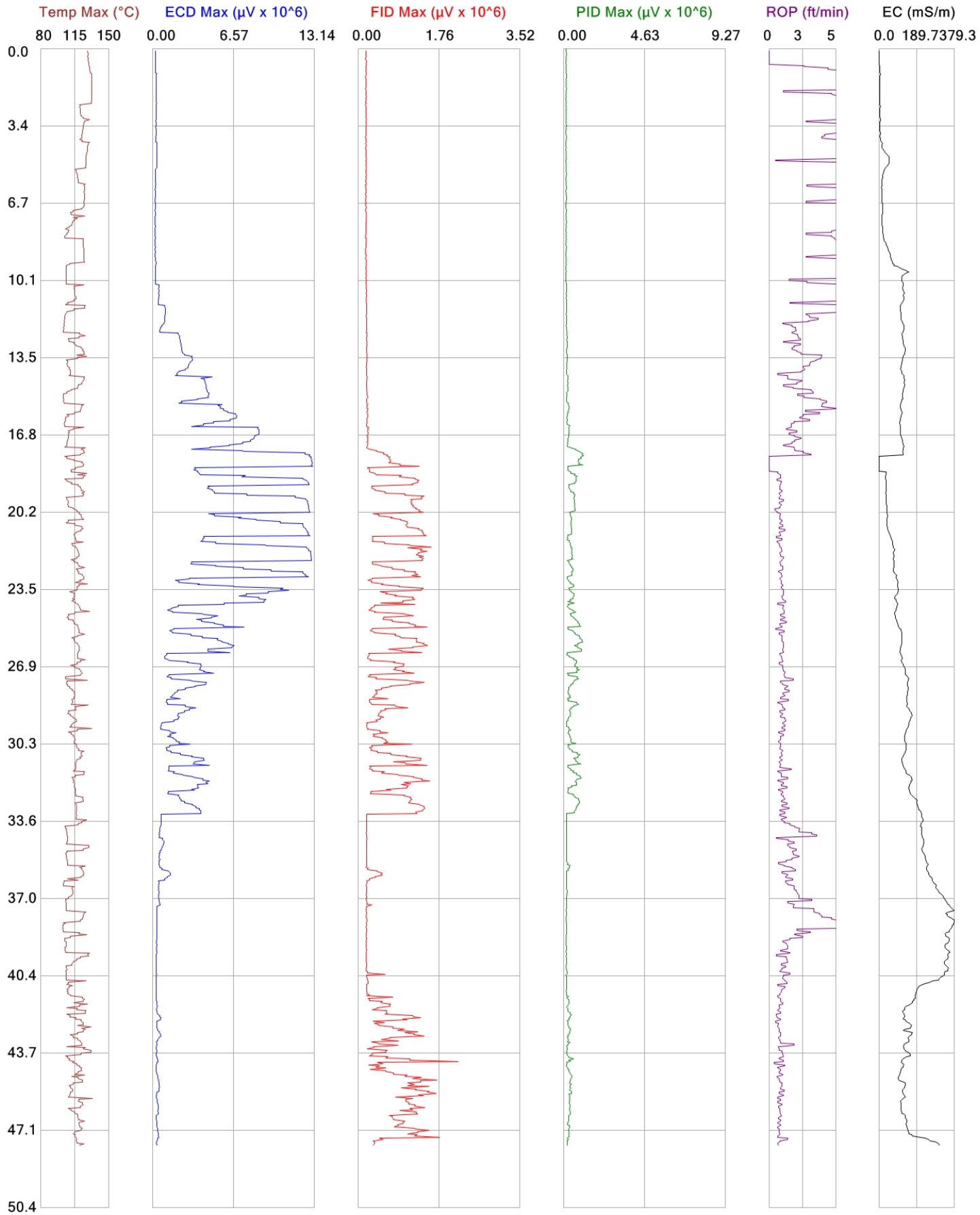
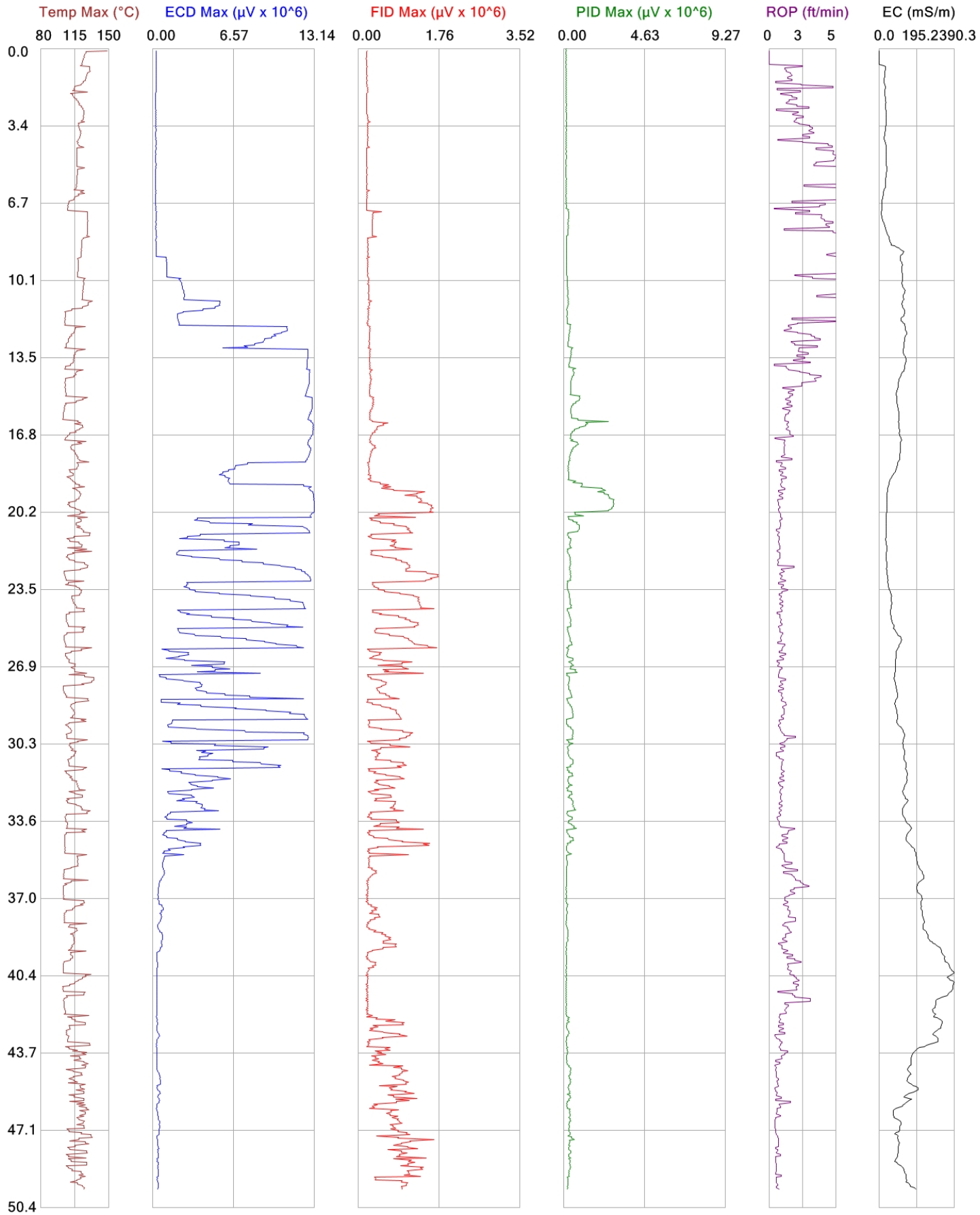
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



	File: MIP10
Client: Tetra Tech EC, Inc.	Date: 8/4/2009
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



	File: MIP11
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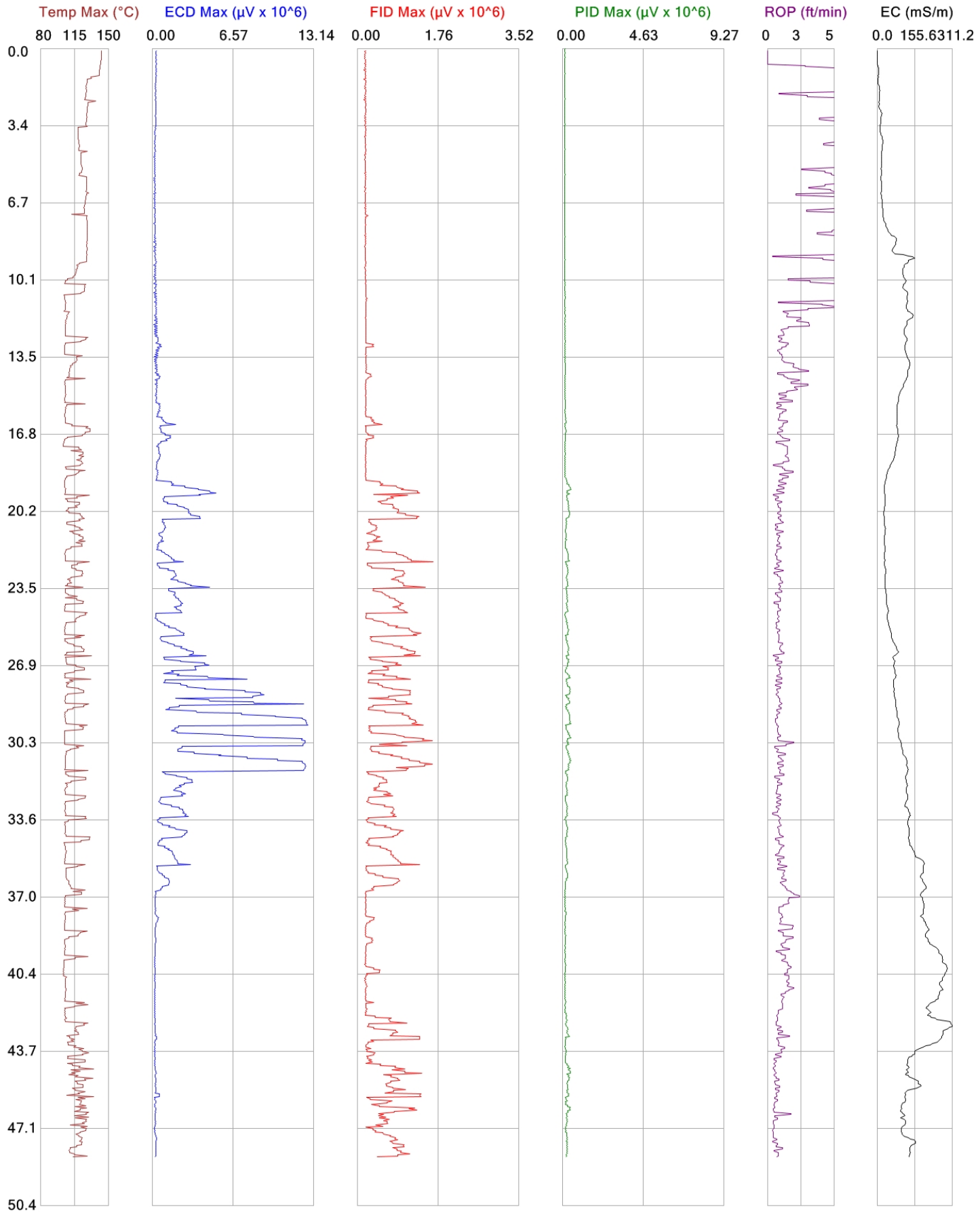
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



	File: MIP12
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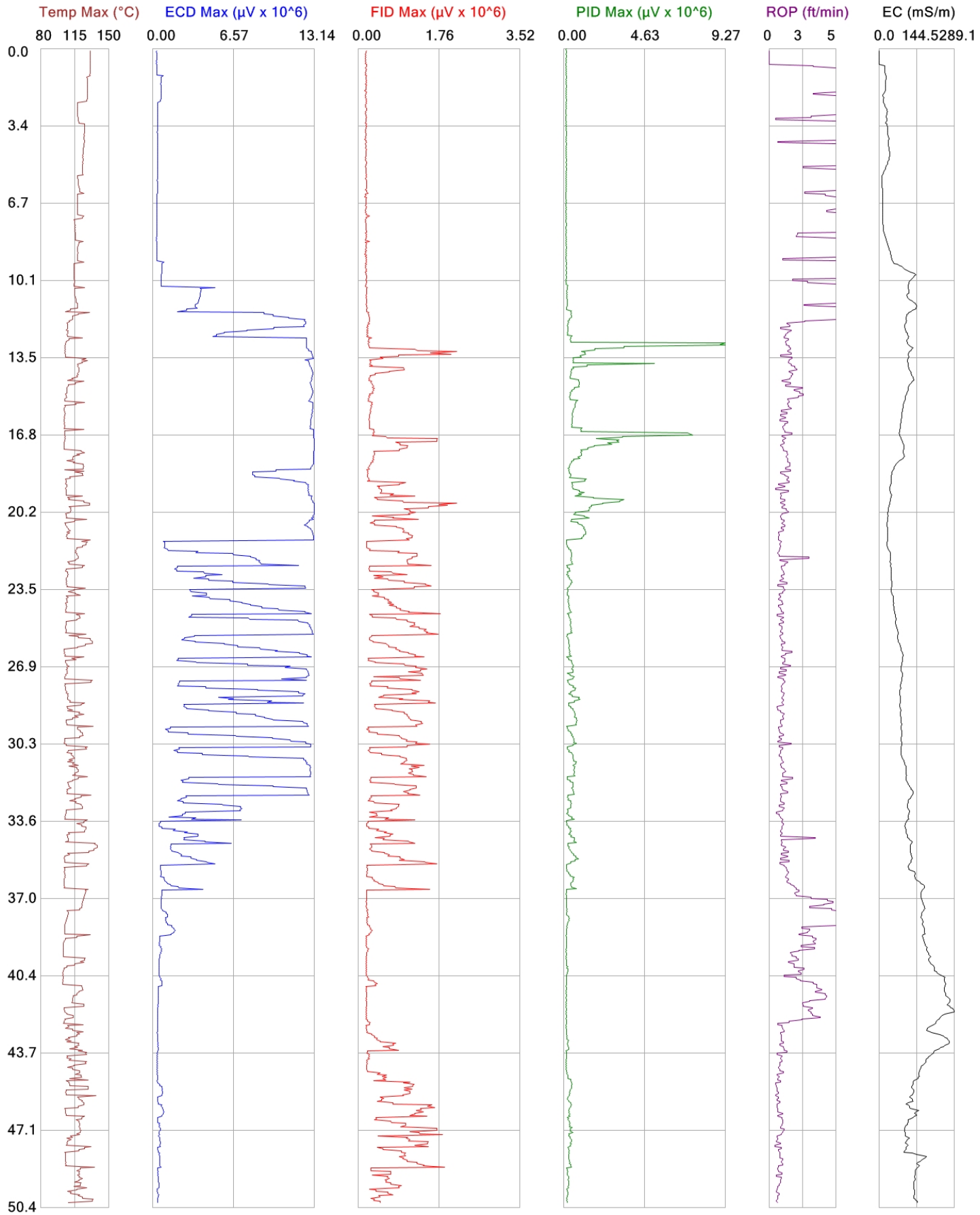
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



	File: MIP13
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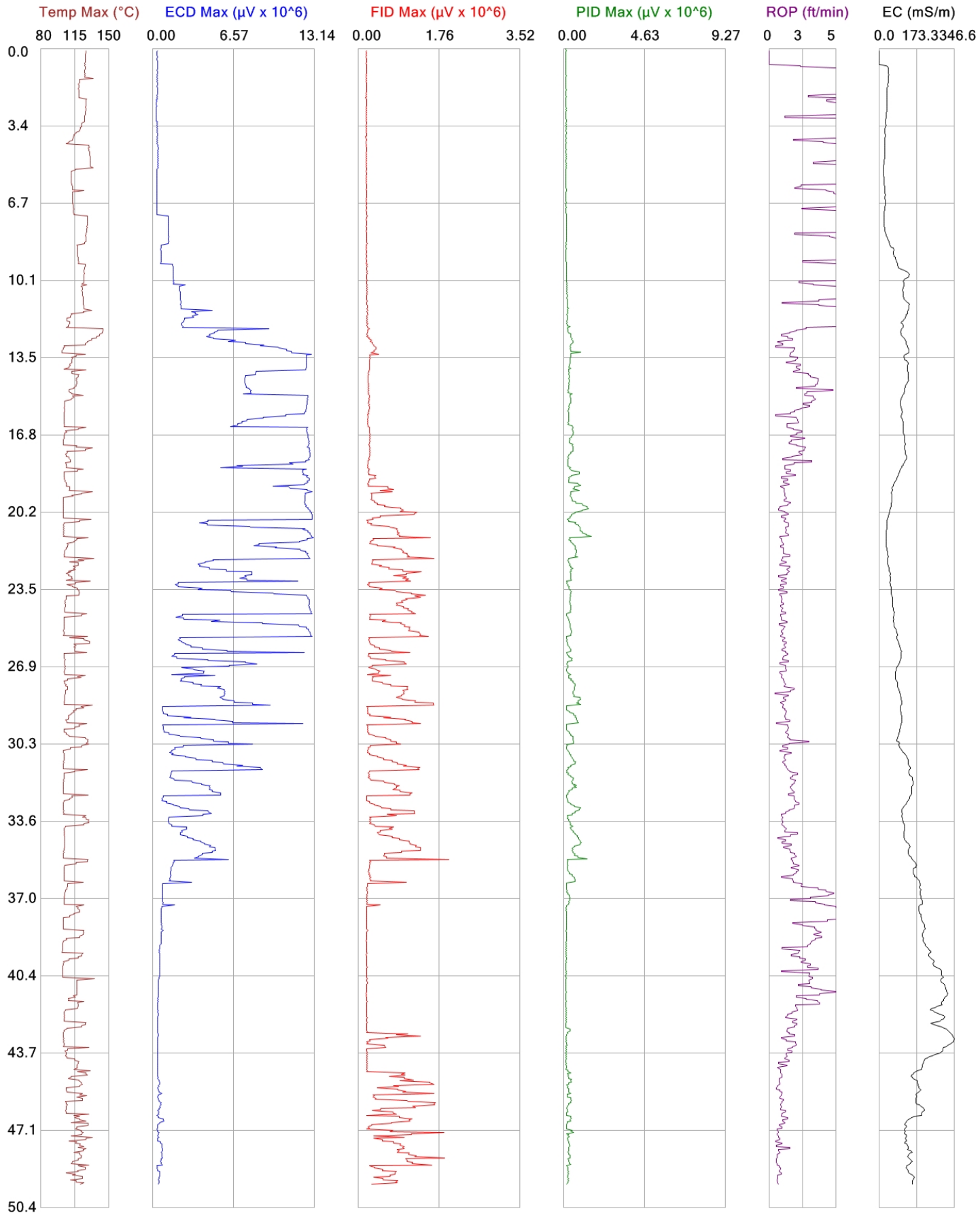
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



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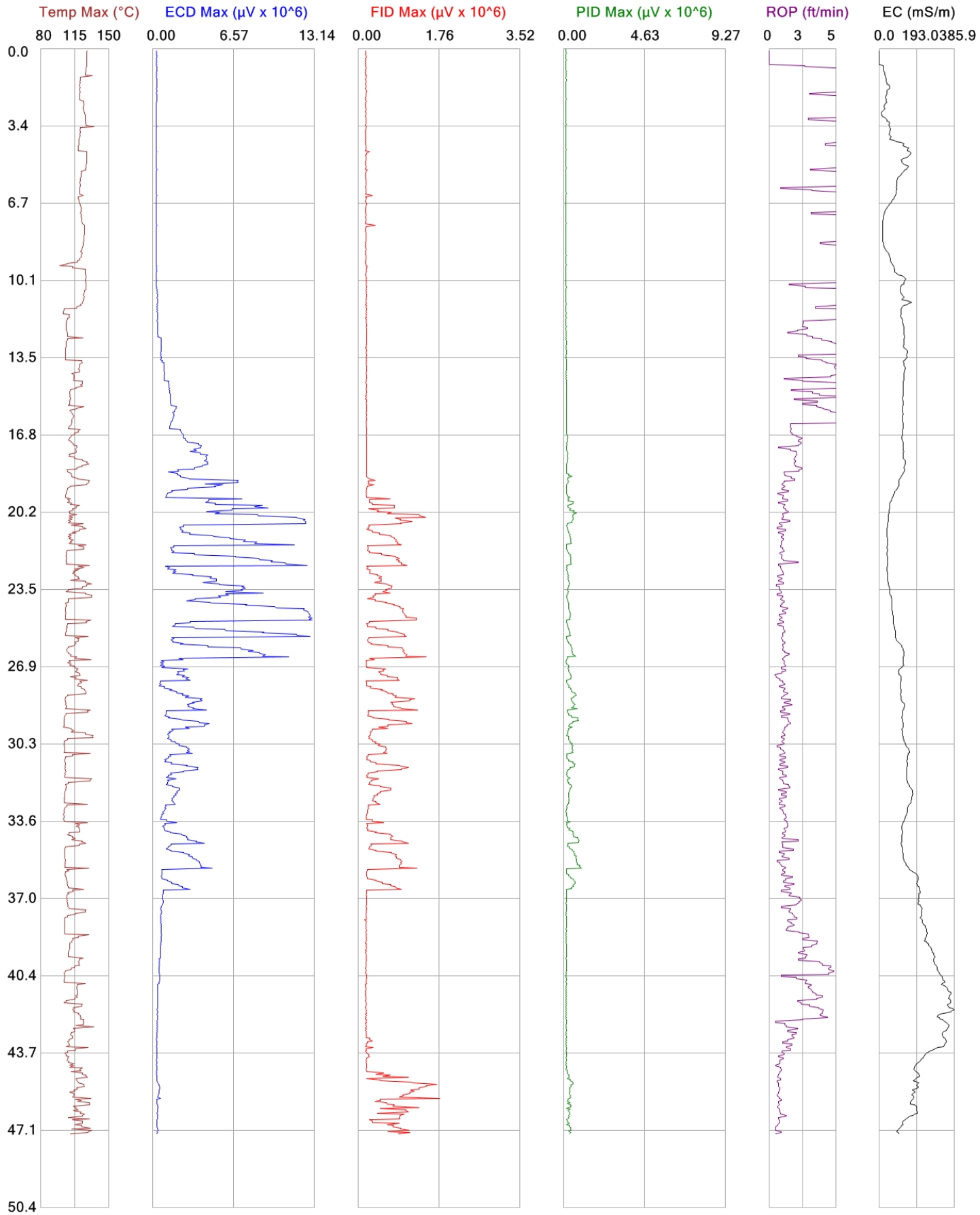
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



	File: MIP15
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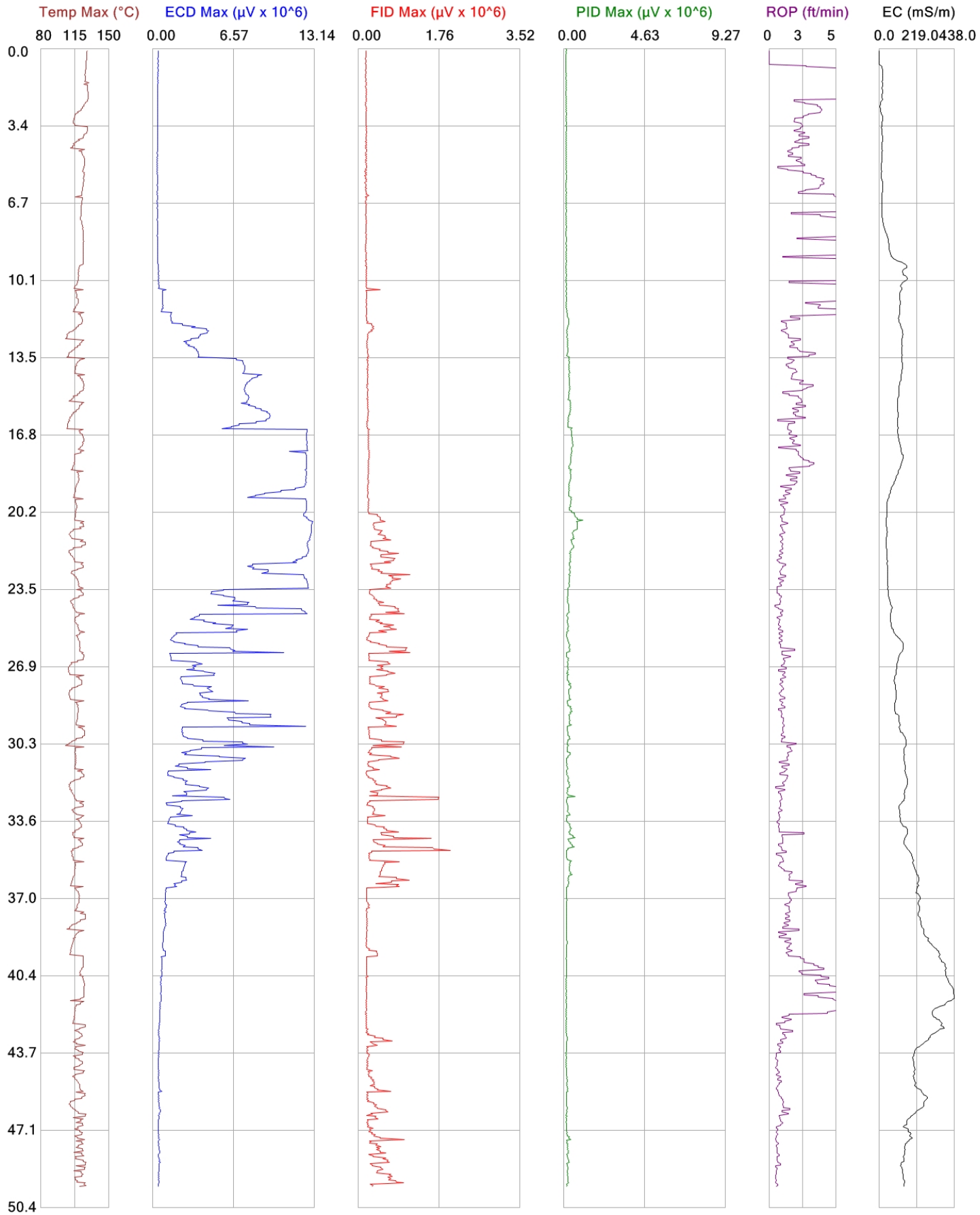
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



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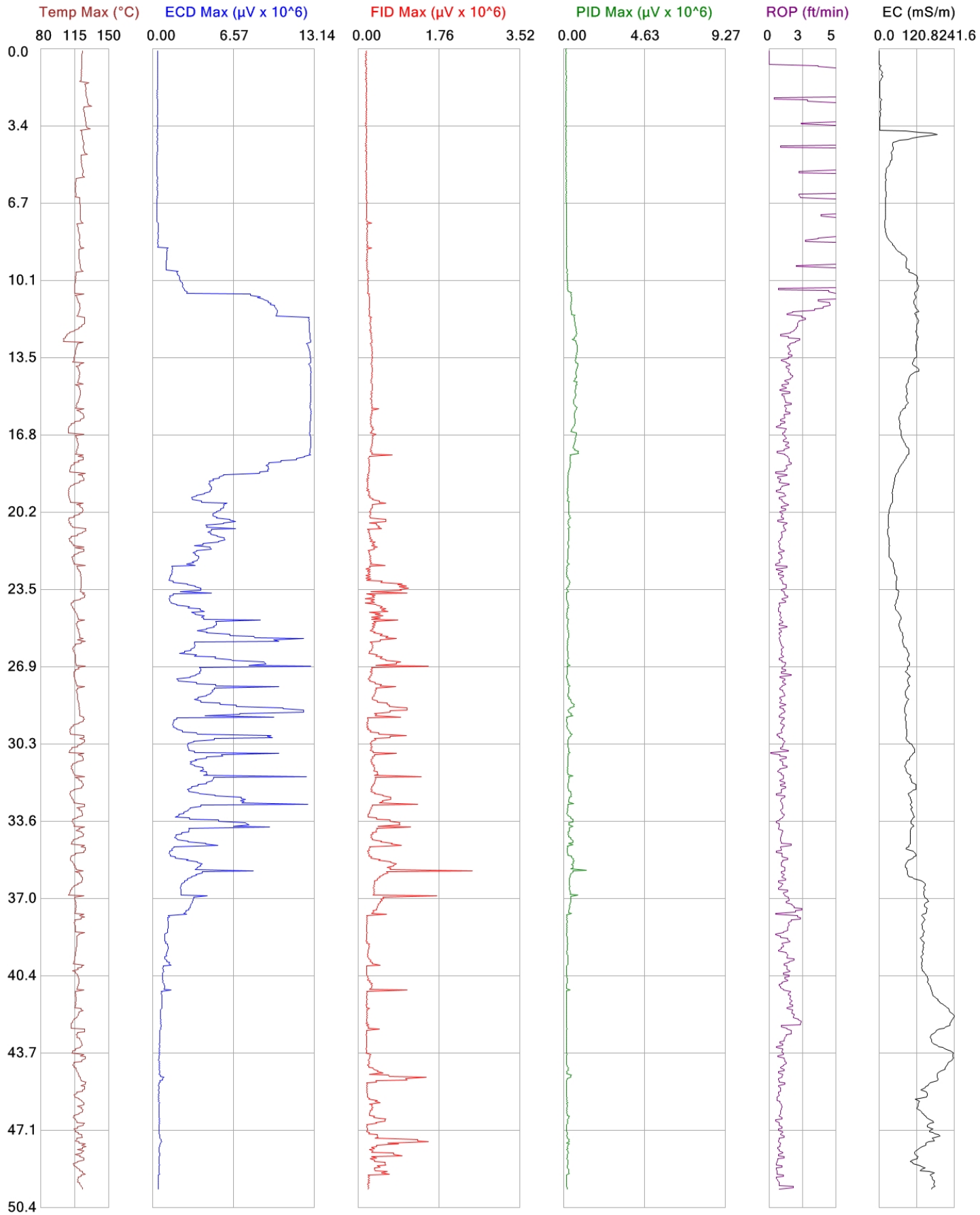
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES



	File: MIP17
Client: Tetra Tech EC, Inc.	Date: 8/6/2009
Project ID: Alameda Point	Location:

COLUMBIA TECHNOLOGIES

APPENDIX E

ZVI MONITORING WELL COMPLETION LOGS, WELL DEVELOPMENT LOGS AND SURVEY REPORT (on CD only)

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MERIDIAN SURVEYING ENGINEERING, INC

Wednesday, November 11, 2009

Tetra Tech EC, Inc
1230 Columbia Street Suite 750
San Diego, CA 92101

RE Survey Services

Dear Michael O'Hare ,

The letter is written to inform you of the survey we performed on November 03 and 06 2009

Our survey data was based on NGS (National Geodetic Survey) Designation 941 4750 TIDAL 7 PID HT 0882 (see attached NGS datasheet). The Epoch data was 2007.00. California Coordinate system 83 (CCS83) State Plane Zone III. The vertical datum was NAVD 88 (North American Vertical Datum of 1988).

The Monitoring Wells Northing and Easting is measured form the north PVC. Also the PVC and rim elevations are measured from the north

Attached is a document with the coordinates and descriptions of the points that were located in the field. All points were located as directed by Michael O'Hare in the field.

Sincerely,
MSE, Inc.

PROFESSIONAL LAND SURVEYOR
STANLEY T. GRAY
PLS 6784
Expires 09/30/10
STATE OF CALIFORNIA

Stanley T. Gray P.L.S
Principal

1812 Union Street
San Francisco 94123
TEL: (415) 440-4131
FAX: (415) 440-4132

777 Grand Avenue, Suite 202
San Rafael, CA 94901
TEL: (415) 456-5450
FAX: (415) 456-5451

Northing	Easting	Elevation PVC	Elevation RIM	Code
2109395.96	6042829.84	13.60	13.95	S9-TT-MW04
2113293.74	6046201.04	16.20	16.23	BZMW6
2113543.92	6046266.23	16.29	16.38	BZMW5
2113611.14	6045733.00	11.91	12.17	BZMW2
2113606.64	6046076.64	11.67	12.00	BZMW3
2113710.51	6045986.68	12.27	12.53	BZMW1
2113570.16	6044705.86	11.71	12.10	BZMW7
2113470.49	6046078.84	15.69	16.10	BZMW4
2112029.55	6043283.83	11.30	11.47	S3-TT-MWO2
2110789.88	6043017.27	12.29	12.58	ZW MW01D
2110788.86	6043018.88	12.27	12.66	MW01B
2110786.84	6043020.80	12.29	12.60	MW01 A2
2110787.26	6043017.36	12.26	12.63	MW01 A1
2110785.20	6043017.26	12.31	12.65	MW01 A3
2110784.18	6043015.89	12.07	12.55	ZV1 MW01C
2110785.03	6042997.96	11.86	12.09	MW 04B
2110787.35	6042993.88	11.76	12.12	MW 04A2
2110790.51	6042996.25	11.89	12.13	ZV1 MW 04C
2110796.18	6042996.74	11.76	12.13	MW 04A1
2110795.10	6043000.29	11.86	12.15	MW 04A3
2110792.37	6043034.26	12.23	12.52	ZV1 MW 06C
2110789.20	6043033.22	12.20	12.55	MW 06A3
2110789.45	6043038.53	12.41	12.68	MW 06B
2110792.59	6043038.62	12.31	12.62	MW 06 A2
2110801.54	6043012.90	12.16	12.39	MW 02 B
2110796.80	6043012.16	12.00	12.40	MW 02 A3
2110797.55	6043010.02	12.08	12.31	ZV1 MW 02C
2110801.06	6043010.02	12.07	12.33	MW 02 A2
2110753.83	6043016.60	12.04	12.30	MW 03 B
2110754.63	6043011.88	12.02	12.27	ZV1 MW 03C
2110757.34	6043011.19	11.98	12.29	MW 03 A3
2110756.35	6043016.26	12.05	12.32	MW 03 A2
2110789.36	6042979.09	11.69	11.95	MW 05 B
2110792.01	6042979.54	11.72	11.97	MW 05 A2
2110791.16	6042984.47	11.75	12.03	MW 05 A3
2110788.58	6042984.17	11.70	11.98	ZV1 MW 05 C
2110789.87	6043048.58	12.71	12.90	MW 07 B
2110789.79	6043046.01	12.59	12.89	MW 07 A2
2110784.60	6043047.76	12.64	12.90	MW 07 C
2110784.15	6043044.85	12.64	12.90	MW 07 A3

PROFESSIONAL LAND SURVEYOR
STANLEY T. GRAY
PLS 6784
Expires 09/30/10
STATE OF CALIFORNIA

11/11/09

The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.

```
DATABASE =  ,PROGRAM = datasheet, VERSION = 7.73
1        National Geodetic Survey,   Retrieval Date = NOVEMBER  2, 2009
 HT0882 ***********************************************************************
 HT0882  FBN         -  This is a Federal Base Network Control Station.
 HT0882  TIDAL BM    -  This is a Tidal Bench Mark.
 HT0882  DESIGNATION -  941 4750 TIDAL 7
 HT0882  PID         -  HT0882
 HT0882  STATE/COUNTY-  CA/ALAMEDA
 HT0882  USGS QUAD   -  OAKLAND WEST (1993)
 HT0882
 HT0882                         *CURRENT SURVEY CONTROL
 HT0882  ___________________________________________________________________
 HT0882* NAD 83(2007)-  37 46 48.04867(N)    122 17 53.51878(W)     NO CHECK
 HT0882* NAVD 88     -         2.783  (meters)       9.13   (feet)  ADJUSTED
 HT0882  ___________________________________________________________________
 HT0882  EPOCH DATE  -        2007.00
 HT0882  X           -  -2,696,956.891 (meters)                     COMP
 HT0882  Y           -  -4,266,460.748 (meters)                     COMP
 HT0882  Z           -   3,886,155.927 (meters)                     COMP
 HT0882  LAPLACE CORR-           0.71  (seconds)                   USDV2009
 HT0882  ELLIP HEIGHT-         -29.645 (meters)          (02/10/07) NO CHECK
 HT0882  GEOID HEIGHT-         -32.44  (meters)                     GEOID09
 HT0882  DYNAMIC HT  -           2.781 (meters)       9.12  (feet)  COMP
 HT0882
 HT0882  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
 HT0882  Type    PID    Designation                      North   East  Ellip
 HT0882  ------------------------------------------------------------------
 HT0882  NETWORK HT0882 941 4750 TIDAL 7                  0.29   0.49   2.35
 HT0882  ------------------------------------------------------------------
 HT0882  MODELED GRAV-     979,975.4   (mgal)                       NAVD 88
 HT0882
 HT0882  VERT ORDER  -  FIRST     CLASS II
 HT0882
 HT0882.ITRF positions are available for this station.
 HT0882.The horizontal coordinates were established by GPS observations
 HT0882.and adjusted by the National Geodetic Survey in February 2007.
 HT0882
 HT0882.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 HT0882.See National Readjustment for more information.
 HT0882.No horizontal observational check was made to the station.
 HT0882.The horizontal coordinates are valid at the epoch date displayed above.
 HT0882.The epoch date for horizontal control is a decimal equivalence
 HT0882.of Year/Month/Day.
 HT0882
 HT0882.The orthometric height was determined by differential leveling
 HT0882.and adjusted in June 1991.
 HT0882
 HT0882.This Tidal Bench Mark is designated as VM 984
 HT0882.by the Center for Operational Oceanographic Products and Services.
 HT0882
 HT0882.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 HT0882
 HT0882.The Laplace correction was computed from DEFLEC99 derived deflections.
```

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HT0882
HT0882.The ellipsoidal height was determined by GPS observations
HT0882.and is referenced to NAD 83.
HT0882
HT0882.The geoid height was determined by GEOID09.
HT0882
HT0882.The dynamic height is computed by dividing the NAVD 88
HT0882.geopotential number by the normal gravity value computed on the
HT0882.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
HT0882.degrees latitude (g = 980.6199 gals.).
HT0882
HT0882.The modeled gravity was interpolated from observed gravity values.
HT0882
HT0882;                    North         East     Units Scale Factor Converg.
HT0882;SPC CA 3     -   643,578.886 1,841,610.008   MT  0.99992931   -1 06 03.3
HT0882;SPC CA 3     - 2,111,475.06  6,042,015.50   sFT  0.99992931   -1 06 03.3
HT0882;UTM  10      - 4,181,639.400   561,800.190   MT  0.99964704   +0 25 47.9
HT0882
HT0882!             -  Elev Factor  x  Scale Factor =   Combined Factor
HT0882!SPC CA 3     -   1.00000465  x   0.99992931  =   0.99993396
HT0882!UTM  10      -   1.00000465  x   0.99964704  =   0.99965169
HT0882
HT0882                           SUPERSEDED SURVEY CONTROL
HT0882
HT0882  NAD 83(1998)-  37 46 48.04137(N)    122 17 53.51060(W) AD(1998.50) A
HT0882  ELLIP H (04/06/00)  -29.632  (m)                       GP(1998.50) 3 1
HT0882  NAD 83(1992)-  37 46 48.04032(N)    122 17 53.50989(W) AD(1997.30) 1
HT0882  ELLIP H (07/10/98)  -29.615  (m)                       GP(1997.30) 4 1
HT0882  NAD 83(1992)-  37 46 48.03852(N)    122 17 53.50877(W) AD(1995.42) 1
HT0882  ELLIP H (12/22/97)  -29.564  (m)                       GP(1995.42) 4 1
HT0882  NAVD 88 (12/22/97)    2.78   (m)            9.1    (f) LEVELING    3
HT0882  NGVD 29 (10/21/93)    1.958  (m)            6.42   (f) ADJUSTED    1 2
HT0882
HT0882.Superseded values are not recommended for survey control.
HT0882.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
HT0882.See file dsdata.txt to determine how the superseded data were derived.
HT0882
HT0882_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SEG6180081639(NAD 83)
HT0882_MARKER: DB = BENCH MARK DISK
HT0882_SETTING: 32 = SET IN A RETAINING WALL OR CONCRETE LEDGE
HT0882_SP_SET: CONCRETE SEAWALL
HT0882_STAMPING: NO 7 1939
HT0882_MARK LOGO: CGS
HT0882_PROJECTION: FLUSH
HT0882_MAGNETIC: N = NO MAGNETIC MATERIAL
HT0882_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
HT0882+STABILITY: SURFACE MOTION
HT0882_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
HT0882+SATELLITE: SATELLITE OBSERVATIONS - August 06, 2007
HT0882
HT0882  HISTORY     - Date     Condition        Report By
HT0882  HISTORY     - 1939     MONUMENTED       CGS
HT0882  HISTORY     - 1956     GOOD             NGS
HT0882  HISTORY     - 1963     GOOD             NGS
HT0882  HISTORY     - 19880930 GOOD             NGS
HT0882  HISTORY     - 19950915 GOOD             NGS
HT0882  HISTORY     - 19980429 GOOD             NGS
HT0882  HISTORY     - 20010323 GOOD             NGS
HT0882  HISTORY     - 20070806 GOOD             NGS
HT0882
```

