FINAL
Report for
Data Gap Sampling
Installation Restoration Site 26

Alameda Point
Alameda, California

Contract No. N68711-05-D-6403
Task Order 0003
ITSI Document Control No. 3510303.0052
Navy Document Control No. ITSI-6403-0003-0052

Prepared for:

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July 2007

SITE INVESTIGATION REPORT

DATA GAP SAMPLING
INSTALLATION RESTORATION SITE 26
ALAMEDA POINT, ALAMEDA, CALIFORNIA

FINAL

Prepared For:

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

Prepared Under:

Naval Facilities Engineering Command, Southwest
Contract Number N68711-05-D-6403
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Alameda Pt CERCLA CTO 003

Innovative Technical Solutions, Inc.

Letter of Transmittal

SUBJECT: Final Report for Data Gap Sampling at IR 26, Alameda Point, Alameda, CA
Contract No. N68711-05D-6403 Task Order 0003 ***NAVY DISTRIBUTION***

To:	Steven Peck, P.E.	**From:**	Rachel Hess
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No.	Copies	Date	Title
1	5	7/19/07	Revised Cover, Title Page, and Figure 4 for the Final Remedial Design Data Gap Sampling Investigation Report, Installation Restoration Site 26, Alameda Point, Alameda, CA and RTC to the Draft Final Report

Comments:

The attached replacement covers, title pages, figure and RTCs for the above referenced document have also been provided to the regulatory agencies. Five copies are provided to you for internal Navy distribution. Three hardcopies have been sent directly to Ms. Diane Silva.

CC:

(3 HC) Diane Silva, Admin Records, NAVFAC SW, 937 N. Harbor Dr, Blg 1, 3rd Fl, San Diego, CA, 92132 [619-532-3676]
CC w/ attachments in Project Files and ITSI 8(a) RAC website

Innovative Technical Solutions, Inc.

Letter of Transmittal

SUBJECT: Draft Final Report for Data Gap Sampling at IR 26, Alameda Point, Alameda, CA
Contract No. N68711-05D-6403 Task Order 0003 ***NAVY DISTRIBUTION***

To:	Steven Peck, P.E.	**From:**	Rachel Hess
Company:	Base Realignment & Closure	**Date:**	4/26/07
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1	5	4/20/07	DRAFT FINAL: Remedial Design Data Gap Sampling Investigation Report, Installation Restoration Site 26, Alameda Point, Alameda, CA with Agency Response to Comments

Comments:

The attached DRAFT FINAL Report with Agency Response to Comments (RTCs) has been provided to the regulatory agencies for their review and comment. Five copies are provided to you for internal Navy distribution. Three hardcopies have been sent directly to Ms. Diane Silva.

CC: (0) Thomas Macchiarella, BRAC PMO-West, 1455 Frazee Rd, Ste 900 San Diego, CA, 92108-4310 [619-532-0907]

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TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

ASTM	American Society for Testing and Materials
BEI	Bechtel Environmental, Inc.
bgs	below ground surface
BSU	Bay Sediment Unit
CH	high-estimated plasticity clay
CL	low plasticity clay
CSO	Caretaker Site Office
CTO	Contract Task Order
DCA	dichloroethane
DCE	dichloroethene
DO	dissolved oxygen
EBS	Environmental Baseline Survey
EPA	United States Environmental Protection Agency
FS	Feasibility Study
FWBZ	first water bearing zone
IDW	investigation-derived waste
IR26	Installation Restoration Site 26
ITSI	Innovative Technical Solutions, Inc.
µg/L	micrograms per liter
MSL	mean sea level
NAS	Naval Air Station
Navy	United States Department of the Navy
ORP	oxidation-reduction potential
PCE	tetrachloroethene
PVC	polyvinyl chloride
QCSR	Quality Control Summary Report
RAC	Remedial Action Contract
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
ROICC	Resident Officer in Charge of Construction
RWQCB	Regional Water Quality Control Board – San Francisco Bay Region
SC	clayey sand
SM	silty sand
SP	poorly-graded sand
SWRCB	California State Water Resources Control Board
TCE	trichloroethene
VOC	volatile organic compound

1.0 INTRODUCTION

Innovative Technical Solutions, Inc. (ITSI) prepared this Data Gap Sampling Investigation Report to describe the results of field activities undertaken to further define subsurface conditions and confirm the northern boundary of the previously identified groundwater plume in the vicinity of Building 20, located within the boundaries of Installation Restoration Site 26 (IR26) at Alameda Point, in Alameda, California (Figure 1). The ultimate goal of these activities is to provide data to support development of a Remedial Design (RD) document for this site. This work is being conducted under the 8(a) Remedial Action Contract (RAC) Number N68711-05-D-6403, Contract Task Order (CTO) 003, for the United States Department of the Navy (Navy), Southwest Division, Naval Facilities Engineering Command, San Diego, California.

In accordance with the Draft Final Workplan (ITSI, 2006), the primary objectives of the Data Gap Investigation were to determine whether the groundwater plume adjacent to Building 20 extended beneath the southern corner of the building and to further evaluate the lithology and depth of contamination within the plume boundaries. The following activities were conducted in September and October 2006:

- Drilling and continuous core sampling of five direct-push borings,
- Collection of multiple discrete-depth (hydropunch) grab groundwater samples,
- Installing seven groundwater monitoring wells,
- Installation of three observation piezometers to be used in upcoming aquifer testing, and
- Conducting one round of initial baseline groundwater sampling in the newly installed monitoring wells.

Documentation of field activities and data evaluations are included in Appendices A through G.

2.0 SITE BACKGROUND

This section briefly summarizes site background information for IR26. The Final Remedial Investigation (RI) and Feasibility Study (FS) Reports contain more details regarding the site (Bechtel Environmental, Inc. [BEI], 2003 and 2005, respectively).

2.1 SITE DESCRIPTION AND HISTORY

The U.S. Army acquired the original base property from the City of Alameda in 1930 and began construction activities in 1931. In 1936, the Navy acquired title to the land from the U.S. Army and began building the Naval Air Station (NAS) Alameda in response to the military buildup in Europe before World War II. Construction of the base included several iterations of filling tidelands, marshlands, and sloughs with dredge materials from San Francisco Bay, Oakland Inner Harbor, and Seaplane Lagoon. The base was operated as an active naval facility from 1940 to 1997. Historically, operations included aircraft, engine, gun, and avionics maintenance; fueling activities; and metal plating, stripping, and painting. The Navy operated two power plants, a transportation shop, and a pesticide shop. The base had a deepwater port capable of berthing aircraft carriers and a fuel-distribution-pipeline network that transported aviation and diesel fuel to various areas on the base (BEI, 2003).

IR26 is an approximately 32-acre site located in the central portion of Alameda Point (Figure 2). IR26 is covered by concrete and asphalt pavement, four former aircraft hangars (Buildings 20 through 23), a paint and finishing building (Building 24), and several ancillary buildings (Figure 3). The buildings are occupied by businesses that are tenants of the Alameda Reuse and Redevelopment Agency. The four former aircraft hangars (Buildings 20-23) are included in the Alameda Point Historic District.

The area of interest for this report is southeast of Building 20 and was historically used as an aircraft washdown area. An oil-water separator (OWS 020) associated with the washdown area was located southeast of Building 20. The groundwater southeast of Building 20 is impacted with volatile organic compounds (VOC) that may be associated with aircraft washdown activities conducted there. The VOCs found in the groundwater are predominantly cis-1,2-dichloroethene

(DCE) and 1,1-dichloroethane (DCA), with lesser concentrations of trichloroethene (TCE), vinyl chloride and related chlorinated hydrocarbon compounds. The previous RI/FS conducted at the site identified that the northern limits of the groundwater plume next to Building 20 were not well-defined and that they might extend beneath the building (BEI, 2003 and 2005).

2.2 PREVIOUS INVESTIGATIONS

The IR26 RI report (BEI, 2003) provides an in-depth discussion of the various investigations that have been conducted at or near Alameda Point's IR26 including:

- A 1983 initial assessment study was conducted by Ecology and Environment, Inc. to identify sites that might pose a threat to human health or the environment.
- An initial Environmental Baseline Survey (EBS), which was implemented in two phases. Phase 1 (conducted by Environmental Resource Management – West in 1994) was conducted to further examine the environmental conditions at the Alameda Point sites identified in the IAS. Phase 2A, 2B, and 2C activities were conducted between October 1994 and December 1998 by International Technology Corporation in 2001 and involved collection of environmental samples targeting potentially contaminated areas.
- A Site-Specific EBS was completed in October 1995 for EBS Parcel 192 (the northernmost parcel within IR26) by Environmental Resource Management – West in 1995.
- A basewide supplemental EBS was completed in August 2002 by Tetra Tech EM, Inc. to update and supplement information contained in the previous EBS reports. For IR26, the supplemental EBS reported that all EBS parcels associated with the site were classified as areas where a release had been confirmed and further actions were required.
- Fuel line investigations, removals, and abandonments, and storm sewer investigations and removals were conducted between 1997 and 2002 and documented in numerous reports.
- An RI and an FS were conducted and documented by Bechtel (BEI, 2003 and 2005).
- A PP is being developed; the Final ROD was issued in August 2006 (Navy, 2006).
- A basewide groundwater monitoring program is also ongoing at Alameda Point.

The previous investigations at IR26 identified that the shallow groundwater southeast of Building 20 is impacted by VOCs, predominantly solvents (1,1-DCA, 1,2-DCA, cis-1,2-DCE, TCE, and vinyl chloride) at concentrations greater than Maximum Concentrations Limits (BEI, 2003 and 2005). The contamination identified at Building 20 and the former washdown area are

both southeast of Building 20, suggesting that former washdown activities in this area may be the source of the groundwater contamination.

2.2.1 Record of Decision Status

The Final ROD, currently under regulatory review, was developed for IR26 and presents selected remedy of no action for soil and remedial action for groundwater (Navy, 2006). The ROD identified no action for soil because contamination is present at low levels that do not pose an unacceptable risk for current or proposed future site uses. Of the nine remedial alternatives developed and evaluated, Alternate 6 was selected as the preferred remedy for groundwater. Alternate 6 includes the following components:

- *In-situ* chemical oxidation to quickly breakdown source contaminants.
- *In-situ* bioremediation to accelerate natural microbiological processes causing residual contaminant degradation.
- Short-term institutional controls to implement land use and access restrictions to limit exposure of future landowners(s) and/or user(s) of the property to hazardous substances and to maintain the integrity of the remedial action until remediation is complete and the remedial goals have been achieved.
- Groundwater sampling to confirm the achievement of remedial goals for cis-1,2-DCE (6 micrograms per liter (µg/L)), TCE (5 µg/L), and vinyl chloride (0.5 µg/L), which are protective of potential residents and occupational workers.

The Data Gap Investigation focused on evaluating whether the plume boundary delineated in the ROD extends beneath Building 20. This investigation also provided additional vertical and horizontal lithologic and groundwater chemical data to support development of the Remedial Design for the selected remedy identified in ROD.

2.3 SITE GEOLOGY AND HYDROGEOLOGY

This section summarizes the geologic and hydrogeologic settings beneath IR26 as presented in the RI/FS reports (BEI, 2003 and 2005).

The Alameda Island sedimentary deposits consist of five stratigraphic units (from oldest to youngest): the Alameda Formation, lower unit of the San Antonio Formation, upper unit of the

San Antonio Formation, Merritt Sand Formation, and the Bay Sediment Unit (BSU) (upper bay sediment also referred to as the Young Bay Mud) (BEI, 2003 and 2005). The stratigraphy beneath Alameda Point has been characterized from soil borings advanced to depths of 60 to 70 feet below ground surface (bgs) during previous investigations (BEI, 2003). Most of the sedimentary deposits at Alameda Point are overlain by fill that is present at 12 to 18 feet bgs. The BSU, which was encountered below the fill layer at IR26, is composed of upper and lower units (BEI, 2003 and 2005). The upper low-permeability unit consists of an estuarine deposit of stiff, dark, olive-gray clay with discontinuous silty and clayey sand layers, and has been observed to be up to 35 feet thick at Alameda Point. The lower unit consists of estuarine deposits of silty sand with interbedded layers of fine sand. The BSU is underlain by Merritt Sand (a brown, poorly graded, fine-to medium-grained sand) that exists in thicknesses up to 35 feet beneath IR26 (BEI, 2003). The upper BSU is an aquitard that is expected to inhibit vertical migration of chemicals reported in the upper fill soils and groundwater to deeper native material (BEI, 2003 and 2005).

The shallow first water-bearing zone (FWBZ) in the fill material overlying the BSU at IR26 is measured at depths to groundwater of approximately 2 to 6 feet bgs. The shallower groundwater is encountered at the north end of the site, in the vicinity of Building 20. Investigations at IR26 have reported an average horizontal hydraulic gradient of 0.003 in the FWBZ, with groundwater flow direction generally toward the east. Aquifer testing of the FWBZ in the central region of Alameda Point produced hydraulic conductivity value ranges of 6.30×10^{-3} to 1.46×10^{-2} feet/minute (BEI, 2005). Groundwater has been estimated to travel at a velocity of 26 feet per year. The northern boundary of IR26 is approximately 1,000 feet south of Oakland Inner Harbor. Studies at the site indicate that the groundwater is not appreciably tidally influenced (BEI, 2005).

Buildings 20 through 24 were built before 1947 over fill material emplaced in the 1930s and 1940s. Surface runoff in the northern portion of IR 26 (near Buildings 20, 21, 22, and north of Building 23) drains to catch basins that connect to the storm sewer system, which flows to the east and then runs north to Oakland Inner Harbor. This portion of the storm drain system slopes to the north and is approximately 6 feet bgs near Building 20 (BEI, 2003 and 2005).

2.4 GROUNDWATER USE AND POTENTIAL BENEFICIAL USES

This section summarizes the groundwater use and its potential uses beneath IR26. A more detailed discussion is presented in the RI/FS reports (BEI, 2003 and 2005).

Groundwater beneath the central portions of Alameda Point (including IR26) is not currently used for drinking water, irrigation, or industrial supply. Drinking water is supplied to Alameda Point by the East Bay Municipal Utilities District. The California State Water Resources Control Board (SWRCB) classifies the groundwater beneath Alameda Point as potentially suitable for municipal or domestic supply, industrial process water, industrial service water, and agricultural water supply (BEI, 2003). In 2000, the Regional Water Quality Control Board San Francisco Region (RWQCB) proposed that the municipal and domestic supply designation for shallow bay-front groundwater in the artificial fill layer, Young Bay Mud, and the San Antonio/ Merritt Sand Formations in the Oakland shoreline/Alameda Point area (which includes IR26) be de-designated. In 2003, the RWQCB San Francisco Bay Region determined that groundwater meets the municipal and domestic water supply designation exemption criteria in the SWRCB source of drinking water policy Resolution 88-63 and RWQCB Resolution 89-39 for groundwater west of Saratoga Street at Alameda Point (BEI, 2003). This area includes the groundwater beneath IR26.

3.0 FIELD ACTIVITIES

The goals of the field activities described herein were to obtain an improved understanding of the lateral extent of the VOC plume near Building 20 and to collect additional information on subsurface lithology and groundwater characteristics in support of the Remedial Design. To achieve this, multiple discrete-depth grab groundwater samples were collected at five locations to further define the extent of contamination and seven monitoring wells were subsequently installed and baseline sampled to provide additional data on plume stability. In addition, three temporary observation piezometers were installed for a planned step drawn-down and 24-hour aquifer pump test to be conducted at the site in order to generate data on site-specific aquifer characteristics.

3.1 HYDROPUNCH INVESTIGATION

On September 5 and 6, 2006, five soil borings (B20-SB-001 through B20-SB-005) were drilled to further investigate the extent of groundwater contaminated with chlorinated hydrocarbons in the area south of Building 20. The locations of these five borings are shown on Figure 4. The objectives of the hydropunch investigation were to 1) provide additional lithologic data to better characterize subsurface conditions in the area of the identified chlorinated hydrocarbon groundwater plume, and 2) close both lateral and vertical data gaps and further delineate the plume boundaries. Groundwater samples collected during this activity were analyzed for VOCs by EPA Method 8260B on a 24-hour turn around basis in order to expedite decisions for placement of step-out locations. No step-out locations were selected after the initial sampling round, based upon review of the analytical results for the hydropunch samples which showed the plume had been adequately delineated by the first round of drilling.

Lithologic data was obtained by driving continuous core samples at each location using a dual tube direct push hydraulic drill rig. The site geologist logged the soil cores in accordance with the American Society for Testing and Materials (ASTM) Procedure D 2488: Standard Practice for Description and Identification of Soils (ASTM, 2000). The geologist used the lithologic information obtained to select three discrete depth sample intervals at each location, and the drill

rig revisited each location to collect groundwater samples using a hydropunch. This two-step process was necessary because continuous core sampling precludes the collection of groundwater samples in the same boring due to the requirement that the hydropunch sampler be driven into previously undisturbed soil. Boring logs are included with the field documentation presented in Appendix A of this report.

Grab groundwater samples were collected using a HydroPunch® sampler at three distinct depth intervals (most were collected at depths of approximately 10, 15, and 20 feet bgs) based on the subsurface lithology. The HydroPunch® sample intervals were selected (based upon a review of the continuous core logs) to screen zones of higher-permeability materials (mainly poorly-graded [SP] sands) overlying clay beds that might act as a barrier to downward vertical migration. The selected sample intervals were intended to target the presumed likely path of contaminant transport (i.e. higher permeability saturated zones) for chlorinated solvents mobilized as a dissolved phase in groundwater. The HydroPunch® sampling methodology used during the investigation is as follows: a sampling tool consisting of an inner stainless-steel screen nested inside of a protective outer drill casing is connected to the steel drive pipe and driven or pushed into undisturbed soil to the desired sampling depth. The sampling tool is designed so that the sample inlet remains closed while the tool is advanced, which precludes any contact of the inner screen with any contaminated soils or fluids. Once the tool is at the selected depth, the outer drive pipe is pulled upward to open the inlet section of the tool, allowing groundwater to flow into the screened sample chamber. The desired sample volume is collected using a disposable bailer and then transferred to appropriate pre-cleaned, laboratory-supplied sample containers for VOC analysis. After the required sample volume is obtained, the borehole is backfilled with bentonite-cement grout.

3.2 MONITORING WELL INSTALLATION, DEVELOPMENT, AND SAMPLING

This section describes the methods that were used to install, develop, and collect samples from the groundwater monitoring wells. Seven groundwater monitoring wells (26MW01 through 26MW07) were installed to provide ongoing groundwater level and chemical data to evaluate the stability of the IR26 groundwater plume and to help document future remedial action

effectiveness. Groundwater monitoring well locations were selected based upon review of the hydropunch data collected during the first round of drilling (described in Section 3.1), but these locations were essentially the same as the proposed well locations that were presented in the *Final Feasibility Study Report, Installation Restoration Program Site 26, Alameda Point* completed by Bechtel (BEI, 2005). Boring logs for the monitoring wells showing well construction details are included with the field documentation presented in Appendix A. Alameda County Water District Well Permits are included in Appendix B.

3.2.1 Monitoring Well Installation

From September 19 through 22, 2006 seven shallow groundwater monitoring wells (26MW01 through 26MW07) were installed to monitor the (shallow) FWBZ aquifer south of Building 20. Groundwater monitoring well locations are shown on Figure 4. The shallow groundwater monitoring wells were designed to screen the entire saturated thickness of the fill materials overlying BSU sediments at the site. The wells were installed with screened intervals set from 3 feet bgs to the total well depths of 15 to 15.5 feet bgs. The wells were screened slightly below the depth of first encountered water, which was generally found as shallow as 2.5 feet bgs in the proposed well locations. This shallow depth to water was considered to be anomalously high, an aftereffect of unusually high precipitation experienced during the preceding rainy season. The tops of the screens were intentionally set at 3 feet bgs to avoid having upper well seals (bentonite plus neat cement) less than 2.5 feet thick. Alameda County monitoring well regulations call for a minimum seal depth of 5 feet bgs *or the maximum depth practicable.*

An eighth deeper well (proposed location 26MW08D) had been proposed to monitor groundwater conditions in the second water-bearing zone beneath the BSU downgradient of the plume, but this well was ultimately not installed after it was discovered that the Merritt Sand and San Antonio Formations (the typical formations that comprise the SWBZ at Alameda) are apparently both absent in this portion of Alameda Point. Low permeability clay with generally high-estimated plasticity (CH), identified as Bay Mud (BSU) by the site geologist, was encountered from approximately 21 feet bgs to a total depth of 101.5 feet bgs. A 9-inch diameter steel conductor casing was installed at this location to seal off the shallow aquifer prior to drilling through the BSU. The bottom of the conductor casing was set at approximately 23 feet

bgs, i.e. approximately 2 feet into the top of a laterally persistent CH clay found at 21 feet bgs. The conductor casing was grouted in place when the boring was abandoned.

Well borings were drilled using a truck-mounted hollow stem auger drill rig (CME 75). Boreholes were lithologically logged based on soil cores driven every 5 feet and depth to first encountered groundwater was noted on the logs. After completion of the boreholes, the well screens and casings were placed in the borehole through the hollow-stem augers. The monitoring wells were constructed of 4-inch diameter Schedule 40 flush-threaded polyvinyl chloride (PVC) casing and flush-threaded slotted PVC well screen with 0.010-inch slots. The annulus for each well was backfilled through the augers with Number 2/16 Monterey filter pack sand from the bottom of the borehole to approximately 0.5 foot above the top of the screened interval. A transition seal consisting of approximately 1.5 feet of bentonite chips was placed above the filter sand, and the bentonite chips were hydrated and allowed to swell prior to grouting. Neat cement/bentonite grout was placed above the transition seal to ground surface. The wellheads were all capped with locking expanding plugs and completed with flush-mounted, traffic-rated well vaults set in concrete to match the surrounding ground surface. Well construction details are summarized in Table 1.

3.2.2 Monitoring Well Development

From September 27 through 29, 2006, the monitoring wells were developed to remove fine sand, silt, and clay materials from the screened interval and the surrounding filter pack. The monitoring wells were developed using alternate "surge and bail" techniques. The column of water inside the monitoring well casing was gently agitated using a vented surge block, and then pumped or bailed down. During development, the field crew periodically measured standard water quality parameters (temperature, pH, conductivity, turbidity, dissolved oxygen [DO], and oxidation-reduction potential [ORP]) using properly calibrated portable field instruments. Water quality parameters were measured and recorded at least once per well volume or once every five minutes. The flow rate during purging, total gallons pumped, and drawdown measurements were also recorded. Monitoring wells were developed until the purge water was relatively free of fine sediments and water quality parameters stabilized. Stabilization was deemed complete after three consecutive readings fell within plus or minus 0.1 pH units, plus or minus 1.0 degree

centigrade, and conductivity values varied by less than 10 percent. Well development logs are included in the field documentation presented in Appendix A.

3.2.3 Monitoring Well Sampling

The monitoring wells were sampled October 2 through 4, 2006. [Two wells were resampled for VOCs only on October 17, 2006 due to the analytical lab missing the holding times for the wells' first round of groundwater samples.] Groundwater samples were collected with a peristaltic pump and dedicated sample tubing utilizing "low-flow" sampling techniques. The field crew measured standard water quality parameters (temperature, pH, conductivity, turbidity, DO, and ORP) and initiated sample collection when the water quality parameters stabilized. Stabilization was considered complete after three consecutive readings were within plus or minus 0.1 pH units, plus or minus 1.0 degree centigrade, and conductivity values varied by less than 10 percent. Groundwater samples were analyzed for VOCs by EPA Method 8260B and Dissolved Metals by EPA Method 6010B/6020/7470A. Well purge and sample logs are included in the field documentation presented in Appendix A.

3.3 TEMPORARY OBSERVATION PIEZOMETER INSTALLATION

Three temporary observation piezometers (26PZ01 through 26PZ03) were drilled and installed on September 20 and 21, 2006 using a truck-mounted hollow stem auger drill rig or suitable alternative. The piezometers were screened to match the screened interval of the monitoring wells. The piezometers were installed with screened intervals set from 3 feet bgs to the total depths of 15 to 15.5 feet bgs. The piezometers were constructed with 2-inch-diameter Schedule 40 flush-threaded PVC casing and flush-threaded slotted PVC well screen with 0.010-inch slots. The annulus was backfilled with #2/16 Monterey filter pack sand from the bottom of the borehole to approximately 0.5 feet above the top of the screen. A transition seal consisting of bentonite chips was placed above the filter sand, hydrated and allowed to swell prior to grouting. Neat cement/bentonite grout was placed above the transition seal to ground surface. Boring logs for the piezometers showing construction details are included with the field documentation presented in Appendix A. The piezometers will be used as observation wells during the aquifer tests described in Section 6 and during implementation of the future Remedial Action.

3.4 SITE SURVEY

The locations of the monitoring wells and borings were surveyed to within 0.1 foot horizontal accuracy using the State Plane Coordinate System. The survey provided the elevation of the top of the casing of each monitoring well to 0.01 feet accuracy. Elevations were based on the National Geodetic Vertical Datum of 1929 as adjusted by the National Geodetic Survey in June 1991 and converted to NGVD27. Vertical coordinates are reported as feet above Mean Seal Level (MSL). The survey data will be merged with existing survey data in the Alameda Point database. Survey results are posted in Table 1 and are included with the field documentation in Appendix A.

3.5 WASTE CHARACTERIZATION AND DISPOSAL

Wastes generated during the Data Gap Investigation were temporarily stored on-site in a designated staging area and labeled as non-hazardous pending analysis for waste characterization, profiling, and final off-site disposal. The selection and approval of the staging area were coordinated with the Navy Caretaker Site Office (CSO) representative. The Navy provided the appropriate EPA identification number, sign all required documentation, and perform other related functions required of a hazardous waste generator.

Approximately 8,000 gallons of purged groundwater and decontamination rinsate, contained in a Baker Tank and generated from well installation, development, and sampling, and the aquifer tests, were accepted and disposed of at the Oakland EBMUD Treatment Facility under the Alameda Point Basewide Program's Trucked Non-Hazardous Waste Permit # INTE3000-001 on December 14, 2006. Soil IDW, contained in 55-gallon drums and generated during well installation, was transported and disposed of at the Forward Landfill in Manteca California on December 15, 2006. Disposal of both liquid and soil were coordinated through the Resident Officer in Charge of Construction (ROICC). Copies of disposal manifest documentation are provided in Appendix G.

4.0 RESULTS OF DATA GAP INVESTIGATION

Project activities conducted during the Data Gap Investigation included:

- Drilling and continuous core sampling of five direct-push borings,
- Collection of multiple discrete-depth (hydropunch) grab groundwater samples,
- Installing seven groundwater monitoring wells,
- Installation of three observation piezometers to be used in upcoming aquifer testing, and
- Conducting one round of initial baseline groundwater sampling in the newly installed monitoring wells.

This section describes the results of above field activities.

4.1 SUBSURFACE GEOLOGY AND HYDROGEOLOGY

The subsurface geology in the vicinity of the groundwater plume south of Building 20 (IR 26) consists of fill materials overlying in-place sediments of the BSU. The top of the BSU was encountered at depths of 15 to 15.5 feet bgs in the area of investigation. The transition from fill to BSU sediments was characterized by a change in color from olive browns to dark grayish green (gley color), an increase in the amount of fine-grained sediments and clays (especially high plasticity clays), and an increase in the size and abundance of shell fragments in the soil samples. Within the plume area boundaries, color was considered a less reliable indicator, since hydrocarbon-stained soils can approximate the color of unimpacted BSU sediments. In some portions of the site, the transition between locally-derived hydraulic fill materials (SP sands) and higher permeability BSU sediments (SP sands interbedded with clays) is indistinct. Within the plume area boundaries, the top of the BSU coincides with a laterally persistent clay layer that may have helped retard vertical migration of contaminants from the fill materials into underlying BSU sediments. The subsurface geology of the site is shown in cross section on Figure 5.

Fill materials at the site are predominantly olive colored poorly graded sands (SP), with subordinate amounts of silty sand (SM), clayey sand (SC) and both low-plasticity and high-plasticity clays (CL and CH). The poorly graded sands that comprise the bulk of the fill contain

little to no fines (generally < 5%) and minor quantities of very small shell fragments, typical of locally-derived hydraulic fill.

Beneath the fill materials, the upper 5 feet of the BSU (from approximately 15 to 21 feet bgs) consists of interbedded clays and sand layers (possibly representing channel sands in a near-shore slough environment). The clays in the upper portion of the BSU are dark grayish green with high-estimated plasticity and contain shell fragments. The shell fragments in the BSU are generally more abundant and larger in size than in the overlying fill materials. Sands in the upper BSU are generally poorly graded (SP), "clean" sands (about 5 to 10% fines) darker in color than the SP sands in the overlying fill (dark grayish green instead of olive).

Most of the soil borings drilled during the Data Gap Investigation were terminated in a laterally persistent clay layer encountered at a depth of approximately 21 feet bgs within the area of investigation. This clay layer is very dark greenish gray (gley color) with generally high-estimated plasticity (CH) and contains abundant shell fragments, including intact shells. This clay layer was investigated at boring location 26MW08D by hollow-stem auger drilling after a conductor casing was installed to seal off the shallow water-bearing zone. Soil samples collected for lithologic logging purposes every 5 feet indicated that this clay layer persists from 21 feet bgs to the bottom of the boring, which was terminated at a depth of 101.5 feet bgs (Figure 5).

4.2 ANALYTICAL RESULTS FOR HYDROPUNCH SAMPLES

Grab groundwater samples were collected from three depth-discrete intervals in each of the five initial Hydropunch borings (B20-SB-001 through B20-SB-005) drilled on September 5-6, 2006. Analytical results for Hydropunch samples are summarized in Table 2, and posted on Figure 4.

The highest concentrations of chlorinated hydrocarbons were detected in the grab groundwater sample collected by hydropunch screened at 9.5 to 12 feet bgs in boring B20-SB-001. This sample contained 310 µg/L 1,2-DCE, 32 µg/L TCE, 2.2 µg/L (J-flagged; estimated) tetrachloroethene (PCE), 2.0 µg/L (J-flagged; estimated) vinyl chloride and trace amounts (equal to or less than 0.6 µg/L) 1,1-DCE and 1,1-DCA. The sample collected from deeper in this same boring, from a hydropunch screened at 18.5 to 21 feet bgs, contained only 1.3 µg/L 1,2-DCE, 0.5

µg/L PCE and trace (0.2 J µg/L) TCE. Boring B20-SB-001 was drilled near the center of the previously delineated area of VOC contamination (Figure 4).

Minor concentrations of 1,2-DCE (2.4 µg/L; 2.5 µg/L in duplicate) were detected in grab groundwater samples collected by hydropunch screened at 7.5 to 10 feet bgs in boring B20-SB-004. No other significant concentrations of chlorinated hydrocarbons (other than trace) were detected in the grab groundwater samples collected by hydropunch (Table 2).

4.3 ANALYTICAL RESULTS FOR GROUNDWATER MONITORING WELLS

Groundwater samples were collected by low-flow sampling technique from each of the seven groundwater monitoring wells (26MW01 through 26MW07) installed on September 19-22, 2006. Analytical results for groundwater monitoring well samples are summarized in Table 3 (VOCs) and Table 4 (Metals). Analytical results for VOCs are posted on Figure 4.

Concentrations of TCE (25 µg/L; 24 µg/L in duplicate) and vinyl chloride (5.6 µg/L; 5.2 µg/L in duplicate) were detected in well 26MW03, installed near the center of the previously delineated chlorinated VOC plume. These concentrations were much lower than those found in Hydropunch samples collected from nearby location B20-SB-001. The apparent discrepancy between the two sample points is likely due to the differences in methodology between Hydropunch sampling and low-flow groundwater sampling techniques. Hydropunch samples typically carry a higher suspended sediment load that may contribute to higher detected contaminant concentrations when compared to samples obtained from a properly installed and developed groundwater monitoring well. Another factor contributing to the apparent discrepancy may be the difference in the length of screened intervals; the Hydropunch sampling device employed in this project uses a 2.5-foot long screened sample chamber while the monitoring wells were constructed to screen the entire upper saturated zone, with screened lengths of approximately 12 to 13 feet. Even using low-flow sampling to minimize drawdown it is to be expected that samples collected from groundwater monitoring wells screened across the entire saturated zone are representative of a larger portion of the saturated zone than grab Hydropunch samples targeted to screen individual 2.5-foot sections within the shallow groundwater zone. It should be noted that BOTH

types of samples are still representative of site conditions as long as the corresponding screened intervals and possible biases or limitations of the sampling methodology are taken into account.

Groundwater collected from monitoring well 26MW04, installed along the expected southern perimeter of the plume, showed 10 µg/L TCE, 4.2 µg/L 1,2-DCE, and trace (0.7 µg/L) vinyl chloride (Figure 4). The remaining wells contained only trace to non-detect concentrations of VOCs (Table 3).

Several of the wells showed concentrations of arsenic and barium above Alameda background values, including some arsenic levels exceeding the MCL of 10 µg/L (Table 4). The metals results were otherwise unremarkable.

The newly installed monitoring wells were surveyed on October 20, 2006 and the top-of-casing elevations were used to determine the groundwater flow direction and gradient for the site. Previously, groundwater flow direction was estimated based on the information obtained from hydropunch borings during the RI and from offsite wells. Figure 6 is a potentiometric surface map of the shallow groundwater in the vicinity of the Building 20 chlorinated hydrocarbon plume, based on depth-to-water measurements taken on October 26, 2006. This newer data confirmed the previous interpretation of groundwater flow direction, which is slightly north of due east. The calculated groundwater gradient based on the potentiometric surface map is approximately 0.0025 feet per foot.

4.4 CONTAMINANT DISTRIBUTION IN GROUNDWATER

Groundwater analytical data collected during the Data Gap Investigation in the area south of Building 20 were consistent with previous interpretations of the lateral limits of the groundwater VOC plume as depicted in the relevant RI/FS documents for the site (BEI, 2005 & BEI, 2006). There were some differences from the previous interpretation of the lateral extent, notably low concentrations of DCE in Hydropunch® boring B20-SB-004 and TCE concentrations detected in monitoring well 26MW04 indicate that plume boundaries appear to extend a little farther to the northeast and to the south than the previous data indicated.. Figure 7 is a comparison of the area of groundwater contamination exceeding Remedial Goals based on the previous data only versus

the newly drawn area (as shown in Figure 4) which is based on a "best-fit" of both the new and the older data.

Groundwater samples collected from boring B20-SB-003 (inside Building 20) and monitoring wells 26MW02 and 26 MW07 show that significant groundwater contamination does not appear to extend northward underneath the building.

Depth-discrete grab groundwater samples collected from the Hydropunch® borings provided groundwater chemical data needed to evaluate the vertical extent of contamination. Previous subsurface investigations did not extend below 12 feet bgs, and most of the groundwater samples were collected from depths of 9 feet or less. Grab groundwater samples collected from boring B20-SB-001, drilled in the center of the chlorinated hydrocarbon plume, showed high concentrations at a screened depth of 9.5 to 12 feet bgs, but only trace concentrations (less than 2 micrograms per liter) of VOCs in the 18.5 to 21 foot sample. A clay layer located at the top of the BSU (15 to 15.5 feet bgs) in the area underlying fill materials contaminated with chlorinated hydrocarbons appears to have limited vertical migration of contaminants (Figure 5).

The lowermost sample in each Hydropunch® boring was targeted for permeable sediments (SP sands of the BSU) immediately above the persistent clay layer that was encountered at approximately 21 feet bgs across most of the site. Except for the minor VOCs in the sample collected from directly below the plume center in boring B20-SB-001, groundwater samples collected from hydropunches screened in BSU sediments were clean.

5.0 DATA QUALITY CONTROL SUMMARY REPORT

A Data Quality Control Summary Report (QCSR) was prepared for the groundwater results collected from the monitoring wells and is included as Appendix E.

The QCSR concluded that the analytical methods used for this project were selected to provide quality data sufficient to meet project data quality objectives and project sensitivity requirements. No major quality control issues were identified. The data generated in support of the project are usable with appropriate qualifications and meet project objectives.

6.0 AQUIFER TESTING

Aquifer testing was conducted in order to establish a radius of influence for the aquifer and provide site-specific hydraulic conductivity data in the preparation and development of the RD. The information will be used to estimate the extent of lateral influence and to model the distribution and effects of the chemical oxidation process on the groundwater plume in order to design the spacing of injection points and quantity of material needed for effective treatment in implementing the RD.

Aquifer tests for IR26 consisted of a step test (to determine an optimal pumping rate), a 24-hour pump and recovery test. These tests were conducted in accordance with the procedures presented in the Draft Final Workplan (ITSI, 2006) on October 31 through November 2, 2006. Aquifer testing data evaluation is attached in Appendix F. A summary of calculated aquifer parameters is presented in Table 5

7.0 REFERENCES

American Society for Testing and Materials (ASTM), 2000. *Procedure D 2488: Standard Practice for Description and Identification of Soil.*

California Regional Water Quality Control Board, San Francisco Region (RWQCB), 2001. *Preliminary Remediation Criteria and Closure Strategy for Petroleum-Contaminated Sites at Alameda Point, Alameda, California.* June 11.

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Innovative Technical Solutions, Inc. (ITSI), 2006. *Field Workplan for Data Gap Sampling, Installation Restoration Site 26, Alameda Point, Alameda, CA.* Draft Final, August 2006.

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TABLES

FINAL
REPORT FOR
DATA GAP SAMPLING
INSTALLATION RESTORATION SITE 26

DATED 20 APRIL 2007

TABLE 1: CONSTRUCTION DETAILS FOR BUILDING 20 (IR26) MONITORING WELLS
IR26 Data Gap Investigation
Alameda Point, Alameda, California

Well Identification Number	Constructed Well Depth (feet bgs)	Top of Screen Depth (feet bgs)	Bottom of Screen Depth (feet bgs)	Casing Type	Casing Diameter (inches)	Construction Date	Drill Method	Borehole Diameter (inches)	Static Water Level (ft.)*	Top of Casing (feet above MSL)
26MW01	15.5	3.0	15.5	PVC	4	9/22/2006	HSA	10.25	2.35	5.07
26MW02	15.5	3.0	15.5	PVC	4	9/21/2006	HSA	10.25	3.15	5.75
26MW03	15.0	3.0	15.0	PVC	4	9/20/2006	HSA	10.25	2.50	5.05
26MW04	15.0	3.0	15.0	PVC	4	9/20/2006	HSA	10.25	2.42	4.99
26MW05	16.0	3.0	16.0	PVC	4	9/19/2006	HSA	10.25	3.20	5.60
26MW06	15.0	3.0	15.0	PVC	4	9/20/2006	HSA	10.25	2.35	4.58
26MW07	15.5	3.0	15.5	PVC	4	9/21/2006	HSA	10.25	3.05	5.60
26PZ01	15.5	3.5	15.5	PVC	2	9/20/2006	HSA	8.25	NM	5.20
26PZ02	15.5	3.0	15.5	PVC	2	9/20/2006	HSA	8.25	NM	5.70
26PZ03	15.0	3.0	15.0	PVC	2	9/21/2006	HSA	8.25	NM	5.17

* Initial water level prior to sampling

bgs	Below ground surface
ft.	Feet
MSL	Mean Sea Level
HSA	Hollow stem auger
PVC	Polyvinyl chloride
NM	Not measured

TABLE 2: ANALYTICAL RESULTS FOR HYDROPUNCH BORINGS: CHLORINATED VOCs
IR26 Data Gap Investigation
Alameda Point, Alameda, California

Location ID	Remedial Goals/MCLs microgram per liter (ug/L)	B20-SB-001	B20-SB-001	B20-SB-001	B20-SB-001
Sample ID		90606026012	90606026013*	90606026014	90606026015
Sample Depth		4.5' - 7'	4.5' - 7'	9.6' - 12'	18.5' - 21'
Sample Date		9/6/2006	9/6/2006	9/6/2006	9/6/2006
1,1-Dichloroethane	5.0	**0.3 J**	**0.4 J**	**0.4 J**	0.5 U
1,1,-Dichloroethene	6.0	0.5 U	0.5 U	**0.6 J**	0.5 U
1,2-Dichloroethene (total)	6.0	**0.2 J**	**0.2 J**	**310**	**1.3**
Tetrachloroethene	5.0	0.5 U	0.5 U	**2.2 J**	**0.5**
Trichloroethene	5.0	0.5 U	0.5 U	**32**	**0.2 J**
Vinyl Chloride	0.5	0.5 U	0.5 U	**2.0 J**	0.5 U

MCLs = Maximum Contaminant Levels
* Field duplicate
COPC = Chemical of potential concern
J = Estimated
U = Undetected
Values in micrograms per liter (ug/L)
Positive detections are shown in bold font.
Yellow Highlight = Concentration exceeds Remedial Goals or MCLs

TABLE 2: ANALYTICAL RESULTS FOR HYDROPUNCH BORINGS: CHLORINATED VOCs
IR26 Data Gap Investigation
Alameda Point, Alameda, California

Location ID	Remedial Goals/MCLs microgram per liter (ug/L)	B20-SB-002	B20-SB-002	B20-SB-002	B20-SB-003
Sample ID		90606026009	90606026010	90606026011	90506026002
Sample Depth		7.5' -10'	14.5' - 17'	18.5' - 21'	7.5' -10'
Sample Date		9/6/2006	9/6/2006	9/6/2006	9/5/2006
1,1-Dichloroethane	5.0	0.5 U	0.5 U	0.5 U	0.5 U
1,1,-Dichloroethene	6.0	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	6.0	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5.0	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5.0	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	0.5	0.5 U	0.5 U	0.5 U	0.5 U

MCLs = Maximum Contaminant Levels
* Field duplicate
COPC = Chemical of potential concern
J = Estimated
U = Undetected
Values in micrograms per liter (ug/L)
Positive detections are shown in bold font.
Yellow Highlight = Concentration exceeds Remedial Goals or MCL

TABLE 2: ANALYTICAL RESULTS FOR HYDROPUNCH BORINGS: CHLORINATED VOCs
IR26 Data Gap Investigation
Alameda Point, Alameda, California

Location ID	Remedial Goals/MCLs microgram per liter (ug/L)	B20-SB-003	B20-SB-003	B20-SB-004	B20-SB-004	B20-SB-004
Sample ID		90506026003	90506026004	90606026005	90606026006*	90606026007
Sample Depth		12.5' - 15'	18.5' - 21'	7.5' -10'	7.5' -10'	14.5' - 17'
Sample Date		9/5/2006	9/5/2006	9/6/2006	9/6/2006	9/6/2006
1,1-Dichloroethane	5.0	0.5 U	0.5 U	**0.08 J**	0.5 U	0.5 U
1,1,-Dichloroethene	6.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	6.0	0.5 U	0.5 U	**2.4**	**2.5**	0.5 U
Tetrachloroethene	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5.0	0.5 U	0.5 U	**0.1 J**	0.5 U	0.5 U
Vinyl Chloride	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

MCLs = Maximum Contaminant Levels
* Field duplicate
COPC = Chemical of potential concern
J = Estimated
U = Undetected
Values in micrograms per liter (ug/L)
Positive detections are shown in bold font.
Yellow Highlight = Concentration exceeds Remedial Goals or MCL

TABLE 2: ANALYTICAL RESULTS FOR HYDROPUNCH BORINGS: CHLORINATED VOCs
IR26 Data Gap Investigation
Alameda Point, Alameda, California

Location ID	Remedial Goals/MCLs microgram per liter (ug/L)	B20-SB-004	B20-SB-005	B20-SB-005	B20-SB-005
Sample ID		90606026008	90606026002	90606026003	90606026004
Sample Depth		18.5' - 21'	7.5' -10'	13' - 15.5'	18.5' - 21'
Sample Date		9/6/2006	9/6/2006	9/6/2006	9/6/2006
1,1-Dichloroethane	5.0	0.5 U	0.5 U	0.5 U	0.5 U
1,1,-Dichloroethene	6.0	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	6.0	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5.0	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5.0	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	0.5	0.5 U	0.5 U	0.5 U	0.5 U

MCLs = Maximum Contaminant Levels
* Field duplicate
COPC = Chemical of potential concern
J = Estimated
U = Undetected
Values in micrograms per liter (ug/L)
Positive detections are shown in bold font.
Yellow Highlight = Concentration exceeds Remedial Goals or MCL

TABLE 3: ANALYTICAL RESULTS FOR GROUNDWATER MONITORING WELLS: CHLORINATED VOCS
IR26 Data Gap Investigation
Alameda Point, Alameda, California

Location ID	Remedial Goals/MCLs	26MW01	26MW02	26MW03	26MW03	26MW04
Sample ID	microgram per liter (ug/L)	100306026005	100306026006	101706026014	101706026015*	100306026004
Sample Date		10/3/2006	10/3/2006	10/17/2006	10/17/2006	10/3/2006
1,1-Dichloroethane	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,-Dichloroethene	6.0	0.5 U	0.5 U	**0.3 J**	**0.3 J**	0.5 U
1,2-Dichloroethene (total)	6.0	0.5 U	0.5 U	0.5 U	0.5 U	**4.2**
Tetrachloroethene	5.0	0.5 U	0.5 U	**0.8**	**0.8**	0.5 U
Trichloroethene	5.0	0.5 U	0.5 U	**25**	**24**	**10**
Vinyl Chloride	0.5	0.5 U	0.5 U	**5.6**	**5.2**	**0.7**

MCLs = Maximum Contaminant Levels
* Field duplicate
COPC = Chemical of potential concern
J = Estimated
U = Undetected
Values in micrograms per liter (ug/L)
Positive detections are shown in **bold** font.
Yellow Highlight = Concentration exceeds Remedial Goals or MCLs

TABLE 3: ANALYTICAL RESULTS FOR GROUNDWATER MONITORING WELLS: CHLORINATED VOCS
IR26 Data Gap Investigation
Alameda Point, Alameda, California

Location ID	Remedial Goals/MCLs	26MW05	26MW06	26MW07
Sample ID	microgram per liter (ug/L)	100306026003	100206026001	101706026016
Sample Date		10/3/2006	10/2/2006	10/17/2006
1,1-Dichloroethane	5.0	0.5 U	0.5 U	0.5 U
1,1,-Dichloroethene	6.0	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	6.0	**0.2 J**	0.5 U	0.5 U
Tetrachloroethene	5.0	0.5 U	0.5 U	0.5 U
Trichloroethene	5.0	0.5 U	0.5 U	**1**
Vinyl Chloride	0.5	**0.2 J**	0.5 U	**0.6**

MCLs = Maximum Contaminant Levels
* Field duplicate
COPC = Chemical of potential concern
J = Estimated
U = Undetected
Values in micrograms per liter (ug/L)
Positive detections are shown in **bold** font.
Yellow Highlight = Concentration exceeds Remedial Goals or MCLs

TABLE 4: ANALYTICAL RESULTS FOR GROUNDWATER MONITORING WELLS: DISSOLVED METALS
IR26 Data Gap Investigation
Alameda Point, Alameda, California

Location ID	MCLs	26MW01	26MW02	26MW03	26MW04	26MW05	26MW06
Sample ID	microgram per liter	100306026005	100306026006	100406026009	100306026004	100306026003	100206026001
Sample Date	(ug/L)	10/3/2006	10/3/2006	10/4/2006	10/3/2006	10/3/2006	10/2/2006
Antimony	6	**0.31 J**	**0.44 J**	**11 J**	**0.42 J**	**0.31 J**	**0.17 J**
Arsenic	10	**11**	**10**	**32**	**11**	**8.5**	**12**
Barium	1000	**780**	**1000**	**450**	**290**	**610**	**490**
Beryllium	4	2 U	2 U	2 U	2 U	2 U	2 U
Cadmium	5	1 U	1 U	5 U	1 U	1 U	1 U
Chromium	50	1 U	**0.44 J**	10 U	1 U	**1 J**	**0.39 J**
Cobalt	NA	**0.68 J**	**2.1**	**0.9 J**	**1.1**	**1.4**	**1.4**
Copper	1000	1 U	**0.31 J**	**5.8 J**	1 U	1 U	1 U
Lead	15	1 U	1 U	3 U	1 U	1 U	1 U
Mercury	2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Molybdenum	NA	**34**	**4.9**	8.4 U	**8.6**	**1.4**	**2.4**
Nickel	100	**1.5**	**5.9**	**4.8 J**	**3.4**	**1.9**	**2**
Selenium	50	1 U	1 U	5 U	1 U	**0.28 J**	1 U
Silver	NA	1 U	1 U	5 U	1 U	1 U	1 U
Thallium	2	1 U	1 U	1 U	1 U	1 U	1 U
Vanadium	NA	**3.9**	**13**	10 U	**7.7**	**7.6**	**5.1**
Zinc	NA	6.3 U	**7.2**	3.4 U	5.9 U	5.7 U	5 U

MCLs = Maximum Contaminant Levels
* Field duplicate
COPC = Chemical of potential concern
J = Estimated
U = Undetected
Values in micrograms per liter (ug/L)
Positive detections are shown in **bold** font.
Yellow Highlight = Concentration exceeds MCLs

TABLE 4: ANALYTICAL RESULTS FOR GROUNDWATER MONITORING WELLS: DISSOLVED METALS
IR26 Data Gap Investigation
Alameda Point, Alameda, California

Location ID	MCLs	26MW07	26MW07
Sample ID	microgram per liter	100406026007	100406026008D*
Sample Date	(ug/L)	10/4/2006	10/4/2006
Antimony	6	**19 J**	**13 J**
Arsenic	10	**8.4**	**11**
Barium	1000	**1300**	**1400**
Beryllium	4	2 U	2 U
Cadmium	5	5 U	5 U
Chromium	50	10 U	10 U
Cobalt	NA	20 U	20 U
Copper	1000	**4.1 J**	4.5 U
Lead	15	3 U	3 U
Mercury	2	0.2 U	0.2 U
Molybdenum	NA	**12 J**	16 U
Nickel	100	**3.7 J**	**4.7 J**
Selenium	50	5 U	5 U
Silver	NA	5 U	5 U
Thallium	2	1 U	1 U
Vanadium	NA	10 U	10 U
Zinc	NA	**2.6 J**	16 U

MCLs = Maximum Contaminant Levels
* Field duplicate
COPC = Chemical of potential concern
J = Estimated
U = Undetected
Values in micrograms per liter (ug/L)
Positive detections are shown in **bold** font.
Yellow Highlight = Concentration exceeds MCLs

TABLE 5:
IR 26 Aquifer Test Summary Results
IR26 Data Gap Investigation
Alameda Point, Alameda, California

Hydraulic Conductivity (K) Results (Feet/Minute) (See Note 2)								
	Solution Method							
	Theis	Cooper-Jacob		Neuman A Type Curve	Neuman B Type Curve	Neuman Recovery	Observed Lithology	Literature K Values and Source
	Pumping	Pumping	Recovery					
Pumping Well								Range for Fine Sand
26MW-03	NA	NA	7.37E-03	NA	NA	1.92E-03	SP	Low - 3.94E-05
Observation Wells								High - 3.94E-02
26PZ-01	5.56E-02	7.15E-02	See Note 1	5.29E-02	4.29E-02	See Note 1	SP/Thin CH	Reference:
26PZ-02	2.66E-02	1.35E-02	1.39E-02	1.46E-02	3.00E-02	2.62E-02	SP/Thin CH	Domenico & Schwarz, 1990
26PZ-03	3.33E-02	2.85E-02	6.91E-03	2.98E-02	2.98E-02	3.29E-02	SP/Thin CH	Range for Silty Sands, Fine Sands
26MW-01	2.89E-02	6.33E-03	6.58E-03	2.68E-02	3.94E-03	2.30E-02	SP	Low - 1.97E-04
26MW-04	4.23E-02	3.04E-02	1.89E-02	4.98E-02	3.75E-02	4.44E-02	SP	High - 1.97E-02
26MW-07	1.91E-01	1.82E-02	2.49E-02	1.81E-01	4.91E-02	9.08E-02	SP	Reference: Fetter, 1994

Radius of Influence (Distance-Drawdown Plots)
Pumping Rate 2.0 GPM

Time (minutes)	Distance (Feet)
100	110
1000	175
1371	150

Specific Yield Range 0.07 - 0.37

Notes:
1) PZ-01 measurements were discontinued after 10 hours due to flooding
2) K=Transmissivity (T)/Saturated Thickness (b); T is obtained from plots and b = 13 feet
Yellow highlights indicate selected values

FIGURES

FINAL
REPORT FOR
DATA GAP SAMPLING
INSTALLATION RESTORATION SITE 26

DATED 20 APRIL 2007

2005\35-100 NFAC SW 8a RAC\CTO 03-35-103 03 11226 Chemrox RD\10.0 Graphics\Facility Location Map.ai

Innovative Technical Solutions, Inc.

Report for Data Gap Sampling
Installation Restoration Site 26 RD
Alameda Point
Alameda, California

FIGURE 1
Alameda Point Regional Map

2006\35-100 NFAC SW 8a RAC\CTO 03-35-103.03.11226 Chemox RD\10.0 Graphics\Alameda Site IR 26 GIS\Workplan Figures\Site Location Map.mxd

Innovative Technical Solutions, Inc.

Report for Data Gap Sampling
Installation Restoration Site 26 RD
Alameda Point
Alameda, California

FIGURE 2
Site Location Map

2005\35-100 NFAC SW\ca RAC\CTO 03-35-103.03.11226 Chemox RD\10.0 Graphics\Alameda Site IR 26 GIS\Workplan Figures\Site Features.mxd

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Report for Data Gap Sampling
Installation Restoration Site 26 RD
Alameda Point
Alameda, California

FIGURE 3
Site Features Map

Hydropunch Boring B20-SB-003			
Depth	7.5' - 10'	12.5' - 15'	18.5' - 21'
PCE	0.5 U	0.5 U	0.5 U
TCE	0.5 U	0.5 U	0.5 U
1,2-DCE (tot)	0.5 U	0.5 U	0.5 U
1,1-DCE	0.5 U	0.5 U	0.5 U
1,1-DCA	0.5 U	0.5 U	0.5 U
1,2-DCA	0.5 U	0.5 U	0.5 U
Vinyl Chloride	0.5 U	0.5 U	0.5 U

26MW07 - 10/17/06 (9')	
TCE	**1**
1,2-DCE	0.5 U
Vinyl Chloride	**0.6**

26MW05 - 10/3/06 (9')	
TCE	0.5 U
1,2-DCE	**0.2 J**
Vinyl Chloride	**0.25**

Hydropunch Boring B20-SB-004			
Depth	7.5' - 10'	14.5' - 17'	18.5' - 21'
PCE	0.5 U	0.5 U	0.5 U
TCE	**0.1 J**	0.5 U	0.5 U
1,2-DCE (tot)	**2.4**	0.5 U	0.5 U
1,1-DCE	0.5 U	0.5 U	0.5 U
1,1-DCA	**0.08 J**	0.5 U	0.5 U
1,2-DCA	0.5 U	0.5 U	0.5 U
Vinyl Chloride	0.5 U	0.5 U	0.5 U

26MW02 - 10/3/06 (9')
No COPCs detected

Hydropunch Boring B20-SB-001			
Depth	4.5' - 7'	9.5' - 12'	18.5' - 21'
PCE	0.5 U	**2.2 J**	**0.5**
TCE	0.5 U	**32**	**0.2 J**
1,2-DCE (tot)	**0.2 J**	**310**	**1.3**
1,1-DCE	0.5 U	**0.6 J**	0.5 U
1,1-DCA	**0.3 J**	**0.4 J**	0.5 U
1,2-DCA	0.5 U	2.5 U	0.5 U
Vinyl Chloride	0.5 U	**2.0 J**	0.5 U

Hydropunch Boring B20-SB-002			
Depth	7.5' - 10'	14.5' - 17'	18.5' - 21'
PCE	0.5 U	0.5 U	0.5 U
TCE	0.5 U	0.5 U	0.5 U
1,2-DCE (tot)	0.5 U	0.5 U	0.5 U
1,1-DCE	0.5 U	0.5 U	0.5 U
1,1-DCA	**0.1 J**	0.5 U	0.5 U
1,2-DCA	0.5 U	0.5 U	0.5 U
Vinyl Chloride	0.5 U	0.5 U	0.5 U

26MW01-10/3/06 (9')
No COPCs detected

Hydropunch Boring B20-SB-005			
Depth	7.5' - 10'	13' - 15.5'	18.5' - 21'
PCE	0.5 U	0.5 U	0.5 U
TCE	0.5 U	0.5 U	0.5 U
1,2-DCE (tot)	0.5 U	0.5 U	0.5 U
1,1-DCE	0.5 U	0.5 U	0.5 U
1,1-DCA	0.5 U	0.5 U	0.5 U
1,2-DCA	0.5 U	0.5 U	0.5 U
Vinyl Chloride	0.5 U	0.5 U	0.5 U

26MW06 - 10/2/06 (9')
No COPCs detected

26MW03 - 10/17/06 (9')	
PCE	**0.8**
TCE	**25**
1,2-DCE	0.5 U
1,1-DCE	**0.3 J**
Vinyl Chloride	**5.6**

26MW04 - 10/3/06 (9')	
TCE	**10**
1,2-DCE	**4.2**
Vinyl Chloride	**0.7**

26MW08D
Drilled but not installed,
Bay Mud to 101.5'

Groundwater Flow
October 2006

Legend

- Monitoring Well
- Piezometer
- Soil Boring
- RI Sample Locations
- EBS Sample Locations
- Oil-Water Separator
- Manhole
- Catch Basin

Concentrations Exceeding Remedial Goals
- TCE = 5.0 ug/L
- 1,2-DCE = 6.0 ug/L
- Vinyl Chloride = 0.5 ug/L

- Sanitary Sewer Line
- Storm Sewer Line
- Industrial Waste Water Line
- IR Site Boundary
- Existing Building
- Removed Building
- Paved Area
- Roadway
- Unpaved Area
- Approximate Groundwater Flow Direction
- Line of Cross-section

Note:
Bold font indicates positive detections.
Concentrations exceeding remedial goals are highlighted in yellow.

N

40 0 40

Feet

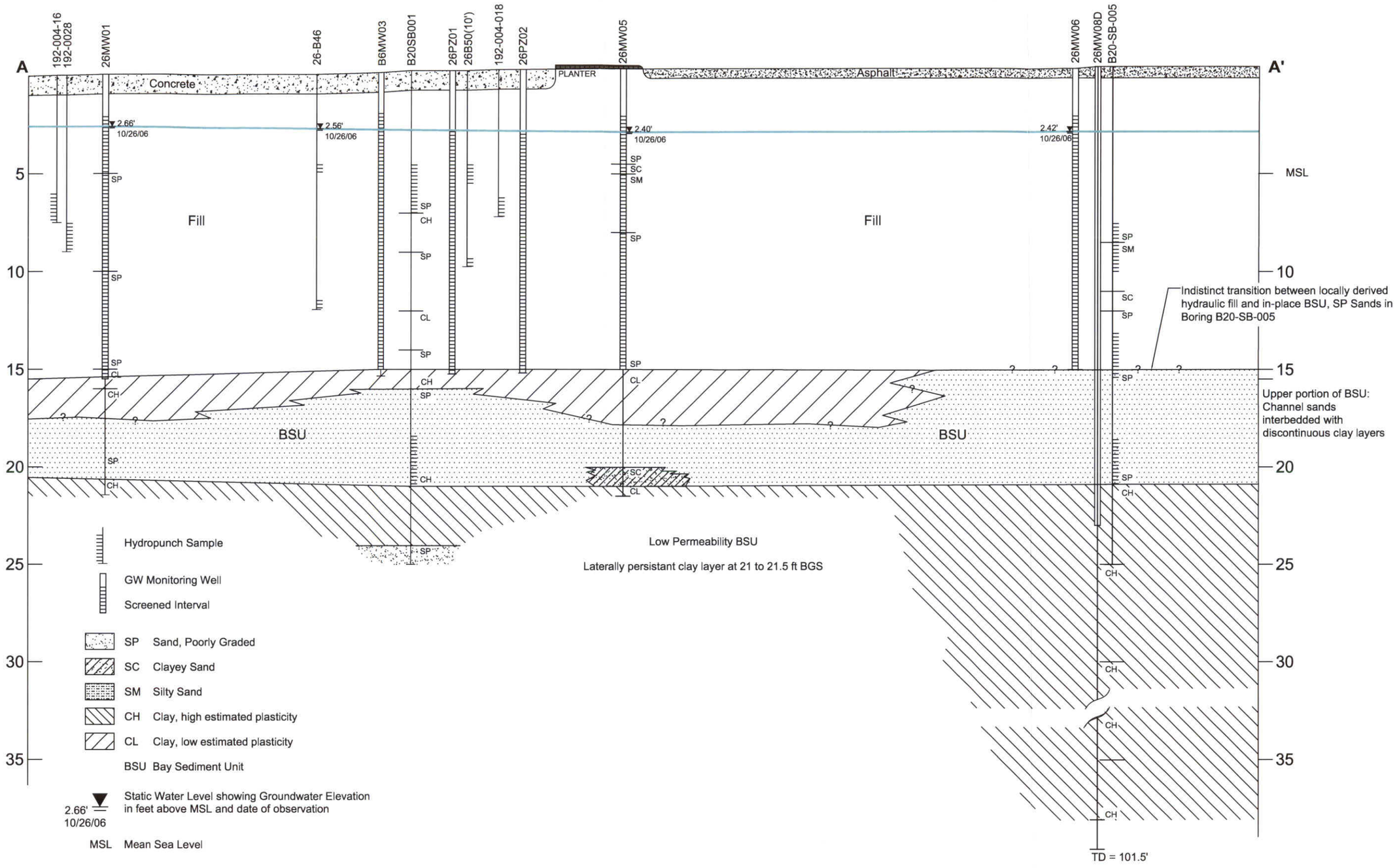
Source: Bechtel Environmental, Inc., 2005. Final Feasibility Study Report, IR Program Site 26, Figure 6-2.

Innovative Technical Solutions, Inc.

Report for Data Gap Sampling
Installation Restoration Site 26
Alameda Point, Alameda, California

FIGURE 4
Results of Data Gap Investigation at Building 20
September - October 2006

2005\35-100 NFAC CTO 03\35-103.03.11226 Chemox RD\10.0 Graphics\Alameda Site IR 26 GIS\Data Gap\Fig 4 Sample Locations.mxd



PROJECTS\2005\35-100 NFAC SW 8a RAC\CT003-35.103.0300 IR26 Chemox RD\10.0 Graphics\Report\x-section.dwg

Innovative Technical Solutions, Inc.

Report for Data Gap Sampling
Installation Restoration Site 26
Alameda Point
Alameda, California

FIGURE 5
Hydrogeologic Cross Section
A - A'

Well Identification Number	Date of Measurement	Top-of-Casing Elevation (ft above MSL)	Depth-to-Water (ft)	Groundwater Elevation (ft above MSL)
26MW01	26-Oct-06	5.07	2.41	2.66
26MW02	26-Oct-06	5.75	3.26	2.49
26MW03	26-Oct-06	5.05	2.49	2.56
26MW04	26-Oct-06	4.99	2.46	2.53
26MW05	26-Oct-06	5.60	3.20	2.40
26MW06	26-Oct-06	4.58	2.16	2.42
26MW07	26-Oct-06	5.60	3.07	2.53

316

26B25

B20-SB-003

B20-SB-004

26B58

26MW07

26MW02

2.50

2.45

2.40

B20-SB-002

26B49

2.55

26B55

26MW08D

192-004-020

2.60

B20-SB-005

192-0031

192-004-0018

2.65

26B50

582

26MW06

A'

192-004-019

B20-SB-001

26MW05

OWS 020

26MW03

192-0032

26B02

192-0029

192-0033

26PZ02

26B56

192-0028

26PZ01

192-004-017

A

26PZ03

26B46

26B57

192-004-016

2.45

2.40

26MW01

26B51

26B03

Groundwater Flow

October 2006

26B52

2.50

2.60

2.55

26MW04

26B54

378

2.65

26B53

26B48

66A

554

320

Source: Bechtel Environmental, Inc., 2005.
Final Feasibility Study Report, IR Program Site 26, Figure 6-2.

Legend

- Monitoring Well
- Piezometer
- Soil Boring/Hydrograph
- EBS Sample Locations
- RI Sample Locations
- Oil-Water Separator
- GW Contours
- Manhole
- Catch Basin
- Storm Sewer Line
- Sanitary Sewer Line
- Industrial Waste Water Line
- Existing Building
- Removed Building
- Paved Area
- Roadway
- Unpaved Area
- IR Site Boundary
- Approximate Groundwater Flow Direction
- A — A' Line of Cross-section

N

40 0 40

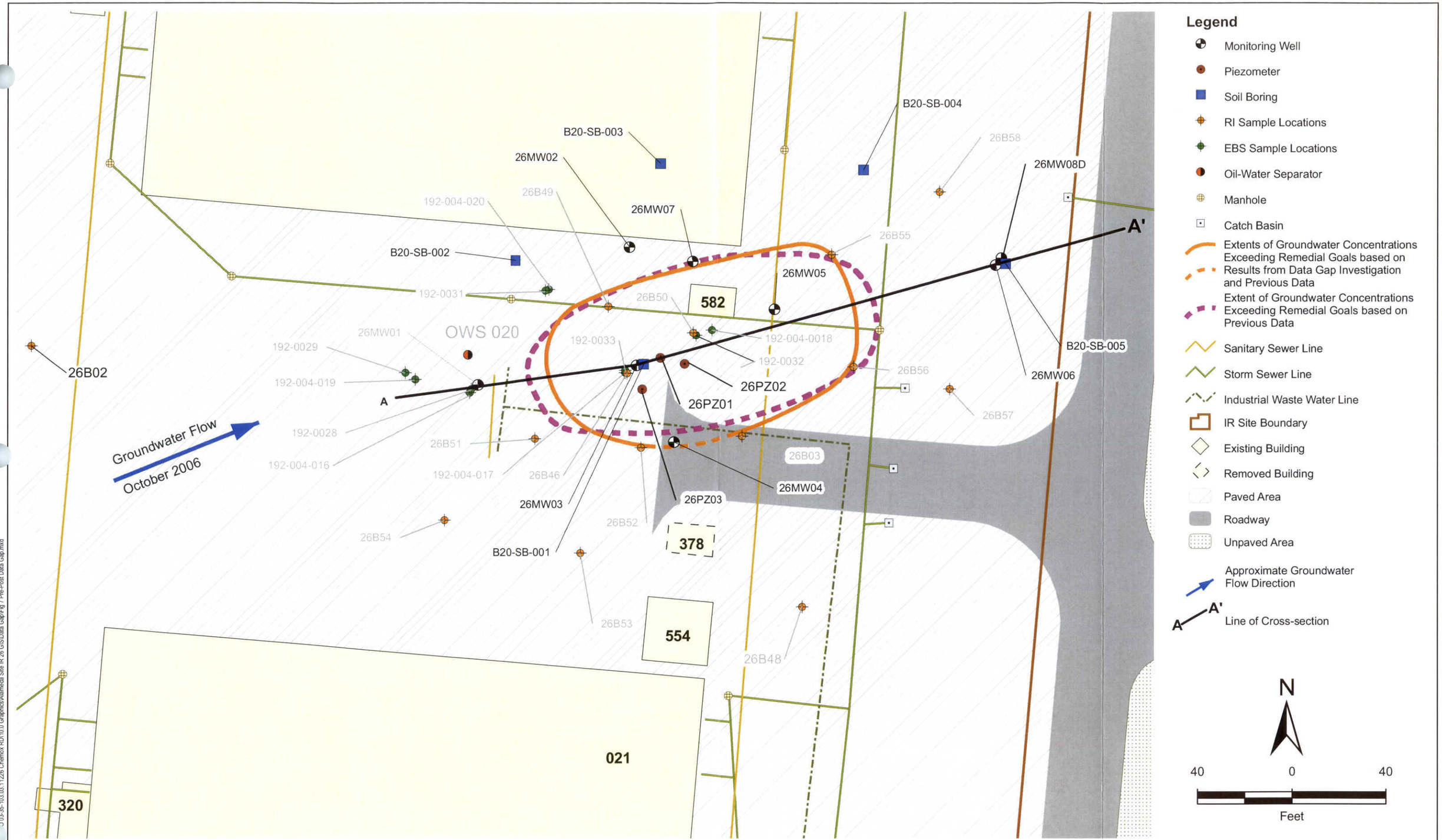
Feet

2005\35-100.NFAC SW ACCTO 03-35-103.03.11226 Chemox RD\10.0 Graphics\Alameda Site IR 26 GIS\Data Gap\Fig 6 Shallow GW.mxd

ITSI Innovative Technical Solutions, Inc.