```
HT0882                          STATION DESCRIPTION
HT0882
HT0882'DESCRIBED BY NATIONAL GEODETIC SURVEY 1956
HT0882'AT ALAMEDA.
HT0882'AT ALAMEDA, AT THE U.S. NAVAL AIR STATION, AT THE T JUNCTION OF
HT0882'ATLANTIC AVENUE AND 5TH STREET, IN TOP OF THE CONCRETE BULKHEAD
HT0882'AT THE NORTHEAST CORNER OF A LAGOON, 100.0 FEET SOUTHWEST OF AND
HT0882'ACROSS 5TH STREET FROM THE SOUTHWEST CORNER OF BUILDING 66, 38.9
HT0882'FEET WEST OF THE WEST CURB OF THE STREET, 22 FEET NORTH OF THE
HT0882'PROLONGATION OF ATLANTIC AVENUE, 9.5 FEET NORTHWEST OF THE CENTER
HT0882'ONE OF THREE RAILS PAINTED YELLOW TO PROTECT HIGH VOLTAGE BOXES,
HT0882'7.5 FEET WEST OF BENCH MARK LAGOON N.E. (USN), AND ABOUT LEVEL
HT0882'WITH THE STREET.
HT0882
HT0882                          STATION RECOVERY (1963)
HT0882
HT0882'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1963
HT0882'RECOVERED IN GOOD CONDITION.
HT0882
HT0882                          STATION RECOVERY (1988)
HT0882
HT0882'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1988
HT0882'RECOVERED IN GOOD CONDITION WITH THE FOLLOWING EXCEPTIONS.
HT0882'DELETE--100.4 FT SOUTHWEST AND ACROSS 5TH STREET FROM THE SOUTHWEST
HT0882'CORNER OF BUILDING 66.  ADD--36.9 M (121.1 FT) SOUTHWEST OF THE
HT0882'SOUTHWEST CORNER OF BUILDING 66.
HT0882
HT0882                          STATION RECOVERY (1995)
HT0882
HT0882'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (JDD)
HT0882'RECOVERED AS DESCRIBED.
HT0882
HT0882                          STATION RECOVERY (1998)
HT0882
HT0882'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1998 (CSM)
HT0882'THE STATION IS LOCATED IN ALAMEDA, AT THE U.S. NAVAL AIR STATION AT
HT0882'ALAMEDA POINT, ON THE WEST SIDE OF THE JUNCTION OF WEST ATLANTIC AVE
HT0882'AND 5TH STREET, AT THE SOUTHEAST CORNER OF ABANDONED TAXIWAY H, IN TOP
HT0882'OF THE SEAWALL AT THE NORTHEAST CORNER OF SEAPLANE LAGOON.
HT0882'OWNERSHIP--U.S. NAVY.  TO REACH THE STATION FROM THE NORTHBOUND LANES
HT0882'OF INTERSTATE HIGHWAY 880 AT THE BROADWAY EXIT IN OAKLAND, GO NORTH
HT0882'FOR 0.64 KM (0.40 MI) ON THE EXIT RAMP TO A TRAFFIC LIGHT. TURN LEFT,
HT0882'WEST FOR ABOUT 30 M (98.4 FT) TO 5TH ST.  TURN LEFT, SOUTH AND GO INTO
HT0882'THE WEBSTER ST TUBE (UNDER FREEWAY) FOR 2.41 KM (1.50 MI) TO THE
HT0882'INTERSECTION OF ATLANTIC AVE.  TURN RIGHT, WEST-SOUTHWEST FOR 1.44 KM
HT0882'(0.90 MI) ON ATLANTIC AVE TO THE ALAMEDA POINT GATE AND GUARDHOUSE AT
HT0882'THE NAVAL AIR STATION.  CHECK IN AND CONTINUE WESTERLY FOR 0.48 KM
HT0882'(0.30 MI) ON ATLANTIC AVENUE TO THE JUNCTION OF 5TH STREET AND THE
HT0882'STATION AHEAD IN THE SEAWALL.  LOCATED 18.0 M (59.1 FT) WEST OF THE
HT0882'CENTER OF 5TH STREET, 6.7 M (22.0 FT) NORTH OF THE EXTENDED CENTER OF
HT0882'ATLANTIC AVENUE, 4.9 M (16.1 FT) EAST OF THE EAST END OF A CHAIN LINK
HT0882'FENCE, 4.0 M (13.1 FT) WEST OF THE EAST END OF THE SEAWALL, 0.8 M (2.6
HT0882'FT) NORTH OF THE SOUTH EDGE OF THE SEAWALL, ABOUT LEVEL WITH THE
HT0882'GROUND SURFACE AND FLUSH WITH THE TOP OF THE SEAWALL.
HT0882
HT0882                          STATION RECOVERY (2001)
HT0882
HT0882'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2001 (AJL)
HT0882'RECOVERED AS DESCRIBED.
HT0882'
```

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HT0882
HT0882                          STATION RECOVERY (2007)
HT0882
HT0882'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2007 (CDL)
HT0882'GO TO THE ATLANTIC AVE GATE OF THE OLD ALAMEDA NAVAL AIR STATION.
HT0882'DRIVE   WEST ON ATLANTIC AVE TO THE WEST SIDE OF THE T INTERSECTION OF
HT0882'ATLANTIC AVE AND FERRY POINT. GO NORTH WEST 5 METERS TO THE THE CORNER
HT0882'OF THE FENCE. LOOK DOWN THROUGH THE FENCE TO SEE THE TIDAL BENCH MARK.
HT0882'
HT0882'
HT0882'PICTURES THAT SHOW THE AREA HAVE BEEN SUBMITTED TO OPUS DB

*** retrieval complete.
Elapsed Time = 00:00:00
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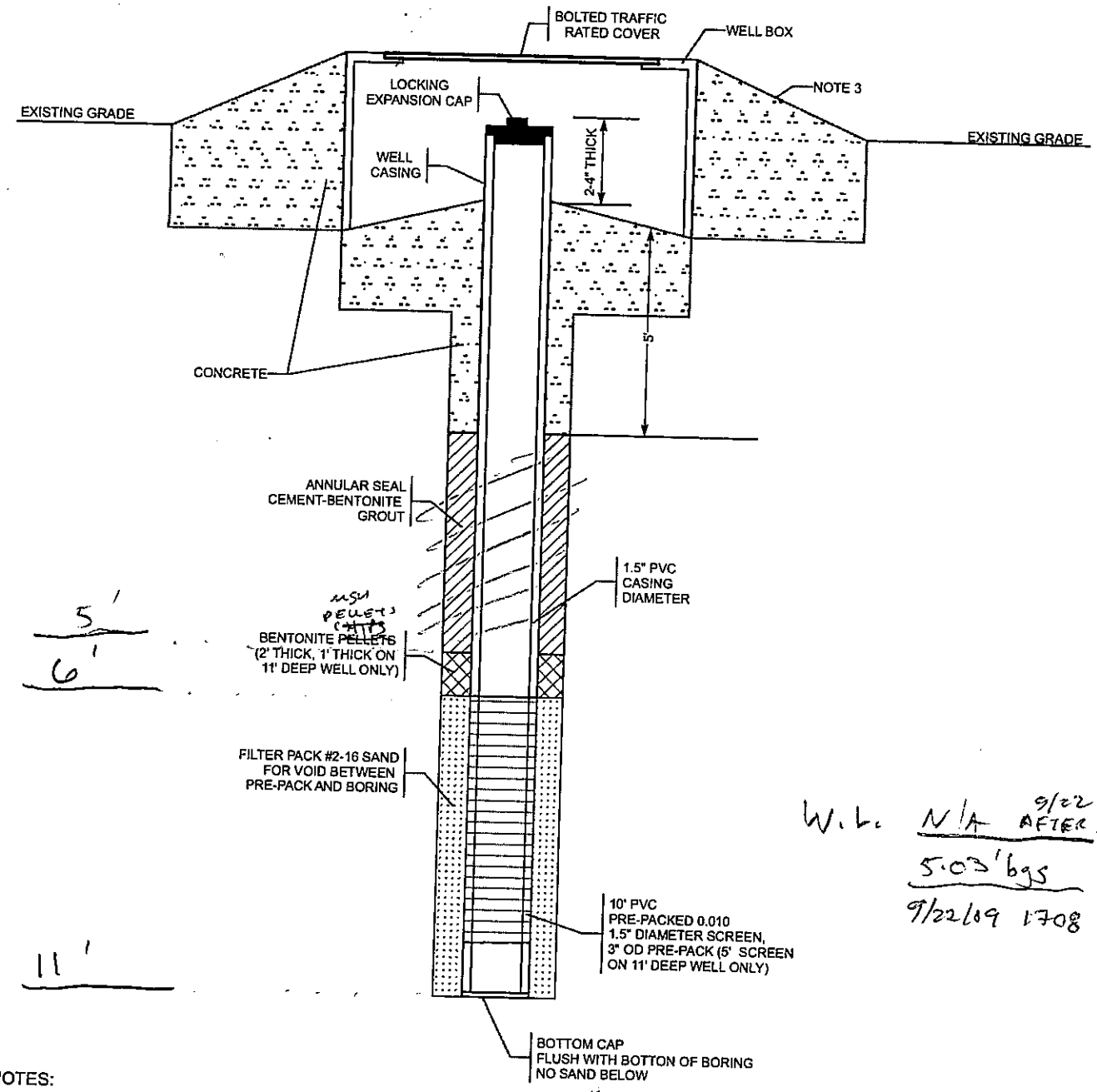
ZA1- MW01 A1

9/22/09



W.L. N/A 9/22 AFTER INSTALLATION
5.03' bgs
9/22/09 1708

NOTES:

1. DIAGRAM DEVELOPED USING CALIFORNIA WELL STANDARDS 74-90 AND RESIDENT OFFICER IN CHARGE OF CONSTRUCTION RECOMMENDATIONS
2. 4.5" BORING WIDTH FOR 1.5" MONITORING WELL (3" OD PRE-PACK)
3. FINISH WITH MATCHING MATERIALS OF EXISTING GRADE
4. DIAGRAM NOT TO SCALE
5. SLOT SIZE OF SCREEN AND FILTER PACK MAY VARY

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

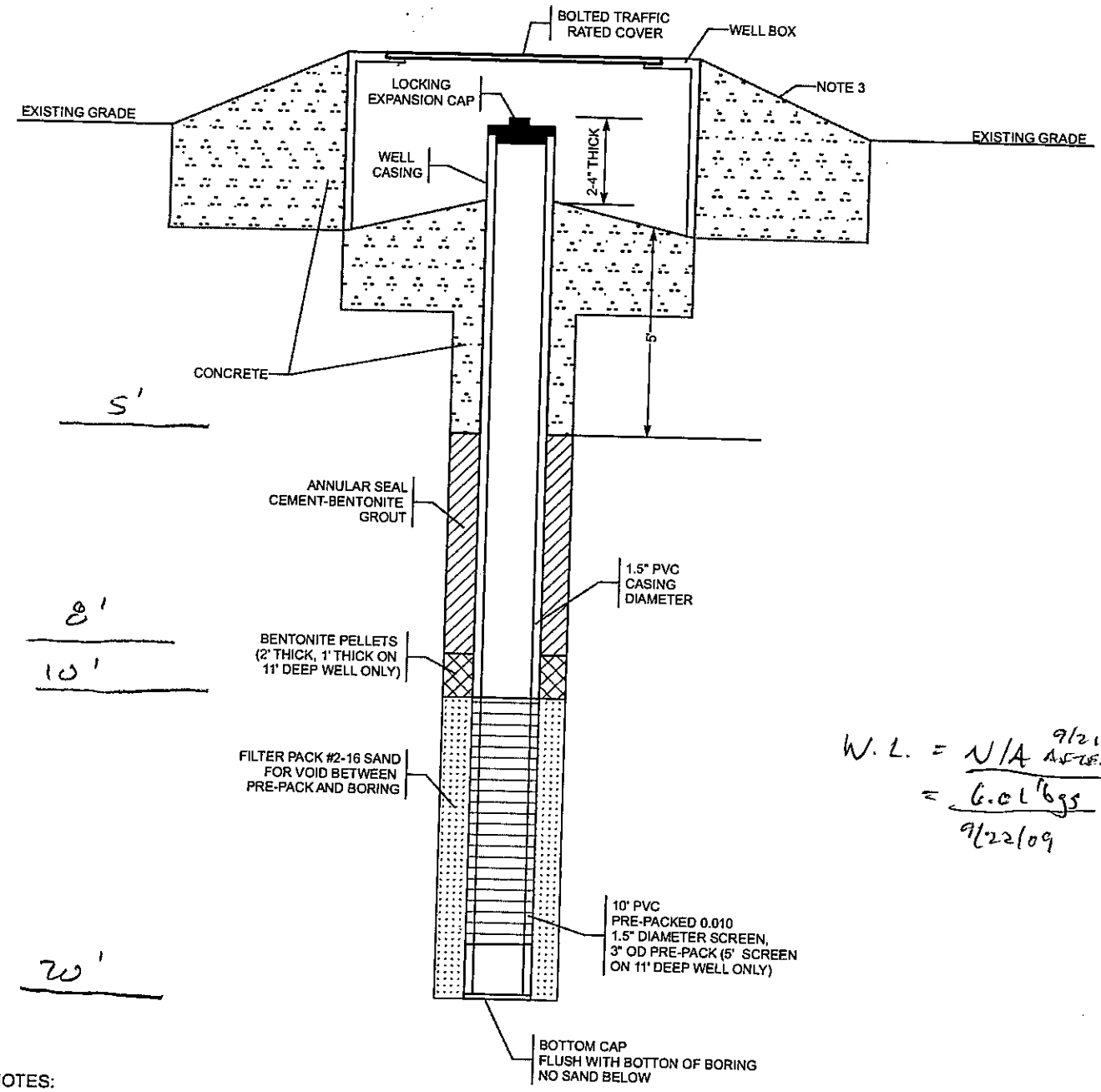
REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZA1- MW01 A1 ✓

ZVI- MW01 A2

9/21/09



W.L. = N/A 9/21 AFTER INSTALLATI
= 6.01' bgs
9/22/09

NOTES:

1. DIAGRAM DEVELOPED USING CALIFORNIA WELL STANDARDS 74-90 AND RESIDENT OFFICER IN CHARGE OF CONSTRUCTION RECOMMENDATIONS
2. 4.5" BORING WIDTH FOR 1.5" MONITORING WELL (3" OD PRE-PACK)
3. FINISH WITH MATCHING MATERIALS OF EXISTING GRADE
4. DIAGRAM NOT TO SCALE
5. SLOT SIZE OF SCREEN AND FILTER PACK MAY VARY

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

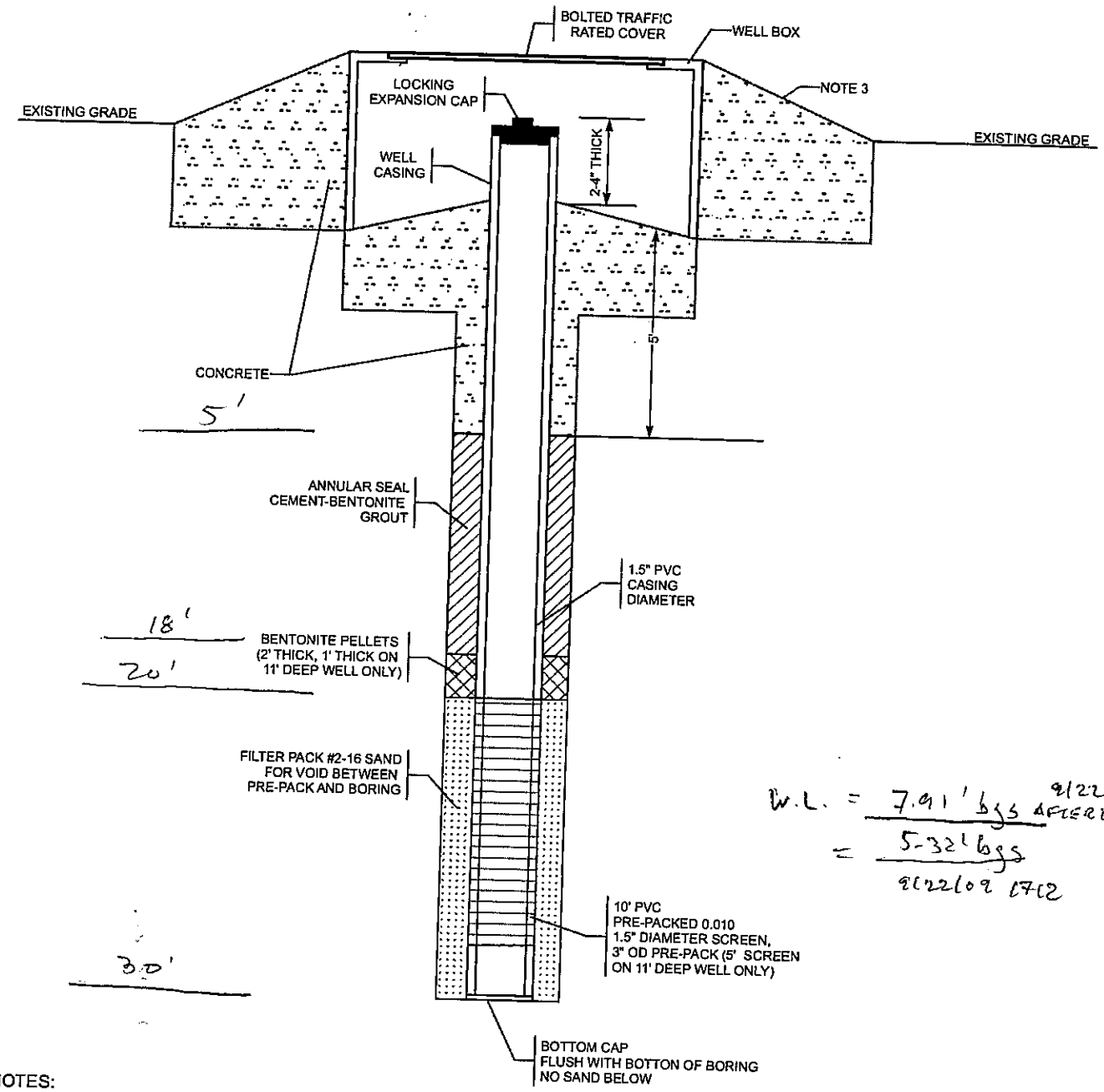
ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZVI- MW01 A2

ZVI- MW01 A3 9/22/09



W.L. = 7.91' bgs 9/22 AFTER WS ALLATION
= 5.32' bgs
9/22/09 1712

NOTES:

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SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

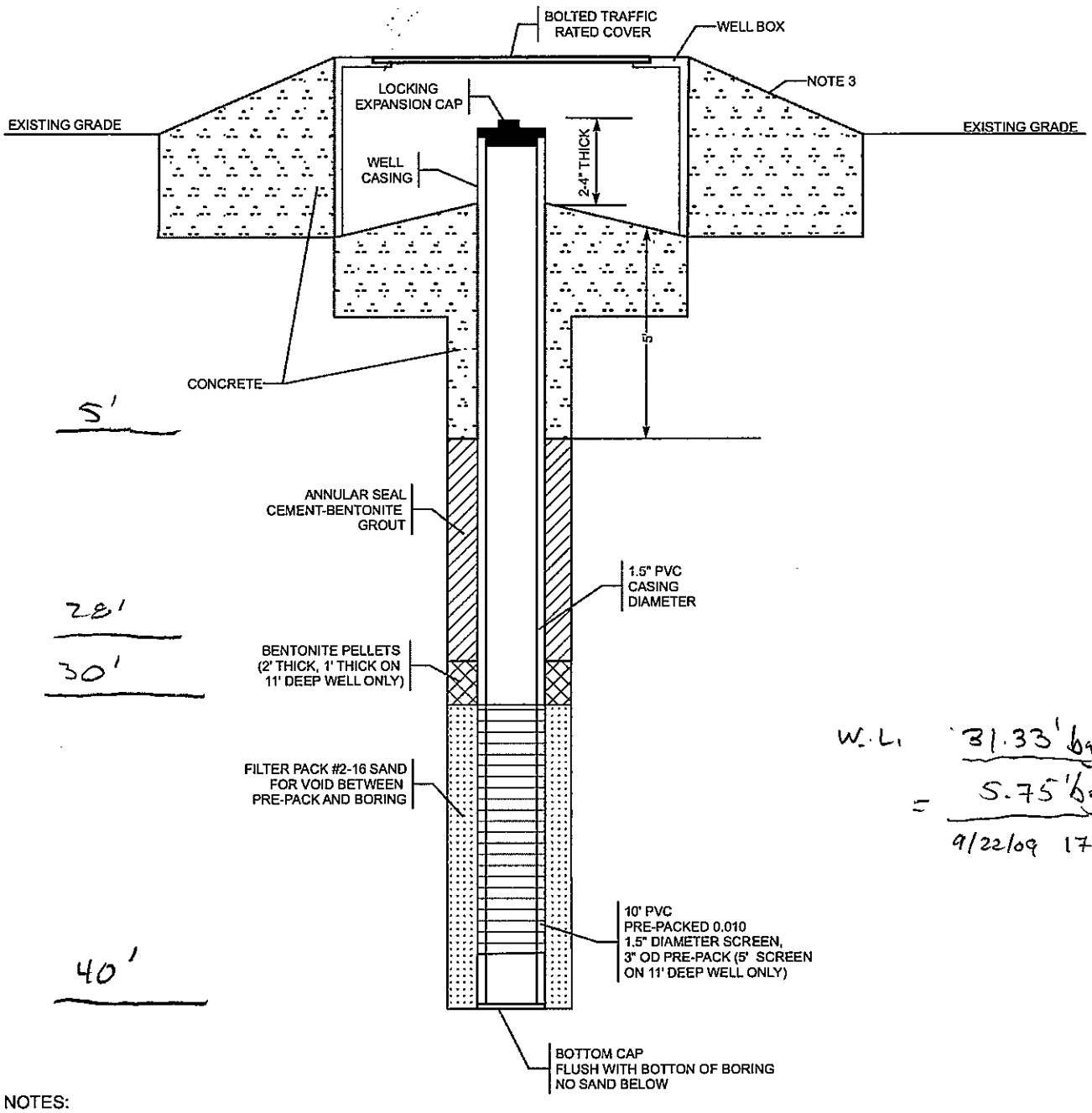
ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZVI- MW01 A3 ✓

ZA1 - MW01B 9/21/09



W.L. 31.33' bgs @ 1/2 HRS AFTER INSTALLAT
= 5.75' bgs
9/22/09 1706

NOTES:

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PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

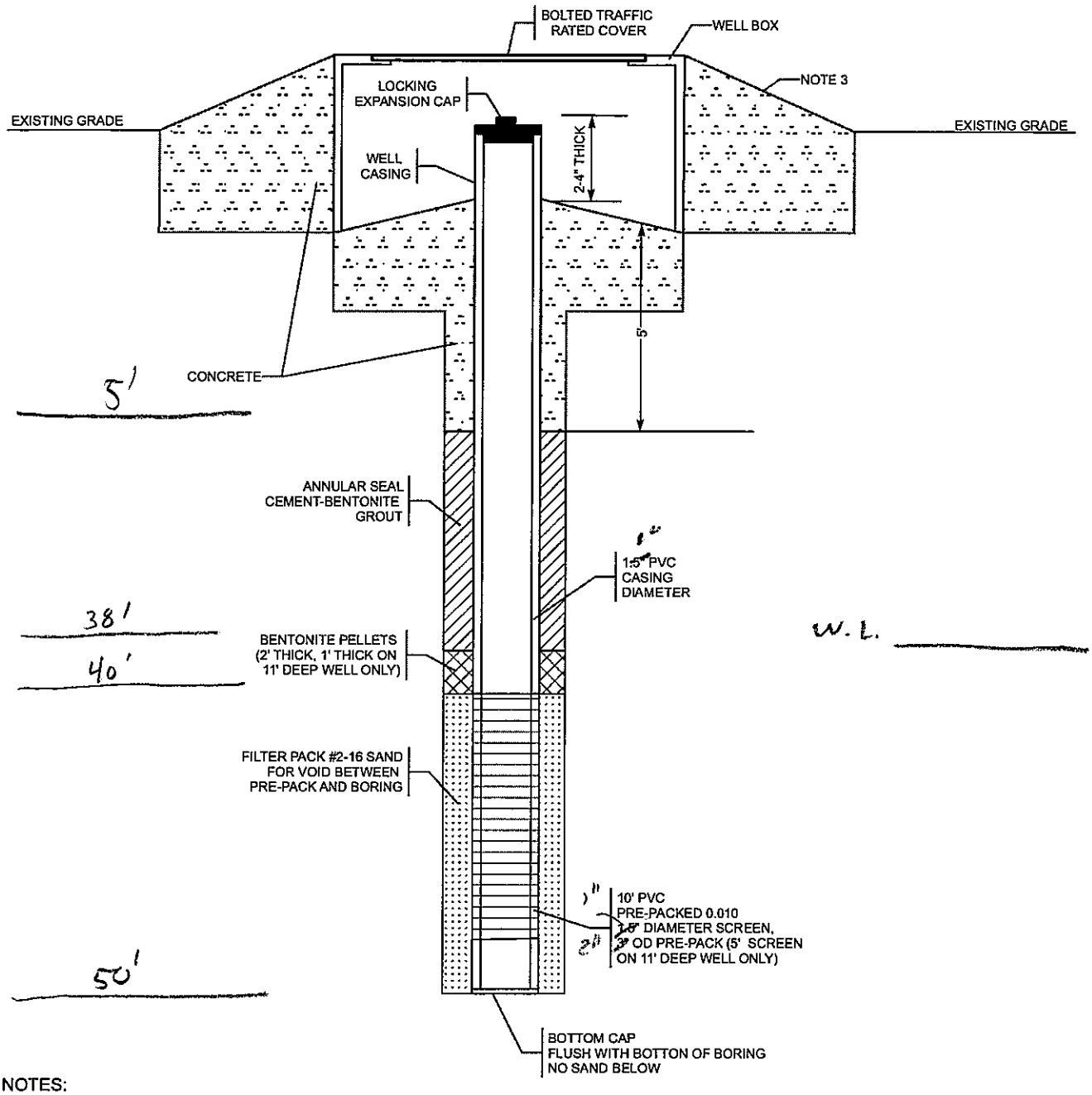
ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRATECH EC, INC.

ZA1 - MW01B

ZA1-MW01 C 10/28/09



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BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

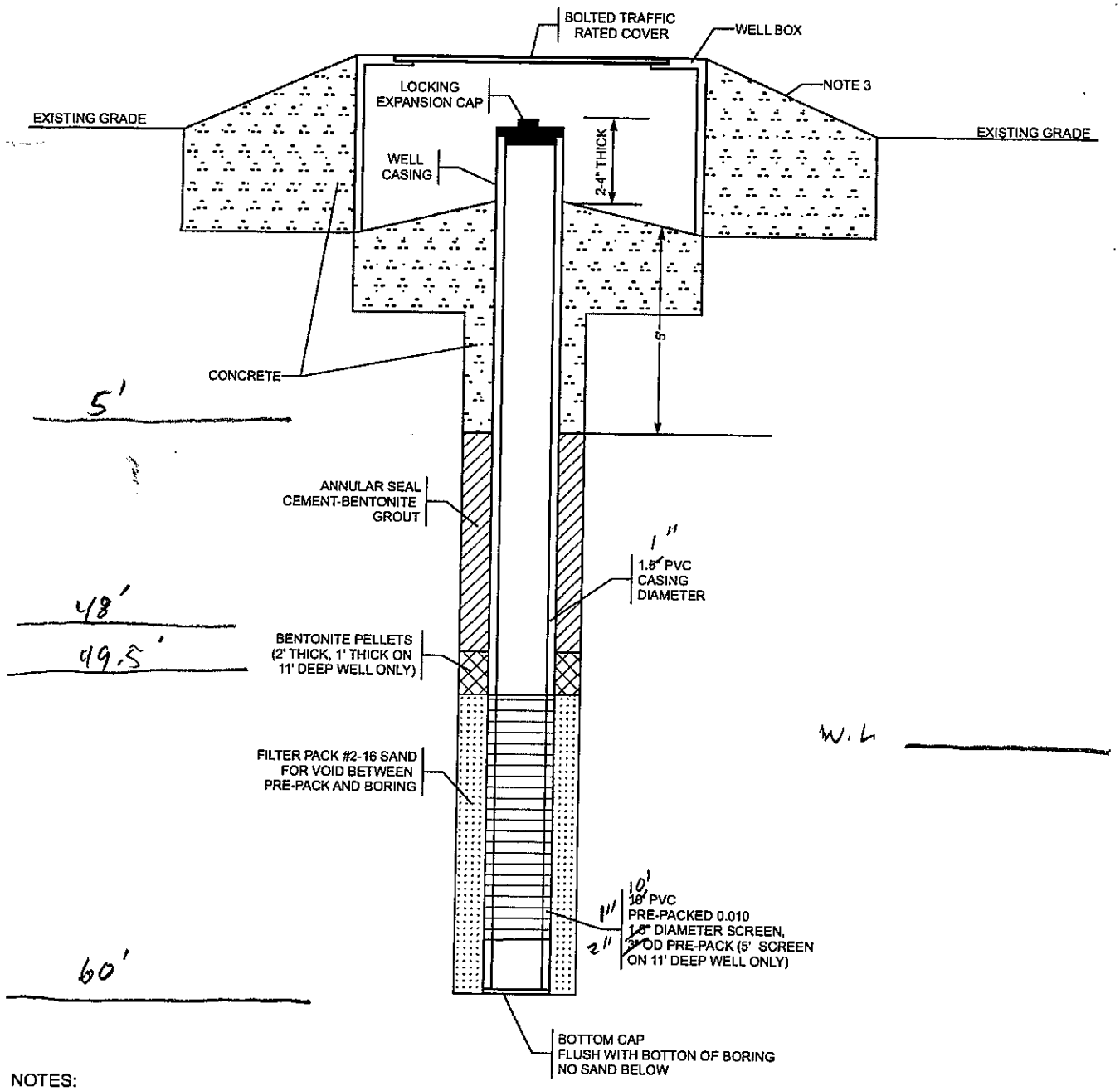
ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRATECH EC, INC.

ZA1-. MW01C

ZVI- MW01D 10/29/09



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PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

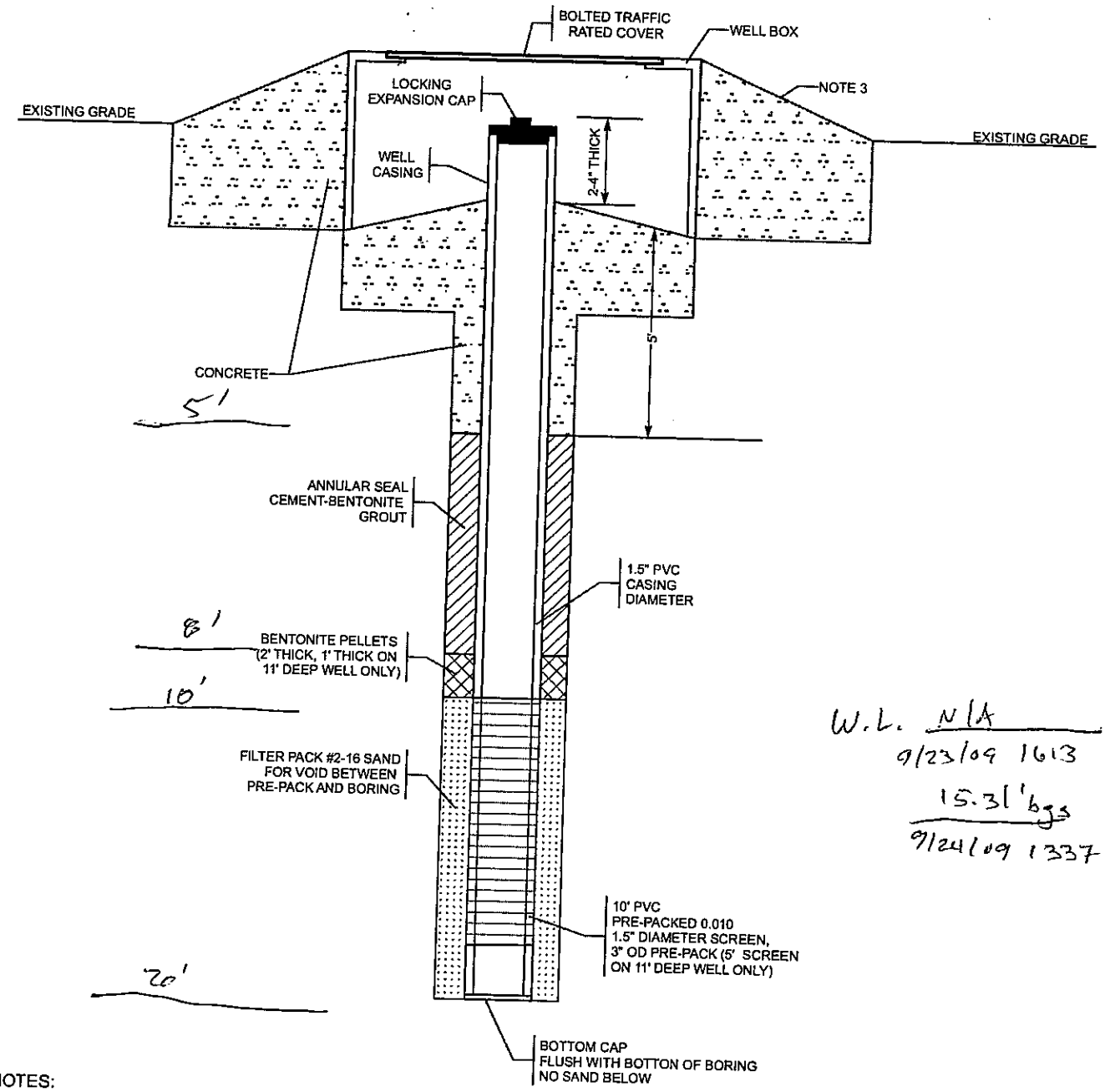
REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZVI- MW01D

ZV1- MW02 A2

9/23/09



W.L. N/A
9/23/09 1613
15.31' bgs
9/24/09 1337

NOTES:

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BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

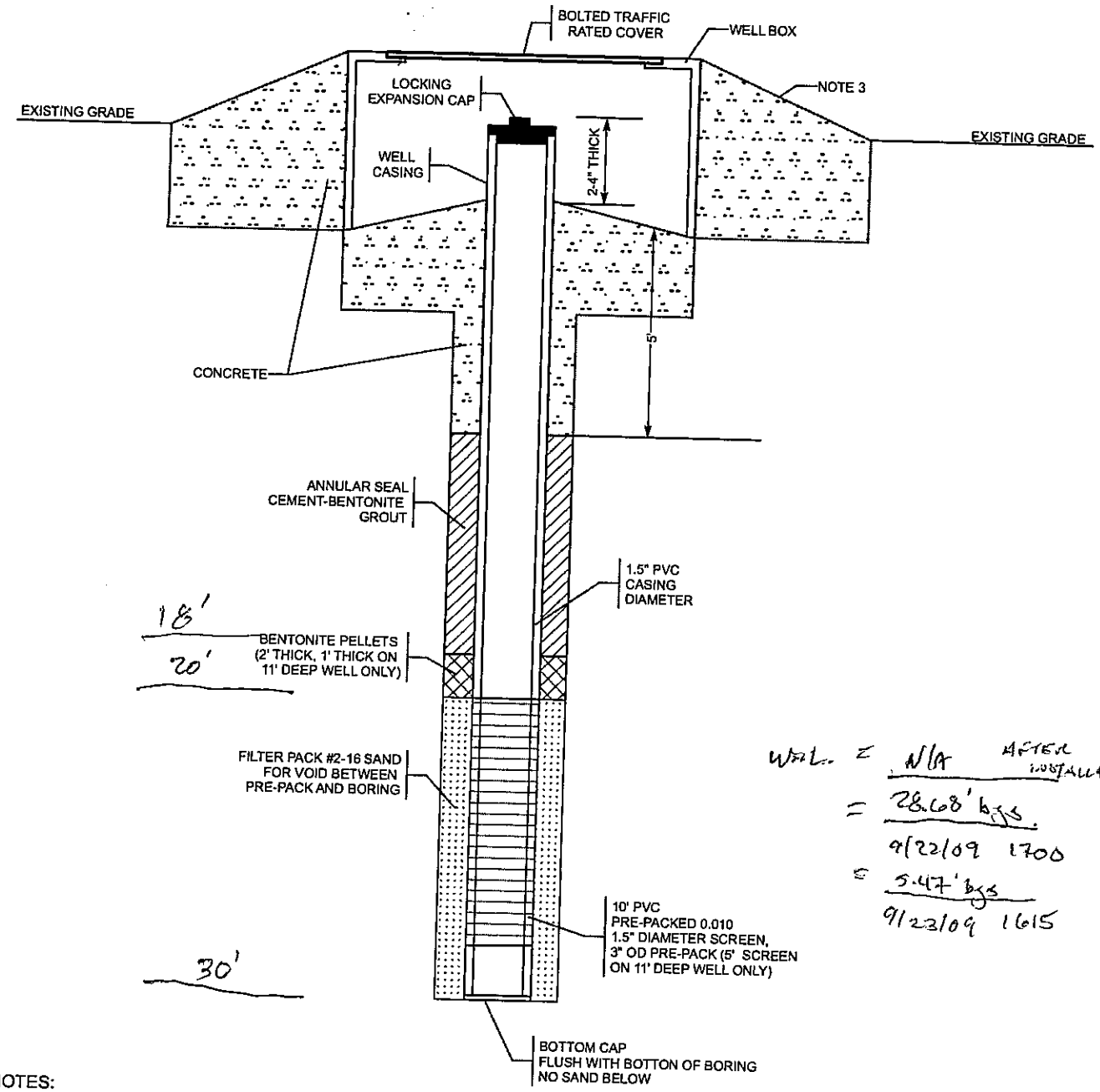
REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZV1 - MW02 A2

ZVI- MW02 A3

9/22/09



WL = N/A AFTER INSTALLATION

= 28.68' bgs

9/22/09 1700

= 5.47' bgs

9/23/09 1615

NOTES:

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PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

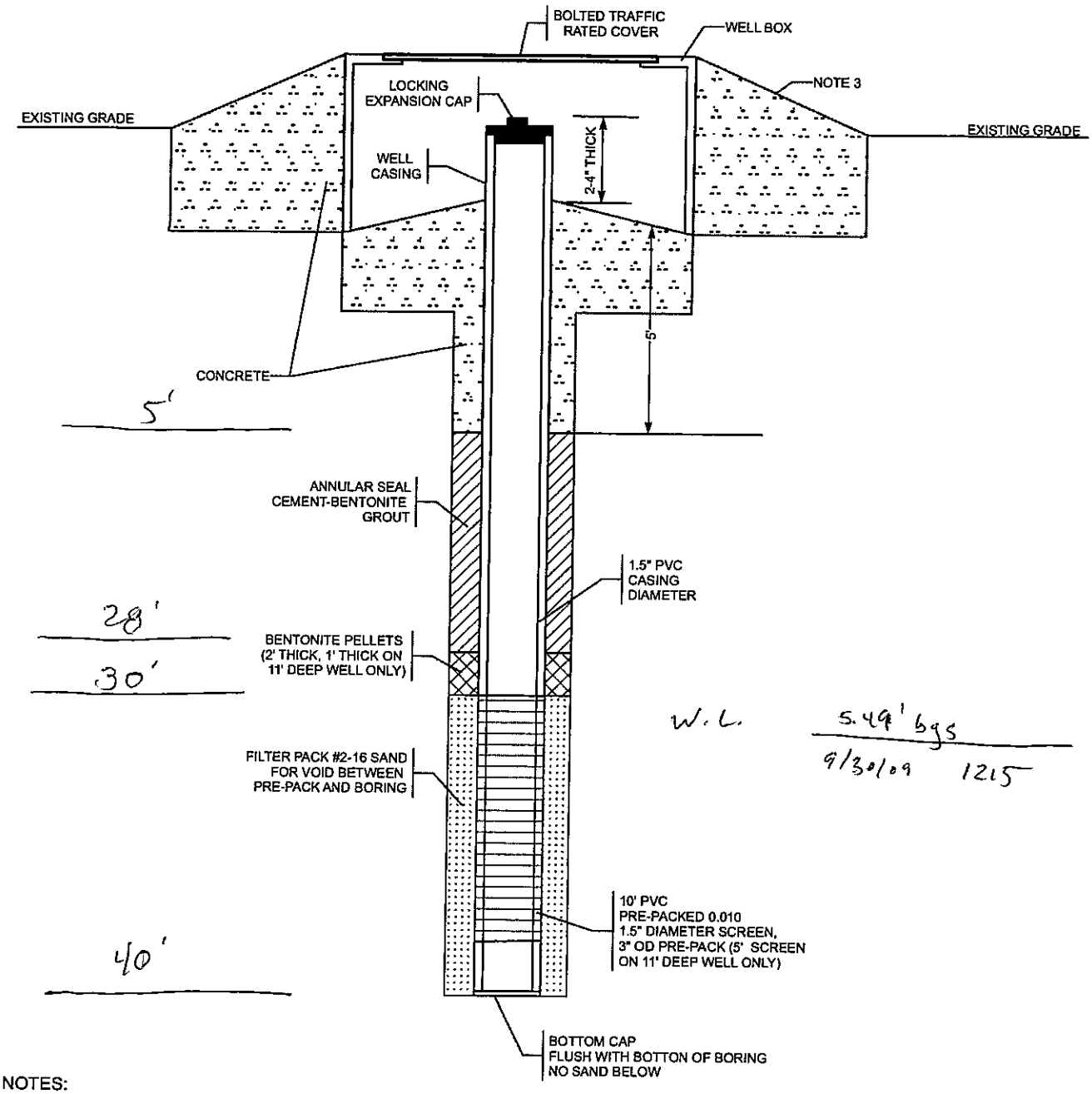
ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZVI- MW02 A3

ZVI- MW02B 9/29/09



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PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

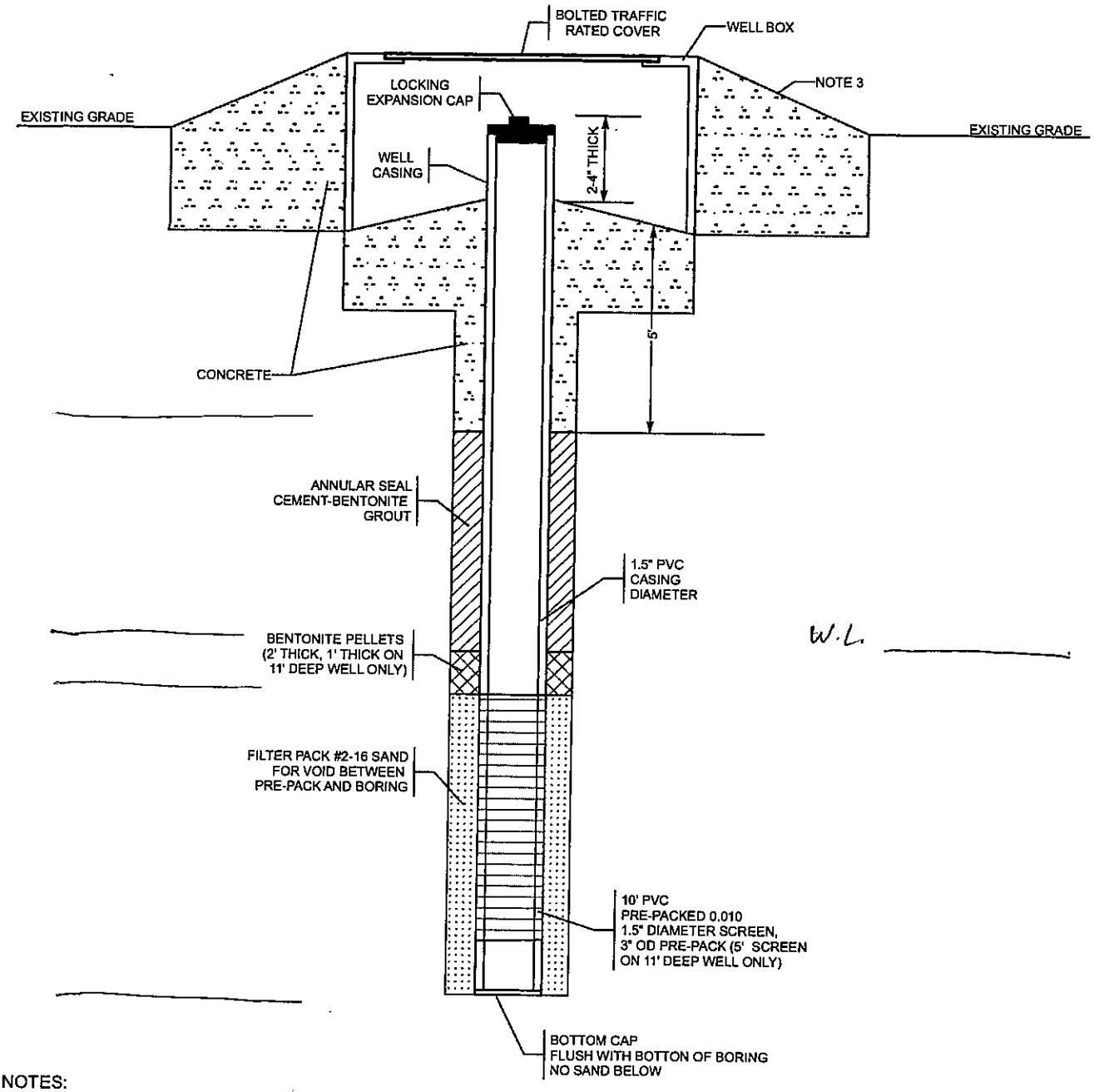
ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH EC, INC.

ZVI- MW02B

ZVI- MW02C 9/30/09



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PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

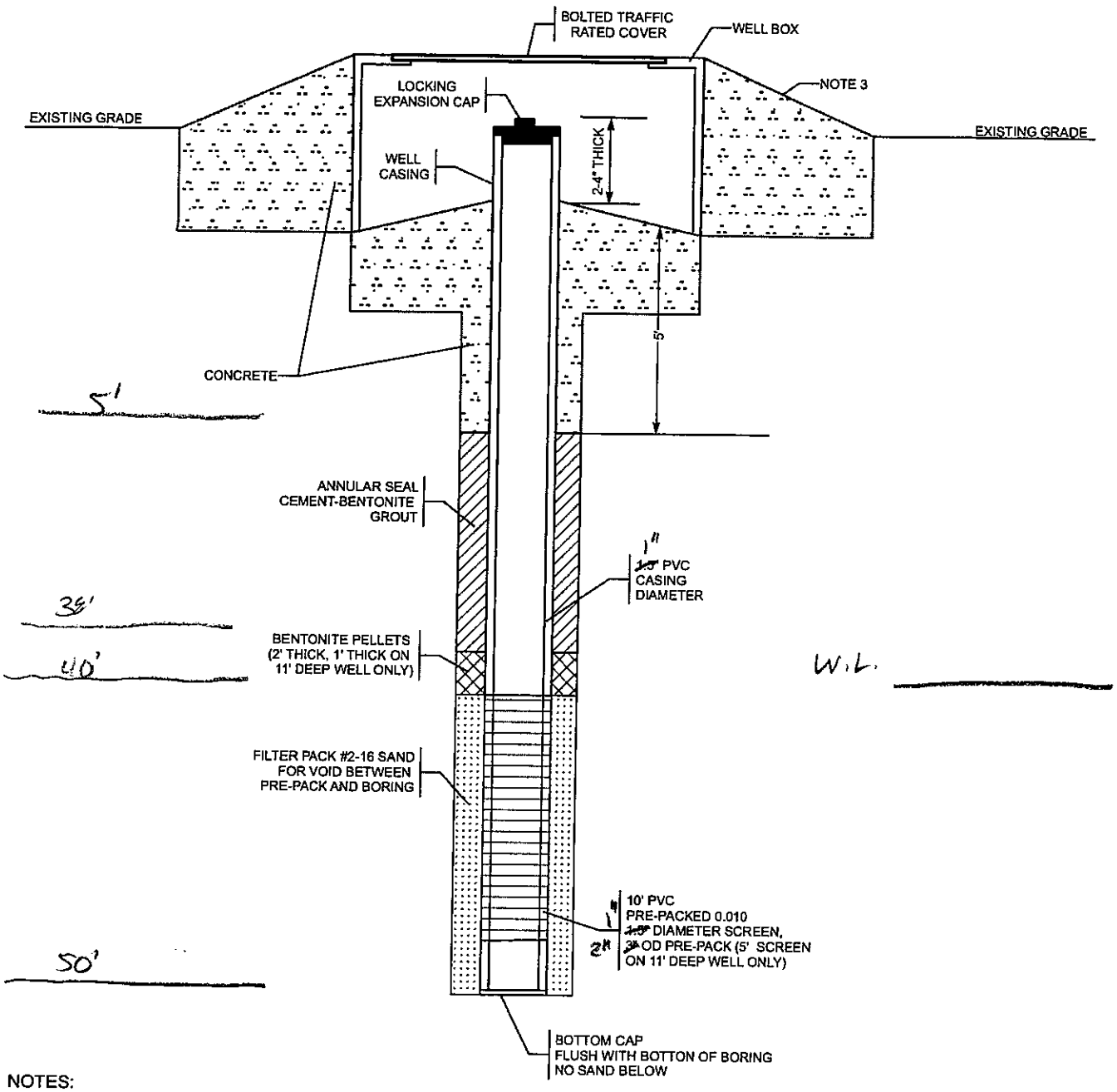
ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH EC, INC.

ZVI- MW02C

ZA1-MW02C 10/28/09



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PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

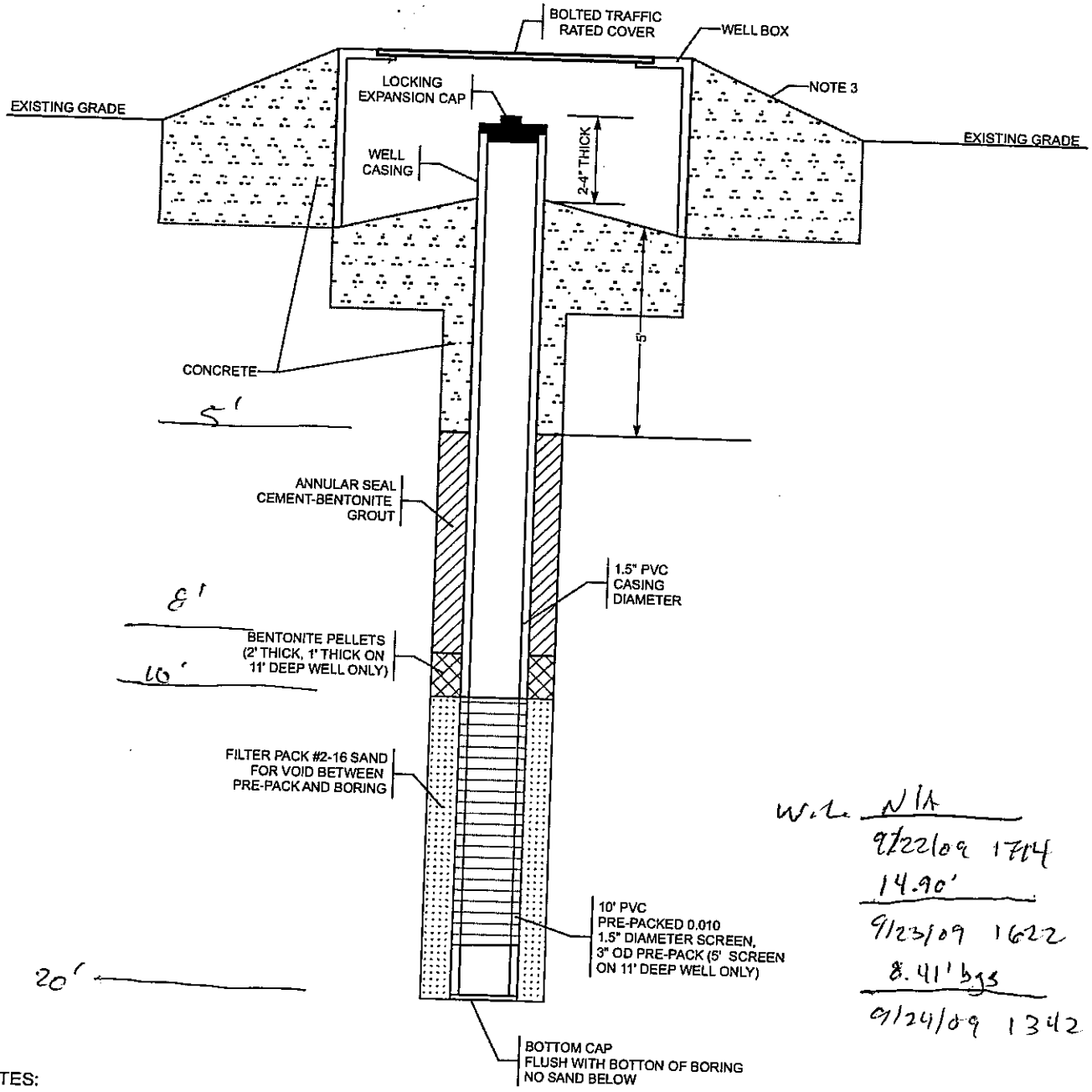
REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZA1-MW02C

ZH1-MW03 A2

9/22/09



WL: N/A
9/22/09 1714
14.90'
9/23/09 1622
8.41' bgs
9/24/09 1342

NOTES:

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PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

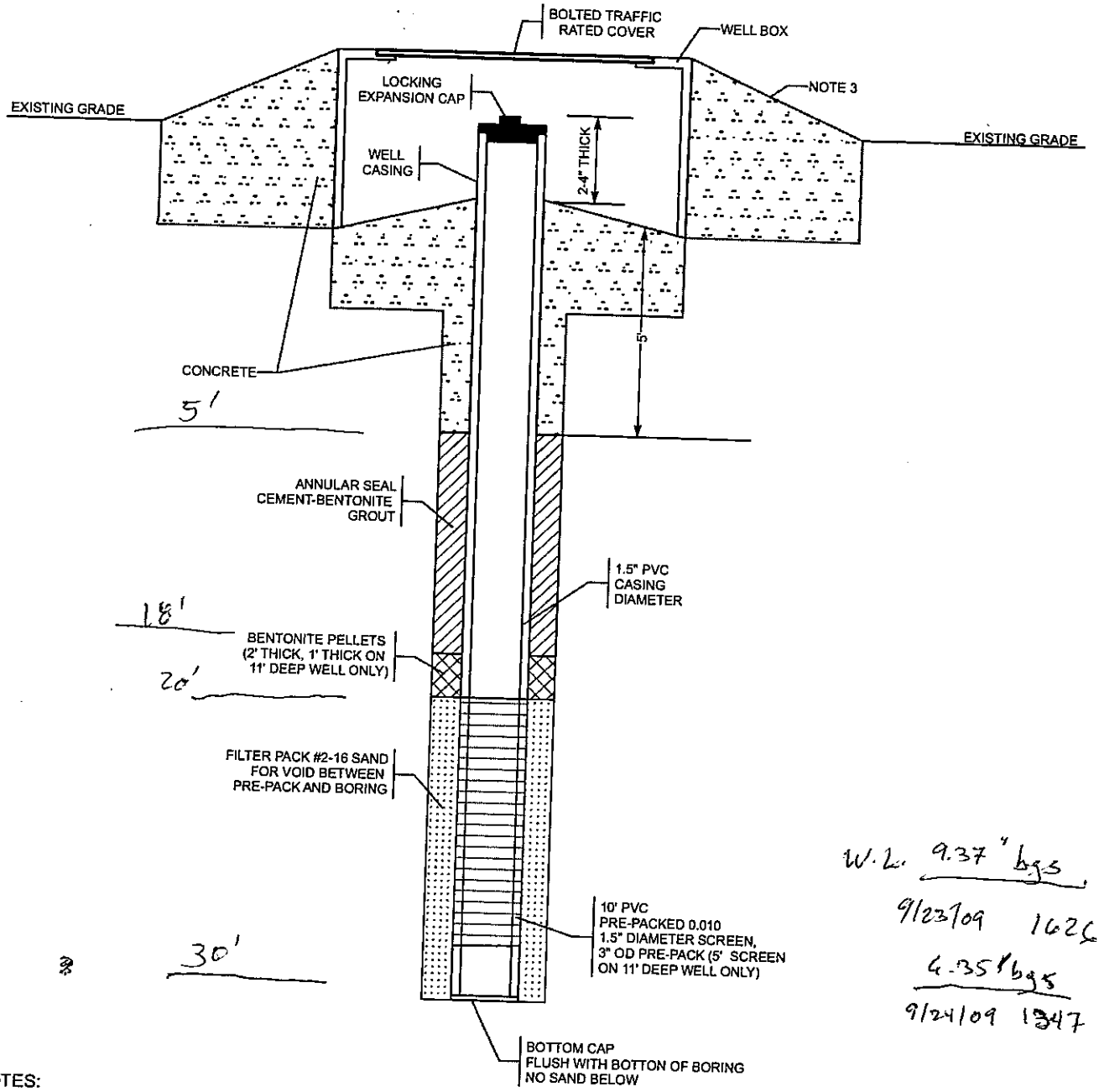
ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH INC.

ZH1- MW03 A2

ZV1- MW03 A3 9/23/09



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SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

REVIEW: 0
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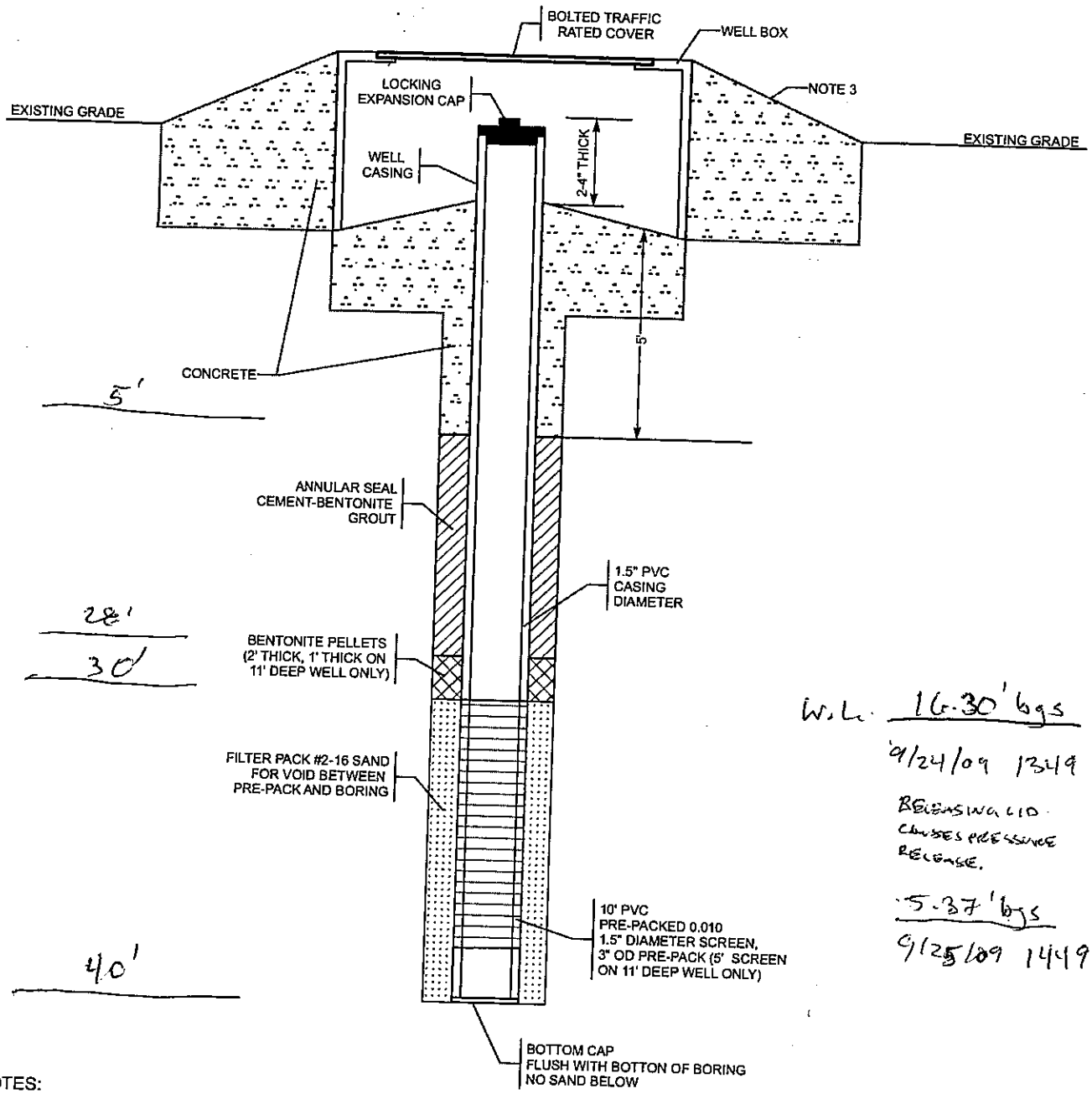
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZV1- MW03 A3

ZAI- MW03B

9/24/09



W.L. 16.30' bgs
9/24/09 1349

RELEASING LID CAUSES PRESSURE RELEASE.

5.37' bgs
9/25/09 1449

NOTES:

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PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

REVIEW: 0
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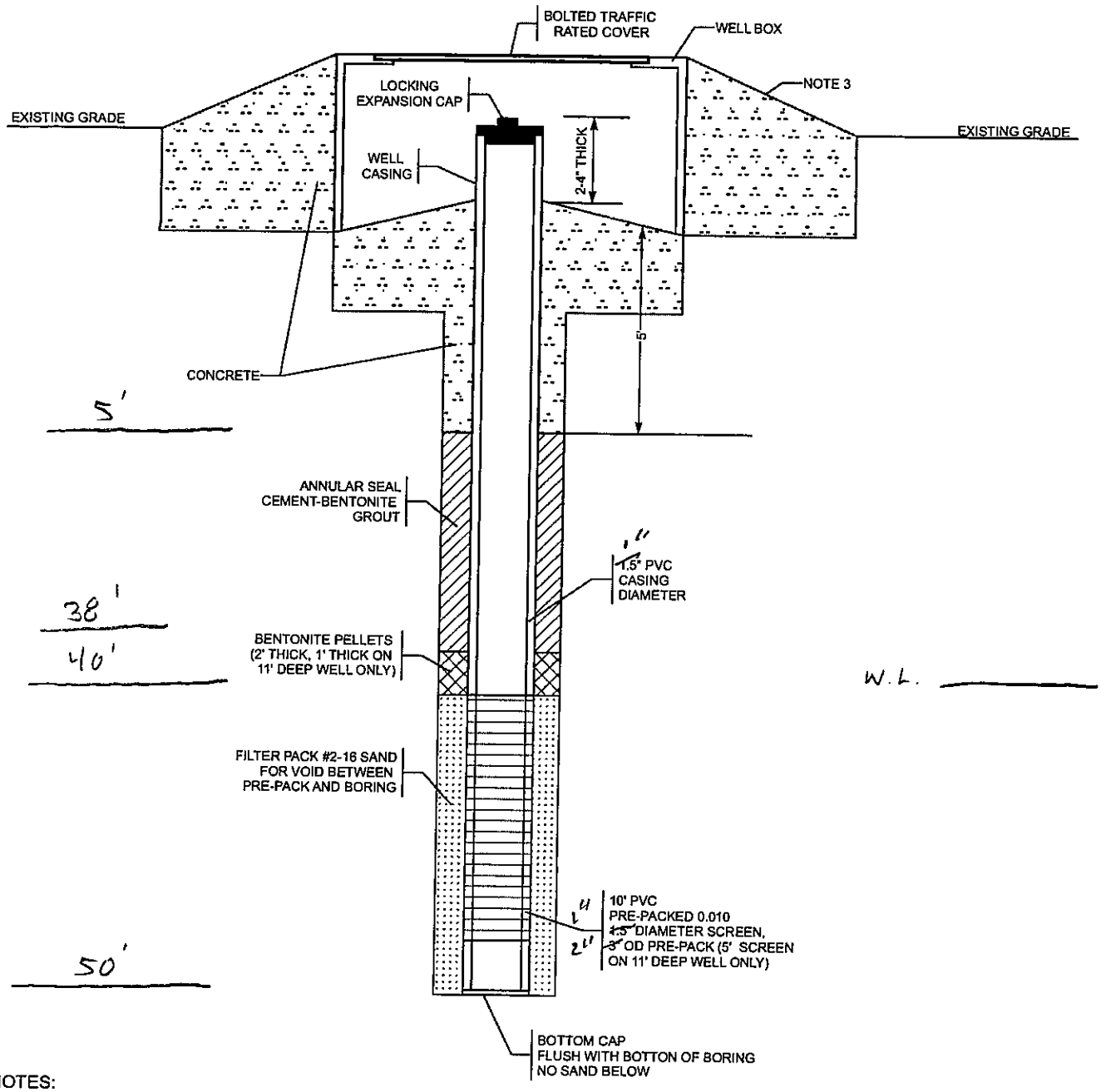
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZAI- MW03B

ZV1- MW03C 10/27/09



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PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

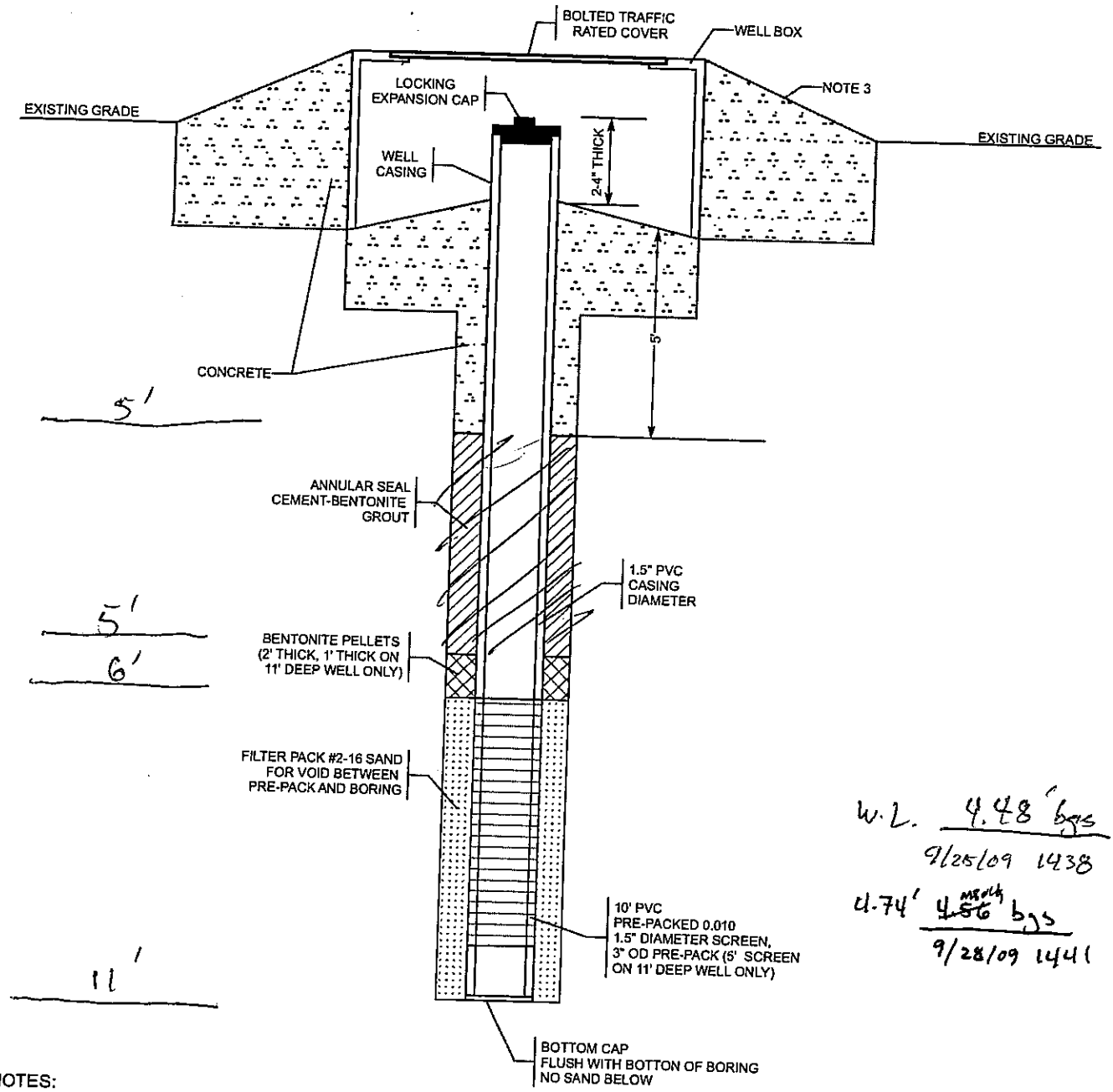
REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRATECH EC, INC.

ZV1- MW03C

ZV1-MW04 A1

9/25/09



W.L. 4.48' bgs
9/25/09 1438

4.74' ~~4.56~~ 4.74 bgs
9/28/09 1441

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BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

REVIEW: 0
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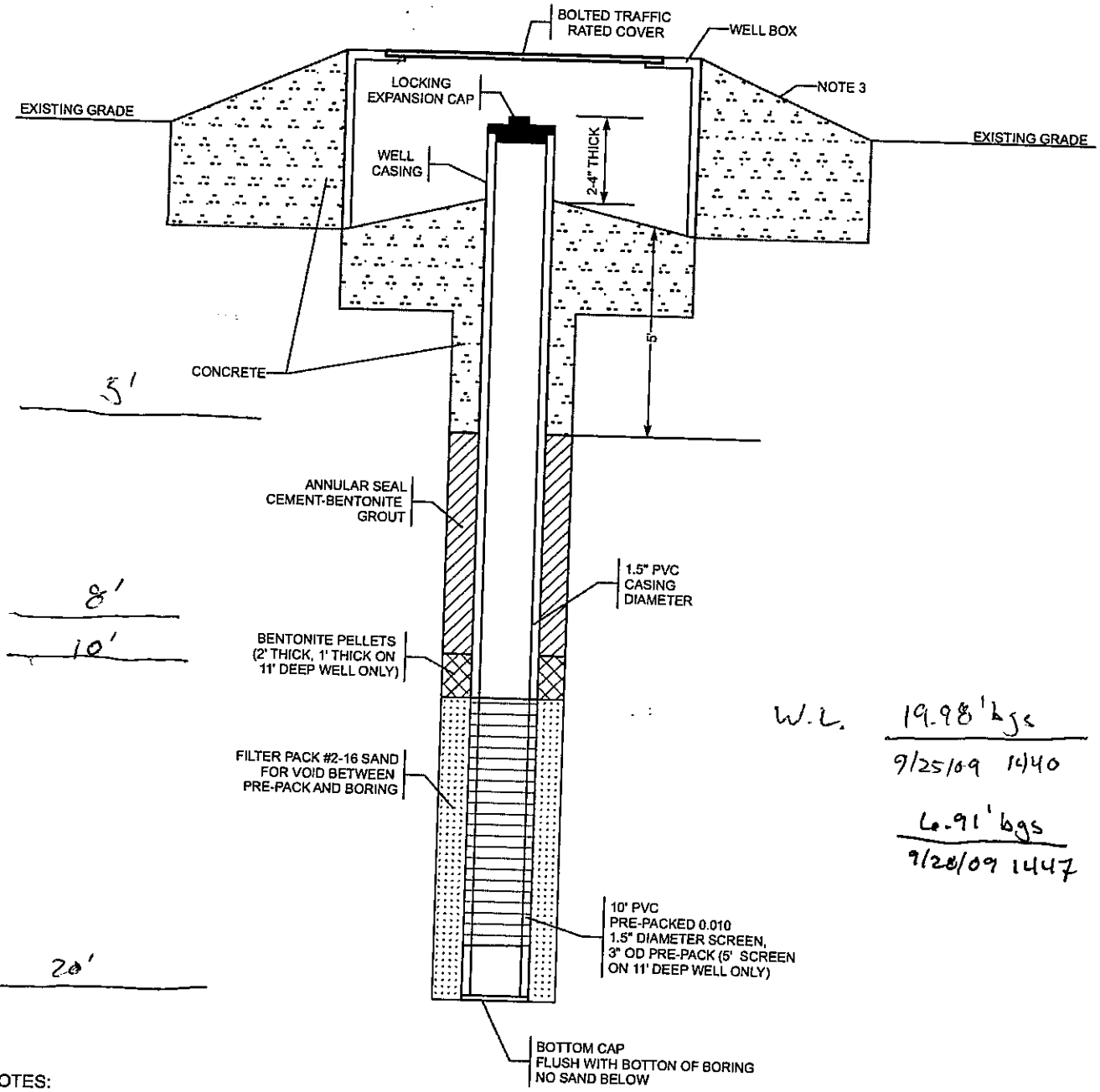
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZV1-MW04 A1

ZVI-MW04 A2 9/25/09



W.L. 19.98' bgs
9/25/09 1440

6.91' bgs
9/28/09 1447

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PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

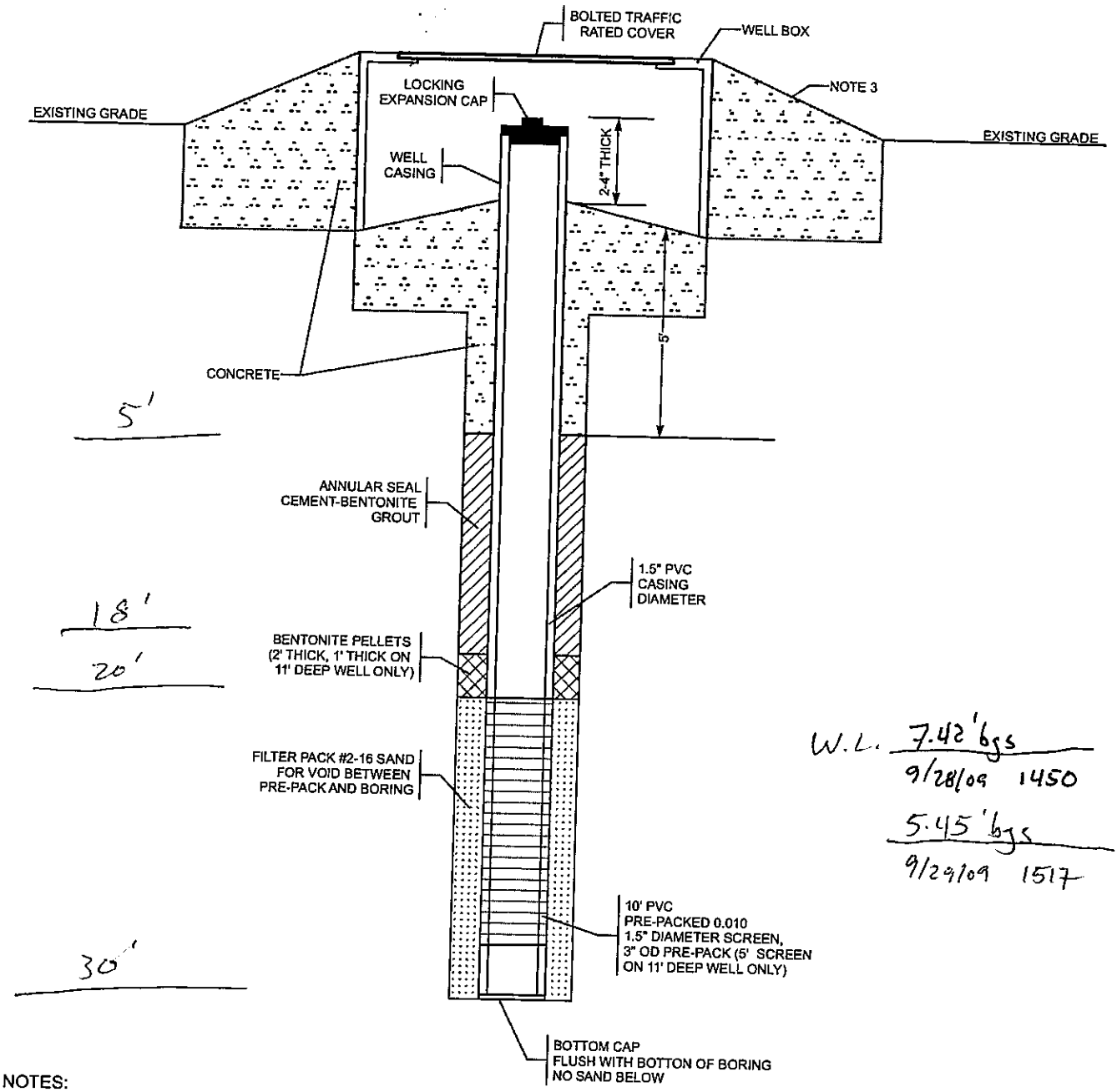
REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZVI-MW04-A2

ZA1 - MW04 A3

9/28/09



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SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

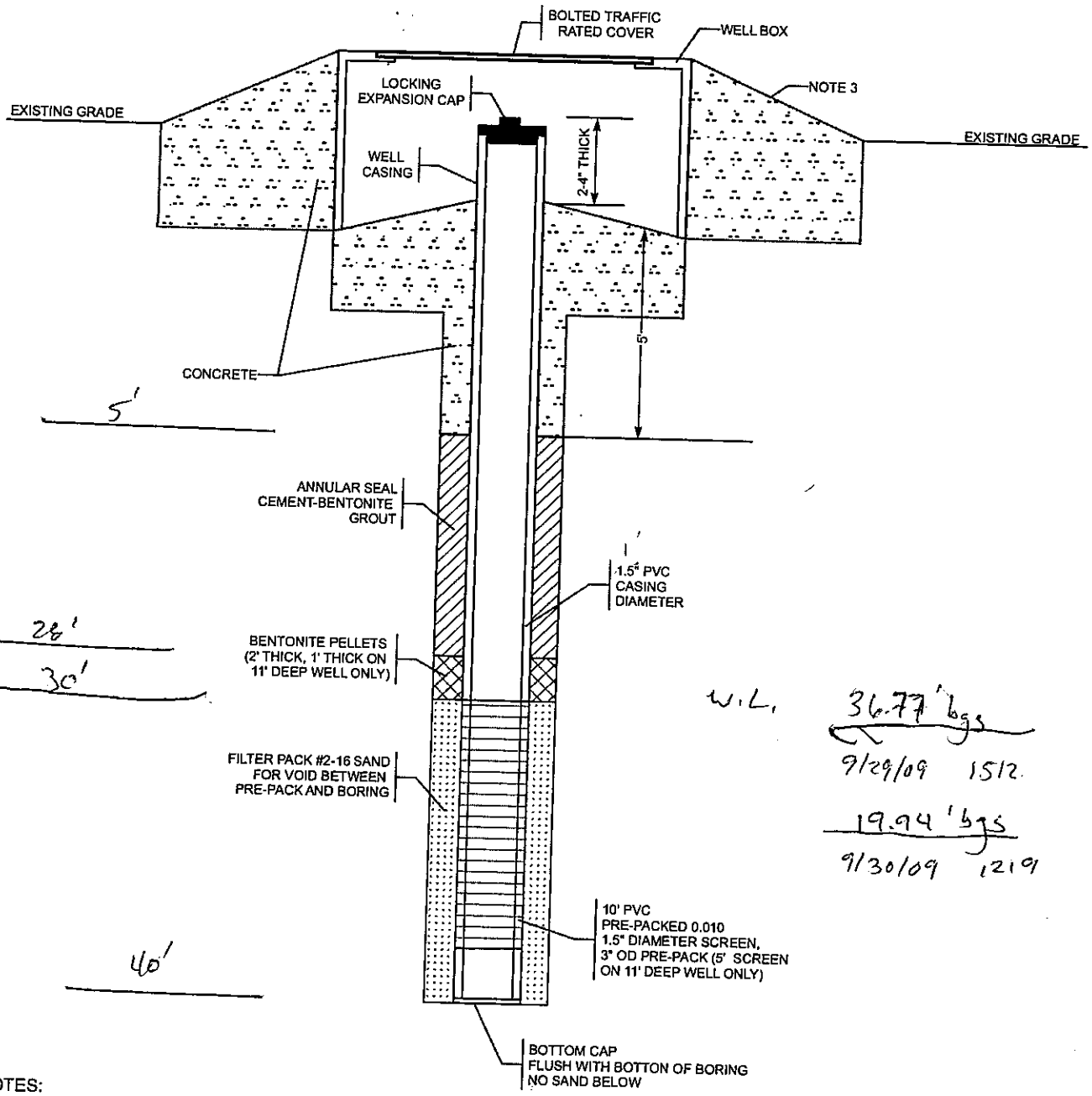
ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZA1- MW04A3

ZVI- MW04B 9/29/09



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SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

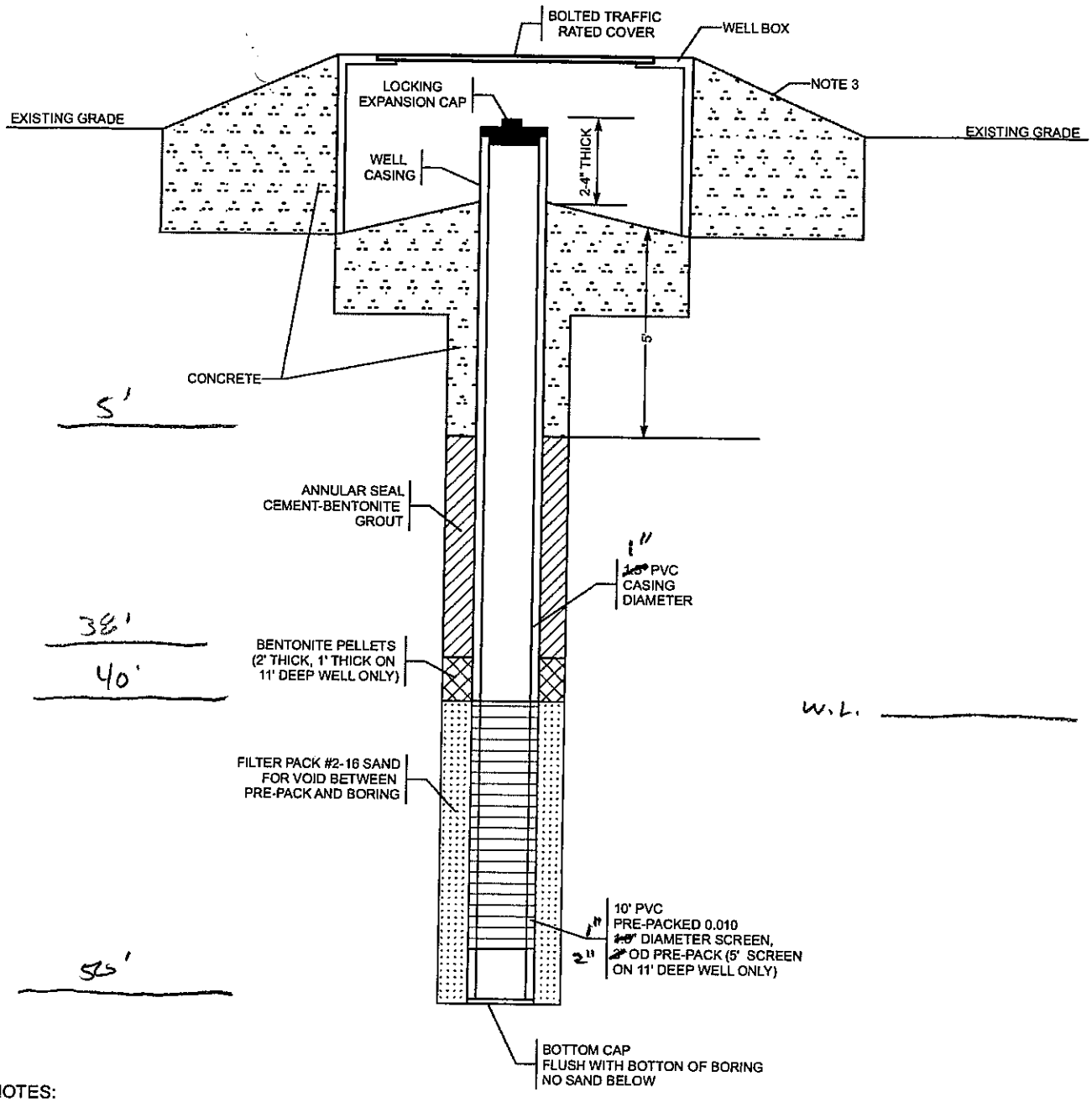
ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZVI - MW04B

241 - MW04 C 10/28/09



NOTES:

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2. 4.5" BORING WIDTH FOR 1.5" MONITORING WELL (3" OD PRE-PACK)
3. FINISH WITH MATCHING MATERIALS OF EXISTING GRADE
4. DIAGRAM NOT TO SCALE
5. SLOT SIZE OF SCREEN AND FILTER PACK MAY VARY

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

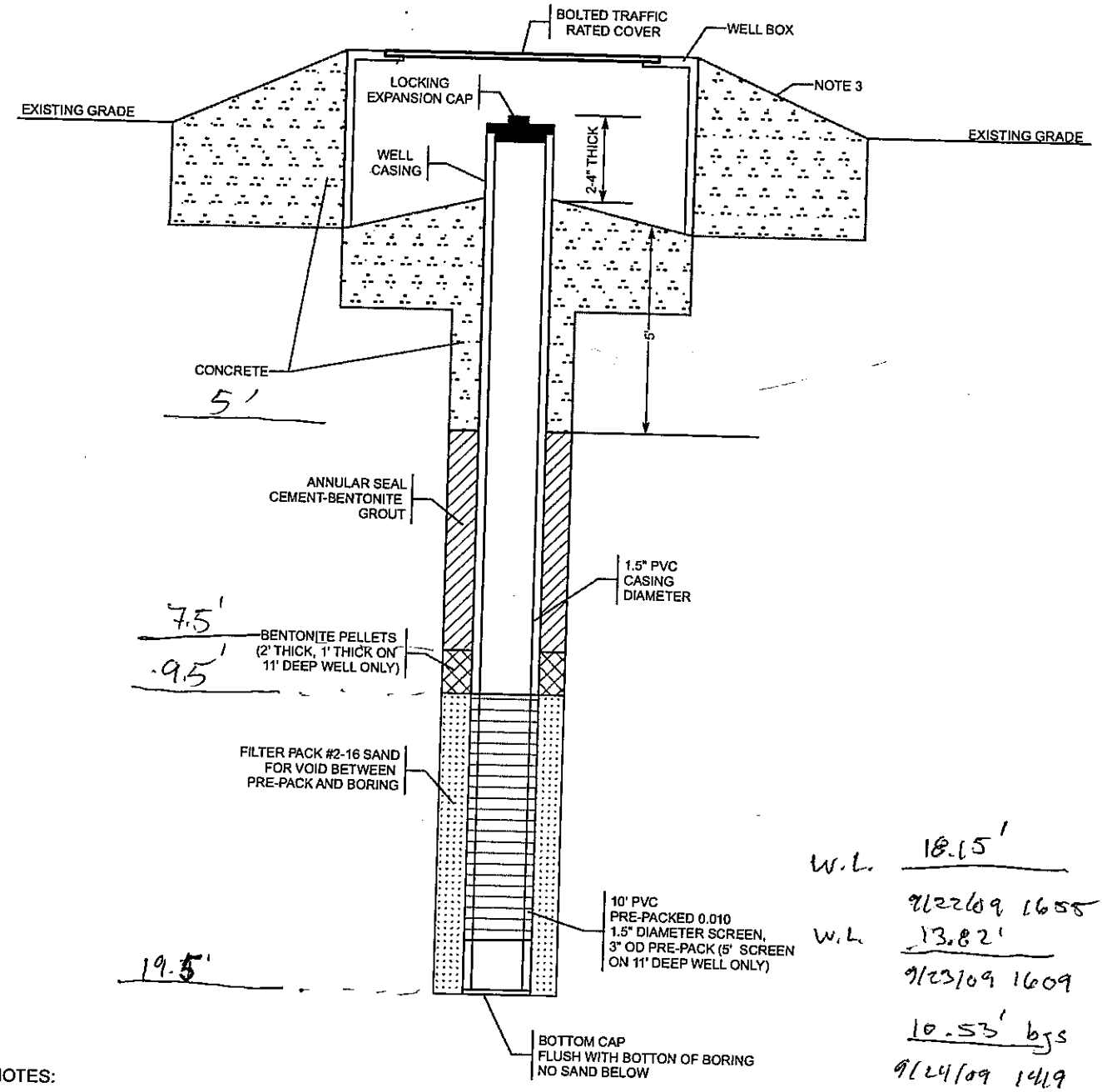
REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH INC.

241 - MW04C

ZA1 - MW05 A2

9/22/09



W.L. 18.15'
9/22/09 1655

W.L. 13.82'
9/23/09 1609

10.53' bgs
9/24/09 1619

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FIGURE 8-2

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ALAMEDA, CALIFORNIA

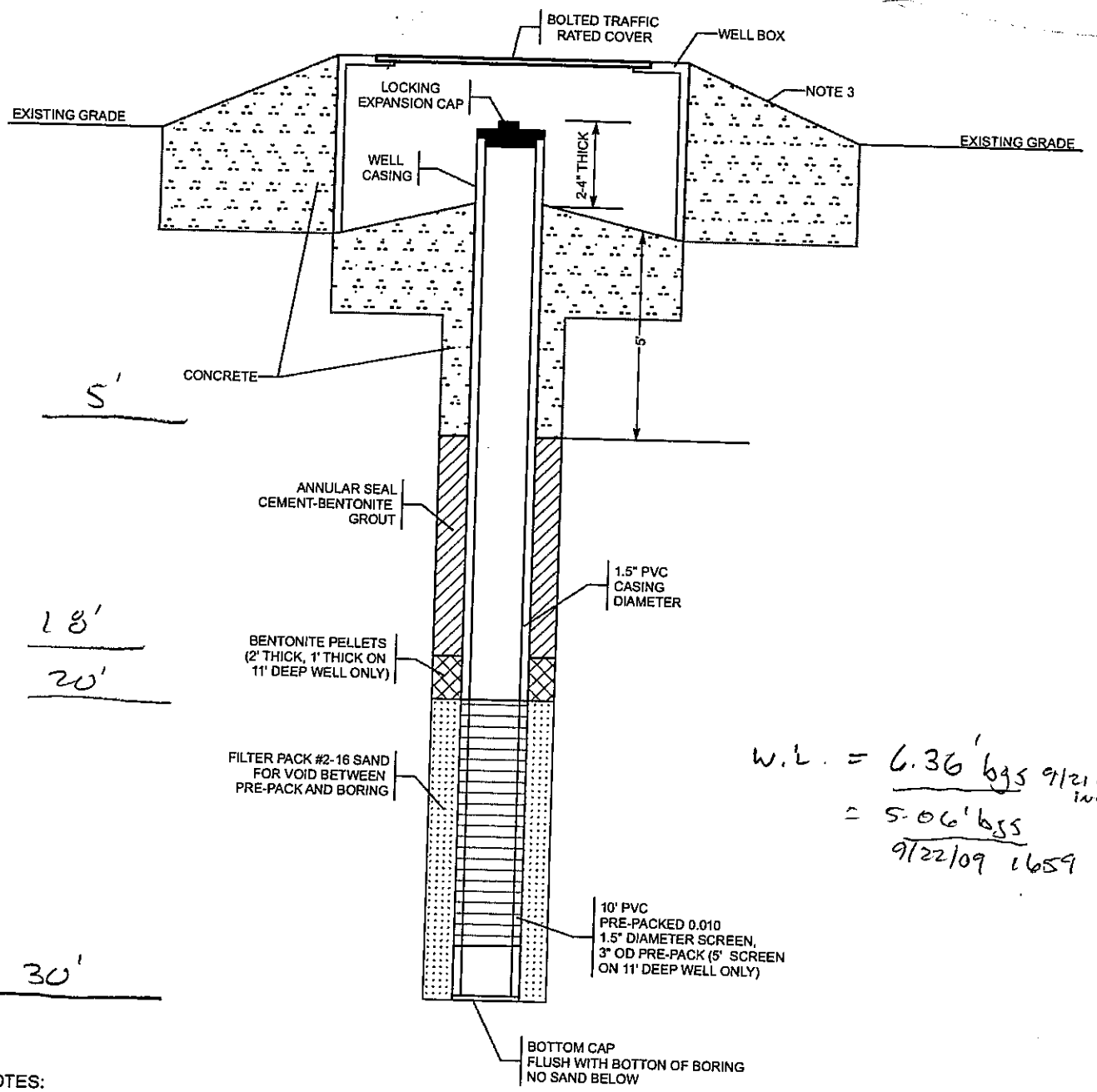
REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZA1 - MW05 A2

ZA1- MW05A3

9/21/09



W.L. = 6.36' bgs 9/21 AFTER INSTALLATION
= 5.06' bgs
9/22/09 1659

NOTES:

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FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

REVIEW: 0
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FILE NUMBER: 020X5076.mxd

TETRA TECH

ZA1- MW05 A3

ZVI- MW05 B

9/29/09

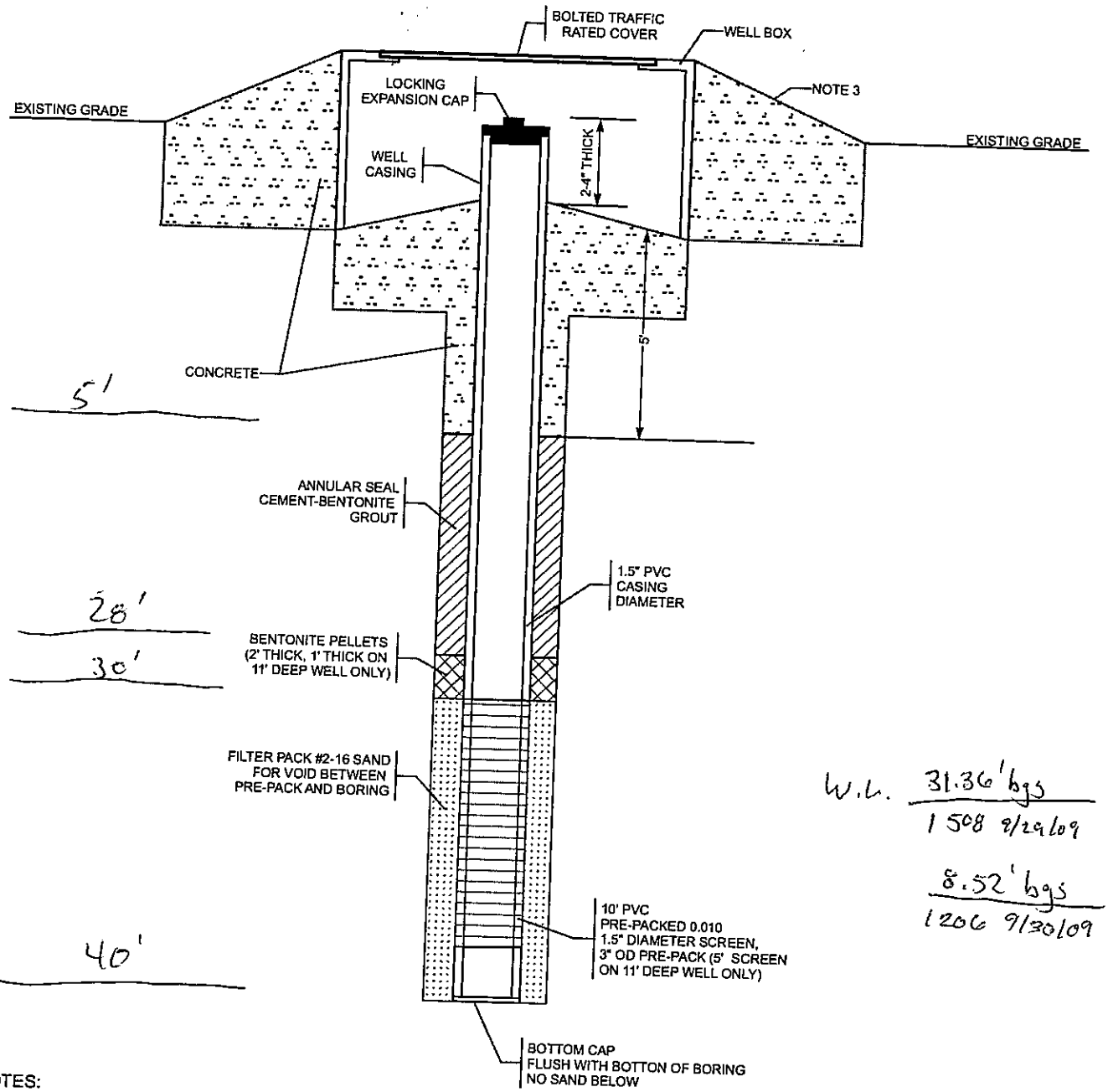

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FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

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FILE NUMBER: 020X5076.mxd

TETRA TECH

ZVI -MW05 B

ZV1- MW05C 10/28/09

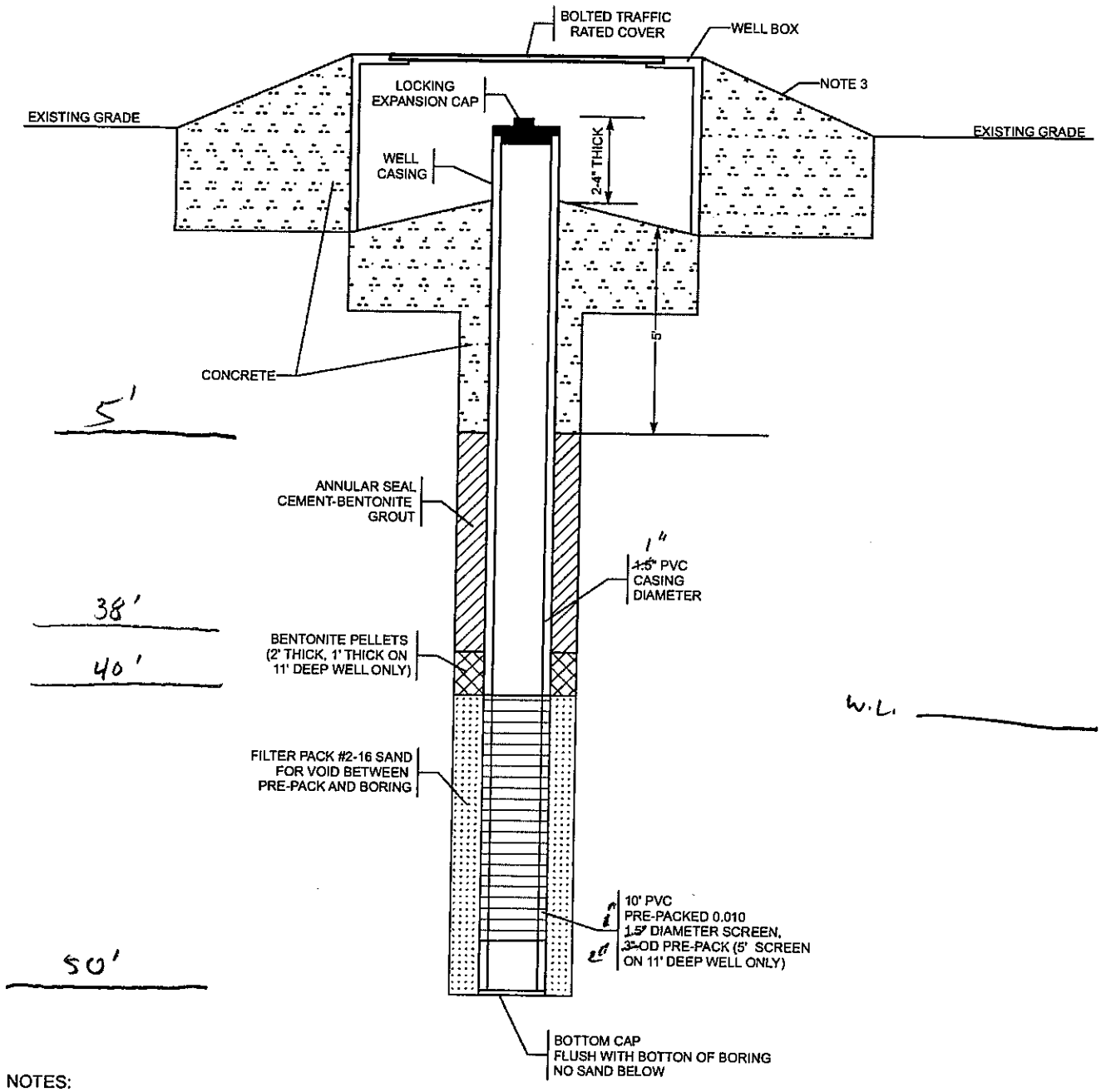

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FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZV1- MW05C

ZVI - MW06 A2 9/22/09

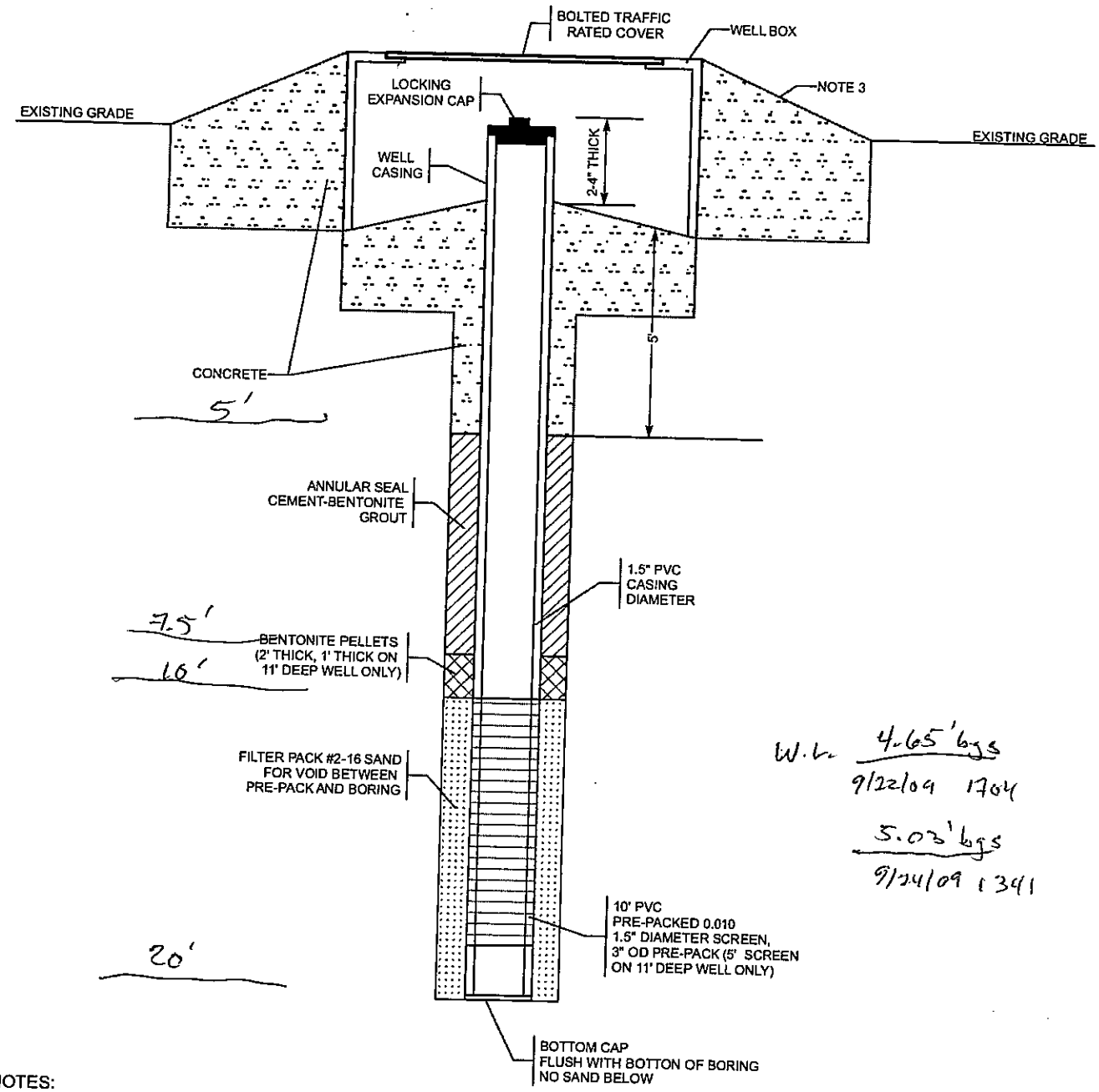

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FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

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TETRA TECH

ZVI- MW06 A2

ZVI- MW06 A3

9/28/09

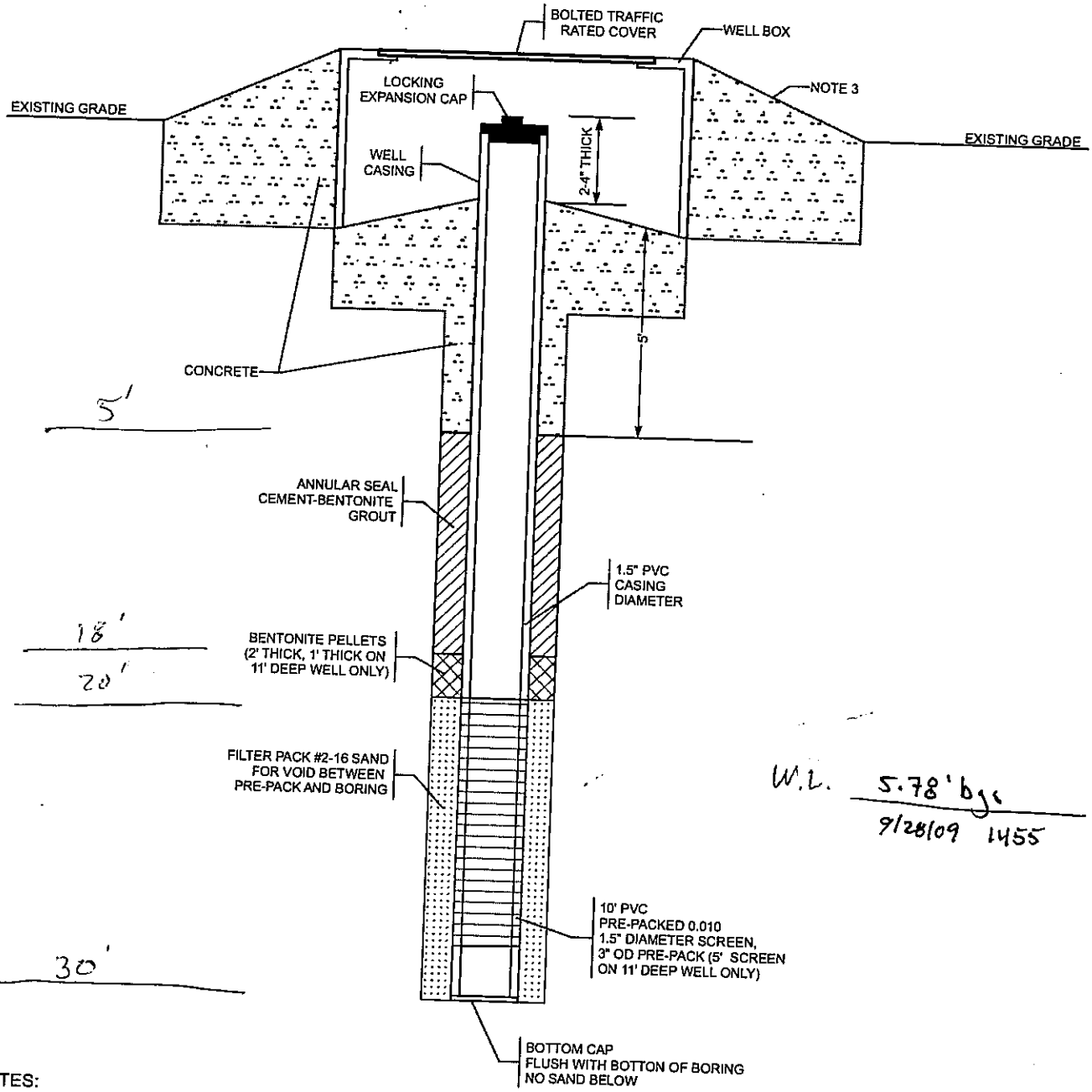

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FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

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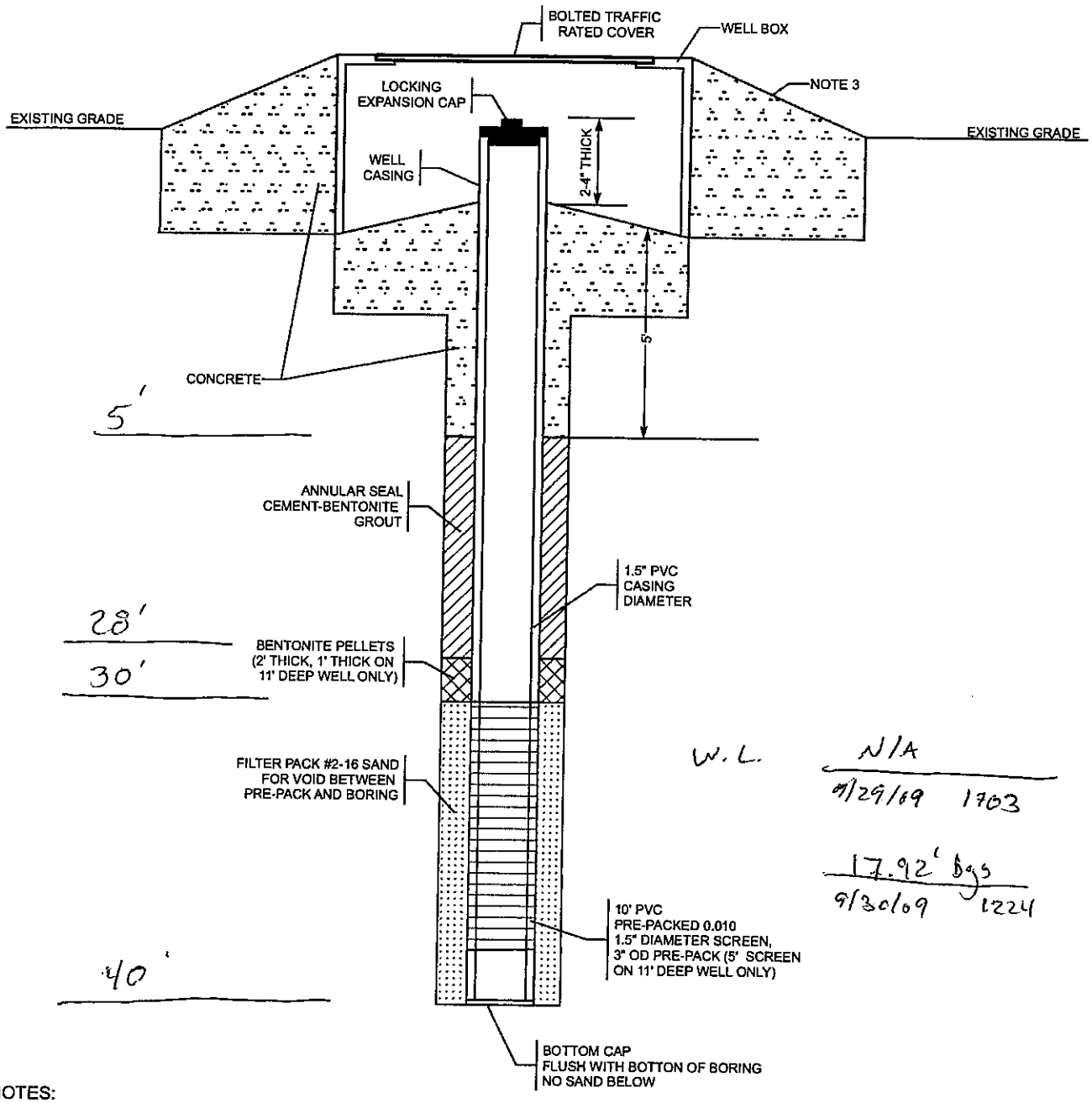
TETRA TECH

ZVI- MW06 A3

ZA1- MW 06B 9/29/09



W.L. N/A
9/29/09 1703

17.92' bgs
9/30/09 1224

NOTES:

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FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZA1- MW 06 B

ZV1- MW06C 10/27/09

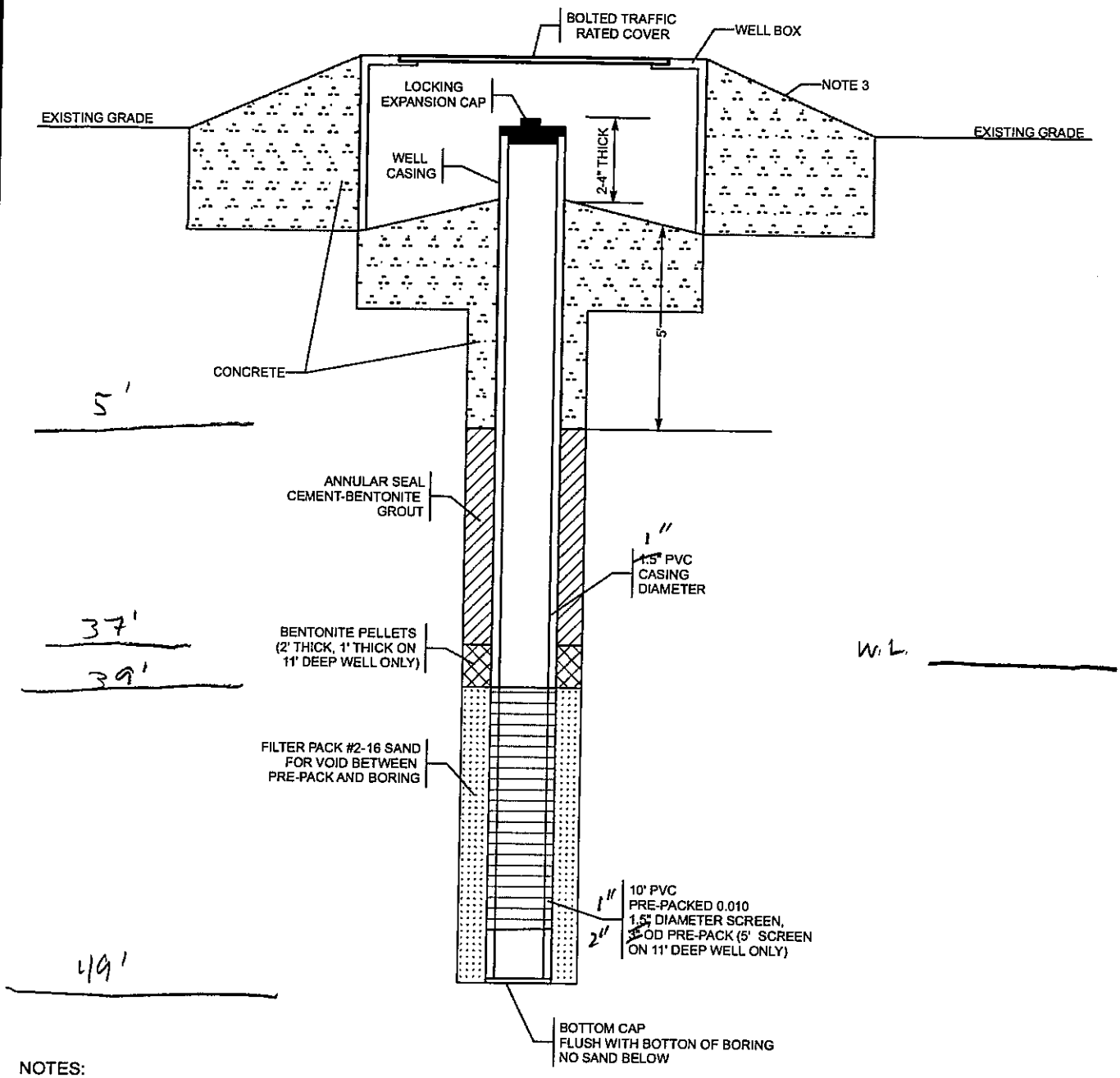

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FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

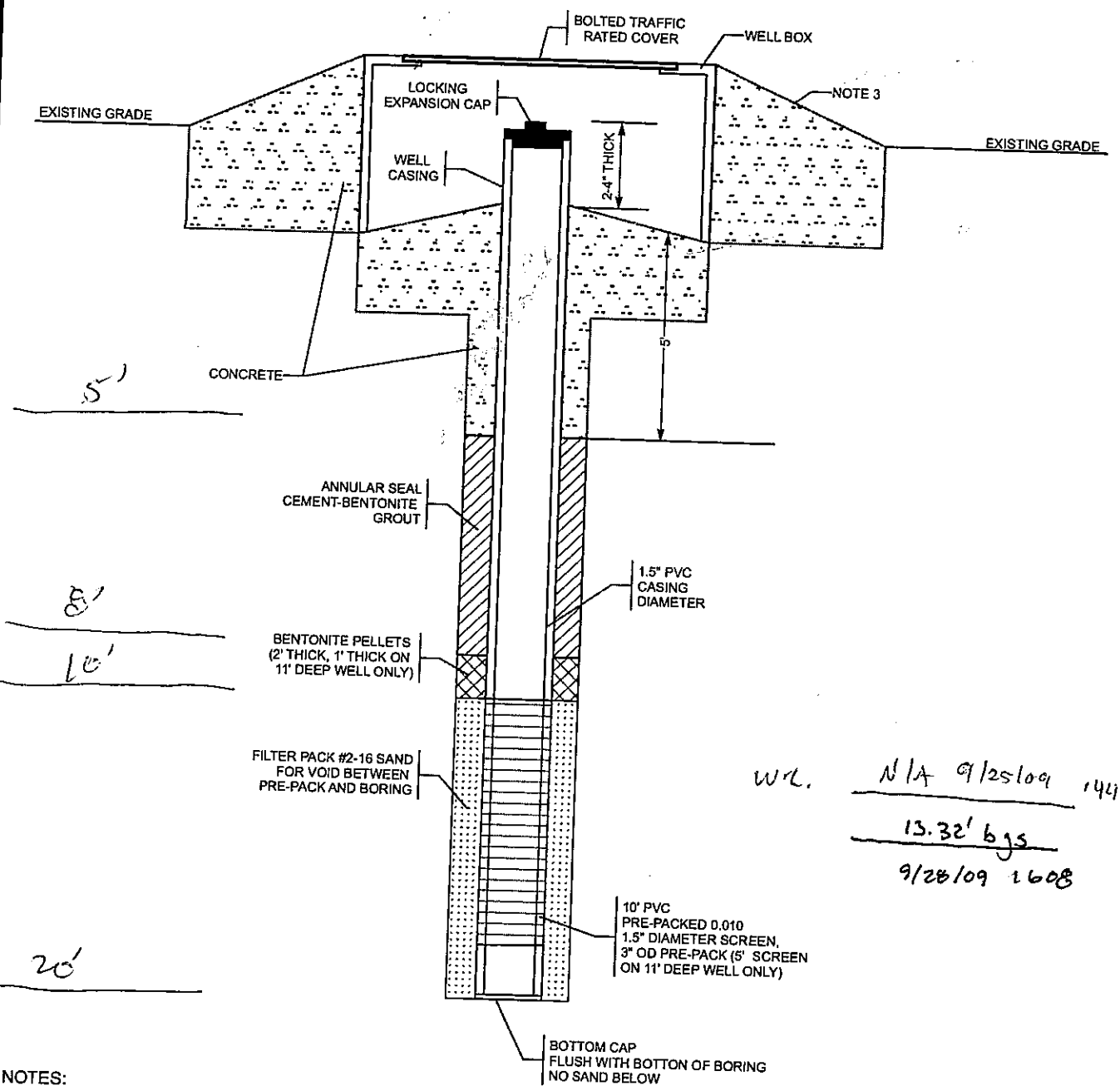
REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZV1- MW06C

ZVI -MW07 A2

9/25/09



WL. N/A 9/25/09 1444

13.32' bgs

9/28/09 1608

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WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

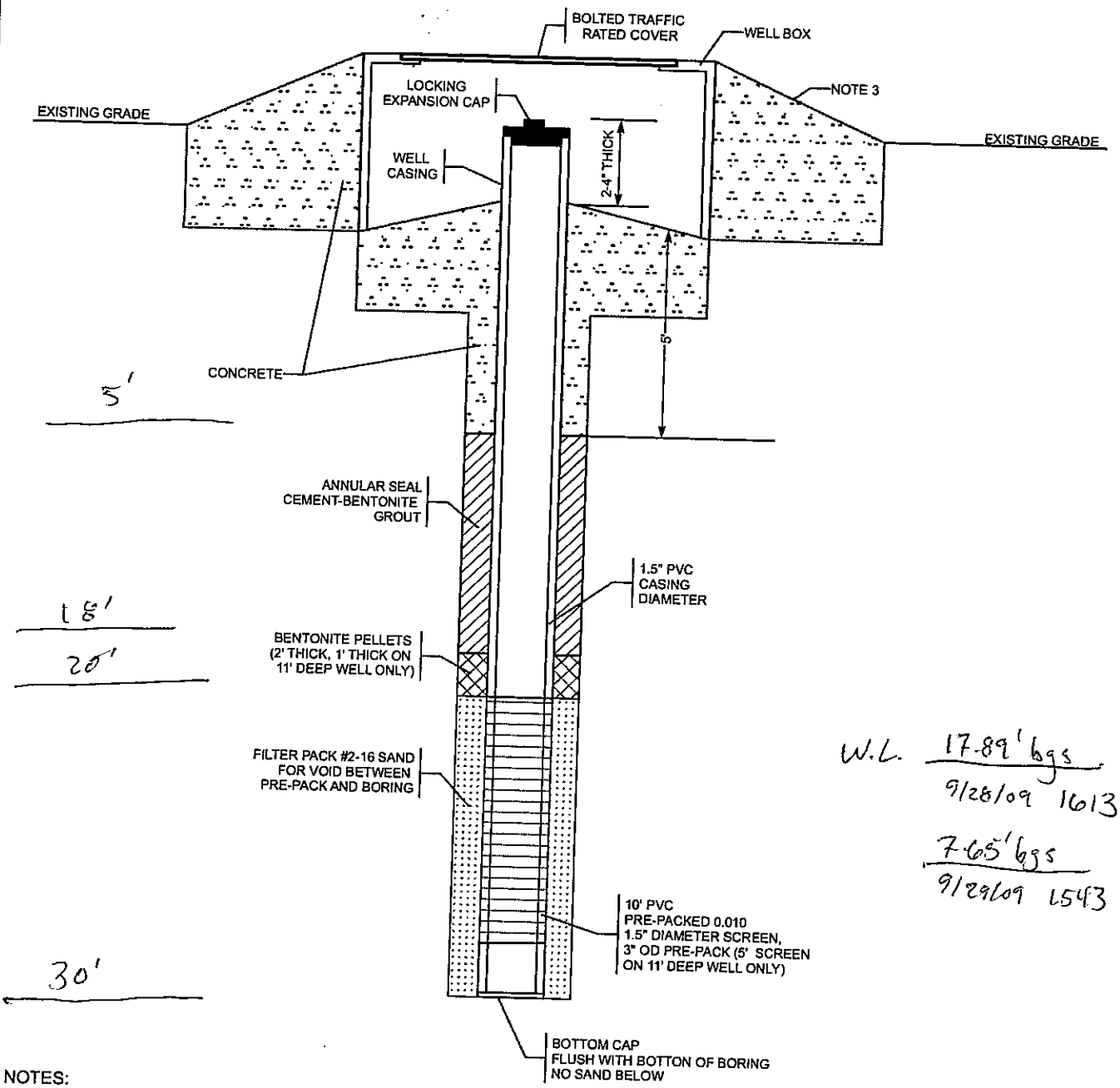
ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZVI- MW07 A2

ZVI- MW07 A3 9/28/09



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PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

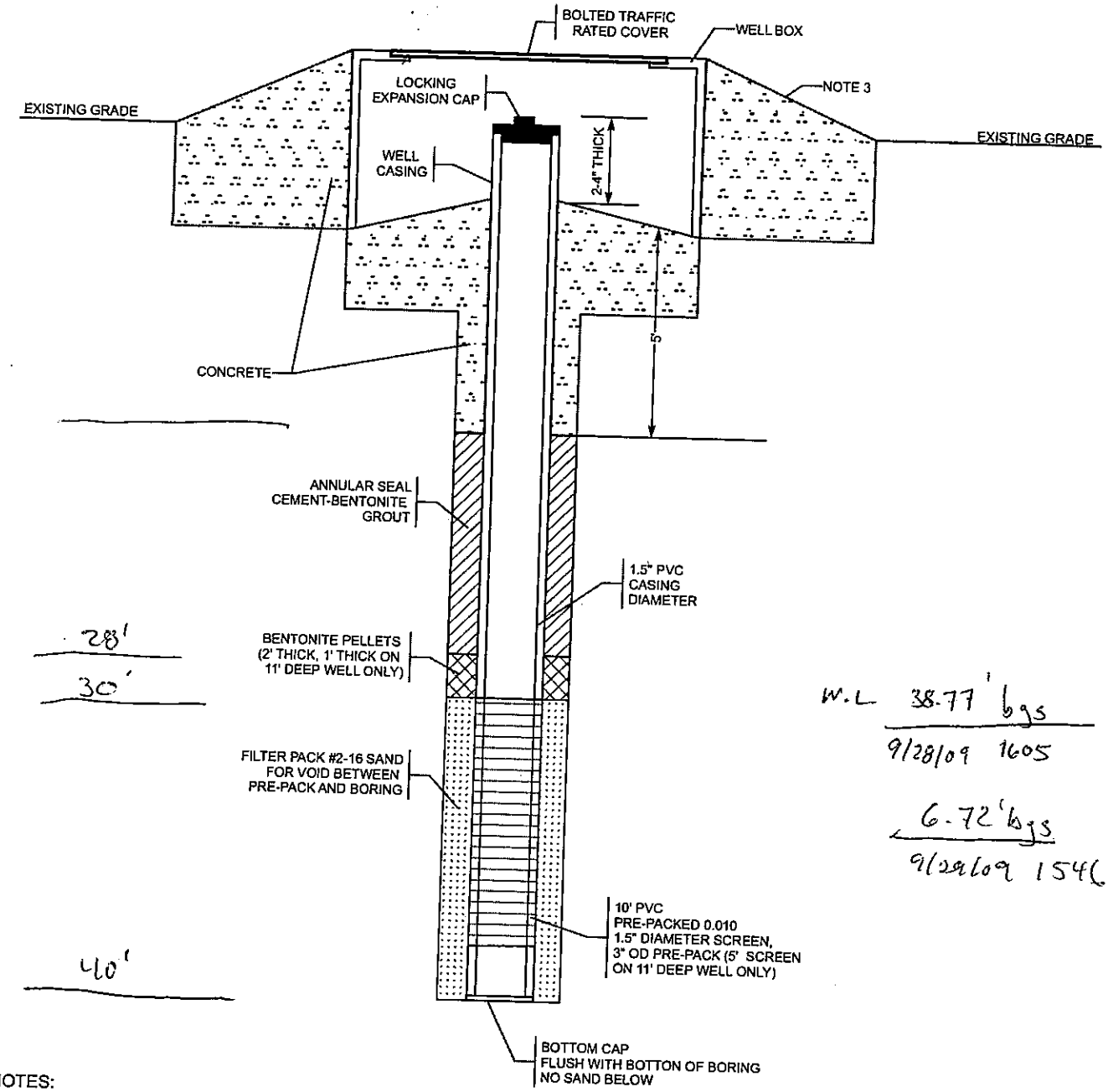
REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

ZVI- MW07 A3

ZVI- MW07 B

9/28/09



W.L 38.77' bgs
9/28/09 1605

6.72' bgs
9/29/09 1546

NOTES:

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FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

REVIEW: 0
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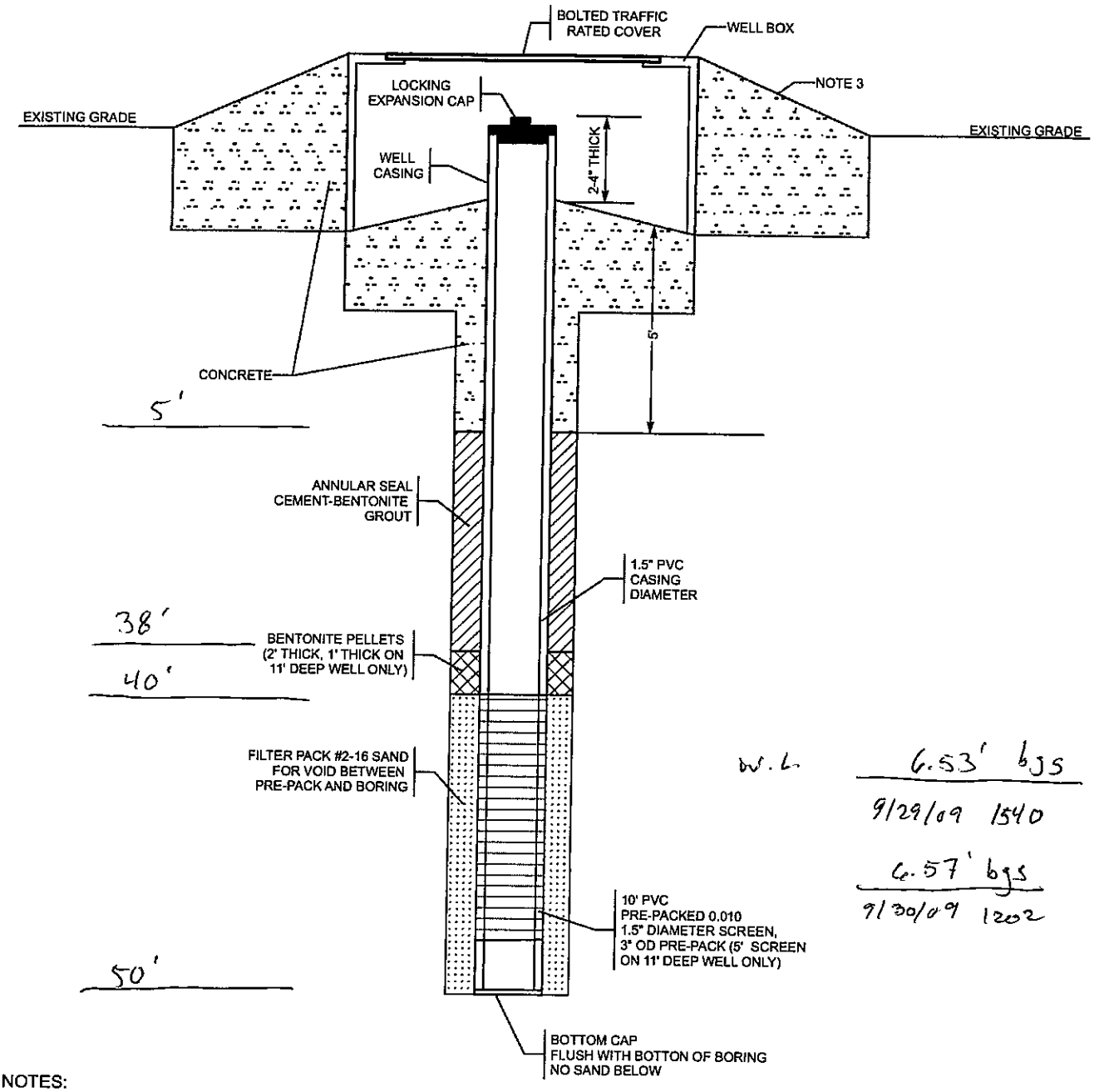
TETRA TECH

ZVI- MW07B

. 241- MW07C 9/29/09



W.L. 6.53' bgs
9/29/09 1540
6.57' bgs
9/30/09 1202

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PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

WORK PLAN FOR REMOVING OIL/WATER SEPARATOR 163 AND CONDUCTING A ZERO-VALENT IRON TREATABILITY STUDY AT OU-2B

FIGURE 8-2

MONITORING WELL COMPLETION SCHEMATIC

ALAMEDA, CALIFORNIA

REVIEW: 0
AUTHOR: RKH
FILE NUMBER: 020X5076.mxd

TETRA TECH

241- MW07C

WELL DEVELOPMENT SHEET

Well ID: MW01A1
Date: 10/5/2009 - Start
Time Start: 12:11
Time End:
Well Diameter: 1.5 in
Casing Depth: 11 ft below TOC
Baseline Water Lever: 5.05 ft below TOC
Casing Volume: 1 gal => 3 x casing volume = 3
Volume Purged: ~6 gal

Time	NTU	Comment
12:11	started surge and bail. water very turbid	
	bailed for about 1.5 gallons and dried	
	bailed total of 2 gallons and let recharge	
	overnight.	
7:30		STW 5'4" water color dark Brw
1:19 pm	bailed a total 1.5 gallons Total 10-6	
Overnight	Total gallons of water bailed 6 gal	
	Done	
Water never cleared		

ARS Technologies, Inc.
1800 SECOND STREET
BERKELEY, CA 94710
510-868-0177

WELL DEVELOPMENT SHEET

Well ID MW01A2 Date: 10-1-09

Time Start 1:45 Pm Time End 4:45

Well Diameter 1.5 in

Casing Depth 20' ft below TOC

Baseline Water Lever 9.3 ft below TOC

Casing Volume 2.1 gal => 3 x casing volume = 6.3

Volume Purged 3.5 gal

Time	NTU	Comment
1:45	-71.06	DTW 9.3 Water color light Brw
2:15	No Reading ERROR	DTW 18'.1" water color light Brown
3:00 STOP	No Reading	DTW 19.5 water color Dark Brown
3:45 STOP No water	-71.74	DTW 18.8 water color light Brw 3gal
4:20	-69.56	DTW 19'.9 water color light Brw
4:30	-75.15	DTW 20'.1" water color light Brw
4:40	-46.95	DTW 20' water color light Brw ½ gal
4:45	-0.26	DTW 20'.3 water color Dirty Clear
	Complete	

ARS Technologies, Inc.
1800 SECOND STREET
BERKELEY, CA 94710
510-868-0177

WELL DEVELOPMENT SHEET

Well ID MW01 A3
Time Start 13:20
Well Diameter 1-5 in
Casing Depth ~~90~~ 30 ft below TOC
Baseline Water Lever 5.4 ft below TOC
Casing Volume 3.1 gal => 3 x casing volume = 9.3
Volume Purged 25 gal

Date: 10/5/2009
Time End 16:55

Time	NTU	Comment
13:20		Surge and bail, 5 gallons
15:36		BTW 5.4 Start pumping
15:40	790	DTW 15.35 water cloudy
15:55	295	DTW 17.60 cleaner
16:10	237	DTW 18.2
16:25	105.4	DTW 18.7
16:40	75.3	DTW 19.25
16:55	34.9	DTW 18.5
	Complete	

ARS Technologies, Inc.
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BERKELEY, CA 94710
510-868-0177

WELL DEVELOPMENT SHEET

Well ID MW01B
Date: 10-1-09
Time Start 2.30
Time End 4.3
Well Diameter 1.5 in
Casing Depth 40 ft below TOC
Baseline Water Lever 10.4 ft below TOC
Casing Volume 4.1 gal => 3 x casing volume = 12.3
Volume Purged ~~12~~ 12.3 gal

Time	NTU	Comment
2.30 Pm	386	DTW 10.1 water color light Brw
3:00 Pm STOP	No Reading	DTW 38.6 Water color Dark Brw
3:30 START	9.14	DTW 36.6 water color semi clear 5gal
4:00 Pm	-29.06	DTW 38.2 water color semi clear 7 gal
	Complete	

ARS Technologies, Inc.
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WELL DEVELOPMENT SHEET

Well ID 241 MW01C
Date: 10/30/09
Time Start
Time End 9:10
Well Diameter 1" in
Casing Depth 50' ft below TOC
Baseline Water Lever 9.0 ft below TOC
Casing Volume ~~4.6~~ 2.3 gal => 3 x casing volume = ~~6~~ 9.2
Volume Purged 19.5 gal

	Time	NTU	Comment
	10:00 - 10:15		Purge well 2 gal Dry well Dark Brw
	11:10		DTW 41'
	12:45 - 1:00pm	755	start Pumping Dry well
	2:15		DTW 55.4
	total gallons Pump. 4		
11/2	7:40	Starting Pumping	DTW 5'.5"
	7:50	1000	Water light Brown
	8:00		STOP Dry well
	9:15 - 9:30	1000	Water cloudy bailing well
	10:00	677	water Semi clear
	10:15	124	
	10:30	178	
	10:40	260	water Semi clear
	~~10:45~~ 1:15	474	Water cloudy 5gal
		total gal Purged for Today 10.5	
11/3	7:45		DTW 5'6" started Pumping
	8:00	91	water Semi clear
	8:15	172	Semi clear
	8:30	415	water cloudy
	8:40	99	WATER SEMI CLEAR
	8:45	66	WATER clear
	9:00	47.32	CLEAR
	9:10	18.62	CLEAR
		Complete	

ARS Technologies, Inc.
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BERKELEY, CA 94710
510-868-0177

WELL DEVELOPMENT SHEET

Well ID 2/1 MW01D
Date: 10/30/09
Time Start
Time End
Well Diameter 1" in
Casing Depth 60' ft below TOC
Baseline Water Lever 8.1 ft below TOC
Casing Volume ~~4.4~~ 2.7 gal => 3 x casing volume = 10.8
Volume Purged 16.5 gal

Time	NTU	Comment
8:45 - 9:00		Surge & Purge water Dark Brown
9:45	1000	turbidity Reading Water Brown 5
10:00		Dry well 3gal
10:45		DTW 55.8
1:05 - 1:20		starting pumping water light Brw 5gal
		Dry well gal Total gal
2:00 - 2:15		Dry well
	total gallons Pumped 6.5	
1 1/2 7:40		DTW 5'8"
8:05		Starting Pumping
8:10	696	water light Brw
8:15	965 STOP	water light Brw Dry well
9:30 - 10:00	1000	Turbidity reading bailing water
11:10	456	Water semi clear 5gal
12:10	223	water almost clear
12:20 - 12:30	755	Dry Well
1:05	643	semi clear
3:15		started pumping
3:30	177	water semi clear
3:35	143	water clear
3:40	102	water still clear
3:50	89	water clear
4:00	86	Water clear
4:05	83	Water semi clear
4:25	606	Water semi clear

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BERKELEY, CA 94710
510-868-0177

Cont'd

WELL DEVELOPMENT SHEET

Well ID 2V1 MW01D

Date: _____

Time Start _____

Time End 4:55

Well Diameter _____ in

Casing Depth _____ ft below TOC

Baseline Water Lever _____ ft below TOC

Casing Volume _____ gal => 3 x casing volume = _____

Volume Purged _____ gal

Time	NTU	Comment
4:30	321	Semi clear
4:35	250	
4:40	94	Water clear
4:45	73	WATER clear
4:50	58	WATER clear
4:52	43.69	Water clear
4:55	36.21	Water clear 5 gal
	DTW 58'2"	
	Complete	

ARS Technologies, Inc.
1800 SECOND STREET
BERKELEY, CA 94710
510-868-0177

WELL DEVELOPMENT SHEET

Well ID MW04A1
Date: 10/5/2009
Time Start 12:33
Time End 15:16
Well Diameter 1.5 in
Casing Depth 11 ft below TOC
Baseline Water Lever 4.43 ft below TOC
Casing Volume 1 gal => 3 x casing volume = 3
Volume Purged gal

Time	NTU	Comment
12:33	start bailing and surging	
12:45	RAN Dry after ~1.5 gallons.	
13:07	purged another 0.5 gallon	
13:46	121	at 2.5 gallons
~~13:50~~ 14:00	155	at 3.0 gallons
14:44	77.9	at 5 gallons
14:56	141.12	5.5 gallons
15:15	8.00	6 gallons
	Complete	

All done with bailing. periodically after letting recharge

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WELL DEVELOPMENT SHEET

Well ID MW02AT
Date: 10-6-09
Time Start 9:30
Time End 3:10
Well Diameter 1.5 in
Casing Depth 20 ft below TOC
Baseline Water Lever 7.6 ft below TOC
Casing Volume 2.1 gal => 3 x casing volume = 6.3
Volume Purged 6.3 gal

Time	NTU	Comment
9:30	32.1	DTW 7.6 water color clear
12:40	1866	DTW 19.5 water color Brown
2:10	828	water color cloudy bailed 4gal
3:30 stop dry well	412	DTW 19.8" color of water cloudy
3:40 Dry	303	DTW 35.3 color of water cloudy
4:15 Dry	243	color of water cloudy
4:30 Dry	222	color of water semi clear
overnight	Total gallons	of water bailed 5gal
10/7 7:15	811	DTW 19.8 water color Dirty clear
7:30 stop Dry		
10:30	156	DTW 19.8 water color semi clear
10:55	175	DTW 19.7
1:10	93	taking a reading test
2:25	84.1	bail & took a reading test
3:00	61.6	reading test water color clear
3:10	50	DTW 19.9 water color clear
	Completed	

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WELL DEVELOPMENT SHEET

Well ID MW02A3 Date: 10-2-09
Time Start ~~[illegible]~~ 9:20 AM Time End 11:45
Well Diameter 1.5" in
Casing Depth 30' ft below TOC
Baseline Water Lever 5'4" ft below TOC
Casing Volume 3.1 gal => 3 x casing volume = 9.3
Volume Purged 9.3 gal

Time	NTU	Comment
9:25	1533	DTW 12'8" Water color light Brw
9:40	788	DTW 19'2" Water color Dirty clear
9:55	5134	DTW 22'1" Water Color light Brw
10:10	6062	DTW 28'3" Water color light Brw
10:25	1164	DTW 28'6 water color light Brw 5gal
10:40	1029	DTW 28'3" water color Dirty Clear
10:55	143	DTW 29'1" Water color clear
11:00	-0.41	DTW 28'6" Water color clear
11:10	-0.61	DTW 28'5" Water Clear
11:15	-21.92	DTW 28'7" water color Clear
11:30	22.1	DTW 28'6" Water clear
11:45	35.44	DTW 29'5" Water Color Clear
	Complete	

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WELL DEVELOPMENT SHEET

Well ID MW02B
Date: 10-02-09
Time Start 12:30
Time End 2:45 pm
Well Diameter 1.5 in
Casing Depth 40 ft below TOC
Baseline Water Lever ft below TOC
Casing Volume 4.1 gal => 3 x casing volume = 12.3
Volume Purged 15 gal gal

Time	NTU	Comment
12:45	1196	DTW 17'1" Water color light Brw
1:00 pm	676	DTW 19'1" Water color light Brw 5 gal
1:15 pm	895	DTW 21'5" Water color semi Clear
1:25 pm	-6.73	DTW 22'2" Water color semi Clear
1:35 PM	-21.19	DTW 22'9 Water semi clear
1:45 pm	-47.37	DTW 22'3" Water color semi Clear
1:55 pm	532	DTW 22'8" Water semi Clear
2:05	485	DTW 23'2" Water Color semi clear 5gal
2:15	465	DTW 22'4" Water color same as above
2:25	4.14	DTW 21'3" water color same as above
2:35	0.07	DTW 23'5" Water Color semi clear
2:40	18.3	DTW 23'4" Water semi clear
2:45	4.33	DTW 22'3' Water semi clear 5gal
	Complete	

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WELL DEVELOPMENT SHEET

Well ID: 2V1 MW02C
Date: 10/30/09
Time Start:
Time End: 3:15
Well Diameter: 1" in
Casing Depth: 50' ft below TOC
Baseline Water Lever: 60' ft below TOC
Casing Volume: 2.3 gal => 3 x casing volume = 9.2
Volume Purged: 10 gal

Time	NTU	Comment
12:05 – 12:10		started Pumping & stop Dry well 1gal
2:15 – 2:30		started Pumping stop Dry well 2gal
Total gallons Purged 3		
11/2 7:42 am		DTW 54"
8:15 – 8:30		started Pumping stop dry well
10:25	1000	Water cloudy
2:00 pm	222	started Pumping
2:10	181	Water Semi clear 5gal
2:20	378	
2:45	792	water cloudy clear
2:50	404	water Semi Clear
3:00	137	Semi clear
3:05	90	water clear
3:10	31	water clear
3:15	27.66	DTW 47.7"
	Complete	

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WELL DEVELOPMENT SHEET

Well ID MW03A
Time Start 8:30
Well Diameter 1.5 in
Casing Depth 30 ft below TOC
Baseline Water Lever 5.9" ft below TOC
Casing Volume 3.1 gal => 3 x casing volume = 9.3
Volume Purged 13 gal

Date: 10-5-09
Time End 11:50

Time	NTU	Comment
8:30	958.7	DTW 15.6 Water dark brw
8:45	768.3	DTW 15 Water dark Brw
9:00	587.2	DTW 18.5 water clearer
9:15	512	DTW 19.6 Water light Brw
9:30	378	DTW 258 water light Brw 5 gal
10:45	295	DTW 15.7 Water light Brw
11:00	200	DTW 17.8 Water semi clear 5 gal
11:15	120	DTW 18.5 Water semi clear
11:30	78	DTW 18.3 Water semi clear 3 gal
11:50	42	DTW 18.5
	Complete	

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WELL DEVELOPMENT SHEET

Well ID MW03A2 Date: 10-7-09
Time Start Time End 2:17
Well Diameter 1.5 in
Casing Depth 20 ft below TOC
Baseline Water Lever 5.5 ft below TOC
Casing Volume 2.1 gal => 3 x casing volume = 6.3
Volume Purged 7 gal

Time	NTU	Comment
9:00	89.6	DTW 5.5 water color clear
9:15	229	DTW 14 water color semi clear
9:30 STOP Dry	245	DTW 17.5 water color semi clear
2:30	96.1	DTW 15.8 water color semi clear
2:40 STOP	92.4	DTW Dry water color semi clear
sit overnight	Total gallons Purged 5gal	
10/8 7:30 - 7:35		Bailed 2 gal
10:00	1731	DTW 19.2' color of water cloudy
12:30	712	Turbidity Test
2:17	242	Turbidity TEST DTW 18.9
Turbidity always To high		
well was never at finish		

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WELL DEVELOPMENT SHEET

Well ID: MW03B
Date: 10/5/2009
Time Start: 11:57
Time End: 15:35
Well Diameter: 1.5 in
Casing Depth: 40 ft below TOC
Baseline Water Lever: 5.4 ft below TOC
Casing Volume: 4.1 gal => 3 x casing volume = 12.3
Volume Purged: ~17.5 gal

Time	NTU	Comment
11:57		Start surging and bailing
13:13	start pumping	DTW 12.7 cloudy
13:20	883	DTW 16.35 "
13:35	439	DTW 21.10 "
13:50	296	DTW 26.91 cleaner
14:05	861	DTW 29.2 got cloudy again
14:20	1082	DTW 30.42 "
14:35	1871	DTW: 31.7 cloudy
14:50	379	DTW 32.65
15:05	144	DTW 32.6
15:20	46.7	DTW 34.7
15:35	50.0	DTW 35.3
	complete	

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WELL DEVELOPMENT SHEET

Well.ID ZVI MW03C
Time Start 10:45
Well Diameter 1" in
Casing Depth 50' ft below TOC
Baseline Water Lever 6.3 ft below TOC
Casing Volume ~~#~~ 2.3 gal => 3 x casing volume = 9.2
Volume Purged 10 gal

Date: 10/30/09
Time End 12/20 11/3

Time	NTU	Comment
10:45	1000	Pump well Dark Brw
11:40	133	5gal water clearing
12:00	44.10	water clear
12:05	30:87	water clear Dry well
water is clear but we		haven't purge all the right amount
of Gallons		
11/3 11:10		DTW 9'5" Started Pumping
11:40	815	water light Brw
11:45	476	water cloudy
11:55	206	WATER Cloudy
12:00	80	water Semi clear
12:05	47.91	clear
12:15	32.89	water clear
12:20	21.08	WATER clear
		DTW 23'8"
	Complete	

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WELL DEVELOPMENT SHEET

Well ID MW04A2 Date: 10-6-09
Time Start 9:30 Time End
Well Diameter 1.5 in
Casing Depth 20' ft below TOC
Baseline Water Lever 5'3 ft below TOC
Casing Volume 2.1 gal => 3 x casing volume = 6.3
Volume Purged gal

	Time	NTU	Comment
	9:30	No Reading	DTW 5'3" Water color dirty Brw
	10:15 stop Dry	No Reading	DTW 19'3" water color dirty Brw
		Total Gallons of water Purged 5 gal	
10/7	1:25	Start bailing water DTW 13'6"	
	1:30 STOP	Run Dry 1.5 gal Purged color of water Dark Brw	
	Sit overnight	Total gallons Purged 6.5	
10/8	7:40 - 7:45	Bailed 2.5 gal	
	9:00	No Reading	Turbidity Test water color dark Brw
	11:00	No reading	water still to dark
	12:35	No Reading	Water color dark Brown
	2:35	Final DTW 18.7	
	Turbidity always To high		
	Did not complete well		

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WELL DEVELOPMENT SHEET

Well ID MW04A3 Date: 10/5
Time Start 7:15 Time End 8:23
Well Diameter 1.5 in
Casing Depth 30' ft below TOC
Baseline Water Lever 5.4 ft below TOC
Casing Volume 3.1 gal => 3 x casing volume = 9.3
Volume Purged 10 gal

Time	NTU	Comment
7:18	offscale	brownish & cloudy
7:33	359	10.4'
7:48	128	10'2" Watercolor cloudy 5 gal
8:03	22.0	10'3" water color cloudy
8:15	26.83	10'2" water color semi clear 5 gal
	Complete	

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WELL DEVELOPMENT SHEET

Well ID: MW04B
Time Start: 8:00
Well Diameter: 1.5 in
Casing Depth: 40 ft below TOC
Baseline Water Lever: 15.8 ft below TOC
Casing Volume: ~ 4.1 gal => 3 x casing volume = 12.3
Volume Purged: gal

Date: 10/5 – Start
Time End: 2:25

Time	NTU	Comment
8:00		sc started bailing
8:27		Start using pump
8:30	1832	water slighty cloudy 25.4'
8:45	1253	33.5'
9:00		well ran dry
	stopped pumping and let recharge	
9:30		30.2'
11:53		DTW 29.7 Restart pumping
11:55	1179	
12:04	1593	DTW 36.65
12:06	well ran dry, stopped purging	
13:01		DTW 34.5 will continue after leaving it overnight. total Purged today 5gal.
~~7:30~~		
10/6 7:45	79.7	DTW 25.5" water color semi clear
8:00 STOP	437	DTW 35 water Dirty
10:15 STOP Dry well	233	DTW 30' water color semi clear 5gal
3:15	77.5	DTW 24 water color semi clear
3:25 STOP Dry well	261	DTW 38.3" water color cloudy 2gal
	Total gallons of water in 2 days 12gal	
10/7 7:15	66.1	DTW 6' water color semi clear
7:25	39.5	DTW 31'9" water color clear
7:35 STOP Dry	149	DTW 36'7" water color semi clear
9:35		DTW 25.4
9:40	83.9	DTW 29.1
9:55 STOP Dry	56.4	DTW 31.1 water color clear
10:00 STOP random		DTW 29.8 water color clear 5gal

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1:55 start Pumping NTU 85 DTW 32 color of water semi clear
2:00 STOP Dry well NTU 149 DTW 38 color of water semi clear
3:15 START Pumping NTU 84.1 DTW 34.5 color of water semi clear
3:25 STOP Dry well
Total gallons Purged 19gal sit over night

8:00 - 8:15 Purged 5 gal
10:55 Take a reading TEST NTU 421 DTW 37.7 color of water semi clear
12:25 Turbidity test NTU 111 DTW 34.5 color of water semi clear
1:30 Turbidity test NTU 57.7 water color semi clear
2:25 Turbidity TEST NTU 35 DTW 33.5

Completed

WELL DEVELOPMENT SHEET

Well ID MW04B
Time Start 13:55
Well Diameter 1.5 in
Casing Depth 40 ft below TOC
Baseline Water Lever ft below TOC
Casing Volume 4.1 gal => 3 x casing volume = 12.3
Volume Purged 19 gal

Date: 10/7 – 10/8
Time End

	Time	NTU	Comment
	13:55	85	DTW 32' water color semi clear
	14:00 stop Dry well	149	DTW 38 water color Semi clear
	15:15 start Pump Pump		DTW 34.5
	15:25 stop Dry well	need To	let well sit over night To recharge
10/8	10:55	421	DTW 37' 7" color of water light brw
	12:15	44.7	Turbidity test only water color semi clear
	13:30	57.7	Turbidity test only water color semi clear
	14:25	35	DTW 33.5
		Complete	
	Total Time spent on this		
	Approx 3:15 Hrs		

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WELL DEVELOPMENT SHEET

Well.ID 211MW04C
Time Start
Well Diameter 1" in
Casing Depth 50' ft below TOC
Baseline Water Lever 8.5" ft below TOC
Casing Volume ~~1.6~~ 2.3 gal => 3 x casing volume = ~~10.8~~ 9.2
Volume Purged 10 gal

Date: 11/2/09
Time End 1:52pm

	Time	NTU	Comment
	12:15 - 12:25	1000	Pumping water Dry well
	2:25		starting Pumping
	total gallons Pumped 2		
11/2	7:43		DTW 5'2"
	8:35		Pumping well
	8:45 - 8:50	1000	Water light Brown Stop Dry well
	12:00		starting Pumping
	1:15	976	Water light Brw
	1:25	276	Water Semi clear
	1:30	209	Water semi clear
	1:35	116	Water almost clear
	1:40	62	Water clear
	1:47	52	water clear
	1:52	45.61	Water Clear 8 gal
			DTW 46'
		Complete	

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WELL DEVELOPMENT SHEET

Well ID: MW05A2
Date: 10/5/2009 - start
Time Start: 12:53
Time End:
Well Diameter: 1.5 in
Casing Depth: 20 ft below TOC
Baseline Water Lever: 4.8 ft below TOC
Casing Volume: 2.1 gal => 3 x casing volume = 6.3
Volume Purged: 8 gal

	Time	NTU	Comment
	12:53	bailed	and surged. took out
	13:07	2 gallons	before running dry still murky
	16:21	bailed	total of 3 gallons. let it recharge
		overnight	
10/6	7:5 am	~~437~~	DTW 5'3
	8:30	No Reading	DTW 11' color of water light Br
	over Night	Total gallons of water bailed 6 gal in 2 days	
10/7	7:15 STOP Smitty Dry	No Reading	DTW 14.5 water color semi clear
	9:15	1025	DTW 18.2 water color light Brown
	9:20 STOP Dry		
	11:00 take a reading	620	
	1:15 pm	143	Just Took a reading
	3:30	297	Reading test bailed 2gal
	Sit over Night	Total gallons bailed 8gal	
10/8	8:00-8:05	Bailed	3 gal
	10:10	3716	DTW 19.4 color of water light Brw
	12:40	1314	DTW 19.6 color of water light Brw
	1:20	1695	Turbidity test
	2:15	641	Turbidity Test DTW 18.1
	Did not	complete	this well turbidity —
	always	To high	

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WELL DEVELOPMENT SHEET

Well ID: MW05 A3
Date: 10/5
Time Start: 8:30
Time End: 11:15
Well Diameter: 1.5 in
Casing Depth: 30 ft below TOC
Baseline Water Lever: 5.3 ft below TOC
Casing Volume: 3.1 gal => 3 x casing volume = 9.3
Volume Purged: ~15 gal

Time	NTU	Comment
8:30		start surging & bailing
9:00		~~well~~ bailed about 6 gallons
9:25	start pumping	WT: 11.95'
9:40	1097	WT: 14.07'
9:55	335	DTW 14'2" Water color cloudy
10:10	201	DTW 14'2" water color semi clear
10:25	111	DTW 13.67 water cleaner
10:40	64.9	DTW: 13.5 water clear.
10:55	46.3	DTW: 13.77 water clear.
11:10	39.7	DTW: 13.9 water clear
	Stopped purging	

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WELL DEVELOPMENT SHEET

Well ID: MW05 B
Date: 10/5 - Start.
Time Start: 9:35
Time End: 9:00 am
Well Diameter: 1.5 in
Casing Depth: 40 ft below TOC
Baseline Water Lever: ~ 15.5 ft below TOC
Casing Volume: 4.1 gal => 3 x casing volume = 12.3
Volume Purged: gal

Time	NTU	Comment
9:35		start surging and bailing
		bailed ~ 3.5 gal
11:20	654 start pumping.	DTW: 31.2 water cloudy
11:35	847	DTW: 34.1
11:50	well dried. let recharge.	
12:08		DTW: 35.4
12:24		DTW 37.4
12:51		DTW: 36.2
	will continue	purging the next day to let recharge
	total purged	today: 9 gallons.
8:30	40.5	23'.7" water color semi clear
8:45	22.4	23'.5"
9:00	26.5	23' 2" water color clear
	Complete	

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WELL DEVELOPMENT SHEET

Well ID 2V1 MW 05C
Date: 10/30/09
Time Start
Time End 12:00 Pm
Well Diameter 1" in
Casing Depth 50' ft below TOC
Baseline Water Lever 5.9" ft below TOC
Casing Volume ~~[illegible]~~ 2.3 gal => 3 x casing volume = ~~[illegible]~~ 9.2
Volume Purged 13 gal

Time	NTU	Comment
12:25 - 2:35		Bailed 5 gal
11/2 7:44		DTW 5.0
8:52 - 9:00	STOP	Pumping well Dry well
9:30		Pumping well
9:50	1000	Turbidity reading water cloudy
10:15	1000	
10:30	580	
10:40	346	
10:50	220	
11:00	223	5gal
11:30	146	
11:35	98	
11:45	65	water clear
11:50	53	water clear
12:00	41	water clear
		DTW 48.3
	Complete	

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WELL DEVELOPMENT SHEET

Well ID MW06 A2
Date: 10-1-09
Time Start 9:00
Time End
Well Diameter 1.5 in
Casing Depth 20' ft below TOC
Baseline Water Lever ft below TOC
Casing Volume 2.1 gal => 3 x casing volume = 6.3
Volume Purged 6.3 gal

Time	NTU	Comment
9:45	6.87	DTW 5'3" water color Dark Brw
10:00	-21.74	DTW 12.5 water color Dirty Brw
1:15	-72.04	DTW 17.1 water color Dirty clear
2:00	-76.13	DTW 18.1 water color Clear
2:15	107.2	DTW 18.[illegible] water Clear
2:30 STOP	83.3	DTW 18.5 water Dirty clear
3:10 START-STOP	67.6	DTW 18.9 water color Dirty clear
3:25	3.79	DTW 19.1" water color semi clear
	Complete	

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WELL DEVELOPMENT SHEET

Well ID MW06A3
Time Start 3:30
Well Diameter 1.5 in
Casing Depth 30 ft below TOC
Baseline Water Lever 4.7 ft below TOC
Casing Volume 3.1 gal => 3 x casing volume = 9.3
Volume Purged 9.3 gal

Date: 10-1-09
Time End 4:10 Pm

Time	NTU	Comment
3:30	No Reading Error	DTW 4.7 water color Dark Brw
3:45	19.9	DTW 10.8" water color semi clear
4:00 pm	-79.82	DTW 25' watercolor light Brown 5gal
4:10 pm	-22.5	DTW 15.7 water color Dirty clear
	Complete	

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WELL DEVELOPMENT SHEET

Well ID MW06B
Date: 10-1-09
Time Start 7:30
Time End 1:45 Pm
Well Diameter 1.5 in
Casing Depth 40' ft below TOC
Baseline Water Lever 9'7" ft below TOC
Casing Volume ~~[illegible]~~ 4.1 gal => 3.x casing volume = 12.3
Volume Purged 12.3 gal

Time	NTU	Comment
~~7:30~~ 7:45	2.93	DTW 9'7" water color white
8:00	No Reading	DTW 27' water color Brown
8:15	No Reading	23'
8:30	No Reading	
8:45	2.12	DTW 25.6" water color light Brown
9:00	33.5	DTW 25.4 water color light Brown
9:15	43.67	DTW 23'3" water color light Brown
9:30	1.27	DTW 18'1. water color light Brw
9:45	192	DTW 21'8" water color light Brw
10:15	2156 >	DTW 22'.3" water color light Brw
10:30	3416 >	DTW 19'.7 water color Dirty clear
10:45	1913	DTW 20.8 water Clear
12:30	79.63	DTW 10'2 water clear
12:45	76.51	DTW 36'.1 water light Brw
1:00	No Reading Error	DTW 37.1 water color Dirty Clear
1:20	-28.95	DTW 32 water color Dirty clear
1:30	-17.39	DTW Dry water color Dirty clear
1:45	-40.88	DTW 32'2" water color clear
	Complete	

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WELL DEVELOPMENT SHEET

Well ID ZVI MW06C
Time Start
Well Diameter 1" in
Casing Depth 50' ft below TOC
Baseline Water Lever 9.0 ft below TOC
Casing Volume ~~4~~ 2.3 gal => 3 x casing volume = ~~46~~ 9.2
Volume Purged 11 gal

Date: 10/30/09
Time End 11:05 11/3

	Time	NTU	Comment
	10:15 - 10:45		Purge Well Dry well 1.5gal Dark Brw
	1:20		Starting Pumping 5gal Total so far
	1:40	729	Water color light Brw
	1:45	176	Water color semi clear
	1:50	67	water clear
	1:55	26.04	water clear Dry well 1gal
	Water is clear but we haven't the total amount of gallons Purged		
11/3	9:15		DTW 5'6" started to Pump
	10:15	392	Semi clear
	10:25	163	Semi clear
	10:35	110	~~Semi clear~~ CLEAR
	10:45	172	Clear
	10:50	149	Clear
	10:53	97	Clear
	11:00	69	Clear
	11:05	37.74	Clear 6 gal
			DTW 43'9"
		Complete	

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WELL DEVELOPMENT SHEET

Well ID MW 07 02 A
Date: 10-6-09
Time Start 13:30
Time End
Well Diameter 1.5 in
Casing Depth 20 ft below TOC
Baseline Water Lever 6 ft below TOC
Casing Volume 2.1 gal => 3 x casing volume = 6.3
Volume Purged 7.5 gal

	Time	NTU	Comment
	13:30	No Turbidity Test	DTW 6 Water color Dark Brw
	16:30 STOP Dry well Bailed 3 gal of water		
	will let well sit over night to recharge		
10/7	8:45	182	DTW 14.3 Water color Brw
	8:55 STOP bailing water Dry well		
	10:15 Start bailing	364	DTW 17.6 Water color light Brw
	10:20 STOP bailing Dry well		
	14:00	185	Turbidity test only
	15:35	100	Turbidity test only
	need to let well sit over night to recharge Total		
	gallons of water bailed 4.5		
10/8	11:15	215	Turbidity test only
	12:00	453	turbidity test only water color light Brw
	13:15	229	turbidity test
	14:20	122	turbidity test DTW 19' water color same as above
	Turbidity always to high and well takes		
	to long to recharge		water never cleared
	Total time spent for this well in		
	3 days about 3.5 Hrs		

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WELL DEVELOPMENT SHEET

Well ID: MW07A3
Date: 10-6-09
Time Start: 12:50
Time End: 12:50
Well Diameter: 1.5 in
Casing Depth: 30 ft below TOC
Baseline Water Lever: 6 ft below TOC
Casing Volume: 3.1 gal => 3 x casing volume = 9.3
Volume Purged: 13 gal

Time	NTU	Comment
12:50	No Reading	DTW 6' water color dark Brw
1:00 Pm	7.46	DTW 21'2" Water color cloudy
1:15 Pm STOP	No Reading	Dry Purged 5 gal
2:15	1400	DTW 24'.7" water color cloudy 3gal
2:30 STOP	799	DTW 29'9" · Water color cloudy well run Dry
3:50	58.8	DTW 13'3" water color semi clear
4:00 Dry well	1991	DTW water color cloudy
4:35	417	Water color cloudy
Over night	Total gallons of water Purged 6gal	
8:15	33	DTW 4'9" color of water semi clear
8:25	183	DTW 20'.1 color of water semi clear
8:35	2056	DTW 22'7" color of water Dirty clear
8:45	1967	DTW 25.6 Color of water Dirty clear
8:55 STOP Dry	328	DTW 26 color of water semi clear 5gal
10:10 Start Pumping		DTW 9'.7"
10:15	117	DTW 22. color of water semi clear
10:30 STOP Dry	271	D
~~1:40~~ Start 1:40		DTW 7.8"
1:45	7.16	DTW 13.0'
1:50	11.1	DTW 20.0' Purged 2 gal
	Complete	

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WELL DEVELOPMENT SHEET

Well ID MW07B
Date: 10-6-09
Time Start 12:30
Time End ___ ___
Well Diameter 1.5 in
Casing Depth 40 ft below TOC
Baseline Water Lever 7' ft below TOC
Casing Volume 4.1 gal => 3 x casing volume = 12.3
Volume Purged 28 gal gal

Time	NTU	Comment
12:30	No reading	DTW 7' water color cloudy
12:35		Dry well Purged 5 gal
2:35	364	DTW 20'.1 water color cloudy
2:50	9.77	DTW 33'.8" water semi clear
3:-05	1.559	DTW 39'9" water cloudy stop Dry well
will continue Taking Turbidity Test next day will let well		
sit over night To recharge		
10/7/09 7:40	80.2	DTW 6'2" water color semi clear
7:45	81.6	DTW 26'9" water color semi clear
7:55	117	DTW 30'9" water color semi clear
8:05 stop Dry well	617	DTW 34'9" water color semi clear Purged 5 gal
10:35 start Pumping		DTW 17.1
10:50	767	DTW 37' water color yellow Brw
11:00 stop Dry well		Purged 4 gal
13:20 start Pumping	373	DTW 25.6
13:25	56.4	DTW 32'.5
13:35	210	DTW 35.5 stop Dry well
13:45 start Pumping		DTW 26'.1
13:55	194	DTW 36.6 stop Dry well Purged 5 gal
14:15 start Pumping	263	DTW 39.5 water color semi clear
14:25 stop Dry well	101	water color semi clear
15:30 start Pumping	155	DTW 35' water color semi clear
15:45	117	DTW 39'.5 water semi clear
16:00 stop Dry well		Purged 5 gal
Total gallons Purged for This day 19 gal		
will let The well sit overnight To recharge		

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WELL DEVELOPMENT SHEET

Well ID MW 07B
Date: 10-8-09
Time Start
Time End
Well Diameter 1.5 in
Casing Depth 40 ft below TOC
Baseline Water Lever ft below TOC
Casing Volume 4.1 gal => 3 x casing volume =
Volume Purged gal

Time	NTU	Comment
10:00	140	Turbidity test only water semi clear
10:45	126.6	Turbidity test only water semi clear
12:10	62.1	Turbidity test only water semi clear
14:20	91.8	DTW 33.4 Purged 4 gal
Water never went up more		than 5' inside the well-
and turbidity	was always	to high lowest # 62.1
Total gallons	Purged in	3 days 28 gal
Total time	spent on this	well Approx 4 hrs & 25 mnts

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WELL DEVELOPMENT SHEET

Well ID: MW07C
Date: 10-6-09
Time Start: 10:30
Time End: 11:50
Well Diameter: 1.5 in
Casing Depth: 50 ft below TOC
Baseline Water Lever: 7'6" ft below TOC
Casing Volume: 5.2 gal => 3 x casing volume = 15.6
Volume Purged: .42 gal

Time	NTU	Comment
10:30	No Reading	DTW 7'6" water color Dark gray 5gal
10:45	165	DTW 25'4" water color Semi Clear
10:50	No Reading	Purged 5gal
10:55	156	DTW 21'8" Water color Semi Clear 5gal
11:05	~~[illegible]~~ 74	DTW 25'8" Water Color Semi Clear 5gal
11:10	No Reading	Purged 5gal
11:15	55.6	DTW 29'4" water color Semi Clear
11:20	No Reading	Purged 5gal
11:25	56.6	DTW 29'9" water color Semi Clear 5gal
11:30	4.91	DTW 28'8" Water color Clear
11:35	45.5	DTW 18'1" water color Clear 5gal
11:40	83	DTW 25'9" water color Clear 5gal
11:45	33	DTW 24'4" water color Clear 5gal
11:50	9.4	DTW 14'4" water color Clear 2gal
	Complete	

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APPENDIX F

GROUNDWATER SAMPLING DATA SHEETS
(on CD only)

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LOW FLOW WELL MONITORING DATA SHEET

ject #: 091102-AK1	Client: TETRA TECH
ampler: FS	Date: 11-6-09
Well I.D.: ZV1 ~~MW-01A~~ MW01A1	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 11.30	Depth to Water Pre: 3.75 Post: 6.42
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 50 mL/MIN Pump Depth: 9'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1242	18.67	8.68	1240	281	6.31	-11.5	500 mL	5.48
1245	19.11	8.59	1150	>1000	1.92	-9.5	650	6.04
1248	19.04	8.51	1007	>1000	2.73	-7.8	800	6.14
1251	18.55	8.45	845	444	3.23	-2.2	950	6.18
1254	18.55	8.43	812	419	3.38	0.0	1100	6.22
1257	18.45	8.40	780	407	3.58	1.1	1250	6.26
1300	18.36	8.36	748	340	3.50	3.9	1400	6.33
1303	18.29	8.29	740	326	3.22	6.1	1550	6.39
1306	18.28	8.26	731	318	3.06	7.8	1700	6.42
							DTB:	11.30

Did well dewater? Yes No	Amount actually evacuated: 1700
Sampling Time: 1308	Sampling Date: 11-6-09
Sample I.D.: 20-BASE-001	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: MS/MSD

MICRO SEEP TAKEN
@ 14.30

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK-1	Client: TETRA TECH
Sampler: AK	Date: 11-9-09
Well I.D.: 2V1-MW01A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 20.47	Depth to Water Pre: 5.10 Post: 5.80
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1109	5.10, 1110	5.20, 1111	5.31, 1112	5.42	1113	5.55		
1113	13.84	8.81	2780	68	4.05	161.0	150	5.55
1116	14.08	8.84	2855	63	2.74	172.7	300	5.59
1119	14.10	8.91	2930	28	2.11	180.1	450	5.60
1122	14.19	8.92	2960	30	1.85	184.5	600	5.63
1125	14.55	8.93	2983	27	1.58	190.6	750	5.70
1128	14.59	8.93	2997	28	1.49	199.7	900	5.80
MICROSEEP	TAKEN	@	1355					

Did well dewater? Yes No	Amount actually evacuated: 900ml
Sampling Time: 1130	Sampling Date: 11-9-09
Sample I.D.: 20-BASE-002	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102 - AK1	Client: TETRA TECH
Sampler: F. SRINONGTONG	Date: 11/6/09
Well I.D.: ZVI-MW 01A3	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 30.45	Depth to Water Pre: 4.21 Post: 6.38
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 50 mL/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1042	18.86	6.96	3179	25	1.39	-148.5	500 mL INITIAL	6.20
1045	18.98	6.94	2800	22	1.02	-157.5	650	6.21
1048	19.00	6.88	2796	15	0.77	-158.1	800	6.24
1051	19.19	6.85	2776	12	1.37	-156.2	950	6.28
1054	19.19	6.81	2762	9	1.84	-151.3	1100	6.32
1057	19.27	6.80	2737	8	1.71	-150.1	1250	6.38
1100	19.26	6.78	2720	7	1.48	-146.8	1400	6.38
							DTB:	30.45

Did well dewater? Yes No	Amount actually evacuated: 1400 mL
Sampling Time: 1110	Sampling Date: 11/6/09
Sample I.D.: 20-BASE-003	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICRO SEEP
TAKEN @ 30.45

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-5-09
Well I.D.: 2V1-MW01B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 39.52	Depth to Water Pre: 4.90 Post: 5.70
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 50 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1354	18.67	8.56	8274	35	3.09	-65.7	150	DTW: 5.10
1357	18.69	8.46	8600	91	2.29	-66.9	300	5.36
1400	18.77	8.41	8640	122	1.67	-68.2	450	5.46
1403	18.85	8.40	8606	124	1.57	-68.5	600	5.49
1406	18.85	8.37	8581	130	1.54	-68.0	750 ml	5.70
MICRO SEEP TAKEN @				1545				

Did well dewater? Yes No	Amount actually evacuated: 750 ml
Sampling Time: 1410	Sampling Date: 11-5-09
Sample I.D.: 20-BASE-004	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102-AK1	Client: TETRA TECH
Sampler: FS	Date: 11-6-09
Well I.D.: ZVI-MW01C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 49.30	Depth to Water Pre: 5.03 Post: 9.53
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556 FLO CELL

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other
Flow Rate: 50 mL/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
918	18.22	7.48	1.67	36	3.29	181.3	INITIAL 500	8.05
913	18.0	7.53	1.67	32	3.05	154.0	650	8.42
916	17.7	7.53	1.68	23	2.89	149.9	800	8.79
919	17.7	7.52	1.67	24	2.89	142.3	950	8.90
922	17.8	7.54	1.67	28	2.66	139.0	1100	9.02
925	17.7	7.56	1.67	23	2.81	135.4	1250	9.15
928	17.7	7.56	1.67	24	2.77	127.4	1400	9.32
931	17.8	7.57	1.67	24	2.76	124.3	1550	9.53
							DTB: 49.30	

Did well dewater? Yes (No) Amount actually evacuated: 1550
Sampling Time: 940 Sampling Date: 11-6-09
Sample I.D.: 20-BASE-005 Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC
Equipment Blank I.D.: @ Time (Duplicate I.D.:) 20-BASE-006 @ 0950

MICROSEEP TAKEN @ 1040

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102-AK1	Client: TETRA TECH : ALAMEDA PT.
Sampler: FS	Date: 11-9-09
Well I.D.: ZV1-MW01D	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 59.92	Depth to Water Pre: 5.03 Post: 10.47
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: FLO 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 mL/min Pump Depth: 55'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1322	17.90	7.60	2.21	10	6.06	227.0	200 mL INITIAL	6.90
1325	18.61	7.31	2.83	14	2.53	160.4	350	7.81
1328	18.62	7.34	2.76	9	1.50	132.0	500	8.70
1331	18.36	7.35	2.63	7	1.53	123.0	650	9.00
1334	18.14	7.35	2.63 ~~2.70~~	5	1.86	111.0	800	9.98
1337	17.88	7.35	2.54	5	2.04	103.6	950	10.11
1340	17.60	7.33	2.50	5	2.05	97.1	1100	10.33
1343	17.41	7.33	2.50	5	2.21	93.1	1250	10.47

Did well dewater? Yes (No)	Amount actually evacuated: 1250
Sampling Time: 1350	Sampling Date: 11-9-09
Sample I.D.: 20-BASE-007	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICRO SEEP TAKEN @ 1505

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-4-09
Well I.D.: ZVI- MW02A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 20.24	Depth to Water Pre: 5.10 Post: 5.91
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 50 ml/MIN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
859	DTW: 5.20	, 900	DTW: 5.22	, 901	DTW: 5.31	, 902	DTW: 5.40	903 DTW: 5.50 INITIAL
903	18.00	8.87	3250	30	2.98	58.3	250	5.50
906	18.20	8.87	3333	19	2.05	51.1	400	5.71
909	18.47	8.86	3345	19	1.87	43.8	550	5.79
912	18.63	8.86	3355	17	1.85	36.9	700	5.91
MICRO	SEEP	SAMPLE	TAKEN	@	1055			

Did well dewater? Yes No Amount actually evacuated: 700 ml

Sampling Time: 915 Sampling Date: 11-4-09

Sample I.D.: 20-BASE-008 Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-4-09
Well I.D.: 2U1-MW02A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.10	Depth to Water Pre: 4.50 Post: 6.33
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW Observations
1115 DTW: 4.99, 1116 DTW: 5.10, 1117 DTW: 5.21, 1118 DTW: 5.35, 1119 DTW: 5.42								
1119	18.17	7.91	5018	52	1.32	48.8	256	5.42
1122	18.19	7.85	5079	49	1.13	47.4	400	5.70
1125	18.14	7.80	4972	51	1.00	51.2	550	6.00
1128	18.33	7.75	4801	47	9.2	52.5	700	6.20
MICRO SEEP @ 1235								

Did well dewater? Yes (No)	Amount actually evacuated: 850 ml
Sampling Time: 1130	Sampling Date: 11-4-09
Sample I.D.: 20-BASE-009	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-03-09
Well I.D.: ZVI-MW02B	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 39.95	Depth to Water Pre: 5.05 Post: 5.62
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 25ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1247	22.00	9.48	8000	11	1.37	38.7	25	5.35
1248	22.03	9.49	7998	19	1.34	37.8	50	5.35
1249	22.08	9.45	7932	22	1.42	75.8	75	5.37
1250	22.08	9.47	7957	38	1.32	68.1	100	5.38
1251	22.08	9.47	7958	46	1.16	65.8	125	5.40
1254	22.15	9.49	7959	45	1.13	61.1	200	5.45
1257	22.21	9.50	7955	42	1.09	58.4	275	5.51
1300	22.20	9.50	7952	38	1.18	54.8	350	5.57
1303	22.21	9.50	7950	40	1.10	51.6	425	5.62
~~1306~~								
~~SEEPS~~ AK	MICROSEEPS	SAMPLED	@ 1500					

Did well dewater? Yes (No)	Amount actually evacuated: 425 ml
Sampling Time: 1305	Sampling Date: 11-03-09
Sample I.D.: 20-BASE-010	Laboratory: E-MAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

KRIS JOHN
925 609 1088

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102-AK-1	Client: TETRA TECH
Sampler: IW	Date: 11/9/09
Well I.D.: ZVI-MW02C	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 49.80	Depth to Water Pre: 3.96 Post: 5.58
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: Dedicated Tubing X New Tubing Other

Flow Rate: 50ml/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW (ft) Observations
1256	17.69	7.41	16266	28	1.79	-86.9	500	5.12
1259	17.72	7.43	16278	23	1.55	-91.3	650	5.16
1302	17.88	7.49	16300	27	1.24	-98.6	800	5.26
1305	17.93	7.52	16316	24	1.08	-101.7	950	5.34
1308	17.97	7.54	16315	23	1.00	-105.8	1100	5.44
1311	18.02	7.56	16317	24	0.97	-107.5	1250	5.58
MICROSEEP SAMPLE TAKEN @ 1420								

Did well dewater? Yes (No)	Amount actually evacuated: 1250ml
Sampling Time: 1320	Sampling Date: 11/9/09
Sample I.D.: 20-BASE-011	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK-1	Client: TETRA TECH
Sampler: IW	Date: 11/5/09
Well I.D.: ZV1-MW03A2	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 20.21	Depth to Water Pre: 4.92 Post: 5.48
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: Dedicated Tubing X New Tubing Other_____

Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
1448	18.96	8.44	2162	6	3.12	-1.8	200	5.23
1451	19.01	8.42	2183	6	2.58	0.2	350	5.36
1454	19.01	8.40	2196	5	2.44	3.4	500	5.42
1457	19.00	8.40	2201	6	2.40	5.4	650	5.48
MICROSEEP SAMPLE TAKEN @ 1600								

Did well dewater? Yes No	Amount actually evacuated: 650 ml
Sampling Time: 1510	Sampling Date: 11/5/09
Sample I.D.: 20-BASE-012	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102-AK-1	Client: TETRA TECH
Sampler: IW	Date: 11/6/09
Well I.D.: ZV1-MW03A3	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 30.06	Depth to Water Pre: 5.12 Post: 5.48
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: Dedicated Tubing X New Tubing Other_____
Flow Rate: 50 ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
0846	18.11	6.63	2155	11	3.66	-114.6	200	5.23
0849	18.09	7.10	3292	10	1.85	-127.4	350	5.33
0851	18.16	7.23	3390	13	1.08	-135.6	500	5.40
0854	18.19	7.38	3412	9	0.67	-151.6	650	5.44
0857	18.14	7.40	3409	8	0.69	-154.1	800	5.46
0900	18.09	7.41	3418	9	0.71	-156.2	950	5.48
MICROSEEP SAMPLE TAKEN @ 1000								

Did well dewater? Yes (No)	Amount actually evacuated: 950ml
Sampling Time: 0910	Sampling Date: 11/6/09
Sample I.D.: ZO-BASE-013	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102-AK-1	Client: TETRA TECH
Sampler: IW	Date: 11/6/09
Well I.D.: ZVI-MW03B	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 40.15	Depth to Water Pre: 4.84 Post: 5.49
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: Dedicated Tubing X New Tubing Other
Flow Rate: 50 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
1005	17.71	8.70	7083	8	3.66	-81.6	200	5.11
1008	17.92	8.76	7444	4	2.85	-85.2	350	5.18
1011	18.02	8.75	7551	5	2.47	-96.1	500	5.23
1014	18.09	8.72	7565	4	1.40	-112.5	650	5.31
1017	18.14	8.72	7581	4	1.30	-117.8	800	5.40
1020	18.13	8.72	7598	3	1.25	-119.2	950	5.49
MICROSEEP SAMPLE TAKEN @ 1140								

Did well dewater? Yes (No)	Amount actually evacuated: 950 ml
Sampling Time: 1030	Sampling Date: 11/6/09
Sample I.D.: 20-BASE-014	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20-BASE-015 @ 1030

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102-AK-1	Client: TETRA TECH
Sampler: IW	Date: 11/6/09
Well I.D.: ZV1-MW03C	Well Diameter: 2 3 4 6 8 1"
Total Well Depth: 49.81	Depth to Water Pre: 5.63 Post: 6.56
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 500ml/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
1153	18.37	7.35	14,303	9	2.17	-100.1	200	5.85
1156	18.33	7.34	14321	9	1.45	-105.5	350	6.12
1159	18.34	7.33	14332	7	0.89	-111.4	500	6.30
1202	18.33	7.34	14336	8	0.73	-114.8	650	6.48
1205	18.30	7.34	14352	7	0.68	-117.3	800	6.56
MICROSEEP	SAMPLE	TAKEN	@	1330				

Did well dewater? Yes No	Amount actually evacuated: 800ml
Sampling Time: 1220	Sampling Date: 11/6/09
Sample I.D.: 20-BASE-016	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-4-09
Well I.D.: 2U1-MW04A1	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 10.84	Depth to Water Pre: 3.80 Post: 4.15
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 50 ml/min Pump Depth: 9'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW: Observations
1418	20.03	7.95	652	16	2.77	-83.3	150	4.09
1421	20.12	7.83	611	13	1.41	-72.1	300	4.12
1424	20.16	7.81	598	10	1.21	-69.3	450	4.15
1427	20.15	7.80	573	10	1.05	-67.5	600	4.14
1430	20.22	7.80	563	9	1.03	-66.4	750	4.15
*MS/MSD								
MICRO SEEP @			1640					

Did well dewater? Yes No	Amount actually evacuated: 750 ml
Sampling Time: 1430	Sampling Date: 11-4-09
Sample I.D.: 20-BASE-017	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-5-09
Well I.D.: 2V1-MW04A2	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 20.24	Depth to Water Pre: 4.35 Post: 6.15
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 ml/MIN Pump Depth: ~~YSI 556~~ 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
910	17.96	8.80	2658	396	1.15	-314.7	150	5.05
913	18.20	8.77	2768	343	0.89	-333.5	300	5.32
916	18.24	8.84	2842	291	0.83	-338.3	450	5.51
919	18.38	8.70	2894	256	0.74	-349.4	600	5.76
922	18.25	8.68	2909	238	0.68	-346.9	750	5.90
925	17.99	8.64	2908	247	0.63	-360.5	900	6.15
MICRO SEEP		SAMPLED		@ 1040				

Did well dewater? Yes (No)	Amount actually evacuated: 900ml
Sampling Time: 925	Sampling Date: 11-5-09
Sample I.D.: 20-BASE-018	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

PG 1 OF 2

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-4-09
Well I.D.: ZV1-MW04A3	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 30.23	Depth to Water Pre: 4.73 Post: 5.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____

Flow Rate: 50 ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1235	DTW: 5.05	, 1236	DTW: 5.05,	1237	DTW: 5.06	, 1238	DTW: 5.07,	1239 DTW: 5.05
1239	19.48	7.47	3575	42	1.23	-70.8	250	DTW: 5.05
1242	19.56	7.42	3379	24	0.93	-120.3	400	5.10
1245	19.45	7.40	3255	21	0.83	-161.5	550	5.09
1248	19.34	7.39	3133	19	0.76	-224.0	700	5.08
1251	19.67	7.38	2992	18	0.68	-265.0	850	5.05
1254	19.56	7.37	2867	18	0.66	-295.1	1000	5.09
1257	19.92	7.35	2739	15	0.56	-315.2	1150	5.12
1300	20.23	7.34	2724	23	0.57	-320.8	1300	5.21
1303	20.22	7.33	2688	20	0.45	-321.7	1450	5.23
1306	20.38	7.32	2671	18	0.39	-320.1	1600	5.27

Did well dewater? Yes No	Amount actually evacuated: 1750 ml
Sampling Time: ~~20-BASE-019~~ AND 1310	Sampling Date: 11-4-09
Sample I.D.: 20-BASE-019	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-4-09
Well I.D.: ZV1-MW04A3	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 30.23	Depth to Water Pre: 4.73 Post: 5.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 50 ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	Observations
1309	20.32	7.30	2659	17	0.37	-316.9	1750	5.30
MICROSEEP SAMPLE @ 1405								

Did well dewater? Yes No	Amount actually evacuated: 1750 ml
Sampling Time: 1310	Sampling Date: 11-4-09
Sample I.D.: 20-BASE-019	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-5-09
Well I.D.: ZVI-MW04B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 40.17	Depth to Water Pre: 5.05 Post: 5.50
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 50 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1047	18.86	9.12	8554	28	2.18	-313.9	150	4.87
1050	19.02	9.06	9220	25	1.73	-305.8	300	4.97
1053	19.10	9.06	11544	17	1.43	-299.5	450	5.00
1056	19.17	9.06	11498	27	1.31	-283.1	600	5.12
1059	19.26	9.06	11397	19	1.21	-276.0	750	5.22
1102	19.28	9.06	11286	20	1.10	-278.2	900	5.41
1105	19.32	9.06	11179	18	1.00	-273.2	1050	5.50
MICROSEEP SAMPLE TAKEN @					1300			

Did well dewater? Yes No	Amount actually evacuated: 1050 ml
Sampling Time: 1105	Sampling Date: 11-5-09
Sample I.D.: 20-BASE-020	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102-4K1	Client: TETRA TECH ALAMEDA
Sampler: F. S.	Date: 11/9/09
Well I.D.: ZV1-MW04C	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 49.13	Depth to Water Pre: 5.20 Post: 7.37
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 mL/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
918	15.95	7.79	1.73	226	2.92	169.0	200 INITIAL	6.00
921	16.99	8.21	1.76	284	1.55	142.6	350	6.45
924	16.84	8.22	1.75	240	1.10	126.3	500	6.95
927	16.72	8.23	1.76	218	1.11	121.1	650	7.23
930	16.59	8.23	1.76	180	1.08	112.9	800	7.22
933	16.12	8.23	1.76	149	1.17	108.7	950	7.28
9:36	15.90	8.23	1.76	154	1.16	103.5	1100	7.30
939	15.64	8.24	1.76	133	1.29	101.0	1250	7.32
942	15.36	8.23	1.76	135	~~100.~~ 1.23	100.5	1400	7.34
945	15.27	8.23	1.77	135	1.23	100.8	1550	7.37

Did well dewater? Yes (No) Amount actually evacuated: 1550
Sampling Time: 950 Sampling Date: 11-9-09
Sample I.D.: 20-BASE-021 Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D (Other:) SEE COC
Equipment Blank I.D.: @ Time Duplicate I.D.:

MICRO SEEP TAKON
@ 11:00

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK-1	Client: TETRA TECH
Sampler: IW	Date: 11/5/09
Well I.D.: ZV1-MW05A2	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 19.17	Depth to Water Pre: 4.22 Post: 4.43
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: Dedicated Tubing X New Tubing Other _____

Flow Rate: 50ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
0945	17.89	8.40	1835	46	2.17	-124.9	500	4.32
0948	17.96	8.43	1837	18	1.73	-127.7	650	4.36
0951	18.07	8.45	1740	14	1.71	-131.1	800	4.38
0954	17.99	8.46	1701	14	1.71	-136.4	950	4.40
0957	17.93	8.47	1690	15	1.69	-138.6	1100	4.43
MICROSEEP SAMPLE TAKEN @ 1130								

Did well dewater? Yes (No)	Amount actually evacuated: 1100 ml
Sampling Time: 1010	Sampling Date: 11/5/09
Sample I.D.: 20-BASE-022	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK-1	Client: TETRA TECH
Sampler: IW	Date: 11/5/09
Well I.D.: ZV1-MW05A3	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 30.23	Depth to Water Pre: 4.86 Post: 5.10
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: Dedicated Tubing X New Tubing Other_____
Flow Rate: 50ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW (ft) Observations
1116	19.97	7.69	2829	10	2.73	-149.7	500	5.02
1119	20.03	7.73	2847	7	1.27	-163.0	650	5.08
1122	20.00	7.75	2857	7	0.92	-166.4	800	5.09
1125	19.97	7.77	2861	6	0.75	-173.1	950	5.09
1128	19.95	7.78	2861	6	0.68	-175.9	1100	5.10
1131	19.90	7.79	2863	5	0.66	-176.6	1250	5.10
MICROSEEP SAMPLE TAKEN @ 1240								

Did well dewater? Yes No	Amount actually evacuated: 1250 ml
Sampling Time: 1135	Sampling Date: 11/5/09
Sample I.D.: ZO-BASE-023	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK-1	Client: TETRA TECH
Sampler: IW	Date: 11/5/09
Well I.D.: ZVI-MW05B	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 40.24	Depth to Water Pre: 4.62 Post: 5.20
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: Dedicated Tubing X New Tubing Other_____
Flow Rate: 50ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
1250	20.59	9.22	11735	18	1.81	44.9	200	4.90
1253	20.55	9.22	11666	12	1.67	49.6	350	4.93
1256	20.54	9.21	11741	7	1.62	49.3	500	4.96
1259	20.51	9.21	11722	6	1.64	48.7	650	5.13
1302	20.50	9.21	11760	4	1.70	47.9	800	5.20
MICROSEEP SAMPLE TAKEN @					1410			

Did well dewater? Yes (No)	Amount actually evacuated: 800ml
Sampling Time: 1320	Sampling Date: 11/5/09
Sample I.D.: 20-BASE-024	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20-BASE-025 @ 1320

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102-AK1	Client: TETRATECH : ALAMEDA PT.
Sampler: FS	Date: 11-9-09
Well I.D.: ZV1-MW05C	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 48.66	Depth to Water Pre: 4.84 Post: 7.12
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 mL/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW Observations
1112	17.36	8.21	1.65	135	3.23	117.0	200 mL INITIAL	6.10
1115	18.24	8.28	1.67	28	1.67	91.1	350	6.31
1118	17.43	8.31	1.70	43	1.16	65.8	500	6.80
1121	17.48	8.31	1.69	48	1.00	57.4	650	6.98
1124	17.22	8.31	1.70	44	0.99	52.0	800	7.00
1127	17.00	8.32	1.70	46	1.02	50.0	950	7.12

Did well dewater? Yes (No)	Amount actually evacuated: 950 mL
Sampling Time: 1130	Sampling Date: 11-9-09
Sample I.D.: 20-BASE-026	Laboratory: E MAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICRO SEEP TAKEN
@ 1245

LOW FLOW WELL MONITORING DATA SHEET

Project #: ~~09AK~~ 09 1102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-6-09
Well I.D.: ZVI- MW06A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 19.20	Depth to Water Pre: 5.00 Post: 6.41
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 50ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1315	17.23	8.65	5138	20	3.67	-278.1	150	5.62
1318	17.27	8.54	5941	16	1.76	-291.1	300	5.90
1321	17.21	8.65	5861	15	1.29	-287.4	450	6.10
1324	17.23	8.67	5814	16	1.17	-283.4	600	6.24
1327	17.16	8.68	5805	16	1.13	-284.0	750	6.41
MICRO SEEP @ 1440								

Did well dewater? Yes No Amount actually evacuated: 750

Sampling Time: 1330 Sampling Date: 11-6-09

Sample I.D.: 20-BASE-027 Laboratory: MAX

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-6-09
Well I.D.: 2V1-MW06A3	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 30.27	Depth to Water Pre: 5.00 Post: 5.41
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 50 ml/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1121	17.57	7.53	4496	31	2.13	-250.7	150	5.40
1124	17.80	7.52	4708	26	1.90	-229.8	300	5.40
1127	17.81	7.50	4778	26	1.81	-215.0	450	5.41
1130	17.95	7.49	4790	25	1.65	-203.2	600	5.41
1133	17.92	7.48	4784	26	1.57	-193.3	750	5.41
1136	17.86	7.47	4738	25	1.51	-184.6	900	5.41
MICRO SEEP	SAMPLED	@	1305					

Did well dewater? Yes No	Amount actually evacuated: 900 ml
Sampling Time: 1140	Sampling Date: 11-6-09
Sample I.D.: 20-BASE-028	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-9-09
Well I.D.: ZV1-MW06B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 40.10	Depth to Water Pre: 5.05 Post: 5.99
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 50 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
0935 DTW: 5.05,	936 DTW: 5.12,	937 DTW:	5.18, 938 DTW:		5.24, 939	DTW: 5.29		
939	14.02	8.27	4451	18	3.12	202.0	150	5.29
942	14.71	8.42	4869	16	2.08	192.8	300	5.49
945	14.41	8.46	4924	18	1.74	185.8	450	5.65
948	14.34	8.49	4954	16	1.51	179.1	600	5.85
951	14.42	8.50	4919	18	1.42	176.1	750	5.99
MICROSEEP SAMPLE TAKEN @ 1110								

Did well dewater? Yes No	Amount actually evacuated: 750 ml
Sampling Time: 955	Sampling Date: 11-9-09
Sample I.D.: 20-BASE-029	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

~~20-BASE-006~~ AK 20-BASE-TB-006 @ 945

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-6-09
Well I.D.: 2V1- MW06C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 48.77	Depth to Water Pre: 4.30 Post: 7.61
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder Pump~~
Sampling Method: Dedicated Tubing ~~New Tubing~~ Other _____
Flow Rate: 50 ml / min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
914	17.60	7.01	14880	34	2.25	125.5	150	6.00
917	17.10	7.29	15042	22	1.66	107.2	300	6.25
920	17.05	7.28	15034	17	1.47	91.3	450	6.47
923	16.92	7.31	15016	23	1.37	89.3	600	6.65
926	16.64	7.32	15031	17	1.39	86.8	750	6.87
929	16.38	7.22	15004	12	1.38	69.0	900	7.02
932	16.69	7.22	14963	12	1.35	54.0	1050	7.20
935	16.73	7.26	15008	10	1.29	50.8	1200	7.43
938	16.73	7.26	15013	10	1.25	45.9	1350	7.61
MICRO SEEP SAMPLED @ 1110								

Did well dewater? Yes (No) Amount actually evacuated: 1350 ml
Sampling Time: 20-BASE-030 (AK) Sampling Date: 11-6-09
Sample I.D.: 940 Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC
Equipment Blank I.D.: @ Time Duplicate I.D.:

TRIP BLANK 20-BASE-TB-05 @ 1000, 11/6/09

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-2-09
Well I.D.: ZVI-MW07A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 20.04	Depth to Water Pre: 5.55 Post: 7.91
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or uS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1548	24.09	8.53	3340	28	1.42	121.2	50	6.89
1549	24.18	8.55	3312	26	1.26	103.6	100	6.92
1550	24.21	8.55	3289	24	1.13	91.5	150	7.10
1551	24.22	8.55	3274	26	1.11	84.8	200	7.21
1552	24.24	8.55	3259	26	1.04	75.6	250	7.30
1555	24.25	8.55	3204	23	0.91	44.2	400	7.52
1558	24.22	8.55	3147	29	0.77	32.5	550	7.79
1601	24.22	8.55	3137	29	0.74	21.4	700	7.80
1604	24.22	8.55	3107	29	0.72	11.8	950	7.91
MICROSEEPS SAMPLED @				1730				

Did well dewater? Yes No	Amount actually evacuated: 950 ml
Sampling Time: 1605	Sampling Date: 11-2-09
Sample I.D.: 20-BASE-031	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRATECH
Sampler: AK	Date: 11-2-09
Well I.D.: ZVI-MW07A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.25	Depth to Water Pre: 5.64 Post: 7.71
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 50 ml/MIN Pump Depth: 25'

Time	Temp. (°C or °F) +/- 1.0	pH +/- 0.1	Cond. (mS or µS) +/- 3%	Turbidity (NTUs) 10% or <10	D.O. (mg/L) +/- 0.3	ORP (mV) ±10	Water Removed (gals. or mL)	DTW! Observations
1013	20.14	7.23	6220	20	1.10	91.2	150	6.65
1016	20.14	7.24	6224	16	0.94	70.2	300	6.85
1019	20.19	7.26	6150	13	0.85	50.9	450	7.11
1022	20.23	7.26	6102	17	0.86	41.6	600	7.24
1025	20.30	7.26	6022	13	0.84	36.0	750	7.36
1028	20.39	7.24	5947	12	0.80	63.3	900	7.51
1031	20.47	7.22	5856	10	0.79	61.0	1050	7.61
1034	20.57	7.18	5767	10	0.74	56.6	1200	7.71
* MICROSEEP SAMPLE @			1145					

Did well dewater? Yes (No)	Amount actually evacuated: 1200 ml
Sampling Time: 1035	Sampling Date: 11-2-09
Sample I.D.: ~~ZVI-MW07A3~~ 20-BASE-032 (FD)	Laboratory: EMAX / MICROSEEPS
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRA TECH
Sampler: AK	Date: 11-03-09
Well I.D.: 2K1- MW07B	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 40.05	Depth to Water Pre: 5.71 Post: 8.07
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 50 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
911	17.35	8.13	7705	19	4.48	123.9	50	6.31
912	17.65	8.19	7712	21	3.03	111.6	100	6.63
913	17.62	8.19	7711	13	2.89	108.4	150	6.90
914	17.63	8.20	7709	13	2.48	104.5	200	7.00
915	17.63	8.20	7710	12	2.35	103.9	250	7.14
918	17.75	8.21	7715	11	1.83	100.4	400	7.33
921	17.88	8.22	7718	9	1.51	98.4	550	7.52
924	18.02	8.24	7720	12	1.08	94.9	700	7.82
927	18.11	8.24	7722	11	0.91	93.0	850	7.94
930	18.17	8.25	7730	10	0.79	91.7	1000	8.07
* MICRO SEEP SAMPLED @					1030			

Did well dewater? Yes (No)	Amount actually evacuated: 1000 ml
Sampling Time: 930	Sampling Date: 11-3-09
Sample I.D.: 20- BASE- 033	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

- SMALL REACTION w/ HCL (BUBBLE)

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AK1	Client: TETRATECH
Sampler: AK	Date: 11-2-09
Well I.D.: 2V1-MW07C	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 50.42	Depth to Water Pre: 5.77 Post: 5.72
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 50 ml/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW! Observations
1238	22.32	7.84	15255	16	1.65	-3.4	50	5.60
1239	22.20	7.85	15185	13	1.25	-13.1	100	5.64
1240	22.16	7.85	15168	12	1.06	-20.0	150	5.69
1241	22.11	7.84	15167	16	0.97	-27.4	200	5.70
1242	22.09	7.83	15167	14	0.84	-15.3	250	5.70
1245	22.27	7.80	15200	18	0.45	-131.6	400	5.57
1248	22.41	7.76	15231	22	0.48	-137.9	550	5.50
1251	22.39	7.75	15313	24	0.40	-172.4	700	5.72
1254	22.38	7.75	15288	20	0.63	-123.9	850	5.64
1257	22.29	7.81	15291	24	0.59	-156.6	1000	5.74
1300	22.19	7.84	15274	25	0.49	-156.9	1150	5.75

Did well dewater? Yes (No)	Amount actually evacuated: 1300 ml
Sampling Time: 1305	Sampling Date: 11-2-09
Sample I.D.: 20-BASE-034	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102AC1	Client: TETRATECH
Sampler: AC	Date: 11-2-09
Well I.D.: 2V1-MW07C	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 50.42	Depth to Water Pre: 5.77 Post: 5.72
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 ml/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1303	22.10	7.86	15223	24	0.37	-156.9	1300	5.72
+ MICROSCOP	SAMPLE	TAKEN @			1355			

Did well dewater? Yes (No)	Amount actually evacuated: 1300 ml
Sampling Time: 1305	Sampling Date: 11-2-09
Sample I.D.: 20-BASE-034	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102-AK-1	Client: TETRA TECH
Sampler: IW	Date: 11/9/09
Well I.D.: D03-04	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 56.72	Depth to Water Pre: 5.28 Post: 5.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: X Dedicated Tubing New Tubing Other ____

Flow Rate: 50ml/min. Pump Depth: 52'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
0902	17.87	7.33	20636	7	2.53	249.1	500ml	5.28
0905	18.06	7.47	27386	8	1.19	240.4	650	5.28
0908	17.99	7.53	28518	6	0.70	233.9	800	5.30
0911	18.01	7.55	28589	3	0.57	229.8	950	5.30
0914	18.02	7.57	28629	4	0.52	226.9	1100	5.30
MICROSEEP SAMPLE TAKEN @ 1000								

Did well dewater? Yes (No)	Amount actually evacuated: 1100 ml
Sampling Time: 0930	Sampling Date: 11/9/09
Sample I.D.: 20-BASE-035	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091102-AK-1	Client: TETRA TECH
Sampler: IW	Date: 11/9/09
Well I.D.: 372-MW1	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 12.47	Depth to Water Pre: 3.98 Post: 4.02
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: X Dedicated Tubing New Tubing Other ____

Flow Rate: 50ml/min Pump Depth: 7.5'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
1020	17.61	7.98	1122	8	3.74	119.1	500	4.00
1023	17.55	7.90	955	5	3.57	126.7	650	4.00
1026	17.50	7.83	730	4	3.42	132.2	800	4.00
1029	17.51	7.79	594	3	3.33	134.1	950	4.01
1032	17.53	7.76	506	3	3.28	136.4	1100	4.01
1035	17.52	7.73	443	2	3.27	137.1	1250	4.01
1038	17.48	7.70	406	2	3.21	141.3	1400	4.02
1041	17.47	7.69	400	3	3.22	140.6	1550	4.02
1044	17.45	7.69	398	3	3.18	141.0	1700	4.02
MICROSCOP SAMPLE TAKEN @ 1120								

Did well dewater? Yes (No)	Amount actually evacuated: 1700ml
Sampling Time: 1050	Sampling Date: 11/9/09
Sample I.D.: 20-BASE-036	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/3/09
Well I.D.: ZVI-MW01A1	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 11.20	Depth to Water Pre: 4.74 Post: 6.23
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump ~~Peristaltic Pump~~ ~~Bladder Pump~~
Sampling Method: Dedicated Tubing ~~New Tubing~~ Other_____
Flow Rate: 50 ml/m Pump Depth: 8'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1028	15.19	8.21	617	18	3.81	-19.7	150	DTW 5.05
1031	14.59	8.15	575	12	3.51	-11.8	300	5.32
1034	14.55	8.09	550	9	3.24	-6.2	450	5.63
1037	14.25	8.05	537	10	3.00	-11.0	600	5.82
1040	14.23	8.04	535	8	2.92	-13.2	750	5.97
1043	14.14	8.03	536	8	2.88	-13.4	900	6.07
1046	14.15	8.01	537	7	2.82	-13.1	1050	6.18

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 1050	Sampling Date: 12/3/09
Sample I.D.: 20-R1-001	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/2/09
Well I.D.: ZVI-MW01A2	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 20.50	Depth to Water Pre: 5.45 Post: 8.59
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder Pump~~
Sampling Method: Dedicated Tubing ~~Flow~~ Tubing Other _____
Flow Rate: 50 ml/m Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1135	15.42	9.12	2992	243	2.76	-91.1	150	DTW 5.69
1138	16.63	9.14	2889	499	0.75	-116.0	300	6.00
1141	17.08	9.14	2872	472	0.44	-139.3	450	6.31
1144	17.06	9.15	2899	443	0.47	-145.7	600	6.60
1147	17.09	9.14	2908	422	0.46	-146.9	750	6.85
1150	16.52	9.14	2914	413	0.43	-147.1	900	7.12
1153	16.60	9.09	2891	391	0.48	-144.8	1050	7.21
1156	16.75	9.11	2897	388	0.41	-150.3	1200	7.30
1159	16.69	9.11	2894	390	0.40	-151.1	1350	7.37

Did well dewater? Yes (No)	Amount actually evacuated: 1350 ml
Sampling Time: 1200	Sampling Date: 12/2/09
Sample I.D.: ZO-R1-002	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: GL	Date: 12/3/09
Well I.D.: ZVI-MW01A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 20.62	Depth to Water Pre: 5.78 Post: 8.41
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 50 ml/m Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
0933	14.95	7.48	3208	7	1.94	-106.5	150	DTW 5.90
0936	15.17	7.40	2868	8	1.39	-138.1	300	6.21
0939	16.18	7.38	2739	7	0.92	-153.3	450	6.51
0942	16.64	7.37	2675	5	1.23	-158.8	600	6.83
0945	16.83	7.37	2655	4	1.55	-159.5	750	7.12
0948	16.82	7.36	2634	2	0.85	-155.1	900	7.42
0951	16.90	7.36	2629	2	0.79	-152.3	1050	7.69
0954	16.92	7.36	2624	2	0.77	-153.1	1200	

Did well dewater? Yes (No) Amount actually evacuated: 1.2 l
Sampling Time: 0955 Sampling Date: 12/3/09
Sample I.D.: 20-R1-003 Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC
Equipment Blank I.D.: @ Time Duplicate I.D.: 20-R1-004 @ 0955

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: GL	Date: 12/2/09
Well I.D.: 2V1-MW01B	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 39.83	Depth to Water Pre: 5.63 Post: 9.59
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump ~~Peristaltic Pump~~ ~~Bladder Pump~~
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other_____
Flow Rate: 50 ml/m Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1238	17.86	8.54	7604	13	3.61	18.4	150	DTW 5.83
1241	17.90	8.53	7883	8	0.89	17.3	300	6.14
1244	17.91	8.53	7891	9	0.72	16.4	450	6.44
1247	17.81	8.52	7894	8	0.57	16.4	600	6.76
1250	17.79	8.52	7891	6	0.54	17.6	750	7.05
1253	17.84	8.52	7887	6	0.51	18.3	900	7.37

Did well dewater? Yes (No)	Amount actually evacuated: 900 ml
Sampling Time: 1255	Sampling Date: 12/2/09
Sample I.D.: 20-RI-005	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 09130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/3/09
Well I.D.: ZV1-MW01C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 50.14	Depth to Water Pre: 5.78 Post: 9.49
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 50 ml/m Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
0841	12.91	7.65	16741	9	2.97	54.0	150	PTW 6.02
0844	13.45	7.69	16832	8	2.35	-2.0	300	6.39
0847	13.37	7.69	16975	8	2.27	-24.5	450	6.65
0850	13.08	7.70	17104	6	1.79	-69.4	600	6.92
0853	13.01	7.70	17129	6	1.75	-71.3	750	7.14
0856	12.99	7.71	17133	4	1.71	-72.2	900	7.36

Did well dewater? Yes (No)	Amount actually evacuated: 900 ml
Sampling Time: 0900	Sampling Date: 12/3/09
Sample I.D.: 20-R1-006	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: GL	Date: 12/2/09
Well I.D.: ZV1-MW01D	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 60.19	Depth to Water Pre: 6.00 Post: 15.70
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other_____
Flow Rate: 50ml/m Pump Depth: 55'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1325	15.16	7.45	20680	5	3.36	3.3	150	DTW 6.09
1328	16.06	7.41	22021	7	1.52	-90.9	300	6.71
1331	16.31	7.51	22522	6	0.97	-105.5	450	7.20
1334	15.70	7.53	22690	5	0.79	-119.5	600	7.92
1337	15.27	7.52	22622	4	0.71	-129.1	750	8.48
1340	15.73	7.51	22482	3	0.67	-149.7	900	8.89
1343	15.84	7.51	22475	3	0.67	-152.3	1050	9.31
1346	15.87	7.51	22482	2	0.66	-153.9	1200	9.60

Did well dewater? Yes (No)	Amount actually evacuated: 1.2 l
Sampling Time: 1350	Sampling Date: 12/2/09
Sample I.D.: 20-R1-007	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/1/09
Well I.D.: 2V1-MW02A2	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 20.25	Depth to Water Pre: 5.26 Post: 8.51
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 75ml/m Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
0835	14.97	8.86	3331	16	1.75	-106.6	225	DTW 5.50
0838	15.86	8.89	3198	11	0.99	-109.8	450	5.83