Report for Data Gap Sampling
Installation Restoration Site 26
Alameda Point, Alameda, California

FIGURE 6
Potentiometric Surface Map for Shallow Groundwater
Building 20
October 2006



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Report for Data Gap Sampling
Installation Restoration Site 26
Alameda Point, Alameda, California

FIGURE 7
Comparison of Pre- and Post-Data Gap
Extent of Groundwater Concentrations
Exceeding Remedial Goals

APPENDIX A

FIELD DOCUMENTATION

BORING LOGS

Project IR26 DATA GAP INV. Logged By KRL **Boring No.** B20-SB-001

Project Number 35103.0300 Date Drilled 9/5/06 Sheet 1 Of 1

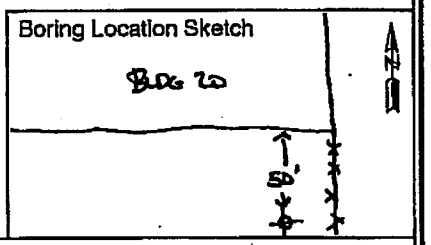
Location BLDG. 20 ALAMEDA PT. Total Depth 25'

Surface Elevation _____ Boring Diameter 2.5"

Drillers PRECISION SAMPLING

Method 7720 DT (CONTINUOUS CORE)

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B=zero/ambient/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							CONCRETE
						SP	SAND (SP), very dark greenish grey (5G 3/1), med dense, moist to wet, fine grained sand w/ <5% fines, shell frags throughout, STRONG HC ODOR
5		090606 026-012 D13 (FD)	90 14:30 14:40 0.0			SP	SAND (SP), same as above, WET, increasing fines
						CH	CLAY (CH), dark greenish grey (5G 4/1), V. stiff, moist to wet, Estimated high plasticity
10		090606 026- 014 15:00	0.0			SP	SAND (SP), very dark greenish grey (5G 3/1), med dense, wet, abundant shell fragments, 10-15% fines
						CL	CLAY (CL), ~~v. dark greenish grey (5G 3/1)~~ dark greenish grey (5G 4/1), stiff, wet
						SP	SAND (SP), lt. olive brown (2.5Y 5/6) m. dense, wet, 5% fines
15			0.0			CH	CLAY (CH), V. dark greenish green (5G 2.5/2), v. stiff, moist
						CH	CLAY (CH), dark greenish grey (5G 4/1), v. stiff, WET
		090606 026- 015 15:15	0.0			SP	SAND (SP), V. dark greenish green (5G 2.5/2), med. dense, wet, <5% fines, fine grained, abundant shell frags
						SP	SAND (SP), same as above, increasing fine content
						CL	SILTY CLAY (CL), V. dark greenish green (5G 2.5/2), wet, med. stiff, WET, ≈ 10% fine sand, V. abundant shell fragments, some intact shells
25						SP	SAND (SP), V. dark greenish green (5G 2.5/2), med. dense, wet, <5% fines, shell frags
							BORING TERMINATED @ 25' bgs
30							

Casing Diameter _____ Casing Length _____ From _____ To _____

Screen Size _____ Screen Length _____ From _____ To _____

Sand Type _____ From _____ To _____

Bentonite Type _____ From _____ To _____

Cement/Grout _____ From _____ To _____

Surface Completion _____

ITSI Innovative Technical Solutions, Inc.

Project IR26 DATA GAP INV. | Logged By KRL | **Boring No. B20-SB-002**

Project Number 35163.0300 | Date Drilled 9/5/06 | Sheet 1 Of 1

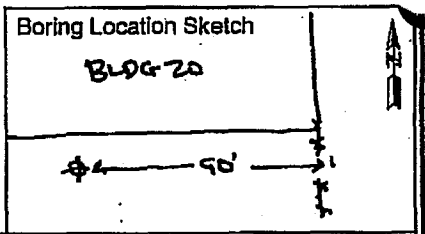
Location BLDG 20 ALAMEDA PT | Total Depth 25'

Surface Elevation _____ | Boring Diameter 2.5"

Drillers PRECISION SAMPLING

Method 7720 DT (CONTINUOUS CORE)

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/station/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							CONCRETE
				1.4		SP	SAND (SP), light olive brown (2.5Y5/6), med. dense, MOIST, fine to medium grained ≤5% fines (FILL)
						SP	SAND (SP), olive grey (5Y4/2), med dense, fine grained, uncommon shell frgs. 5-10% fines (FILL)
5		09 06 06				SP	SAND (SP), same as above
		02 06					
		005					
		13:10					
10						SP	SAND (SP), same as above
						SM/SC	~~SAND (SP), same as above KRL~~ SILTY SAND (SM), olive grey (5Y4/2), soft, wet, v. loose/m Sample GRADES TO... CLAYEY SAND (SC), olive grey (5Y4/2), stiff, wet
		09 06 06				SP	SAND (SP), olive grey (5Y4/2), med. dense, moist, fine to med. gr. 5-10% fines
15		07 06					
		010					
		13:30				SP	SAND (SP), v. dark greyish green (5G3/2), med. dense, WET, fine grained sand w/ <5% fines
		09 06 06				CH	CLAY (CH), dark greenish grey (5G4/1), v. stiff, wet to moist, estimated high plasticity
		02 06				SP	SAND (SP), v. dark greyish green (5G3/2), med. dense, wet, fine gr. 5-10% fines
20		011					increasing fines GRADING TO ....
		14:00				SM	SILTY SAND (SM) v. dark greyish green (5G3/2), med. dense, WET, fine gr. sand w/ 15-35% fines, abundant shell fragments thin clay layer, as above
25							BORING TERMINATED @ 25' bgs.
30							

Casing Diameter _____ Casing Length _____ From _____ To _____

Screen Size _____ Screen Length _____ From _____ To _____

Sand Type _____ From _____ To _____

Bentonite Type _____ From _____ To _____

Cement/Grout _____ From _____ To _____

Surface Completion _____

ITSI Innovative Technical Solutions, Inc.

Project IR26 DRAGGAP-INV. Logged By KEL **Boring No.** B20-SB-003

Project Number 35103.0300 Date Drilled 9/5/06 Sheet 1 Of 1

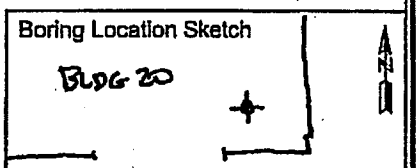
Location BLDG 20 ALAMEDA PT Total Depth 25'

Surface Elevation _____ Boring Diameter 2.5"

Drillers PRECISION SAMPLING

Method 7720 DT (CONTINUOUS CORE)

Boring Location Sketch



Depth (Feet)	Sample Interval	Hydraulic Push Blow Counts Sample ID	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							CONCRETE
				▽		SP	SAND (SP), lt. olive brown (2.5 Y 5/6), med. dense, moist, med. grained sand w/ 5-10% fines, shell fragments
							WET @ 2.0' bgs
5		090506-026-002 14:52	0.0			SP	SAND (SP), olive grey (5Y 4/2), med dense, wet, fine grained sand w/ ≤ 5% fines, shells ~~common~~ rare shell fragments uncommon
10		090506-026-003 15:10	0.0			SP	SAND (SP), same as above
							CLAY LENS @ 11-11.5'
							CLAY LENS @ 12-12.5'
15		090506-026-004 15:30	0.0			SP	SAND (SP), V. dark greyish green (5G 3/2), loose to med. dense, WET, fine gr.
							CLAY (CH) bottom 6" of sampler
						SP	SAND (SP), V. dark greyish green (5G 3/2), loose, wet, fine gr. sand with ≤ 5% fines, abundant shell fragments, SLIGHT H_2S ODOR
							CLAY LENS
20			0.0			SP	SAND (SP), same as above
						CH	CLAY (CH), dark greenish grey (5G 4/1), stiff, wet to moist, abundant shell fragments (BAY MUD)
25			0.0				BORING TERMINATED @ 25' bgs
30							

Casing Diameter _____ Casing Length _____ From _____ To _____

Screen Size _____ Screen Length _____ From _____ To _____

Sand Type _____ From _____ To _____

Bentonite Type _____ From _____ To _____

Cement/Grout _____ From _____ To _____

Surface Completion _____

ITSI Innovative Technical Solutions, Inc.

Project IR26 DARK GRAY INV. | Logged By KRL | **Boring No.** BZO-SB-004

Project Number 35103.0300 | Date Drilled 9/5/06 | Sheet 1 Of 1

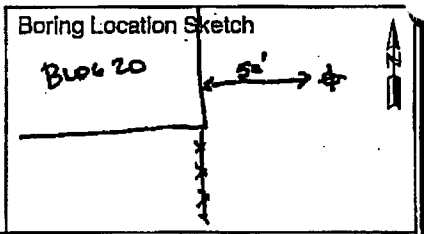
Location BLDG. 20 ALAMEDA PT. | Total Depth 25'

Surface Elevation _____ | Boring Diameter 2.5"

Drillers PRECISION SAMPLING

Method 7720 DT (CONTINUOUS CORE)

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							ASPHALT
							NO RECOVERY 0-5' - SAMPLE BARREL BLOCKED BY ROCK IN TIP
5		090606 0226-0005 0006 (FD)	0.0 10:40 10:50			SP	SAND (SP), light olive brown (2.5Y 5/6), med dense, wet, fine to med grained, <5% fines
							POOR RECOVERY 5-10' small plug of asphalt in tip of sampler
10						SP	SAND (SP), olive brown (5Y 4/3), med. dense, wet, fine grained sand w/ 10-15% fines
						CL	GRADES TO SANDY CLAY (CL), olive (5Y 5/3), med stiff, wet, 10% fine sand
		090606				CL	CLAY (CL), olive (5Y 5/3), stiff, wet, little to no sand
15		0226-0007 11:05	0.0			SP	SAND (SP), dark greenish grey (5G 4/1), med. dense, wet, fine sand w/ 5-10% fines, shell fragments common
							COLOR CHANGE TO V. dark greyish green (5G 2.5/2), <5% fines
		090606 0226-0008 11:30	0.0				
20						CH	CLAY (CH), v. dark greyish green (5G 2.5/2), stiff, wet to moist, v. abundant shell fragments, some intact shells (BAY MUD)
25			0.0				BORING TERMINATED @ 25' bgs
30							

Casing Diameter _____ Casing Length _____ From _____ To _____

Screen Size _____ Screen Length _____ From _____ To _____

Sand Type _____ From _____ To _____

Bentonite Type _____ From _____ To _____

Cement/Grout _____ From _____ To _____

Surface Completion _____

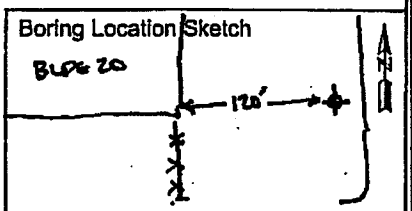
ITSI Innovative Technical Solutions, Inc.

Project: IR26 DATA GAP INV.
Logged By: KGL
Project Number: 35103.0300
Date Drilled: 9/5/06
Location: BLDG 20 ALAMEDA PT.
Total Depth: 25'
Surface Elevation:
Boring Diameter: 2.5"
Drillers: PRECISION SAMPLING
Method: 7720 DT (continuous core)

Boring No. B20-SB-005

Sheet 1 Of 1

Boring Location Sketch



Depth (Feet)	Sample Interval	HYDROPUNCH Blow Counts Sample	PID (ppm) B-zone/slam/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							ASPHALT
			0.0	1/4		SP	SAND (SP); olive brown (2.5Y4/4), med. dense, moist, med. grained, <5% fines (FILL)
5		09 06 06				SP	SAND (SP), light olive brown (2.5Y 5/6), med. dense, wet, fine gr., little to no fines (FILL)
		02 06					
		002					
		0820					
10			0.0			SM	SILTY SAND (SM), dark greenish grey (5G 4/1), med. dense, wet, fine gr. sand w/ 15-20% silty fines (FILL)
						SC	grades to CLAYEY SAND (SC), dark greenish grey (5G 4/1), stiff, wet (FILL)
		09 06 06				SP	SAND (SP); v. dark greyish green (5G 3/2), dense, wet, fine gr. sand, little to no fines, shell fragments
		026					
		003					
15		06:30					
		09 06 06					
		026					
		004					thin clay lens @ 18'
20		10:00	0.0			SP	SAND (SP); same as above
						SP	SAND (SP); same as above, increasing shell frags
						CH	CLAY (CH); V. dark greenish grey (5G 2.5/2), dark greyish green, stiff, wet to moist, abundant shell fragments, some entire shells (BAY MUD)
25							BORING TERMINATED @ 26' bgs
30							

Casing Diameter ____ Casing Length ____ From ____ To ____
Screen Size ____ Screen Length ____ From ____ To ____
Sand Type ____ From ____ To ____
Bentonite Type ____ From ____ To ____
Cement/Grout ____ From ____ To ____
Surface Completion ____

ITSI Innovative Technical Solutions, Inc.

Project: I-26 DATA GAP INV.
Project Number: 35103.0300
Location: BLDG 26 - WILMINGTON, NC
Surface Elevation:

Logged By: KRL
Date Drilled: 9/22/06
Total Depth: 21.5 FT
Boring Diameter: 10¼"
Drillers: RST DRILLING
Method: HSA - CME 75

Boring No. 26MW01
Sheet 1 Of 1

Boring Location Sketch: BOAT YARD, 26MW01, BLDG 26

Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/detect/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
						CONCRETE	CONCRETE
			0.0			SP	SAND (SP), olive (5Y 4/4), loose, moist, fine sand, ≤ 5% fines (FILL) FROM CUTTINGS
5		4 8 12	0.0			SP	SAND (SP), same as above, MEDIUM DENSE, WET
							Thin gravelly zone @ ≈ 6'
10		3 4 7	0.0			SP	SAND (SP), olive (5Y 4/4), loose, wet, fine sand w/ 5-10% fines, rare shell fragments
15		3 6 6	0.0			SP	SAND (SP), same as above, loose
						CL	SILTY CLAY (CL), GREENISH BLACK (5GY 2.5/1), STIFF, WET, 10-15% fine sand
						CH	CLAY (CH), GRAYISH GREEN (5GY 4/2), STIFF, WET, HIGH ESTIMATED PLASTICITY (BSU)
20		3 3 4	0.0			SP	SAND (SP), olive (5Y 4/4), loose, wet PROBABLE SLOUGH
						CH	CLAY (CH), GRAYISH GREEN (5G 4/2), med. stiff to stiff, WET, HIGH ESTIMATED PLASTICITY, little to no sand, abundant shell fragments + some intact shells (BAY MUD)
25							TERMINATE BORING AT 21.5 FT BGS 10¼" AUGERS TO 20.0 FT BGS BACKFILL TO 15.5 FT W/ BENTONITE CHIPS
30							

Casing Diameter: 4" SCH 40 PVC — Casing Length: 3' — From: 0.0 — To: 3.0
Screen Size: 0.010-in — Screen Length: 12.5' — From: 3.0 — To: 15.5
Sand Type: 2/12 (6 BAGS) — From: 2.5 — To: 15.5
Bentonite Type: MED CHIPS (½ BAG) — From: 1.0 — To: 2.5
Cement/Grout: 1' — From: 0.0 — To: 1.0
Surface Completion: 8" x 12" FLUSH MOUNTED WELL BOX LOCKING WELL CAP

ITSI Innovative Technical Solutions, Inc.

Project IR26 DATA GAP ENV. | Logged By KRL | **Boring No. 26MW02**

Project Number 35103.0300 | Date Drilled 9/21/06 | Sheet 1 Of 1

Location BLDG 20 ALAMEDA PT. | Total Depth 21.5 FT

Surface Elevation _____ | Boring Diameter 10¼"

Drillers RSE DRILLING

Method HSA's - CME-75 (140 lb hammer)

Boring Location Sketch: BLDG 20; 47'; 26MW02; 26MW17

Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/slam/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							CONCRETE = 12"
						SP	SAND (SP), olive (5Y 4/4), loose, moist, med. grained sand w/ < 5% fines (fill)
5		4 5 6	0.0			SP	SAND (SP), olive (5Y 4/3), loose, WET, fine to med. grained sand w/ ≤ 5% fines
10		4 4 6	0.0			SP	SAND (SP), olive (5Y 4/4), loose, wet, fine sand w/ ≤ 5% fines
						CL	CLAY (CL), dark olive grey (5Y 3/2), med. stiff, WET, 10-15% fine sand in silty clay matrix
15		4 2 2	0.0			SC	CLAYEY SAND (SC), dark olive grey (5Y 3/2), loose, wet, fine sand w/ 25-35% fines
						CH	CLAY (CH), greenish black (5G 2.5/1), SOFT, WET, little to no sand, HIGH ESTIMATED PLASTICITY
20		2 2 2	0.0			CL	SANDY CLAY (CL); greenish black (5G 2.5/1), SOFT, WET, 30-35% fine sand, shell fragments common
						CH	CLAY (CH); greenish black (5G 2.5/1), SOFT, WET, little to no sand, HIGH ESTIMATED PLASTICITY (Thin SP layer near bottom of sample)
25							BORING TERMINATED @ 21.5 FT BGS. 10¼" AUGERS TO 20.0 FT BGS. BACKFILLED W/ BENTONITE CHIPS TO 15.5 FT
30							

Casing Diameter 4" Sch 40 PVC | Casing Length 3' | From 0.5 | To 3.0

Screen Size 0.010-in | Screen Length 12.5' | From 3.0 | To 15.5

Sand Type 2/12 (6 BAGS) | From 2.5 | To 15.5

Bentonite Type MED CHIPS (½ BAG) | From 1.0 | To 2.5

Cement/Grout 1.0' | From 0.5 | To 1.0

Surface Completion 8"x12" FLUSH MOUNTED WELL BOX LOCKING WELL CAP

ITSI Innovative Technical Solutions, Inc.

Project IR26 DATA GAP INV1 | Logged By KRL | **Boring No.** 26MW03

Project Number 35103.0300 | Date Drilled 9/20/06 | Sheet 1 Of 1

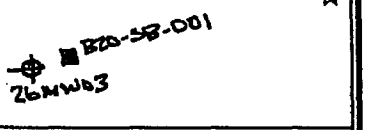
Location BLDG 20 ALAMEDA PT | Total Depth 15.5'

Surface Elevation _____ | Boring Diameter 10¼"

Drillers RSI DRILLING

Method HSA - CME 75

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
5						SEE B20-SB-001 LITHOLOGY	SEE BORING B20-SB-001 FOR LITHOLOGY (2.5 FT FROM LOCATION)
10							
15							BORING TERMINATED AT 15.5 FT. [8" OD 10¼" AUGERS TO 15.0 FT] BACKFILLED W/ SAND TO 15.0 FT. DRILLER PUNCHED DOWN ≈ 0.5 FT WHEN KNOCKING OUT THE BOTTOM PLUG.
20							
25							
30							

Casing Diameter 4" SCH 40 PVC | Casing Length 3' | From 0.0 To 3.0

Screen Size 0.010-in | Screen Length 12' | From 3.0 To 15.0

Sand Type 2/12 (78 BAGS) | From 2.5 To 15.5

Bentonite Type MED. CHIPS (½ BAG) | From 1.0 To 2.5

Cement/Grout 1.0 | From 0.0 To 1.0

Surface Completion 8"X12" FLUSH MOUNTED WELL BOX LOCKING WELL CAP

ITSI Innovative Technical Solutions, Inc.

Project IR26 DATA GAP INV. | Logged By KMC | **Boring No. 26MW04**

Project Number 35103.0300 | Date Drilled 9/20/06 | Sheet 1 Of 1

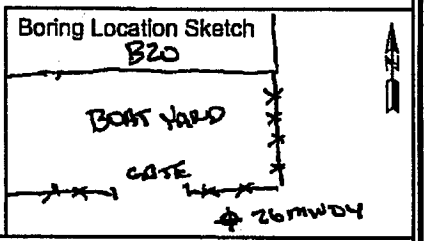
Location BLDG 20 ALAMEDA POINT | Total Depth 21.5'

Surface Elevation _____ | Boring Diameter 10 1/4"

Drillers RSE DRILLING

Method HSA-CME 75

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/Stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
0							ASPHALT
							BASE ROCK - GRAVEL
						SP	SAND (SP), olive (5Y 4/4), med. dense, fine gr. sand w/ little to no fines, moist, WET @ 2.5 ft (cuttings)
5						SP	SAND (SP), olive gray (5Y 4/2), dense, WET, fine sand, ≤5% fines, shell fragments (uncommon)
10		NR					NO RECOVERY ≈ 4" of sand in sampler (WET, LOOSE SAND)
15						SP	SAND (SP), olive (5Y 4/4), dense, WET, fine sand, 5-10% fines
							GRADES TO....
						SC	CLAYEY SAND (SC), olive (5Y 4/4), dense, WET, fine sand, 20-25% fines, shell fragments more common
20						SP	SAND (SP), olive (5Y 4/4), dense, WET, fine to med. gr. sand, 5-10% fines, abundant shell fragments
						SM	SILTY SAND (SM), v. dark greyish green (5G 3/2), dense, WET, fine gr. sand w/ 30-40% fines, abundant shell fragments
							BORING TERMINATED @ 21.5', 10 1/4" augers to 20'
							BACKFILLED W/ BENTONITE CHIPS TO 15'
25							
30							

Casing Diameter 4" Sch 40 PVC | Casing Length 3' | From 0.0 | To 3.0

Screen Size 0.010-slot | Screen Length 12' | From 3.0 | To 15.0

Sand Type 2/12 | From 2.5 | To 15.0

Bentonite Type MED. CHIPS | From 1.0 | To 2.5

Cement/Grout 1.0 | From 0.0 | To 1.0

Surface Completion 8"X12" FLUSH MOUNTED WELL BOX W/ LOCKING WELL CAP

ITSI Innovative Technical Solutions, Inc.

Project IR 26 DATA GAP INV. | Logged By KRL | **Boring No.** 26MW05

Project Number 35103.0300 | Date Drilled 9/19/06 | Sheet 1 Of 1

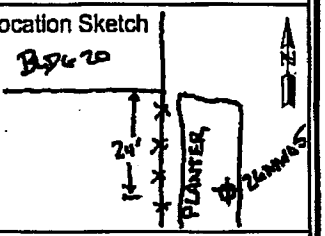
Location BLDG 20 - ALAMEDA PT. | Total Depth 21.5'

Surface Elevation | Boring Diameter 10 1/4"

Drillers RSI DRILLING

Method HSA - CME 75

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							GRASS OVER DARK BROWN SILTY FILL
						SP	HANDAUGER TO 5' SAND (SP), light olive brown (2.5Y 5/4) wet @ 2.5', med. dense, fine to med. grained sand w/ fines, increasing fines w/ depth (5-10)
5						SC	SLATEY SAND (SC), light olive brown (2.5Y 5/4), WET, med. dense, fine to med. gr. sand, 30-40% fines (FILL)
						SC	COLOR CHANGE @ 5.5 FT TO GRAYISH GREEN (5G 5/2)
						NR	NO RECOVERY 6.0-6.5
10						NR SP	SLOUGH 10.0 TO 10.5 SAND (SP), olive (5Y 4/3), WET, DENSE, fine to med sand w/ 5-10% Fines (FILL) FLOWING SANDS - SANDS CAME UP 6" INSIDE AUGERS WHEN DRILL RODS PULLED UP.
15						SP	SAND (SP), olive (5Y 4/3), WET, DENSE, Fine to med grained sand, 5-10% Fines
						CL	SILTY CLAY (CL), greenish black (5G 2.5/1), moist to WET, silty clay w/ little to no sand (BAY MUD)
20						SC CL	CLAYEY SAND (SC), V. dark greenish green (5G 2.5/2), WET, dense, fine sand w/ 25-30% fines, shell fragments CLAY (CL), V. dark greenish green (5G 2.5/2), wet, stiff 5-10% fine sand in clay matrix, occasional shell fragments (BAY MUD)
							BORING TERMINATED @ 21.5' bgs. 10 1/4" AUGERS TO 20.0 FT bgs.
25							
30							

Casing Diameter 4" Sch 40 PVC | Casing Length 20.03' | From 0.0 To 3.0

Screen Size 0.010-in | Screen Length 13' | From 3.0 To 16.0

Sand Type 2/12 | From 2.5 To 17.0

Bentonite Type med. chips | From 1.0 To 2.5

Cement/Grout 1.0 | From 0.0 To 1.0

Surface Completion 8"x12" flushmounted well box w/ locking well cap

ITSI Innovative Technical Solutions, Inc.

Project IR26 DATA GAP INV. | Logged By KRL | **Boring No.** 26MW06

Project Number 35103.0300 | Date Drilled 9/19/06 KRL 9/20/06 | Sheet 1 Of 1

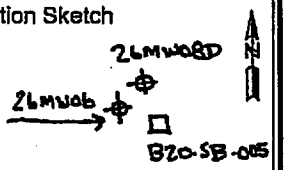
Location B20 ALAMEDA POINT | Total Depth 15'

Surface Elevation | Boring Diameter 10¼"

Drillers RSI DRILLING

Method HSA - CME 75

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/step/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
5				▽		SEE B20-SB-005	SEE BORING B20-SB-005 FOR LITHOLOGY (3 FT FROM LOCATION)
10							
15							DRILLED TO ~~15.5~~ 15.0 KRL FT BGS W/ 10¼" HSA
20							
25							
30							

Casing Diameter 4" Sch 40 PVC | Casing Length 3' | From 0.0 To 3.0

Screen Size 0.010-in | Screen Length ~~12.5~~ KRL 12' | From 3.0 To ~~15.5~~ KRL 15'

Sand Type 2/12 | From 2.5 To 15'

Bentonite Type MED CHIPS | From 1.0 To 2.5

Cement/Grout 1.0' | From 0.0 To 1.0

Surface Completion 8" X12" FLUSH MOUNTED WELL BOX LOCKING WELL CAP

ITSI Innovative Technical Solutions, Inc.

Project JR26 DARIGAD INV. | Logged By KRL | **Boring No.** 26MW07

Project Number 35103.0300 | Date Drilled 9/21/06 | Sheet 1 Of 1

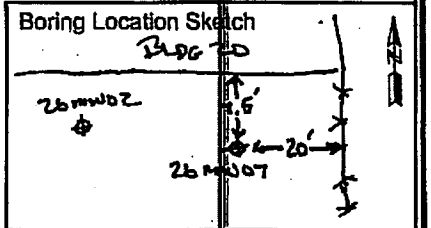
Location BLOCK 20 ALAMEDA PT | Total Depth 21.5 FT

Surface Elevation _____ | Boring Diameter 10 1/4"

Drillers RST DRILLING

Method HSA - CME 75 (140 lb hammer)

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
						A A	CONCRETE
						SP	SAND (SP), olive (5Y 4/4), med. dense, moist, med. gr. sand w/ ≤ 5% fines (Fines)
				10:14 10:58			WET @ 2.5 FT
5		3 4 5	0.00			SP	SAND (SP), same as above, loose, WET
						CL	Thin clay zone in tip of sample (< 6")
10		3 3 3	0.00			SP	SAND (SP), dark olive grey (5Y 3/2), loose, wet, fine grained sand w/ ≤ 5% fines, rare shell fragments
15		2 2 4	0.00			SC	CLAYEY SAND (SC), dark olive grey (5Y 3/2), loose, WET, fine gr. sand w/ 25-35% fines
						CL	SILTY CLAY (CL), greyish green (5G 4/2) SOFT, WET TO MOIST, low est. plasticity, clay w/ 5-10% fine sand
20		2 3 3	0.00			SP	SAND (SP), greenish black (5G 2.5/1), loose, WET, fine sand w/ 5-10% fines shell fragments
						CH	CLAY (CH), greenish black (5G 2.5/1), SOFT, WET,
25							BORING TERMINATED AT 21.5 FT BGS 10 1/4" AUGERS TO 20.0 FT BGS
30							

Casing Diameter 4" Sch 40 PVC | Casing Length 3' | From 0.0 | To 3.0

Screen Size 0.010-in | Screen Length 12.5' | From 3.0 | To 15.5

Sand Type 2/12 (6 bags) | From 2.5 | To 15.5

Bentonite Type MEDICHIPS (1/2 bg) | From 1.0 | To 2.5

Cement/Grout 1.0' | From 0.0 | To 1.0

Surface Completion 8" x 12" flush mounted well box locking well cap

ITSI Innovative Technical Solutions, Inc.

Project IR26 DATA GAP INV. Logged By KRL **Boring No.** 26MW08D

Project Number 35103.0300 Date Drilled 9/22/06 - CONDUCTOR CASING
9/26/06 25 - 61.5' SOLID
9/27/06 61.5' to TD Sheet 1 Of 4

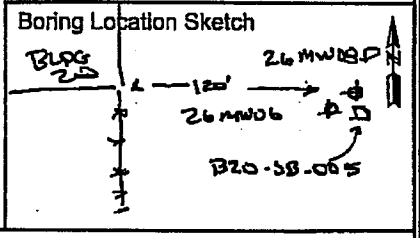
Location BLDG 20, ALAMEDA PT Total Depth 101.5'

Surface Elevation _____ Boring Diameter 14 1/4" HSA TO 23'
6 1/4" HSA TO 100'

Drillers RSI DRILLING

Method HSA - CME 75

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/slam/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
5							SEE BORING LOG FOR B20-SB-005 FOR LITHOLOGY OF UPPER 25 FT
							1/8" thick steel conductor casing OD = 8 5/8" ID = 8 1/8" (nominal 8-inch pipe)
							NEAT PORTLAND CEMENT TO 23'
10			0.0		BACKFILLED W/ NEAT CEMENT (9/27/06)		
15							
20							
25		30* 3 3	0.0			CH	14 1/4" OD AUGERS DRILLED TO 23 FT BGS (9/22/06) BEGIN DRILLING @ 23' ON 9/26/06 CLAY (CH), GRAYISH GREEN (5G 4/2), med. stiff to stiff, WET, little to no fine sand, HIGH ESTIMATED PLASTICITY
							* pushing past bottom plug from conductor casing.
30		2 2				CH	CLAY (CH)

Casing Diameter _____ Casing Length _____ From _____ To _____

Screen Size _____ Screen Length _____ From _____ To _____

Sand Type _____ From _____ To _____

Bentonite Type _____ From _____ To _____

Cement/Grout _____ From _____ To _____

Surface Completion _____

ITSI Innovative Technical Solutions, Inc.

Project I-226 DATA GAP INV. | Logged By KRL | **Boring No.** 26MW08D

Project Number 35103.0300 | Date Drilled 9/26/06 | Sheet 2 Of 4

Location BLDG 20 ALAMEDA PS | Total Depth 101.5'

Surface Elevation _____ | Boring Diameter 6 1/4"

Drillers RSI DRILLING

Method HSA - CME 75

Boring Location Sketch

Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
30		2 4 2	0.0			CL	CLAY (CL), GRAYISH GREEN (5G 4/2), SOFT, WET, 10-15% FINE SAND, ABUNDANT SHELL & SHELL FRAGS
						CH	CLAY (CH), GRAYISH GREEN (5G 4/2) MED STIFF, WET, LITTLE TO NO SAND, HIGH EST. PLASTICITY
35		4 4 5	0.0			CH	CLAY (CH), SAME AS ABOVE EXCEPT MED. STIFF, MOIST TO V. MOIST
40		4 5 4	0.0			CH	CLAY (CH), SAME AS ABOVE
45		5 7 7	0.0		BACKFILLED W/ NEAT CEMENT (9/27/06)	CH	CLAY (CH), SAME AS ABOVE, UNCOMMON SHELL FRAGMENTS
50		4 4 5	0.0			CH	CLAY (CH), SAME AS ABOVE, MOIST
55		3 4 5	0.00			SP	SAND (SP), GRAYISH GREEN (5G 4/2), HEAVED INTO AUGERS, WET, FINE GR.
						CH	CLAY (CH) GRAYISH GREEN (5G 4/2), MED. STIFF TO STIFF, MOIST TO V. MOIST, LITTLE TO NO SAND, ABUNDANT SHELL FRAGMENTS
60						CH	CLAY (CH)

Casing Diameter _____ Casing Length _____ From _____ To _____

Screen Size _____ Screen Length _____ From _____ To _____

Sand Type _____ From _____ To _____

Bentonite Type _____ From _____ To _____

Cement/Grout _____ From _____ To _____

Surface Completion _____

ITSI Innovative Technical Solutions, Inc.