0841	16.14	8.93	3214	8	0.72	-110.7	675	6.09
0844	16.01	8.93	3201	7	0.62	-91.3	900	6.38
0847	15.98	8.91	3199	7	0.59	-103.1	1125	6.71
0850	15.95	8.90	3198	5	0.56	-104.6	1350	7.02
0853	15.94	8.90	3197	6	0.56	-106.7	1575	7.33

Did well dewater? Yes (No)	Amount actually evacuated: 1575ml
Sampling Time: 0855	Sampling Date: 12/1/09
Sample I.D.: 20-P1-008	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 11/30/09
Well I.D.: 2VI-MW02A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.22	Depth to Water Pre: 5.22 Post: 11.67
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other_____
Flow Rate: 75 ml/m Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations DTW
1323	20.80	7.91	3810	18	3.07	-128.4	225	5.69
1326	20.76	7.62	3435	10	2.40	-125.2	450	6.15
1329	20.77	7.58	3358	9	2.05	-124.9	675	6.47
1332	20.18	7.51	3228	8	1.48	-128.5	900	6.82
1335	20.01	7.50	3229	9	1.42	-130.5	1125	7.03
1338	19.95	7.50	3222	7	1.36	-133.9	1350	7.22
1341	19.92	7.50	3220	6	1.39	-135.2	1575	7.50
		MS/MSD						

Did well dewater? Yes (No) Amount actually evacuated: 1575 ml
Sampling Time: 1345 Sampling Date: 11/30/09
Sample I.D.: 20-R1-009 Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC
Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/1/09
Well I.D.: ZV1-MW02B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 40.00	Depth to Water Pre: 5.45 Post: 7.75
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 75ml/m Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
0953	15.58	9.76	7079	9	1.89	-28.4	225	DTW 5.75
0956	16.00	9.82	7248	9	1.47	-33.2	450	6.03
0959	16.49	9.84	7380	8	1.02	-35.7	675	6.21
1002	16.97	9.91	7442	9	0.70	-40.8	900	6.53
1005	17.30	10.00	7484	8	0.52	-52.9	1125	6.69
1008	17.42	10.10	7541	7	0.53	-75.0	1350	6.83
1011	17.46	10.12	7550	7	0.49	-77.7	1575	6.92
1014	17.46	10.14	7552	5	0.51	-79.9	1800	7.02

Did well dewater? Yes No	Amount actually evacuated: 1.8 L
Sampling Time: 1015	Sampling Date: 12/1/09
Sample I.D.: 20-R1-010	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: GL	Date: 11/30/09
Well I.D.: ZV1-MW02C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 49.93	Depth to Water Pre: 5.46 Post: 8.32
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 50 ml/m Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1218	18.08	7.72	16765	7	3.13	-86.8	150	DTW 6.38
1221	18.37	8.07	17299	12	2.87	-104.4	300	6.50
1224	18.50	8.18	17829	15	2.43	-106.2	450	6.70
1227	19.15	8.23	18312	9	1.55	-96.3	600	6.94
1230	19.25	8.25	18377	7	1.37	-92.7	750	7.11
1233	19.28	8.23	18391	5	1.29	-89.3	900	7.29
1236	19.30	8.24	18399	6	1.25	-88.7	1050	7.43
1239	19.31	8.25	18403	4	1.23	-86.7	1200	7.61

Did well dewater? Yes (No)	Amount actually evacuated: 1.2 l
Sampling Time: 1240	Sampling Date: 11/30/09
Sample I.D.: ZO-R1-011	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-2-09
Well I.D.: 2VI-MW03A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 20.22	Depth to Water Pre: 5.30 Post: 7.49
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder Pump~~
Sampling Method: Dedicated Tubing ~~New Tubing~~ Other _____

Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
959	10.68	8.19	2141	9	1.49	121.9	150	6.06
1002	11.38	8.23	2150	6	1.25	121.9	300	6.35
1005	11.57	8.25	2159	7	1.03	121.9	450	6.60
1008	11.70	8.25	2168	6	0.93	122.5	600	6.91
1011	11.62	8.25	2175	6	0.88	122.5	750	7.20
1014	11.77	8.26	2173	5	0.84	123.6	900	7.49

Did well dewater? Yes No	Amount actually evacuated: 900 ml
Sampling Time: 1015	Sampling Date: 12/2/09
Sample I.D.: 20-R1-012	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-2-09
Well I.D.: 2V1-MW03A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.11	Depth to Water Pre: 5.14 Post: 5.92
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other_____

Flow Rate: 50 ml/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (ml))	DTW! Observations
835	14.32	7.41	1879	26	0.95	-95.7	150	5.45
838	13.42	7.39	1865	31	0.82	-87.5	300	5.58
841	15.48	7.34	1759	33	0.39	-89.6	450	5.86
844	15.15	7.36	1704	29	0.40	-85.9	600	6.00
847	14.93	7.38	1653	27	0.35	-81.4	750	5.70
850	14.14	7.36	1644	25	0.32	-75.5	900	5.72
853	14.53	7.37	1655	24	0.29	-70.3	1050	6.00
856	14.59	7.36	1628	23	0.25	-70.6	1200	5.92

Did well dewater? Yes (No)	Amount actually evacuated: 1200 ml
Sampling Time: 900	Sampling Date: 12-2-09
Sample I.D.: 20-R1-013	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

20-R1-TB-003 @ 830
20-R1-EB-003 @ 930

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-2-09
Well I.D.: ZVI- MW03B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 40.28	Depth to Water Pre: 5.28 Post: 7.01
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____

Flow Rate: 50 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1311	12.57	8.42	12340	34	1.64	77.9	150	5.90
1314	12.46	8.45	12289	10	0.96	76.1	300	6.25
1317	12.48	8.46	12284	12	0.88	77.2	450	6.35
1320	12.63	8.48	11829	14	0.80	81.2	600	6.60
1323	12.74	8.51	11649	15	0.75	88.1	750	6.82
1326	12.78	8.52	11400	16	0.71	88.8	900	7.01

Did well dewater? Yes No	Amount actually evacuated: 900 ml
Sampling Time: 1330	Sampling Date: 12-2-09
Sample I.D.: 20-R1-014	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AKJ	Client: TETRA TECH
Sampler: AK	Date: 12-2-09
Well I.D.: ZV1-MW03C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 50.15	Depth to Water Pre: 3.51 Post: 8.09
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 50 ml / min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW: Observations
1200	13.53	7.30	15362	57	1.23	-80.3	150	6.42
1203	13.64	7.31	15416	60	0.97	-75.9	300	6.82
1206	13.70	7.32	15417	52	0.82	-73.6	450	7.13
1209	13.77	7.33	15398	45	0.78	-73.4	600	7.49
1212	13.80	7.34	15400	42	0.73	-74.0	750	7.80
1215	13.82	7.34	15390	40	0.69	-74.1	900	8.09

Did well dewater? Yes (No)	Amount actually evacuated: 900 ml
Sampling Time: 1215	Sampling Date: 12-2-09
Sample I.D.: 20-R1-015	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20-R1-016

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/1/09
Well I.D.: ZV1-MW04A1	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 10.91	Depth to Water Pre: 4.00 Post: 5.05
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: Ysi 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder Pump~~
Sampling Method: Dedicated Tubing ~~New Tubing~~ Other _____
Flow Rate: 50 ml/m Pump Depth: 8'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	Observations
1228	17.21	7.67	672	4	1.59	-226.9	150	DTW 4.69
1231	17.60	7.48	645	4	0.67	-244.8	300	4.83
1234	17.70	7.45	630	3	0.44	-256.9	450	4.91
1237	17.97	7.45	622	3	0.30	-282.7	600	4.98
1240	18.07	7.46	618	3	0.25	-292.9	750	5.03
1243	18.20	7.53	605	3	0.21	-300.1	900	5.05
1246	18.23	7.54	601	2	0.21	-303.2	1050	5.05
1249	18.26	7.57	599	2	0.22	-305.1	1200	5.05

Did well dewater? Yes ~~No~~	Amount actually evacuated: 1.2 l
Sampling Time: 1250	Sampling Date: 12/1/09
Sample I.D.: ZO-P1-017	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 09/130-AK1	Client: Tetra Tech
Sampler: GL	Date: 12/2/09
Well I.D.: ZV1-MW04A2	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 20.31	Depth to Water Pre: 4.70 Post: 7.12
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 50 ml/m Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	Observations
0830	13.78	9.04	2251	61	1.61	-132.7	150	DTW 5.03
0833	13.79	9.05	2207	49	1.25	-156.0	300	5.29
0836	13.81	9.04	2180	30	1.16	-165.0	450	5.43
0839	13.84	9.04	2158	26	1.06	-171.4	600	5.58
0842	13.88	9.02	2139	21	0.93	-176.9	750	5.84
0845	13.79	9.03	2137	11	0.91	-180.4	900	5.90
0848	13.76	9.03	2137	9	0.88	-182.7	1050	6.06
0851	13.70	9.01	2129	10	0.87	-183.0	1200	6.30

Did well dewater? Yes (No)	Amount actually evacuated: 1.2 l
Sampling Time: 0855	Sampling Date: 12/2/09
Sample I.D.: ZO-R1-018	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/1/09
Well I.D.: ZV1-MW04A3	Well Diameter: 2 3 4 6 8 (15)
Total Well Depth: 30.45	Depth to Water Pre: 5.24 Post: 5.46
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 75ml/m Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1051	16.41	7.73	2804	3	2.02	-71.0	225	DTW 5.32
1054	17.06	7.68	2614	3	0.94	-96.2	450	5.50
1057	16.74	7.68	2568	3	0.80	-100.7	675	5.46
1100	16.78	7.63	2550	2	0.66	-105.4	900	5.46
1103	16.82	7.65	2545	2	0.61	-110.1	1125	5.46
1106	16.79	7.66	2548	2	0.59	-112.3	1350	5.46
1109	16.77	7.67	2545	3	0.58	-113.2	1575	5.46

Did well dewater? Yes (No)	Amount actually evacuated: 1575ml
Sampling Time: 1110	Sampling Date: 12/1/09
Sample I.D.: ZO-R1-019	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: GL	Date: 12/2/09
Well I.D.: ZV1-MW04B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 40.14	Depth to Water Pre: 5.15 Post: 8.44
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder Pump~~
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 75 ml/m Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
0941	13.71	9.19	7773	5	1.50	-201.6	225	DTW 5.31
0944	14.61	9.27	7869	6	1.11	-215.3	450	5.45
0947	15.42	9.33	8033	5	0.70	-229.5	675	5.75
0950	15.66	9.34	8144	4	0.55	-236.6	900	6.04
0953	15.98	9.33	8176	4	0.48	-241.7	1125	6.36
0956	15.97	9.36	8192	4	0.46	-245.3	1350	6.66
0959	15.94	9.34	8197	3	0.41	-249.1	1575	6.94

Did well dewater? Yes No	Amount actually evacuated: 1575 ml
Sampling Time: 1000	Sampling Date: 12/2/09
Sample I.D.: ZO-R1-020	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130-AK1	Client: Tetra Tech
Sampler: SL	Date: 12/1/09
Well I.D.: ZV1-MW04C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 49.33	Depth to Water Pre: 5.40 Post: 19.20
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: Dedicated Tubing ~~New~~ Tubing Other _____
Flow Rate: 50 ml/m Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	Observations
1331	19.54	8.04	17156	6	1.46	-282.2	150	DTW 6.48
1334	19.36	8.10	17215	7	0.42	-303.8	300	7.23
1337	19.46	8.07	17241	7	0.27	-305.6	450	8.12
1340	19.24	8.03	17322	6	0.21	-306.3	600	8.91
1343	19.29	8.01	17322	5	0.19	-306.4	750	9.91
1346	19.32	8.01	17315	5	0.18	-308.0	900	10.75
		MS/MSD						

Did well dewater? Yes (No)	Amount actually evacuated: 900 ml
Sampling Time: 1350	Sampling Date: 12/1/09
Sample I.D.: 20-R1-021	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12/1/09
Well I.D.: 2U1- MW05A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 19.22	Depth to Water Pre: 4.70 Post: 7.29
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____

Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW: Observations
843	12.98	8.20	1284	19	1.11	-7.0	150	5.53
846	13.64	8.19	1279	16	0.87	17.4	300	5.78
849	13.84	8.18	1278	14	0.72	37.4	450	6.05
852	13.92	8.18	1275	12	0.60	52.4	600	6.26
855	14.10	8.18	1273	12	0.59	68.0	750	6.53
858	14.13	8.18	1273	12	0.54	78.5	900	6.80
901	14.10	8.19	1275	12	0.53	83.5	1050	7.05
904	14.14	8.19	1275	12	0.49	87.9	1200	7.29

Did well dewater? Yes No	Amount actually evacuated: 1200 ml
Sampling Time: 905	Sampling Date: 12-1-09
Sample I.D.: 20-R1-022	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130 AK1	Client: TETRA TECH
Sampler: AK	Date: 12-1-09
Well I.D.: 2V1- MW05A3	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 30.28	Depth to Water Pre: 5.00 Post: 5.61
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 50 ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW! Observations
1014	11.83	7.71	2726	32	1.14	-9.5	150	5.30
1017	11.77	7.69	2730	31	0.90	-11.8	300	5.40
1020	11.69	7.67	2734	32	0.71	-14.8	450	5.42
1023	11.70	7.65	2742	31	0.51	-15.6	600	5.51
1026	11.72	7.64	2749	30	0.47	-16.6	750	5.55
1029	11.76	7.63	2751	31	0.42	-17.6	900	5.61

Did well dewater? Yes No	Amount actually evacuated: 900 ml
Sampling Time: 1030	Sampling Date: 12-1-09
Sample I.D.: 20-R1-023	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-1-09
Well I.D.: 2V1-MW05B	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 39.99	Depth to Water Pre: 5.19 Post: 7.28
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1350	15.99	9.00	18914	14	1.81	107.9	150	5.34
1353	16.20	9.02	19015	12	1.22	112.1	300	5.60
1356	16.13	9.02	18480	10	1.07	114.7	450	5.86
1359	16.20	9.02	18049	9	0.98	115.1	600	6.10
1402	16.14	9.02	17376	10	0.88	117.7	750	6.31
1405	16.17	9.02	16904	8	0.82	118.1	900	6.60
1408	16.29	9.02	16381	8	0.75	120.3	1050	6.82
1411	16.33	9.02	16089	8	0.78	120.7	1200	7.01
1414	16.34	9.02	15908	7	0.69	122.6	1350	7.28

Did well dewater? Yes (No)	Amount actually evacuated: 1350 ml
Sampling Time: 1415	Sampling Date: 12-1-09
Sample I.D.: 20-R1-024	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-1-09
Well I.D.: ZVI-MW05C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 48.68	Depth to Water Pre: 5.19 Post: 6.41
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW! Observations
1219	17.10	8.52	15628	19	0.14	-93.0	150	6.19
1222	17.05	8.48	15716	20	0.04	-99.2	300	6.29
1225	16.73	8.48	15738	18	0.07	-99.3	450	6.41
* BUBBLES	IN	WATER	LINE					

Did well dewater? Yes (No)	Amount actually evacuated: 450 ml
Sampling Time: 1225	Sampling Date: 12-1-09
Sample I.D.: 20-R1-025	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20_R1-026 @ 1225

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 11-30-09
Well I.D.: ZU1-MW06A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 19.01	Depth to Water Pre: 5.60 Post: 6.92
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1303	16.06	8.89	4137	98	0.23	-98.4	150	6.52
1306	16.28	8.88	4114	102	0.20	-100.3	300	6.60
1309	16.40	8.87	4099	107	0.13	-101.1	450	6.80
1312	16.49	8.86	4088	109	0.11	-101.5	600	6.92

Did well dewater? Yes No	Amount actually evacuated: 600 ml
Sampling Time: 1315	Sampling Date: 11/30/09
Sample I.D.: 20-R1-027	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: ~~09~~ 11-30-09
Well I.D.: 2V1- MW06A3	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 30.30	Depth to Water Pre: 5.33 Post: 6.10
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 50 ml/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW: Observations
1136	15.49	7.35	2880	11	2.43	-84.9	150	5.98
1139	15.98	7.32	2820	10	1.57	-87.9	300	6.01
1142	16.13	7.30	2798	8	1.08	-85.6	450	6.05
1145	16.23	7.29	2785	7	0.70	-81.7	600	6.09
1148	16.38	7.29	2774	6	0.52	-76.6	750	6.06
1151	16.52	7.28	2765	6	0.42	-69.6	900	6.08
1154	16.64	7.28	2755	4	0.34	-62.2	1050	6.11
1157	16.82	7.29	2751	5	0.32	-59.9	1200	6.10

Did well dewater? Yes No	Amount actually evacuated: 1200 ml
Sampling Time: 1200	Sampling Date: 11-30-09
Sample I.D.: 20-R1-028	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TERTA TECH
Sampler: AK	Date: 11/30/09
Well I.D.: ZV1-MW06B	Well Diameter: 2 3 4 6 8 (15)
Total Well Depth: 40.20	Depth to Water Pre: 5.30 Post: 8.20
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 50 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW! Observations
1431	18.54	8.24	6809	11	2.17	116.8	150	6.75
1434	18.58	8.24	6812	12	1.35	118.4	300	7.00
1437	18.64	8.23	6814	10	0.84	120.9	450	7.25
1440	18.61	8.23	6811	9	0.65	121.0	600	7.53
1443	18.58	8.22	6808	10	0.49	122.6	750	7.70
1446	18.57	8.21	6809	9	0.41	123.5	900	7.99
1449	18.47	8.20	6809	7	0.39	124.3	1050	8.20

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 1450	Sampling Date: 11/30/09
Sample I.D.: 20-R1-029	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 11-30-09
Well I.D.: ZVI-MW06C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 48.80	Depth to Water Pre: 5.50 Post: 6.94
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 ml/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW: Observations
1005	16.21	7.66	15842	133	0.58	-102.2	300	5.95
1008	16.46	7.64	15467	17	0.44	-98.4	600	6.29
1011	16.48	7.63	15567	15	0.38	-92.5	900	6.55
1014	16.04	7.63	15555	16	0.34	-90.1	1200	6.79
1017	15.78	7.63	15609	15	0.35	-88.6	1500	6.94

Did well dewater? Yes (No)	Amount actually evacuated: 1500 ml
Sampling Time: 1020	Sampling Date: 11-30-09
Sample I.D.: 20-R1-030	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-3-09
Well I.D.: 2U1-MW07A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 19.80	Depth to Water Pre: 7.13 Post: 9.32
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50 ml / min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1319	14.61	8.79	2880	32	0.99	9.9	150	8.42
1322	14.65	8.78	2873	26	0.85	4.5	300	8.69
1325	14.62	8.78	2867	27	0.71	-1.4	450	8.90
1328	14.51	8.78	2860	26	0.64	-8.8	600	9.10
1331	14.69	8.78	2857	25	0.61	-5.3	750	9.32

Did well dewater? Yes No	Amount actually evacuated: 750 ml
Sampling Time: 1335	Sampling Date: 12-3-09
Sample I.D.: 20-R1-031	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-3-09
Well I.D.: ZV1-MW07A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.03	Depth to Water Pre: 5.50 Post: 8.38
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
925	13.23	7.23	4251	88	0.51	-73.8	1800	8.12
928	13.38	7.22	4254	90	0.50	-74.0	1950	8.23
931	13.35	7.20	4264	84	0.49	-67.2	2100	8.38

Did well dewater? Yes (No)	Amount actually evacuated: 2100 ml
Sampling Time: 935	Sampling Date: 12-3-09
Sample I.D.: 20-R1-032	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-3-09
Well I.D.: 2V1-MW07A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.03	Depth to Water Pre: 5.50 Post: 8.38
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW! Observations
852	13.09	7.31	5137	398	6.85	-90.8	150	6.70
855	13.56	7.35	5201	851	0.59	-110.2	300	6.83
858	13.25	7.34	5049	>1000	0.16	-110.9	450	7.05
901	13.26	7.31	4848	>1000	0.23	-105.1	600	7.17
904	13.18	7.29	4697	>1000	0.26	-96.3	750	7.30
907	13.08	7.29	4636	668	0.29	-92.0	900	7.47
910	13.15	7.28	4531	338	0.38	-89.9	1050	7.61
913	13.29	7.28	4430	222	0.43	-87.3	1200	7.70
916	13.39	7.27	4349	162	0.59	-85.4	1350	7.81
919	13.44	7.28	4316	117	0.55	-82.7	1500	7.93
922	13.21	7.25	4273	104	0.54	-78.4	1650	8.04

SEE NEXT PAGE →

Did well dewater? Yes (No)	Amount actually evacuated: 2100 ml
Sampling Time: 935	Sampling Date: 12-3-09
Sample I.D.: 20-R1-032	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

20-R1-TB-004 @ 855
20-R1-EB-004 @ 955

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-3-09
Well I.D.: ZVI-MW07B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 40.22	Depth to Water Pre: 5.40 Post: 7.27
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____

Flow Rate: 50ml / MIN Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1131	14.69	8.22	8124	48	5.42	86.1	150	6.24
1134	13.89	8.21	8063	35	5.92	101.8	300	6.51
AIR	IN	WATER	LINE	STOPPED	PURGE	—	REATTACHED	
TUBING	&	RESTARTED	PURGE					
1154	14.24	8.21	8008	20	6.93	110.1	450	7.22
1157	13.87	8.21	8002	18	6.78	111.6	600	7.22
1200	14.34	8.20	7983	24	6.71	113.5	750	7.25
1203	14.61	8.21	7963	23	6.71	111.8	900	7.26
1206	14.16	8.22	7965	22	6.70	112.9	1050	7.27

Did well dewater? Yes No	Amount actually evacuated: 1050 ml
Sampling Time: 1210	Sampling Date: 12-3-09
Sample I.D.: 20-R1-033	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130AK1	Client: TETRA TECH
Sampler: AK	Date: 12-3-09
Well I.D.: 2U1-MW07C	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 50.47	Depth to Water Pre: 5.56 Post: 6.57
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml / MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW! Observations
1019	14.83	8.31	13769	15	0.93	-88.8	150	6.33
1022	15.13	8.28	13899	13	0.79	-85.2	300	6.40
1025	15.26	8.22	14097	10	0.60	-80.6	450	6.47
1028	15.69	8.18	14143	7	0.57	-83.3	600	6.48
1031	15.73	8.16	14250	7	0.49	-84.2	750	6.40
1034	15.63	8.06	14465	6	0.42	-108.8	900	6.45
1037	15.62	8.04	14477	5	0.42	-111.9	1050	6.48
1040	15.38	7.99	14569	4	0.38	-121.2	1200	6.50
1043	15.70	7.98	14603	3	0.38	-122.7	1350	6.51
1046	15.77	7.94	14596	3	0.38	-119.3	1500	6.51

Did well dewater? Yes (No)	Amount actually evacuated: 1500 ml
Sampling Time: 1050	Sampling Date: 12-3-09
Sample I.D.: 20-R1-034	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130 AK1	Client: TETRA TECH
Sampler: AK1 SL	Date: 12/2/09
Well I.D.: D0304	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: N/A	Depth to Water Pre: 5.19 Post: 5.25
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump ~~Bladder~~ Pump
Sampling Method: ~~Dedicated~~ Tubing New Tubing Other ___
Flow Rate: 200 ml/m Pump Depth: N/A

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1426	18.40	7.86	17278	8	0.35	-8.2	600	DTW 5.25
1429	18.51	7.86	17021	5	0.23	-10.0	1200	5.25
1432	18.52	7.82	17520	4	0.21	-11.4	1800	5.25
1435	18.55	7.85	17445	4	0.20	-12.8	2400	5.25
1438	18.50	7.79	17496	3	0.19	-13.2	3000	5.25

Did well dewater? Yes (No)	Amount actually evacuated: 3.0 L
Sampling Time: 1440 ~~A20-RL035~~	Sampling Date: 12/2/09
Sample I.D.: ~~02-2009D-040~~ (AK)	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091130ANC1	Client: TETRA TECH
Sampler: ANC	Date: 12-2-09
Well I.D.: 372 - MW1	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: N/A	Depth to Water Pre: 3.91 Post: 4.40
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: (Dedicated Tubing) New Tubing Other ____
Flow Rate: 200 ml / min Pump Depth: DEDICATED

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (ml))	DTW: Observations
1420	16.60	7.57	275	6	3.96	114.8	600	4.14
1423	16.61	7.56	273	3	3.91	116.8	1200	4.25
1426	16.65	7.56	272	3	3.86	119.9	1800	4.40

Did well dewater? Yes (No)	Amount actually evacuated: 1800 ml
Sampling Time: 1430	Sampling Date: 12-2-09
Sample I.D.: 20-R1-036	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH @ ALAMEDA				PROJECT NUMBER 091130AK1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
RAE	2000.39	11/30/09 @ 630	1508 100	101	YES	N/A	AC
RAE	2000.56	11/30/09 @ 634	1508 100	101	YES	N/A	AC
YSI 556	06F1362AT	11/30/09 @ 707	ORP 244	241.3	244.0	15.74	AC
↓	↓	↓	PH 7.0 4.0 10.0	7.01 4.04, 9.82	7.00 4.00 9.97	15.76	AC
↓	↓	↓	CONDUCTIVITY 3900	3765	3900	15.72	AC
↓	↓	↓	DO 100%	96.2	100.4	15.26	AC
YSI 556	02D0577AH ~~05G1520AT~~ AC	11/30/09 @ 717	ORP 244	254.1 ~~240.1~~ AC	244.0	15.58 ~~14.75~~ AC	AC
↓	↓	↓	PH 7.0 4.0 10.0	7.12 4.00 9.85	7.01 4.00 9.99	15.23 ~~14.95~~ AC	AC
↓	↓	↓	CONDUCTIVITY 3900	3721	3900	15.06	AC
↓	↓	↓	DO 100%	96.6	99.2	14.87	AC

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH @ ALAMEDA				PROJECT NUMBER 0911 3CAIC1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	02D0577AH	12/1/09 @ 615	ORP 240	238.4	240.0	17.07	AK
			PH 7.0 4.0 10.0	7.07 3.92 9.86	7.0 3.98 9.96	17.00	AK
			CONDUCTIVITY 3900	3991	3901	16.76	AK
			DO 100.0%	102.1	99.8	16.50	AK

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH @ ALAMEDA				PROJECT NUMBER 091130AK1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	02D0577AH	11/30/09 @ 1349	ORP 237	238.9	237.0	19.47	AK
			PH 7.0 4.0 10.0	7.06 3.90 9.87	7.0 4.0 9.99	18.34	AK
			CONDUCTIVITY 3900	3871	3900	18.65	AK
			DO 100%	98.1	101.4	16.54	AK
YSI 556	02D0577AH	12/2/09 @ 630	ORP 240	240.6	240.0	16.59	AK
			PH 7.0 4.0 10.0	7.12 3.90 9.76	7.00 4.00 10.01	16.59	AK
			CONDUCTIVITY 3900	3831	3902	16.53	AK
			DO 100%	102.1	99.1	16.05	AK
YSI 556	02D0577AH	12/3/09 805	ORP 247	245.5	247	13.05	AK
			PH 7.0 4.0 10.0	7.07 3.93 9.81	7.01 4.04 9.98	13.07	AK
			CONDUCTIVITY 3900	3840	3901	13.03	AK
			DO 100%	98.0	99.9	12.29	AK

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME	TETRA TECH @ ALAMEDA			PROJECT NUMBER	091130AC1		
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	06F1362	12/1/09 0613	pH 4 7 10	pH 4.00 7.00 10.00	✓	17.02	[illegible]
↓	↓	↓	3900 uS	3900	✓	16.85	[illegible]
↓	↓	↓	244.0 mV	241.3	✓	16.50	[illegible]
↓	↓	↓	100% DO	99.1%	✓	16.42	[illegible]
YSI 556	06F1362	12/2/09 0630	pH 4 7 10	pH 4.00 7.00 10.00	✓	17.54	[illegible]
↓	↓	↓	3900 uS	3900 uS	✓	17.06	[illegible]
↓	↓	↓	244.0 mV	243.1	✓	16.62	[illegible]
↓	↓	↓	3900 uS 100% DO	98.7%	✓	15.96	[illegible]

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME	TETRA TECH @ ALAMEDA			PROJECT NUMBER	091130 AK1		
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	°C TEMP.	INITIALS
YSI 556	06F1362	12/2/09 1105	pH 4 7 10	pH 4.00 7.00 10.00	✓	15.13	[illegible]
↓	↓	↓	3900 µs	3897 µs	✓	15.27	[illegible]
↓	↓	↓	244.0 mV	242.3 mV	✓	15.02	[illegible]
↓	↓	↓	100% DO	99.1%	✓	14.69	[illegible]
YSI 556	06F1362	12/3/09 0800	pH 4 7 10	pH 4.00 7.00 10.00	✓	14.25	[illegible]
↓	↓	↓	3900 µs	3898 µs	✓	12.87	[illegible]
↓	↓	↓	244.0 mV	247.3	✓	12.35	[illegible]
↓	↓	↓	100% DO	99.1%	✓	12.45	[illegible]

LOW FLOW WELL MONITORING DATA SHEET

PG 1 OF 2

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/16/09
Well I.D.: ZV1- MW01A1	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 11.08	Depth to Water Pre: 4.30 Post: 5.22
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 50 ml / MIN Pump Depth: 9'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW: Observations
1045	13.82	8.28	1490	352	2.05	-90.1	150	4.80
1048	14.03	8.26	1254	339	2.12	-89.8	300	4.88
1051	14.18	8.21	1015	315	2.25	-84.3	450	4.98
1054	14.19	8.16	934	308	2.35	-81.8	600	5.07
1057	14.09	8.10	820	290	2.51	-75.6	750	5.18
1100	14.00	8.05	756	267	2.65	-71.4	900	5.11
1103	13.94	8.01	705	233	2.68	-67.2	1050	5.17
1106	13.97	7.98	673	191	2.68	-63.4	1200	5.17
1109	13.78	7.94	661	159	2.64	-60.2	1350	5.19
1112	13.51	7.91	646	126	2.54	-56.0	1500	5.18
1115	13.44	7.89	637	121	2.49	-53.4	1650	5.20

Did well dewater? Yes No	Amount actually evacuated: 1800 ml
Sampling Time: 1120	Sampling Date: 12/16/09
Sample I.D.: 20-RZ-001	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20-RZ-002 @ 1120

MICROSEED @ 1120

LOW FLOW WELL MONITORING DATA SHEET

PG 2 OF 2

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/16/09
Well I.D.: 2V1-MW01A1	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 11.08	Depth to Water Pre: 4.30 Post: 5.22
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50 ml/min Pump Depth: 9'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1118	13.51	7.88	630	118	2.42	-51.2	1800	5.22

Did well dewater? Yes No	Amount actually evacuated: 1800 ml
Sampling Time: 1120	Sampling Date: 12/16/09
Sample I.D.: 20-R2-001	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20-R2-002@

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AF1	Client: TETRA TECH
Sampler: AK	Date: 12/15/09
Well I.D.: ZV1- MW01A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 20.46	Depth to Water Pre: 5.20 Post: 7.94
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50 ml/MIN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1246	15.87	8.94	2340	>1000	0.22	-279.6	150	7.11
1249	15.93	8.94	2343	>1000	0.22	-286.9	300	7.18
1252	15.98	8.94	2347	>1000	0.22	-291.9	450	7.28
1255	16.04	8.94	2352	>1000	0.23	-296.0	600	7.33
1258	16.03	8.94	2358	>1000	0.23	-299.2	750	7.41
1301	15.99	8.94	2363	>1000	0.23	-301.8	900	7.48
1304	15.95	8.93	2367	>1000	0.22	-304.2	1050	7.52
1307	15.97	8.93	2369	>1000	0.22	-306.6	1200	7.62
1310	15.94	8.93	2373	>1000	0.22	-308.3	1350	7.68
1313	15.95	8.93	2377	>1000	0.22	-310.1	1500	7.70
1316	15.89	8.93	2381	>1000	0.21	-311.8	1650	7.77

Did well dewater? Yes No	Amount actually evacuated: 2100 ml
Sampling Time: 1325	Sampling Date: 12/15/09
Sample I.D.: 20-R2-003	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/15/09
Well I.D.: 2U1-MW01A2	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 20.46	Depth to Water Pre: 5.20 Post: 7.94
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other_____
Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1319	15.51	8.93	2390	>1000	0.21	-313.0	1800	7.83
1322	15.28	8.92	2395	>1000	0.20	-313.8	1950	7.89
1325	15.47	8.92	2394	>1000	0.20	-312.5	2100	7.94
* @ 1307 CALLED INTO CLIENT ABOUT TURBIDITY STABLE								

Did well dewater? Yes (No)	Amount actually evacuated: 2100 ml
Sampling Time: 1325	Sampling Date: 12/15/09
Sample I.D.: 20-RZ-003	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: ~~091216~~ AN 091214A1C1	Client: TETRA TECH
Sampler: AK	Date: 12/16/09
Well I.D.: ZVI-MW01A3	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 30.57	Depth to Water Pre: 4.95 Post: 7.80
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____

Flow Rate: 50 ml/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1332	17.06	7.30	4798	42	1.37	-45.0	150	6.40
1335	17.01	7.11	4185	31	0.97	-69.4	300	6.61
1338	17.04	7.04	3655	28	0.86	-75.3	450	6.93
1341	17.02	6.98	3109	27	0.93	-88.7	600	7.28
1344	17.02	6.99	2959	29	0.88	-99.3	750	7.52
1347	17.00	6.99	2921	27	0.83	-104.8	900	7.67
1350	16.99	6.99	2911	26	0.79	-106.8	1050	7.80
MICRO SEEP @ 1350								

Did well dewater? Yes No Amount actually evacuated: 1050 ml

Sampling Time: 1350 Sampling Date: 12/16/09

Sample I.D.: 20-RZ-004 (MS/MSD) Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/15/09
Well I.D.: 2U1- MW01B	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 39.56	Depth to Water Pre: 4.62 Post: 7.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW: Observations
1050	14.68	8.21	8021	44	3.06	27.0	150	5.50
1053	14.70	8.22	8033	22	2.32	26.8	300	5.65
1056	14.97	8.21	8054	29	1.39	26.4	450	5.91
1059	15.01	8.21	8053	32	0.99	25.8	600	6.28
1102	15.41	8.21	8044	35	0.71	25.2	750	6.63
1105	15.77	8.22	8041	38	0.58	24.1	900	7.00
1108	15.80	8.22	7999	40	0.51	23.6	1050	7.30
MICROSTEP SAMPLED @ 1110								

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 1110	Sampling Date: 12/15/09
Sample I.D.: 20-R2-005	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214 - AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 12-17-09
Well I.D.: ZV1-MW01C	Well Diameter: 2 3 4 6 8 1 ¾"
Total Well Depth: 49.86	Depth to Water Pre: 5.80 Post: 7.40
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 100 mL/min Pump Depth: 45

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1333	14.77	7.54	17.25	8	1.97	194.5	200	5.97
1336	14.71	7.59	17.32	5	1.49	181.1	500	6.31
1339	15.39	7.61	17.36	8	1.16	174.5	800	6.63
1342	15.67	7.62	17.36	8	1.00	181.2	1100	7.01
1345	16.03	7.65	17.36	8	0.92	185.1	1400	7.40
					MICROSOOP		TAKEN	
					@		1450	

Did well dewater? Yes No	Amount actually evacuated: 1400 mL
Sampling Time: 1350	Sampling Date: 12-17-09
Sample I.D.: 20-R2-006	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AKI	Client: TETRA TECH
Sampler: AK	Date: 12/16/09
Well I.D.: ZVI-MW01D	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 59.86	Depth to Water Pre: 3.53 Post: 8.15
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 50 ml/min Pump Depth: 53'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (ml))	DTW: Observations
904	14.52	7.04	26176	60	2.04	-85.7	150	5.95
907	14.74	7.00	28782	6	1.64	-65.0	300	6.52
910	14.69	7.01	29810	7	1.59	-65.9	450	7.11
913	14.62	7.02	29914	5	1.47	-69.3	600	7.70
916	14.37	7.02	29941	4	1.34	-72.8	750	8.15
	MICROSEED		@ 920					

Did well dewater? Yes (No) Amount actually evacuated: 750 ml

Sampling Time: 920 Sampling Date: 12/16/09

Sample I.D.: 20-RZ-007 Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

Equipment Blank I.D.: 20-RZ-@ EB-003 Time 1000 Duplicate I.D.:

20-RZ-TB-003 @ 945

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-4F1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-16-09
Well I.D.: ZVI-MW02A2	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 20.11	Depth to Water Pre: 4.90 Post: 7.25
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 mL/MIN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1335	15.80	8.87	3529	13	1.27	72.0	200	5.45
1338	15.96	8.85	3433	11	1.07	77.5	500	5.94
1341	15.89	8.84	3281	9	0.77	83.2	800	6.29
1344	15.80	8.82	3256	9	0.59	88.6	1100	6.51
1347	15.67	8.81	3200	7	0.54	97.1	1400	6.82
					MICRO 8260		TAPSN	
							@ 1450	

Did well dewater? Yes (No)	Amount actually evacuated: 1400
Sampling Time: 1400	Sampling Date: 12-16-09
Sample I.D.: 20-R2-01~~08~~ AF	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AF1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-16-09
Well I.D.: ZV1-MW02A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.02	Depth to Water Pre: 4.85 Post: 7.92
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 mL/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1020	15.97	7.73	3920	21	1.63	-17.7	200	5.71
1023	16.71	7.61	3352	16	0.87	-39.5	500	6.32
1026	17.12	7.58	3021	11	0.61	-52.9	800	6.94
1029	17.17	7.58	2958	12	0.53	-60.7	1100	7.20
1032	17.02	7.57	2925	11	0.57	-65.5	1400	7.64
					MICRO	SOSP	TAKEN	@ 1130

Did well dewater? Yes (No)	Amount actually evacuated: 1400
Sampling Time: 1040	Sampling Date: 12-16-09
Sample I.D.: 20-R2-009	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-4K1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-16-09
Well I.D.: ZV1-MW02B	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 40.39	Depth to Water Pre: 5.10 Post: 7.05
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 mL/MIN Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1134	14.49	9.34	7844	11	1.87	55.9	200	5.51
1137	14.96	9.34	8123	11	0.85	62.9	500	5.75
1140	15.00	9.36	8126	11	0.78	63.7	800	6.05
1143	15.13	9.39	8108	12	0.70	67.0	1100	6.21
						MICRO SCEP	TAKEN	
							@ 1310	

Did well dewater? Yes (No) Amount actually evacuated: 1100 mL

Sampling Time: 1150 Sampling Date: 12-16-09

Sample I.D.: 20-R2-010 Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D (Other:) SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.: RO- 20-R2-011

TAKEN @ 1200

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AF1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-16-09
Well I.D.: ZVI-MW02C	Well Diameter: 2 3 4 6 8 3/4"
Total Well Depth: 49.63	Depth to Water Pre: 3.80 Post: 9.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____

Flow Rate: 100 mL/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
900	14.92	8.07	17.06	61	2.07	14.0	200	6.35
903	15.70	8.17	18.42	65	0.81	46.0	500	6.85
906	15.30	8.17	18.40	60	0.71	48.4	800	7.48
909	15.25	8.16	18.34	54	0.65	50.1	1100	8.10
				MICRO SEEP		TAKEN @		10 15

Did well dewater? Yes No	Amount actually evacuated: 1100
Sampling Time: 915	Sampling Date: 12-16-09
Sample I.D.: 20-R2-012	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214 - AK1	Client: TETRA TECH ALAMEDA PT.
Sampler: FS	Date: 12-14-09
Well I.D.: ZVI-MW03A2	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 20.16	Depth to Water Pre: 4.92 Post: 13.22
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 100 mL/MN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1332	14.20	7.93	2443	21	2.80	107.3	200	5.85
1335	15.23	7.90	2294	7	1.87	104.3	500	6.12
1338	15.43	7.88	2234	8	1.54	106.8	800	6.55
1341	15.57	7.87	2210	8	1.35	109.2	1100	6.75
1344	15.34	7.90	2200	7	1.28	108.2	1400	7.10
					MICRO 555P		Taken @	
								1440

Did well dewater? Yes No	Amount actually evacuated: 1400 mL
Sampling Time: 1350	Sampling Date: 12-14-09
Sample I.D.: 20-R2-013	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AK1	Client: TETRA TECH ALAMEDA PT
Sampler: FS	Date: 12-14-09
Well I.D.: ZVI-MW03A3	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 30.03	Depth to Water Pre: 4.91 Post: 6.03
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
942	14.37	7.53	1889	32	1.77	-40.0	200	5.06
945	14.91	7.57	1748	29	1.22	-257.1	500	5.51
948	15.19	7.60	1696	29	1.02	-266.0	800	5.58
951	15.23	7.60	1660	27	0.87	-268.4	1100	5.59
954	15.28	7.66	1628	25	0.86	-270.6	1400	5.62
					MICROSCOP		SAMPLED	@
						11:20		

Did well dewater? Yes (No)	Amount actually evacuated: 1400 mL
Sampling Time: 1000 MS/MSD	Sampling Date: 12-14-09
Sample I.D.: 20-R2-014	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE SCOPE
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AK1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-15-09
Well I.D.: ZV1-MW03B	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 40.02	Depth to Water Pre: 4.92 Post: 6.90
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 200 mL/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW. Observations
843	15.18	8.45	7465	11	4.07	186.0	200	5.32
846	15.49	8.33	7592	15	0.86	188.9	500	5.70
849	15.40	8.33	7604	19	0.74	193.5	800	5.93
852	14.74	8.36	7600	25	0.70	240.1	1100	6.08
855	14.84	8.37	7574	23	0.68	216.4	1400	6.35
858	14.71	8.39	7583	22	0.65	223.4	1700	6.57
					MICRO SCEP		TAKEN	@ 955

Did well dewater? Yes (No)	Amount actually evacuated: 1700
Sampling Time: 905	Sampling Date: 12-15-09
Sample I.D.: 20-R2-015	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214 - AK1	Client: TETRA TECH @ ALAMEDA PT
Sampler: FS	Date: 12-14-09
Well I.D.: ZV1 - MW03C	Well Diameter: 2 3 4 6 8 (3/4")
Total Well Depth: 49.68	Depth to Water Pre: 4.91 Post: 5.82
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1137	13.76	7.74	13.98	20	2.80	-274.4	200	5.00
1140	14.79	7.63	14.66	38	1.52	-252.2	500	5.45
1143	15.09	7.67	14.77	48	1.03	-249.5	800	6.84
1146	15.13	7.69	14.79	46	0.86	-252.7	1100	7.00
1149	14.31	7.69	14.87	42	0.88	-252.6	1400	7.10
						MICRO SEEP		
							SAMPLED	@ 1245
~~MICROSEEP SAMPLED @ 1155~~								

Did well dewater? Yes (No) Amount actually evacuated: 1400 mL

Sampling Time: 1155	Sampling Date: 12-14-09
Sample I.D.: 20-R2-016	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AK-1	Client: TETRA TECH
Sampler: IW	Date: 12/16/09
Well I.D.: ZV1-MW04A1	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 10.82	Depth to Water Pre: 3.54 Post: 3.86
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI SS6

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: Dedicated Tubing X New Tubing Other _____

Flow Rate: 50ml/min Pump Depth: 8.5'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
1048	13.88	7.10	949	133	8.22	-49.2	200	3.65
1051	13.92	7.23	940	138	8.21	-55.8	350	3.69
1054	13.92	7.32	934	130	8.16	-59.9	500	3.74
1057	13.92	7.37	931	128	8.10	-60.0	650	3.80
1100	13.91	7.39	928	126	8.11	-61.7	800	3.86
1130	MICROSEEP		SAMPLE	TAKEN				

Did well dewater? Yes No	Amount actually evacuated: 800ml
Sampling Time: 1110	Sampling Date: 12/16/09
Sample I.D.: 20-R2-017	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214 - AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 12-17-09
Well I.D.: ZV1 - MW04A2	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 20.11	Depth to Water Pre: 5.80 Post: 7.21
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1032	14.50	8.45	1714	58	1.63	74.5	200	6.35
1035	14.53	8.43	1800	59	1.15	90.9	500	6.47
1038	14.60	8.44	1816	59	1.00	98.0	800	6.61
1041	14.78	8.44	1827	59	0.92	105.3	1100	6.88
				MICRO		SSEP	TAKEN	@ 1200

Did well dewater? Yes (No) Amount actually evacuated: 1100 mL
Sampling Time: 1045 Sampling Date: 12-17-09
Sample I.D.: 20-B2-018 Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D (Other:) SEE COC
Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-NK-1	Client: TETRA TECH
Sampler: IW	Date: 12/16/09
Well I.D.: ZV1-MW04A3	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 30.24	Depth to Water Pre: 4.91 Post: 5.11
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: Dedicated Tubing X New Tubing Other _____

Flow Rate: 50ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
0930	13.10	7.29	2627	4	9.14	-19.0	200	4.95
0933	13.21	7.28	2558	4	9.05	-40.3	350	5.01