Project IR 26 DARK GAP INV.
Project Number 35103.0300
Location BLDG 20, ALAMEDA POINT
Surface Elevation

Logged By KPL
9/26/06 TO 61.5'
Date Drilled 9/27/06 61.5' TO TD
Total Depth 101.5'
Boring Diameter 6¼"
Drillers RSI DRILLING
Method HSA - CME 75

Boring No. 26MW08D
Sheet 3 Of 4

Boring Location Sketch

Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/slam/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
60		3 3 3	0.0		BACKFILLED W/ NEAT CEMENT (9/27/06)	CH	CLAY (CH), GRAYISH GREEN (5G 4/2), MED. STIFF, moist to V. moist thin sandy layers, abundant shell fragments DISCONTINUE DRILLING AT 60', 61.5' (9/26/06) RESUME DRILLING ON 9/27/06 KA
65		3 4 4	0.0			CH	CLAY (CH), GRAYISH GREEN (5G 4/2), MED STIFF, moist to V. moist, little to no sand, shell fragments common. HIGH ESTIMATED PLASTICITY
70		4 4 4	0.0			CH	CLAY (CH), same as above, shell fragments less common.
75		3 4 4	0.0			CH	CLAY (CH), same as above.
80		4 5 4	0.0			CH	CLAY (CH), same as above.
85		4 6 7	0.0			CH	CLAY (CH), V. dark grayish green (5G 3/2), stiff, slightly moist to moist, some pale green mottling (5G 6/2), ~~saturated~~ for dried, stiffer and darker in color than above
90		4 5 5				CH	CLAY (CH)

Casing Diameter _____ Casing Length _____ From _____ To _____
Screen Size _____ Screen Length _____ From _____ To _____
Sand Type _____ From _____ To _____
Bentonite Type _____ From _____ To _____
Cement/Grout _____ From _____ To _____
Surface Completion _____

ITSI Innovative Technical Solutions, Inc.

Project IR26 DATA GAP INV.
Project Number 35103.0300
Location BLDG 20, ALAMEDA PT
Surface Elevation

Logged By ICRL
Date Drilled 9/27/06
Total Depth 101.5'
Boring Diameter 6¼"
Drillers RST DRILLING
Method HSA - CME 75

Boring No. 26 MW08D
Sheet 4 Of 4

Boring Location Sketch

Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
90	4 5 6		0.0		BACKFILLED W/ NEAT CEMENT (9/27/06)	CH	CLAY (CH), same as above.
95	4 5 6		0.0			CH	CLAY (CH), same as above.
100	4 5 6		0.0		TD: 101.5'	CH	CLAY (CH), same as above.
							BORING TERMINATED AT 101.5 FT BGS 6¼" AUGERS TO 100' BACKFILLED W/ NEAT PORTLAND CEMENTS TO GROUND SURFACE
15							
20							
25							
30							

Casing Diameter _____ Casing Length _____ From _____ To _____
Screen Size _____ Screen Length _____ From _____ To _____
Sand Type _____ From _____ To _____
Bentonite Type _____ From _____ To _____
Cement/Grout _____ From _____ To _____
Surface Completion _____

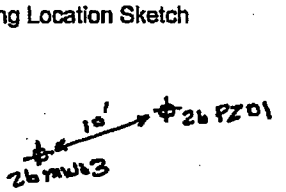
ITSI Innovative Technical Solutions, Inc.

Project IR26 DATAGAP INV.
Project Number 35103.0300
Location BLDG 20, ALAMEDA POINT
Surface Elevation

Logged By KSL
Date Drilled 9/20/06
Total Depth 15.5 FT BGS
Boring Diameter HAND AUG 8¼"
Drillers RSI DRILLING
Method HSA - CME 75

Boring No. 26PZ01
Sheet 1 Of 1

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS
0–30						SEE BZ0 - SB-001

DESCRIPTION

SEE BORING 26SB-001 (T320 FW) FOR LITHOLOGY (10' FROM THIS LOCATION)

BORING TERMINATED AT 15.5 FT BGS
(CORRECTED) FULL 8¼" AUGERS TO 15 FT.
DRILLER PUNCHED DOWN 2 0.5 FT WHEN KNOCKING OUT THE BOTTOM PLUG. WELL SET BEFORE IT COULD BE CORRECTED BY RIG GEOLOGIST

Casing Diameter 2" SCH 40 PVC Casing Length 3' From 3.5 To 0.5
Screen Size 0.010-in Screen Length 12' From 3.5 To 15.5
Sand Type 2/12 (2.5 bags) From 2.5 To 15.5
Bentonite Type MED. CHIPS (1 bag) From 1.0 To 2.5
Cement/Grout 1.0 From 0.0 To 1.0
Surface Completion 8"x12" FLUSH MOUNTED WELL BOX LOCKING WELL CAP

ITSI Innovative Technical Solutions, Inc.

Project: IR 26 DATA GAP EVAL. | Logged By: KRL | **Boring No.** 26PZ02

Project Number: 35103.0300 | Date Drilled: 9/20/06 | Sheet 1 Of 1

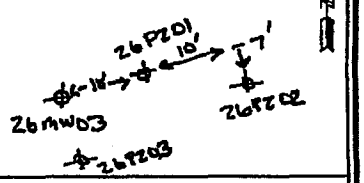
Location: BLDG 20 ALAMEDA POINT | Total Depth: 15.5 FT

Surface Elevation: | Boring Diameter: 8 1/4"

Drillers: RSE DRILLING

Method: HSA - CME 75

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/slant/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
5				3.14		SEE LOG FOR BZD-SB-001	WATER @ 3.1 FT BGS SEE BORING BZD-SB-001 FOR LITHOLOGY Note: GROUND SURFACE AT 26PZ02 IS APPROX. 0.5' HIGHER THAN OTHER TWO PIEZOMETER LOCATIONS & WELL 26MW03. WELL SCREENED ACCORDINGLY
10							
15							BORING TERMINATED @ 15.5 FT BGS 8 1/4" AUGERS TO 15.5 FT BGS DRILLER PUNCHED 15.0 DOWN ~ 0.5 FT WHEN KNOCKING OUT THE BOTTOM PLUG.
20							
25							
30							

Casing Diameter: 2" SCH 40 PVC | Casing Length: 3' | From: 0.0 | To: 3.0

Screen Size: 0.010-in | Screen Length: 12.5' | From: 3.0 | To: 15.5

Sand Type: 2/12 | From: 2.5 | To: 15.5

Bentonite Type: MED CHIPS | From: 1.0 | To: 2.5

Cement/Grout: 1.0 | From: 0.0 | To: 1.0

Surface Completion: 8"x12" FLUSH MOUNTED WELL BOX
LOCKING WELL CAP

ITSI Innovative Technical Solutions, Inc.

Project IR26 DATA GAP INV. Logged By KRL **Boring No.** 26PZ03

Project Number 35103.0300 Date Drilled 9/21/06 Sheet 1 Of 1

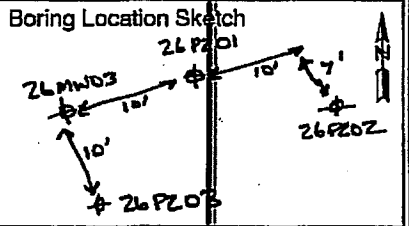
Location BLDG 20 ALAMEDA PT. Total Depth 15'

Surface Elevation _____ Boring Diameter 8¼"

Drillers RSI DRILLING

Method HSA - CME 75

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/stain/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
0						SEE BZO-SB-001	SEE LOG FOR BZO-SB-001 FOR LITHOLOGY
5							
10							
15							BORING TERMINATED AT 15 FT BGS [8¼" augers to 15.0 ft]
20							
25							
30							

Casing Diameter 2" Sch 40 PVC Casing Length 3' From 0.5 To 3.0

Screen Size 0.010-in Screen Length 12' From 3.0 To 15.0

Sand Type 2/12 (35b) From 2.5 To 15.0

Bentonite Type MEDCHIPS (½ kg) From 1.0 To 2.5

Cement/Grout 1' From 0.0 To 1.0

Surface Completion 8"x12" flush mounted well box locking watertight

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WELL DEVELOPMENT FORMS

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Sheet 1 of 1

MONITORING WELL ~~PURGE AND SAMPLE~~ DEVELOPMENT FORM

PROJECT NAME: Data Gap Invest. IR-26 PROJECT NO.: 35103.03

WELL NO.: 26MW01 TESTED BY: RS/BD DATE: 9/29/06

Measuring Point Description: TOC

Total Well Depth (ft.) 15.05

Water Level Measurement Method: Solinst

Purge Method: Surge/Bail/Pump.

Time Start Purge: 1150

Time End ~~Purge~~: 1330

Static Water Level (ft.): 3.12

~~Sample Method~~: N/A

Time Sampled: N/A

~~Sample Depth (ft.)~~: N/A

~~Field Filtering~~: N/A

Field Preservation: N/A

Comments

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Well Casing Volume (gal)
							2	4	6		
	15.05	-	3.12	=	11.93	x	0.16	0.64	1.44	=	20.87

Time	1220	1230	1240	1250	1300	1310	1320	1330
Volume Purged (gals)	15	5	5	10	10	10	10	10
Cumulative Volume Purged (gals)	15	20	25	35	45	55	65	75
Cumulative Number of Casing Volumes	0.7	0.9	1.2	1.6	2.1	2.6	3.1	3.5
Purge Rate (gpm)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Temperature (F°/C°)	21.30	21.60	21.86	21.88	22.13	22.16	22.03	22.07
pH	7.84	7.66	7.56	7.56	7.56	7.53	7.58	7.60
Specific Conductivity (mS/cm)	15770	13361	11731	11540	11601	10996	10847	10836
Dissolved Oxygen (mg/L)	2.85	4.13	6.51	4.80	19.63	5.11	5.91	5.10
Turbidity (NTU)	1224.9	1225.9	259.8	190.0	96.3	24.8	17.2	14.2
ORP (mV)	-81.6	-86.1	-88.0	-96.7	-100.0	-103	99.9	-102.5
Odor	N	N	N	N	N	N	N	N
Dewatered?	N	N	N	N	N	N	N	N
DTW -	4.65	4.75	4.84	4.90	4.90	4.90	4.90	4.90

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Sheet ___ of ___

MONITORING WELL DEVELOPMENT FORM

Project Name: Data Gap Investigation Project No.: 35103.030

Well No.: 26MW02 Tested By: RS/BD Date: 9/27/06

Measuring Point Description: TOC Initial Water Level (ft.): 3.40

Total Well Depth (ft.): 14.50 Final Water Level (ft.): 14.04

Water Level Measurement Method: Solinst Time Start Develop: 1450

Development Method(s): Surge/Bail/Pump Time End Develop: 1335

Comments:

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for ~~Casing~~ Well Diameter (in): 2 ~~0.95~~ 0.16; 4 ~~1.75~~ 0.64; 6 1.44	=	~~Casing~~ Well Volume (gal)
	14.50		3.40		11.10				19.4

Time	~~1505~~	1515	1525	1535							
Depth to water	11.80	13.20	11.70	14.04							
Volume purged (gals)	15	20	20	20							
Σ volume purged (gals)	15	35	55	75							
Σ ~~casing~~ well volumes	0.7	1.8	2.8	3.8							
Purge rate (gpm)	2.0	2.0	2.0	2.0							
Temperature (F°/C°)	22.61	21.25	21.23	21.24							
pH	7.77	7.17	7.17	7.19							
Specific conductivity (µmhos/cm)	10632	22857	22664	22238							
Dissolved oxygen (mg/L)	2.09	4.09	5.09	4.80							
Turbidity or Color	1239	179	9.3	30.1							
Odor?	N	N	N	N							
De-watered?	N	N	N	N							

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MONITORING WELL DEVELOPMENT FORM

Project Name: Data Gap Investigation IR26 Project No.: 35103.030

Well No.: 26MW03 Tested By: RS, BD Date: 09/27/06

Measuring Point Description: (N) Top of Casing Initial Water Level (ft.): -3' BTC

Total Well Depth (ft.): 14.95 Final Water Level (ft.): -12.30 BTC

Water Level Measurement Method: Water Level Probe Time Start Develop: 1100

Development Method(s): Surge and Pump Time End Develop: 1230

Comments:

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for ~~Casing~~ Well Diameter (in) 2	4	6	=	~~Casing~~ Well Volume (gal)
19.68	14.25		3.0 BTC		11.25		~~0.16~~ 0.95	~~0.64~~ 1.75	1.44		19.68

Time	1115	1120	1125	1130	1140	1150	1202	1212	1220	1230
Depth to water (BTC)	3.0	8.02	8.30	8.20	11.05	13.16	10.07	8.45	11.70	12.30
Volume purged (gals)	15	15	15	15	20	20	20	20	20	20
Σ volume purged (gals)	15	30	45	60	80	100	120	140	160	180
Σ ~~casing~~ well volumes	~~0.76~~	~~1.5~~	2.2	3.0	4.0	5.08	6.09	7.10	8.13	9.15
Purge rate (gpm)	~~3.0~~	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	3.0
Temperature (F°/C°)	22.67	23.07	22.36	22.54	22.56	22.49	22.89	23.44	22.82	22.80
pH	7.50	7.53	7.54	7.54	7.52	7.55	7.47	7.56	7.49	7.46
Specific conductivity (µmhos/cm)	18826	17478	19818	15490	15353	15336	18551	8321	12935	15365
Dissolved oxygen (mg/L)	1.67 ~~20.9~~	2.27	4.37	5.54	2.84	3.61	2.81	4.51	3.71	3.57
Turbidity or Color	1236	1224	764	331	100.8	133.7	77.0	142	70.2	83.2
Odor?	Y	~~N~~ Y	Y	Y	Y	Y	Y	Y	Y	Y
De-watered?	N	N	N	N	N	N	N	N	N	N

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MONITORING WELL DEVELOPMENT FORM

Project Name: Data Gap Investigation IR26 Project No.: 35103.030

Well No.: 26MW04 Tested By: RS/BD Date: 09/27/06

Measuring Point Description:	TOC	Initial Water Level (ft.):	2.51
Total Well Depth (ft.):	14.89	Final Water Level (ft.):	11.20
Water Level Measurement Method:	Solinst	Time Start Develop:	0910
Development Method(s):	Surge/Bail/Pump	Time End Develop:	1120
Comments:			

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for ~~Casing~~ Well Diameter (in) 2 ~~0.16~~	4 ~~0.64~~	6 1.44	=	~~Casing~~ Well Volume (gal)
	14.89		2.51		12.38						21.6

Time	0937	0945	0951	1000	1010	1020	1030				
Depth to water	/	11.42	11.45	11.45	13.50	12.50	11.20				
Volume purged (gals)	20	15	15	15	15	15	15				
Σ volume purged (gals)	20	35	50	65	80	95	110				
Σ casing volumes	0.9	1.6	2.3	3.0	3.7	4.4	5.1				
Purge rate (gpm)	2.3	→									
Temperature (F°/C°)	21.96	21.36	21.15	21.14	21.68	21.55	22.06				
pH	7.64	7.56	7.60	7.60	7.55	7.54	7.56				
Specific conductivity (µmhos/cm)	20994	28113	28193	21883	19938	19381	18583				
Dissolved oxygen (mg/L)	1.13	1.53	2.43	3.19	3.64	3.74	2.38				
Turbidity or Color	1229	1006	421	189	72.2	55.3	42.4				
Odor?	N	N	N	N	N	N	N				
De-watered?	N	N	N	N	N	N	N				

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MONITORING WELL DEVELOPMENT FORM

Project Name: Data Gap Investigation IR 26 Project No.: 35103.030

Well No.: 26 MW 05 Tested By: RS, BD Date: 09/29/06

Measuring Point Description: TOC

Total Well Depth (ft.): 15.85 Bgs

Water Level Measurement Method: Solinst WLM

Development Method(s): Surge / Pump

Comments: Well Bubbling Intermittantly

Initial Water Level (ft.): -3.18 BTOC

Final Water Level (ft.): -5.05 BTOC

Time Start Develop: 1050

Time End Develop: 1135

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Well Diameter (in) 2	4	6	=	Well Volume (gal)
	15.55		3.18		12.37		~~0.16~~ 0.16	~~0.64~~ 0.64	1.44		21.65

Time	1100	1110	1120	1130							
Depth to water	3.19	5.81	5.90	5.95							
Volume purged (gals)	15	12	13	12							
Σ volume purged (gals)	15	27	40	52							
Σ Well volumes	.69	1.24	1.85	2.41							
Purge rate (gpm)	1.50	1.25	1.25	1.25						RS	
Temperature (F°/C°)	19.70	20.09	20.44	20.35							
pH	7.63	7.59	7.57	7.58							
Specific conductivity (µmhos/cm)	17183	16526	16784	15796							
Dissolved oxygen (mg/L)	1.89	2.14	2.46	2.28							
Turbidity or Color	1065.3	254.2	125.6	62.0							
Odor?	N	N	N	N							
De-watered?	N	N	N	N							

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Sheet 1 of 1

MONITORING WELL DEVELOPMENT FORM

Project Name: Data Gap Investigation IR 26 Project No.: 35103.030

Well No.: 26MW06 Tested By: RS, BD Date: 09/29/06

Measuring Point Description: TOC Initial Water Level (ft.): -2.36 BTOC

Total Well Depth (ft.): 14.62 BGS Final Water Level (ft.): 3.14 BTOC

Water Level Measurement Method: Solinst WLM Time Start Develop: 0925

Development Method(s): Surge / Bail Time End Develop: 1030

Comments: * Changed Method to Surge/Pump @ 0955
* Well Bubbling intermittently (WELL)

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for (WELL) Diameter (in) 2	4	6	=	(WELL) Volume (gal)
							~~0.95~~ 0.16	~~1.75~~ 0.64	1.44		
20.93	14.32		2.36		11.96						20.93

Time	~~0940~~	1005	1010	1018	1025	
Depth to water	~~2.40~~	~~3.58~~	3.51	3.55	3.60	
Volume purged (gals)	15	10	10	10	10	
Σ volume purged (gals)	15	25	35	45	55	
Σ ~~casing~~ (WELL) volumes	.72	1.19	1.67	2.15	2.63	
Purge rate (gpm)	~~3.0~~	1.5	~~1.5~~ 1.5 BG	1.5	1.5	
Temperature (F°/C°)	~~23.8~~	~~23.40~~	23.62	23.92	24.00	
pH	7.79	7.57	7.46	7.43	7.39	
Specific conductivity (µmhos/cm)	~~23366~~	21023	20588	20581	~~20333~~	
Dissolved oxygen (mg/L)	~~4.58~~	4.00	3.59	3.01	2.96	
Turbidity or Color	~~1780~~	285	155	93.3	64.6	
Odor?	N	N	N	N	N	
De-watered?	N	N	N	N	N	

* Well initially developed on 09/25/06

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Sheet 1 of 1

MONITORING WELL DEVELOPMENT FORM

Project Name: Data Gap Investigation IR26 Project No.: 35103.030

Well No.: 26MW07 Tested By: RS, BD Date: 09/27/06

Measuring Point Description: TOC Initial Water Level (ft.): 2.79

Total Well Depth (ft.): 15.09 Final Water Level (ft.): 13.50

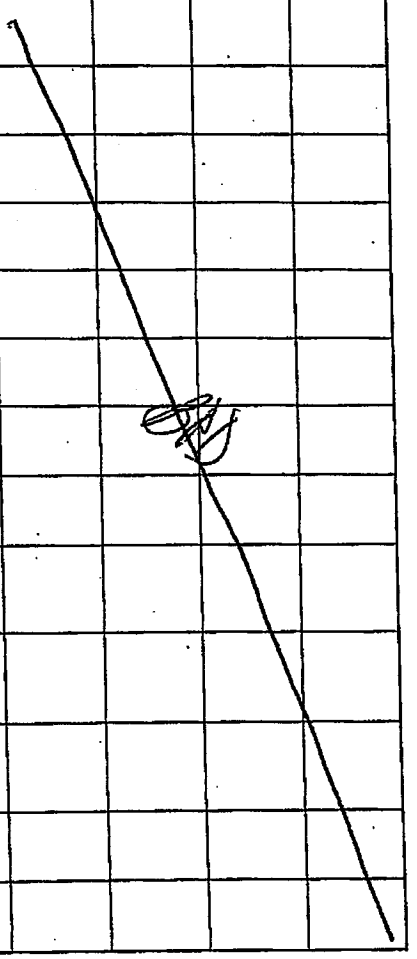
Water Level Measurement Method: Solist Time Start Develop: 1330

Development Method(s): Surge/Bail/Pump. Time End Develop: 1430

Comments:

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Well ~~Casing~~ Diameter (in) 2	4	6	=	Well ~~Casing~~ Volume (gal)
21.52	15.09		2.79		12.30		~~0.95~~ ~~0.16~~	~~1.75~~ ~~0.64~~	1.44		21.52

Time	1345	1355	1405	1415	1425	1430	
Depth to water	11.0	12.00	13.05	14.00	13.70	13.50	
Volume purged (gals)	15	20	20	20	20	~~20~~ 15 BD	
Σ volume purged (gals)	15	~~35~~ 35	55	75	95	110	
Σ Well ~~Casing~~ volumes	0.7	1.6	2.5	3.4	4.4	5.1	
Purge rate (gpm)	2.0	2.0	2.0	2.0	2.0	2.0	
Temperature (F°/C°)	21.75	20.49	20.80	20.33	20.27	20.69	
pH	7.74	7.50	7.50	7.18	7.17	7.11	
Specific conductivity (µmhos/cm)	16340	22928	23738	24752	23628	23639	
Dissolved oxygen (mg/L)	2.46	4.64	4.95	2.89	4.91	4.70	
Turbidity or Color	1227	9.9	1120	20.0	16.1	10.0	
Odor?	N	N	N	N	N	N	
De-watered?	N	N	N	N	N	N	



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MONITORING WELL DEVELOPMENT FORM

Project Name: Data Gap Investigation IR-26 Project No.: 35103.03

Well No.: 26-PZ01 Tested By: RS/BD Date: 9/28/06

Measuring Point Description: TOC Initial Water Level (ft.): 2.63

Total Well Depth (ft.): 14.91 Final Water Level (ft.):

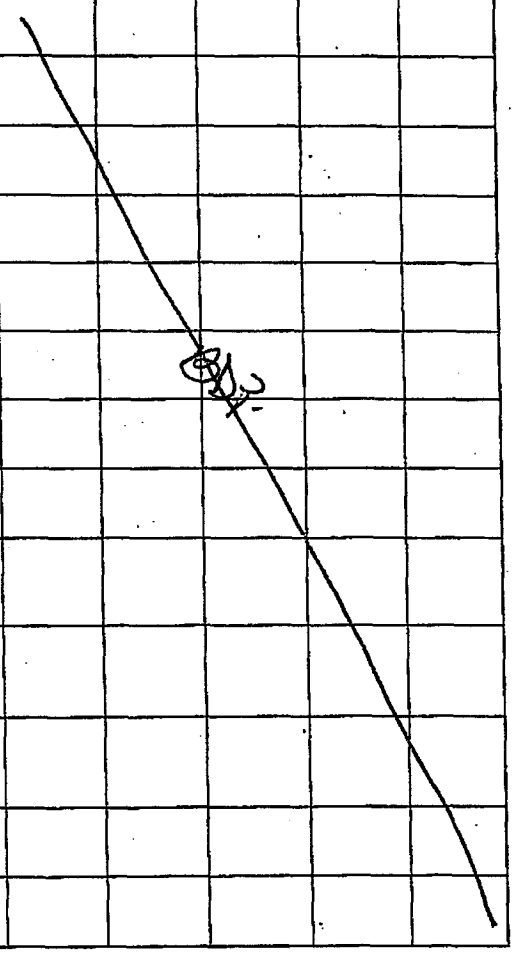
Water Level Measurement Method: Solinst Time Start Develop: ~~1300~~ 1400

Development Method(s): Surge/Pump Time End Develop:

Comments:

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for ~~Casing~~ Well Diameter (in) 2	4	6	=	~~Casing~~ Well Volume (gal)
	14.91		2.63		12.28		~~0.95~~ ~~0.16~~	~~1.75~~ ~~0.64~~	1.44		11.66

Time	1505	1525	1545	1605	1625	
Depth to water	3.31	3.20	3.15	3.10	3.01	
Volume purged (gals)	5	5	5	5	5	
Σvolume purged (gals)	5	10	15	20	25	
Σcasing volumes	0.4	0.8	1.2	1.7	2.14	
Purge rate (gpm)	0.4	0.4	0.4	0.4	0.4	
Temperature (F°/C°)	22.49	22.40	22.25	22.18	22.16	
pH	7.39	7.38	7.32	7.31	7.32	
Specific conductivity (µmhos/cm)	10128	10122	10125	10127	10124	
Dissolved oxygen (mg/L)	6.72	4.25	3.71	3.50	3.28	
Turbidity or Color	1230	265	20.1	4.0	3.4	
Odor?	N	N	N	N	N	
De-watered?	N	N	N	N	N	



Innovative Technical Solutions, Inc.

MONITORING WELL DEVELOPMENT FORM

Project Name: Data Gap Investigation IR-26 Project No.: 35103.03

Well No.: 26-PZ-02 Tested By: RS/BD Date: 9/28/06

Measuring Point Description:	TOC	Initial Water Level (ft.):	3.15
Total Well Depth (ft.):	14.82	Final Water Level (ft.):	3.78
Water Level Measurement Method:	Solinst.	Time Start Develop:	0940
Development Method(s):	surge/Pump.	Time End Develop:	1115
Comments:			

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for ~~Casing~~ Well Diameter (in) 2 ~~0.95~~ 0.16	4 ~~1.75~~ 0.64	6 1.44	=	~~Casing~~ Well Volume (gal)
	14.82		3.15		11.67						11.09

Time	~~8950~~	1015	1035	1055	1115
Depth to water	3.15	3.75	3.76	3.78	3.78
Volume purged (gals)	5	5	5	5	5
Σ volume purged (gals)	5	10	15	20	25
Σ casing volumes	0.4	0.9	1.3	1.8	2.2
Purge rate (gpm)	0.4	0.4	0.4	0.4	0.4
Temperature (F°/C°)	21.93	21.70	21.76	21.82	21.80
pH	7.57	7.69	7.68	7.64	7.60
Specific conductivity (µmhos/cm)	6182	5526	5461	5396	5455
Dissolved oxygen (mg/L)	5.01	5.32	7.27	6.47	4.16
Turbidity or Color	1229	626	243	21.2	2.5
Odor?	N	N	N	N	N
De-watered?	N	N	N	N	N

ITSI Innovative Technical Solutions, Inc.

MONITORING WELL DEVELOPMENT FORM

Project Name: Data Gap Investigation IR-26 Project No.: 35103.03

Well No.: 26-PZ-03 Tested By: RS/BD Date: 9/28/06

Measuring Point Description: TOC Initial Water Level (ft.): 2.61

Total Well Depth (ft.): 13.85 Final Water Level (ft.): 2.99

Water Level Measurement Method: Solinst. Time Start Develop: ~~11:05~~ / 1245

Development Method(s): Surge/Pump Time End Develop: 1430

Comments:

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for ~~Casing~~ Well Diameter (in) 2 ~~0.95~~ 0.16	4 ~~1.75~~ 0.64	6 1.44	=	~~Casing~~ Well Volume (gal)
	13.85	-	2.61	=	11.24	x				=	10.67

Time	1250	1310	1330	1350	1410	1430				
Depth to water	3.05	3.02	2.99	2.99	2.99	2.99				
Volume purged (gals)	2	3	5	5	5	5				
Σvolume purged (gals)	2	5	10	15	20	25				
Σcasing volumes	0.18	0.46	0.93	1.4	1.8	2.3				
Purge rate (gpm)	0.4	0.4	0.4	0.4	0.4	0.4				
Temperature (F°/C°)	23.42	23.48	23.50	23.62	23.51	23.45				
pH	7.44	7.45	7.46	7.47	7.46	7.46				
Specific conductivity (µmhos/cm)	8760	10040	9517	9888	10227	10214				
Dissolved oxygen (mg/L)	0.91	0.45	0.39	0.37	0.35	0.35				
Turbidity or Color	1243	283	23.1	79.2	25.9	84.0				
Odor?	N	N	N	N	N	N				
De-watered?	N	N	N	N	N	N				

SAMPLING AND PURGE FORMS

Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, CA. 94598
(925) 946-3100 (TEL), (925) 256-8998 (FAX)

SAMPLE COLLECTION LOG

PROJECT: IR26 DATA GAP INV.
PROJECT NO.: 351030300
DATE: 9/5/06
PAGE: 1 of 1
SITE LOCATION: IR26 BLDG 20 2701 MONARCH ST. ALAMEDA POINT

SAMPLE NUMBER	DATE SAMPLED	TIME SAMPLED	SAMPLE LOCATION	SAMPLED BY	SAMPLE DESCRIPTION	FINAL SAMPLE DISPOSITION	NOTES/COMMENTS
090506026001A	9/5/06	14:22	IR26	KRL	TRIP BLANKS	CIT / 24 hr TAT	
090506026002	9/5/06	14:52	B20-SB-003	KRL	Hydropunch 7.5-10' bgs	" "	
090506026003	9/5/06	15:10	B20-SB-003	KRL	" 12.5-15' bgs	" "	
090506026004	9/5/06	15:30	B20-SB-003	KRL	" 18.5-21' bgs	" "	Strong reaction w/HCl in VOAs
			4 TOTAL SAMPLES				TOTAL TESTS

KRL 9/5/06

SAMPLER(S) SIGNATURE(S) KRLeonard

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #:

Sampler: BRIAN DEE / LR LEONARD 925.250-8959

Project No.: 351030300

Report To: RACHEL HESS

Project Name: IR 26 DATA GAP INV.

Company: ITSI

Project P.O.:

Telephone: 510-715-7842

Turnaround Time: 24 HOUR

Fax: 925-256-8598

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	Analysis: VOCs 8260B
	0905060260001A	9/5/06 1422		X		3	X				X
	0905060260002	9/5/06 1452		X		3	X				X
	0905060260003	9/5/06 1510		X		3	X				X
	0905060260004	9/5/06 1530		X		3	X				X

Notes:
24 HOUR TURNAROUND
FAX RESULTS TO
RACHEL HESS

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:
[signature] 9/5/06 1730 DATE / TIME
DATE / TIME
DATE / TIME

RECEIVED BY:
[signature] 9/5/06 1730 DATE / TIME
DATE / TIME
DATE / TIME

Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, CA. 94598
(925) 946-3100 (TEL), (925) 256-8998 (FAX)

PROJECT: IR26 DATA GAP - INV.
PROJECT NO.: 35103.0300
SITE LOCATION: IR26, BLDG 20, 2701 MONARCH ST., ALAMEDA PT.

SAMPLE COLLECTION LOG

DATE: 9/06/06
PAGE: 1 of 1

SAMPLE NUMBER	DATE SAMPLED	TIME SAMPLED	SAMPLE LOCATION	SAMPLED BY	SAMPLE DESCRIPTION	FINAL SAMPLE DISPOSITION	NOTES/COMMENTS
090606026001A	9/6/06	0800	IR26	KRW/BD	TRIPBLANKS	C.T /24 HR TAT	
090606026002	9/6/06	0820	B20-SB-005	KRW/BD	HYDROPUNCH 7.5'-10' BGS	" " " "	MS/MSD
090606026003	9/6/06	0930	B20-SB-005	KRW/BD	" 13'-15.5' BGS	" " " "	
090606026004	9/6/06	1000	B20-SB-005	KRW/BD	" 18.5'-21' BGS	" " " "	mod. reaction w/ HCL in VOA
090606026005	9/6/06	1040	B20-SB-004	KRW/BD	" 7.5'-10' BGS	" " " "	
090606026006	9/6/06	1050	B20-SB-004	KRW/BD	" " " "	" " " "	FIELD DUPLICATE
090606026007	9/6/06	1105	B20-SB-004	KRW/BD	" 14.5'-17' BGS	" " " "	
090606026008	9/6/06	1130	B20-SB-004	KRW/BD	" 18.5'-21' BGS	" " " "	
090606026009	9/6/06	1310	B20-SB-002	KRW/BD	" 7.5'-10' BGS	" " " "	
090606026010	9/6/06	1330	B20-SB-002	KRW/BD	" 14.5'-17' BGS	" " " "	
090606026011	9/6/06	1400	B20-SB-002	KRW/BD	" 18.5'-21' BGS	" " " "	
090606026012	9/6/06	1430	B20-SB-001	KRW/BD	" 4.5'-7' BGS	" " " "	SUSPENDED SEDIMENT IN SAMPLE
090606026013	9/6/06	1440	B20-SB-001	KRW/BD	" " " "	" " " "	FIELD DUPLICATE
090606026014	9/6/06	1500	B20-SB-001	KRW/BD	" 9.5'-12' BGS	" " " "	
090606026015	9/6/06	1515	B20-SB-001	KRW/BD	" 18.5'-21' BGS	" " " "	
~~KRW 9/6/06~~					~~KRW 9/6/06~~		
			15	TOTAL SAMPLES			TOTAL TESTS

SAMPLER(S) SIGNATURE(S) KRWoodward

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Email: www.itsi.com

Chain of Custody Record No. 0850

Lab PO#: 0325-35/030300

Lab: Curtis & Tompkins

Project name: Data Gap Invest. IR-26

ITSI technical contact: Ken Leonard 925-250-8959

Field samplers: RS, BD

Project number: 35103.0300

ITSI project manager: Rachel Hess

Field samplers' signatures:

Sample ID	Sample Location	Date	Time	Matrix	MS / MSD	No./Container Types: 40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	120 ml Poly	Encore	Preservative Added: None	Analysis Required: VOCs 8260B/5030B	SVOCs	PAHs	Pest	Dioxins	TVPH	TEPH	Metals	Cr+6	PCBs
100206026001	IR-26	10/02/06	1240	W		3								X									
100206026002A	IR-26	10/02/06	1300	W		3								X									
100306026003	IR-26	10/03/06	0830	W		3								X									
100306026004	IR-26	10/03/06	0855	W		3								X									
100306026005	IR-26	10/03/06	1405	W		3								X									
100306026006	IR-26	10/03/06	1525	W		3								X									

	Name (print)	Company Name	Date	Time
Relinquished by: Raymond Spencer	Ray Spencer	ITSI	10.03.06	1620
Received by:	Tony Rojas	C&T	10.3.06	1620
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks: 5-day TAT. VOA's are unpreserved due to Sample 100206026002A is preserved w/HCl

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Chain of Custody Record No. 0848

Lab PO#: 0325-35/030300

Lab: Curtis & Tompkins

Project name: Data Gap Invst IR-26

ITSI technical contact: Ken Leonard

Field samplers: RS, BD

Project number: 35103.0300

ITSI project manager: Rachel Hess

Field samplers' signatures:

Sample ID	Sample Location	Date	Time	Matrix	MS / MSD	No./Container Types: 40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	120 ml Poly	Encore	250 ml Poly	Analysis Required: VOCs	SVOCs	PAHs	Pest	Dioxins	TVPH	TEPH	Metals 6010B	Cr+6	PCBs	Alk 310.0	TDS 160.1	Mercury 245.1A
100206026001	IR-26	10/02/06	1240	W				1					1								X			X	X	X
100306026003	IR-26	10/03/06	0830	W				1					1								X			X	X	X
100306026004	IR-26	10/03/06	0855	W				1					1								X			X	X	X
100306026005	IR-26	10/03/06	1405	W				1					1								X			X	X	X
100306026006	IR-26	10/03/06	1525	W				1					1								X			X	X	X

Preservative Added: HA HNO3 | Ice | Ice | HA H2SO4

	Name (print)	Company Name	Date	Time
Relinquished by:	Raymond Spencer	ITSI	10-03-06	1620
Received by:	Tony Rojas	C&T	10-3-06	1620
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

Fed Ex #:

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PROJECT: DATA GAP Investigation
PROJECT NO.: 35103.0300
SITE LOCATION: IR Site 26

SAMPLE COLLECTION LOG

DATE: 10/02/06
PAGE: 1 of 1

SAMPLE NUMBER	DATE SAMPLED	TIME SAMPLED	SAMPLE LOCATION	SAMPLED BY	SAMPLE DESCRIPTION	FINAL SAMPLE DISPOSITION	NOTES/COMMENTS
100206026001	10/02/06	1240	IR-26	BD/RS	IR26-MW-06	C&T	
100206026002A	10/02/06	1300	IR-26	BD/RS	Trip Blank	C&T	
100206026003	10/03/06	0830	IR-26	RS-BD	RS IR26MW05	C&T	
100306026004	10/03/06	0945	IR-26	RS-BD	26MW04	C&T	
100306026005	10/03/06	1405	IR-26	RS.BD	26MW01	C&T	
100306026006	10/03/06	1525	IR-26	RS-BD	26MW02	C&T	
100406026007	10/04/06	0930	IR-26	RS-BD	26MW07	C&T	
100406026008	10/04/06	0940	IR-26	RS-BD	RS 26MW07 ~~Duplicate~~	C&T	Duplicate
100406026009	10/04/06	1025	IR-26	RS-BD	26MW03	C&T	
~~100406026010~~	~~10/04/06~~	~~0800~~	~~IR-26~~	~~RS-BD~~	~~IR-26 TB~~	~~C&T~~	~~Trip Blank~~ not analyzed
			TOTAL SAMPLES				TOTAL TESTS

SAMPLER(S) SIGNATURE(S)

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Chain of Custody Record No. 0804

Lab PO#: 0325-35/030300	Lab: Curtis & Thompkins
Project name: Data Gap Investigation, IR26	ITSI technical contact: KEN LEONARD (925) 250-8959
Project number: 35103.0300	ITSI project manager: Rachel Hess
	Field samplers: RS, BD
	Field samplers' signatures:

Sample ID	Sample Location	Date	Time	Matrix	MS / MSD	No./Container Types: 40 ml VOA	1 Liter Amber	500 ml Poly	Sleeve	Glass Jar	120 ml Poly	Encore	Preservative Added: ICE	Analysis Required: VOCs 8260B	SVOCs	PAHs	Pest	Dioxins	TVPH	TEPH	Metals	Cr+6	PCBs
10040602660 07	IR 26	10/04/06	0930	W		3								X									
10040602660 08D	IR 26	10/04/06	0940	W		3								X									
10040602660 09	IR 26	10/04/06	1025	W		3								X									
~~10040602660 00~~	RS																						
10040602660 10	IR 26	10/04/06	0800	W		3								X									

	Name (print)	Company Name	Date	Time
Relinquished by:	Raymond Spencer	ITSI	10/04/06	1140
Received by:	J.D. Cenzon	ITSI	10/04/06	1140
Relinquished by:	J.D. Cenzon	ITSI	10/04/06	1620
Received by:	Rick Graves	C&T	10/4/06	1620
Relinquished by:				
Received by:				

Turnaround time/remarks:

10/14/06 Holding Time missed by lab. Lab instructed NOT to analyze these samples. Samples re-collected 10/17/06. R6000

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Chain of Custody Record No. 0805

Lab PO#:	Lab:
0325-35 / 030300	Curtis & Thompkins
Project name: Data Gap Investigation IR26	**ITSI technical contact:** Ken Leonard (925) 250-8959
Project number: 35103.0300	**ITSI project manager:** Rachel Hess
	Field samplers: Raymond Spencer, Brian Def
	Field samplers' signatures:

Sample ID	Sample Location	Date	Time	Matrix	MS / MSD	No./Container Types: 40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	120 ml Poly	Encore	250 ml Poly	Analysis Required: VOCs	SVOCs	PAHs	Pest	Dioxins	TVPH	TEPH	Metals 6010 B	Cr+6	PCBs	Alkalinity 310.0	TDS 160.1	Mercury 7470A
10040602600 7	IR 26	10/04/06	0930	W				X					X								X			X	X	X
10040602600 8D	IR 26	10/04/06	0940	W				X					X								X			X	X	X
10040602600 9	IR 26	10/04/06	1025	W				1					1								X			X	X	X

Preservative Added: No Preservative | ICE | ICE | No Preservative

	Name (print)	Company Name	Date	Time
Relinquished by: Raymond Spencer	Raymond Spencer	ITSI	10/04/06	1140
Received by: J.D. Coursen	J.D. Coursen	ITSI	10/04/06	1140
Relinquished by: J.D. Coursen	J.D. Coursen	ITSI	10/04/06	1620
Received by: Rick Grams	Rick Grams	CET	10/4/06	1620
Relinquished by:				
Received by:				

Turnaround time/remarks:

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PROJECT: IR-26 Data Gap Invst.
PROJECT NO.: 35103.0300
SITE LOCATION: IR-26, Bldg-20

SAMPLE COLLECTION LOG

DATE: 10/03/06
PAGE: 1 of 1

SAMPLE NUMBER	DATE SAMPLED	TIME SAMPLED	SAMPLE LOCATION	SAMPLED BY	SAMPLE DESCRIPTION	FINAL SAMPLE DISPOSITION	NOTES/COMMENTS
100206026001	10/02/06	1240	IR-26, Bldg 20	BD/RS	26-MW-06	C&T	
100206026002A	10/02/06	1300		BD/RS	Trip Blank	C&T	TB
100306026003	10/03/06	0830		BD/RS	26-MW-05	C&T	
100306026004	10/03/06	0945		BD/RS	26-MW-04	C&T	
100306026005	10/03/06	1405		BD/RS	26-MW-01	C&T	
100306026006	10/03/06	1525		BD/RS	26-MW-02	C&T	
100406026007	10/04/06	0930		BD/RS	26-MW-07	C&T	Non-Preg. VOAs
100406026008	10/04/06	0940		BD/RS	26-MW-07 (Field Dup)	C&T	FD
100406026009	10/04/06	1025		BD/RS	26-MW-03	C&T	Non-Preg. VOAs
100406026010A	10/04/06	0800		BD/RS	Trip Blank	C&T	TB
100506026011	10/05/06	1000		BD/RS	IDW-Soil (Comp.)	C&T	
100506026012	10/05/06	1030		BD/RS	IDW-Soil (Comp.)	C&T	
100506026013	10/05/06	1100		BD/RS	IDW-Soil (Comp.)	C&T	
101706026014A	10/17/06	1000		BD/RS	Trip Blank	C&T	TB-Resample
101706026015	10/17/06	1200		BD/RS	26-MW-03	C&T	Re-Sample
101706026016D	10/17/06	1215		BD/RS	26-MW-03 (Field Dup)	C&T	Re-Sample
101706026017	10/17/06	1310		BD/RS	26-MW-07	C&T	Re-Sample
			TOTAL SAMPLES				TOTAL TESTS

SAMPLER(S) SIGNATURE(S)

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Chain of Custody Record No. 0806

Lab PO#: 0325-35 /030300

Lab: Curtis & Thompkins

Project name: DATA GAP Investigation IR-26

Project number: 35103.0300

ITSI technical contact: KEN LEONARD (925) 250-8959

ITSI project manager: RACHEL HESS (925) 946-3105

Field samplers: BRIAN DEE, Raymond Spencer

Field samplers' signatures:

Sample ID	Sample Location	Date	Time	Matrix	MS / MSD	No./Container Types: 40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	120 ml Poly	Encore	1663 JAR	Preservative Added	Analysis Required: VOCs 8260B	SVOCs 8270C	PAHs	Pest	Dioxins	TVPH	TEPH 8015B	Metals CAM17	CrVI	PCBs
														ICE										
														ICE										
100506026011	IR-26	10/05/06	1000	Soil								3	2		X	X					X	X		
100506026012	IR-26	10/05/06	1030	Soil								3	2		X	X					X	X		
100506026013	IR-26	10/05/06	1100	Soil								3	2		X	X					X	X		

	Name (print)	Company Name	Date	Time
Relinquished by:	Raymond Spencer	ITSI	10.5.06	1300
Received by: J.D. LENZEN	J.D. LENZEN	ITSI	10.5.06	1301
Relinquished by: J.D. LENZEN	J.D. LENZEN	ITSI	10.5.06	1445
Received by:	Rick Grams	CAT	10/5/06	1450
Relinquished by:				
Received by:				

Turnaround time/remarks: STANDARD TAT, PLEASE Hold for possible future (Additional) Analysis.

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Chain of Custody Record No. 0807

Lab PO#: 0325.35 / 030300

Lab: CURTIS & TOMPKINS

Project name: IR26 DATA GAP INVESTIGATION

ITSI technical contact: KEN LENARD 925.946.5498

Field samplers: RAYMOND SPENCER

Project number: 35103.0300

ITSI project manager: RACHEL HESS 925.946.3105

Field samplers' signatures:

Sample ID	Sample Location	Date	Time	Matrix	MS / MSD	No./Container Types: 40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	120 ml Poly	Encore	Preservative Added: ICE	Analysis Required: VOCs (8260B)	SVOCs	PAHs	Pest	Dioxins	TVPH	TEPH	Metals	Cr+6	PCBs
101706026017A	TRIP BLANK	10/17/06	1000	GW		3								X									
101706026014	26MW03	10/17/06	1200	GW		3								X									
101706026015D	26MW03	10/17/06	1215	GW		3								X									
101706026016	26MW07	10/17/06	1310	GW		3								X									

Jo Lang

	Name (print)	Company Name	Date	Time
Relinquished by:	RAYMOND SPENCER	ITSI	10.17.06	1457
Received by:	Tony Rojas	C&T	10.17.06	1500
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks: T.A.T. 48 HOURS OR SOONER

* PRESERVED W/ HCL

** NOT PRESERVED W/ HCL (UN-PRESERVED)

NOTE: SAMPLES RE-COLLECTED DUE TO MISSED HOLDING TIMES BY LAB.

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SAMPLE COLLECTION LOG

PROJECT: Data Gap Investigation IR-26
PROJECT NO.: 35103-0300
SITE LOCATION: IR-26 Alameda Pt.

DATE: 10-17-06
PAGE: 1 of 1

SAMPLE NUMBER	DATE SAMPLED	TIME SAMPLED	SAMPLE LOCATION	SAMPLED BY	SAMPLE DESCRIPTION	FINAL SAMPLE DISPOSITION	NOTES/COMMENTS
101706026017A	10/17/06	1000	IR-26	RS-BD	Trip Blank (3 VOAs)	C & T	48HR TAT P/U by Courier
101706026014	10/17/06	1200	26MW03	RS, BD	3 VOAs - (VOC 8260B)	C & T	
101706026015D	10/17/06	1215	26MW03	RS, BD	Field Duplicate	C & T	
101706026016	10/17/06	1310	26MW07	RS, BD	3 VOAs - (VOC 8260B)	C & T	

4 TOTAL SAMPLES

TOTAL TESTS

SAMPLER(S) SIGNATURE(S)

* GW Samples Re Taken for #'s
#100406026006 → #100406026009A.

Innovative Technical Solutions, Inc.

MONITORING WELL PURGE AND SAMPLE FORM

PROJECT NAME: Data Gap IR-26 PROJECT NO.: 35103.0300

WELL NO.: 26MW01 TESTED BY: RS/BB DATE: 10/03/06

Measuring Point Description: TOC Static Water Level (ft.): 2.35

Total Well Depth (ft.): 14.65 Sample Method: P. Pump

Water Level Measurement Method: Solinst. Time Sampled: 1405

Purge Method: P. Pump Sample Depth (ft.): 13.0'

Time Start Purge: 1320 Field Filtering: Yes,

Time End Purge: 1400 Field Preservation: HNO3/Ice

Comments:

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Well Diameter (in)			=	Well Volume (gal)
							2	4	6		
	14.65		2.35		12.30		0.16	0.64	1.44		21.5

Time	1325	1330	1335	1340	1345	1350	1355	1400
Volume Purged (gals)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cumulative Volume Purged (gals)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
Cumulative Number of ~~Casing~~ Volumes	0.02	0.04	0.06	0.09	0.10	0.13	0.16	0.18
Purge Rate (gpm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Temperature (F°) or (C°)	21.37	21.46	21.47	21.50	21.51	21.56	21.61	21.64
pH	7.66	7.57	7.55	7.51	7.48	7.46	7.45	7.45
Specific Conductivity (mS/cm)	27.909	24675	23,769	22.00	21.27	21.29	19.53	18.92
Dissolved Oxygen (mg/L)	1.78	1.06	1.12	1.06	1.09	1.16	1.17	1.19
Turbidity/Color (NTU)	10.9	2.3	2.5	3.5	3.6	4.5	5.4	5.3
Odor	N	N	N	N	N	N	N	N
Dewatered?	N	N	N	N	N	N	N	N
DTW =	2.45	2.48	2.49	2.49	2.50	2.55	2.55	2.55

Innovative Technical Solutions, Inc.

MONITORING WELL PURGE AND SAMPLE FORM

PROJECT NAME: Data Gap 1R-26 PROJECT NO.: 35103-0300

WELL NO.: 26MW02 TESTED BY: RS/AD DATE: 10/03/06

Measuring Point Description: TOC Static Water Level (ft.): 3.15

Total Well Depth (ft.): 14.75 Sample Method: P. Pump.

Water Level Measurement Method: Solinst Time Sampled: 1525

Purge Method: P. Pump. Sample Depth (ft.): 13.0

Time Start Purge: 1440 Field Filtering: Yes

Time End Purge: 1520 Field Preservation: HNO3 / Ice

Comments:

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for ~~Casing~~ Well Diameter (in) 2: 0.16 / 4: 0.64 / 6: 1.44	=	~~Casing~~ Well Volume (gal)
	14.75		3.15		11.60		0.64		20.3

Time	1445	1450	1455	1500	1505	1510	1515	1520
Volume Purged (gals)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cumulative Volume Purged (gals)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
Cumulative Number of Casing Volumes	0.02	0.04	0.07	0.09	0.12	0.14	0.17	0.19
Purge Rate (gpm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Temperature (F°) or (C°)	21.23	21.40	21.65	21.49	21.43	21.31	21.27	21.27
pH	7.58	7.56	7.47	7.44	7.40	7.35	7.33	7.31
Specific Conductivity (mS/cm)	32.24	31.92	30.08	29.02	28.40	28.11	27.86	27.71
Dissolved Oxygen (mg/L)	0.29	0.22	0.17	0.17	0.17	0.17	0.17	0.17
Turbidity/Color (NTU)	122	100.3	16.8	17.2	11.7	9.4	6.9	16.1
Odor	N	N	N	N	N	N	N	N
Dewatered?	N	N	N	N	N	N	N	N
DTW:	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38

Innovative Technical Solutions, Inc.

MONITORING WELL PURGE AND SAMPLE FORM

PROJECT NAME: Bobo Gap Invst. IR-26 PROJECT NO.: 35103.0300

WELL NO.: 26MW03 TESTED BY: RS/BD DATE: 10/04/06

Measuring Point Description: TOC

Static Water Level (ft.): 2.50

Total Well Depth (ft.): 14.30

Sample Method: P. Pump.

Water Level Measurement Method: Solinst

Time Sampled: 1045

Purge Method: P. Pump

Sample Depth (ft.): 12.50'

Time Start Purge: 1000

Field Filtering: Yes

Time End Purge: 1040

Field Preservation: HNO3/Ice

Comments:

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for ~~Casing~~ well Diameter (in)			=	~~Casing~~ well Volume (gal)
							2	4 (1.25)	6		
	14.30		2.50		11.80		0.16	~~0.64~~	1.44		20.65

Time	1005	1010	1015	1020	1025	1030	1035	1040
Volume Purged (gals)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cumulative Volume Purged (gals)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
Cumulative Number of ~~Casing~~ Volumes	0.02	0.04	0.07	0.09	0.12	0.14	0.16	0.19
Purge Rate (gpm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Temperature (F°) or (C°)	23.36	23.39	23.30	23.29	23.24	23.23	23.20	23.2
pH	7.36	7.30	7.31	7.31	7.31	7.31	7.32	7.32
Specific Conductivity (mS/cm)	14.56	17.70	17.65	17.64	17.64	17.53	17.31	17.32
Dissolved Oxygen (mg/L)	0.26	0.16	0.16	0.15	0.14	0.15	0.16	0.17
Turbidity/Color (NTU)	0.6	0.0	-0.2	-0.2	-0.2	0.3	0.0	-0.2
Odor	N	N	N	N	N	N	N	N
Dewatered?	N	N	N	N	N	N	N	N
DTW=	2.72	2.74	2.74	2.75	2.75	2.75	2.76	2.76

Innovative Technical Solutions, Inc.

MONITORING WELL PURGE AND SAMPLE FORM

PROJECT NAME: DATA GAP Investigation IR-26 PROJECT NO.: 351030300

WELL NO.: 26MW03 TESTED BY: RS . BD DATE: 10/17/06

Measuring Point Description: Top of Casing (TOC) Static Water Level (ft.): -2.50 BTOC

Total Well Depth (ft.): -14.01 BTOC Sample Method: Parastaltic Pump

Water Level Measurement Method: Solnist Time Sampled: 1200

Purge Method: Parastaltic Pump Sample Depth (ft.): 7.5" BTOC

Time Start Purge: 1115 Field Filtering: N/A

Time End Purge: 1155 Field Preservation: ICE

Comments: TOC: -.60" Bgs VOA's: NON PRESERVED (NP/HCL)

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for ~~Casing~~ WELL Diameter (in) 2	4	6	=	~~Casing~~ WELL Volume (gal)
	14.01		2.42		11.59		0.16	~~0.64~~ 0.75	1.44		20.28

Time	1120	1125	1130	1135	1140	1145	1150	1155
Volume Purged (gals)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cumulative Volume Purged (gals)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
Cumulative Number of Casing Volumes	0.02	0.04	0.07	0.09	0.12	0.14	0.17	0.19
Purge Rate (gpm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Temperature (F°) or (C°)	22.95	22.95	22.87	22.90	22.83	22.82	22.78	22.7
pH	6.36	6.40	6.38	6.45	6.46	6.45	6.44	6.45
Specific Conductivity (mS/cm)	108.2	119.8	138.6	134.3	134.1	134.7	135.7	140.0
Dissolved Oxygen (mg/L)	0.22	0.20	0.13	0.13	0.13	0.11	0.10	0.10
Turbidity/Color (NTU)	2.61	2.51	1.85	2.26	2.76	2.04	2.33	1.52
Odor	N	N	N	N	N	N	N	N
Dewatered?	N	N	N	N	N	N	N	N
DTW =	2.55	2.60	2.60	2.60	2.60	2.60	2.60	2.60

Innovative Technical Solutions, Inc.

MONITORING WELL PURGE AND SAMPLE FORM

PROJECT NAME: Data Gap IR-26 PROJECT NO.: 35103.0300

WELL NO.: 26MW04 TESTED BY: RS/BD DATE: 10/03/06

Measuring Point Description: TOC Static Water Level (ft.): 2.42

Total Well Depth (ft.): 15.00 Sample Method: P. Pump

Water Level Measurement Method: Solnist Time Sampled: 0955

Purge Method: P. Pump Sample Depth (ft.): 13.00

Time Start Purge: 0910 Field Filtering: Yes

Time End Purge: 0950 Field Preservation: Yes/HNO3/Ice

Comments:

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	~~Casing~~ Well Volume (gal)
							2	(4) 1.75	6		
	15.00		2.42		12.58		0.16	~~0.64~~	1.44		22.0

Time	0915	0920	0925	0930	0935	0940	0945	0950
Volume Purged (gals)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cumulative Volume Purged (gals)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
Cumulative Number of ~~Casing~~ Volumes	0.02	0.04	0.06	0.09	0.11	0.13	0.15	0.18
Purge Rate (gpm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Temperature (F°) or (C°)	21.35	21.39	21.43	21.51	21.57	21.56	21.56	21.56
pH	7.46	7.46	7.43	7.42	7.41	7.42	7.42	7.42
Specific Conductivity (mS/cm)	32,808	31,504	29,554	27,849	26,786	26,317	25,192	24,397
Dissolved Oxygen (mg/L)	26.85	28.81	27.96	28.24	29.14	29.13	28.24	27.73
Turbidity/Color (NTU)	8.4	3.8	2.3	3.9	4.0	1.2	1.2	1.5
Odor	N	N	N	N	N	N	N	N
Dewatered?	N	N	N	N	N	N	N	N
DTW:	2.55	2.77	2.79	2.79	2.80	2.80	2.80	2.80

Innovative Technical Solutions, Inc.

MONITORING WELL PURGE AND SAMPLE FORM

PROJECT NAME: Data Gap PROJECT NO.: 35103.0300

WELL NO.: 26MW-05 TESTED BY: RS/BD DATE: 10/03/06

Measuring Point Description: TOC Static Water Level (ft.): 3.20

Total Well Depth (ft.): 15.90 Sample Method: P. Pump

Water Level Measurement Method: Solinst Time Sampled: 0825

Purge Method: P. Pump. Sample Depth (ft.): 14.0

Time Start Purge: 0740 Field Filtering: Yes

Time End Purge: 0820 Field Preservation: HCl/HNO3/Ice

Comments:

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Well Casing Diameter (in)			=	Well Casing Volume (gal)
							2	(4)	6		
							0.16	0.64	1.44		
	15.90	-	3.20	=	12.70	x		0.64		=	22.2

Time	0745	0750	0755	0800	0805	0810	0815	0820
Volume Purged (gals)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cumulative Volume Purged (gals)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
Cumulative Number of Casing Volumes	0.02	0.04	0.06	0.09	0.11	0.13	0.15	0.18
Purge Rate (gpm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Temperature (F°) or (C°)	19.64	19.70	19.78	19.85	19.92	19.93	19.95	19.96
pH	7.72	7.69	7.63	7.59	7.57	7.55	7.55	7.55
Specific Conductivity (mS/cm)	33081	33093	33051	33062	33148	32962	32967	32929
Dissolved Oxygen (mg/L)	0.20	0.19	0.16	0.19	0.37	0.08	0.07	0.15
Turbidity/Color (NTU)	9.4	9.1	6.5	5.4	6.1	5.1	5.9	5.2
Odor	N	N	N	N	N	N	N	N
Dewatered?	N	N	N	N	N	N	N	N
DTW:	3.30	3.35	3.40	3.42	3.41	3.41	3.41	3.41

Innovative Technical Solutions, Inc.

MONITORING WELL PURGE AND SAMPLE FORM

PROJECT NAME: Data Gap IR-26 PROJECT NO.: 35103.0300

WELL NO.: 26MW06 TESTED BY: RS/BD DATE: 10/02/06

Measuring Point Description: TOC Static Water Level (ft.): 2.35

Total Well Depth (ft.): 14.26 Sample Method: Peri-pump

Water Level Measurement Method: Solinst Time Sampled: 1240

Purge Method: P-Pump. Sample Depth (ft.): 13.50

Time Start Purge: 1150 Field Filtering: Yes

Time End Purge: 1235 Field Preservation: Yes /HCl/Ice

Comments:

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
							2	(4)	6		
	14.26		2.35		11.91		0.16	0.64	1.44		7.6

Time	1155	1205	1210	1215	1220	1225	1230	1235
Volume Purged (gals)	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cumulative Volume Purged (gals)	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
Cumulative Number of Casing Volumes	0.13	0.19	0.26	0.32	0.39	0.46	0.52	0.59
Purge Rate (gpm)	0.2	0.05	0.10	0.10	0.10	0.10	0.10	0.10
Temperature (F°) or (C°)	23.96	24.27	24.28	24.23	24.24	24.23	24.22	24.2
pH	7.60	7.50	7.49	7.48	7.46	7.46	7.46	7.45
Specific Conductivity (mS/cm)	26.000	22.589	22.748	22.831	22.945	22.956	22.968	23.00
Dissolved Oxygen (mg/L)	0.35	0.40	0.37	0.35	0.44	0.44	0.45	0.45
Turbidity/Color (NTU)	57.0	12.0	15.3	9.7	7.6	8.2	8.9	7.8
Odor	N	N	N	N	N	N	N	N
Dewatered?	N	N	N	N	N	N	N	N
DTW:	2.45	2.40	2.38	2.38	2.35	2.32	2.32	2.3

Innovative Technical Solutions, Inc.

MONITORING WELL
PURGE AND SAMPLE FORM

PROJECT NAME: Data Gap Invst. IR-26 PROJECT NO.: 35103.0300

WELL NO.: 26MW07 TESTED BY: RS/BD DATE: 10/04/06

Measuring Point Description: TOC Static Water Level (ft.): 3.05

Total Well Depth (ft.): 15.05 Sample Method: P. Pump

Water Level Measurement Method: Solinst Time Sampled: 0930

Purge Method: P. Pump Sample Depth (ft.): 12.5'

Time Start Purge: 0845 Field Filtering: Yes

Time End Purge: Field Preservation: HNO3 / Ice

Comments:

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for ~~Casing~~ Well Diameter (in)			=	Casing Volume (gal)
							2	4	6		
	15.05		3.05		12.00		0.16	0.64	1.44		21.0

Time	0850	0855	0900	0905	0910	0915	0920	0925
Volume Purged (gals)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cumulative Volume Purged (gals)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
Cumulative Number of ~~Casing~~ Volumes	0.02	0.04	0.07	0.09	0.11	0.14	0.16	0.19
Purge Rate (gpm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Temperature (F°) or (C°)	19.98	20.03	20.04	20.00	19.98	19.93	19.93	19.9
pH	7.66	7.52	7.44	7.41	7.39	7.38	7.37	7.3
Specific Conductivity (mS/cm)	24.13	22.43	22.21	22.31	22.43	22.56	22.60	22.6
Dissolved Oxygen (mg/L)	0.29	0.19	0.14	0.14	0.14	0.14	0.13	0.13
Turbidity/Color (NTU)	4.2	3.1	2.0	1.8	1.4	1.2	1.1	0.9
Odor	N	N	N	N	N	N	N	N
Dewatered?	N	N	N	N	N	N	N	N
DTW:	3.35	3.41	3.45	3.48	3.50	3.50	3.50	3.5

Innovative Technical Solutions, Inc.

Sheet 1 of 1

MONITORING WELL PURGE AND SAMPLE FORM

PROJECT NAME: Data Gap Investigation IR-26 PROJECT NO.: 35103.0300

WELL NO.: 26MW07 TESTED BY: RS · BD DATE: 10·17·06

Measuring Point Description: Below Top of Casing Static Water Level (ft.): 2.96

Total Well Depth (ft.): 15.01 Sample Method: P. Pump

Water Level Measurement Method: Solinst (WM) Time Sampled: 1310

Purge Method: P. Pump Sample Depth (ft.): 10.00 BTOC

Time Start Purge: 1225 Field Filtering: N/A

Time End Purge: 1305 Field Preservation: ICE

Comments: Non-preserved VOA's for sample collection TOC: -.92 Bg.

Well Volume Calculation (fill in before purgihg)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Well Diameter (in) 2 / 4 / 6	=	Well Casing Volume (gal)
	15.01		2.96		12.05		0.16 / ~~0.64~~ / 1.44		21.08

Time	1230	1235	1240	1245	1250	1255	1300	1305
Volume Purged (gals)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cumulative Volume Purged (gals)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
Cumulative Number of Casing Volumes	0.02	0.04	0.07	0.09	0.11	0.14	0.16	0.18
Purge Rate (gpm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Temperature (F°) or (C°)	21.26	21.34	21.27	21.34	21.29	21.31	21.37	21.40
pH	6.79	6.71	6.69	6.65	6.65	6.61	6.59	6.59
Specific Conductivity (mS/cm)	147.5	170.1	173.2	173.7	175.3	177.2	177.9	179.2
Dissolved Oxygen (mg/L)	0.36	0.16	0.16	0.13	0.13	0.11	0.11	0.11
Turbidity/Color (NTU)	1.52	3.30	3.00	2.73	2.78	2.56	2.66	2.72
Odor	N	N	N	N	N	N	N	N
Dewatered?	N	N	N	N	N	N	N	N
DW:	3.21	3.25	3.25	3.26	3.27	3.27	3.28	3.29

Innovative Technical Solutions, Inc.

PIEZOMETER DEVELOPMENT AND SAMPLING FORM

Project Name: IR26 Data Gap Investigation | Project No.: 35103.0300.

Well No.: 26PZ02 | Tested By: KW / RS | Date: 9/25/06

Measuring Point Description:	N. Edge of TOC	Total Well Depth (ft.):	15.5' (spec)
Water Level Measurement Method:	Solinst WL meter	Sample Method:	N/a
Development Method(s):	Smeal rig w/ SS Bailer	Time Sampled:	N/a
Time Start Develop:	15:00	Sample Depth (ft):	N/a
Time End Develop:	16:30	Field Filtering:	N/a
Initial/Static Water Level (ft.):	3.12'	Field Preservation:	N/a
Final Water Level (ft.):	3.40'	Comments:	Initial sounded depth: 15.02 (soft) Final sounded depth: 14.47 (soft)

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in) 2	4	6	=	Casing Volume (gal)
	15.5'	-	3.12	=	12.38	x	(0.16)	0.64	1.44	=	1.98

Time	15:20	15:28	15:35	15:50	16:10	
Depth to water	4.27'	3.89'	4.21'	4.02'	4.12'	
Volume purged (gals)	5	~~10~~ 5 KW	5	10	15	
Σ volume purged (gals)	5	10	15	25	40	
Σ casing volumes	2.5	5.0	7.6	12.6	20.2	
Purge rate (gpm)	0.25 (BAIL)	0.62 (BAIL)	0.7 (BAIL)	0.7 (BAIL)	0.75 (BAIL)	
Temperature (F°/C°)	22.81	21.80	22.05	22.08	22.00	
pH	7.83	7.53	7.56	7.60	5.00 (4x) 7.46	
Specific conductivity (µmhos/cm) MS	10.80	12.08	9.48	4.78	6.05	
Dissolved oxygen (mg/L)	2.60	4.60	4.63	5.35	4.18	
Turbidity or Color	>1000 NTU	>1000 NTU	>1000 NTU	>1000 NTU	>1000 NTU	
Odor?	NO	NO	NO	NO	NO	
De-watered?	NO	NO	NO	NO	NO	

KW 9/25/06

APPENDIX B

WELL PERMITS

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 09/18/2006 By jamesy

Permit Numbers: W2006-0798 to W2006-0808
Permits Valid from 09/19/2006 to 09/22/2006

Application Id: 1158621579229 **City of Project Site:** Alameda
Site Location: Building 20 - Alameda Point (IR Site 26), 2701 Monarch St, Alameda, CA
Project Start Date: 09/19/2006 **Completion Date:** 09/22/2006

Applicant: Innovative Technical Solutions - Ken Leonard **Phone:** 925-946-3100
2730 Shadelands Dr #100, Walnut Creek, CA 94598
Property Owner: US Dept. of the Navy - SWPIV **Phone:** 510-749-5940
1230 Columbia St, #1100, San Diego, CA 92101
Client: ** same as Property Owner **

Total Due: $3300.00
Receipt Number: **Total Amount Paid:** $0.00
Payment Type: EXMPT **PAYMENT EXEMPT**

Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 8 Wells
Driller: RSI Drilling - Lic #: 802334 - Method: auger **Work Total: $2400.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2006-0798	09/18/2006	12/18/2006	26MW01	12.00 in.	4.00 in.	3.00 ft	15.00 ft
W2006-0799	09/18/2006	12/18/2006	26MW02	12.00 in.	4.00 in.	3.00 ft	15.00 ft
W2006-0800	09/18/2006	12/18/2006	26MW03	12.00 in.	4.00 in.	3.00 ft	15.00 ft
W2006-0801	09/18/2006	12/18/2006	26MW04	12.00 in.	4.00 in.	3.00 ft	15.00 ft
W2006-0802	09/18/2006	12/18/2006	26MW05	12.00 in.	4.00 in.	3.00 ft	15.00 ft
W2006-0803	09/18/2006	12/18/2006	26MW06	12.00 in.	4.00 in.	3.00 ft	15.00 ft
W2006-0804	09/18/2006	12/18/2006	26MW07	12.00 in.	4.00 in.	3.00 ft	15.00 ft
W2006-0805	09/18/2006	12/18/2006	26MW08D	12.00 in.	4.00 in.	3.00 ft	15.00 ft

Specific Work Permit Conditions

1. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

2. Permitte, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

Alameda County Public Works Agency - Water Resources Well Permit

3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained.

4. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Including permit number and site map.

5. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.

6. Minimum surface seal thickness is two inches of cement grout placed by tremie

7. Minimum seal depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.

8. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

9. No Inspector Assigned to this site.
Applicant shall contact this office by email at wells@acpwa.org and certify in writing that work was completed and according to County Standards within 5 working days after the completion of work.