0936	13.34	7.27	2536	4	9.02	-42.1	500	5.05
0939	13.46	7.25	2566	3	9.00	-46.0	650	5.11
MICROSEEP SAMPLE TAKEN @ 1000								

Did well dewater? Yes No Amount actually evacuated: 650ml

Sampling Time: 0945 Sampling Date: 12/16/09

Sample I.D.: 20-RZ-019 Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214 - AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 12-17-09
Well I.D.: ZV1-MW04B	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 40.06	Depth to Water Pre: 8.33 Post: 10.18
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1206	14.66	8.87	7400	26	3.36	-61.2	200	8.20
1209	15.31	8.92	7622	10	1.06	-76.1	500	8.41
1212	15.55	8.94	7693	9	0.78	-85.8	800	8.65
1215	15.63	8.96	7766	8	0.63	-93.6	1100	8.89
1218	15.53	8.96	7777	7	0.53	-96.3	1400	9.05
					MICRO 5000		TAKEN	
							@ 1320	

Did well dewater? Yes (No)	Amount actually evacuated: 1400
Sampling Time: 1225	Sampling Date: 12-17-09
Sample I.D.: 20-R2-020	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-IW-1	Client: TETRA TECH
Sampler: IW	Date: 12/16/09
Well I.D.: ZVI-MW04L	Well Diameter: 2 3 4 6 8 1"
Total Well Depth: 49.25	Depth to Water Pre: 4.64 Post: ~~5.82~~ 5.96 IW
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump X Bladder Pump
Sampling Method: Dedicated Tubing X New Tubing Other

Flow Rate: 50ml/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
1318	16.00	7.80	17998	122	7.58	86.5	200	5.14
1321	15.98	7.82	18016	33	7.51	82.5	350	5.32
1324	16.11	7.84	18010	18	7.38	75.3	500	5.51
1327	16.20	7.85	17989	9	7.29	71.4	650	5.66
1330	16.28	7.86	17982	7	7.23	70.6	800	5.82
1333	16.30	7.86	17987	8	7.20	69.4	950	5.96
1440	MICROSEEP		SAMPLE	TAKEN.				

Did well dewater? Yes (No) Amount actually evacuated: ~~800ml~~ 950ml IW

Sampling Time: 1340 Sampling Date: 12/16/09

Sample I.D.: 20-RZ-021 Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214 - AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 12-17-09
Well I.D.: ZV1 - MW0542	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 20.05	Depth to Water Pre: 4.60 Post: 6.57
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
904	14.28	8.13	1050	6	1.43	59.3	200	5.08
907	14.46	8.08	1051	7	1.08	80.7	500	5.34
910	14.46	8.06	1053	6	0.80	96.5	800	5.60
913	14.20	8.05	1049	6	0.66	108.5	1100	6.89
916	14.23	8.04	1041	5	0.64	116.5	1400	6.18
919	14.14	8.05	1041	6	0.62	122.5	1700	6.31
					MICRO SCG		TAKEN	
							@ 1030	

Did well dewater? Yes (No)	Amount actually evacuated: 1700 mL
Sampling Time: 0930	Sampling Date: 12-17-09
Sample I.D.: 20-B2-022	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AK1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-15-09
Well I.D.: ZV1-MW05A3	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 30.11	Depth to Water Pre: 4.76 Post: 5.70
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 200 mL/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1315	15.73	7.58	2930	11	2.48	21.0	200	5.40
1318	16.01	7.37	2850	16	1.47	0.0	500	5.42
1321	16.24	7.20	2794	14	1.06	-13.6	800	5.45
1324	16.43	7.11	2772	14	0.83	-20.9	1100	5.55
1327	16.54	7.06	2760	13	0.74	-21.5	1400	5.65
					MICROSCOP		TAKEN	@ 1425

Did well dewater? Yes (No)	Amount actually evacuated: 1400
Sampling Time: 1335	Sampling Date: 12-15-09
Sample I.D.: 20-R2-023	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AK1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-15-09
Well I.D.: ZN1-MW05B	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 40.18	Depth to Water Pre: 4.75 Post: 8.06
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 200 mL/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1130	16.06	9.09	11.02	15	1.60	65.4	200	4.90
1133	16.53	9.10	12.07	14	0.76	92.0	500	5.41
1136	16.56	9.10	11.85	17	0.66	106.1	800	5.78
1139	16.54	9.11	11.73	16	0.60	110.1	1100	6.01
1142	16.44	9.11	11.62	16	0.56	111.4	1400	6.20
					MICRO SCOP		TAKEN	@
								1235

Did well dewater? Yes (No)	Amount actually evacuated: 1400 mL
Sampling Time: 1145	Sampling Date: 12-15-09
Sample I.D.: 20-R2-024	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214-AK1	Client: TETRA TECH @ ALEMEDA PT.
Sampler: FS	Date: 12-15-09
Well I.D.: ZV1-MW05C	Well Diameter: 2 3 4 6 8 3/4"
Total Well Depth: 48.82	Depth to Water Pre: 5.20 Post: 7.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 200 mL/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1013	14.89	8.49	14995	20	1.12	-79.1	200	5.20
1016	15.39	8.41	15997	22	0.54	-26.2	500	5.75
1019	15.57	8.39	16477	20	0.86	1.3	800	6.02
1022	15.77	8.40	16630	21	0.89	18.6	1100	6.31
1025	15.36	8.38	16,699	22	0.83	33.1	1400	6.41
1028	15.45	8.38	16676	27	0.78	33.7	1700	6.85
1031	15.66	8.38	16637	28	0.75	37.6	2000	7.02
1034	15.81	8.38	16639	31	0.70	41.6	2300	7.30
					MICRO SOSP		TAKEN	@ 1135

Did well dewater? Yes No	Amount actually evacuated: 2300 mL
Sampling Time: 1040	Sampling Date: 12-15-09
Sample I.D.: 20-R2-025	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRATECH
Sampler: AK	Date: 12/14/09
Well I.D.: 2V1-MW06A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 19.18	Depth to Water Pre: 4.94 Post: 7.29
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW: Observations	
1142	15.75	8.42	4890	110	8.60	-106.5	150	6.20	*
1145	16.13	8.44	4773	145	8.85	-105.6	300	6.40	*
1148	15.64	8.45	4704	160	9.10	-102.9	450	6.70	*
1151	15.42	8.46	7618	174	9.24	-101.5	600	6.78	*
1154	15.22	8.47	4604	185	9.38	-99.1	750	6.90	*
1157	15.17	8.48	4533	186	9.43	-97.6	900	7.08	
1200	15.21	8.49	4500	187	9.47	-95.8	1050	7.29	
MICROSEEP SAMPLED @				RAD					

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 1200	Sampling Date: 12/14/09
Sample I.D.: 20-R2-026	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

* AIR IN WATERLINE

20-R2-TB-001 @ 1205
20-R2-EB-001 @ 1305

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AKI	Client: TETRA TECH
Sampler: AK	Date: 12/15/09
Well I.D.: ZVI- MW06A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.24	Depth to Water Pre: 4.87 Post: 5.29
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
904	12.00	7.33	5303	19	2.71	-55.8	150	5.22
907	12.33	7.48	5954	30	2.39	-7.9	300	5.20
910	12.28	7.48	5953	33	2.14	2.5	450	5.20
913	12.43	7.46	5878	36	2.01	0.2	600	5.22
916	12.78	7.44	5708	42	1.82	-16.7	750	5.30
919	12.93	7.43	5609	41	1.71	-25.3	900	5.27
922	13.21	7.43	5548	45	1.66	-35.1	1050	5.29
MICROSEEP SAMPLED @ 925								

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 925	Sampling Date: 12/15/09
Sample I.D.: 20-RZ-027	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: ~~20-RZ-EB-002~~ @ ~~925~~ 1040 (AF)	Duplicate I.D.: 20-RZ-028 @ 925

20-RZ-TB-002 @ 900

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/14/09
Well I.D.: ZVI-MW06B	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 40.09	Depth to Water Pre: 5.35 Post:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml / MIN Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1405	16.39	8.27	6863	81	6.60	-122.0	150	5.90
1408	16.30	8.28	7044	31	7.14	-126.9	300	6.10
1411	16.18	8.28	7069	28	7.13	-128.5	450	6.18
1414	16.13	8.28	7086	25	7.18	-128.9	600	6.10
1417	15.56	8.28	7084	23	7.63	-128.2	750	6.35
1420	15.86	8.28	7010	23	7.81	-127.2	900	6.45
1423	16.08	8.29	7099	21	7.80	-127.8	1050	6.41
MICRO	SEEP	SAMPLED	@	1425				

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 1425	Sampling Date: 12/14/09
Sample I.D.: 20-RZ-029	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214 AK1	Client: TETRA TECH
Sampler: AK	Date: 12/14/09
Well I.D.: 2V1-MW06C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 48.77	Depth to Water Pre: 3.41 Post: 9.90
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 ml/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1008	16.74	7.64	16833	67	6.23	-100.6	150	8.25
1011	16.14	7.63	17093	45	6.66	-76.5	300	8.51
1014	16.65	7.63	16873	42	7.18	-72.6	450	8.82
1017	16.64	7.63	17174	41	6.93	-67.8	600	9.07
1020	16.36	7.63	17039	39	7.39	-61.6	750	9.30
1023	16.69	7.63	17023	38	7.28	-63.3	900	9.65
1026	17.15	7.63	17001	37	7.41	-65.8	1050	9.90
MICROSEEP SAMPLED @ 1030								

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 1030	Sampling Date: 12/14/09
Sample I.D.: 20-R2-030	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/17/09
Well I.D.: ZVI-MW07A2	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 19.93	Depth to Water Pre: 5.68 Post: 9.22
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50 ml/MIN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
923	13.15	8.56	2857	64	1.72	3.3	150	6.90
926	13.35	8.58	2862	40	1.43	-50.6	300	7.16
929	13.48	8.60	2868	32	1.18	-80.9	450	7.45
932	13.62	8.61	2869	24	1.04	-98.0	600	7.70
935	13.67	8.62	2873	19	0.98	-114.9	750	8.00
938	13.64	8.61	2876	21	0.87	-127.5	900	8.33
941	13.75	8.61	2871	20	0.81	-136.1	1050	8.63
944	13.79	8.61	2872	19	0.79	-140.1	1200	8.90
947	13.88	8.61	2870	19	0.74	-146.1	1350	9.22
MICRO SEEP		SAMPLED @		950				

Did well dewater? Yes No	Amount actually evacuated: 1350 ml
Sampling Time: ~~20~~ 950	Sampling Date: 12/17/09
Sample I.D.: 20-R2-031	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/17/09
Well I.D.: ZV1-MW07A3	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 30.02	Depth to Water Pre: 5.48 Post: 7.50
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 50 ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1314	15.95	7.12	3460	48	1.34	-88.4	150	6.60
1317	15.99	7.10	3404	41	1.06	-87.5	300	6.90
1320	16.05	7.09	3374	34	0.99	-90.4	450	7.10
1323	16.16	7.07	3381	29	0.96	-93.2	600	7.22
1326	16.32	7.05	3393	27	0.91	-97.7	750	7.39
1329	16.58	7.03	3400	26	0.87	-100.5	900	7.50
MICROSEEP		@	1330					

Did well dewater? Yes No	Amount actually evacuated: 900 ml
Sampling Time: 1330	Sampling Date: 12/17/09
Sample I.D.: 20-R2-032	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/17/09
Well I.D.: ZVI-MW07B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 40.27	Depth to Water Pre: 4.97 Post: 8.81
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: AK Dedicated Tubing New Tubing Other _____
Flow Rate: 350 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1107	16.03	8.07	7503	13	1.30	20.3	150	6.86
1110	16.30	8.00	7549	9	1.03	19.0	300	7.15
1113	16.34	8.02	7582	8	0.76	17.7	450	7.62
1116	16.35	8.03	7589	7	0.64	16.8	600	8.10
1119	16.30	8.03	7596	6	0.61	16.6	750	8.42
1122	16.46	8.03	7588	5	0.57	16.4	900	8.81
MICROSEEP SAMPLED @ 1125								

Did well dewater? Yes No	Amount actually evacuated: 900 ml
Sampling Time: 1125	Sampling Date: 12/17/09
Sample I.D.: 20-RZ-033	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AK1	Client: TETRA TECH
Sampler: AK	Date: 12/17/09
Well I.D.: ZVI-MW07C	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 50.50	Depth to Water Pre: 5.67 Post: 6.03
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 50 ml/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	PTW: Observations
1208	17.14	8.27	13180	9	1.18	-152.9	150	6.00
1211	17.02	8.26	13268	9	0.80	-158.0	300	6.05
1214	17.28	8.22	13363	6	0.57	-157.1	450	6.02
1217	17.14	8.19	13433	5	0.50	-159.1	600	6.03
MICROSEEPS		@	1220					

Did well dewater? Yes No	Amount actually evacuated: 600 ml
Sampling Time: 1220	Sampling Date: 12/17/09
Sample I.D.: 20-R2-034	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 09124AK1	Client: TETRA TECH
Sampler: AK	Date: 12/18/09
Well I.D.: D03-04	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: N/A	Depth to Water Pre: 5.04 Post: 5.04
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other ____

Flow Rate: 500 ml/min Pump Depth: DEDICATED/UNKNOWN

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW Observations
728	18.16	7.49	30015	24	0.52	131.0	1500	5.04
731	18.18	7.48	29556	4	0.42	64.0	3000	5.04
734	17.97	7.48	28585	3	0.39	42.1	4500	5.04
737	18.28	7.48	28088	3	0.36	26.4	6000	5.04
740	18.13	7.49	27289	2	0.35	11.8	7500	5.04
743	18.39	7.50	25460	1	0.33	-11.8	9000	5.04
746	18.25	7.46	23786	1	0.32	-8.9	10500	5.04
749	18.35	7.41	23826	1	0.31	-12.8	12000	5.04
752	18.13	7.32	23312	1	0.31	-18.1	13500	5.04
MICRO SEET		@	755					

Did well dewater? Yes (No) Amount actually evacuated: 13500 ml

Sampling Time: 755 Sampling Date: 12/18/09

Sample I.D.: 20-R2-035 Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091214AKC1	Client: TETRA TECH
Sampler: AKC	Date: 12/18/09
Well I.D.: 372-MW1	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: N/A	Depth to Water Pre: 3.80 Post: 3.90
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other ____

Flow Rate: 500 ml / MIN Pump Depth: DEDICATED PUMP / UNKNOWN

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
846	15.61	7.63	314	3	2.45	28.9	1500	3.90
849	15.52	7.52	313	3	2.41	31.4	3000	3.91
852	15.40	7.47	311	3	2.32	33.5	4500	3.90
855	15.24	7.45	311	3	2.27	34.4	6000	3.90
MICROSEEP		@	855					

Did well dewater? Yes (No) Amount actually evacuated: 6000 ml

Sampling Time: 855 Sampling Date: 12/18/09

Sample I.D.: 20-RZ-036 Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.:

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH @ ALAMEDA POINT				PROJECT NUMBER 091214-AK-1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	02D0577AI	12/16/09 0830	= 3900 µs →	= 3902 µs	YES	15.44	IW
			= 100% DO →	= 101.2 % DO	YES	15.05	IW
			= 7.00 = 10.00 pH → = 4.00	= 7.00 = 10.01 pH = 4.00	YES	15.25	IW
			= 244.0 mV @ 15.0° →	= 244.2 mV @ 15.30°	YES	15.30	IW
HACH 2100P	06030C0156U4	12/16/09 0840	= 20.0 = 100.0 NTU → = 800.0	= 20.0 = 99.0 NTU = 801.0	YES	—	IW
YSI 556	02D0577AI	12/16/09 1200	= 3900 µs →	3903 µs	YES	16.18	IW
			= 100% DO →	99.8% DO	YES	17.10	IW
			= 7.00 = 10.00 pH → = 4.00	= 3.99 = 7.00 pH = 9.98	YES	16.86	IW
			= 245.0 mV @ 16.0° →	245.0 mV @ 16.21°	YES	16.21	IW

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105 - AK1	Client: TETRATECH @ ALEMEDA PT.
Sampler: FS	Date: 01-06-10
Well I.D.: 2V1-MW01A1	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 11.14	Depth to Water Pre: 4.06 Post: 5.81
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 mL/min Pump Depth: 8.5'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW: (ft) Observations
1320	12.93	8.29	573	89	4.61	162	200	4.72
1323	13.73	7.89	551	72	4.15	209	500	4.92
1326	14.18	7.83	548	68	3.93	201	800	5.13
1329	14.15	7.87	548	72	4.62	-20	1100	5.16
1332	14.11	7.86	548	73	5.08	-34	1400	5.20
1335	14.10	7.83	549	72	4.94	80	1700	5.40
1338	14.13	7.81	549	72	4.69	255	2000	5.35
1341	14.40	7.80	549	86	3.86	282	2300	5.30
1344	14.60	7.77	551	90	3.56	309	2600	5.31
1347	14.70	7.76	552	95	3.39	315	2900	5.33
1350	14.71	7.75	554	92	3.31	323	3200	5.35

BUBB IN H_2O LINE

Did well dewater? Yes (No)	Amount actually evacuated: 3200 mL
Sampling Time: 1400	Sampling Date: 01-06-10
Sample I.D.: 20-R3-001	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105 - AK 1	Client: TETRATECH @ ALEMEDA PT.
Sampler: FS	Date: 01-06-10
Well I.D.: ZV1 - MW - 01A2	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 20.35	Depth to Water Pre: 5.21 Post: 8.90
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	Observations
1221	15.39	8.96	2796	>1000	0.52	-109	200	5.41
1224	15.83	9.00	2587	>1000	0.35	-153	500	6.10
1227	15.99	9.02	2459	>1000	0.27	-175	800	6.55
1230	16.15	9.02	2397	>1000	0.25	-192	1100	6.90
1233	16.07	9.02	2370	>1000	0.23	-196	1400	7.09
1236	15.61	9.02	2346	>1000	0.21	-198	1700	7.30

Did well dewater? Yes (No)	Amount actually evacuated: 1700 mL
Sampling Time: 1240	Sampling Date: 01-06-10
Sample I.D.: 20-R3-002	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT
Sampler: FS	Date: 01-07-10
Well I.D.: ZVI-MW01A3	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 30.40	Depth to Water Pre: 5.40 Post: 7.60
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump ~~Peristaltic Pump~~ (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other
Flow Rate: 100 mL/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW: (ft) Observations
1111	13.49	7.17	3763	14	2.05	-10	200	5.71
1114	13.69	7.15	3284	17	1.49	-2	500	5.92
1117	14.03	7.14	2934	18	1.24	6	800	6.11
1120	14.17	7.14	2800	15	1.20	19	1100	6.23
1123	14.13	7.13	2674	14	1.59	26	1400	6.34
1126	14.33	7.12	2610	13	1.97	33	1700	6.46
1129	14.47	7.11	2540	14	1.79	28	2000	6.53
1132	14.66	7.11	2524	9	1.62	23	2300	6.64

Did well dewater? Yes (No)	Amount actually evacuated: 2300 mL
Sampling Time: 1140	Sampling Date: 01-07-10
Sample I.D.: 20-R3-003	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT
Sampler: FS	Date: 01-07-10
Well I.D.: ZV1-MW01B	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 39.47	Depth to Water Pre: 5.20 Post: 9.53
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump ~~Peristaltic Pump~~ (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 100 mL/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	PTW: (ft) Observations
0901	12.33	8.31	7565	10	4.35	236	200	5.30
0904	13.00	8.31	7505	14	3.70	236	500	5.61
0907	13.38	8.32	7530	19	3.65	233	800	5.90
0910	13.64	8.32	7533	21	3.52	231	1100	6.30
0913	13.86	8.32	7532	20	3.52	231	1400	6.58
~~0916~~ FS							~~1700~~ FS	

Did well dewater? Yes (No)	Amount actually evacuated: 1400
Sampling Time: 0920	Sampling Date: 01-07-10
Sample I.D.: 20-R3-004	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT
Sampler: FS	Date: 01-07-10
Well I.D.: ZVI-MW01C	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 49.70	Depth to Water Pre: 5.50 Post: 12.20
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump ~~Peristaltic Pump~~ (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 100 mL/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW: (ft) Observations
1256	12.85	7.54	16.21	12	4.80	-103	200	5.68
1259	13.78	7.71	17.05	8	1.50	-60	500	6.86
1302	14.27	7.78	17.16	8	1.17	10	800	7.05
1305	14.29	7.79	17.22	10	0.96	47	1100	7.41
1308	13.96	7.79	17.28	8	0.89	78	1400	7.72
1311	13.64	7.79	17.32	9	0.89	94	1700	7.97
1314	13.53	7.79	17.23	10	0.83	112	2000	8.23
1317	13.82	7.78	17.16	10	0.86	127	2300	8.47
1320	14.24	7.79	17.11	9	0.85	141.5	2600	8.65
1323	14.35	7.79	17.25	9	0.84	156	2900	8.76
		CONTINUED		PAGE	2			

Did well dewater? Yes ~~No~~	Amount actually evacuated: 3800 ml
Sampling Time: NEXT PAGE	Sampling Date: 01-07-10
Sample I.D.: 20-R3-005	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT
Sampler: FS	Date: 01-07-10
Well I.D.: ZVI-MW01C (CONT)	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 49.70	Depth to Water Pre: 5.50 Post: 12.20
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump ~~Peristaltic Pump~~ (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other
Flow Rate: 100 mL/MIN Pump Depth: 45

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
CONTINUED FROM PAGE 1								
1326	14.51	7.80	17.28	8	0.80	173	3200	8.85
1329	14.70	7.81	17.29	8	0.83	183	3500	9.01
1332	14.60	7.81	17.34	8	0.82	192	3800	9.15

Did well dewater? Yes (No)	Amount actually evacuated: 3800 mL
Sampling Time: 1340	Sampling Date: 01-07-10
Sample I.D.: 20-R3-005	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT
Sampler: FS	Date: 01-07-10
Well I.D.: ZVI-MW01D	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 59.70	Depth to Water Pre: 5.60 Post: 15.15
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump ~~Peristaltic Pump~~ (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 100 mL/min Pump Depth: 55'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1004	11.42	7.40	20.79	13	4.12	57	200	5.05
1007	13.33	7.08	22.71	6	1.61	-10	500	5.59
1010	13.84	6.97	23.65	9	1.38	-1	800	6.20
1013	13.81	7.01	23.81	21	1.23	-8	1100	6.95
1016	13.94	7.04	23.03	13	1.19	-14	1400	7.82
1019	14.15	7.06	22.90	8	1.10	-18	1700	8.51

Did well dewater? Yes (No)	Amount actually evacuated: 1700
Sampling Time: 1030	Sampling Date: 01-07-10
Sample I.D.: 20-R3-006	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105AK1	Client: TETRA TECH
Sampler: AK	Date: 1/7/10
Well I.D.: ZVI-MW02AZ	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 20.28	Depth to Water Pre: 4.92 Post: 6.89
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW: Observations
1125	11.84	8.88	3203	12	2.06	17.8	150	6.00
1128	12.25	8.93	3167	4	1.61	12.4	300	6.30
1131	12.40	8.96	3152	4	1.30	8.1	450	6.56
1134	12.46	8.96	3133	4	1.10	5.7	600	6.70
1137	12.48	8.95	3127	3	1.00	4.0	750	6.89

Did well dewater? Yes (No)	Amount actually evacuated: 750 ml
Sampling Time: 1140	Sampling Date: 1/7/10
Sample I.D.: 20-R3-007	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105AK1	Client: TETRA TECH
Sampler: AK	Date: 1/8/10
Well I.D.: 2V1-MW02A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.13	Depth to Water Pre: 4.54 Post: 5.87
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing ~~New Tubing~~ Other

Flow Rate: 50 ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
945	11.68	7.36	3256	10	1.95	-47.4	150	5.52
948	11.72	7.43	3276	10	1.77	-63.0	300	5.60
951	11.68	7.46	3274	8	1.69	-67.4	450	5.74
954	11.64	7.49	3264	7	1.62	-67.8	600	5.87

Did well dewater? Yes (No)	Amount actually evacuated: 600 ml
Sampling Time: 955	Sampling Date: 1/8/10
Sample I.D.: 20-R3-008	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

20-R3-TB-004 @ 800

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105AK1	Client: TETRA TECH
Sampler: AK	Date: 1/7/10
Well I.D.: ZV1-MW02B	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 39.96	Depth to Water Pre: 4.74 Post: 7.41
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW! Observations
1016	14.48	8.95	7642	143	3.49	-23.6	300	6.40
1019	14.33	9.25	7729	119	1.07	-27.7	600	6.78
1022	14.48	9.31	7747	96	0.95	-28.7	900	6.82
1025	14.55	9.37	7744	69	0.80	-29.2	1200	7.00
1028	14.72	9.38	7764	61	0.74	-29.8	1500	7.12
1031	14.63	9.36	7767	47	0.69	-30.0	1800	7.18
1034	14.62	9.35	7787	40	0.67	-30.7	2100	7.28
1037	14.40	9.36	7821	39	0.64	-31.3	2400	7.34
1040	14.33	9.36	7817	37	0.61	-31.5	2700	7.41

Did well dewater? Yes (No)	Amount actually evacuated: 2700 ml
Sampling Time: 1040	Sampling Date: 1/7/10
Sample I.D.: 20-R3-009	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: 20-R3-EB-003 @ 930	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105AK1	Client: TETRA TECH
Sampler: AK	Date: 1/7/10
Well I.D.: ZVI-MW02C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: ~~50.02~~ 49.89 AE	Depth to Water Pre: 3.84 Post: 8.81
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 481 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 ml/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW! Observations
1321	12.05	8.91	.16540	11	2.66	-132.0	150	6.42
1324	12.08	8.97	17041	14	2.34	-113.9	300	6.80
1327	12.16	8.97	17255	13	1.88	-95.6	450	7.10
1330	12.06	8.97	17318	16	1.70	-83.1	600	7.40
1333	12.12	8.94	17260	13	1.63	-74.1	750	7.68
1336	12.24	8.88	17226	12	1.55	-66.1	900	7.99
1339	12.21	8.91	17283	12	1.47	-59.3	1050	8.24
1342	12.30	8.83	17263	11	1.39	-54.0	1200	8.50
1345	12.34	8.84	17310	11	1.34	-50.1	1350	8.81

Did well dewater? Yes (No) Amount actually evacuated: 1350 ml

Sampling Time: 1345 Sampling Date: 1/7/10

Sample I.D.: 20-R3-010 (MS/MSD) Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 01-05-10
Well I.D.: ZV1-MW03A2	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 20.20	Depth to Water Pre: 4.95 Post: 9.35
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 mL/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW ft. Observations
901	12.32	7.97	2242	7	5.33	205.4	200	5.50
904	13.77	7.38	2124	5	1.14	320.5	500	6.20
907	14.03	7.27	2119	5	1.00	369	800	6.61
910	14.26	7.43	2119	4	0.83	323	1100	7.05
913	14.27	7.32	2119	3	0.79	348	1400	7.51
916	14.22	7.45	2118	3	0.74	341	1700	7.92
919	14.28	7.37	2116	4	0.73	344	2000	8.28

Did well dewater? Yes (No)	Amount actually evacuated: 2000
Sampling Time: 925	Sampling Date: 01-05-10
Sample I.D.: 20-23-011	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 01-05-10
Well I.D.: ZV1-MW03A3	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 30.05	Depth to Water Pre: 4.90 Post: 5.80
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 100 mL/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1003	12.78	6.35	1727	12	1.88	9.3	200	5.40
1006	14.08	6.23	1926	18	1.00	-19.8	500	5.52
1009	14.10	6.23	1906	20	1.03	-2.9	800	5.66
1012	14.15	6.24	1799	21	1.67	17.0	1100	5.69
1015	14.20	6.33	1690	12	1.76	63.3	1400	5.74
1018	14.28	6.39	1640	11	1.64	81.4	1700	5.74
1021	14.23	6.39	1610	11	1.56	134.3	2000	5.75
1024	14.36	6.40	1588	11	1.45	131.6	2300	5.76
1027	14.31	6.35	1570	10	1.36	124	2600	5.77

Did well dewater? Yes No	Amount actually evacuated: 2600 mL
Sampling Time: 1030	Sampling Date: 01-05-10
Sample I.D.: 20-R3-012	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 01-05-10
Well I.D.: ZV1-MW03B	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 40.82	Depth to Water Pre: 4.98 Post: 7.91
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 100 mL/MIN Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: (ft) Observations
1218	13.10	7.44	8293	9	3.55	230	200	5.15
1221	13.61	7.45	7981	9	1.57	315	500	5.42
1224	13.94	7.50	7820	7	1.15	324	800	5.80
1227	14.18	7.55	7730	10	0.94	317	1100	6.05
1230	14.28	7.60	7697	11	0.92	326	1400	6.38

Did well dewater? Yes (No)	Amount actually evacuated: 1400
Sampling Time: 1240	Sampling Date: 01-05-10
Sample I.D.: 20-R3-013	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 01-05-10
Well I.D.: ZVI-MW03C	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 49.61	Depth to Water Pre: 5.39 Post: 8.71
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: ft Observations
1105	12.43	6.49	14333	11	2.79	-86.8	200	5.45
1108	12.92	6.42	15100	20	1.33	-87.3	500	6.33
1111	13.10	6.27	15316	23	1.16	-59.2	800	6.72
1114	13.11	6.24	15400	24	0.99	-38.2	1100	7.14
1117	13.13	6.21	15429	23	0.86	-31.2	1400	7.35
1120	13.15	6.22	15444	24	0.83	-29.4	1700	7.61

Did well dewater? Yes (No)	Amount actually evacuated: 1700
Sampling Time: 1130	Sampling Date: 01-05-10
Sample I.D.: 20-R3-014	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105AK1	Client: TETRA TECH
Sampler: AK	Date: 1/6/10
Well I.D.: 2V1-MW04A1	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 10.80	Depth to Water Pre: 3.59 Post: 4.22
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 50 ml/min Pump Depth: 9'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1305	13.30	8.08	1807	17	1.74	-136.0	150	4.19
1308	14.02	8.25	1626	14	1.38	-138.3	300	4.21
1311	14.24	8.30	1532	14	1.22	-140.9	450	4.24
1314	14.45	8.31	1482	14	1.00	-142.5	600	4.22
1317	14.76	8.30	1428	14	0.89	-143.7	750	4.23
1320	14.89	8.31	1411	14	0.83	-147.2	900	4.20
1323	14.67	8.31	1390	14	0.78	-147.0	1050	4.22

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 1325	Sampling Date: 1/6/10
Sample I.D.: 20-R3-015	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105AK1	Client: TETRA TECH
Sampler: AK	Date: 1/6/10
Well I.D.: ZV1-MW04A2	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 20.24	Depth to Water Pre: 5.23 Post: 8.40
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: (AM) ~~15'~~ YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
842	11.81	9.15	1927	103	2.02	144.7	150	6.40
845	12.05	9.34	1973	107	1.86	126.5	300	6.67
848	12.52	9.39	1987	109	1.64	113.7	450	7.05
851	12.59	9.41	2001	108	1.49	97.9	600	7.40
854	12.59	9.40	2006	105	1.39	89.7	750	7.62
857	12.31	9.36	2013	105	1.39	81.4	900	7.81
900	11.68	9.38	2019	105	1.45	75.0	1050	7.97
903	11.20	9.38	2014	104	1.38	69.1	1200	8.18
906	11.06	9.37	2011	104	1.36	65.4	1350	8.40

Did well dewater? Yes (No)	Amount actually evacuated: 1350 ml
Sampling Time: 910	Sampling Date: 1/6/10
Sample I.D.: 20-R3-016	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 10010SAK1	Client: TETRA TECH
Sampler: AK	Date: 1/7/10
Well I.D.: ZV1-MW04A3	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 30.22	Depth to Water Pre: 4.60 Post: 5.23
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 50 ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
859	13.23	7.06	2430	26	1.99	72.3	150	5.20
902	13.71	7.20	2443	19	1.71	-3.1	300	5.23
905	14.09	7.21	2436	12	1.71	-53.2	450	5.22
908	14.12	7.23	2441	10	2.09	-71.0	600	5.20
911	14.32	7.13	2439	9	2.11	-72.1	750	5.22
914	14.40	7.14	2435	8	2.10	-74.2	900	5.23

Did well dewater? Yes (No)	Amount actually evacuated: 900 ml
Sampling Time: 915	Sampling Date: 1/7/10
Sample I.D.: 20-R3-017	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

20-R3-TB-003 @ 855

LOW FLOW WELL MONITORING DATA SHEET

Project #: ~~1005~~ 100105ACI (AC)	Client: TETRA TECH
Sampler: AC	Date: 1/6/10
Well I.D.: 2VI-MW04B	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 40.18	Depth to Water Pre: 8.08 Post: 10.37
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml / min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW! Observations
1008	12.90	9.64	16735	8	1.40	-159.4	150	9.08
1011	12.93	9.76	19533	3	1.00	-124.7	300	9.27
1014	12.85	9.80	19591	4	0.91	-102.0	450	9.60
1017	12.80	9.76	19251	3	0.85	-87.3	600	9.86
1020	12.85	9.77	18882	2	0.83	-75.7	750	10.02
1023	12.82	9.77	18532	2	0.80	-68.2	900	10.18
1026	12.95	9.78	18058	2	0.71	-66.1	1050	10.37

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 1030	Sampling Date: 1/6/10
Sample I.D.: 20-R3-018	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: 20-R3-EB~~002~~ @ 950	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105AK1	Client: TETRA TECH
Sampler: AK	Date: 1/6/10
Well I.D.: ZU1-MW04C	Well Diameter: 2 3 4 6 8 (1)
Total Well Depth: 49.30	Depth to Water Pre: 3.70 Post: 10.05
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other_____
Flow Rate: 100 ml/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (ml))	DTW: Observations
1154	14.92	8.88	18692	71	1.20	-103.1	300	7.68
1157	15.00	8.79	18465	52	0.94	-122.5	600	8.71
1200	14.88	8.76	18415	33	0.85	-132.2	900	9.42
1230	14.52	8.72	18462	32	0.86	-131.8	1200	9.74
1233	13.92	8.70	18412	32	0.91	-127.1	1500	10.05

Did well dewater? Yes (No)	Amount actually evacuated: 1500 ml
Sampling Time: 1235	Sampling Date: 1/6/10
Sample I.D.: 20-R3-019	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105AK1	Client: TETRA TECH
Sampler: AK	Date: 1/5/10
Well I.D.: 2VI-MW05A2	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 19.21	Depth to Water Pre: 5.89 Post: 8.36
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW: Observations
1127	13.78	10.84	1019	5	1.70	-53.9	150	6.89
1130	14.35	10.74	1010	5	1.30	-72.2	300	7.02
1133	14.48	10.70	1002	4	1.05	-93.7	450	7.42
1136	14.52	10.69	1000	4	1.09	-104.0	600	7.60
1139	14.94	10.54	1000	4	0.87	-114.1	750	7.87
1142	14.90	10.52	1002	4	0.84	-122.1	900	8.12
1145	14.86	10.44	1001	4	0.89	-123.9	1050	8.36

Did well dewater? Yes (No)	Amount actually evacuated: 1050 ml
Sampling Time: 1145	Sampling Date: 1/5/10
Sample I.D.: 20-R3-20	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105AK1	Client: TETRA TECH
Sampler: AK	Date: 1/5/10
Well I.D.: ZV1-MW05A3	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 30.22	Depth to Water Pre: 4.40 Post: 6.75
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 100 ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW Observations
1004	13.72	9.23	3765	30	3.18	-114.7	300	5.53
1007	14.22	9.29	3290	5	2.80	-96.0	600	5.71
1010	14.26	9.18	3107	4	2.51	-78.0	900	5.94
1013	14.10	9.01	3035	3	2.16	-72.5	1200	6.05
1016	14.01	8.91	3012	3	2.10	-70.8	1500	6.19
1019	14.30	8.77	3000	3	2.41	-70.2	1800	6.33
1022	14.44	8.62	3035	2	2.70	-76.7	2100	6.47
1025	14.47	8.60	3070	2	2.64	-76.3	2400	6.60
1028	14.64	8.52	3094	2	2.44	-73.1	2700	6.75

Did well dewater? Yes No	Amount actually evacuated: 2700 ml
Sampling Time: 1030	Sampling Date: 1/5/10
Sample I.D.: 20-R3-021	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: 20-R3-EB-009 @ 950	Duplicate I.D.: 20-R3-022

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105AK1	Client: TETRA TECH
Sampler: AK	Date: 1/5/10
Well I.D.: ZV1-MW05B	Well Diameter: 2 3 4 6 8 (1.5)
Total Well Depth: 40.30	Depth to Water Pre: 4.24 Post: 8.10
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 50 ml/MIN Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1311	15.51	12.16	11488	3	1.91	-58.4	150	5.50
1314	15.33	11.89	11289	3	1.14	-116.9	300	5.80
1317	15.24	11.75	11140	3	1.00	-153.1	450	6.09
1320	15.04	11.58	11093	2	0.96	-164.6	600	6.41
1323	14.73	11.46	11020	2	0.89	-164.1	750	6.70
1326	14.82	11.27	10974	2	0.88	-159.2	900	7.01
1329	14.85	11.20	10983	2	0.90	-154.4	1050	7.29
1332	14.82	11.11	11008	2	0.89	-150.3	1200	7.60
1335	14.54	11.09	11049	2	0.90	-147.9	1350	7.88
1338	14.40	11.04	11044	2	0.87	-143.1	1500	8.10

Did well dewater? Yes (No)	Amount actually evacuated: 1500 ml
Sampling Time: 1340	Sampling Date: 1/5/10
Sample I.D.: 20-R3-023	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time:	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105AK1	Client: TETRA TECH
Sampler: AK	Date: 1/5/10
Well I.D.: ZU1-MW05C	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 48.76	Depth to Water Pre: 3.59 Post: 8.57
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 ml/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW Observations
912	15.02	9.73	13843	40	1.59	-227.6	300	7.42
915	15.52	9.76	14068	32	1.44	-231.6	600	7.71
918	15.99	9.73	14250	42	1.37	-235.5	900	8.02
921	15.82	9.75	14346	44	1.30	-238.7	1200	8.30
924	15.93	9.76	14373	45	1.31	-239.5	1500	8.57

Did well dewater? Yes (No)	Amount actually evacuated: 1500 ml
Sampling Time: 925	Sampling Date: 1/5/10
Sample I.D.: 20-R3-024	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

20-R3-TB-001 @ 900

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 01-06-10
Well I.D.: ZV1-MW-06A2	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 19.06	Depth to Water Pre: 5.13 Post: 9.43
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 mL/MIN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: (ft) Observations
950	12.96	8.80	3423	111	1.45	-15	200	5.75
953	13.59	8.77	3303	113	1.10	-4	500	6.02
956	14.17	8.74	3204	112	0.81	10	800	6.30
959	14.11	8.73	3153	113	0.72	22	1100	6.43
1002	14.39	8.72	3122	110	0.58	26	1400	6.63
1005	14.56	8.71	3108	112	0.55	32	1700	7.40

Did well dewater? Yes (No)	Amount actually evacuated: 1700
Sampling Time: 1010	Sampling Date: 01-06-10
Sample I.D.: 20-R3-025	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 01-05-10
Well I.D.: ZV1-MW06A3	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 30.02	Depth to Water Pre: 5.12 Post: 5.92
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 100 mL/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1318	15.20	6.36	3382	39	1.60	-9	200	5.55
1321	15.50	6.21	3360	19	1.10	-1	500	5.66
1324	15.82	6.21	3202	17	0.85	-3	800	5.75
1327	16.05	6.29	3108	13	0.69	-9	1100	5.77
1330	16.11	6.30	30x64	12	0.74	-3	1400	5.80
1333	16.10	6.30	3038	12	0.93	3	1700	5.82

Did well dewater? Yes No	Amount actually evacuated: 1700
Sampling Time: 1340	Sampling Date: 01-05-10
Sample I.D.: 20-R3-026	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT.
Sampler: FS	Date: 01-06-10
Well I.D.: ZV1-MW06B	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 39.93	Depth to Water Pre: 5.30 Post: 8.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 100 mL/MIN Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: ft Observations
0836	13.15	8.11	6641	24	1.77	190	200	5.51
0839	13.48	8.16	6645	26	1.46	140	500	5.74
0842	13.72	8.20	6677	28	1.24	81	800	6.02
0845	13.65	8.21	6697	23	1.10	42	1100	6.21
0848	13.63	8.20	6698	21	1.01	16	1400	6.41
0851	13.57	8.17	6694	20	0.97	9	1700	6.62
0854	13.89	8.14	6660	16	0.86	-22	2000	6.81
0857	13.88	8.12	6677	15	0.80	-40	2300	6.94
0900	13.91	8.12	6673	16	0.74	-42	2600	7.06
0903	13.93	8.12	6675	9	0.76	-49	2900	7.12

Did well dewater? Yes (No)	Amount actually evacuated: 2900
Sampling Time: 910	Sampling Date: 01-06-10
Sample I.D.: 20-23-027	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALEMEDA PT
Sampler: FS	Date: 01-06-10
Well I.D.: ZVI-MW06C	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 48.68	Depth to Water Pre: 5.50 Post: 13.72
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: (ft) Observations
1048	12.54	7.42	11.28	32	4.90	-144	200	5.80
1051	14.48	7.59	15.11	38	0.98	-100	500	6.30
1054	14.55	7.57	16.45	34	0.89	-89	800	6.75
1057	14.70	7.57	16.66	36	0.73	-87	1100	7.22
1100	14.60	7.57	16.72	35	0.72	-82	1400	7.74
~~1403~~ FS								

Did well dewater? Yes (No)	Amount actually evacuated: 1400
Sampling Time: 1105	Sampling Date: 01-06-10
Sample I.D.: 20-R3-028	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT
Sampler: FS	Date: 01-08-10
Well I.D.: ZV1-MW07A2	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 19.81	Depth to Water Pre: 5.38 Post: 10.82
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump ~~Peristaltic Pump~~ (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other
Flow Rate: 100 mL/MIN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW (ft) Observations
0915	12.08	8.71	2793	29	2.10	-87	200	6.11
0918	12.65	8.69	2778	30	1.40	-113	500	6.48
0921	12.97	8.69	2785	30	0.95	-165	800	6.89
0924	13.07	8.69	2790	27	0.73	-238	1100	7.33
0927	12.93	8.69	2794	24	0.59	-297	1400	7.70
0930	12.37	8.69	2806	24	0.58	-316	1700	8.05
0933	12.12	8.69	2798	22	0.53	-326	2000	8.18
0936	12.06	8.69	2790	23	0.53	-333	2300	8.35

Did well dewater? Yes (No)	Amount actually evacuated: 2300
Sampling Time: 940	Sampling Date: 01-08-10
Sample I.D.: 20-R3-029	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20-R3-030

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT
Sampler: FS	Date: 01-08-10
Well I.D.: ZV1-MW07A3	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 29.73	Depth to Water Pre: 5.80 Post: 8.05
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump ~~Peristaltic Pump~~ (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 100 mL/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	Observations
807	10.82	6.99	3516	13	4.03	-3	200	6.13
810	11.87	7.18	4651	8	2.05	-22	500	6.28
813	11.76	7.16	4775	7	1.40	-54	800	6.43
816	11.55	7.12	4694	7	1.29	-84	1100	6.59
819	11.75	7.09	4600	8	1.26	-102	1400	6.73
822	11.86	7.06	4498	8	1.35	-120	1700	6.83
825	12.02	7.04	4399	8	2.22	-136	2000	6.94
828	12.02	7.04	4310	9	2.32	-153	2300	7.08
831	12.19	7.05	4230	9	2.07	-163	2600	7.10
834	12.25	7.06	4203	9	1.79	-172	2900	7.13

Did well dewater? Yes (No)	Amount actually evacuated: 2900
Sampling Time: 840	Sampling Date: 01-08-10
Sample I.D.: 20-R3-031	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105-AK1	Client: TETRA TECH @ ALAMEDA PT
Sampler: FS	Date: 01-08-10
Well I.D.: ZV1-MW07B	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 40.00	Depth to Water Pre: 5.58 Post: 8.83
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump ~~Peristaltic Pump~~ (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other
Flow Rate: 100 mL/MIN Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	Observations
1029	11.34	8.31	6788	12	4.04	-43	200	5.78
1032	11.28	8.31	7065	8	3.54	-40	500	5.85
1035	11.29	8.30	7073	7	3.23	-35	800	6.06
1038	10.77	8.27	7278	7	3.31	-22	1100	6.27