Well Construction-Piezometer-Seismic Monitoring-Seismic Monitoring - 3 Wells
Driller: RSI Drilling - Lic #: 802334 - Method: auger **Work Total: $900.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2006-0806	09/18/2006	12/18/2006	26PZ01	9.00 in.	2.00 in.	3.00 ft	15.00 ft
W2006-0807	09/18/2006	12/18/2006	26PZ02	9.00 in.	2.00 in.	3.00 ft	15.00 ft
W2006-0808	09/18/2006	12/18/2006	26PZ03	9.00 in.	2.00 in.	3.00 ft	15.00 ft

Specific Work Permit Conditions

1. Compliance with the above well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate state reporting-requirements related to well destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days, including permit number and site map.

2. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

Alameda County Public Works Agency - Water Resources Well Permit

3. Permitte, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

4. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained.

5. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.

6. Minimum surface seal thickness is two inches of cement grout placed by tremie

7. Minimum seal depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.

8. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

9. No Inspector Assigned to this site.
Applicant shall contact this office by email at wells@acpwa.org and certify in writing that work was completed and according to County Standards within 5 working days after the completion of work.

PROGRAMS AND SERVICES

Well Standards Program

The Alameda County Public Works Agency, Water Resources is located at:
399 Elmhurst Street
Hayward, CA 94544
For Driving Directions or General Info, Please Contact 510-670-5480 or wells@acpwa.org
For Drilling Permit information and process contact James Yoo at
Phone: 510-670-6633
FAX: 510-782-1939
Email: Jamesy@acpwa.org

Alameda County Public Works is the administering agency of General Ordinance Code, Chapter 6.88 . The purpose of this chapter is to provide for the regulation of groundwater wells and exploratory holes as required by California Water Code. The provisions of these laws are administered and enforced by Alameda County Public Works Agency through its Well Standards Program.

Drilling Permit Jurisdictions in Alameda County: There are four jurisdictions in Alameda County.

Location: Agency with Jurisdiction Contact Number

Berkeley City of Berkeley Ph: 510-981-7460
Fax: 510-540-5672

Fremont, Newark, Union City Alameda County Water District Ph: 510-668-4460
Fax: 510-651-1760

Pleasanton, Dublin, Livermore, Sunol Zone 7 Water Agency Ph: 925-454-5000
Fax: 510-454-5728

The Alameda County Public Works Agency, Water Resources has the responsibility and authority to issue drilling permits and to enforce the County Water Well Ordinance 73-68. This jurisdiction covers the western Alameda County area of **Oakland, Alameda,Piedmont, Emeryville, Albany, San Leandro, San Lorenzo, Castro Valley**, and **Hayward** . The purpose of the drilling permits are to ensure that any new well or the destruction of wells, including geotechnical investigations and environmental sampling within the above jurisdiction and within Alameda County will not cause pollution or contamination of ground water or otherwise jeopardize the health, safety or welfare of the people of Alameda County.

Permits are required for all work pertaining to wells and exploratory holes at any depth within the jurisdiction of the Well Standards Program. A completed permit application *(30 Kb)** , along with a site map, should be submitted at least **ten (10) working days prior to the planned start of work**. Submittals should be sent to the address or fax number provided on the application form. When submitting an application via fax, please use a high resolution scan to retain legibility.

Fees
Beginning April 11, 2005 , the following fees shall apply:

A permit to construct, rehabilitate, or destroy wells, including cathodic protection wells, but excluding dewatering wells (*Horizontal hillside dewatering and dewatering for construction period only), shall cost $300.00 per well.

A permit to bore exploratory holes, including temporary test wells, shall cost $200 per site. A site includes the project parcel as well as any adjoining parcels.

Please make checks payable to: **Treasurer, County of Alameda**

Permit Fees are exempt to State & Federal Projects
Applicants shall submit a letter from the agency requesting the fee exemption.

Scheduling Work/Inspections:
Alameda County Public Works Agency (ACPWA), Water Resources Section requires scheduling and inspection of permitted work. All drilling activities must be scheduled in advance. Availability of inspections will vary from week to week and will come on a first come, first served bases. To ensure inspection availability on your desired or driller scheduled date, the following procedures are required:

Please contact **James Yoo at 510-670-6633** to schedule the inspection date and time (You must have drilling permit approved prior to scheduling).

Schedule the work as far in advance as possible (at least 5 days in advance); and confirm the scheduled drilling date(s) at least 24 hours prior to drilling.

Once the work has been scheduled, an ACPWA Inspector will coordinate the inspection requirements as well as how the Inspector can be reached if they are not at the site when Inspection is required. Expect for special circumstances given, all work will require the inspection to be conducted during the working hours of 8:30am to 2:30pm., Monday to Friday, excluding holidays.

Request for Permit Extension:
Permits are only valid from the start date to the completion date as stated on the drilling permit application and Conditions of Approval. To request an extension of a drilling permit application, applicants must request in writing prior to the completion date as set forth in the Conditions of Approval of the drilling permit application. Please send fax or email to Water Resources Section, Fax 510-782-1939 or email at wells@acpwa.org. There are no additional fees for permit extensions or for re-scheduling inspection dates. You may not extend your drilling permit dates beyond 90 days from the approval date of the permit application. **NO refunds** shall be given back after 90 days and the permit shall be deemed voided.

Cancel a Drilling Permit:
Applicants may cancel a drilling permit only in writing by mail, fax or email to Water Resources Section, Fax 510-782-1939 or email at wells@acpwa.org. If you do not cancel your drilling permit application before the drilling completion date or notify in writing within 90 days, Alameda County Public Works Agency, Water Resources Section may void the permit and No refunds may be given back.

Refunds/Service Charge:
A service charge of $25.00 dollars for the first check returned and $35.00 dollars for each subsequent check returned.

Applicants who cancel a drilling permit application **before** we issue the approved permit(s), will receive a **FULL** refund (at any amount) and will be mailed back within two weeks.

Applicants who cancel a drilling permit application **after** a permit has been issued will then be charged a service fee of $50.00 (fifty Dollars).

To collect the remaining funds will be determined by the amount of the refund to be refunded (see process below).

Board of Supervisors Minute Order, File No. 9763, dated January 9, 1996, gives blanket authority to the Auditor-Controller to process claims, from all County departments for the refund of fees which do not exceed $500 (Five Hundred Dollars)(with the exception of the County Clerk whose limit is $1,500).

Refunds over the amounts must be authorized by the Board of Supervisors Minute Order, File No. 9763 require specific approval by the Board of Supervisors. The forms to request for refunds under $500.00 (Five Hundred Dollars) are available at this office or any County Offices. If the amount is exceeded, a Board letter and Minute Order must accompany the claim. Applicant shall fill out the request form and the County Fiscal department will process the request.

Enforcement
Penalty. Any person who does any work for which a permit is required by this chapter and who fails to obtain a permit shall be guilty of a misdemeanor punishable by fine not exceeding Five Hundred Dollars ($500.00) or by imprisonment not exceeding six months, or by both such fine and imprisonment, and such person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any such

violation is committed, continued, or permitted, and shall be subject to the same punishment as for the original offense. (Prior gen. code §3-160.6)

Enforcement actions will be determined by this office on a case-by-case basis
Drilling without a permit shall be the cost of the permit(s) and a fine of $500.00 (Five Hundred Dollars).

Well Completion Reports (State DWR-188 forms) must be filed with the Well Standards Program within 60 days of completing work. Staff will review the report, assign a state well number, and then forward it to the California Department of Water Resources (DWR). Drillers should not send completed reports to DWR directly. Failure to file a Well Completion Report or deliberate falsification of the information is a misdemeanor; it is also grounds for disciplinary action by the Contractors' State License Board. Also note that filed Well Completion Reports are considered private record protected by state law and can only be released to the well owner or those specifically authorized by government agencies.

See our website (www.acgov.org/pwa/wells/index.shtml) for links to additional forms.

The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. 0045774

Page 1 of 2

Owner's Well Number 26HW07

Date Work Began 9/21/06 Date Work Ended 9/21/06

Local Permit Agency Alameda County Public Works

Permit Number W2006-0504 Permit Date 9/8/06

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method HSA Drilling Fluid

Depth from Surface Feet	to Feet	Description: Describe material, grain size, color, etc
0	1.0	Concrete
1.0	10.0	Sand, olive, medium dense, moist, medium grained sand
6.0		Thin clay zone of clay
10.0	15.0	Sand, dark olive grey, loose, wet, fine grained sand
15.0	15.5	Clayey sand, dark olive grey, wet, wet, fine grained sand
15.5	20.0	Silty clay, greyish green, soft, wet to moist
20.0	21.0	Sand, greenish black, loose, wet, fine sand
21.0	21.5	Clay, greenish black, soft, wet

Total Depth of Boring 21.5 Feet

Total Depth of Completed Well 15.5 Feet

Well Owner

Name Innovative Technical Solutions Inc

Mailing Address 2730 Shadelands Dr.

City Walnut Creek State CA Zip 94598

Well Location

Address Alameda Pt. Naval Air Station

City Alameda County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

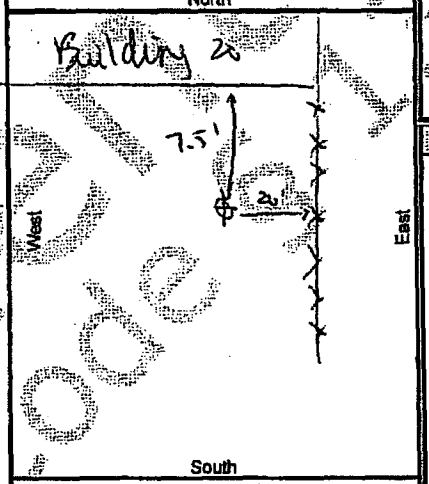
Datum Decimal Lat. 37.78521 Decimal Long. 122.30880

APN Book Page Parcel

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under GEOLOGIC LOG

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 2.5 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0	3.0	4.0	blank	PVC	Sch 40			
3.0	15.5	4.0	Screen	PVC	Sch 40			0.010

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	1.0	cement	Portland
1.0	2.5	bentonite	medium chips
2.5	15.5	sand	#2

Attachments

☑ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name YSI Drilling

Person, Firm or Corporation

220 N 60th Street Woodland CA 95776

Address City State Zip

Signed 10/17/06

C-57 Licensed Water Well Contractor Date Signed

802-334 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Project JR26 DARDANELLE INV.
Project Number 35103.0300
Location BLDG 20 ALAMEDA PT
Surface Elevation

Logged By KAL
Date Drilled 9/21/06
Total Depth 21.5 FT
Boring Diameter 10 1/4"
Drillers RST DRILLING
Method HSA - CME 75 (140lb hammer)

Boring No. 26MW07
Sheet 1 Of 1

Boring Location Sketch
BLDG 20
26MW02
7.5'
20'
26MW07

Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/slam/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							CONCRETE
						SP	SAND (SP), olive (5Y 4/4), med. dense, moist, med. gr. sand w/ ≤ 5% fines (FILL)
							WET @ 2.5 FT
5		3 4 4	0.00			SP	SAND (SP), same as above, loose, WET
						CL	Thin clay zone in tip of sample (< 6")
10		2 3 3	0.00			SP	SAND (SP), dark olive grey (5Y 3/2), loose, WET, Fine grained sand w/ ≤ 5% fines, rare shell fragments
15		4 2 2	0.00			SC	CLAYEY SAND (SC), dark olive grey (5Y 3/2), loose, WET, fine gr. sand w/ 25-35% fines
						CL	SILTY CLAY (CL), grayish green (5G 4/2) SOFT, WET TO MOIST, low est. plasticity, clay w/ 5-10% fine sand
20		2 3 3	0.00			SP	SAND (SP), greenish black (5G 2.5/1), loose, WET, fine sand w/ 5-10% fines shell fragments
						CH	CLAY (CH), greenish black (5G 2.5/1), SOFT, WET,
							BOTTOM TERMINATED AT 21.5 FT BGS 10 1/4" AUGERS TO 20.0 FT BGS
25							
30							

Casing Diameter 4" Sch40 PVC Casing Length 3' From 0.0 To 3.0
Screen Size 0.010-in Screen Length 12.5' From 3.0 To 15.5
Sand Type 2/12 (6 bags) From 2.5 To 15.5
Bentonite Type MEDCHIPS (½ bag) From 1.0 To 2.5
Cement/Grout 1.0' From 0.0 To 1.0
Surface Completion 8"x12" flush mounted well box locking well cap

ITSI Innovative Technical Solutions, Inc.

This free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. ~~of Well~~ 2045773

Page 1 of 3

Owner's Well Number 2S/MW06

Date Work Began 9/20/06 Date Work Ended 9/20/06

Local Permit Agency Alameda County Public Works

Permit Number W2006-0503 Permit Date 9/15/06

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ● Vertical ○ Horizontal ○ Angle Specify

Drilling Method HSA Drilling Fluid

Depth from Surface Feet	to Feet	Describe material, grain size, color, etc
0	1.0	Asphalt
1.0	2.5	Sand, olive brown, medium dense, moist, medium grained
2.5	8.5	Sand, light olive brown, medium dense, dark, fine grained, little to no fines
8.5	11.5	Silty sand, dark greenish gray, medium dense, wet, fine grained sand
11.5	12.5	Clayey sand, dark greenish gray, stiff, wet
12.5	15.0	Sand, very dark greenish gray, dense, wet, fine grained sand

Total Depth of Boring 15.0 Feet

Total Depth of Completed Well 15.0 Feet

Well Owner

Name Innovative Technical Solutions Inc.

Mailing Address 2730 Shadelands Dr.

City Walnut Creek State CA Zip 94598

Well Location

Address Alameda Pt. Naval Air Station

City Alameda County Alameda

Latitude ___ Deg. ___ Min. ___ Sec. N Longitude ___ Deg. ___ Min. ___ Sec. W

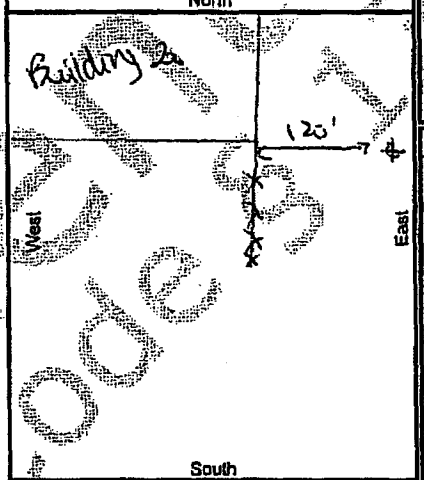
Datum ___ Decimal Lat. 37.78530 Decimal Long. 122.30825

APN Book ___ Page ___ Parcel ___

Township ___ Range ___ Section ___

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

● New Well
○ Modification/Repair
○ Deepen
○ Other ___
○ Destroy

Describe procedures and materials under GEOLOGIC LOG

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
● Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other ___

Water Level and Yield of Completed Well

Depth to first water 2.5 (Feet below surface)

Depth to Static Water Level ___ (Feet) Date Measured ___

Estimated Yield * ___ (GPM) Test Type ___

Test Length ___ (Hours) Total Drawdown ___ (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	3.0	4.0	blank	PVC	Sch 40			
3.0	15.0	4.0	Screen	PVC	Sch 40			0.010

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	1.0	cement	redimix
1.0	2.5	bentonite	med chips
2.5	15	sand	2/12

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other ___

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name RSI Drilling
Person, Firm or Corporation

220 N East Street Woodland CA 95776
Address City State Zip

Signed [signature]
C-57 Licensed Water Well Contractor

10/17/06 Date Signed

502-334 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Project IR26 DATA GAP INV. | Logged By KRL | **Boring No.** 26MW06

Project Number 35103.0300 | Date Drilled ~~9/19/06~~ KRL 9/20/06 | Sheet 1 Of 1

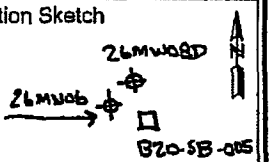
Location B20 ALAMEDA POINT | Total Depth ~~15'~~ 15'

Surface Elevation _____ | Boring Diameter 10 1/4"

Drillers RSI DRILLING

Method HSA - CME 75

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/steri/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
5						SEE B20-SB-005	SEE BORING B20-SB-005 FOR LITHOLOGY (3 FT FROM LOCATION)
10							
15							DRILLED TO ~~15.5~~ KRL 15.0 FT BGS W/ 10 1/4" HSA
20							
25							
30							

Casing Diameter 4" Sch 40 PVC | Casing Length 3' | From 0.0 To 3.0

Screen Size 0.010-in | Screen Length ~~12.5~~ KRL 12' | From 3.0 To ~~15.5~~ KRL 15'

Sand Type 2/12 | From 2.5 To 15'

Bentonite Type MED CHIPS | From 1.0 To 2.5

Cement/Grout 1.0' | From 0.0 To 1.0

Surface Completion 8" X12" FLUSH MOUNTED WELL BOX LOCKING WELL CAP

ITSI Innovative Technical Solutions, Inc.

Project IR26 DATA GAP INV. Logged By IKL **Boring No.** B20-SB-005

Project Number 35103.0300 Date Drilled 9/5/06 Sheet 1 Of 1

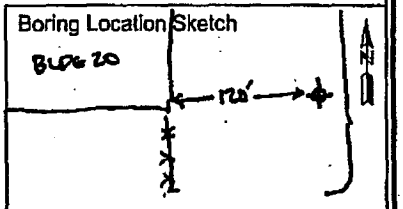
Location BLDG 20 ALAMEDA PT. Total Depth 25'

Surface Elevation _____ Boring Diameter 2.5"

Drillers PRECISION SAMPLING

Method 7720 DT (CONTINUOUS CORE)

Boring Location Sketch



Depth (Feet)	Sample Interval	Hydropunch Blow-Counts Sample	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							ASPHALT
			0.0	▽		SP (FILL)	SAND (SP); olive brown (2.5Y4/4), med. dense, moist, med. grained, 5% fines
						SP (FILL)	SAND (SP), light olive brown (2.5Y 5/6), med. dense, wet, fine gr., little to no fines (FILL)
5							
		090606 0826-002 0820					
			0.0			SM (FILL)	SILTY SAND (SM), dark greenish grey (5G 4/1), med. dense, wet, fine gr. sand w/ 15-20% silty fines (FILL)
						SC (FILL)	grades to CLAYEY SAND (SC), dark greenish grey (5G 4/1), stiff, wet (FILL)
10							
		090606 0826-003 0830				SP	SAND (SP); v. dark greenish green (5G 3/2), dense, wet, fine gr. sand, little to no fines, shell fragments
15							
		090606 0826-004 1000	0.0				Thin clay lens @ 18'
						SP	SAND (SP); same as above
20						SP	SAND (SP); same as above, increasing shell frags
						CH	CLAY (CH); V. dark greenish grey (5G 2.5/2), dark greenish green, stiff, wet to moist, abundant shell fragments, some entire shells (BAY MUD)
25							BORING TERMINATED @ 25' BGS
30							

Casing Diameter _____ Casing Length _____ From _____ To _____

Screen Size _____ Screen Length _____ From _____ To _____

Sand Type _____ From _____ To _____

Bentonite Type _____ From _____ To _____

Cement/Grout _____ From _____ To _____

Surface Completion _____

ITSI Innovative Technical Solutions, Inc.

This free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e045772

Page 1 of 2

Owner's Well Number 26MW05

Date Work Began 9/19/06 Date Work Ended 9/19/06

Local Permit Agency Alameda County Public Works

Permit Number W2006-0502 Permit Date 9/18/06

DWR Use Only - Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description: Describe material, grain size, color, etc.
0	1.0	Grass over dark brown silty fill
1.0	5.0	Sand, light olive brown, wet, medium dense, fine to medium grained sand
5.0	10.0	Clay, Sand, light olive brown, wet, medium dense, fine to medium grained sand color clay at 5.5 fet to grayish green
10.0	15.0	Sand, olive, wet, dense, fine to medium grained sand
15.0	16.0	Sand, olive, wet, dense, fine to medium grained sand
16.0	20.0	Silty Clay, greenish black, moist to wet, silty clay with little to no sand
20.0	21.0	Clayey sand, very dark greenish gray, wet, dense, fine sand with fines
21.0	21.5	Clay, very dark greyish green, wet, stiff

Total Depth of Boring 21.5 Feet

Total Depth of Completed Well 16 Feet

Well Owner

Name Innovative Technical Solutions Inc.

Mailing Address 2730 Shadelands Dr.

City Walnut Creek State CA Zip 94598

Well Location

Address Alameda Pt Naval Air Station

City Alameda County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

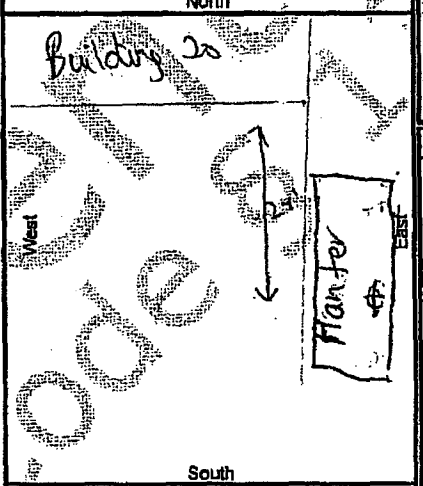
Datum Decimal Lat. 37.78822 Decimal Long. 122.30451

APN Book Page Parcel

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under GEOLOGIC LOG

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	3.0	4.0	Blank	PVC	Sch 40			
3.0	16.0	4.0	Screen	PVC	Sch 40			0.010

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	1.0	cement	redimix
1.0	2.5	bentonite	mgl. chips
2.5	17.0	sand	2/12

Attachments

☒ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name RSI Drilling
Person, Firm or Corporation

220 N East Street Woodland CA 95776
Address City State Zip

Signed [signature] 10/2/06 802-334
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

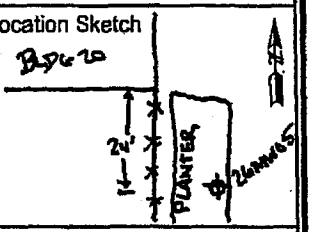
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Project: IR 26 DATA GAP INV.
Project Number: 35103.0300
Location: BLDG 20 - ALAMEDA PT.
Surface Elevation:

Logged By: KBL
Date Drilled: 9/19/06
Total Depth: 21.5'
Boring Diameter: 10 1/4"
Drillers: RSI DRILLING
Method: HSA - CME 75

Boring No. 26MW05
Sheet 1 Of 1

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							GRASS OVER DARK BROWN SILTY FILL
							HANDAUGER TO 5'
						SP	SAND (SP), light olive brown (2.5Y 5/4) wet @ 2.5', med. dense, fine to med. grained sand w/ trace fines, 5-10 increasing fines w/ depth
5						SC	CLAYEY SAND (SC), light olive brown (2.5Y 5/4), WET, med. dense, fine to med. gr. sand, 30-40% fines (FILL)
						SC	COLOR CHANGE @ 5.5 FT TO GREYISH GREEN (5G 5/2)
						NR	NO RECOVERY 6.0-6.5
10						NR	SLOUGH 10.0 TO 10.5
						SP	SAND (SP), olive (5Y 4/3), WET, DENSE, fine to med sand w/ 5-10% Fines (FILL)
							FLOWING SANDS - SANDS CAME UP 6" INSIDE AUGERS WHEN DRILL RODS PULLED UP.
15						SP	SAND (SP), olive (5Y 4/3), WET, DENSE, Fine to med grained sand, 5-10% Fines.
						CL	SILTY CLAY (CL) greenish black (5G 2.5/1), moist to WET, silty clay w/ little to no sand (BSL)
20						SC	CLAYEY SAND (SC) V. dark greenish green (5G 2.5/2), WET, dense, fine sand w/ 25-30% fines, shell fragments
						CL	CLAY (CL), V. dark greenish green (5G 2.5/2), wet stiff 5-10% fine sand in clay matrix, abundant shell fragments (BAY MUD)
							BORING TERMINATED @ 21.5' bgs.
							10 1/4" AUGERS TO 20.0 ft bgs.
25							
30							

Casing Diameter: 4" Sch 40 PVC — Casing Length: 0.0 3' — From 0.0 To 3.0
Screen Size: 0.010-in — Screen Length: 13' — From 3.0 To 16.0
Sand Type: 2/12 — From 2.5 To 17.0
Bentonite Type: med. chips — From 1.0 To 2.5
Cement/Grout: 1.0 — From 0.0 To 1.0
Surface Completion: 8"x12" Flush mounted well box
locking well cap

ITSI Innovative Technical Solutions, Inc.

The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e045771

Page 1 of 2

Owner's Well Number 26MW04

Date Work Began 9/20/06 Date Work Ended 9/21/06

Local Permit Agency Alameda County Public Works

Permit Number W2006-0801 Permit Date 9/18/06

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method HSA Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	0.5	Asphalt
0.5	1.5	Base rock, gravel
1.5	5.0	Sand, silt, medium dense, moist, wet, fine grained sand with little to no fines
5.0	15.0	Sand, olive gray, dense, wet, fine sand,
15.0	16.0	Sand, olive, dense, wet, fine sand
16.0	17.0	Clayey Sand, olive, dense wet, fine sand
20.	21.0	Sand, olive, dense, wet, fine to medium sand
21.0	22.0	Silty sand, very dark greyish green, medium dense wet, fine grained sand

Total Depth of Boring 21.5 Feet

Total Depth of Completed Well 150. Feet

Well Owner

Name Innovative Technical Solutions Inc

Mailing Address 2776 Shadelands Dr

City Walnut Creek State CA Zip 94598

Well Location

Address Alameda Pt. Naval Air Station

City Alameda County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

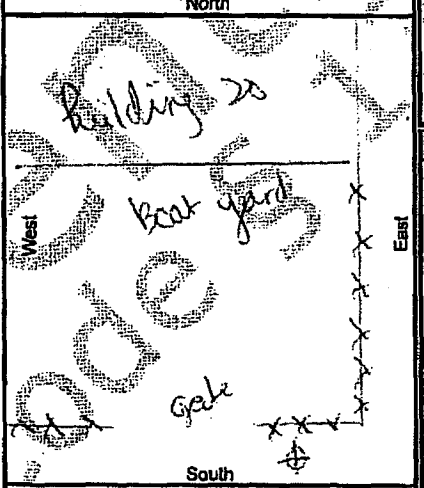
Datum Decimal Lat. 37.7882 Decimal Long. 122.3080

APN Book Page Parcel

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under GEOLOGIC LOG

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 2.5 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0	3.0	4.0	blank	PVC	Sch 40			
3.0	15.0	4.0	screen	PVC	Sch 40			0.010

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	1.0	Cement	redimix
1.0	2.5	bentonite	med. chips
2.5	15.0	sand	#2/12

Attachments

☑ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name RSI Drilling
Person, Firm or Corporation

220 N East Street Woodland CA 95776
Address City State Zip

Signed
C-57 Licensed Water Well Contractor

10/17/06
Date Signed

802-334
C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Project IR26 DATA GAP INV. | Logged By KPL | **Boring No. 26MW04**

Project Number 35103.0300 | Date Drilled 9/20/06 | Sheet 1 Of 1

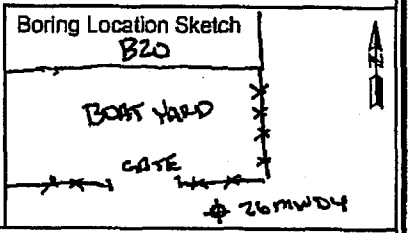
Location BLDG 20 ALAMEDA POINT | Total Depth 21.5'

Surface Elevation | Boring Diameter 10 1/4"

Drillers RSE DRILLING

Method HSA-CME75

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							ASPHALT
							BASE ROCK - GRAVEL
						SP	SAND (SP), olive (5Y 4/4), med. dense, ~~fine~~ moist, WET @ 2.5 ft, Fine gr. sand w/ little to no fines (cuttings)
5						SP	SAND (SP), olive gray (5Y 4/2), dense, WET, fine sand, ≤5% fines, shell fragments (uncommon)
10		NR					NO RECOVERY ≈ 4" of slough in SPLIT SPOON (WET, LOOSE SAND)
15						SP / SC	SAND (SP), olive (5Y 4/4), dense, WET, fine sand, 5-10% fines, GRADES TO... CLAYEY SAND (SC), olive (5Y 4/4), dense, WET, fine sand, 20-25% fines, shell fragments more common
20						SP	SAND (SP), olive (5Y 4/4), dense, WET, fine to med. gr. sand, 5-10% fines, abundant shell fragments
						SM	SILTY SAND (SM), v. dark greyish green (5G 3/2), ~~to~~ med. dense, WET, fine gr. sand w/ 30-40% fines, abundant shell fragments
25							BORING TERMINATED @ 21.5', 10 1/4" augers to 20'
							BACKFILLED w/ BENTONITE CHIPS TO 15'
30							

Casing Diameter 4" Sch 40 PVC | Casing Length 3' | From 0.0 To 3.0

Screen Size 0.010-slot | Screen Length 12' | From 3.0 To 15.0

Sand Type 2/12 | From 2.5 To 15.0

Bentonite Type MED. CHIPS | From 1.0 To 2.5

Cement/Grout 1.0 | From 0.0 To 1.0

Surface Completion 8" X 12" FLUSH MOUNTED WELL BOX w/ LOCKING WELL CAP

ITSI Innovative Technical Solutions, Inc.

The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. e045769

Page 1 of 2

Owner's Well Number 24MW02

Date Work Began 9/21/06 Date Work Ended 9/21/06

Local Permit Agency Alameda County Public Works

Permit Number W2006-0799 Permit Date 9/18/06

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method HSA Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	1.0	Concrete
1.0	2.5	Sand, olive, loose, moist, medium grained sand
2.5	11.0	Silt, olive, loose, wet, fine to med sand
11.0	15.0	Clay, dark olive gray, medium stiff, wet
15.0	15.5	Clayey sand, dark olive gray, loose, wet, fine sand
15.5	20.0	Clay, greenish black, soft, wet little to no sand
20.0	21.0	Sandy clay, greenish black, soft, wet
21.0	21.5	Clay, greenish black, soft, wet, little to no sand

Total Depth of Boring 21.5 Feet

Total Depth of Completed Well 15.5 Feet

Well Owner

Name Innovative Technical Solutions Inc.

Mailing Address 2730 Shadelands Dr.

City Walnut Creek State CA Zip 94598

Well Location

Address Alameda Pt. Naval Air Station

City Alameda County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

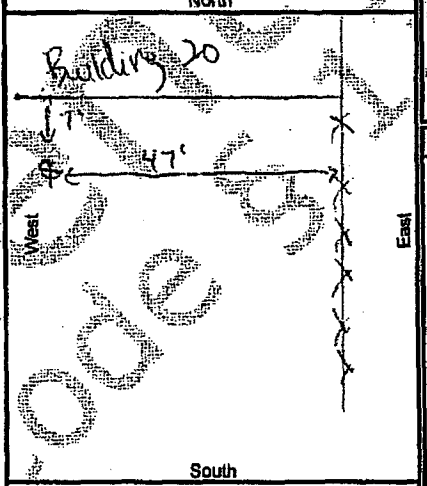
Datum Decimal Lat. 37.78143 Decimal Long. -122.30858

APN Book Page Parcel

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under GEOLOGIC LOG

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 2.5 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0	3.0	7.0	blank	PVC	Sch 40			
3.0	15.0	4.0	screen	PVC	Sch 40			0.010

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	1.0	cement	concrete
1.0	2.5	bentonite	medium chips
2.5	15.5	sand	#2/12

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name RSI Drilling
Person, Firm or Corporation

220 N. First Street Address, Woodland City, CA State, 95776 Zip

Signed C-57 Licensed Water Well Contractor

10/2/06 Date Signed

802-334 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Project IR26 DATA GAP INV. | Logged By KRL | **Boring No. 26MW02**

Project Number 35103.0300 | Date Drilled 9/21/06 | Sheet 1 Of 1

Location BLDG 20 ALAMEDA PT. | Total Depth 21.5 FT

Surface Elevation | Boring Diameter 10¼"

Drillers RSE DRILLING

Method HSA - CME-75 (140 lb hammer)

Boring Location Sketch: BLDG 20; 7' × 47'; 26MW02; 26MW17

Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/client/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
0							CONCRETE = 12"
						SP	SAND (SP), olive (5Y 4/4), loose, moist, med. grained sand w/ < 5% fines (FILL)
5		6 4 4	0.0			SP	SAND (SP), olive (5Y 4/3), loose, WET, fine to med. grained sand w/ ≤ 5% fines
10		4 4 6	0.0			SP	SAND (SP), olive (5Y 4/4), loose, wet, fine sand w/ ≤ 5% fines
						CL	CLAY (CL), dark olive grey (5Y 3/2), med. stiff, WET, 10-15% fine sand in ~~silty clay matrix~~
15		4 2 2	0.0			SC	CLAYEY SAND (SC), dark olive grey (5Y 3/2), loose, wet, fine sand w/ 25-35% fines
						CH	CLAY (CH), greenish black (5G 2.5/1), SOFT, WET, little to no sand, HIGH ESTIMATED PLASTICITY
20		2 2 2	0.0			CL	SANDY CLAY (CL); greenish black (5G 2.5/1), SOFT, WET, 30-35% fine sand, shell fragments common
						CH	CLAY (CH); greenish black (5G 2.5/1), SOFT, WET, little to no sand, HIGH ESTIMATED PLASTICITY (Thin SP layer near bottom of sample)
25							BORING TERMINATED @ 21.5 FT BGS. 10¼" AUGERS TO 20.0 FT BGS. BACKFILLED W/ BENTONITE CHIPS TO 15.5 FT
30							

Casing Diameter 4" Sch 40 PVC | Casing Length 3' | From 0.0 | To 3.0

Screen Size 0.010-in | Screen Length 12.5' | From 3.0 | To 15.5

Sand Type 2/12 (6 BAGS) | From 2.5 | To 15.5

Bentonite Type MED CHIPS (½ BAG) | From 1.0 | To 2.5

Cement/Grout 1.0' | From 0.0 | To 1.0

Surface Completion 8"x12" FLUSH MOUNTED WELL BOX LOCKING WELL CAP

ITSI Innovative Technical Solutions, Inc.

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File Original with DWR

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. e045770

Page 1 of 3

Owner's Well Number 2E.MW03

Date Work Began 7/20/16 Date Work Ended 9/20/16

Local Permit Agency Alameda County Public Works

Permit Number W2016-0800 Permit Date 9/1/16

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method HSA Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc.
0	1.5	Concrete
1.5	7.0	Sand, very dark greyish green, medium dense, moist to wet, fine grained sand
7.0	9.0	Clay, dark greenish grey, very stiff, moist to wet
9.0	12.0	Sand, very dark greenish grey, medium dense, wet
12.0	14.0	Clay, dark greenish grey, stiff, wet
14.0	14.5	Sand, light olive brown, medium dense, stiff, wet
14.5	15.0	Clay, very dark greyish green, very stiff, moist
15.0	15.5	Clay, dark greenish grey, very stiff, wet

Total Depth of Boring 15.5 Feet

Total Depth of Completed Well 15.0 Feet

Well Owner

Name Innovative Technical Solutions Inc

Mailing Address 2730 Shadelands Dr.

City Walnut Creek State CA Zip 94598

Well Location

Address Alameda Pt. Naval Air Station

City Alameda County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

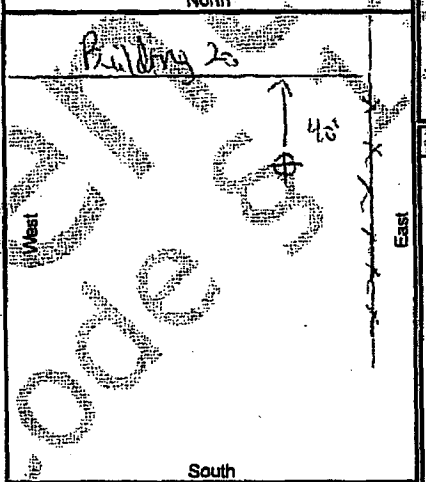
Datum Decimal Lat. 37.78827 Decimal Long. 122.3085

APN Book Page Parcel

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under GEOLOGIC LOG

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 30 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	3	4.0	blank	PVC	Sch 40			
3	15.0	4.0	screen	PVC	Sch 40			0.010

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	1.0	Cement	redimix
1.0	2.5	bentonite	medium chips
2.5	15.5	sand	2/12

Attachments

☑ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name RSI Drilling (Person, Firm or Corporation)

2220 N East Street (Address) Woodland (City) CA (State) 95776 (Zip)

Signed (C-57 Licensed Water Well Contractor) Date Signed 10/17/16 C-57 License Number 902-334

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Project IR26 DATA GAP INV. Logged By KRL **Boring No.** 26MW03

Project Number 35103.0300 Date Drilled 9/20/06 Sheet 1 Of 1

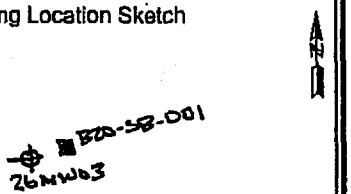
Location BLDG 20 ALAMEDA PT Total Depth 15.5'

Surface Elevation _____ Boring Diameter 10 1/4"

Drillers RSI DRILLING

Method HSA - CME 75

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/slem/slem/sample	Water Level	Well Construction	Lithology / USCS
5						SEE BZO-SB-001 LITHOLOGY
10						
15						
20						
25						
30						

DESCRIPTION

SEE BORING BZO-SB-001 FOR LITHOLOGY (2.5 FT FROM LOCATION)

BORING TERMINATED AT 15.5 FT. [8" HSA 10 1/4" AUGERS TO 15.0 FT] BACKFILLED W/ SAND TO 15.0 FT. DRILLER PUNCHED DOWN ≈ 0.5 FT WHEN REMOVING OUT THE BOTTOM FLUTE.

Casing Diameter 4" SCH40 PVC Casing Length 3' From 0.0 To 3.0

Screen Size 0.010-in Screen Length 12' From 3.0 To 15.0

Sand Type 2/12 (7BAG) From 2.5 To 15.5

Bentonite Type MED. CHIPS (1/2 BAG) From 1.0 To 2.5

Cement/Grout 1.0 From 0.0 To 1.0

Surface Completion 8"X12" FLUSH MOUNTED WELL BOX LOCKING WELL CAP

ITSI Innovative Technical Solutions, Inc.

Project IR26 DATA GAP INV. Logged By KRL **Boring No.** B20-SB-001

Project Number 35103.0300 Date Drilled 9/5/06 Sheet 1 Of 1

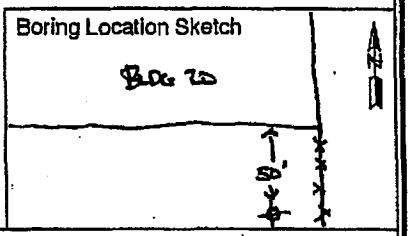
Location BLDG. 20 ALAMEDA PT. Total Depth 25'

Surface Elevation _____ Boring Diameter 2.5"

Drillers PRECISION SAMPLING

Method 7720 DT (continuous core)

Boring Location Sketch



Depth (Feet)	Sample Interval	Hydrpunch Blow Counts Sample	PID (ppm) B-zone/slam/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							CONCRETE
						SP	SAND (SP), very grayish green (5GY 3/2), fine grained sand w/ <5% fines, shell frags, vegetation, STRONG HC ODOR
5		090606 026-012 013 (FD)	90 14:30 14:40 0.0			SP	SAND (SP), same as above, WET, increasing fines
						CH	CLAY (CH), dark greenish grey (5G 4/1), V. stiff, moist to wet, Estimated high plasticity
10		090606 026- 014 15:00	0.0			SP	SAND (SP), very grayish green (5GY 3/2), dark greenish grey (5G 4/1), med dense, wet, abundant shell fragments, 10-15% fines
						CL	CLAY (CL), dark greenish grey (5G 4/1), stiff, wet
						SP	SAND (SP), M. olive brown (2.5Y 5/6) m. dense, wet 5% fines
15			0.0			CH	CLAY (CH), V. dark greyish green (5G 2.5/2), V. stiff, moist
						CH	CLAY (CH), dark greenish grey (5G 4/1), V. stiff, wet
		090606 026- 015 15:15	0.0			SP	SAND (SP), V. dark greyish green (5G 2.5/2), med. dense, wet, <5% fines, fine grained, abundant shell frags
20						SP	SAND (SP), same as above, increasing fine content
						CL	SILTY CLAY (CL) V. dark greyish green (5G 2.5/2), GRADES INTO wet med. stiff, WET, ≈ 10% fine sand, V. abundant shell fragments, some intact shells
25						SP	SAND (SP), V. dark greyish green (5G 2.5/2), med. dense, wet ≤5% fines, shell frgs
							BORING TERMINATED @ 25' bgs
30							WELL INSTALL

Casing Diameter _____ Casing Length _____ From _____ To _____

Screen Size _____ Screen Length _____ From _____ To _____

Sand Type _____ From _____ To _____

Bentonite Type _____ From _____ To _____

Cement/Grout _____ From _____ To _____

Surface Completion _____

ITSI Innovative Technical Solutions, Inc.

The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. e045768

Page 1 of 2

Owner's Well Number 24 MW01

Date Work Began 9/22/06 Date Work Ended 9/22/06

Local Permit Agency Alameda County Public Works

Permit Number W2006-0798 Permit Date 9/18/06

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method HSA Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	1.0	Concrete
1.0	2.5	Sand, olive, loose, moist, fine sand
2.5	6.0	Sand, loose, moist, medium dense, olive
6.0	6.5	Thin gravelly zone
6.5	15.5	Sand, olive, loose, wet, fine sand
15.5	16.0	Silty clay, greenish black, stiff, wet, fine sand
16.0	20.0	Clay, greyish green, stiff, wet
20.0	20.5	Sand, olive, loose, wet
20.5	21.5	Clay, greyish green, medium stiff to stiff, wet

Total Depth of Boring 21.5 Feet

Total Depth of Completed Well 15.5 Feet

Well Owner

Name Innovative Technical Solutions Inc.

Mailing Address 2730 Shadelands Dr.

City Walnut Creek State CA Zip 94598

Well Location

Address Alameda Pt. Naval Air Station

City Alameda County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

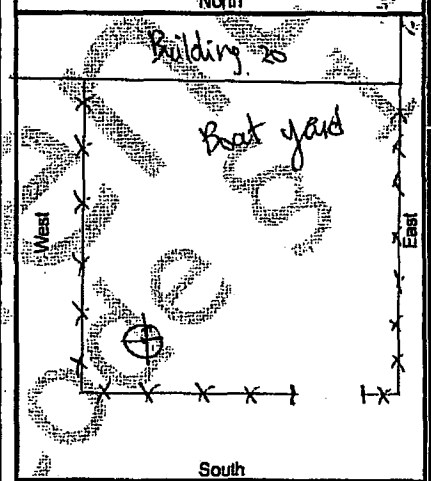
Datum Decimal Lat. 37.78824 Decimal Long. 122.3013

APN Book Page Parcel

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under GEOLOGIC LOG

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0	3.0	4.0	blank	PVC	SCH 40			
3	15.5	4.0	screen	PVC	SCH 40			0.010

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	1.0	Cement	redimix
1.0	2.5	bentonite	bentonite chips
2.5	15.5	sand	2/12

Attachments

☑ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name RSI Drilling
Person, Firm or Corporation

220 N East Street Address Woodland City CA State 95776 Zip

Signed [signature] C-57 Licensed Water Well Contractor

10/12/06 Date Signed

802-334 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Project: IR26 DATA GAP INV.
Project Number: 35103.0300
Location: BLDG 26 - ALAMEDA PT
Surface Elevation:

Logged By: KTL
Date Drilled: 9/22/06
Total Depth: 21.5 FT
Boring Diameter: 10¼"
Drillers: RSE DRILLING
Method: HSA - CME 75

Boring No. 26MW01
Sheet 1 Of 1

Boring Location Sketch: Buper 20, BOAT YARD, 26MW01

Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/dam/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							CONCRETE
			0.0			SP	SAND (SP), olive (5Y 4/4), loose, moist, fine sand, ≤ 5% fines (FILL) FROM CUTTINGS
5		8 8 4				SP	SAND (SP); same as above, medium dense, wet
		16	0.0				Thin gravelly zone @ ≈ 6'
10		3 4 5	0.0			SP	SAND (SP), olive (5Y 4/4), loose, wet, fine sand w/ 5-10% fines, rare shell fragments
15		3 3 5				SP	SAND (SP), same as above, loose
		8	0.0			CL	SILTY CLAY (CL), greenish black (5GY 2.5/1), stiff, wet, 10-15% fine sand
						CH	CLAY (CH), grayish green (5G 4/2), stiff, wet, high estimated plasticity (BSL)
20		3 3 4	0.0			SP	SAND (SP), olive (5Y 4/4), loose, wet PROBABLE SLOUGH
						CH	CLAY (CH), grayish green (5G 4/2), med. stiff to stiff wet, high estimated plasticity, little to no sand, abundant shell frag. mats + some intact shells (BAY MUD)
25							TERMINATE BORING AT 21.5 FT BGS 10¼" AUGERS TO 20.0 FT BGS BACKFILL TO 15.5 FT w/ BENTONITE CHIPS
30							

Casing Diameter: 4" SCH 40 PVC — Casing Length: 3' — From: 0.0 — To: 3.0
Screen Size: 0.010-in — Screen Length: 12.5' — From: 3.0 — To: 15.5
Sand Type: 2/12 (6 BAGS) — From: 2.5 — To: 15.5
Bentonite Type: MED CHIPS (½ BAG) — From: 1.0 — To: 2.5
Cement/Grout: 1' — From: 0.0 — To: 1.0
Surface Completion: 8" x 12" FLUSH MOUNTED WELL BOX LOCKING WELL CAP

Innovative Technical Solutions, Inc.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e045767

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Page 1 of 3

Owner's Well Number 2.8.2203

Date Work Began 9/21/06 Date Work Ended 9/21/06

Local Permit Agency Alameda County Public Works

Permit Number W2006-0808 Permit Date 09/18/06

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method HSA Drilling Fluid

Depth from Surface Feet	to Feet	Description: Describe material, grain size, color, etc
0	1.5	Concrete
1.5	7.0	Sand, very dark greyish green, medium dense, moist to wet, fine grained sand
7.0	9.0	Clay, dark greenish gray, very stiff, moist to wet
9.0	12.0	Sand, very dark greyish green medium dense, wet
12.0	14.0	Clay, dark greenish grey, stiff, wet
14.0	14.5	Sand, light olive brown, medium dense, stiff wet
14.5	15.0	Clay, very dark greyish green, very stiff, moist

Total Depth of Boring 15.0 Feet

Total Depth of Completed Well 15.0 Feet

Well Owner

Name Innovative Technical Solutions Inc.

Mailing Address 2730 Shadelands Dr.

City Walnut Creek State CA Zip 94598

Well Location

Address Alameda Ft. Naval Air Station

City Alameda County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

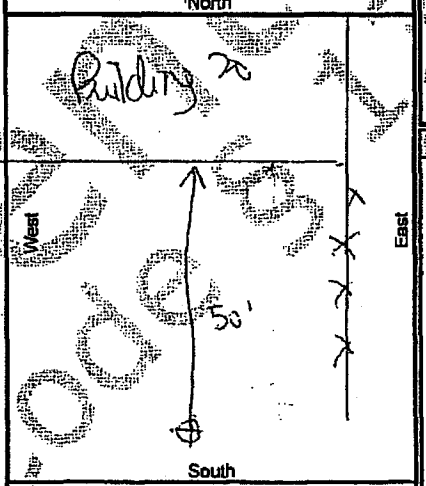
Datum Decimal Lat. 37.78821 Decimal Long. 122.30587

APN Book Page Parcel

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under GEOLOGIC LOG

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0	3.0	2	blank	PVC	Sch 40			
3.0	15.0	2	screen	PVC	Sch 40			0.010

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	1.0	Cement	redi mix
1.0	2.5	bentonite	bentonite chips
2.5	15.0	Sand	2/12

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name RSI Drilling
Person, Firm or Corporation

220 N 6th Street Woodland CA 95776
Address City State Zip

Signed
C-57 Licensed Water Well Contractor

10/12/06
Date Signed

802-338
C-57 License Number

Project IR26 DATA GAP INV. | Logged By KRL | **Boring No. 26PZ03**

Project Number 35103.0300 | Date Drilled 9/21/06 | Sheet 1 of 1

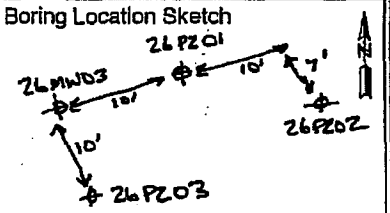
Location BLDG 20 ALAMEDA PT. | Total Depth 15'

Surface Elevation _____ | Boring Diameter 8¼"

Drillers RSE DRILLING

Method HSA - CME 75

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/sistem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
5						SEE BZO-SB-001	SEE LOG FOR BZO-SB-001 FOR LITHOLOGY
10							
15							BORING TERMINATED AT 15 FT BGS [8¼" augers to 15.0 Ft]
20							
25							
30							

Casing Diameter 2" Sch40 PVC | Casing Length 3' | From 0.0 | To 3.0

Screen Size 0.010-in | Screen Length 12' | From 3.0 | To 15.0

Sand Type 2/12 (3.56) | From 2.5 | To 15.0

Bentonite Type MEDCAPS (½ kg) | From 1.0 | To 2.5

Cement/Grout 1' | From 0.0 | To 1.0

Surface Completion 8"x12" flush mounted well box locking well cap

ITSI Innovative Technical Solutions, Inc.

Project IR26 DATA GAP INV. | Logged By KRL | **Boring No. B20-SB-001**

Project Number 35103.0300 | Date Drilled 9/5/06 | Sheet 1 Of 1

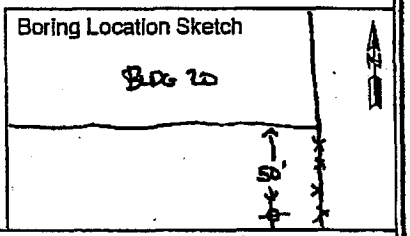
Location BLDG. 20 ALAMEDA PT. | Total Depth 25'

Surface Elevation _____ | Boring Diameter 2.5"

Drillers PRECISION SAMPLING

Method 7720 DT (continuous core)

Boring Location Sketch



Depth (Feet)	Sample Interval	Hyd Push / Blow Counts / Sample	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							CONCRETE
						SP	SAND (SP), very dark greyish green (5G 3/1), med dense, moist to WET, fine grained sand w/ <5% fines, shell frags throughout, STRONG HC ODOR
		090606 026-012 D13 (FD)	90 14:30 14:40 0.0	▽		SP	SAND (SP), same as above, WET, increasing fines
		090606 026-014	15:00 0.0			CH	CLAY (CH), dark greenish grey (5G 4/1), V. STIFF, moist to WET, Estimated high plasticity
						SP	SAND (SP), very dark greyish green (5G 3/1), med dense, WET, abundant shell fragments, 10-15% fines
						CL	CLAY (CL), ~~v. dark greenish grey (5G 3/1)~~ dark greenish grey (5G 4/1), stiff, WET
						SP	SAND (SP), M. olive brown (2.5Y 5/6) m. dense, WET, <5% fines
						CH	CLAY (CH), V. dark greyish green (5G 2.5/2), V. STIFF, moist
						CH	CLAY (CH), dark greenish grey (5G 4/1), V. STIFF, WET
		090606 026-015	15:15 0.0			SP	SAND (SP), V. dark greyish green (5G 2.5/2), med. dense, WET, <5% fines, fine grained, abundant shell frags
						SP	SAND (SP), same as above, increasing fine content
						CL	SILTY CLAY (CL), V. dark greyish green (5G 2.5/2), WET, med. stiff, & 10% fine sand, V. abundant shell fragments, some intact shells
						SP	SAND (SP), V. dark greyish green (5G 2.5/2), med. dense, WET, <5% fines, shell frags
							BORING TERMINATED @ 25' bgs
							WELL INSTALL

Casing Diameter _____ Casing Length _____ From _____ To _____

Screen Size _____ Screen Length _____ From _____ To _____

Sand Type _____ From _____ To _____

Bentonite Type _____ From _____ To _____

Cement/Grout _____ From _____ To _____

Surface Completion _____

ITSI Innovative Technical Solutions, Inc.

The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e045766

Page 1 of 3

Owner's Well Number 26P202

Date Work Began 09/20/06 Date Work Ended 09/20/06

Local Permit Agency Alameda County, Public Works

Permit Number W2006-0308 Permit Date 9/18/06

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ● Vertical ○ Horizontal ○ Angle Specify

Drilling Method HSA Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	1.5	Concrete
1.5	7.0	Sand, very dark greyish green, medium dense, moist to wet, fine grained sand
7.0	9.0	Clay, dark greenish grey, very stiff, moist to wet
9.0	12.0	Sand, very dark greyish green, medium dense, wet
12.0	14.0	Clay, dark greenish grey, stiff, wet
14.0	14.5	Sand, light olive brown, medium dense, stiff, wet
14.5	15.0	Clay, very dark greyish green, very stiff, moist
15.0	15.5	Clay, dark greenish grey, very stiff, wet

Total Depth of Boring 15.5 Feet

Total Depth of Completed Well 15.5 Feet

Well Owner

Name Innovative Technical Solutions Inc.

Mailing Address 2730 Shadelands Dr.

City Walnut Creek State Zip 94598

Well Location

Address Alameda Pt. Naval Air Station

City Alameda County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

Datum Decimal Lat. 37.78822 Decimal Long. 122.30.580

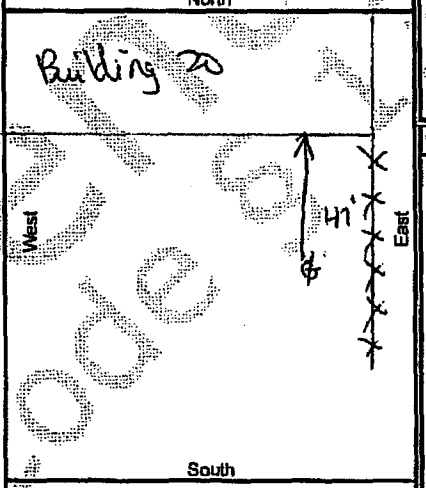
APN Book Page Parcel

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

● New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under GEOLOGIC LOG

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
● Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 3.1 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0	3.0	20	blank	PVC	Sch 40			
3.0	15.5	2.0	screen	PVC	Sch 40			0.010

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	1.0	cement	Redi mix
1.0	2.5	bentonite	bentonite chips
2.5	15.5	sand	2/12

Attachments

☒ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name ESI Drilling

Person, Firm or Corporation

220 N 1st Ave Woodland CA 95776

Address City State Zip

Signed C-57 Licensed Water Well Contractor

10/17/06 Date Signed

902-734 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Project IR 26 DATA GAP EVAL. Logged By KRL **Boring No.** 26PZ02

Project Number 35103.0300 Date Drilled 9/20/06 Sheet 1 Of 1

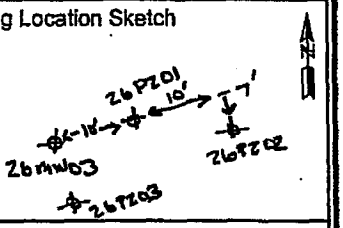
Location BLDG 20 ALAMEDA POINT Total Depth 15.5 FT

Surface Elevation _____ Boring Diameter 8¼"

Drillers RSI DRILLING

Method HSA - CME 75

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/slem/sample	Water Level	Well Construction	Lithology / USCS
5				3.1		SEE LOG FOR BZD-SB-001
10						
15						
20						
25						
30						

DESCRIPTION

WATER @ 3.1 FT BGS

SEE BORING BZD-SB-001 FOR LITHOLOGY

NOTE: GROUND SURFACE AT 26PZ02 IS APPROX. 0.5' HIGHER THAN OTHER TWO PIEZOMETER LOCATIONS & WELL 26MW03. WELL SCREENED ACCORDINGLY

BORING TERMINATED @ 15.5 FT BGS
8¼" AUGERS TO 15.5 FT BGS
DRILLER PUNCHED 15.0 DOWN ~0.5 FT WHEN KNOCKING OUT THE BOTTOM PLUG.

Casing Diameter 2" SCH 40 PVC Casing Length 3' From 0.0 To 3.0

Screen Size 0.010-in Screen Length 12.5' From 3.0 To 15.5

Sand Type 2/12 From 2.5 To 15.5

Bentonite Type MED. CHIPS From 1.0 To 2.5

Cement/Grout 1.0 From 0.0 To 1.0

Surface Completion 8"x12" FLUSH MOUNTED WELL BOX LOCKING WELL CAP

ITSI Innovative Technical Solutions, Inc.

Project IR26 DATA GAP ENV.
Project Number 35103.0300
Location BLDG. 20 ALAMEDA PT.
Surface Elevation

Logged By KRL
Date Drilled 9/5/06
Total Depth 25'
Boring Diameter 2.5"
Drillers PRECISION SAMPLING
Method 7720 DT (continuous core)

Boring No. B20-SB-001
Sheet 1 Of 1

Boring Location Sketch
BLDG 20
N
50'

Depth (Feet)	Sample Interval	Hydropunch Blow Counts Sample	PID (ppm) B-zone/step/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							CONCRETE
						SP	SAND (SP), very dark greyish green (5GY 3/1), dark greenish grey (5G 4/1), med dense, moist to wet, fine fine grained sand w/ <5% fines, shell frags throughout, STRONG HC ODOR
5		090606 026-012 D13 (FD)	90 14:30 14:40 0.0			SP	SAND (SP), same as above, WET, increasing fines
						CH	CLAY (CH), dark greenish grey (5G 4/1), V. stiff, moist to WET, Estimated high plasticity
10		090606 026-014 15:00	0.0			SP	SAND (SP), very dark greyish green (5GY 3/1), dark greenish grey (5G 4/1), med dense, WET, abundant shell fragments, 10-15% fines
						CL	CLAY (CL), ~~v. dark greenish grey (5G 3/1)~~ dark greenish grey (5G 4/1), stiff, wet
15			0.0			SP	SAND (SP), lt. olive brown (2.5Y 5/6) m. dense, wet 5% fines
						CH	CLAY (CH), V. dark greyish green (5G 2.5/2), V. stiff, moist
						CH	CLAY (CH), dark greenish grey (5G 4/1), V. stiff, WET
						SP	SAND (SP), V. dark greyish green (5G 2.5/2), med. dense, wet, <5% fines, fine grained, abundant shell frags
20		090606 026-015 15:15	0.0			SP	SAND (SP), same as above, increasing fine content
						CL	SILTY CLAY (CL), GRADES INTO V. dark greyish green (5G 2.5/2), WET, med. stiff, ≤ 10% fine sand, V. abundant shell fragments, some intact shells
25						SP	SAND (SP), V. dark greyish green (5G 2.5/2), med. dense, wet, ≤5% fines, shell frags
							BORING TERMINATED @ 25' bgs
30							~~WELL INSTR~~

Casing Diameter _____ Casing Length _____ From _____ To _____
Screen Size _____ Screen Length _____ From _____ To _____
Sand Type _____ From _____ To _____
Bentonite Type _____ From _____ To _____
Cement/Grout _____ From _____ To _____
Surface Completion _____

ITSI Innovative Technical Solutions, Inc.

The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. e045757

Page 1 of 3

Owner's Well Number 2ipPZ01

Work Began 09/20/06 Date Work Ended 09/20/06

Local Permit Agency Alameda County Public Works

Permit Number W2006-0536 Permit Date 09/18/2006

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ● Vertical ○ Horizontal ○ Angle Specify

Drilling Method HSA Drilling Fluid

Depth from Surface Feet	to Feet	Description: Describe material, grain size, color, etc
0	1.5	concrete
1.5	7.0	sand, very dark greyish green, med dense, moist to wet, fine grained sand
7.0	9.0	Clay dark greenish grey, very stiff, moist to wet
9.0	12.0	Sand, very dark greyish green, medium dense, wet
12.0	14.3	Clay, dark greenish gray, stiff wet
14.0	14.5	Sand, light olive brown, medium dense, stiff, wet
14.5	15.0	Clay, very dark greyish green, very stiff, moist
15.0	15.5	Clay, dark greenish grey, very stiff, wet

Total Depth of Boring 15.5 Feet

Total Depth of Completed Well 15.5 Feet

Well Owner

Name Innovative Technical Solutions Inc.

Mailing Address 2730 Shadelands Dr.

City Walnut Creek State CA Zip 94598

Well Location

Address Alameda Pt. Naval Air Station

City Alameda County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

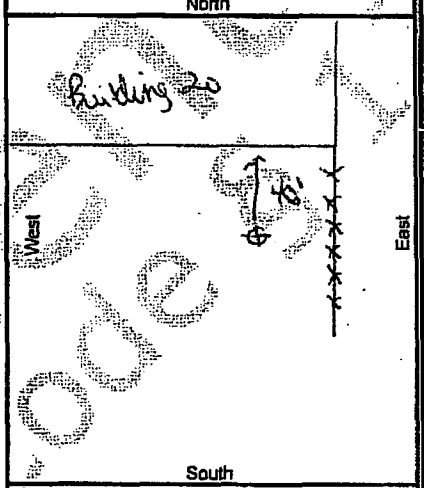
Datum Decimal Lat. 37.7881S Decimal Long. 122.3883

APN Book Page Parcel

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

● New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under GEOLOGIC LOG

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
● Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 3.0 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0.5	3.5	2.0	blank	PVC	SCH 40			
3.5	15.5	2.0	screen	PVC	SCH 40			0.010

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	1.0	cement	Rich mix
1.0	2.5	bentonite	bentonite chips
2.5	15.5	sand	2/12

Attachments

☑ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name RSI Drilling (Person, Firm or Corporation)

220 N 1st Street (Address) Woodland (City) CA (State) 95776 (Zip)

Signed (C-57 Licensed Water Well Contractor) 10/17/06 (Date Signed) 802-334 (C-57 License Number)

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Project IR26 DATAGAP INV. | Logged By KRL | **Boring No.** 26PZ01

Project Number 35103.0300 | Date Drilled 9/20/06 | Sheet 1 Of 1

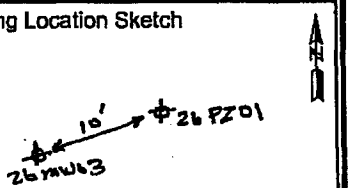
Location BLDG 20, ALAMEDA POINT | Total Depth 15.5 FT BGS

Surface Elevation _____ | Boring Diameter ~~10"~~ 8¼"

Drillers TSI DRILLING

Method HSA - CME 75

Boring Location Sketch



Depth (Feet)	Sample Interval	Blow Counts	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
5						SEE B20 - SB-001	SEE BORING ~~B20~~ 26SB-001 FOR LITHOLOGY (10' FROM THIS LOCATION)
10							
15							BORING TERMINATED AT 15.5 FT BGS ~~CORED~~ 8¼" AUGERS TO 15 FT. DRILLER PUNCHED DOWN ± 0.5 FT WHEN KNOCKING OUT THE BOTTOM PLUG. WELL SET BEFORE IT COULD BE CORRECTED BY RIG GEOLOGIST
20							
25							
30							

Casing Diameter 2" SCH 40 PVC | Casing Length 3' | From 3.5 | To 0.5

Screen Size 0.010-in | Screen Length 12' | From 3.5 | To 15.5

Sand Type 2/12 (2.5 bgs) | From 2.5 | To 15.5

Bentonite Type MED. CHIPS (1/2") | From 1.0 | To 2.5

Cement/Grout 1.0 | From 0.0 | To 1.0

Surface Completion 8"x12" FLUSH MOUNTED WELL BOX LOCKING WELL CAP

ITSI Innovative Technical Solutions, Inc.

Project IR26 DATA GAP INV. Logged By KRL **Boring No.** B20-SB-001

Project Number 35103.0300 Date Drilled 9/5/06 Sheet 1 Of 1

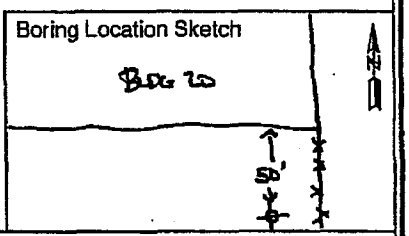
Location BLDG. 20 ALAMEDA PT. Total Depth 25'

Surface Elevation _____ Boring Diameter 2.5"

Drillers PRECISION SAMPLING

Method 7720 DT (continuous core)

Boring Location Sketch



Depth (Feet)	Sample Interval	HNP Reading / Blow Counts / Sample	PID (ppm) B-zone/steam/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
							CONCRETE
						SP	SAND (SP), very grayish green 3/2 VGR dark greenish gray (5G 4/1), med dense, moist to wet, fine grained sand w/ <5% fines, shell frags throughout, STRONG HC ODOR
5		090606 026-012 0913 (FB)	90 14:30 14:40 0.0			SP	SAND (SP), same as above, wet, increasing fines
						CH	CLAY (CH), dark greenish gray (5G 4/1), v. stiff, moist to wet, Estimated high plasticity
10		090606 026-014 15:00	0.0			SP	SAND (SP), very dark greyish green (5G 3/2) dark greenish gray (5G 4/1), med dense, wet, abundant shell fragments, 10-15% fines
						CL	CLAY (CL), ~~v. dark greenish gray (5G 3/1)~~ dark greenish gray (5G 4/1), stiff, wet
						SP	SAND (SP), M. olive brown (2.5Y 5/6) m. dense, wet 5% fines
						CH	CLAY (CH) V. dark grayish green (5G 2.5/1), v. stiff, moist
15			0.0			CH	CLAY (CH), dark greenish grey (5G 4/1), v. stiff, WET
						SP	SAND (SP), v. dark grayish green (5G 2.5/2), med. dense, wet, <5% fines, fine grained, abundant shell frags
		090606 026-015 15:15	0.0			SP	SAND (SP), same as above, increasing fine content
20						CL	SILTY CLAY (CL) v. dark grayish green (5G 2.5/2), GRADES INTO wet, med. stiff, @ 10% fine sand, v. abundant shell fragments, some intact shells
						SP	SAND (SP) v. dark grayish green (5G 2.5/2), med. dense, wet <5% fines, shell frags
25							BORING TERMINATED @ 25' bgs
							~~WELL INSTL~~
30							

Casing Diameter _____ Casing Length _____ From _____ To _____

Screen Size _____ Screen Length _____ From _____ To _____

Sand Type _____ From _____ To _____

Bentonite Type _____ From _____ To _____

Cement/Grout _____ From _____ To _____

Surface Completion _____

ITSI Innovative Technical Solutions, Inc.

APPENDIX C

LABORATORY ANALYTICAL REPORTS

(APPENDIX C IS LOCATED ON THE COMPACT DISK)

APPENDIX C – LABORATORY ANALYTICAL REPORTS

THIS RECORD CONTAINS LARGE VOLUMES OF DATA AND IS NOT REQUIRED TO BE PHYSICALLY LOCATED WITH THE ADMINISTRATIVE RECORD DOCUMENT.

DUE TO EXTENSIVE VOLUME, THIS DATA WILL NOT BE IMAGED.

TO VIEW THE DATA, CONTACT:

DIANE C. SILVA
RECORDS MANAGEMENT SPECIALIST
NAVAL FACILITIES ENGINEERING COMMAND SOUTHWEST
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132

TELEPHONE: (619) 532-3676

APPENDIX D

PHOTO LOG

Innovative Technical Solutions, Inc.

Photographic Documentation

Photograph No. 1

Date:
9-19-06

Description:
Well location 26MW06 prior to drilling (the hole cut in asphalt). Location near where drillers are standing is B20-SB-005. White marking at bottom of photo was proposed location for 26MW08D.

Photograph No. 2

Date:
9-19-06

Description:

5'-6.5' and 10'-11.5' samples (left to right) at 26MW05. Soil is mainly SP sand, probably locally-derived hydraulic fill.

Innovative Technical Solutions, Inc.