1041	11.01	8.31	7715	5	3.06	-18	1400	6.41
1044	11.02	8.34	7859	4	1.71	-12	1700	6.52
1047	11.13	8.34	7854	6	1.52	-10	2000	6.64
1050	11.31	8.34	7831	4	1.43	-9	2300	6.75

Did well dewater? Yes (No)	Amount actually evacuated: 2300 mL
Sampling Time: 1100	Sampling Date: 01-08-10
Sample I.D.: 20-R3-032	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105 AKI	Client: TETRA TECH
Sampler: AK	Date: 1/8/10
Well I.D.: 2U1-MW07C	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 50.50	Depth to Water Pre: 5.70 Post: 6.28
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 552

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 100 ml/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
1104	15.06	8.50	11785	7	1.29	-147.5	300	6.30
1107	14.87	8.43	12063	6	0.78	-159.3	600	6.29
1110	14.81	8.39	12099	6	0.71	-160.8	900	6.30
1113	14.68	8.36	12126	6	0.66	-163.0	1200	6.28

Did well dewater? Yes No	Amount actually evacuated: 1200 ml
Sampling Time: 1115	Sampling Date: 1/8/10
Sample I.D.: 20-R3-0~~36~~ 033	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: 20-R3-EB-004 @ 1050	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105AC1	Client: TETRA TECH
Sampler: AC	Date: 1/8/10
Well I.D.: D03-04	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: PUMP IN WELL	Depth to Water Pre: 5.12 Post: 5.14
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump — Peristaltic Pump — (Bladder Pump)
Sampling Method: Dedicated Tubing — (New Tubing) — Other ____
Flow Rate: 500 ml/min — Pump Depth: UNKNOWN (DEDICATED)

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (ml))	DTW Observations
1148	17.89	7.30	27458	4	0.35	-91.0	1500	5.12
1151	18.16	7.23	27099	3	0.27	-99.3	3000	5.13
1154	18.04	7.21	26784	3	0.23	-100.9	4500	5.13
1157	18.01	7.15	26035	2	0.22	-104.4	6000	5.12
1200	18.11	7.24	24743	2	0.21	-113.9	7500	5.14
1203	18.02	7.25	24227	1	0.24	-115.7	9000	5.13
1206	18.30	7.24	24109	1	0.22	-117.7	10500	5.14

Did well dewater? Yes (No)	Amount actually evacuated: 10500
Sampling Time: 1210	Sampling Date: 1/8/10
Sample I.D.: 20-R3-034 (MS/MSD)	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100105AK1	Client: TETRA TECH
Sampler: AK	Date: 1/8/10
Well I.D.: 372-MW1	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: PUMP IN WELL	Depth to Water Pre: 3.78 Post: 4.54
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other DEDICATED B. PUMP
Flow Rate: 500 ml / MIN Pump Depth: UNKNOWN

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW: Observations
840	15.40	7.25	217	23	3.62	3.4	1500	4.00
843	15.17	7.23	217	13	3.57	6.5	3000	4.26
846	15.08	7.15	216	5	3.59	12.6	4500	4.54

Did well dewater? Yes (No)	Amount actually evacuated: 4500
Sampling Time: 850	Sampling Date: 1/8/10
Sample I.D.: 20-R3-035	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20-R3-036

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH @ ALAMEDA POINT				PROJECT NUMBER ~~100104AK1~~ 100105AK1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	06F1302AT ~~05K1408AF~~	1/5/10 ~~1/04/10~~ 630	PH 7.0 4.0 10.0	10.01 7.07, 4.00	YES	13.12	AC
			CONDUCTIVITY 3900	3752	3901	12.11	AC
			DO 100.0%	92.7	101.1	10.91	AC
			ORP 247	240	247	13.17	AC
		1/5/10 ~~1/04/10~~	PH 7.0 4.0 10.0	7.0 4.01 10.01	YES	15.12	AC
			CONDUCTIVITY 3900	3899	YES	15.39	AC
			DO 100.0%	101.2	100.1	11.12	AC
			ORP 244	241.7	244	15.14	AC

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH @ ALAMEDA POINT				PROJECT NUMBER 100105AK1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	06F1362 AT	1/6/10 @ 645	ORP 244	234.7	244.0	14.61	AK
↓	↓	↓	PH 7.0 4.0 10.0	7.85 4.06 10.0	7.0 3.99 10.00	14.59	AK
			CONDUCTIVITY 3900	4057	3900	14.52	AK
			DO 100%	104.9	100.5	14.38	AK
↓	↓	1/6/10 @ 1135	ORP 244	246.6	244	15.15	AK
		↓	PH 7.0 4.0 10.0	6.96 4.01 10.00	YES	15.62	AK
			DO 100%	100.0	YES	13.72	AK
↓	↓	↓	CONDUCTIVITY 3900	3902	3900	15.45	AK

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH @ ALAMEDA POINT				PROJECT NUMBER 100105AK1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	06F1362AT	1/7/10 @ 645	ORP 244.0	245.5	244.0	14.98	AK
↓	↓	↓	PH 7.0 4.0 10.0	7.04 3.86 9.70	7.00 4.00 9.94	14.90	AK
↓	↓	↓	CONDUCTIVITY 3900	4007	3900	14.81	AK
↓	↓	↓	DO 100.0%	80.1	100.3	14.58	AK
↓	↓	1130	ORP 244.0	244.9	244.0	15.15	AK
↓	↓	↓	PH 7.0 4.0 10.0	7.01 4.05 9.95	7.0 4.0 10.0	15.25	AK
↓	↓	↓	CONDUCTIVITY 3900	3905	3901	15.14	AK
↓	↓	↓	DO 100%	100.2	99.9	12.54	AK

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH @ ALAMEDA Rr				PROJECT NUMBER 100105AK1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	06F1362AT ~~YSI 556~~ (02)	18/10@ 625	ORP 244	243.7	244.0	14.74	AK
↓	↓	↓	PH 7.0 4.0 10.0	7.42 4.00 9.97	7.00 4.00 9.99	14.71	AK
			CONDUCTIVITY 3900	3963	3900	14.70	AK
			DO 100%	117.6	100.1	14.42	AK

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH @ ALAMEDA PT.				PROJECT NUMBER 100105 – AK1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP. °C	INITIALS
YSI 556	05K1408	01-05-10 / 815	pH 4.0 7.0 10.0	3.83 6.89 10.68	YES	11.70	FS
↓	↓	" / 810	D.O. 100% ORP 247 mV	81.7 % 249 mV	YES	10.84 12.79	FS
↓	↓	" / 805	CONDUCTIVITY 3900 µS	3869 µS	YES	12.21	FS
TURBIDITY METER	06060C017121	" / 818	NTU 5/60/580	NTU 5/58/581	YES	—	FS
YSI 556	05K1408	" / 1140	pH 4.0/7.0/10.0 CONDUCTIVITY 3900µS → 3880µS	3.95/7.02/10.11	YES YES	13.15 °C 12.95	FS
↓	↓	" / 1145	ORP 245 mV D.O. 100%	244.1 mV 97.1 %	YES YES	14.02 13.28 °C	FS
↓	↓	01-06-10 / 652	DO: 100% CONDUCTIVITY 3900µS	109 % 3889 µS	YES YES	15.57° 15.27	FS FS
↓	↓	" / 700	pH. 4.0 7.0 10.0 ORP 244 mV	3.84/7.06/9.84 249.5	YES YES	15.44 14.83	FS FS
YSI 556	↓	/ 1200	pH 4.0 7.0 10.0 ORP 244 mV COND. 3900 µS DO 100%	pH 4.05/7.02/10.11 ORP 245.1 COND. 3889 µS DO 152%	YES	15.95 16.01	FS
↓	↓	01-07-10 / 635	pH 4.0/7.0/10.0 COND. 3900µS	4.01/7.03/9.99 3973	YES	16.26 16.18	FS
↓	↓	" / 645	DO 100% ORP mV	88.6 % mV	YES YES	16.03 15.83	FS

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH @ ALAMEDA PT				PROJECT NUMBER 100105-AK1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	05K1408	01-07-10 / 1150	pH 4.0 7.0 10.0	4.02/7.11 10.05	YES	14.11	FS
↓	↓	" / 1153	D.O. 100% ORP 244 mV	92% 244.1 mV	YES YES	14.21 14.75	FS
↓	↓	" / 1157	CONDUCTIVITY 3900 µS	3891 µS	YES	14.51	FS
↓	↓	01-08-10 / 626	pH 4.0/7.0/10.0 ORP 247 mV	3.94/7.04/10.02 237 mV	YES YES	16.47 16.31	FS FS
↓	↓	" / 634	CONDUCTIVITY 3900µS D.O. 100%	3982 µS 102.3 %	YES YES	16.23 15.79	FS FS

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: IW	Date: 2/17/10
Well I.D.: ZVI-MW01A1	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 11.22	Depth to Water Pre: 3.35 Post: 4.90
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 100ml/min Pump Depth: 8.5'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
1054	17.47	7.71	675	>1000	2.77	-57.5	200	4.45
1057	16.85	7.56	635	>1000	1.44	-58.5	500	4.62
1100	17.07	7.47	616	824	1.23	-55.0	800	4.74
1103	17.09	7.46	610	658	1.19	-51.7	1100	4.80
1106	17.23	7.48	603	535	1.08	-48.7	1400	4.82
1109	17.48	7.49	602	518	1.05	-45.9	1700	4.86
1112	17.60	7.49	597	513	1.02	-44.4	2000	4.90
1230	MICROSEEP SAMPLE TAKEN.							

Did well dewater? Yes No	Amount actually evacuated: 2000 ml
Sampling Time: 1120	Sampling Date: 2/17/10
Sample I.D.: 20-R4-001	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: IW	Date: 2/16/10
Well I.D.: ZVI-MW01A2	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 20.35	Depth to Water Pre: 4.67 Post: 7.19
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other
Flow Rate: 100 ml/min Pump Depth: 151

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (ml))	DTW (ft) Observations
1333	20.12	8.25	2936	792	1.61	-276.2	200	5.01
1336	19.09	8.11	2651	>1000	0.48	-294.6	500	5.15
1339	18.63	8.08	2612	>1000	0.31	-313.9	800	5.67
1342	18.59	8.15	2607	>1000	0.28	-320.5	1100	6.03
1345	18.60	8.18	2608	>1000	0.27	-322.7	1400	6.22
1348	18.60	8.24	2608	>1000	0.25	-328.0	1700	6.38
1351	18.52	8.24	2607	>1000	0.27	-329.1	2000	6.57
1354	18.50	8.23	2607	>1000	0.26	-330.9	2300	6.77
1357	18.52	8.22	2605	>1000	0.23	-332.6	2600	6.98
1400	18.57	8.20	2602	>1000	0.23	-334.7	2900	7.19

* SAMPLED AFTER 10 READINGS PER CLIENT + HISTORY OF HIGH TURBIDITY *

Did well dewater? Yes (No)	Amount actually evacuated: 2900 ml
Sampling Time: 1410	Sampling Date: 2/16/10
Sample I.D.: 20-R4-002	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICROSEEP SAMPLE TAKEN @ 1450

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: IW	Date: 2/17/10
Well I.D.: ZVI-MW01A3	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 30.46	Depth to Water Pre: 4.98 Post: 5.84
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 100ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
0943	15.40	6.89	2952	11	1.45	-122.1	200	5.27
0946	15.18	6.83	2875	7	1.10	-115.8	500	5.46
0949	15.11	6.82	2844	6	0.99	-112.5	800	5.56
0952	15.16	6.81	2826	5	0.96	-109.1	1100	5.84
1040	MILRUSEEP		SAMPLE	TAKEN.				

Did well dewater? Yes No	Amount actually evacuated: 1100ml
Sampling Time: 1000	Sampling Date: 2/17/10
Sample I.D.: 20-R4-003	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: IW	Date: 2/16/10
Well I.D.: ZVI-MW01B	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 39.50	Depth to Water Pre: 5.04 Post: 6.99
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 100ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW (ft) Observations
1223	17.76	7.87	8126	6	2.09	-197.6	200	5.41
1226	17.44	7.78	7906	5	1.59	-195.4	500	5.84
1229	17.39	7.72	7836	4	1.49	-194.2	800	6.26
1232	17.60	7.69	7826	4	1.42	-194.0	1100	6.61
1235	17.66	7.65	7819	3	1.37	-191.3	1400	6.99
1320	MICROSEEP SAMPLE TAKEN.							

Did well dewater? Yes No	Amount actually evacuated: 1400ml
Sampling Time: 1240	Sampling Date: 2/16/10
Sample I.D.: 20-R4-004	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20-R4-005 @ 1250

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: IW	Date: 2/17/10
Well I.D.: ZVI-MW016	Well Diameter: 2 3 4 6 8 1"
Total Well Depth: 49.80	Depth to Water Pre: 5.02 Post: 9.00
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 100ml/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
0823	15.83	7.18	18,374	26	1.41	-140.1	200	5.51
0826	15.87	7.24	18,461	18	1.10	-158.9	500	6.53
0829	15.36	7.27	18,451	22	0.98	-181.2	800	7.22
0832	15.69	7.31	18411	14	0.86	-206.6	1100	7.81
0835	15.59	7.33	18478	9	0.84	-215.6	1400	8.26
0838	15.25	7.33	18509	8	0.83	-218.8	1700	8.49
0841	15.09	7.34	18,496	6	0.82	-220.6	2000	9.00
0940	MICROSCOP SAMPLE TAKEN.							

Did well dewater? Yes No	Amount actually evacuated: 2000 ml
Sampling Time: 0850	Sampling Date: 2/17/10
Sample I.D.: 20-R4-006	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: IW	Date: 2/16/10
Well I.D.: ZVI-MW01D	Well Diameter: 2 3 4 6 8 1"
Total Well Depth: 59.65	Depth to Water Pre: 5.02 Post: 9.16
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 100ml/min Pump Depth: 55'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW (ft) Observations
1052	17.91	7.62	18,818	8	2.07	-259.1	200	6.08
1055	17.31	6.89	22442	19	2.67	-241.0	500	6.74
1058	17.53	6.86	22516	10	0.96	-253.8	800	7.36
1101	17.66	6.92	22517	7	0.77	-269.7	1100	8.04
1104	17.63	6.94	22525	8	0.62	-272.1	1400	8.52
1107	17.74	6.96	22533	7	0.61	-274.5	1700	9.16
1220	MICROSEEP	SAMPLE	TAKEN.					

Did well dewater? Yes No	Amount actually evacuated: 1700 ml
Sampling Time: 1120	Sampling Date: 2/16/10
Sample I.D.: ~~20-R4-008IW~~ 20-R4-007	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.: 20-R4-008 @ 1130

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: IW	Date: 2/16/10
Well I.D.: ZVI-MW02A2	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 20.24	Depth to Water Pre: 4.23 Post: 5.46
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 100 ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW (ft) Observations
0924	16.32	8.26	3099	5	1.24	129.3	200	4.75
0927	16.43	8.32	3103	6	1.01	118.9	500	5.12
0930	16.26	8.31	3100	4	0.99	116.9	800	5.23
0933	16.24	8.31	3097	4	0.94	113.9	1100	5.46
1020	MICROSEEP SAMPLE TAKEN.							

Did well dewater? Yes No	Amount actually evacuated: 1100 ml
Sampling Time: 0940	Sampling Date: 2/16/10
Sample I.D.: 20-R4-009	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215 - FS1	Client: TETRATECH AT ALAMEDA POINT
Sampler: IW	Date: 2/15/10
Well I.D.: ZV1-MW02A3	Well Diameter: 2 3 4 6 8 1.5'
Total Well Depth: 30.04	Depth to Water Pre: 4.90 Post: 7.16
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW (ft) Observations
1152	19.16	7.41	3375	38	5.22	-43.8	200	5.02
1155	18.76	6.67	3244	56	1.34	-49.1	500	
1158	18.83	6.51	3236	58	1.18	-52.9	800	
1201	18.87	6.48	3232	52	1.08	-54.2	1100	
1204	18.86	6.25	3225	43	0.92	-57.4	1400	
1207	18.93	6.28	3227	41	0.88	-60.3	1700	
1210	18.89	6.32	3229	31	0.87	-61.0	2000	
1213	18.98	6.43	3223	32	0.79	-62.9	2300	
1216	19.01	6.48	3224	30	0.77	-64.1	2600	
1219	19.01	6.48	3222	31	0.73	-63.4	2900	7.16
1300	MICROSCOP		SAMPLE	TAKEN.				

Did well dewater? Yes (No)	Amount actually evacuated: 2900ml
Sampling Time: 1225	Sampling Date: 2/15/10
Sample I.D.: 20-R2-010	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215 - FS1	Client: TETRATECH AT ALAMEDA POINT
Sampler: IW	Date: 2/15/10
Well I.D.: ZVI-MW02B	Well Diameter: 2 3 4 6 8 1.5'
Total Well Depth: ~~30.04~~ 40.40 IW	Depth to Water Pre: 5.31 Post: 6.18
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 mL/MIN Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
1346	19.27	8.17	7920	8	1.49	-80.0	200	5.48
1349	18.94	7.84	7929	5	0.84	-75.2	500	5.69
1352	18.58	7.86	7936	3	0.73	-73.9	800	5.84
1355	18.87	8.02	7922	3	0.67	-72.4	1100	6.00
1358	18.88	8.06	7928	3	0.60	-72.1	1400	6.09
1401	18.89	8.10	7928	4	0.60	-72.1	1700	6.18
~~1404~~ IW								
1500	MICROSEEP SAMPLE TAKEN.							

Did well dewater? Yes (No)	Amount actually evacuated: 1700 ml
Sampling Time: 1410	Sampling Date: 2/15/10
Sample I.D.: 20-R4-011	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: ~~20-R4-EB-001~~ @ Time 1450	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215 - FS1	Client: TETRATECH AT ALAMEDA POINT
Sampler: JW	Date: 2/15/10
Well I.D.: ZVI-MW02C	Well Diameter: 2 3 4 6 8 1
Total Well Depth: 49.73	Depth to Water Pre: 4.80 Post: 6.12
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW= (ft) Observations
0957	15.86	7.76	11,698	26	4.73	-248.1	200	4.52
1000	16.04	7.05	16,979	32	1.53	-182.7	500	4.69
1003	16.51	7.01	17,132	32	1.05	-209.5	800	4.88
1006	16.76	6.92	17,166	25	0.87	-223.3	1100	5.26
1009	16.91	6.87	17,208	23	0.80	-219.6	1400	5.44
1012	16.97	6.81	17,258	22	0.68	-218.3	1700	5.82
1015	16.90	6.78	17,263	22	0.61	-217.0	2000	6.12
1130	MICROSEEP	SAMPLE	TAKEN.					

Did well dewater? Yes (No) Amount actually evacuated: 2000ml
Sampling Time: 1020 Sampling Date: 2/15/10
Sample I.D.: 20-R4-012 Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D (Other:) SEE COC.
Equipment Blank I.D.: @ Time Duplicate I.D.: 20-R4-013 @ 1025

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: FS	Date: 2/18/10
Well I.D.: ZVI-MW03A2	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 20.23	Depth to Water Pre: 4.21 Post: 8.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/MIN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
958	13.68	8.54	2561	4	2.60	79.5	200	4.51
1001	13.72	8.53	2513	2	1.98	78	500	4.75
1004	13.72	8.51	2426	3	1.73	78	800	4.99
1007	13.67	8.52	2374	3	1.49	77	1100	5.23

Did well dewater? Yes (No)	Amount actually evacuated: 1100 mL
Sampling Time: 1010	Sampling Date: 2/18/10
Sample I.D.: 20-R4-014	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICROSEEP TAKEN @ 1120

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: FS	Date: 2/19/10
Well I.D.: ZVI-MW03A3	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 30.02	Depth to Water Pre: 4.40 Post: 4.50
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (ml))	D.T.W. Observations
855	14.31	7.36	2749	18	3.06	39	200	5.20
858	14.79	7.48	3176	11	2.00	-57	500	5.30
901	14.83	7.62	3194	10	1.99	-120	800	4.80
904	14.94	7.72	2999	9	2.48	-135	1100	4.82
907	14.89	7.72	2593	7	2.80	-133	1400	4.87
910	14.82	7.71	2345	7	2.70	-126	1700	4.90
913	14.96	7.65	1939	7	2.26	-101	2000	4.89
916	14.95	7.62	1870	6	2.12	-91	2300	4.84
919	14.95	7.61	1847	4	2.05	-85	2600	4.81

Did well dewater? Yes (No)	Amount actually evacuated: 2600 mL
Sampling Time: 930	Sampling Date: 2/19/10
Sample I.D.: 20-R4-015	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICROSCOP TAKEN @ 1010

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: FS	Date: 2/18/10
Well I.D.: ZVI-MW03B	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 40.00	Depth to Water Pre: 4.40 Post: 6.02
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW Observations
847	13.64	8.50	7913	4	3.86	155	200	4.52
850	14.14	8.68	9036	3	2.79	127	500	4.80
853	14.16	8.75	9056	3	1.95	107	800	4.99
856	14.11	8.76	8949	4	1.78	100	1100	5.22
859	14.09	8.76	8826	4	1.72	97	1400	5.36

Did well dewater? Yes (No)	Amount actually evacuated: 1400 mL
Sampling Time: 905	Sampling Date: 2/18/10
Sample I.D.: 20-R4-016	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICRO SEEP TAKEN @ 1000

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: FS	Date: 2/18/10
Well I.D.: ZVI-MW03C	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth:	Depth to Water Pre: 4.38 Post: 6.50
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 mL/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW. Observations
1137	14.46	8.19	15.3	5	3.57	-247	200	5.44
1140	14.50	8.13	15.5	20	1.49	-229	500	5.80
1143	14.59	8.03	15.6	25	1.26	-200	800	6.20
1146	14.52	8.01	15.7	28	1.22	-198	1100	6.37
1149	14.52	7.99	15.6	28	1.43	-200	1400	6.50

Did well dewater? Yes (No)	Amount actually evacuated: 1400
Sampling Time: 1200	Sampling Date: 2/18/10
Sample I.D.: 20-R4-017	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICROSEEP TAKEN @ 1300

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215 - FS1	Client: TETRATECH @ ALAMEDA POINT
Sampler: FS	Date: 2-17-10
Well I.D.: 2V1-MW04A1	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 10.80	Depth to Water Pre: 4.80 Post: 3.80
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/MIN Pump Depth: 8.5

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (ml))	DTW. Observations
1024	16.88	7.85	1354	9	1.38	-195.2	200	3.60
1027	16.77	7.88	1370	7	0.77	-206	500	3.62
1030	16.97	7.89	1373	7	0.63	-206	800	3.62
1033	17.05	7.89	~~1355~~ 1375	6	0.58	-205	1100	3.63
1036	17.65	7.88	1377	6	0.58	-204	1400	3.64

Did well dewater? Yes (No)	Amount actually evacuated: 1400 mL
Sampling Time: 1040	Sampling Date: 2-17-10
Sample I.D.: 20-R4-018	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICRO SEEP TAKON

@ 1140

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215 - FS1	Client: TETRATECH AT ALAMEDA POINT
Sampler: FS	Date: 2/16/10
Well I.D.: ZVI-MW04A2	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 19.95	Depth to Water Pre: 4.82 Post: 7.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 100 mL/MIN → 50 mL/MIN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1242	15.93	9.29	2180	35	1.78	-101	200	4.91
1245	15.99	9.23	2030	52	1.35	-85	500	5.60
1248	15.98	9.18	1939	48	0.99	-74	800	6.10
1251	15.99	8.75	1890	46	0.97	29	1100	6.21
1254	15.99	8.69	1883	45	0.94	15	1400 50 mL/MIN	6.45
1257	15.86	8.74	1856	44	0.82	2	1550	6.66
1300	15.66	8.74	1817	42	0.77	1	1700	6.85
1303	15.66	8.74	1805	41	0.80	1	1850	6.92

Did well dewater? Yes (No)	Amount actually evacuated: 1850 mL
Sampling Time: 1305	Sampling Date: 2/16/10
Sample I.D.: 20-RZ-019	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICRO SEEP
TAKEN @
1400

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: FS	Date: 2/17/10
Well I.D.: ZVI-MW04A3	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 30.17	Depth to Water Pre: 4.15 Post: 4.60
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW. Observations
858	14.21	8.02	3131	6	3.81	-248	200	4.50
901	14.89	8.18	4697	7	2.11	-229	500	4.51
904	14.99	8.13	4595	8	1.59	-246	800	4.55
907	14.88	8.11	4382	8	1.45	-255	1100	4.60
910	14.66	8.09	3961	10	1.43	-266	1400	4.60
913	14.70	8.04	3650	11	1.53	-278	1700	4.60
916	14.98	8.03	3509	11	1.79	-279	2000	4.60
919	15.15	8.00	3344	9	1.80	-283	2300	4.60
922	15.26	7.97	3245	9	1.74	-285	2600	4.60
925	15.27	7.96	3201	9	1.58	-288	2900	4.60

Did well dewater? Yes (No)	Amount actually evacuated: 2900 mL
Sampling Time: 930	Sampling Date: 2/17/10
Sample I.D.: 20-R4-20	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICROSEEP
TAKEN @ 1020

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215 - FS1	Client: TETRATECH AT ALAMEDA POINT
Sampler: FS	Date: 2/16/10
Well I.D.: ZV1-MW04B	Well Diameter: 2 3 4 6 8 (1.5')
Total Well Depth: 39.96	Depth to Water Pre: 7.27 Post: 7.99
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 mL/MIN Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW Observations
1058	16.25	10.11	8222	6	1.80	-302	200	7.32
1101	16.54	~~10.52~~ 10.11	9844	6	0.73	-274	500	7.51
1104	16.38	10.10	9890	7	0.72	-271	800	7.72
1107	16.30	10.08	9813	6	0.59	-267	1100	7.85
* ODOR DETECTED								

Did well dewater? Yes (No)	Amount actually evacuated: 1100 mL
Sampling Time: 1110	Sampling Date: 2/16/10
Sample I.D.: 20-RZ-021	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.: MS/MSD

MICRO SEEP
TAKEN @
1245

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: FS	Date: 2/16/10
Well I.D.: ZVI-MW04C	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 49.25	Depth to Water Pre: 4.80 Post: 7.49
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other

Flow Rate: 100 mL/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW. Observations
1401	16.62	7.94	17.9	14	3.35	46	200	5.40
1404	16.86	8.34	19.0	64	1.46	-45	500	5.90
1407	16.86	8.40	19.3	76	1.28	-73	800	6.30
1410	16.90	8.43	19.3	68	1.18	-88	1100	6.70
1413	16.94	8.40	19.3	74	1.00	-82	1400	6.97
1416	16.96	8.38	19.3	68	0.99	-75	1700	7.47

Did well dewater? Yes (No)	Amount actually evacuated: 1700 mL
Sampling Time: 1420	Sampling Date: 2/16/10
Sample I.D.: 20-R4-022	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICRO SEEP TAKEN @ 1515

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215 - FS1	Client: TETRATECH AT ALAMEDA POINT
Sampler: FS	Date: 2/15/10
Well I.D.: ZV1-MW05A2	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 19.90	Depth to Water Pre: 4.45 Post: 6.34
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/MIN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	Observations
1337	16.35	8.98	972	19	2.61	9	200	4.61
1340	16.39	8.30	995	19	1.60	70	500	4.92
1343	16.41	8.62	917	17	1.18	39	800	5.21
1346	16.46	8.67	873	16	0.86	32	1100	5.57
1349	16.71	8.70	850	16	0.66	29	1400	5.91
1352	16.77	8.72	840	15	0.62	27	1700	6.34

Did well dewater? Yes (No)	Amount actually evacuated: 1700 mL
Sampling Time: 1400	Sampling Date: 2/15/10
Sample I.D.: 20-RA-023	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215 - FS1	Client: TETRATECH AT ALAMEDA POINT
Sampler: FS	Date: 2/15/10
Well I.D.: ZV1-MW05A3	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 30.06	Depth to Water Pre: 3.99 Post: 5.55
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 100 mL/MIN Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1140	14.97	8.43	3574	17	4.19	-73	200	4.40
1143	15.09	8.22	3373	16	3.35	-66	500	4.65
1146	15.30	8.10	3172	17	3.11	-49	800	4.85
1149	15.43	8.04	3006	14	3.22	-32	1100	5.02
1152	15.68	7.99	2884	10	3.03	-18	1400	5.12
1155	15.78	7.95	2865	7	2.85	-12	1700	5.27
1158	15.84	7.91	28.67	6	2.52	-2	2000	5.35
1201	15.84	7.89	28.77	4	2.38	1	2300	5.41
1204	15.81	7.87	2962	4	2.24	4	2600	5.49
					MICROSEP		SAMPLED	@ 1258

Did well dewater? Yes No	Amount actually evacuated: 2600 mL
Sampling Time: 1210	Sampling Date: 2/15/10
Sample I.D.: 20-R4-024	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215 - FS1	Client: TETRATECH AT ALAMEDA POINT
Sampler: FS	Date: 2/16/10
Well I.D.: ZVI-MW05B	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 40.09	Depth to Water Pre: 4.40 Post: 6.60
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/MIN Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW Observations
924	15.16	9.14	10332	4	4.94	146	200	4.06
927	15.53	9.37	12405	3	2.71	53	500	4.49
930	15.56	9.63	12956	4	1.85	-48	800	4.92
933	15.42	9.71	12588	5	1.69	-79	1100	5.30
936	15.41	9.68	12161	4	1.56	-63	1400	5.66
939	15.58	9.63	11682	4	1.47	-40	1700	6.05
942	15.62	9.58	11,362	3	1.42	-18	2000	6.23
945	15.44	9.54	11254	3	1.41	-2	2300	6.40
948	15.41	9.50	10977	4	1.41	15	2600	6.57
951	15.45	9.49	10881	3	1.39	21	2900	6.58
954	15.48	9.48	10839	3	1.36	29	3200	6.61

Did well dewater? Yes (No)	Amount actually evacuated: 3200 mL
Sampling Time: 1000	Sampling Date: 2/16/10
Sample I.D.: 20-RA-025	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICROBEEP
TAKEN @ 1050

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215 - FS1	Client: TETRATECH AT ALAMEDA POINT
Sampler: FS	Date: 2/15/10
Well I.D.: ZVI-MW05C	Well Diameter: 2 3 4 6 8 ~~2"~~ 1"
Total Well Depth: 48.64	Depth to Water Pre: 5.15 Post: 9.99
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 100 mL/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Observations
1005	14.84	9.23	15038	13	2.35	-138	200	5.50
1008	15.72	9.16	16725	17	1.99	-100	500	6.25
1011	15.84	9.13	16942	19	1.79	-100	800	7.14
1014	16.08	9.39	16655	19	1.28	-143	1100	8.05
1017	16.02	9.55	15966	19	1.17	-169	1400	8.58
1020	16.06	9.60	15472	12	1.12	-184	1700	9.37
1023	15.93	9.61	15328	14	1.10	-195	2000	9.90
1026	16.03	9.61	15197	16	1.10	-200	2300	9.92
1029	16.22	9.61	15150	17	1.12	-205	2600	9.91
1032	16.49	9.58	15192	17	1.16	-210	2900	9.95
					MICRO SEEP TAKEN @ 1135			

Did well dewater? Yes No	Amount actually evacuated: 2900 mL
Sampling Time: 1035	Sampling Date: 2/15/10
Sample I.D.: 20-RZ-026	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: IW	Date: 2/18/10
Well I.D.: ZVI-MW06A2	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 19.18	Depth to Water Pre: 4.12 Post: 6.26
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Flow Rate: 100ml/min Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW (ft) Observations
1319	14.27	8.00	4160	31	2.09	-264.1	200	5.18
1322	14.51	7.90	4329	19	0.68	-286.2	500	5.57
1325	14.51	7.88	4350	19	0.54	-295.3	800	5.79
1328	14.46	7.88	4358	13	0.52	-300.0	1100	5.92
1331	14.34	7.87	4363	13	0.46	-302.1	1400	6.05
1334	14.30	7.86	4370	12	0.46	-304.4	1700	6.26
1500	MICROSEEP SAMPLE TAKEN.							

Did well dewater? Yes No	Amount actually evacuated: 1700ml
Sampling Time: 1340	Sampling Date: 2/18/10
Sample I.D.: 20-RH-027	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: IW	Date: 2/17/10
Well I.D.: ZVI-MW06A3	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 30.12	Depth to Water Pre: 4.42 Post: 5.01
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 100 ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
1320	20.16	7.01	2341	79	0.91	-297.6	200	4.96
1323	19.34	6.92	2347	14	0.62	-302.0	500	4.96
1326	19.35	6.89	2347	9	0.50	-306.6	800	4.98
1329	19.36	6.89	2350	6	0.44	-308.7	1100	5.00
1332	19.38	6.87	2353	8	0.42	-310.1	1400	5.01
1440	MICROSEEP SAMPLE TAKEN.							

Did well dewater? Yes No	Amount actually evacuated: 1400
Sampling Time: 1340	Sampling Date: 2/17/10
Sample I.D.: 20-R4-028	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: FS	Date: 2/19/10
Well I.D.: ZVI-MW06B	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 39.81	Depth to Water Pre: 4.70 Post: 10.44
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 mL/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW. Observations
1028	14.79	8.51	6167	5	5.20	-227	200	4.48
1031	15.23	9.07	7512	5	2.14	-229	500	4.69
1034	15.38	9.21	8926	7	1.85	-215	800	4.98
1037	15.36	9.18	9206	8	1.44	-179	1100	5.30
1040	15.45	9.18	9067	10	1.38	-178	1400	5.61
1043	15.43	9.19	8864	12	1.27	-195	1700	5.73
1046	15.45	9.20	8755	14	1.12	-207	2000	5.82
1049	15.50	9.20	8612	13	1.11	-215	2300	5.93

Did well dewater? Yes (NO)	Amount actually evacuated: 2300 mL
Sampling Time: 1100	Sampling Date: 2/19/10
Sample I.D.: 20-R4-029	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICROSCOP
TAKEN @ 1145

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: FS	Date: 2/19/10
Well I.D.: ZVI-MW06C	Well Diameter: 2 3 4 6 8 (1")
Total Well Depth: 48.31	Depth to Water Pre: 4.81 Post: 9.00
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____

Flow Rate: 100 mL/MIN Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1142	15.11	10.16	4540	35	3.53	-224	200	4.62
1145	15.25	8.53	12250	29	1.68	-253	500	5.21
1148	15.24	8.30	16217	29	1.20	-198	800	5.85
1151	15.25	8.18	17340	24	1.40	-163	1100	6.38
1154	15.27	8.14	17655	24	1.43	-155	1400	6.61
1157	1525	8.14	17681	25	1.50	-154	1700	6.85

Did well dewater? Yes (No)	Amount actually evacuated: 1700
Sampling Time: 1200	Sampling Date: 2/19/10
Sample I.D.: 20-R4-030	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICRO SOEP
TAKEN @ 1300

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: FS	Date: 2-17-10
Well I.D.: 2V1-MW07A2	Well Diameter: 2 3 4 6 8 (1.5")
Total Well Depth: 19.90	Depth to Water Pre: 4.40 Post: 7.14
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other _____
Flow Rate: 100 mL/MIN Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW. Observations
1247	16.22	8.54	2963	25	5.15	-71	200	5.42
1250	16.47	8.63	3103	22	1.59	-103	500	5.71
1253	16.54	8.64	3116	21	1.39	-109	800	5.88
1256	16.89	8.66	3116	21	1.07	-114	1100	5.98
1259	16.99	8.65	3120	20	0.95	-114	14 DD	6.02
1302	17.14	8.66	3125	21	0.88	-113	1700	6.08

Did well dewater? Yes (No)	Amount actually evacuated: 1700 mL
Sampling Time: 1310	Sampling Date: 2-17-10
Sample I.D.: 28-24-031	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other:) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.: MS/MSD

MICROSEEP TAKEN @ 1510

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: IW	Date: 2/18/10
Well I.D.: ZV1-MW07A3	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 29.80	Depth to Water Pre: 5.02 Post: 5.96
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____
Flow Rate: 100ml/min Pump Depth: 25'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW (ft) Observations
1131	14.28	7.37	3632	5	3.56	-240.1	200	5.31
1134	15.01	7.42	4530	9	1.30	-210.7	500	5.54
1137	15.05	7.42	4461	7	1.15	-214.5	800	5.70
1140	15.06	7.41	4413	6	1.03	-221.5	1100	5.84
1143	15.17	7.42	4425	4	0.96	-220.1	1400	5.91
1146	15.28	7.45	4429	4	0.92	-218.2	1700	5.96
1230	MICROSEEP	SAMPLE	TAKEN.					

Did well dewater? Yes No	Amount actually evacuated: 1700 ml
Sampling Time: 1150	Sampling Date: 2/18/10
Sample I.D.: 20-R4-032	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: IW	Date: 2/18/10
Well I.D.: ZV1-MW07B	Well Diameter: 2 3 4 6 8 1.5
Total Well Depth: 40.25	Depth to Water Pre: 4.93 Post: 5.82
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other _____

Flow Rate: 100ml/min Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	DTW (ft) Observations
1008	13.83	8.35	8355	9	4.47	6.4	200	5.41
1011	14.52	8.35	7945	8	2.21	9.2	500	5.53
1014	14.65	8.34	7837	6	1.77	10.1	800	5.68
1017	14.39	8.33	7824	6	1.63	15.9	1100	5.76
1020	14.21	8.33	7819	4	1.54	17.1	1400	5.82
1110	MICROSEEP SAMPLE TAKEN.							

Did well dewater? Yes No Amount actually evacuated: 1400 ml

Sampling Time: 1030 Sampling Date: 2/18/10

Sample I.D.: 20-R4-033 Laboratory: EMAX

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC.

Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: IW	Date: 2/18/10
Well I.D.: ZVI-MW07C	Well Diameter: 2 3 4 6 8 1.5"
Total Well Depth: 50.39	Depth to Water Pre: 5.25 Post: 5.56
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other
Flow Rate: 100 ml/min Pump Depth: 45'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW (ft) Observations
0857	13.96	8.26	13,170	2	2.37	204.8	200	5.48
0900	14.20	8.27	13,170	2	1.66	150.4	500	5.51
0903	14.34	8.29	13,172	3	1.43	125.4	800	5.52
0906	14.63	8.31	13,146	2	1.15	44.3	1100	5.53
0909	14.81	8.33	13,167	2	1.01	19.7	1400	5.55
0912	14.86	8.33	13,169	3	1.00	13.0	1700	5.56
0915	14.92	8.33	13,175	2	0.98	12.4	2000	5.56
1000								
~~0920~~	MICROSEEP		SAMPLE	TAKEN.				

Did well dewater? Yes No	Amount actually evacuated: 2000 ml
Sampling Time: 0920	Sampling Date: 2/18/10
Sample I.D.: 20-R4-034	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FB	Client: Tetra Tech @ Alameda Pt
Sampler: JD	Date: 2-19-10
Well I.D.: D03-04	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: pump @ 52'	Depth to Water Pre: 4.50 Post: 4.55
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: Dedicated Tubing (New Tubing) Other ____

Flow Rate: 100 mL/min Pump Depth: 52'

Time	Temp. (°C or °F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or (mL))	DTW/ Sol Observations
1055	16.38	7.47	23889	31	3.43	76.0	initial	4.56/15.73
1058	16.66	7.12	30571	28	1.72	76.4	300	4.55/19.18
1101	16.60	7.07	30964	26	0.91	74.5	600	4.55/19.30
1104	16.68	7.04	30942	25	0.72	71.1	900	4.55/19.30
1107	16.73	7.05	30980	24	0.60	68.2	1200	4.55/19.31
					Fe^{2+} 0.0 mg/L			

Did well dewater? Yes (No) Amount actually evacuated: 1200

Sampling Time: 1110 Sampling Date: 2-19-10

Sample I.D.: 20-R4-035 Laboratory: EMax

Analyzed for: TPH-G BTEX MTBE TPH-D Other: See COC

Equipment Blank I.D.: @ Time Duplicate I.D.:

MICRO SEEP
TAKEN @ 1200

LOW FLOW WELL MONITORING DATA SHEET

Project #: 100215-FS1	Client: TETRATECH @ ALAMEDA PT.
Sampler: FS	Date: 2-18-10
Well I.D.: 372-MW1	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 12.45	Depth to Water Pre: 2.81 Post: 3.10
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type: 751 556

Purge Method: 2" Grundfos Pump Peristaltic Pump (Bladder Pump)
Sampling Method: (Dedicated Tubing) New Tubing Other ____
Flow Rate: 100 mL/MIN Pump Depth: — PRE INSTALLED

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations
1129	14.63	7.71	247	25	2.61	-66	200	3.08
1132	14.56	7.61	246	21	1.74	-62	500	3.12
1135	14.47	7.59	245	10	1.60	-61	800	3.13
1138	14.44	7.58	245	8	1.56	-61	1100	3.14
1141	14.43	7.58	244	6	1.57	-61	1400	3.14

Did well dewater? Yes (No)	Amount actually evacuated: 1400 mL
Sampling Time: 1310	Sampling Date: 2-18-10
Sample I.D.: 20-RY-036	Laboratory: EMAX
Analyzed for: TPH-G BTEX MTBE TPH-D	(Other) SEE COC.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

MICRO SEEP TAKEN @ 1445

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH ALAMEDA PT.				PROJECT NUMBER 100215-FS7			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	10A101420	2-15-10 640	pH ~~4.0~~ 7.0 10.0 CONDUCTIVITY 3900 µS	~~4.17~~ 6.85/9.91 3740 µS	Yes Yes	15.47 16.17	FS
↓	↓	" 645	ORP 248 mV D.O. 100 %	ORP 244 mV 80.1 %	Yes Yes	15.79 15.21	FS
↓	↓	" 1330	D.O. 100% ORP 246	95% 245	Yes Yes	16.35 16.25	FS FS
↓	↓	" 1330	pH. 4.0 7.0 10.0 Cond. 3900 µS	4.05/7.11/10.02 3855 µS	Yes Yes	16.01 16.52	FS FS
HACH TURB METER	07060C02MA24	2-16-10 711	5-60-580 NTU	5-58-572	Yes	—	FS
YSI 556	10A101420	" 712	pH. 4.0/7.0/10.0 D.O. 100%	3.71/7.10/9.90 108 %	Yes Yes	17.93 17.43	FS
↓	↓	" 715	Cond. 3900 µS ORP 246 mV	4021 µS 240.5 mV	Yes Yes	18.43 18.39	FS
↓	↓	" 1230	pH 4.0/7.0/10.0 D.O. 100 %	4.07/7.26/10.10 90.1 %	Yes Yes	18.17 17.99	FS
↓	↓	" 1235	COND. 3900 µS ORP 240 mV	3815 µS 239.5 mV	Yes Yes	17.77 17.51	FS
↓	↓	2-17-10 830	pH 4.0/7.0/10.0 D.O. 100%	4.33/6.59/9.11 109.9 %	Yes Yes	15.71 14.98	FS FS
↓	↓	" 835	ORP 242 mV COND. 3900 µS	243.5 mV COND. 3783 µS	Yes Yes	16.65 16.81	FS FS

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME	TETRA TECH @ PT. ALAMEDA			PROJECT NUMBER	160217 - FS1		
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
481. 556	10A10 1420	2-17-10 / 1240	pH. 4.0 7.0 10.0 DO 100 %	4.16/7.24/9.72 90.2 %	YES YES	16.70 16.84	FS FS
↓	↓	" / 1243	ORP 242 mV COND 3900 µS	243.1 mV 3816 µS	YES YES	16.95 16.81	FS FS
↓	↓	2-18-10 / 810	pH 4.0/7.0/10.0 ORP 240 mV	4.18/7.03/9.21 ORP 240.8 mV	YES	16.77 17.71	FS
↓	↓	2-18-10 / 815	CONDUCTIVITY 3900 µS D.O. 100%	3976 µS 110.1%	YES YES	17.26 17.51	FS FS
↓	↓	2-19-10 / 830	pH. 4.0 7.0 10.0 D.O. 100%	4.02/9.99 7.02 103.1%	YES YES	16.01 17.04	FS
↓	↓	2-19-10 / 835	COND. 3900 µS ORP 240 mV	3877 µS 239.8 mV	YES YES	17.38 17.10	FS

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME Tetra tech @ Alameda PT				PROJECT NUMBER 100215-FS1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	09C101092	2-10-10 0800	7,10,4 340uS ORP 20%	7.02, 10.07, 328 3408 uS 243.4 D.O. 98%	yes	15C	JD

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME TETRA TECH @ ALAMEDA POINT				PROJECT NUMBER			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	09C101092	2/18/10 0805	=3900 µS →	3902 µS	YES	17.40	IW
			=100% DO →	100.2 %DO	YES	15.72	IW
			=7.00 =10.00 =4.00 pH →	=6.98 =10.00 =4.00 pH	YES	16.83	IW
			=243.0 mV @16.00° →	243.0 mV @16.12°	YES	16.12	IW
YSI 556	09C101092	2/18/10 1200	= 3900 µS →	3898 µS →	YES	15.22	IW
			=100% DO →	99.6 %DO	YES	16.01	IW
			=7.00 =10.00 =4.00 pH	=6.99 =10.02 =3.99 pH	YES	15.72	IW
			= 243.0 mV @16.00° →	243.2 @16.08°	YES	16.08	IW

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME				PROJECT NUMBER 100215-FS1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	09C101092	2/15/10 0826	= 3900 µs →	3898 µs	YES	15.30	IW
			= 100% DO →	100.6 % DO	YES	14.84	IW
			= 7.00 = 10.00 pH → = 4.00	= 7.00 = 10.01 pH = 4.02	YES	15.48	IW
			= 244.0 mV @ 15.00° →	= 244.2 mV @ 14.82°	YES	14.82	IW
YSI 556	09C101092	2/16/10 0815	= 3900 µs →	3902 µs	YES	14.39	IW
			= 100% DO →	100.1 % DO	YES	15.12	IW
			= 7.00 = 4.00 pH → = 10.00	= 6.99 = 4.00 pH = 9.98	YES	15.32	IW
			= 244.0 mV @ 15.00° →	244.2 mV @ 14.96°	YES	14.96	IW

APPENDIX G

DATA QUALITY ASSESSMENT

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APPENDIX G

DATA QUALITY ASSESSMENT

This data quality assessment was prepared to evaluate the implementation of the sampling and analysis procedures detailed in the Sampling and Analysis Plan (SAP) in Appendix A of the Work Plan for Removing Oil/Water Separator 163 and Conducting a Zero-Valent Iron Treatability Study at OU-2B, Alameda Point, Alameda, California (TtEC 2009).

The samples were analyzed by EMAX laboratory, a state of California-certified and Navy-evaluated laboratory. Subsequently, a third-party validation company (Laboratory Data Consultants, Inc.) performed data validation on all sample analyses except for waste characterization sample results. The validation was conducted in accordance with Environmental Work Instruction (EWI) #1, 3EN2.1, Chemical Data Validation (SWDIV 2001), the Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA 540/R-99/008 (EPA 1999), the Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA 540-R-0-/004 (EPA 2004), the Quality Systems Manual for Environmental Laboratories (DoD 2006), and the criteria specified in the SAP (TtEC 2009). Twenty percent of the samples were validated in accordance with a U.S. Environmental Protection Agency (EPA) Level IV-equivalent protocol. The remainder of the samples were validated with an EPA Level III-equivalent protocol.

In addition, specialty testing including microbiological and dissolved hydrogen analyses were analyzed by Microbial Insights and Microseeps. Because of the nature of this testing, third-party validation was not required, and therefore is not discussed in this section.

The summary tables of analytical results from the sampling activities are presented in Appendix A. The chain-of-custody records, laboratory analytical results, and data validation reports are included in Appendix B.

The following sections describe the fulfillment of the field quality control (QC) sampling objectives and analytical QC objectives for this project.

1.1 FIELD QUALITY CONTROL SAMPLING OBJECTIVES

In accordance with the SAP (TtEC 2009), field QC sampling objectives included the collection of field duplicates (1 per 10 post-excavation and groundwater monitoring well samples), matrix spike (MS)/matrix spike duplicates (MSDs) (1 per 20 samples), source blanks (1 per lot of source water from the laboratory used for equipment blank sample collection), equipment blanks (1 per day when non-disposable sampling equipment was used), and trip blanks (1 per cooler of water

samples for volatile analysis). For this project, all field QC sampling objectives were met as described in the following sections.

1.1.1 Field Duplicates

Field duplicates consist of two samples (an original and a duplicate) of the same matrix collected at the same time and location, to the extent possible, using the same sampling technique. The purpose of the field duplicate is to evaluate the precision of the overall sample collection and analysis process through the calculation of the relative percent difference (RPD) for duplicate pairs.

The RPD QC limit was established at 25 percent, and field duplicate pairs not meeting this criterion can be attributed to the following:

- Both the original and duplicate results are reported at low concentrations below or just above the quantitation limit, which can produce variability, leading to greater RPDs.
- One or both results are qualified as estimated, rejected, or not detected.

For the 16 field duplicates collected for this project (samples denoted as FD in the tables in Appendix A), RPDs were below the 25 percent criteria.

1.1.2 Matrix Spike and Matrix Spike Duplicate

MS/MSD samples are prepared for chemical analysis by spiking the samples with a known amount of a target analyte. Once the spike is added to the MS/MSD samples, the samples are carried through the complete sample preparation process along with the other samples in the batch. The percent recoveries (%R) for the MS/MSD samples are compared against each other and against the known amount of the spike to measure the accuracy of the analytical method. RPD values from the MS/MSD samples are calculated to evaluate the analytical precision of the method.

For the 10 MS/MSDs collected for this project, the %R and RPDs were within the specified QC limits described in the SAP (TtEC 2009) except for the following:

Sample ID	Analysis	Analyte
20-009	EPA 6020A	Antimony

This sample result was flagged “J/UJ” (estimated value) in the tables in Appendix A.

1.1.3 Source Blank

A source blank consists of analyte-free, reagent-grade water provided by the laboratory to be used for the collection of equipment blank samples. A source blank sample is collected for each lot of water from the laboratory in the event the laboratory does not certify the water clean (i.e., project analytes not detected above quantitation limits) prior to sending.

For this project, the laboratory water used for equipment blanks was certified clean; therefore, no source blank was collected for this project.

1.1.4 Equipment Blank

The equipment blank sample evaluates the effectiveness of the decontamination procedure and is required to be collected at a frequency of one per day if non-disposable sampling equipment is used. Equipment blank samples are analyte-free water collected from the final rinse during the decontamination process and analyzed for the same analytes as the original samples. Effective decontamination is validated when equipment blank results are not detected above the quantitation limits.

For the 17 equipment blanks collected for this project, no results were detected above the quantitation limits.

1.1.5 Trip Blanks

Trip blanks are prepared by the laboratory, carried into the field, and stored with groundwater samples for volatile analysis. Trip blanks are used to determine whether samples have been cross-contaminated with volatile organic compounds or gasoline compounds during sample collection and transportation to the laboratory. Trip blanks are provided in each cooler, which contain water samples for volatile analysis. No cross-contamination is validated when the trip blank results are not detected above the quantitation limits.

For the 29 trip blanks collected for this project, no results were detected above the quantitation limits.

1.2 ANALYTICAL DATA QUALITY OBJECTIVES

The following sections describe the fulfillment of the analytical data quality objectives for this project in terms of precision, accuracy, representativeness, completeness, and comparability parameters, as described in the SAP (TtEC 2009).

1.2.1 Precision and Accuracy

In accordance with the analytical methods, the Quality Systems Manual for Environmental Laboratories (DoD 2006), and the SAP (TtEC 2009) specifications, the following parameters

were assessed by the third-party validation company as applicable to the analyses and associated results were qualified when QC requirements were not achieved:

- Technical holding times and preservation
- Instrument performance checks
- Initial and continuing calibration verifications
- Method blanks
- Surrogates
- Laboratory control samples
- Internal standards
- Inductively coupled argon plasma (ICP) serial dilution
- Target compound identification
- Compound quantitation
- System performance

1.2.1.1 Technical Holding Times and Preservation

Sample holding times and preservation requirements were checked against QC criteria, and all QC requirements were met.

1.2.1.2 Instrument Performance Checks

Instrument performance checks were completed, and all QC requirements were met.

1.2.1.3 Initial and Continuing Calibration Verifications

Percent relative standard deviations (RSDs) and relative response factors (RRFs) of the initial calibration and percent differences (%D) of the continuing calibration met the QC requirement for all samples except as follows:

Sample ID	Analysis	Analyte
20-003	EPA 8081A	Endosulfan sulfate
20-004	EPA 8081A	Endosulfan sulfate
20-011	EPA 8081A	Endosulfan sulfate
20-R2-035	RSK 175	Acetylene
20-R2-036	RSK 175	Acetylene
20-009	EPA 8260B	Acetone 2-Hexanone 2-Butanone Methyl isobutyl ketone

Sample ID	Analysis	Analyte
20-R1-008	EPA 8260B	Chloromethane Chloroethane
20-R1-011	EPA 8260B	Chloromethane
20-R1-013	EPA 8260B	Chloroethane
20-R1-017	EPA 8260B	Chloroethane
20-R1-021	EPA 8260B	Chloromethane Chloroethane
20-R1-022	EPA 8260B	Chloroethane
20-R1-023	EPA 8260B	Chloromethane Chloroethane
20-R1-025	EPA 8260B	Chloroethane
20-R1-026	EPA 8260B	Chloroethane Chloromethane
20-R1-EB-002	EPA 8260B	Chloromethane
20-R1-EB-003	EPA 8260B	Chloroethane
20-R1-TB-002	EPA 8260B	Chloromethane
20-R1-TB-003	EPA 8260B	Chloroethane
20-R2-001	EPA 8260B	1,1,2-Trichloroethane
20-R2-002	EPA 8260B	1,1,2-Trichloroethane
20-R2-015	EPA 8260B	1,1,2,2-Tetrachloroethane
20-R2-019	EPA 8260B	Chloromethane
20-R2-021	EPA 8260B	Chloromethane
20-R2-024	EPA 8260B	1,1,2,2-Tetrachloroethane

These sample results were qualified as “J/UJ” (estimated value) in the tables in Appendix A.

1.2.1.4 Method Blanks

Sample concentrations were compared to concentrations detected in the method blanks. For sample concentrations either not detected or less than 5 times blank contaminant concentrations, associated results were flagged “U” (not detected). For sample concentrations detected but greater than 5 times blank contaminant concentrations, sample results were not affected.

For this project, the following analytes were qualified as “U” in the tables in Appendix A as a result of method blank contamination:

Sample ID	Analysis	Analyte
20-001	EPA 6020A	Thallium
20-002	EPA 6020A	Thallium
20-011	EPA 6020A	Thallium
20-R3-033	EPA 6020A	Iron, dissolved

Sample ID	Analysis	Analyte
20-006	EPA 8260B	Acetone
20-008	EPA 8260B	Acetone
20-011	EPA 8260B	Acetone

1.2.1.5 Surrogates

Surrogate percent recoveries were within QC limits for all applicable analyses except for the following:

Sample ID	Analysis	Analyte
20-AC-015	EPA 8260B	Tetrachloroethene Chloromethane Chloroethane 1,2-Dichloroethane 1,1,2-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,1-Trichloroethane
20-R2-EB-003	EPA 8260B	Tetrachloroethene 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dichloroethane Chloroethane Cis-1,2-Dichloroethene 1,1,1-Trichloroethane Trans-1,2-Dichloroethene Trichloroethene Vinyl Chloride Chloromethane
20-R2-023	EPA 8260B	Chloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene Chloromethane

These sample results were qualified as “J/UJ” (estimated value) in the tables in Appendix A.

1.2.1.6 Laboratory Control Samples

Laboratory control samples were within QC limits for all analyses.

1.2.1.7 Internal Standards

Internal standard area counts and retention times were within QC limits except for the following:

Sample ID	Analysis	Analyte
20-006	EPA 8260B	1,1,2,2-Tetrachloroethane Bromoform

These sample results were flagged "J/UJ" (estimated value) in the tables in Appendix A.

1.2.1.8 ICP Serial Dilution

ICP serial dilutions (applicable to metals analysis only) were within QC limits.

1.2.1.9 Target Compound Identification

All target analytes were correctly identified.

1.2.1.10 Compound Quantitation

Not applicable, since no pesticide analyses were performed for this event.

1.2.1.11 System Performance

System performance met all QC requirements, and no discrepancies were reported.

1.2.2 Representativeness

Representative data were obtained through selection of sampling locations and analytical parameters to meet the data quality objectives of this project. Proper collection and handling of samples and the use of established field and laboratory procedures as described in the SAP (TtEC 2009) were followed.

1.2.3 Completeness

The percent completeness is defined as the percentage of measurements that are judged to be valid. The completeness goal is to generate a sufficient amount of valid data to meet project objectives. Completeness is calculated and reported for each method, matrix, and analyte combination. The number of valid results divided by the number of possible individual analyte results, expressed as a percentage, determines the completeness of the data set. For completeness requirements, valid results are all results not qualified with an "R" flag for rejected. The requirement for completeness for this project is 95 percent.

The percent completeness for results for this project is 100 percent, thereby meeting the completeness goal for this project.

1.2.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. Sample data should be comparable with other measurements for similar samples and sample conditions. The objective for the quality assurance/QC program is to produce data with the greatest possible degree of comparability. The number of matrices that are sampled and the range of field conditions encountered are considered in determining comparability. Comparability is achieved for this project by using standard methods for sampling and analysis, reporting data in standard units, normalizing results to standard conditions, and using standard and comprehensive reporting formats.

1.3 OVERALL ASSESSMENT OF DATA

The data collected during field activities is valid and usable and has been qualified for analytical parameters that did not meet criteria as described above. All samples were collected in accordance to the criteria listed in the SAP (TtEC 2009), and all results were qualified based on guidelines described above. The analytes were found to be of appropriate quality to support the data evaluation detailed in this report.

1.4 REFERENCES

DoD (Department of Defense). 2006. Quality Systems Manual for Environmental Laboratories.

EPA (United States Environmental Protection Agency). 1999. Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA 540/R-99/008.

——————. 2004. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA 540-R-0-/004.

SWDIV (Southwest Division Naval Facilities Engineering Command). 2001. Environmental Work Instruction (EWI) #1, 3EN2.1, Chemical Data Validation.

TtEC (Tetra Tech EC, Inc.). 2009. Work Plan for Removing Oil/Water Separator 163 and Conducting a Zero-Valent Iron Treatability Study at OU-2B, Alameda Point, Alameda, California.

APPENDIX H

ZVI PERFORMANCE EVALUATION DATA ANALYSIS

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APPENDIX H

ZVI PERFORMANCE EVALUATION DATA ANALYSIS

The primary objective of the treatability study was to evaluate the effectiveness of zero-valent iron (ZVI) in reducing chlorinated volatile organic compounds (VOCs), particularly trichloroethene (TCE), in groundwater in a source reduction application. This appendix provides an evaluation of the performance of the ZVI injection conducted within the treatability study area.

In order to evaluate the effectiveness of the ZVI injections, four rounds of groundwater sampling were conducted at 31 monitoring wells installed prior to injection and at 2 existing monitoring wells (372-MW1 and D03-04). The sampling rounds were conducted approximately 1, 2, 6, and 12 weeks after injection completion.

The 33 monitoring locations were sampled and analyzed for chlorinated VOCs, dissolved metals and other cations, anions, total alkalinity, and dissolved gases. Additionally, field testing was used to measure pH, oxidation-reduction potential (ORP), and dissolved oxygen (DO). Analytical results of baseline and post-injection groundwater sampling are displayed in Appendix A, Table A4-1; results of monitoring of field parameters during sampling are presented in Appendix A, Table A4-2. Baseline concentrations of total chlorinated VOCs are shown on Figure 2-5. Injection locations and post-injection concentrations of total chlorinated VOCs in the treatability study area are shown on Figure 4-1.

Sections 1.1 through 1.4 present an evaluation of the technology performance with respect to the data quality objectives (DQOs) established in the Work Plan and are organized as follows:

- Section 1.1 – Effectiveness in Reducing Chlorinated VOCs
- Section 1.2 – Zone of Influence
- Section 1.3 – Contaminant Desorption/Displacement
- Section 1.4 – Secondary Groundwater Effects

1.1 EFFECTIVENESS IN REDUCING CHLORINATED VOCs

The primary contaminant of concern in the vicinity of Building 163 is TCE. Performance evaluation for reduction in TCE and other chlorinated VOCs was based on percent reduction in contaminant level from the baseline to concentrations reported in subsequent post-injection sampling rounds. Changes in chlorinated VOC concentrations were evaluated by comparing post-injection sampling data to baseline sampling data for each compound. When compounds were not detected at concentrations above laboratory reporting limits, a value of one-half the

reporting limit was used to evaluate changes in concentrations. At locations where field duplicate samples were taken, results from the sample with the maximum concentration were used.

1.1.1 Variability in Chlorinated VOC Concentrations

Baseline and post-injection sampling results revealed that significant variability exists in chlorinated VOC concentrations and other groundwater chemical data. Quantifying the magnitude of this variability was required to separate these effects from changes in concentrations that could objectively be attributed to ZVI injection. Estimates of variability can be evaluated by comparing variations in concentrations of chlorinated VOCs between subsequent monitoring well sampling rounds at locations outside of the planned treatment area. Temporal variations between subsequent sampling rounds at monitoring locations not likely to be within the zone of influence of the injection are presumed to be caused by natural variations in concentrations, or background variations.

Temporal variability was evaluated by comparing concentrations of chlorinated VOCs between ZVI monitoring well sampling rounds relative to baseline concentrations at locations outside of the planned treatment area: ZVI-MW05A2-C, ZVI-03A2-C, 372-MW1, and D03-04. Variations of up to 205 percent were noted in chlorinated VOC concentrations at these locations. Average variations for TCE, 1,1-dichloroethene (DCE), cis-1,2-DCE, and vinyl chloride (VC) were 74, 53, 205, and 67 percent, respectively. Average variability in all chlorinated VOC compounds was 68 percent. These variations indicate considerable uncertainty in chlorinated VOC concentrations in the vicinity of the treatment area. At the monitoring locations outside of the planned treatment area (10 depth intervals at monitoring wells ZVI-MW05A2-C, ZVI-03A2-C, 372-MW1, and D03-04), initial chlorinated VOC concentrations were very low, less than 250 micrograms per liter (µg/L) TCE at all 10 locations, with TCE concentrations of less than 10 µg/L at 7 of the 10 locations. See Appendix A for concentrations of all chlorinated VOCs and Table H-1 for changes in concentrations of key chlorinated VOC compounds. Average absolute variation from baseline concentrations was 12 µg/L at these locations, with a maximum variation of 70 µg/L.

1.1.2 Chlorinated VOC Results

Changes in concentrations of TCE, 1,1 DCE, cis-1,2-DCE, VC, and total VOCs (i.e., all chlorinated VOCs analyzed using U.S. Environmental Protection Agency Method 8260B) are summarized in Table H-1.

1.1.2.1 TCE Results

Post-injection sampling indicated a reduction in TCE from baseline concentrations at 7 of 33 monitoring locations: ZVI-MW03A3, ZVI-MW04A3, ZVI-MW06A2, ZVI-MW06B, ZVI-MW06C, ZVI-MW07A3, and ZVI-MW07C. Four additional monitoring locations showed TCE

reductions, but the change in concentration was less than the laboratory reporting limit for TCE. Concentrations at most of these locations were relatively low: less than 100 µg/L at all locations except ZVI-MW06A2 and ZVI-MW07A3. Reductions in TCE at these seven locations varied from 2.5 percent to 68 percent; all were less than the 74 percent variability in TCE noted at locations outside of the treatment area. All but one location, ZVI-MW06A2, showed less variability than the maximum absolute variation (70 µg/L) noted at locations outside the treatment area. Significantly, TCE concentrations decreased from 38,000 to 12,000 µg/L at this monitoring location. However, concentrations of other chlorinated VOCs, notably cis-1,2-DCE, increased at ZVI-MW06A2.

Increases in TCE were observed in 16 of 33 monitoring locations, notably at ZVI-MW01A2 from 1,600 to 2,000 µg/L; at ZVI-MW02A2 from 1,500 to 2,500 µg/L, and at ZVI-MW07A2 from 10,000 to 18,000 µg/L. Significantly, the largest observed increase in TCE (an increase of 8,000 µg/L at ZVI-MW07A2) during post-injection monitoring occurred at the same depth interval as the most significant decrease in TCE, the 10- to 20-foot below ground surface (bgs) interval.

TCE concentrations at the remaining 10 monitoring locations had no change or the change in concentration was less than the laboratory reporting limit.

1.1.2.2 Total Chlorinated VOC Results

Chlorinated VOCs at concentrations above laboratory reporting limits were reported at all monitoring locations except ZVI-MW01C, ZVI-MW01D, ZVI-MW04C, and 372-MW1. Post-injection sampling results indicate changes from baseline total chlorinated VOC concentrations varying from a 67 percent decrease at ZVI-MW03A3 to a 306 percent increase at ZVI-MW07C. Reductions in total chlorinated VOCs are indicated at 12 of 33 monitoring locations. The most significant reductions in total chlorinated VOCs were noted at monitoring points ZVI-MW06A2 and ZVI-MW06B, with reductions from 65,750 to 45,338 µg/L and from 5,889 to 4,790 µg/L, respectively.

As with changes in TCE during the study, increases in total chlorinated VOCs were observed at the majority (21 of 33) of monitoring locations within the treatment area, notably at ZVI-MW01B from 698 to 2,492 µg/L, at ZVI-MW02A2 from 4,178 to 6,371 µg/L, at ZVI-MW01A2 from 8,949 to 9,317 µg/L, and at ZVI-MW07A2 from 18,774 to 38,002 µg/L.

1.1.2.3 Chlorinated VOC Trends

Figure H-1 displays trends in concentrations at each monitoring location for TCE, cis-1,2-DCE, and VC with elapsed time since injection completion. At several monitoring locations, TCE initially increased and then began to decrease towards baseline concentrations, most notably at ZVI-MW01A1 and B, ZVI-MW02A3, ZVI-MW04A1, ZVI-MW06A3 and B, and ZVI-MW07A3

and C. In most cases (with the exception of ZVI-MW06B and C and ZVI-MW07A3 and C), TCE concentrations did not return to baseline levels during the 12-week monitoring period. It is unclear whether concentrations at these locations will stabilize at pre-injection levels or whether the concentrations will continue to decline, representing net reductions in TCE from pre-injection levels.

At three monitoring locations within the 10- to 20-foot-bgs interval, ZVI-MW1A2, ZVI-MW02A2, and ZVI-MW07A2, TCE concentrations continued to increase throughout the monitoring period. At the monitoring location showing the most significant decrease in TCE concentrations, ZVI-MW06A2, TCE concentrations decreased sharply from 38,000 to 8,500 µg/L and then began to increase again to 12,000 µg/L by the end of the monitoring period, indicating that TCE removal due to ZVI influence had been essentially completed at this location by approximately 45 days following injection completion. Beyond this time, either the rate of desorption of TCE from soil became greater than the rate of dechlorination of TCE by ZVI-influenced reactions, or reactivity of ZVI at the monitoring point had decreased to the extent that advection or diffusion of TCE was favored from nearby areas of high concentrations. If the trend progresses as indicated and the current trend is projected, TCE concentrations at ZVI-MW06A2 will increase to pre-injection levels by approximately 409 days after injection completion. Although longer-term monitoring is required to verify this trend, this location provided the best indication of the longevity of the nanoscale ZVI product in a source reduction environment at the treatability study area.

1.1.3 Chlorinated VOC Mass Removal Estimates

Estimates in TCE, 1,1-DCE, cis-1,2-DCE, and VC mass before and after the injection are presented in Table H-2. Based on baseline sampling results, these four compounds are estimated to make up 99 percent of the mass at the treatment site and were therefore used for mass removal calculations.

1.1.3.1 Mass Removal Calculation Method

The treatment area used in calculating masses of these compounds was defined by the radius of influence determined for the three attempted injection points, as discussed below. Volumes of soil within the treatment zone were calculated from depth-dependent radii of influence (see Table H-3). An assumed porosity of 0.25 was used to calculate the volume of water within the treatment zone and a soil density of 1.7 grams per cubic centimeter was used to calculate the mass of soil in the treatment zone. Radii of influence were used to calculate treatment zone volumes at each depth interval. Concentrations of chlorinated VOCs observed within the treatment zone were used to calculate masses of chlorinated VOCs in both the aqueous and sorbed phases. Chlorinated VOC concentrations were computed by averaging observed concentrations within each injection point radius of influence per depth interval. If no monitoring location was found to lie within the estimated radius of influence of injection points for a given depth interval, concentrations at the closest monitoring point at that depth interval were used.

Sorbed masses for each compound were estimated by multiplying chlorinated VOC concentrations by the organic carbon partitioning coefficient (Koc) for each compound and an assumed fraction of natural organic carbon (foc). See Table H-2 for details and formulas used in calculations.

1.1.3.2 Mass Removal Calculation Results

TCE mass was estimated to have been reduced from 2.45 to 1.74 pounds, a reduction of approximately 29 percent within the treated area. However, 99 percent of the calculated reduction in TCE occurred within the 10- to 20-foot-bgs depth interval, estimated entirely based on the reduction in TCE concentration observed at ZVI-MW06A2. Therefore, while TCE concentrations were significantly reduced at this monitoring location, concentrations increased in the majority of the treatment area.

Increases in the masses of 1,1-DCE, cis-1,2-DCE, and VC were indicated, with increases within the treated zone of 48, 27, and 16 percent, respectively.

Based on the TCE reduction and the increase in the other three main VOC compounds, the mass of total VOCs was estimated to decrease very slightly, by 0.04 percent, during the treatability study.

1.2 ZONE OF INFLUENCE

In evaluating the effectiveness of the ZVI treatment technology, groundwater analytical and field parameter data from the 33 monitoring locations were used to establish a radius of influence for the injection locations and a zone of influence for the overall ZVI injection. Figure 4-1 shows the resulting zone of influence for the treatability study.

1.2.1 Zone of Influence Calculation Methodology

Correlation among a number of analytical parameters was used in evaluating radii of influence. Due to the nature of the injection process (fracturing followed by injection of ZVI in carrier fluid and slurry at 3-foot depth intervals), radii of influence for each injection location were evaluated as depth-dependent parameters. Monitoring points where significant geochemical changes or chlorinated VOC reductions were observed to occur were evaluated to be in the zone of influence of the injection process. The farthest distance from an injection point where such changes were observed to occur at a given depth interval was used to establish the radius of influence for each injection location at that depth interval. Where influence at a specified distance was indicated at one monitoring location, but not indicated at less than this distance at one or more other monitoring locations, the average of these radial distances was used in calculating the radius of influence at that injection location. If no changes were observed at a

given depth interval, the radius of influence was assumed to be less than the distance to the closest monitoring location.

Due to variability in chlorinated VOC concentrations discussed above, correlation among multiple parameters was used to establish whether a given monitoring point at a given depth interval was influenced by the ZVI injection. One complication, as discussed in Sections 3.3 and 3.4 of this ZVI Treatability Study Report, was that at one of the injection locations (ZVI-IP03) attempts to inject the design volume of ZVI material were unsuccessful. In fact, difficulties in achieving initial fracture of the formation resulted in injection of ZVI material at maximum depths of 45, 43, and 44 feet bgs at IP01, IP02, and IP03, respectively, rather than the design maximum injection depth at each of 50 feet bgs. Note that, due to these complications, less than 60 percent of the design quantity of ZVI material was injected in the study area.

In evaluating injection influence, the following were used as indicators of ZVI influence at a given monitoring location:

- Increase, especially initially, of concentrations of dissolved iron, and preferentially dissolved iron filtered to screen particles larger than 0.45 micron
- Increase in dissolved gases, including acetylene, ethene, ethane, methane, and hydrogen gas
- Changes in concentrations of dissolved metals such as arsenic and manganese, as well as other cations
- Decrease in ORP and DO
- Increase in pH and total alkalinity

Variability in both field parameters and in groundwater analytical data was similar to that discussed above for TCE and other chlorinated VOCs. The following average variations in concentrations were observed in monitoring locations outside of the planned treatment area: dissolved iron, 62 percent; arsenic, 59 percent; ethene, 93 percent; ethane, 42 percent; and hydrogen gas, 83 percent. Changes in pH were minimal; pH declined slightly in the treated zone. Changes in DO in the treated zone were within the variability at the control points, while a decrease in ORP of 240 percent was noted within the planned treatment area as compared to decreases of 70 percent and 143 percent at the control locations. Therefore, correlation of significant reductions in ORP in conjunction with changes in other groundwater geochemical parameters, as discussed above, was used as an indication of ZVI influence at a given monitoring location.

1.2.2 Evaluation of ZVI Influence

ZVI influence was indicated from groundwater sampling data and field parameter data at eight locations: ZVI-MW01A2; ZVI-MW04A1; ZVI-MW06A2, A3, B, and C; and ZVI-MW07A2 and A3. ZVI influence was marginally indicated at one additional location, ZVI-MW01B.

Figure H-3 shows fluctuations in various analytical parameters during post-injection monitoring at those locations that most indicate influence of ZVI injection. In general, at locations most clearly influenced by ZVI injection, the following changes from baseline concentrations occurred: dissolved iron increased significantly then decreased; ORP decreased to a negative millivolt (mV) value; some production of dissolved gases (either ethene, ethane, acetylene or hydrogen gas or a combination of one or more of these) was indicated; and increased concentrations of dissolved metals, usually arsenic and/or manganese, were noted. These parameters were observed to be the most correlative to probable ZVI influence. Other parameters analyzed appeared to be negligible or intermittent indicators of ZVI influence.

1.2.3 Injection Radii of Influence

Depth-dependent radii of influence are presented in Table H-3. Based on the above analysis, radii of influence were established for each depth interval, with a maximum radius of influence of 18.2 feet occurring at the 10- to 20-foot-bgs monitoring interval (A2) and a minimum radius of influence of 6.1 feet occurring at the 40- to 50-foot-bgs monitoring interval (C). Observed evidence of influence at monitoring locations within Building 163 (ZVI-MW07A2 and A3) to the east of the injection points, but not at most monitoring locations immediately west of injection points (ZVI-MW01 cluster), provide indication that ZVI injection and distribution in the subsurface was probably non-uniform. This corresponds to visual observations of surfacing material noted during the injection process.

Since, in most instances, it was not possible to distinguish which injection point influenced a given monitoring location, once established based on influences at nearby monitoring points, the same radii of influence were assumed in a given depth interval at injection locations IP01 and IP02. No indication of influence was indicated beneath the treatment area (monitoring location ZVI-MW01D). Further, minimal influence was indicated in the vicinity of IP03. Only monitoring location ZVI-MW04A1 indicated influence from the ZVI injection attempt at IP03. As noted in Section 3.3 of this ZVI Treatability Study Report, during the injection attempt at IP03, successful fracturing and injection of ZVI were achieved at only one interval, 41 to 44 feet bgs. The majority of injected material was observed to surface in the immediate vicinity of the injection location, indicating a preferential vertical conduit was created along the injection casing that allowed most injected material to rise to or near ground surface. Therefore, only the uppermost depth interval, 6 to 11 feet bgs, was included in the zone of influence at IP03.

1.2.4 Treated Zone

Radii of influence at each depth interval were used to calculate a treated zone volume of approximately 48,200 cubic feet. The resulting zone of influence is shown on Figure 4-1. This treated zone is less than the design treatment zone of approximately 70,000 cubic feet, as expected, due to successful injection of less than 60 percent of the design ZVI material, and successful injection at fewer than the design number of depth intervals at all three design

injection locations. A composite radius of influence of 10.7 feet was calculated based on the weighted average radius of influence from each depth interval. Post-injection sampling data support the conclusion that a radius of influence of less than the design radius of influence of 15 feet was achieved at most depth intervals at each injection location and that the overall treatment zone of influence was smaller than the design value.

1.3 CONTAMINANT DESORPTION/ DISPLACEMENT

A potential effect of ZVI injection is desorption of chlorinated VOCs, resulting in increasing concentrations dissolved in groundwater and, therefore, having the potential to become mobile. Potential desorption was evaluated by comparing chlorinated VOC concentrations in baseline sampling results to those from the post-injection sampling events. Post-injection sampling results indicating an increasing trend in chlorinated VOC concentrations coinciding with evidence of ZVI presence/influence are a possible indication that desorption has occurred at those monitoring locations, especially those in which concentrations initially increase followed by a subsequent decrease.

Additionally, displacement of chlorinated VOCs from adjacent monitored zones may also cause increases in chlorinated VOC concentrations at given monitoring locations. Displacement of chlorinated VOCs to areas outside the treated zone would be indicated by increases in one or more chlorinated VOCs at downgradient and crossgradient monitoring points located outside of the treated zone (i.e., ZVI-MW05A2-C, 372-MW1, and D03-04). Increases in chlorinated VOCs at these monitoring locations, without a corresponding increase in iron or decrease in ORP, indicate that displacement of chlorinated VOCs likely has occurred. Vertical displacement beneath the treatment zone would be indicated by increases in chlorinated VOC concentrations at monitoring locations beneath the treated zone (i.e., ZVI-MW01D).

1.3.1 Evaluation of Desorption of Chlorinated VOCs

As noted in Section 1.1.2, increasing trends in TCE concentrations were indicated at three monitoring locations within the 10- to 20-foot-bgs interval, ZVI-MW1A2, ZVI-MW02A2, and ZVI-MW07A2, where TCE concentrations were shown to increase from 1,600 to 2,000 µg/L, from 1,500 to 2,000 µg/L, and from 10,000 to 18,000 µg/L, respectively. At these same locations, total chlorinated VOCs were shown to increase by 4, 53, and 102 percent, respectively, while filtered iron initially increased by 1,414, 3.9, and 646 percent, respectively. Based on the criteria established in the DQOs, desorption of chlorinated VOCs is indicated at these locations.

At several monitoring locations, TCE initially increased and then began to decrease towards baseline concentrations, most notably at ZVI-MW01A1 and B, ZVI-MW02A3, ZVI-MW04A1, ZVI-MW06A and B, and ZVI-MW07A3 and C (see Figure H-1). Significant increases in dissolved iron were also observed at these monitoring points. At these locations, desorption of chlorinated VOCs, including TCE, followed by possible continued dechlorination by ZVI is

indicated. However, the most significant TCE increases (observed at monitoring locations ZVI-MW06A3, ZVI-MW07A2, and ZVI-MW07A3) were observed adjacent to the monitoring location where the most significant decrease in TCE occurred (ZVI-MW06A2). These results indicate that TCE and other VOCs were possibly displaced, along with ZVI material, within the treated zone during the injection process.

1.3.2 Effect of Upgradient Chlorinated VOC Concentrations

Complicating the interpretation of desorption and displacement are areas of relatively high chlorinated VOC and TCE concentrations to the east, upgradient of the planned treatment area. Monitoring results in these areas, identified in the pre-injection site characterization phase, include total chlorinated VOC concentrations in soil of up to 246,900 micrograms per kilogram (µg/kg) at 5.2 to 6.0 feet bgs (S4-SS-MIP13) and in groundwater of up to 17,308 micrograms per liter (µg/L) at 28 to 33 feet bgs (S4-HP-MIP13). Membrane interface probe (MIP) results (see Figure 2-4) indicate that areas of high chlorinated VOC concentrations extend at least as far east as the interior wall near the center of Building 163. These areas of high chlorinated VOC and TCE concentrations are a potential source of increasing or rebounding chlorinated VOC and TCE concentrations noted during the ZVI monitoring, especially in monitoring zone clusters ZVI-MW06 and ZVIMW07, those monitoring areas closest to Building 163.

1.3.3 Evaluation of Displacement of Chlorinated VOCs

Significant chlorinated VOC and TCE increases were not indicated by post-injection monitoring data at downgradient and crossgradient control points, indicating that the ZVI injection process is unlikely to have caused displacement of chlorinated VOCs from the treated zone to areas outside the treated zone. At ZVI-MW01D, post-injection concentrations of total chlorinated VOCs increased by only 0.2 percent from baseline values and TCE concentrations remained below laboratory reporting limits, indicating downward displacement of chlorinated VOCs due to the ZVI injection was not likely to have occurred.

1.4 SECONDARY GROUNDWATER EFFECTS

An additional measure of technology performance is the creation of a significantly reducing environment within the treatment zone to create favorable conditions for the beta reduction pathway for dechlorination of chlorinated VOCs. Production of persistent reducing conditions at a given site creates an environment favorable for reductive dechlorination of chlorinated VOCs, by natural anaerobic microbial attenuation. Creating a highly reducing environment, however, creates favorable conditions for more rapid dechlorination of chlorinated VOCs by abiotic beta-reduction reactions. In addition to the rapidity of the dechlorination reactions that occur by this process, an advantage is little or no production of undesirable chlorinated daughter products (such as cis-1,2-DCE), as typically occurs during biodegradation of chlorinated compounds.

However, the reducing environment created by injection of ZVI can also potentially increase solubility of certain metal species, such as iron, arsenic, or manganese. Evaluation of these secondary and potentially long-term effects is accomplished by analyzing post-injection sampling results in ORP, DO, pH and alkalinity, dissolved metals, cations, and anions.

1.4.1 Desired Thresholds

Previous studies indicate an approximate threshold ORP of -200 mV to create a sufficiently reducing environment for achieving dechlorination of VOCs (Gillham et al. 1997) including TCE. A subsequent study (Gavaskar et al. 2005) recommended an even lower ORP of -400 mV as a threshold for "promoting and fostering abiotic reactions and minimizing the generation of partially dechlorinated by-products" that can be more persistent. According to the analytic approach and project quality objectives established in the Work Plan and Sampling and Analysis Plan, a DO of less than 1 milligram per liter (mg/L) is also desired to provide sufficient anoxic conditions, increasing the potential for biodegradation.

1.4.2 ORP Results

ORP trends and changes from baseline values with time are shown on Figure H-2. Average ORP in the treated zone decreased by over 200 percent from baseline values during post-injection sampling; however, average ORP after injection in the treated zone was -123 mV, less than the suggested -200 mV threshold and significantly less than the desired -400 mV goal. Further, significant reduction of ORP within the treated zone was not uniform, but was limited primarily to monitoring locations closest to IP01 and IP02 and within the 10- to 20-foot bgs and 20- to 30-foot bgs depth intervals. Figure H-2 shows ORP fluctuations in each monitoring location superimposed on the -200 mV threshold. At the completion of the post-injection monitoring period, 12 of 33 monitoring locations were observed to have residual ORP less than -200 mV (ZVI-MW01A2 and D; ZVI-MW02C; ZVI-MW04A1, A3, and B; ZVI-MW05C; ZVI-MW06A2, A3, and B; and ZVI-MW07A3). The minimum ORP observed at the end of post-injection sampling was -334.7 mV at ZVI-MW01A2.

1.4.3 DO Results

DO values of less than 1 mg/L were observed at approximately half (16 of 33) of the monitoring points during the final post-injection sampling event. Observed monitoring data for both ORP and DO display significant variability at monitoring locations outside the treated zone (e.g., fluctuations in both DO and ORP between sampling events at 372-MW1 and D03-04 averaged 52 percent and 95 percent, respectively) without displaying an obvious trend. This indicates that natural fluctuations in these parameters are significant. Fluctuations in DO throughout the treated zone are generally within the above values (average change in DO from baseline values within the treated zone was 47 percent). Beyond a general decrease in DO at monitoring locations within the treated zone between baseline sampling and the first post-injection monitoring round, no obvious trend in DO was established (see Figure H-2).

1.4.4 pH Results

Average pH decreased slightly both at the treatment zone monitoring points and at the control points. Total alkalinity was observed to increase by approximately 30 percent both at treatment zone monitoring points and at control points. However, analytical results show appreciable variability in this parameter, with observed variations of up to 140 percent at control points. A possible explanation for the lack of expected increase in pH/alkalinity associated with ZVI injection at this site may be the abnormally high observed pHs at this site. Average pH in the treatment zone prior to injection was 8.07; however, certain depth intervals, in particular the 20- to 30-foot-bgs interval and the 30- to 40-foot-bgs interval, had higher initial pHs (as high as 8.93 and 9.50, and average 8.60 and 8.80, respectively in these two zones). Initial alkalinity may have prevented the increase in pH typically associated with this technology.

1.4.5 Precipitation of Metals

Increased concentrations in dissolved metals were noted at most locations influenced by the ZVI injection (see Figure 4-4). Dissolved iron concentrations generally followed the trend of filtered iron concentrations, and, presumably, presence of ZVI. Arsenic and manganese were also observed to increase by 74 percent and 296 percent, respectively, within the treatment zone, as compared to a 59 percent increase in arsenic and a slight reduction in manganese at control locations. However, arsenic concentrations remained within the range of background concentrations for OU-2B, with a maximum observed post-injection concentration of 80.2 µg/L at ZVI-MW01A2.

1.4.6 Anions Results

Nitrates, sulfates, and chlorides were observed to slightly decrease in the treatment zone during the course of the injection monitoring process (with observed decreases from baseline concentrations of nitrates, sulfates, and chlorides of 18, 2, and 10 percent, respectively). Average sulfate concentrations observed in post-injection monitoring (approximately 600 mg/L) were similar to those found during the bench-scale study (approximately 700 mg/L), which concluded that sulfate at the site in existing concentrations did not adversely affect nanoscale ZVI reactivity with TCE. However, the observed small decreases in anions are within the range of fluctuations at monitoring locations outside the treated zone.

1.4.7 Dissolved Gases Results

Dissolved gases, ethane, ethene, hydrogen, acetylene, and methane were all observed to increase within a range of 144 percent (for methane) and 37,000 percent (for hydrogen gas) due primarily to an increase by four orders of magnitude at ZVI-MW01A2 and ZVI-MW07A2) over baseline concentrations within the treatment zone while decreasing or remaining undetected in the control locations.

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TABLES

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TABLE H-1

CHANGES IN CONCENTRATIONS OF SELECTED VOCs

				1,1-Dichloroethene		cis-1,2-Dichloroethene		Trichloroethene		Vinyl Chloride	
Location	Sample Date	StartDepth	EndDepth	µg/L	% change	µg/L	% change	µg/L	% change	µg/L	% change
ZVI-MW01A1	11/6/09	6	11	1.2		490		48.00		24	
ZVI-MW01A1	02/17/10	6	11	5.6	366.7%	510	4.1%	88.00	83.3%	59	145.8%
ZVI-MW01A2	11/9/09	10	20	80		6,300		1,600		940	
ZVI-MW01A2	2/16/2010	10	20	72	-10.0%	6,100	-3.2%	2,000	25.0%	1,100	17.0%
ZVI-MW01A3	11/6/2009	20	30	270		50		66		9.2	
ZVI-MW01A3	2/17/2010	20	30	260	-3.7%	91	82.0%	69	4.5%	14	52.2%
ZVI-MW01B	11/5/2009	30	40	650		27		5.1		0.69	
ZVI-MW01B	2/16/2010	30	40	2,400	269.2%	46	70.4%	13	154.9%	2.3	233.3%
ZVI-MW01C	11/6/2009	40	50	0.20		0.48		0.5		0.3	
ZVI-MW01C	2/17/2010	40	50	0.20	0.0%	0.83	72.9%	0.5	0.0%	0.3	0.0%
ZVI-MW01D	11/9/2009	50	60	0.5		0.26		0.5		0.3	
ZVI-MW01D	2/16/2010	50	60	0.5	0.0%	0.56	115.4%	0.21	-58.0%	0.3	0.0%
ZVI-MW02A2	11/4/2009	10	20	75		2,100		1,500		490	
ZVI-MW02A2	2/16/2010	10	20	82	9.3%	3,200	52.4%	2,500	66.7%	570	16.3%
ZVI-MW02A3	11/4/2009	20	30	1,500		110		80		11	
ZVI-MW02A3	2/15/2010	20	30	240	-84.0%	180	63.6%	140	75.0%	5.7	-48.2%
ZVI-MW02B	11/3/2009	30	40	2,400		17		0.40		0.29	
ZVI-MW02B	2/15/2010	30	40	2,100	-12.5%	14	-17.6%	0.56	40.0%	0.32	10.3%
ZVI-MW02C	11/9/2009	40	50	0.5		0.5		0.5		0.3	
ZVI-MW02C	2/15/2010	40	50	0.40	-20.0%	0.24	-76.0%	0.5	0.0%	0.3	0.0%
ZVI-MW03A2	11/5/2009	10	20	20		230		150		14	
ZVI-MW03A2	2/18/2010	10	20	15	-25.0%	280	21.7%	190	26.7%	11	-21.4%
ZVI-MW03A3	11/6/2009	20	30	290		11		39		2.9	
ZVI-MW03A3	2/19/2010	20	30	78	-73.1%	6.1	-44.5%	24	-38.5%	0.85	-70.7%
ZVI-MW03B	11/6/2009	30	40	180		0.35		1.3		0.3	
ZVI-MW03B	2/18/2010	30	40	160	-11.1%	0.53	51.4%	0.95	-26.9%	0.21	-16.0%
ZVI-MW03C	11/6/2009	40	50	0.63		0.5		0.5		0.3	
ZVI-MW03C	2/18/2010	40	50	0.94	49.2%	0.21	-79.0%	0.5	0.0%	0.3	0.0%
ZVI-MW04A1	11/4/2009	6	11	0.5		3.9		0.28		81	
ZVI-MW04A1	2/17/2010	6	11	0.5	0.0%	2	-48.7%	0.38	35.7%	24	-70.4%
ZVI-MW04A2	11/5/2009	10	20	16.00		450		180		70	
ZVI-MW04A2	2/16/2010	10	20	20	25.0%	670	48.9%	250	38.9%	96	37.1%
ZVI-MW04A3	11/4/2009	20	30	310		48		94		15	
ZVI-MW04A3	2/17/2010	20	30	380	22.6%	86	79.2%	63	-33.0%	13	-13.3%
ZVI-MW04B	11/5/2009	30	40	760		4.4		1.5		0.30	
ZVI-MW04B	2/16/2010	30	40	1,100	44.7%	7	59.1%	2.8	86.7%	0.8	166.7%
ZVI-MW04C	11/9/2009	40	50	0.5		0.58		0.23		0.3	
ZVI-MW04C	2/16/2010	40	50	0.5	0.0%	0.48	-17.2%	0.20	-13.0%	0.3	0.0%
ZVI-MW05A2	11/5/2009	10	20	0.5		8.2		1.7		8.3	
ZVI-MW05A2	2/15/2010	10	20	0.44	-56.0%	30	265.9%	9.7	470.6%	19	128.9%
ZVI-MW05A3	11/5/2009	20	30	170		50		61		4.1	

TABLE H-1

CHANGES IN CONCENTRATIONS OF SELECTED VOCs

				1,1-Dichloroethene		cis-1,2-Dichloroethene		Trichloroethene		Vinyl Chloride	
Location	Sample Date	StartDepth	EndDepth	µg/L	% change	µg/L	% change	µg/L	% change	µg/L	% change
ZVI-MW05A3	2/15/2010	20	30	310	82.4%	54	8.0%	88	44.3%	5	22.0%
ZVI-MW05B	11/5/2009	30	40	320		1.9		1		0.3	
ZVI-MW05B	2/16/2010	30	40	480	50.0%	3.5	84.2%	1.8	80.0%	0.23	-8.0%
ZVI-MW05C	11/9/2009	40	50	28		0.29		0.5		0.3	
ZVI-MW05C	2/15/2010	40	50	110	292.9%	0.34	17.2%	0.5	0.0%	0.3	0.0%
ZVI-MW06A2	11/6/2009	10	20	160		24,000		38,000		3,500	
ZVI-MW06A2	2/18/2010	10	20	62	-61.3%	31,000	29.2%	12,000	-68.4%	2,200	-37.1%
ZVI-MW06A3	11/6/2009	20	30	1,100		78		84		17	
ZVI-MW06A3	2/17/2010	20	30	350	-68.2%	500	541.0%	360	328.6%	75	341.2%
ZVI-MW06B	11/9/2009	30	40	5,800		29		9.5		1.4	
ZVI-MW06B	2/19/2010	30	40	4,700	-19.0%	31	6.9%	8.2	-13.7%	0.9	-35.7%
ZVI-MW06C	11/6/2009	40	50	33		1.50		1.9		0.3	
ZVI-MW06C	2/19/2010	40	50	46	39.4%	1.1	-26.7%	0.75	-60.5%	0.26	4.0%
ZVI-MW07A2	11/2/2009	10	20	44		8,000		10,000		700	
ZVI-MW07A2	2/17/2010	10	20	76.00	72.7%	17,000	112.5%	18,000	80.0%	2,500	257.1%
ZVI-MW07A3	11/2/2009	20	30	2,300		200		400		30	
ZVI-MW07A3	2/18/2010	20	30	1,500	-34.8%	790	295.0%	390	-2.5%	62	106.7%
ZVI-MW07B	11/3/2009	30	40	3,700		39		4.2		0.33	
ZVI-MW07B	2/18/2010	30	40	4,800	29.7%	37	-5.1%	3.8	-9.5%	0.49	48.5%
ZVI-MW07C	11/2/2009	40	50	270		65		69		6.00	
ZVI-MW07C	2/18/2010	40	50	1,600	492.6%	42	-35.4%	54	-21.7%	3.4	-43.3%
372-MW1	11/9/2009	2.5	12.5	0.5		0.5		0.29		0.3	
372-MW1	2/18/2010	2.5	12.5	0.5	0.0%	0.5	0.0%	0.5	72.4%	0.3	0.0%
D03-04	11/9/2009	47	57	0.31		0.5		0.5		0.3	
D03-04	2/19/2010	47	57	0.76	145.2%	0.5	0.0%	0.5	0.0%	0.3	0.0%

TABLE H-1

CHANGES IN CONCENTRATIONS OF SELECTED VOCs

				Total VOCs (all analyzed compounds)	
Location	Sample Date	StartDepth	EndDepth	µg/L	% change
ZVI-MW01A1	11/6/09	6	11	570	
ZVI-MW01A1	02/17/10	6	11	671	17.6%
ZVI-MW01A2	11/9/09	10	20	8,949	
ZVI-MW01A2	2/16/2010	10	20	9,317	4.1%
ZVI-MW01A3	11/6/2009	20	30	404	
ZVI-MW01A3	2/17/2010	20	30	443	9.5%
ZVI-MW01B	11/5/2009	30	40	698	
ZVI-MW01B	2/16/2010	30	40	2,492	257.2%
ZVI-MW01C	11/6/2009	40	50	5	
ZVI-MW01C	2/17/2010	40	50	6	6.4%
ZVI-MW01D	11/9/2009	50	60	6	
ZVI-MW01D	2/16/2010	50	60	6	0.2%
ZVI-MW02A2	11/4/2009	10	20	4,178	
ZVI-MW02A2	2/16/2010	10	20	6,371	52.5%
ZVI-MW02A3	11/4/2009	20	30	1,719	
ZVI-MW02A3	2/15/2010	20	30	575	-66.5%
ZVI-MW02B	11/3/2009	30	40	2,451	
ZVI-MW02B	2/15/2010	30	40	2,144	-12.5%
ZVI-MW02C	11/9/2009	40	50	6	
ZVI-MW02C	2/15/2010	40	50	5	-13.8%
ZVI-MW03A2	11/5/2009	10	20	419	
ZVI-MW03A2	2/18/2010	10	20	501	19.6%
ZVI-MW03A3	11/6/2009	20	30	353	
ZVI-MW03A3	2/19/2010	20	30	115	-67.4%
ZVI-MW03B	11/6/2009	30	40	187	
ZVI-MW03B	2/18/2010	30	40	166	-11.1%
ZVI-MW03C	11/6/2009	40	50	6	
ZVI-MW03C	2/18/2010	40	50	6	-3.3%
ZVI-MW04A1	11/4/2009	6	11	91	
ZVI-MW04A1	2/17/2010	6	11	34	-62.5%
ZVI-MW04A2	11/5/2009	10	20	744	
ZVI-MW04A2	2/16/2010	10	20	1,043	40.3%
ZVI-MW04A3	11/4/2009	20	30	476	
ZVI-MW04A3	2/17/2010	20	30	553	16.0%
ZVI-MW04B	11/5/2009	30	40	780	
ZVI-MW04B	2/16/2010	30	40	1,129	44.7%
ZVI-MW04C	11/9/2009	40	50	6	
ZVI-MW04C	2/16/2010	40	50	5	-2.3%
ZVI-MW05A2	11/5/2009	10	20	24	
ZVI-MW05A2	2/15/2010	10	20	64	169.1%
ZVI-MW05A3	11/5/2009	20	30	291	

TABLE H-1

CHANGES IN CONCENTRATIONS OF SELECTED VOCs

				Total VOCs (all analyzed compounds)	
Location	Sample Date	StartDepth	EndDepth	µg/L	% change
ZVI-MW05A3	2/15/2010	20	30	465	59.9%
ZVI-MW05B	11/5/2009	30	40	332	
ZVI-MW05B	2/16/2010	30	40	498	49.9%
ZVI-MW05C	11/9/2009	40	50	33	
ZVI-MW05C	2/15/2010	40	50	117	254.8%
ZVI-MW06A2	11/6/2009	10	20	65,750	
ZVI-MW06A2	2/18/2010	10	20	45,338	-31.0%
ZVI-MW06A3	11/6/2009	20	30	1,296	
ZVI-MW06A3	2/17/2010	20	30	1,294	-0.1%
ZVI-MW06B	11/9/2009	30	40	5,889	
ZVI-MW06B	2/19/2010	30	40	4,790	-18.7%
ZVI-MW06C	11/6/2009	40	50	41	
ZVI-MW06C	2/19/2010	40	50	52	27.3%
ZVI-MW07A2	11/2/2009	10	20	18,774	
ZVI-MW07A2	2/17/2010	10	20	38,002	102.4%
ZVI-MW07A3	11/2/2009	20	30	2,953	
ZVI-MW07A3	2/18/2010	20	30	2,766	-6.3%
ZVI-MW07B	11/3/2009	30	40	3,790	
ZVI-MW07B	2/18/2010	30	40	4,896	29.2%
ZVI-MW07C	11/2/2009	40	50	422	
ZVI-MW07C	2/18/2010	40	50	1,713	305.9%
372-MW1	11/9/2009	2.5	12.5	6	
372-MW1	2/18/2010	2.5	12.5	6	3.8%
D03-04	11/9/2009	47	57	6	
D03-04	2/19/2010	47	57	6	8.1%

Notes:

value below laboratory reporting limit; half the laboratory reporting limit used in computations

estimated value below laboratory reporting limit

Depths are in feet below ground surface.

Abbreviations and Acronyms:

µg/L – micrograms per liter

VOC – volatile organic compound

TABLE H-2

CHANGES IN MASS OF SELECTED VOCs

Mass Calculations													
	TCE			cis-1,2 DCE			1,1 DCE			VC			
	Mass in Aqueous Phase (lb)	Mass in Soil (lb)	Total (lb)	Mass in Aqueous Phase (lb)	Mass in Soil (lb)	Total (lb)	Mass in Aqueous Phase (lb)	Mass in Soil (lb)	Total (lb)	Mass in Aqueous Phase (lb)	Mass in Soil (lb)	Total (lb)	Total VOCs (lb)
Prior to ZVI injection	1.65	0.80	2.45	1.77	0.36	2.13	0.16	0.03	0.19	0.24	0.05	0.29	5.063
After ZVI Injection	1.17	0.57	1.74	2.25	0.45	2.70	0.24	0.05	0.28	0.28	0.06	0.34	5.061
mass removed/(added)			0.71			(0.57)			(0.09)			(0.05)	0.002
Percent mass removed/ (added)			**29.1%**			**(26.9%)**			**(48.4%)**			**(15.6%)**	**0.04%**

Assumptions		
	log Koc*	**Koc**
TCE	2.03	107.1519
cis-1,2 DCE	1.65	44.66836
1,1 DCE	1.8	63.09573
VC	1.23	16.98244
foc**	0.000445	
TOC	445	
nZVI density	6.9	lb/gal
porosity	0.25	
soil density	1.7	g/cm^3

Abbreviations and Acronyms:

DCE – dichloroethene
foc – fraction organic carbon
g/cm^3 – grams per cubic centimeter
gal – gallon
k_{oc} – organic-carbon-normalized partition coefficient
lb – pound
nZVI – nanoscale zero-valent iron
TCE – trichloroethene
TOC – total organic carbon
VC – vinyl chloride
VOC – volatile organic compound
ZVI – zero-valent iron

*From Afcee, 2004: http://www.siremlab.com/pdf/AFCEE-Anaerobic-Bio-Principles-and-Practices.pdf
**estimated based on TOC per U.S. Environmental Protection Agency, 2005

Computations:
aqueous-phase mass of compound =(volume of treated zone)*porosity*(average of observed compound concentrations within treated zone)
soild-phase mass of compound =(volume of treated zone)*soil density*(average of observed compound concentrations within treated zone)*Koc*foc

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TABLE H-3

TREATMENT AREA ZONE OF INFLUENCE

Interval	Base Depth (feet bgs)	Radius of Influence (feet)	Surface Area (square feet)	Volume (cubic feet)
A1	11	14.4	1,647	6,586
A2	20	18.2	1,731	17,314
A3	30	16.5	1,473	14,734
B	40	11.1	724	7,244
C	50	6.1	234	2,338
D	60	0.0	0	0

Composite radius of influence	10.7	feet
Design treatment area volume	69,741	cubic feet
Actual treatment area volume	48,217	cubic feet
	1,786	cubic yards

Abbreviations and Acronyms:
bgs – below ground surface

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FIGURES

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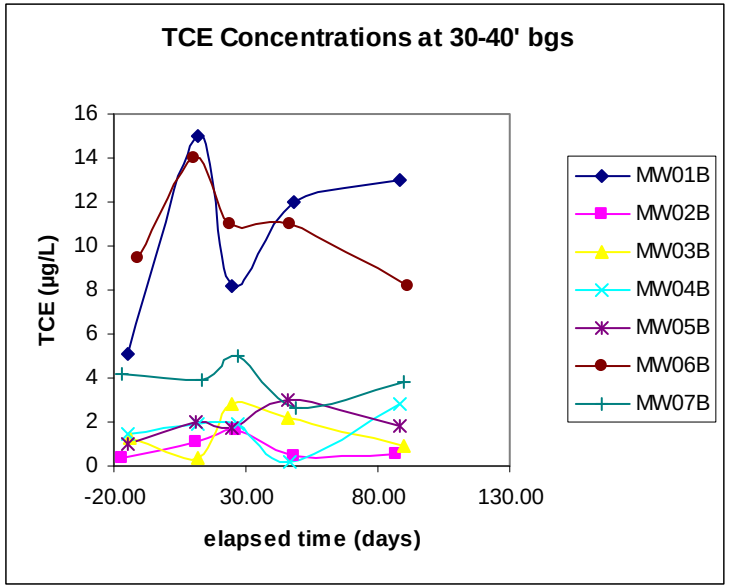
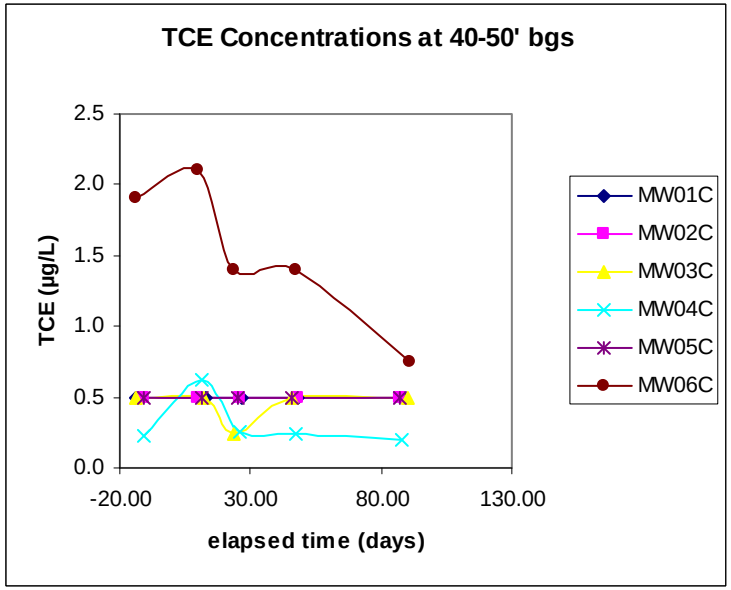
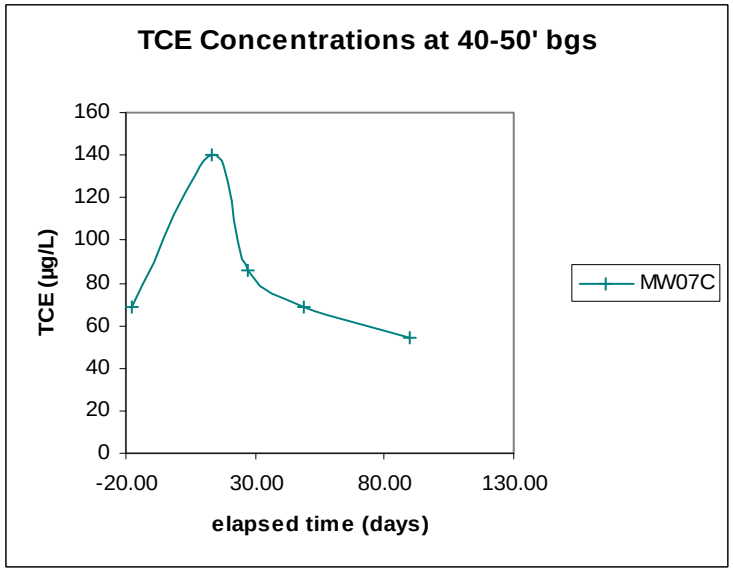
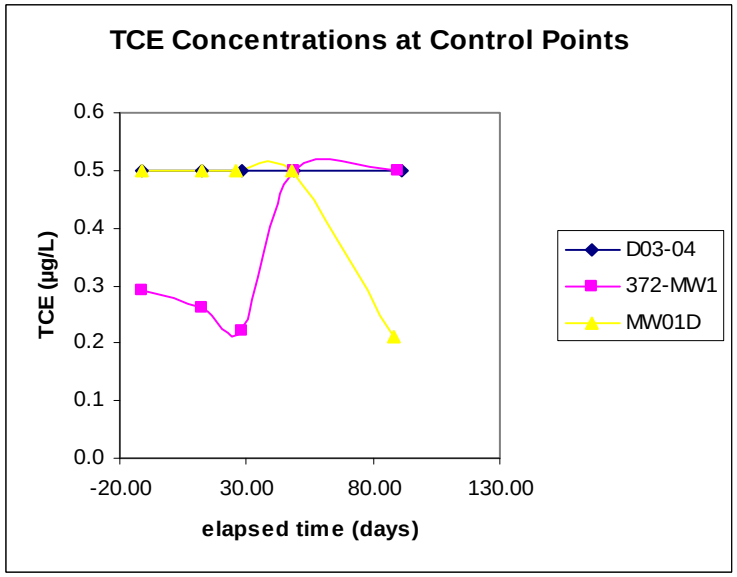
FIGURE H-1

INJECTION INFLUENCE ON CONCENTRATIONS OF TCE, CIS-1,2-DCE, AND VC









Note: Various best fit scales used.

FIGURE H-1

INJECTION INFLUENCE ON CONCENTRATIONS OF TCE, CIS-1,2-DCE, AND VC

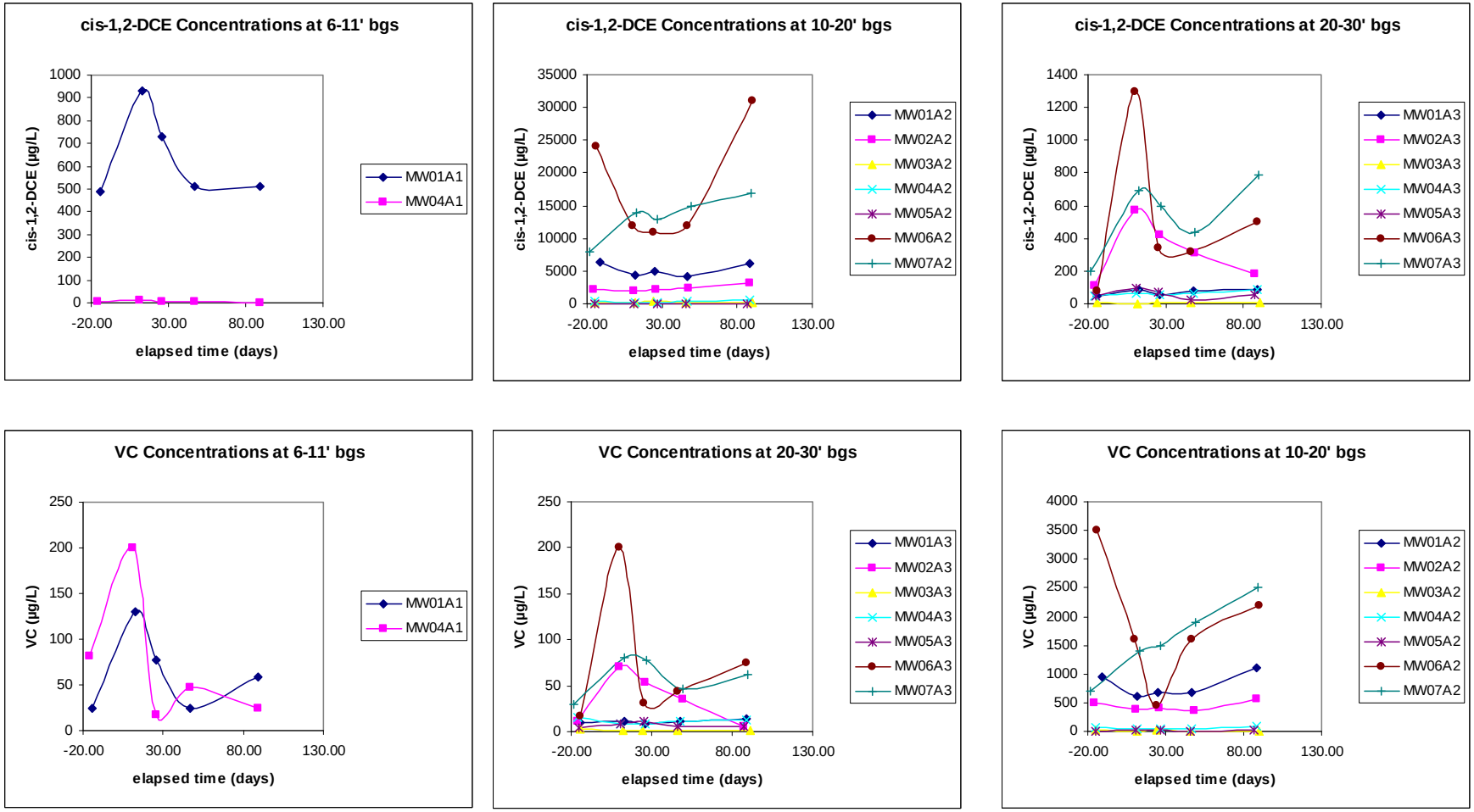


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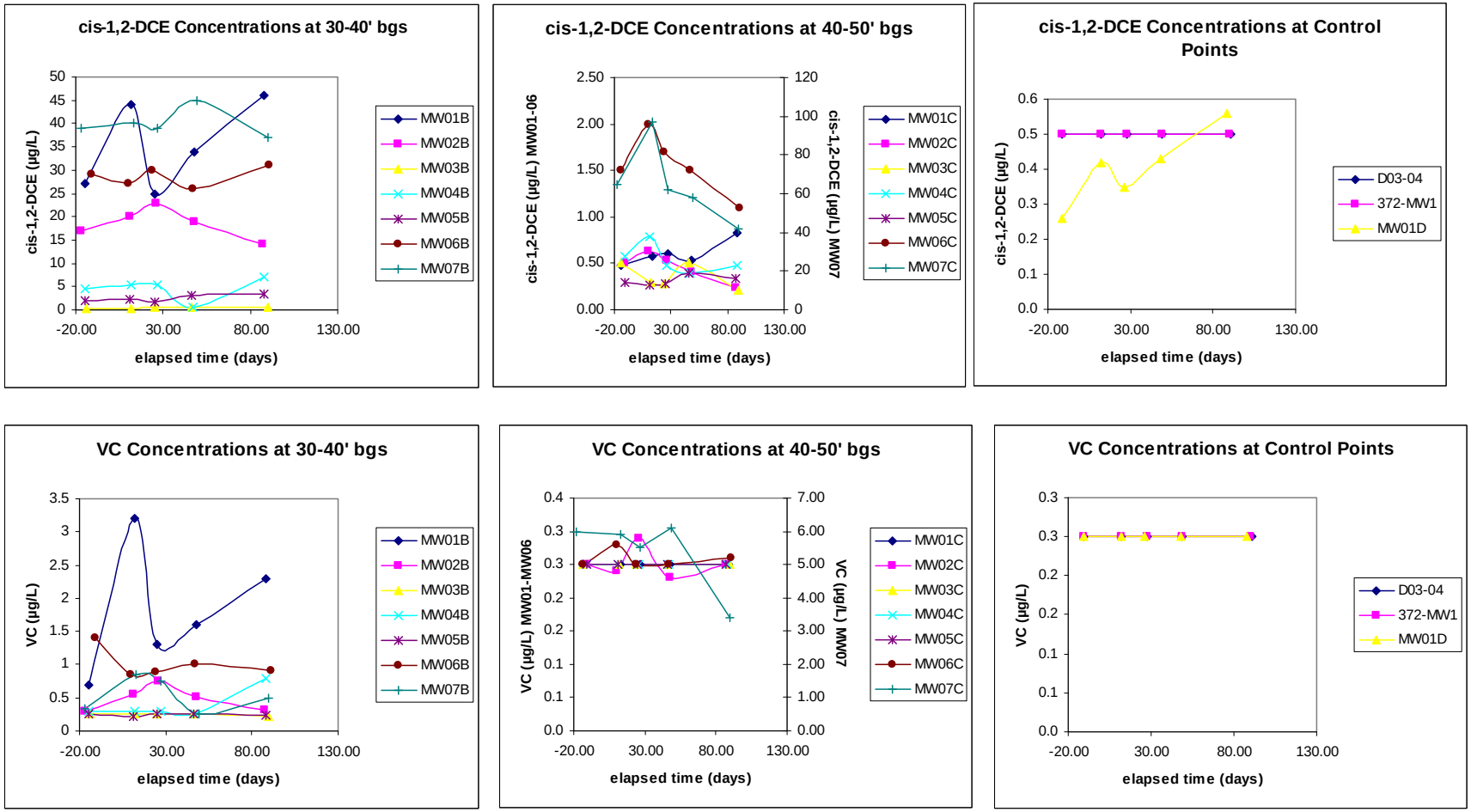
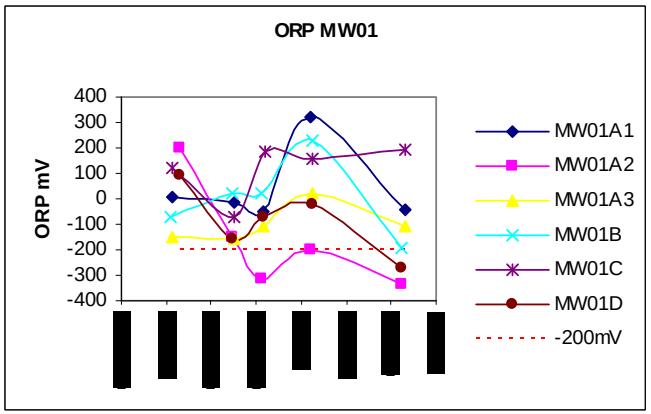
FIGURE H-1

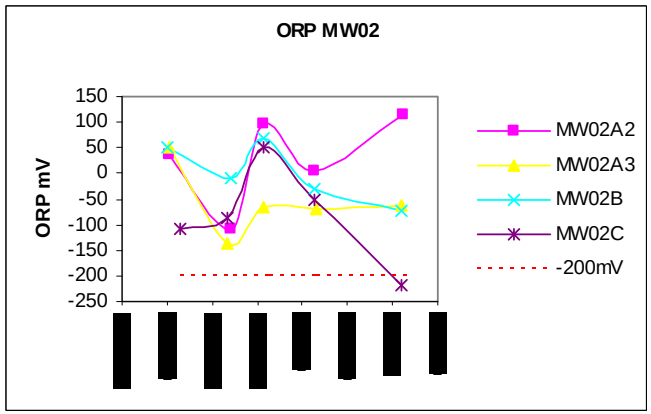
INJECTION INFLUENCE ON CONCENTRATIONS OF TCE, CIS-1,2-DCE, AND VC

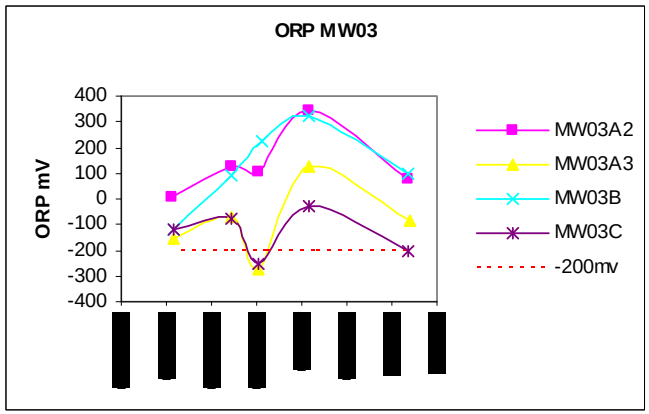


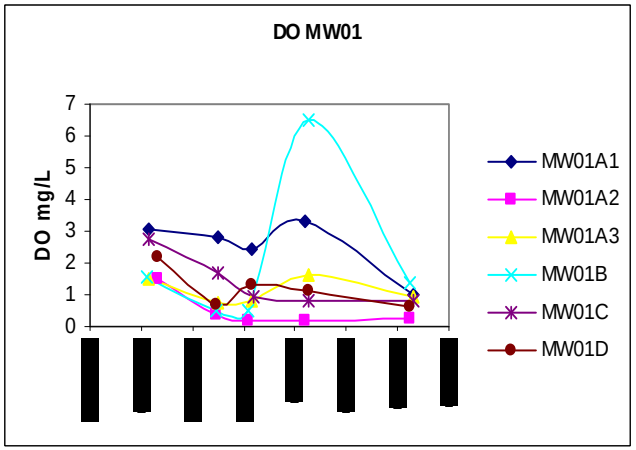
Note: Various best fit scales used.

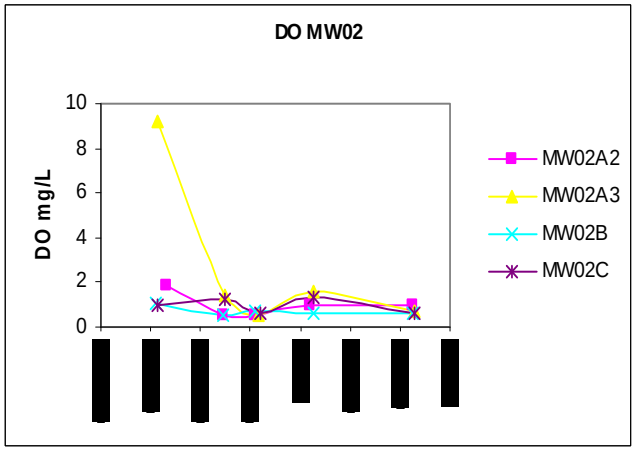
FIGURE H-2
INJECTION INFLUENCE ON OXIDATION-REDUCTION ENVIRONMENT











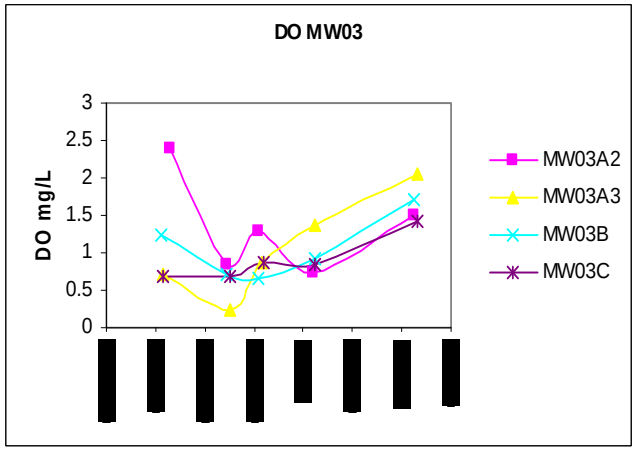


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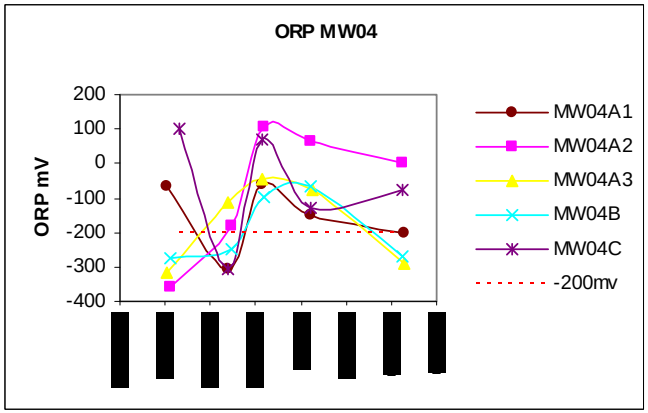
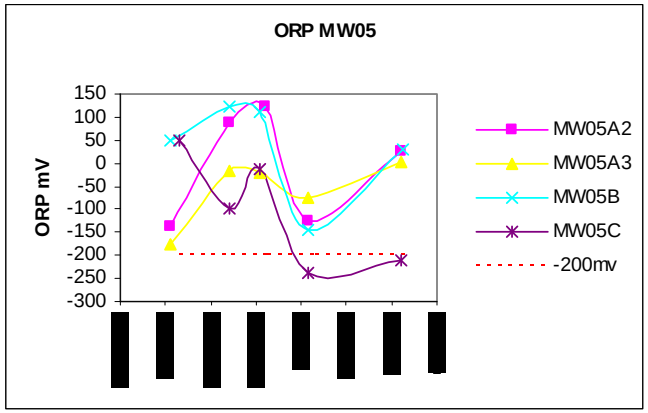
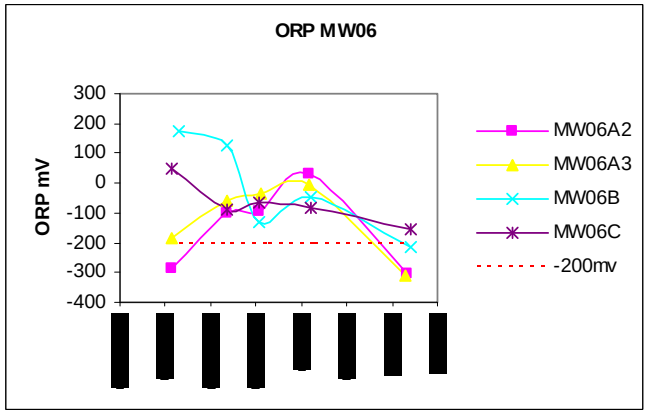
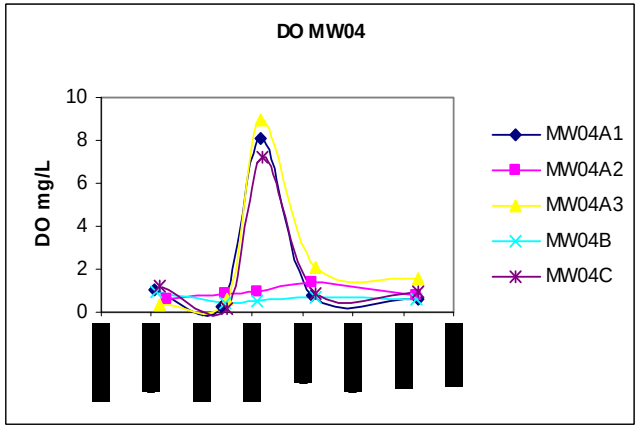
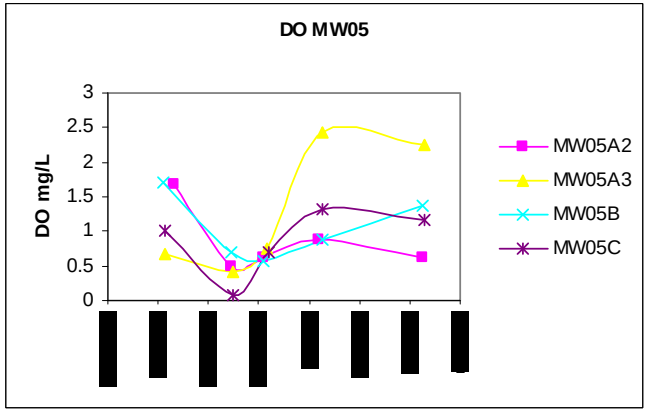
FIGURE H-2
INJECTION INFLUENCE ON OXIDATION-REDUCTION ENVIRONMENT

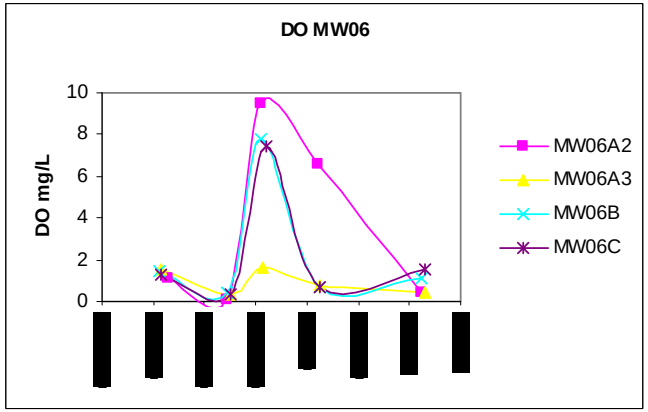






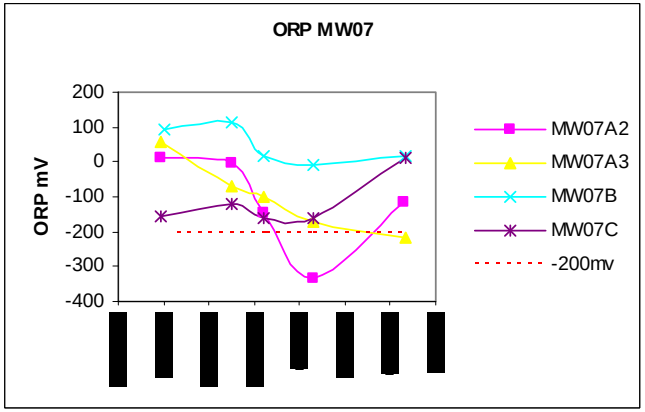


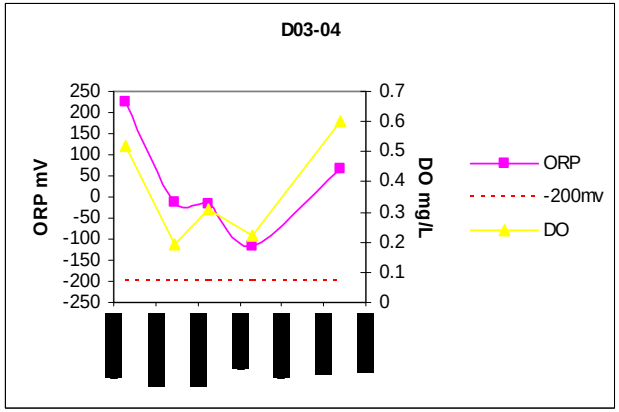


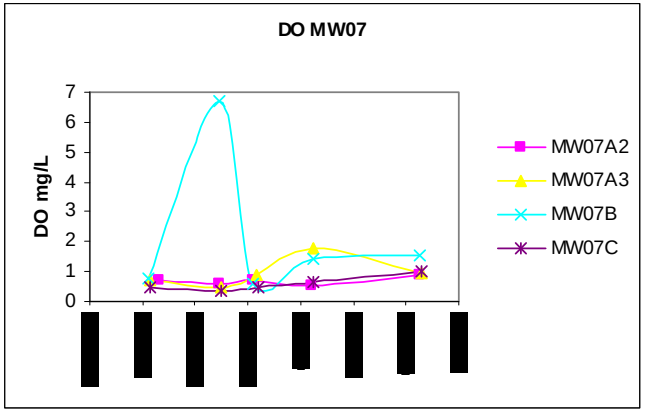


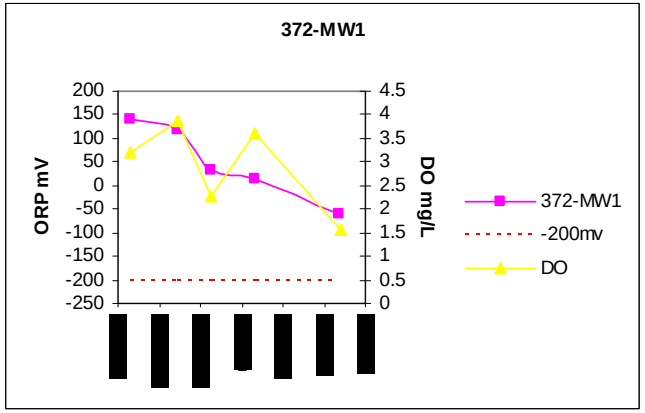
Note: Various best fit scales used.

FIGURE H-2
INJECTION INFLUENCE ON OXIDATION-REDUCTION ENVIRONMENT





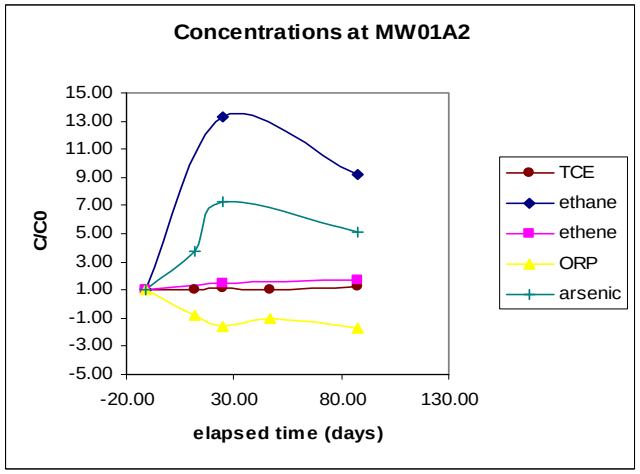


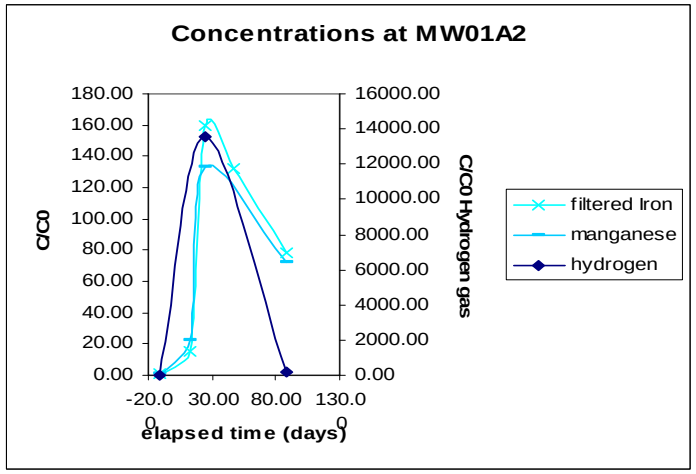


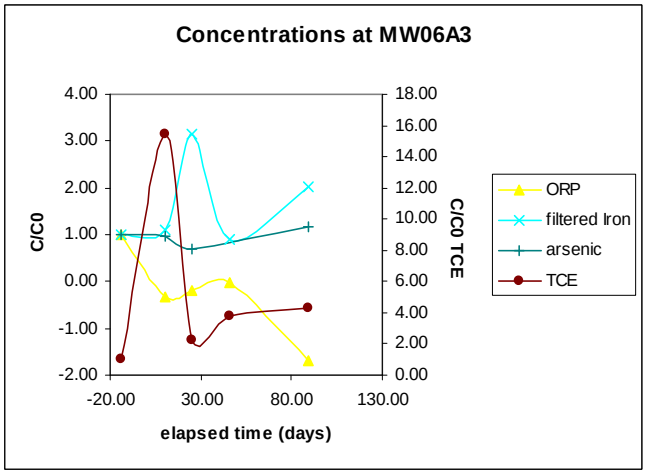
Note: Various best fit scales used.

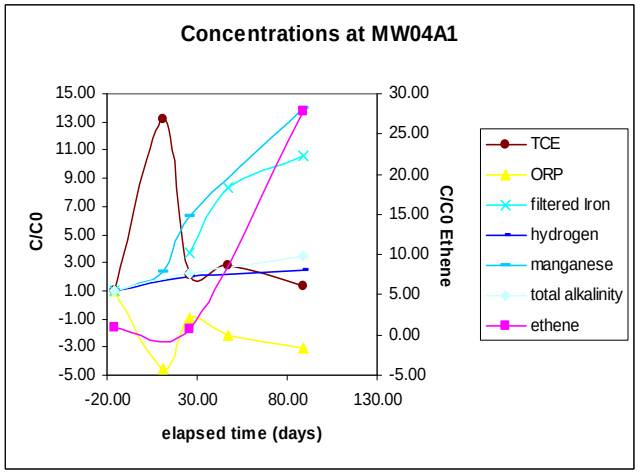
FIGURE H-3

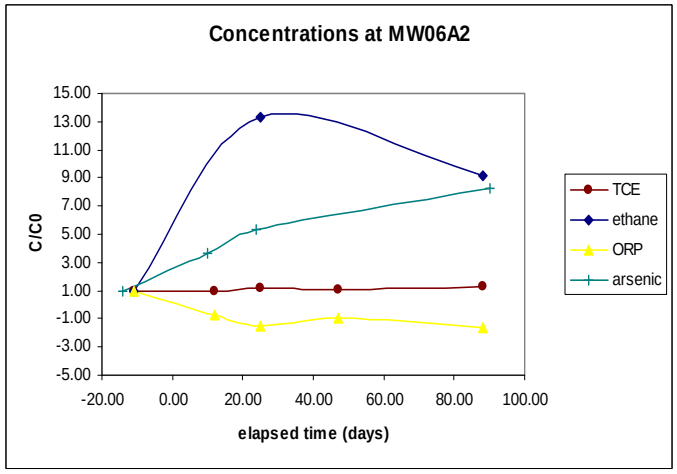
INJECTION INFLUENCE ON GROUNDWATER SAMPLING PARAMETERS

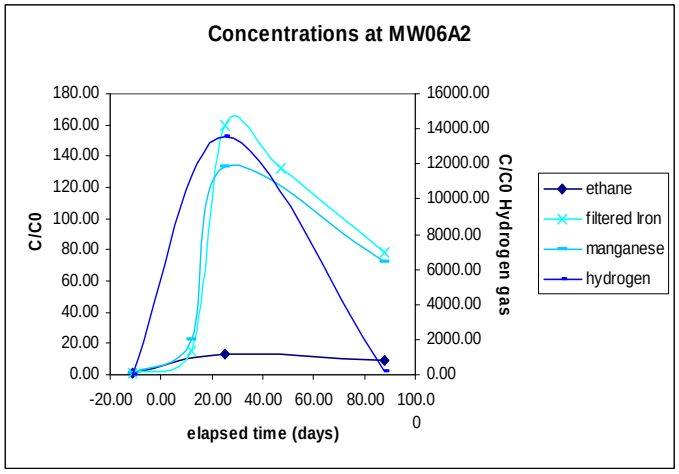








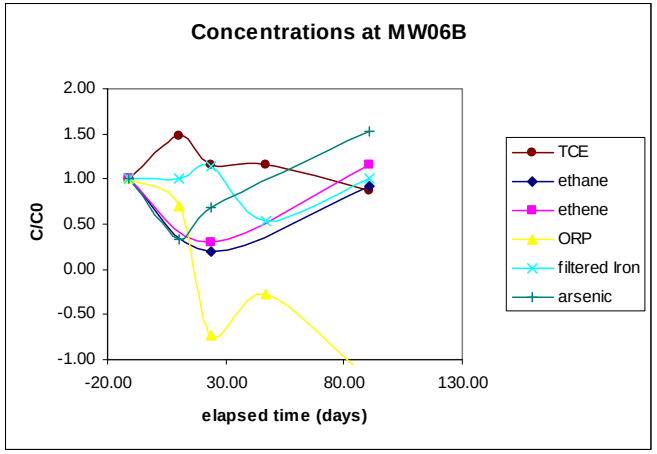


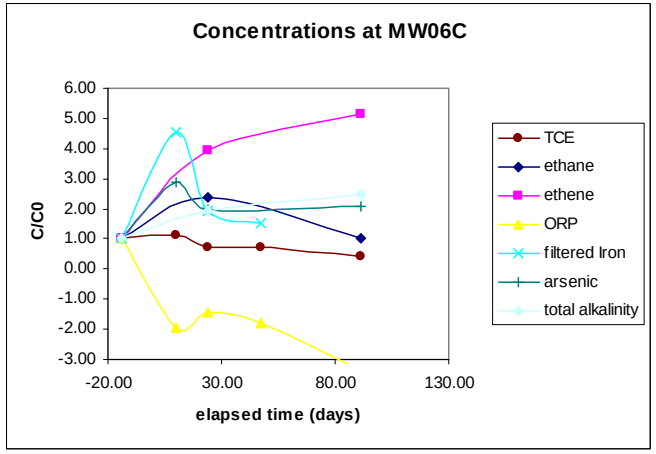


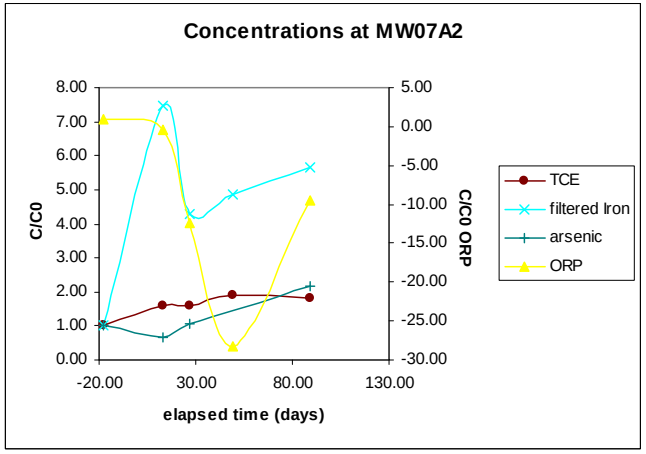
Note: Various best fit scales used.

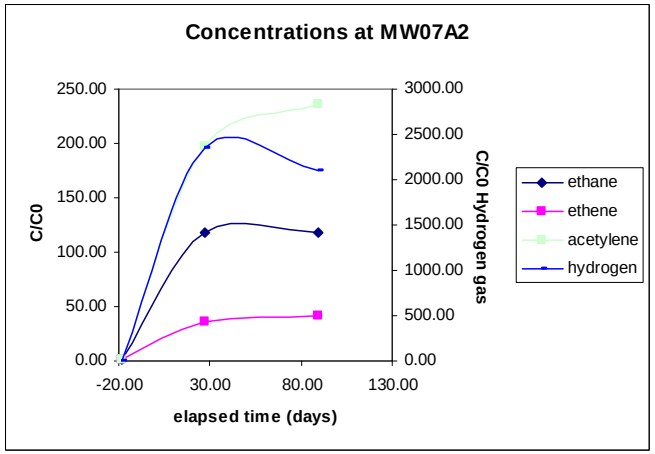
FIGURE H-3

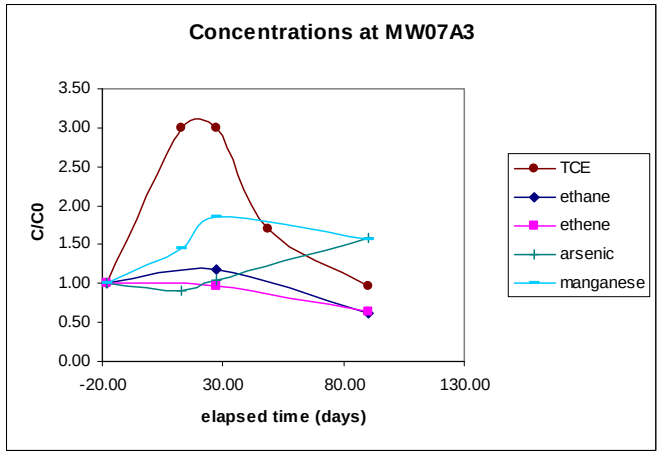
INJECTION INFLUENCE ON GROUNDWATER SAMPLING PARAMETERS

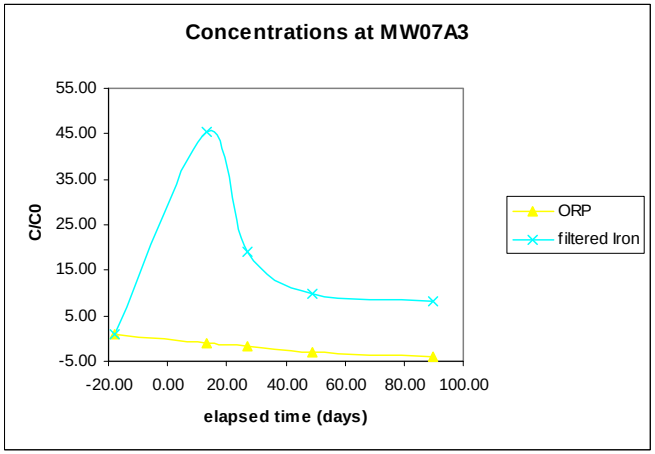












Note: Various best fit scales used.

APPENDIX I

WASTE MANIFESTS
(on CD Only)

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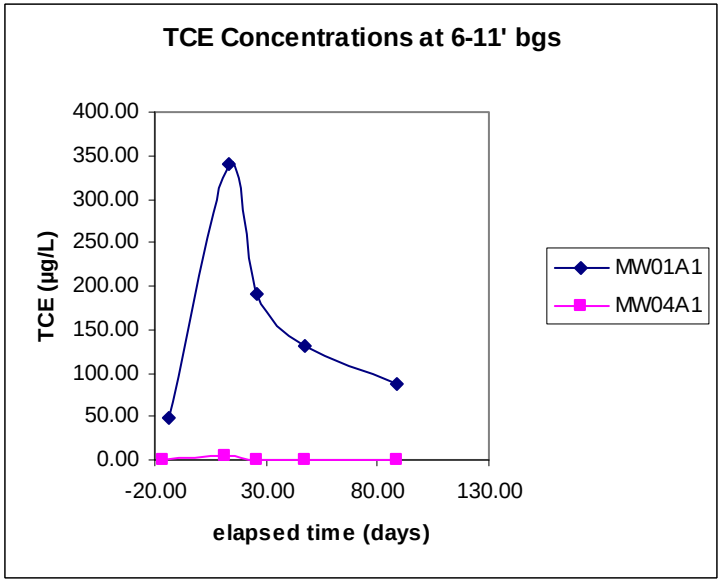
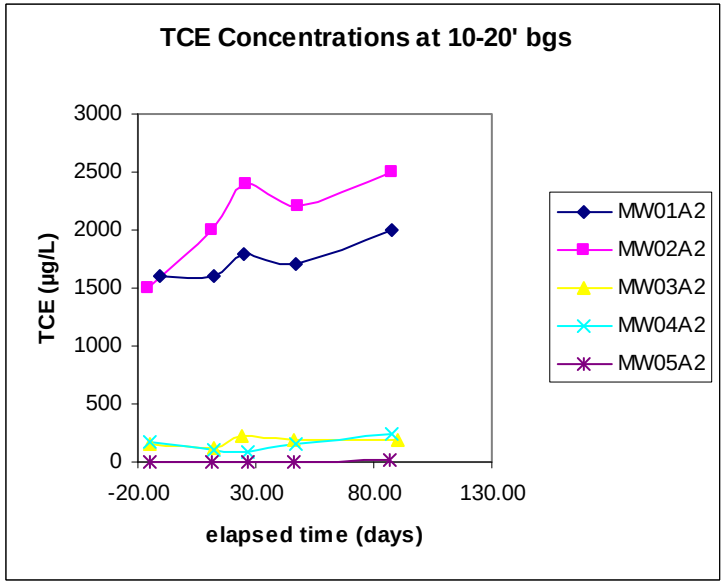
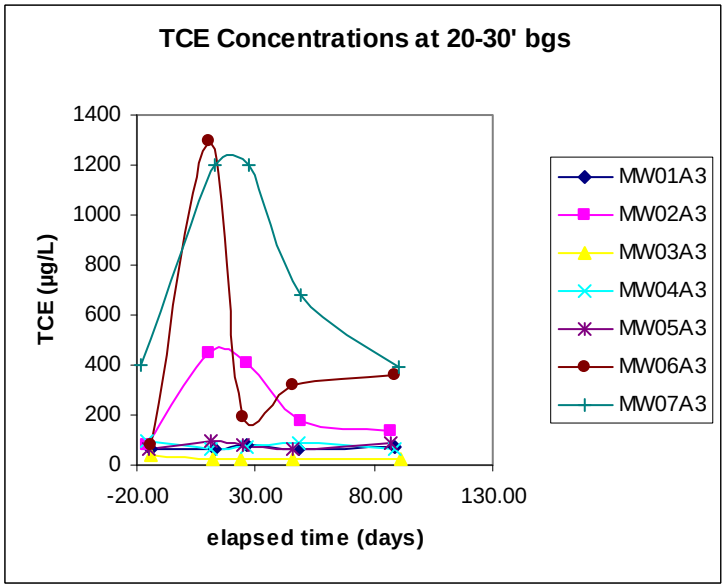
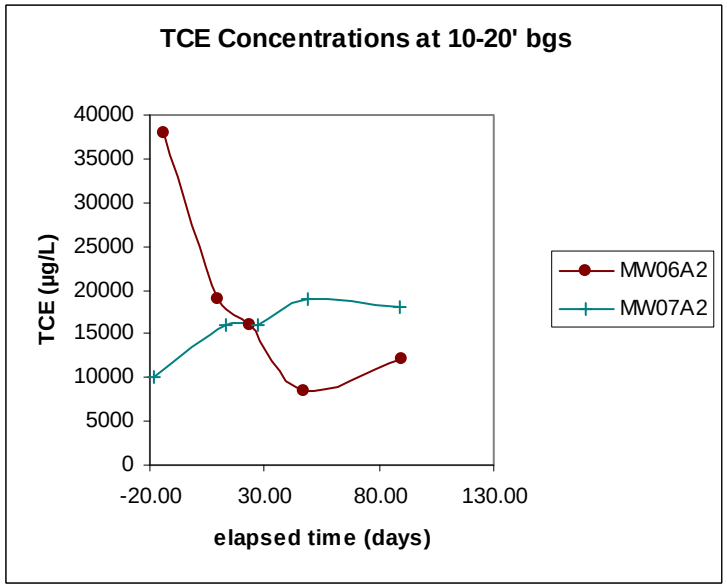
FIGURE H-1

INJECTION INFLUENCE ON CONCENTRATIONS OF TCE, CIS-1,2-DCE, AND VC









Note: Various best fit scales used.

DJ2763338

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CA2170023236
2. Page 1 of 1
3. Emergency Response Phone: 415-552-1818
4. Waste Tracking Number: 002272

5. Generator's Name and Mailing Address
US Navy BRAC PMO-W, Alameda Pt
1 Avenue of the Palms, Ste. 161
San Francisco, CA 94130-1807
Generator's Phone: 415-743-4713

Generator's Site Address (if different than mailing address)
2010 A Kollman Circle
Alameda, CA 94501 USA

6. Transporter 1 Company Name: Eighteen Trucking
U.S. EPA ID Number: CAR000143875

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors Buttonwillow LLC
2500 West Lokern Road
Buttonwillow, CA 93206
Facility's Phone: 661-762-6200
U.S. EPA ID Number: CAD980675275

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	Non-hazardous, Non-DOT regulated liquid (Water/Iron Powder Slurry)	W 4	DM	~~275~~ 220 W	G
2.					
3.					
4.					

13. Special Handling Instructions and Additional Information
Wear proper PPE when handling waste
Sales Order #: DJ2763338 Tracking #: A 6555
Profile #: CH416523

Need Weight Ticket

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: DOUGLAS DeLONG
Signature:
Month 03 Day 01 Year 10

15. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Port of entry/exit:
Transporter Signature (for exports only):
Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Sergio F Garcia
Signature:
Month 3 Day 1 Year 10
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name
Signature
Month Day Year

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

DJ 2763331

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CA2170023236
2. Page 1 of 1
3. Emergency Response Phone: 415-552-1818
4. Manifest Tracking Number: 005418819 JJK

GENERATOR

5. Generator's Name and Mailing Address
US Navy BRAC PMO-W, Alameda Pt
1 Avenue of the Palms, Ste. 161
San Francisco, CA 94130-1807
Generator's Phone: 415-743-4713

Generator's Site Address (if different than mailing address)
2010 A Kollman Circle
Alameda, CA 94501 USA

6. Transporter 1 Company Name: Eighteen Trucking
U.S. EPA ID Number: CAR000143875

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors Buttonwillow LLC
2500 West Lokern Road
Buttonwillow, CA 93206
Facility's Phone: 661-762-6200
U.S. EPA ID Number: CAD980675276

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. Non-RCRA Hazardous Waste, Solid (Soil with DDT)	~~20~~ 19	DM	~~10,000~~ 9,400	P	511		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
Wear proper PPE when handling waste
Profile # CH411351 Sales Order # DJ 2763331 Tracking # A 6973
Weight Ticket & Cert of Disposal Required

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: DOUGLAS DELONG
Signature: on behalf of
Month 03 Day 01 Year 10

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: SERGIO F GARCIA
Signature:
Month 3 Day 1 Year 10
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name
Signature
Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

DJ 2763351

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CA2170023235
2. Page 1 of 1
3. Emergency Response Phone: 415-552-1818
4. Waste Tracking Number: 002274

5. Generator's Name and Mailing Address
US Navy BRAC PMO-W, Alameda Pt
1 Avenue of the Palms, Ste. 161
San Francisco, CA 94130-1807
Generator's Phone: 415-743-4713

Generator's Site Address (if different than mailing address)
2010 A Kollman Circle
Alameda, CA 94501 USA

6. Transporter 1 Company Name: Eighteen Trucking
U.S. EPA ID Number: CAR000143875

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors Buttonwillow LLC
2500 West Lokem Road
Buttonwillow, CA 93205
Facility's Phone: 661-762-6200
U.S. EPA ID Number: CAD990575275

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	Non-Hazardous, Non-D.O.T. Regulated Liquid (purging/decontamination water)	15	DM	825	G
2.			~~DM~~ D		~~T~~ W
3.					
4.					

13. Special Handling Instructions and Additional Information
Wear proper PPE when handling waste
Sales Order # DJ 2763351
Tracking # A6556
Profile # CH396826

NEED WEIGHT TICKET

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: DOUGLAS DeLONG
Signature:
Month 03 Day 01 Year 10

15. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Port of entry/exit:
Transporter Signature (for exports only):
Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: SERGIO F GARCIA
Signature:
Month 3 Day 1 Year 10
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name:
Signature:
Month Day Year

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

DJ 2763356

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CA2170023236
2. Page 1 of 1
3. Emergency Response Phone: 415-552-1818
4. Waste Tracking Number: 002277

5. Generator's Name and Mailing Address
US Navy BRAC PMO-W, Alameda Pt
1 Avenue of the Palms, Ste. 161
San Francisco, CA 94130-1807
Generator's Phone: 415-743-4713

Generator's Site Address (if different than mailing address)
2010 A Kollman Circle
Alameda, CA 94501 USA

6. Transporter 1 Company Name: Eighteen Trucking
U.S. EPA ID Number: CAR000143875

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors Buttonwillow LLC
2500 West Lokern Road
Buttonwillow, CA 93206
Facility's Phone: 661-762-6200
U.S. EPA ID Number: CAD980575275

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non-Hazardous, Non-D.O.T. Regulated Material (concrete cutting material)	1	DM	500	P	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
Wear proper PPE when handling waste
Sales Order # DJ 2763356 Tracking # A6557
Profile # CH422276

Need Weight Ticket !

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Douglas DeLoma
Signature:
Month 03 Day 01 Year 10

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: SERGIO F GARCIA
Signature:
Month 3 Day 1 Year 10

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name
Signature
Month Day Year

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

APPENDIX J

PROJECT PHOTO INDEX
(on CD only)

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Zero-Valent Iron Treatability Study
Photograph Index (photos on CD)

No.	Date	Title	Location	Description	Notes
1	11-10-09	001	OU-2B Site 4	ARS set up at IP-03	
2	11-10-09	002	OU-2B Site 4	ARS driller sets up at IP-03	
3	11-10-09	003	OU-2B Site 4	Compressed nitrogen tanks for injection	
4	11-10-09	004	OU-2B Site 4	Injection preparation at IP-03	
5	11-10-09	005	OU-2B Site 4	Injection set up	
6	11-10-09	006	OU-2B Site 4	Injection set up, compressor	
7	11-10-09	007	OU-2B Site 4	Injection set up, compressed nitrogen tanks	
8	11-10-09	008	OU-2B Site 4	Injection pressure response monitoring	
9	11-10-09	009	OU-2B Site 4	ZVI totes	
10	11-10-09	010	OU-2B Site 4	ZVI tote cap	
11	11-10-09	011	OU-2B Site 4	Injection set up	
12	11-10-09	012	OU-2B Site 4	Injection set up at IP-03	
13	11-10-09	013	OU-2B Site 4	Driller setting up injection	
14	11-11-09	014	OU-2B Site 4	O-ring installation at IP-03	
15	11-11-09	015	OU-2B Site 4	Injection set up view to the west	
16	11-11-09	016	OU-2B Site 4	Surface breach at IP-03	
17	11-11-09	017	OU-2B Site 4	Surface breach at IP-03	
18	11-11-09	018	OU-2B Site 4	Daylighting during injection	
19	11-12-09	019	OU-2B Site 4	Surfacing during injection at IP-03	
20	11-12-09	020	OU-2B Site 4	IP-03 Close up	
21	11-12-09	021	OU-2B Site 4	Driller preparing for fracture initiation	
22	11-12-09	022	OU-2B Site 4	Positioning ZVI tote for injection	
23	11-12-09	023	OU-2B Site 4	Positioning ZVI totes	
24	11-12-09	024	OU-2B Site 4	Daylighting during injection	
25	11-12-09	025	OU-2B Site 4	Surfacing at IP-02	
26	11-18-09	026	OU-2B Site 4	Daylighting at IP-02	
27	11-18-09	027	OU-2B Site 4	Bubbling at !P-01	
28	11-18-09	028	OU-2B Site 4	Froth-like material at IP-02	
29	11-18-09	029	OU-2B Site 4	Froth-like material surfacing at IP-01	
30	11-18-09	030	OU-2B Site 4	Rig set up for ZVI injection	
31	10-28-09	031	OU-2B Site 4	Well construction at ZVI-MW05	
32	10-28-09	032	OU-2B Site 4	Drilling ZVI-MW05	
33	10-28-09	033	OU-2B Site 4	Hand augering at ZVI-MW02	
34	10-28-09	034	OU-2B Site 4	Coring subsurface slab at ZVI-MW01	
35	10-28-09	035	OU-2B Site 4	Coring subsurface slab at ZVI-MW01(2)	
36	9-2-09	036	OU-2B Site 4	S4-CC2 Core 1	
37	9-2-09	037	OU-2B Site 4	S4-CC3 Core 3	
38	9-2-09	038	OU-2B Site 4	S4-CC3 Core 4	

Zero-Valent Iron Treatability Study
Photograph Index (photos on CD)

No.	Date	Title	Location	Description	Notes
39	9-2-09	039	OU-2B Site 4	S4-CC3 Core 5	
40	9-2-09	040	OU-2B Site 4	S4-CC5 Core 1	
41	9-2-09	041	OU-2B Site 4	S4-CC5 Core 2	
42	9-2-09	042	OU-2B Site 4	S4-CC2 Core 2	
43	9-2-09	043	OU-2B Site 4	S4-CC2 Core 3	
44	9-2-09	044	OU-2B Site 4	S4-CC2 Core 4	
45	9-2-09	045	OU-2B Site 4	S4-CC3 Core 1	
46	9-2-09	046	OU-2B Site 4	S4-CC3 Core 2	
47	9-2-09	047	OU-2B Site 4	S4-CC5 Core 3	
48	9-2-09	048	OU-2B Site 4	S4-CC5 Core 4	
49	9-2-09	049	OU-2B Site 4	S4-CC5 Core 5	
50	9-2-09	050	OU-2B Site 4	S4-CC2 Core 5	
51	1-18-09	051	OU-2B Site 4	S4-CC1 Hand auger cuttings 1 with PID reader	
52	1-18-09	052	OU-2B Site 4	S4-CC1 Hand auger cuttings 2 with PID reader	
53	1-18-09	053	OU-2B Site 4	S4-CC1 Hand auger cuttings	
54	1-18-09	054	OU-2B Site 4	S4-CC4 Hand auger cuttings 2 with wood fragments	
55	1-18-09	055	OU-2B Site 4	S4-CC4 Hand auger cuttings 4	
56	1-18-09	056	OU-2B Site 4	S4-CC4 Hand auger cuttings 5	
57	1-18-09	057	OU-2B Site 4	S4-CC4 Hand auger cuttings 6	
58	1-18-09	058	OU-2B Site 4	S4-CC4 Hand auger cuttings 7	
59	1-18-09	059	OU-2B Site 4	S4-CC4 Hand auger cuttings 8	
60	1-18-09	060	OU-2B Site 4	S4-CC4 Hand auger cuttings 9 with PID reader	
61	1-18-09	061	OU-2B Site 4	S4-CC4 Hand auger cuttings 1	
62	1-18-09	062	OU-2B Site 4	S4-CC4 Hand auger cuttings 3	
63	1-27-09	063	OU-2B Site 4	Concrete patch looking east	
64	1-27-09	064	OU-2B Site 4	Close up of concrete box looking east	
65	1-27-09	065	OU-2B Site 4	Close up of possible trench edge at MIP 13	
66	1-27-09	066	OU-2B Site 4	Possible trench at MIP 13	
67	1-27-09	067	OU-2B Site 4	Possible trench view to west	
68	2-3-09	068	OU-2B Site 4	Soil beneath concrete box close up	
69	2-3-09	069	OU-2B Site 4	Soil 5 feet under concrete patch	
70	1-27-09	070	OU-2B Site 4	View south at MIP 13	
71	7-31-09	071	OU-2B Site 4	MIP outside Bldg 163	
72	8-3-09	072	OU-2B Site 4	Limited Access MIP outside Bldg 163	
73	8-3-09	073	OU-2B Site 4	Limited Access MIP outside Bldg 163	
74	8-5-09	074	OU-2B Site 4	MIP inside Bldg 163	

Zero-Valent Iron Treatability Study
Photograph Index (photos on CD)

No.	Date	Title	Location	Description	Notes
75	8-5-09	075	OU-2B Site 4	Setting up MIP inside Bldg 163	
76	8-5-09	076	OU-2B Site 4	Hand auger clearing MIP location	
77	8-5-09	077	OU-2B Site 4	MIP inside Bldg 163 with limited access rig	
78	8-12-09	078	OU-2B Site 4	MIP inside Bldg 163 with limited access rig	
79	8-12-09	079	OU-2B Site 4	MIP outside Bldg 163 with limited access rig	
80	11-6-09	080	OU-2B Site 4	MIP Sampling	
81	11-6-09	081	OU-2B Site 4	MIP Sampling by Bldg 163	
82	11-6-09	082	OU-2B Site 4	MIP Sampling	
83	1-18-09	083	OU-2B Site 4	Subsurface concrete recovered at S4-CC2	
84	1-18-09	084	OU-2B Site 4	Geoprobe in bldg 163	
85	1-19-09	085	OU-2B Site 4	Secondary concrete slab core w of OWS 163	
86	2-3-09	086	OU-2B Site 4	MIP13 SS location	

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Photograph 001. ARS set up at IP03

Photograph 002. ARS driller sets up at IP03

Photograph 003. Compressed nitrogen tanks for injection

Photograph 004. Injection Preparation at IP03

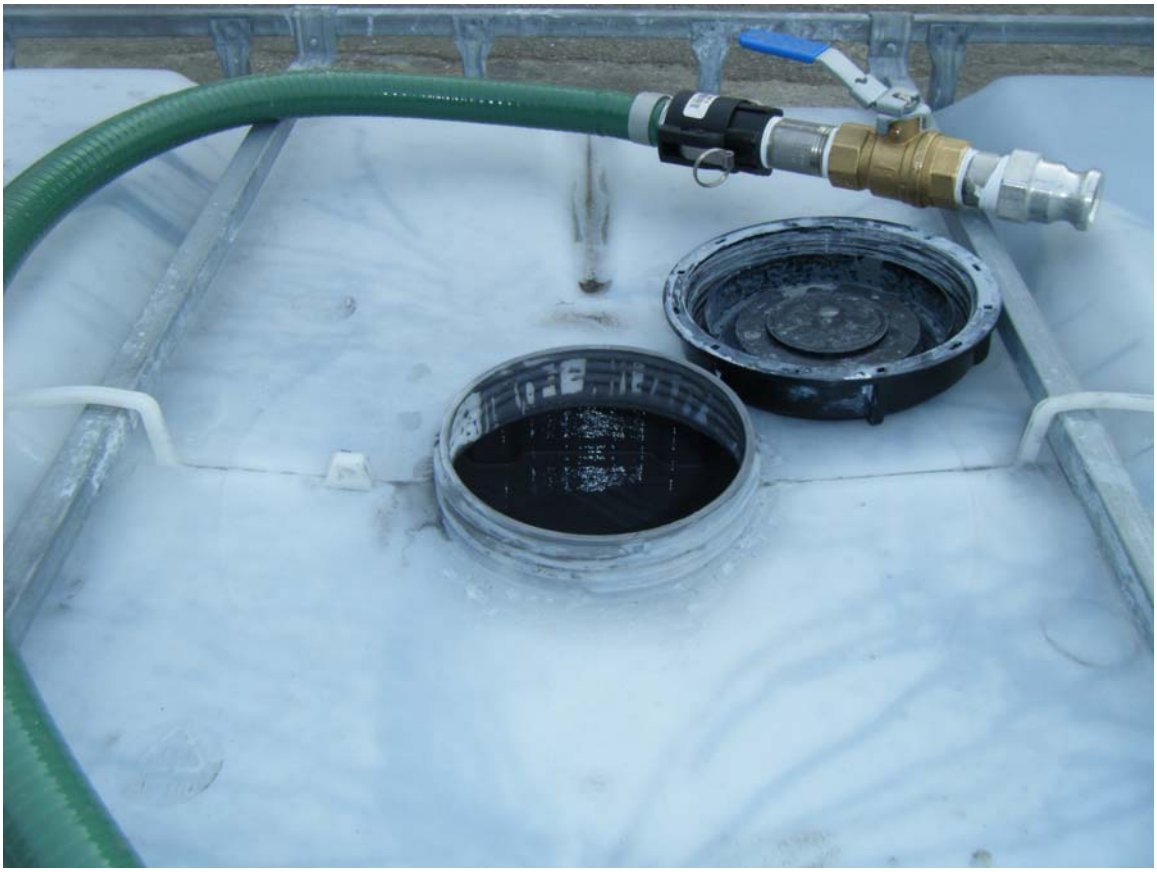
Photograph 005. Injection set up

Photograph 006. Injection set up, compressor

Photograph 007. Injection set up, compressed nitrogen tanks

Photograph 008. Injection pressure response monitoring

Photograph 009. ZVI totes

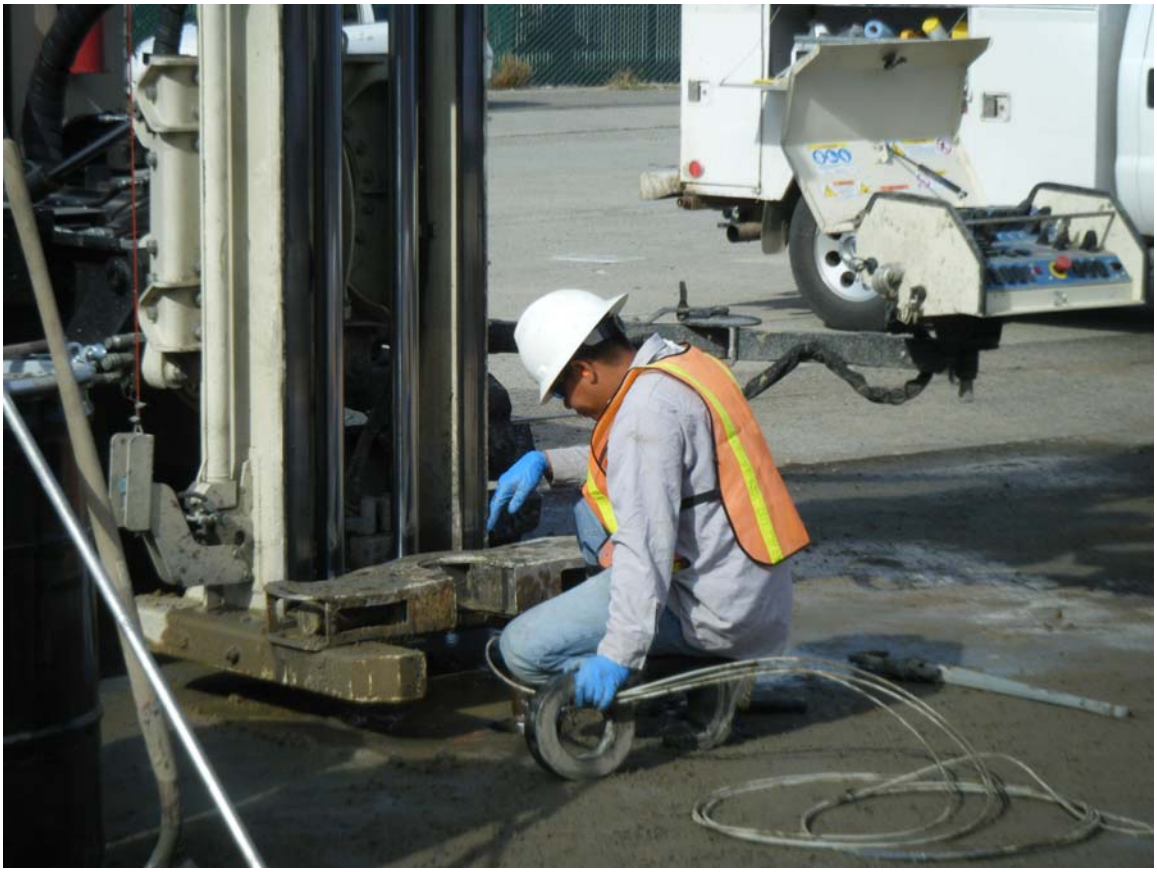


Photograph 010. ZVI tote cap

Photograph 011. Injection set up

Photograph 012. Injection set up at IP03

Photograph 013. Driller setting up injection



Photograph 014. O-ring installation at IP03

Photograph 015. O-ring installation at IP03

Photograph 016. Surface breach at IP03

Photograph 017. Surface breach at IP03

Photograph 018. Daylighting during injection

Photograph 019. Surfacing during injection at IP03

Photograph 020. IP03 Close up

Photograph 021. Driller preparing for fracture initiation

Photograph 022. Positioning ZVI tote for injection

Photograph 023. Positioning ZVI totes

Photograph 024. Daylighting during injection

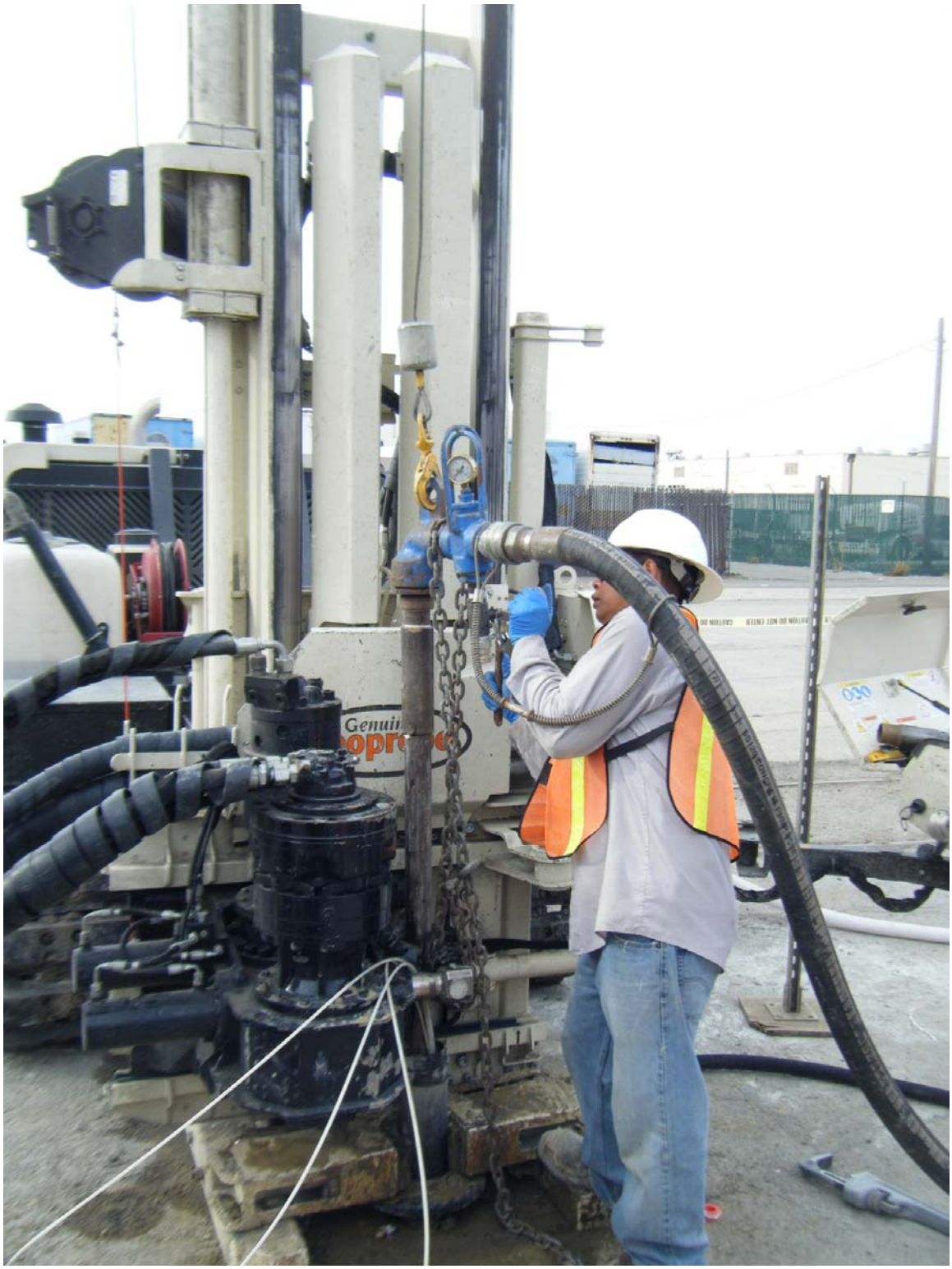
Photograph 025. Surfacing at IP02

Photograph 026. Daylighting at IP02

Photograph 027. Bubbling at IP01

Photograph 028. Froth-like material at IP02

Photograph 029. Froth-like material surfacing at IP01



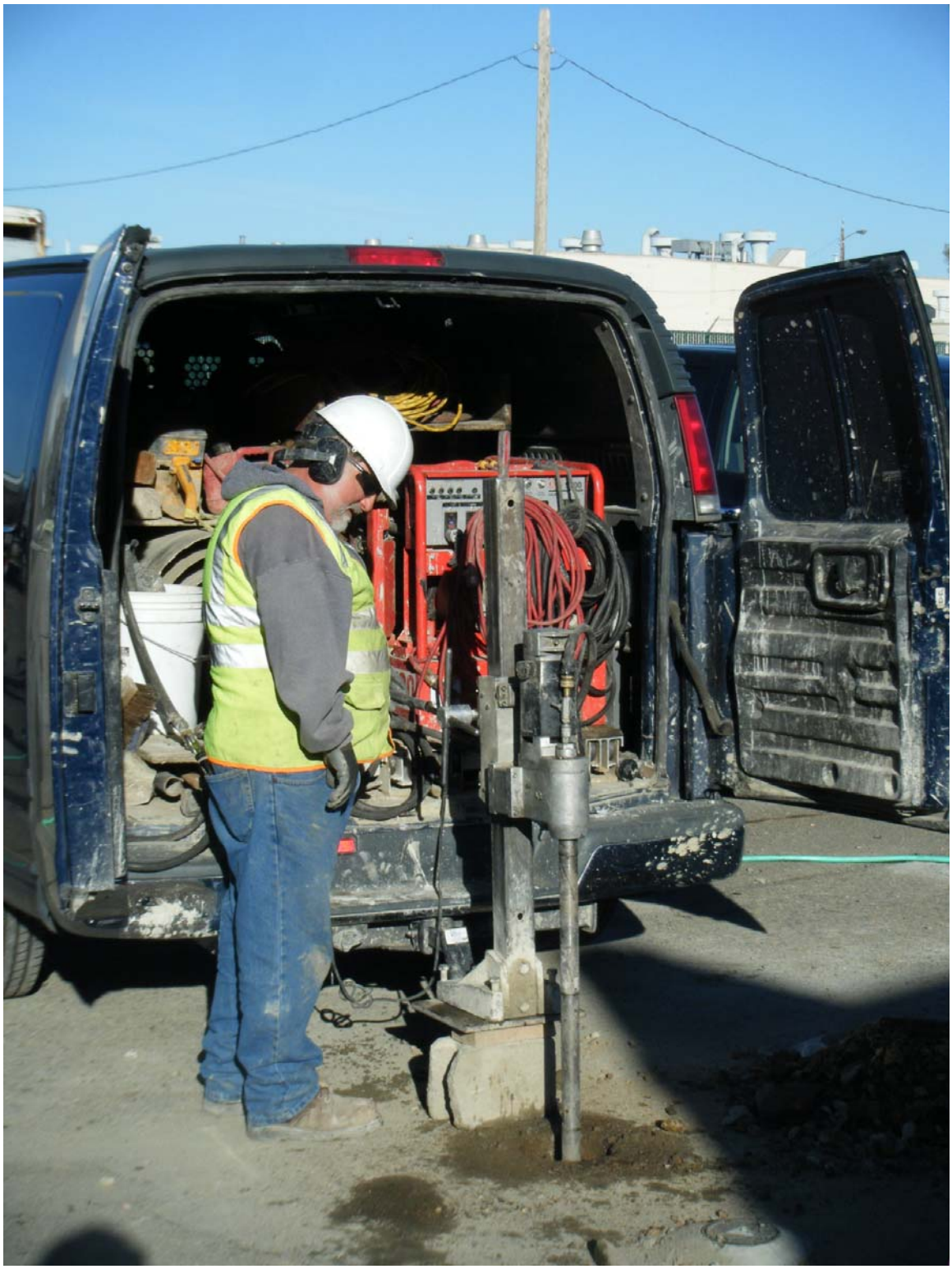
Photograph 030. Rig set up for ZVI injection

Photograph 031. Well construction at ZVI-MW05

Photograph 032. Drilling ZVI-MW05

Photograph 033. Hand augering at ZVI-MW02

Photograph 034. Coring subsurface slab at ZVI-MW01



Photograph 035. Coring subsurface slab at ZVI-MW01(2)

Photograph 036. S4-CC2 Core 1

Photograph 037. S4-CC3 Core 3

Photograph 038. S4-CC3 Core 4

Photograph 039. S4-CC3 Core 5

Photograph 040. S4-CC5 Core 1

Photograph 041. S4-CC5 Core 2

Photograph 042. S4-CC2 Core 2

Photograph 043. S4-CC2 Core 3

Photograph 044. S4-CC2 Core 4

Photograph 045. S4-CC3 Core 1

Photograph 046. S4-CC3 Core 2

Photograph 047. S4-CC5 Core 3

Photograph 047. S4-CC5 Core 4

Photograph 049. S4-CC5 Core 5

Photograph 050. S4-CC2 Core 5

Photograph 051. S4-CC1 Hand auger cuttings 1 with PID reader

Photograph 052. S4-CC1 Hand auger cuttings 2 with PID reader

Photograph 053. S4-CC1 Hand auger cuttings

Photograph 054. S4-CC4 Hand auger cuttings 2 with wood fragments

Photograph 055. S4-CC4 Hand auger cuttings 4

Photograph 056. S4-CC4 Hand auger cuttings 5

Photograph 057. S4-CC4 Hand auger cuttings 6

Photograph 058. S4-CC4 Hand auger cuttings 7

Photograph 059. S4-CC4 Hand auger cuttings 8

Photograph 060. S4-CC4 Hand auger cuttings 9 with PID reader

Photograph 061. S4-CC4 Hand auger cuttings 1

Photograph 062. S4-CC4 Hand auger cuttings 3

Photograph 063. Concrete patch looking east

Photograph 064. Close up of concrete box looking east

Photograph 065. Close up of possible trench edge at MIP 13

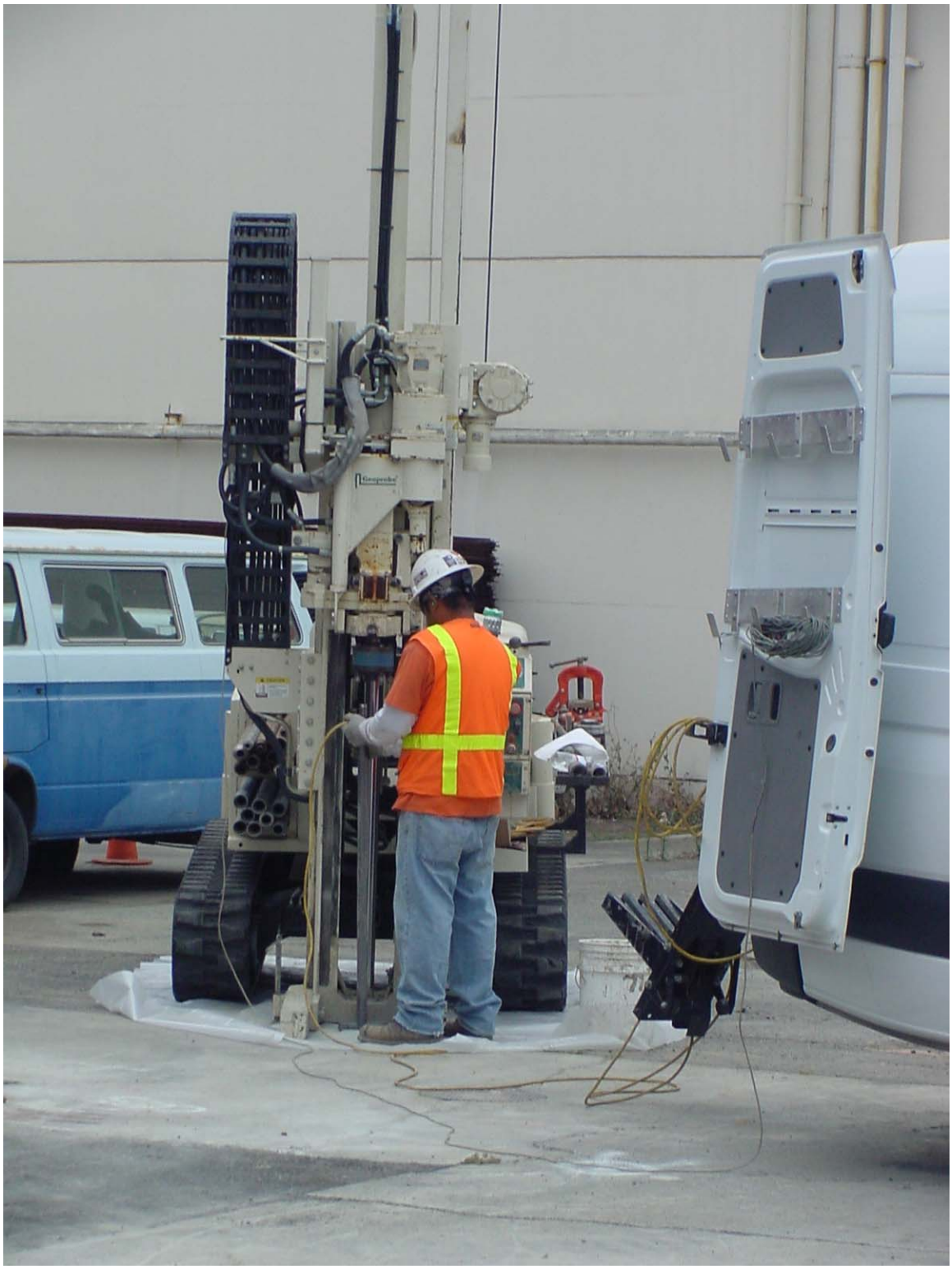
Photograph 066. Possible trench at MIP 13

Photograph 067. Possible trench view to west

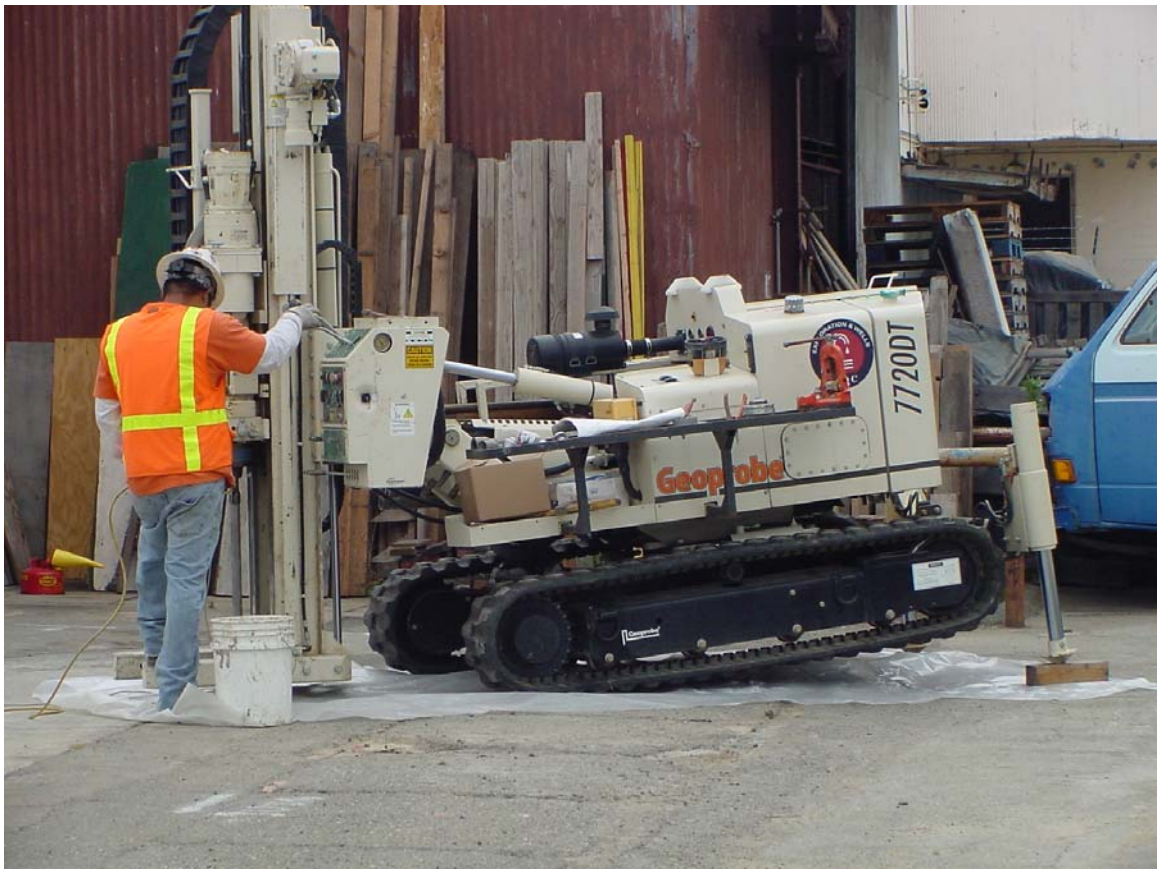
Photograph 068. Soil beneath concrete box close up

Photograph 069. Soil 5 feet under concrete patch

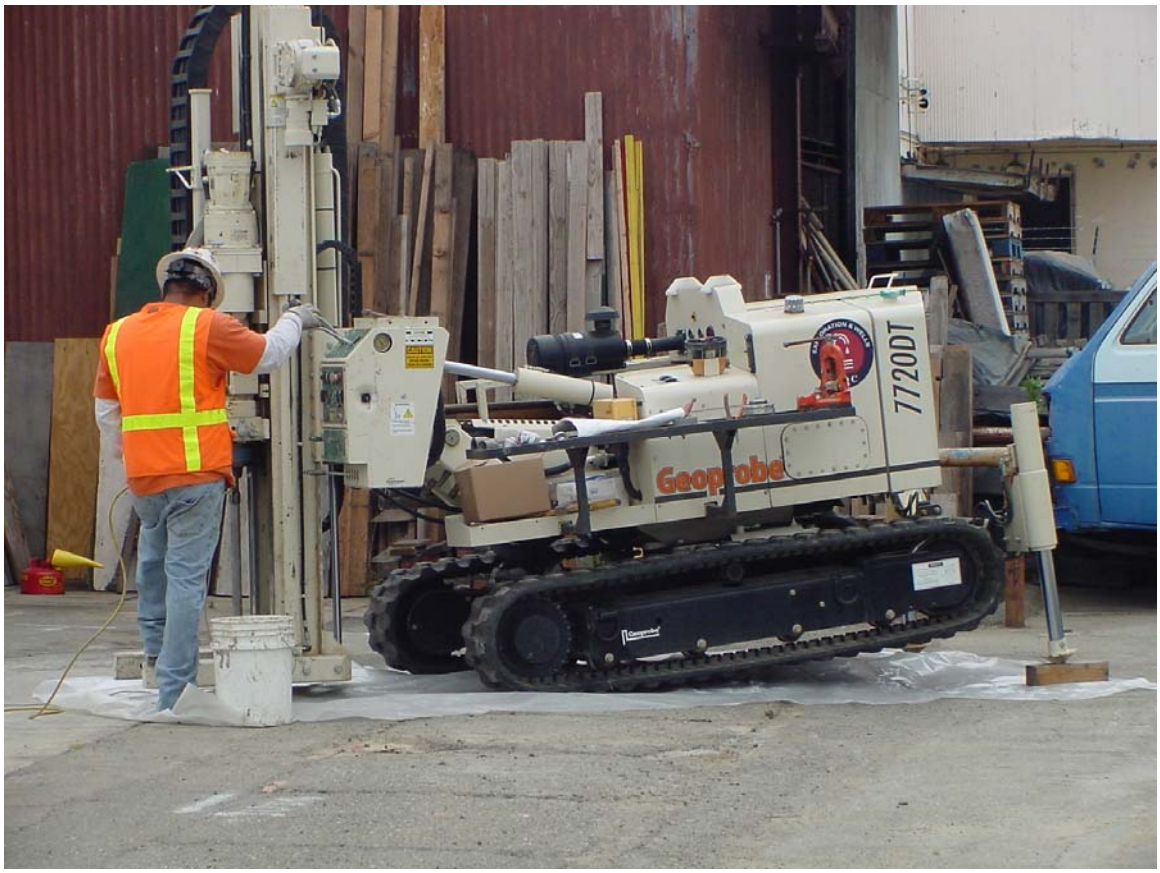
Photograph 070. View south at MIP 13



Photograph 071. MIP outside Bldg 163



Photograph 072. Limited Access MIP outside Bldg 163



Photograph 073. Limited Access MIP outside Bldg 163

Photograph 074. MIP inside Bldg 163

Photograph 075. Setting up MIP inside Bldg 163

Photograph 076. Hand auger clearing MIP location

Photograph 077. MIP inside Bldg 163 with limited access rig

Photograph 078. MIP inside Bldg 163 with limited access rig

Photograph 079. MIP outside Bldg 163 with limited access rig

Photograph 080. MIP Sampling

Photograph 081. MIP Sampling by Bldg 163

Photograph 082. MIP Sampling

Photograph 083. Subsurface concrete recovered at S4-CC2

Photograph 084. Geoprobe in bldg 163

Photograph 085. Secondary concrete slab core w of OWS 163

Photograph 086. MIP13 SS location

N00236_003594
ALAMEDA POINT

FOLDER 2 OF 15

RAW ANALYTICAL DATA

RAW ANALYTICAL DATA IS NOT REQUIRED TO BE PHYSICALLY LOCATED AT OR NEAR THE INSTALLATION AND INFORMATION REPOSITORY.

FOR ADDITIONAL INFORMATION, CONTACT:

DIANE C. SILVA, COMMAND RECORDS MANAGER, CODE EV33
NAVAL FACILITIES ENGINEERING COMMAND, SOUTHWEST
1220 PACIFIC HIGHWAY (NBSD BLDG. 3519)
SAN DIEGO, CA 92132

TELEPHONE: (619) 556-1280
E-MAIL: diane.silva@navy.mil

N00236_003594
ALAMEDA POINT

FOLDER 3 OF 15

RAW ANALYTICAL DATA

RAW ANALYTICAL DATA IS NOT REQUIRED TO BE PHYSICALLY LOCATED AT OR NEAR THE INSTALLATION AND INFORMATION REPOSITORY.

FOR ADDITIONAL INFORMATION, CONTACT:

DIANE C. SILVA, COMMAND RECORDS MANAGER, CODE EV33
NAVAL FACILITIES ENGINEERING COMMAND, SOUTHWEST
1220 PACIFIC HIGHWAY (NBSD BLDG. 3519)
SAN DIEGO, CA 92132

TELEPHONE: (619) 556-1280
E-MAIL: diane.silva@navy.mil

N00236_003594
ALAMEDA POINT

FOLDER 4 OF 15

RAW ANALYTICAL DATA

RAW ANALYTICAL DATA IS NOT REQUIRED TO BE PHYSICALLY LOCATED AT OR NEAR THE INSTALLATION AND INFORMATION REPOSITORY.

FOR ADDITIONAL INFORMATION, CONTACT:

DIANE C. SILVA, COMMAND RECORDS MANAGER, CODE EV33
NAVAL FACILITIES ENGINEERING COMMAND, SOUTHWEST
1220 PACIFIC HIGHWAY (NBSD BLDG. 3519)
SAN DIEGO, CA 92132

TELEPHONE: (619) 556-1280
E-MAIL: diane.silva@navy.mil

N00236_003594
ALAMEDA POINT

FOLDER 5 OF 15

RAW ANALYTICAL DATA

RAW ANALYTICAL DATA IS NOT REQUIRED TO BE PHYSICALLY LOCATED AT OR NEAR THE INSTALLATION AND INFORMATION REPOSITORY.

FOR ADDITIONAL INFORMATION, CONTACT:

DIANE C. SILVA, COMMAND RECORDS MANAGER, CODE EV33
NAVAL FACILITIES ENGINEERING COMMAND, SOUTHWEST
1220 PACIFIC HIGHWAY (NBSD BLDG. 3519)
SAN DIEGO, CA 92132

TELEPHONE: (619) 556-1280
E-MAIL: diane.silva@navy.mil

N00236_003594
ALAMEDA POINT

FOLDER 6 OF 15

RAW ANALYTICAL DATA

RAW ANALYTICAL DATA IS NOT REQUIRED TO BE PHYSICALLY LOCATED AT OR NEAR THE INSTALLATION AND INFORMATION REPOSITORY.

FOR ADDITIONAL INFORMATION, CONTACT:

DIANE C. SILVA, COMMAND RECORDS MANAGER, CODE EV33
NAVAL FACILITIES ENGINEERING COMMAND, SOUTHWEST
1220 PACIFIC HIGHWAY (NBSD BLDG. 3519)
SAN DIEGO, CA 92132

TELEPHONE: (619) 556-1280
E-MAIL: diane.silva@navy.mil

N00236_003594
ALAMEDA POINT

FOLDER 7 OF 15

RAW ANALYTICAL DATA

RAW ANALYTICAL DATA IS NOT REQUIRED TO BE PHYSICALLY LOCATED AT OR NEAR THE INSTALLATION AND INFORMATION REPOSITORY.

FOR ADDITIONAL INFORMATION, CONTACT:

DIANE C. SILVA, COMMAND RECORDS MANAGER, CODE EV33
NAVAL FACILITIES ENGINEERING COMMAND, SOUTHWEST
1220 PACIFIC HIGHWAY (NBSD BLDG. 3519)
SAN DIEGO, CA 92132

TELEPHONE: (619) 556-1280
E-MAIL: diane.silva@navy.mil

N00236_003594
ALAMEDA POINT

FOLDER 8 OF 15

RAW ANALYTICAL DATA

RAW ANALYTICAL DATA IS NOT REQUIRED TO BE PHYSICALLY LOCATED AT OR NEAR THE INSTALLATION AND INFORMATION REPOSITORY.

FOR ADDITIONAL INFORMATION, CONTACT:

DIANE C. SILVA, COMMAND RECORDS MANAGER, CODE EV33
NAVAL FACILITIES ENGINEERING COMMAND, SOUTHWEST
1220 PACIFIC HIGHWAY (NBSD BLDG. 3519)
SAN DIEGO, CA 92132

TELEPHONE: (619) 556-1280
E-MAIL: diane.silva@navy.mil

N00236_003594
ALAMEDA POINT

FOLDER 9 OF 15

RAW ANALYTICAL DATA

RAW ANALYTICAL DATA IS NOT REQUIRED TO BE PHYSICALLY LOCATED AT OR NEAR THE INSTALLATION AND INFORMATION REPOSITORY.

FOR ADDITIONAL INFORMATION, CONTACT:

DIANE C. SILVA, COMMAND RECORDS MANAGER, CODE EV33
NAVAL FACILITIES ENGINEERING COMMAND, SOUTHWEST
1220 PACIFIC HIGHWAY (NBSD BLDG. 3519)
SAN DIEGO, CA 92132

TELEPHONE: (619) 556-1280
E-MAIL: diane.silva@navy.mil

N00236_003594
ALAMEDA POINT

FOLDER 10 OF 15

RAW ANALYTICAL DATA

RAW ANALYTICAL DATA IS NOT REQUIRED TO BE PHYSICALLY LOCATED AT OR NEAR THE INSTALLATION AND INFORMATION REPOSITORY.

FOR ADDITIONAL INFORMATION, CONTACT:

DIANE C. SILVA, COMMAND RECORDS MANAGER, CODE EV33
NAVAL FACILITIES ENGINEERING COMMAND, SOUTHWEST
1220 PACIFIC HIGHWAY (NBSD BLDG. 3519)
SAN DIEGO, CA 92132

TELEPHONE: (619) 556-1280
E-MAIL: diane.silva@navy.mil

N00236_003594
ALAMEDA POINT

FOLDER 11 OF 15

RAW ANALYTICAL DATA

RAW ANALYTICAL DATA IS NOT REQUIRED TO BE PHYSICALLY LOCATED AT OR NEAR THE INSTALLATION AND INFORMATION REPOSITORY.

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ALAMEDA POINT

FOLDER 12 OF 15

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ALAMEDA POINT

FOLDER 14 OF 15

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FOLDER 15 OF 15

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