Photographic Documentation

Photograph No. 3

Date:
9-19-06

Description:
SP sand color comparison; SP sand from above 15 ft bgs on the left, SP sand from below 15 ft on the right. SP sand from above 15 ft has an olive brown tint.

Photograph No. 4

Date:
9-19-06

Description:

SP sand from below 15 ft has a gley tint. Color change was subtle but consistent and was interpreted as the transition from locally-derived hydraulic fill to in-place sediments of the BSU.

Innovative Technical Solutions, Inc.

Photographic Documentation

Photograph No. 5

Date:
9-20-06

Description:

Box for containing drill cuttings and 10 ¼" HAS ready to begin drilling at 26MW06.

Photograph No. 6

Date:
9-22-06

Description:

Support truck arrives with 9-inch nominal diameter conductor casing for installation at drill location 26MW08D.

Innovative Technical Solutions, Inc.

Photographic Documentation

Photograph No. 7

Date:
9-22-06

Description:

Driller demonstrates with a short piece of the "9-inch" conductor casing that the drill bit for 8-1/4" diameter HSA will not fit inside the conductor casing. The ID of the casing measured 8-5/8".

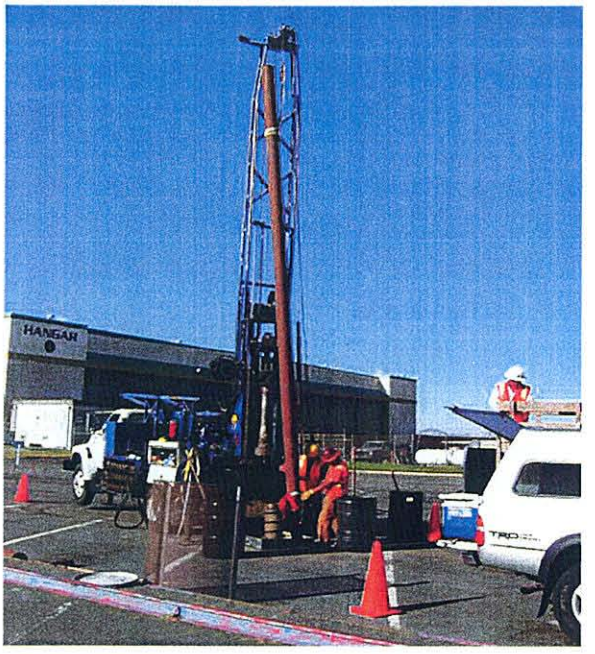
Photograph No. 8

Date:
9-22-06

Description:

Box to contain drill cuttings and 14-1/4" diameter HSA ready to begin drilling at 26MW08D.

Photograph No. 9



Date:
9-22-06

Description:

Steel conductor casing raised up the drill rig mast prior to installation at 26MW08D.

Photograph No. 10

Date:
9-22-06

Description:

Installed conductor casing at 26MW08D. Casing was used to seal off the shallow groundwater zone prior to drilling through persistent clay layer encountered at 21 ft bgs.

Photographic Documentation

Photograph No. 11

Date:
9-22-06

Description:

Drum storage area at the end of Monarch Street.

Photograph No. 12

Date:
9-25-06

Description:

10-foot long stainless steel bailer being used to develop 26MW05.

Innovative Technical Solutions, Inc.

Photographic Documentation

Photograph No. 13

Date:
9-26-06

Description:
6 1/4"' auger inside nominal 9" conductor casing. This was the largest diameter auger available that would fit inside the conductor.

Photograph No. 14

Date:
9-26-06

Description:

Upper 45 feet of clay shown in sample. Clay layer first encountered at 21 feet bgs.

Innovative Technical Solutions, Inc.

Photographic Documentation

Photograph No. 15

Date:
9-26-06

Description:
Fine sands flushed out of hollow stem auger at 55 feet bgs. This was the only indication of coarser grained sediments within the clay unit, other than a few thin seams of sand noted in the core samples collected on 5-foot centers.

Photograph No. 16

Date:
9-27-06

Description:

18" core samples collected on 5-foot centers from 65 ft bgs to 85 ft bgs; all clay.

ITSI Innovative Technical Solutions, Inc.

Photographic Documentation

Photograph No. 17

Date:
9-27-06

Description:
18" core samples collected on 5-foot centers from 90 ft bgs to 101.5 ft bgs; all clay.

Photograph No. 18

Date:
9-27-06

Description:

Grouting the hole after terminating boring at 26MW08D at 101.5 ft bgs.

APPENDIX E

QUALITY CONTROL SUMMARY REPORT

QUALITY CONTROL SUMMARY REPORT

DATA GAP SAMPLING
INSTALLATION RESTORATION SITE 26
ALAMEDA POINT, ALAMEDA, CALIFORNIA

DRAFT

Prepared For:

U.S. Department of the Navy
Base Realignment and Closure Program Management Office West
1455 Frazee Road, Suite 900
San Diego, California 92108-4310

Prepared By:

Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, California 94598

January 2007

Innovative Technical Solutions, Inc.

QUALITY CONTROL SUMMARY REPORT

DATA GAP SAMPLING
INSTALLATION RESTORATION SITE 26
ALAMEDA POINT, ALAMEDA, CALIFORNIA

DRAFT

Naval Facilities Engineering Command, Southwest
Contract Number N68711-05-D-6403
Task Order 0003

Prepared by: _____ Date: 01/08/2007
Paul West
ITSI Senior Chemist

Reviewed by: _____ Date: 1/8/07
Rachel Hess, R.G.
ITSI Project Manager

Approved by: _____ Date: 1/8/07
Jeffrey Hess, R.G.
ITSI Program Manager

ITSI Innovative Technical Solutions, Inc.

TABLE OF CONTENTS

LIST OF ATTACHMENTS

ACRONYMS AND ABBREVIATIONS

C&T	Curtis and Tompkins, Ltd.
°C	degrees Celsius
DVR	Data Validation Report
EDD	electronic data deliverable
EPA	United States Environmental Protection Agency
ICP	inductively coupled plasma
IR	Installation Restoration
ITSI	Innovative Technical Solutions, Inc.
LCS	Laboratory Control Sample
MDL	method detection limit
MS	matrix spike
MS/MSD	matrix spike/matrix spike duplicate
NEDD	Navy Environmental Data Deliverable
NELAP	National Environmental Laboratory Accreditation Program
NFESC	Naval Facilites Engineering Services Center
PDF	portable document format
QC	quality control
RPD	relative percent difference
RL	reporting limit
SDG	sample delivery group
Validata	Validata Chemical Services, Inc.
VOC	volatile organic compounds

1.0 ANALYTICAL PROGRAM

Complete summaries of analytical results are presented in the Appendix C of the Site Investigation Report, Data Gap Sampling, Installation Restoration (IR) Site 26, Alameda Point, Alameda, California.

Groundwater sample analyses were conducted in accordance with the requirements specified in the following guidance documents:

- *Test Methods for Evaluating Solid Waste, SW-846 Physical/Chemical Methods* (U.S. Environmental Protection Agency [EPA], 1996)
- *Methods for Chemical Analysis of Water and Wastes* (EPA, 1983)
- *Field Workplan for Data Gap Sampling, Installation Restoration Site 26, Alameda Point, Alameda, CA, Draft Final, August 2006.*(Innovative Technical Solutions, Incorporated (ITSI), 2006)

Curtis and Tompkins, Incorporated (C&T), of Berkeley, California was selected as the primary analytical laboratory. C&T has successfully completed the Naval Facilities Engineering Service Center's (NFESC) Laboratory Evaluation Program. In addition, C&T participates in and is certified under the National Environmental Laboratory Accreditation Program (NELAP). ITSI conducted a verification audit of C&T in October 2004. The sample login and receipt area of C&T was also audited during the Spring 2006 sampling event. These audits did not identify any significant data quality issues.

C&T scanned all hardcopy reports and included them with the appropriate C&T report. All original, unvalidated C&T reports were submitted as Portable Document Format (PDF) files and are included as Appendix C of the main report for reference. C&T's computer data system also produced an appropriate unvalidated laboratory electronic data deliverable for that specific sample delivery group (SDG).

Finally, Validata Chemical Services, Inc. (Validata) of Duluth, Georgia performed independent EPA Level 4 data validation on 20 percent of the results, and EPA Level 3 data validation on the remaining results. Analytical data were reviewed and validated for all test method results according to the procedures specified in the following documents, as applicable:

- *Field Workplan for Data Gap Sampling, Installation Restoration Site 26, Alameda Point, Alameda, CA, Draft Final, August 2006,* (ITSI, 2006)
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* (EPA, 1999)
- *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* (EPA, 2002)
- *Test Methods for Evaluating Solid Waste, SW-846 Physical/Chemical Methods* (EPA, 1996)

Detailed data validation procedures are included as Table A-9 of the Workplan (ITSI, 2006). The following analytical quality control (QC) elements were evaluated and used as the basis for qualifying data:

- Holding time and temperature compliance
- Initial calibration verification
- Continuing calibration verification
- Method blank contamination
- Field blank contamination
- Laboratory control sample (LCS) accuracy and precision
- Matrix spike (MS) accuracy and precision
- Internal standard recovery
- Interference check sample recovery (EPA Method 6010B only)
- Inductively Coupled Plasma (ICP) Serial Dilution (EPA Method 6010B)
- Surrogate recovery
- Sample duplicate precision
- Instrument tuning and system performance (Level IV)
- Analyte identification and quantitation (Level IV)

Validata produced a data validation report (DVR) for each sample delivery group. All DVRs are included as Attachment 1. Upon completion of the data review, Validata also provided tables noting any changed data qualifiers. These tables are included as Attachment 2. ITSI personnel ensured that the appropriate validation code was entered into the data summary tables presented in the main report. The data validation codes are merged electronically with the laboratory

electronic data deliverables (EDD) in a MS-Access Database from which a full project electronic data deliverable will be submitted in the Navy Environmental Data Deliverable (NEDD) format.

1.1 QUALIFIED RESULTS

The following qualifiers have been applied as appropriate to the data. Final electronic data deliverable and data tables contain the following data qualifiers as appropriate:

- *J qualifier* denotes the analyte was positively identified, the quantitation is an estimation. The analyte was positively identified but the associated numerical value is an estimated value above the method detection limit (MDL) and below the reporting limit (RL).
- *U qualifier* denotes the analyte was analyzed for, but not detected. The associated numerical value is at or below the reporting limit (RL).
- *UJ qualifier* denotes the associated quantification limit may be inaccurate or imprecise
- *R qualifier* denotes the data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria

A qualifier may be applied to a result for more than one reason. For example, an analysis that exceeded the allowed holding time and qualified as estimated, 'J', may also be qualified due to an identified problem with the instrument calibration. In the discussion below, only the initial reason for the qualification will be discussed.

The following sections discuss the quality of the data and reasons for qualification. Significant data quality issues (if any) are discussed in Section 2.0.

1.2 ESTIMATED LOW CONCENTRATIONS

C&T and its subcontract laboratories were tasked to report detected analyte concentrations to the MDL and not detected concentrations to the RL. Detected concentrations between the RL and the MDL are qualified as estimated, 'J' because of the increased quantitative uncertainty in the result as the concentration of the analyte approaches the MDL. A total of 128 results were qualified as estimated due to concentrations measured between the MDL and the RL.

Qualification of results as estimated due to low concentrations of analytes is expected due to the sensitivity of the analytical methodology used and the low concentrations of many analytes. Qualification for low concentrations is not due to method performance, or analytical program issues. Results remain usable with qualification, and so data usability is not affected.

1.3 SAMPLE SHIPMENT AND STORAGE

As samples were collected in the field, preservation by cooling was immediately initiated. C&T arranged for a courier service during each day of sampling. Samples were rapidly shipped directly to C&T. In certain cases, insufficient time had elapsed for thermal equilibrium to be reached and the samples to have been cooled to the specified temperature range of 2 to 6 degrees Celsius (°C). In these cases, samples are still considered as being shipped under proper storage conditions. No other samples were received at temperatures outside the specified temperature range.

Upon receipt by the laboratory, samples were immediately entered into the laboratory's data system, and were stored under refrigeration. No results were qualified due to improper sample shipment and storage for this event.

1.4 HOLDING TIME

Some samples for volatile organic analysis were not preserved which reduced the holding time to 7 days (from a normal holding time of 14 days). Holding times were met for all samples.

1.5 LABORATORY AND FIELD BLANK CONTAMINATION

Low levels of detected analytes due to ambient contamination were detected in some laboratory and field blanks. The sensitivity of modern analytical methodology increases the likelihood of detection of low-level contamination. Sources of low-level contamination are difficult to identify, but common sources include dust, volatile organic compounds gradually released from manufactured plastics, and building materials. A total of 40 results were qualified as not detected, 'U', or not detected at an estimated detection limit, 'UJ'. Of these results, the laboratory reported 28 results as estimated values that were lower than the RL, but higher than the MDL.

The levels of detected analytes are not sufficiently high for a result to be rejected. The identified low-level contamination is not sufficient to affect the data usability.

1.6 CALIBRATION

Instrument calibration is performed in accordance with the specified EPA methodology. The acceptance of the calibration is determined by the measurement of a method-specific statistical parameter. Because of the natural variability during the analytical process, an instrument may be later determined to have a calibration that is outside the acceptance limit. The accuracy of a

result associated with a calibration that is later determined to be outside the acceptance limit will have more uncertainty that result. Depending upon the magnitude of the uncertainty, a result may be qualified. A total of 41 results were qualified as estimated, 'J', or not detected at an estimated detection limit, 'UJ', due to identified problems with the calibration.

On a statistical basis, given the number and types of analytes that are measured in this program, some of the calibrations will occur outside the method acceptance parameters. The number of results qualified is consistent with what is expected, and these results may still be used with qualification. Data usability is not significantly affected.

1.7 SURROGATES AND INTERNAL STANDARDS

Surrogate compounds and internal standards are control compounds used to monitor the analytical process as specified in EPA methodology. The evaluation of the surrogate recovery and internal standard response may indicate that the accuracy of the result is not within the acceptable method-specific parameters. Depending upon the magnitude of the uncertainty, a result may be qualified. A total of 4 results were qualified as estimated, 'J', or not detected at an estimated detection limit, 'UJ', due to identified problems with surrogate recoveries.

The number of results qualified is consistent with what is expected, and these results may still be used with qualification. No results were rejected due to surrogate recovery or internal standard recovery. Data usability is not significantly affected.

1.8 SERIAL DILUTION

For metals analysis, a serial dilution test is used to determine if interferences are present during the analysis. This test is specified in EPA methodology. The measurement of a metal in an undiluted sample is compared to the measurement of the same metal in a diluted sample (and multiplied by the proper dilution factor). Depending upon the magnitude of the uncertainty, a result may be qualified. A serial dilution test may only be evaluated when a measurable amount of analyte is present.

The serial dilution test identified molybdenum and vanadium recoveries that exceeded the control limit. However, the laboratory selected a sample for the serial dilution that was not part of this project. The data validator determined that data qualification was not merited. No results were qualified or rejected due to the serial dilution test.

1.9 LABORATORY CONTROL SAMPLES

Laboratory control samples are synthetic samples prepared and analyzed in the same procedure as normal field samples. Laboratory control samples are used to further monitor the analytical process. No results were qualified or rejected due to the recovery from the laboratory control samples.

1.10 MATRIX SPIKE SAMPLES

One in 20 samples were identified for matrix spike analysis, representing approximately a 5 percent frequency. Matrix spike samples are field samples to which analytes of interest have been added to monitor the analytical process. A total of 3 results for copper have been qualified as estimated, 'J' due to low recovery in the matrix spike samples. The number of results qualified is consistent with what is expected, and these results may still be used with qualification. No results were rejected due to matrix spike results, therefore data usability is not significantly affected.

1.11 DUPLICATE SAMPLES

The laboratory as part of its internal quality control checks also analyzes and reports laboratory replicates. No results were qualified or rejected due to duplicate results

2.0 REJECTED RESULTS

The data review and validation process did not identify any rejected results.

3.0 FIELD DUPLICATES

One in 10 samples were collected as a field duplicate, and were analyzed for the same parameters as the normal sample. A total of 3 field duplicates were collected. Field duplicates results were compared only when an analyte is detected above the reporting limit in both samples. A total of 11 results had analytes that were detected above the reporting limit in both the normal sample and the field duplicate. The Sampling and Analysis Plan specifies that field duplicate results are in agreement when the relative percent difference (RPD) between the field duplicate result and the normal sample result is less than 50. All results are in agreement between the normal sample and its field duplicate. A comparison of field duplicates is included as Attachment 3.

4.0 CONCLUSIONS AND DATA USABILITY

The analytical methods used for this project were selected to provide quality data sufficient to meet data quality objectives and project sensitivity requirements.

4.1 QUALITY ASSURANCE/QUALITY CONTROL SAMPLES

Field QC samples for this project included field duplicates, trip blanks, temperature blanks, and matrix spike/ matrix spike duplicate (MS/MSD) samples. Field duplicate samples were collected in the field at a frequency of 10 percent for each of the thirteen IR sites, and analyzed for the same analytes as their corresponding original samples. Trip blanks were placed in coolers used for wells requiring volatile organic compound (VOC) analysis and analyzed for VOCs as well. Temperature blanks were placed in coolers for cooler temperature checks. MS/MSD samples were collected at a frequency of approximately one for every 20 groundwater field samples.

4.2 COMPLETENESS SUMMARY

Of a total of 1563 results (including normal samples and field duplicates), 87 are qualified as estimated or not detected at an estimated reporting limit. No results were rejected. Estimated results can still be used with qualification. The total completeness is therefore 100 percent. Field duplicate reproducibility is 100 percent for all detected results above the reporting limit.

4.3 FINAL CONCLUSION

The data generated in support of the project are usable with qualifications, and meet the project objectives.

5.0 REFERENCES

Innovative Technical Solutions, Inc.(ITSI), 2006, *Field Workplan for Data Gap Sampling, Installation Restoration Site 26, Alameda Point, Alameda, CA, Draft Final,* August

U. S. Environmental Protection Agency (EPA), 1999, *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*

EPA, 2002, *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*

EPA, 1996, *Test Methods for Evaluating Solid Waste, SW-846 Physical/Chemical Methods*

ATTACHMENT 1

DATA VALIDATION REPORTS

VALIDATA

Chemical Services, Inc.

4070 Balleycastle Lane, Duluth, GA 30097

(770) 232-0130
(770) 232-5082 (Fax)
www.datavalidator.com

DATA VALIDATION SUMMARY
REPORT

COMPANY:	ITSI
SITE NAME:	Alameda IR Data Gap Investigation
CONTRACTED LAB:	Curtis & Tompkins, LTD.
QA/QC LEVEL:	EPA Level III
EPA SOW/METHODS:	SW-846 & EPA Methodology
VALIDATION GUIDELINES:	*USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* 1999; *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* 1994
SAMPLE MATRIX:	Water
TYPES OF ANALYSES:	Volatile Organics (VOA)
SDG NUMBER:	189171

OVERVIEW

SAMPLES:

Client Sample #	Lab Sample #	Matrix	VOA
090506026001A	189171-001	Water	X
090506026002	189171-002	Water	X
090506026003	189171-003	Water	X
090506026004	189171-004	Water	X

DATA REVIEWER(S): Amy L. Hogan, Kevin C. Harmon, Monalisa B. Beasley

RELEASE SIGNATURE:

Data Qualifier Definitions

J	-	The associated numerical value is an estimated quantity.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

Curtis & Tompkins, LTD. - 189171 Organics

SAMPLES: 090506026001A, 090506026002, 090506026003, 090506026004

VOLATILE ORGANICS

SUMMARY

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no major problems associated with this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met.

II.) GC / MS Tuning:

All GC / MS Tuning criteria were met. No action was necessary.

III.) Calibration:

All Initial and Continuing Calibration criteria were met. No action was required.

IV.) Blanks:

Method Blanks:

The following compounds were detected in method blank QC354630:

Compound	Result
bromoform	0.2 ug/L
1,2,4-trichlorbenzene	0.2 ug/L

All positive results for these compounds in the SDG samples, which were less than 5X the blank contamination, were flagged as undetected (U) with results less than the CRQL being raised to the CRQL.

Tentatively Identified Compounds (TIC):

TIC data were not supplied for this SDG. No action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was required.

VI.) Laboratory Control Samples (LCS):

One LCS/LCSD set was analyzed by the laboratory. All LCS criteria were met. No action was taken.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were not submitted for this SDG. Data qualification based on MS/MSD criteria was not required. No action was taken.

VIII.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

IX.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No action was required.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was taken.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No action was required.

XII.) Tentatively Identified Compounds (TICs):

TIC data were not submitted for this SDG. No action was taken.

XIII.) Contract Compliance:

All Contract Compliance criteria were met.

Qualified Form I's

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189171	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	35-102.02	Analysis:	EPA 8260B
Field ID:	090506026001A	Batch#:	117074
Lab ID:	189171-001	Sampled:	09/05/06
Matrix:	Water	Received:	09/05/06
Units:	ug/L	Analyzed:	09/05/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Freon 12	ND	1.0	0.2
Chloromethane	ND	1.0	0.09
Vinyl Chloride	ND	0.5	0.2
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.1
Trichlorofluoromethane	ND	1.0	0.1
Acetone	ND	10	0.5
Freon 113	ND	0.5	0.09
1,1-Dichloroethene	ND	0.5	0.09
Methylene Chloride	ND	10	0.2
Carbon Disulfide	ND	0.5	0.04
MTBE	ND	0.5	0.05
trans-1,2-Dichloroethene	ND	0.5	0.09
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.06
2-Butanone	ND	10	0.3
cis-1,2-Dichloroethene	ND	0.5	0.1
2,2-Dichloropropane	ND	0.5	0.08
Chloroform	ND	0.5	0.04
Bromochloromethane	ND	0.5	0.2
1,1,1-Trichloroethane	ND	0.5	0.04
1,1-Dichloropropene	ND	0.5	0.05
Carbon Tetrachloride	ND	0.5	0.06
1,2-Dichloroethane	ND	0.5	0.06
Benzene	ND	0.5	0.03
Trichloroethene	0.1 J	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.07
Dibromomethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.3
cis-1,3-Dichloropropene	ND	0.5	0.04
Toluene	ND	0.5	0.05
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.06
2-Hexanone	ND	10	0.1
1,3-Dichloropropane	ND	0.5	0.07
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.06
1,2-Dibromoethane	ND	0.5	0.07
Chlorobenzene	ND	0.5	0.05
1,1,1,2-Tetrachloroethane	ND	0.5	0.09
Ethylbenzene	ND	0.5	0.1
m,p-Xylenes	ND	0.5	0.2
o-Xylene	ND	0.5	0.1
Styrene	ND	0.5	0.06
Bromoform	~~0.2 J~~ 1.0 U	1.0	0.1
Isopropylbenzene	ND	0.5	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.06
1,2,3-Trichloropropane	ND	0.5	0.2
Propylbenzene	ND	0.5	0.1
Bromobenzene	ND	0.5	0.09
1,3,5-Trimethylbenzene	ND	0.5	0.1

J= Estimated value
ND= Not Detected
RL= Reporting Limit
DL= Method Detection Limit

2.0

00007

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189171	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-102.02	Analysis:	EPA 8260B
Field ID:	090506026001A	Batch#:	117074
Lab ID:	189171-001	Sampled:	09/05/06
Matrix:	Water	Received:	09/05/06
Units:	ug/L	Analyzed:	09/05/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
2-Chlorotoluene	ND	0.5	0.1
4-Chlorotoluene	ND	0.5	0.07
tert-Butylbenzene	ND	0.5	0.08
1,2,4-Trimethylbenzene	ND	0.5	0.1
sec-Butylbenzene	ND	0.5	0.08
para-Isopropyl Toluene	ND	0.5	0.04
1,3-Dichlorobenzene	ND	0.5	0.1
1,4-Dichlorobenzene	ND	0.5	0.2
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.06
1,2-Dibromo-3-Chloropropane	ND	2.0	0.1
1,2,4-Trichlorobenzene	ND	0.5	0.2
Hexachlorobutadiene	ND	0.5	0.2
Naphthalene	ND	2.0	0.2
1,2,3-Trichlorobenzene	ND	0.5	0.3

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-120
1,2-Dichloroethane-d4	112	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	101	80-122

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

2.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189171	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	35-102.02	Analysis:	EPA 8260B
Field ID:	090506026002	Batch#:	117074
Lab ID:	189171-002	Sampled:	09/05/06
Matrix:	Water	Received:	09/05/06
Units:	ug/L	Analyzed:	09/05/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Freon 12	ND	1.0	0.2
Chloromethane	ND	1.0	0.09
Vinyl Chloride	ND	0.5	0.2
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.1
Trichlorofluoromethane	ND	1.0	0.1
Acetone	ND	10	0.5
Freon 113	ND	0.5	0.09
1,1-Dichloroethene	ND	0.5	0.09
Methylene Chloride	ND	10	0.2
Carbon Disulfide	ND	0.5	0.04
MTBE	ND	0.5	0.05
trans-1,2-Dichloroethene	ND	0.5	0.09
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.06
2-Butanone	ND	10	0.3
cis-1,2-Dichloroethene	ND	0.5	0.1
2,2-Dichloropropane	ND	0.5	0.08
Chloroform	ND	0.5	0.04
Bromochloromethane	ND	0.5	0.2
1,1,1-Trichloroethane	ND	0.5	0.04
1,1-Dichloropropene	ND	0.5	0.05
Carbon Tetrachloride	ND	0.5	0.06
1,2-Dichloroethane	ND	0.5	0.06
Benzene	ND	0.5	0.03
Trichloroethene	ND	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.07
Dibromomethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.3
cis-1,3-Dichloropropene	ND	0.5	0.04
Toluene	ND	0.5	0.05
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.06
2-Hexanone	ND	10	0.1
1,3-Dichloropropane	ND	0.5	0.07
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.06
1,2-Dibromoethane	ND	0.5	0.07
Chlorobenzene	ND	0.5	0.05
1,1,1,2-Tetrachloroethane	ND	0.5	0.09
Ethylbenzene	ND	0.5	0.1
m,p-Xylenes	ND	0.5	0.2
o-Xylene	ND	0.5	0.1
Styrene	ND	0.5	0.06
Bromoform	ND	1.0	0.1
Isopropylbenzene	ND	0.5	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.06
1,2,3-Trichloropropane	ND	0.5	0.2
Propylbenzene	ND	0.5	0.1
Bromobenzene	ND	0.5	0.09
1,3,5-Trimethylbenzene	ND	0.5	0.1
2-Chlorotoluene	ND	0.5	0.1

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

3.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189171	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-102.02	Analysis:	EPA 8260B
Field ID:	090506026002	Batch#:	117074
Lab ID:	189171-002	Sampled:	09/05/06
Matrix:	Water	Received:	09/05/06
Units:	ug/L	Analyzed:	09/05/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
4-Chlorotoluene	ND	0.5	0.07
tert-Butylbenzene	ND	0.5	0.08
1,2,4-Trimethylbenzene	ND	0.5	0.1
sec-Butylbenzene	ND	0.5	0.08
para-Isopropyl Toluene	ND	0.5	0.04
1,3-Dichlorobenzene	ND	0.5	0.1
1,4-Dichlorobenzene	ND	0.5	0.2
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.06
1,2-Dibromo-3-Chloropropane	ND	2.0	0.1
1,2,4-Trichlorobenzene	ND	0.5	0.2
Hexachlorobutadiene	ND	0.5	0.2
Naphthalene	ND	2.0	0.2
1,2,3-Trichlorobenzene	ND	0.5	0.3

Surrogate	%REC	Limits
Dibromofluoromethane	108	80-120
1,2-Dichloroethane-d4	111	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	104	80-122

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

3.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189171	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-102.02	Analysis:	EPA 8260B
Field ID:	090506026003	Batch#:	117074
Lab ID:	189171-003	Sampled:	09/05/06
Matrix:	Water	Received:	09/05/06
Units:	ug/L	Analyzed:	09/05/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Freon 12	ND	1.0	0.2
Chloromethane	ND	1.0	0.09
Vinyl Chloride	ND	0.5	0.2
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.1
Trichlorofluoromethane	ND	1.0	0.1
Acetone	ND	10	0.5
Freon 113	ND	0.5	0.09
1,1-Dichloroethene	ND	0.5	0.09
Methylene Chloride	ND	10	0.2
Carbon Disulfide	ND	0.5	0.04
MTBE	ND	0.5	0.05
trans-1,2-Dichloroethene	ND	0.5	0.09
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.06
2-Butanone	ND	10	0.3
cis-1,2-Dichloroethene	ND	0.5	0.1
2,2-Dichloropropane	ND	0.5	0.08
Chloroform	ND	0.5	0.04
Bromochloromethane	ND	0.5	0.2
1,1,1-Trichloroethane	ND	0.5	0.04
1,1-Dichloropropene	ND	0.5	0.05
Carbon Tetrachloride	ND	0.5	0.06
1,2-Dichloroethane	ND	0.5	0.06
Benzene	ND	0.5	0.03
Trichloroethene	ND	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.07
Dibromomethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.3
cis-1,3-Dichloropropene	ND	0.5	0.04
Toluene	ND	0.5	0.05
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.06
2-Hexanone	ND	10	0.1
1,3-Dichloropropane	ND	0.5	0.07
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.06
1,2-Dibromoethane	ND	0.5	0.07
Chlorobenzene	ND	0.5	0.05
1,1,1,2-Tetrachloroethane	ND	0.5	0.09
Ethylbenzene	ND	0.5	0.1
m,p-Xylenes	ND	0.5	0.2
o-Xylene	ND	0.5	0.1
Styrene	ND	0.5	0.06
Bromoform	ND	1.0	0.1
Isopropylbenzene	ND	0.5	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.06
1,2,3-Trichloropropane	ND	0.5	0.2
Propylbenzene	ND	0.5	0.1
Bromobenzene	ND	0.5	0.09
1,3,5-Trimethylbenzene	ND	0.5	0.1
2-Chlorotoluene	ND	0.5	0.1

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

4.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189171	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-102.02	Analysis:	EPA 8260B
Field ID:	090506026003	Batch#:	117074
Lab ID:	189171-003	Sampled:	09/05/06
Matrix:	Water	Received:	09/05/06
Units:	ug/L	Analyzed:	09/05/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
4-Chlorotoluene	ND	0.5	0.07
tert-Butylbenzene	ND	0.5	0.08
1,2,4-Trimethylbenzene	ND	0.5	0.1
sec-Butylbenzene	ND	0.5	0.08
para-Isopropyl Toluene	ND	0.5	0.04
1,3-Dichlorobenzene	ND	0.5	0.1
1,4-Dichlorobenzene	ND	0.5	0.2
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.06
1,2-Dibromo-3-Chloropropane	ND	2.0	0.1
1,2,4-Trichlorobenzene	ND	0.5	0.2
Hexachlorobutadiene	ND	0.5	0.2
Naphthalene	ND	2.0	0.2
1,2,3-Trichlorobenzene	ND	0.5	0.3

Surrogate	%REC	Limits
Dibromofluoromethane	110	80-120
1,2-Dichloroethane-d4	114	80-130
Toluene-d8	101	80-120
Bromofluorobenzene	104	80-122

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189171	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	35-102.02	Analysis:	EPA 8260B
Field ID:	090506026004	Batch#:	117074
Lab ID:	189171-004	Sampled:	09/05/06
Matrix:	Water	Received:	09/05/06
Units:	ug/L	Analyzed:	09/05/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Freon 12	ND	1.0	0.2
Chloromethane	ND	1.0	0.09
Vinyl Chloride	ND	0.5	0.2
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.1
Trichlorofluoromethane	ND	1.0	0.1
Acetone	13	10	0.5
Freon 113	ND	0.5	0.09
1,1-Dichloroethene	ND	0.5	0.09
Methylene Chloride	ND	10	0.2
Carbon Disulfide	ND	0.5	0.04
MTBE	ND	0.5	0.05
trans-1,2-Dichloroethene	ND	0.5	0.09
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.06
2-Butanone	ND	10	0.3
cis-1,2-Dichloroethene	ND	0.5	0.1
2,2-Dichloropropane	ND	0.5	0.08
Chloroform	ND	0.5	0.04
Bromochloromethane	ND	0.5	0.2
1,1,1-Trichloroethane	ND	0.5	0.04
1,1-Dichloropropene	ND	0.5	0.05
Carbon Tetrachloride	ND	0.5	0.06
1,2-Dichloroethane	ND	0.5	0.06
Benzene	0.2 J	0.5	0.03
Trichloroethene	ND	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.07
Dibromomethane	ND	0.5	0.1
4-Methyl-2-Pentanone	0.6 J	10	0.3
cis-1,3-Dichloropropene	ND	0.5	0.04
Toluene	0.08 J	0.5	0.05
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.06
2-Hexanone	ND	10	0.1
1,3-Dichloropropane	ND	0.5	0.07
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.06
1,2-Dibromoethane	ND	0.5	0.07
Chlorobenzene	ND	0.5	0.05
1,1,1,2-Tetrachloroethane	ND	0.5	0.09
Ethylbenzene	ND	0.5	0.1
m,p-Xylenes	ND	0.5	0.2
o-Xylene	ND	0.5	0.1
Styrene	ND	0.5	0.06
Bromoform	ND	1.0	0.1
Isopropylbenzene	ND	0.5	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.06
1,2,3-Trichloropropane	ND	0.5	0.2
Propylbenzene	ND	0.5	0.1
Bromobenzene	ND	0.5	0.09
1,3,5-Trimethylbenzene	ND	0.5	0.1

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189171	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-102.02	Analysis:	EPA 8260B
Field ID:	090506026004	Batch#:	117074
Lab ID:	189171-004	Sampled:	09/05/06
Matrix:	Water	Received:	09/05/06
Units:	ug/L	Analyzed:	09/05/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
2-Chlorotoluene	ND	0.5	0.1
4-Chlorotoluene	ND	0.5	0.07
tert-Butylbenzene	ND	0.5	0.08
1,2,4-Trimethylbenzene	ND	0.5	0.1
sec-Butylbenzene	ND	0.5	0.08
para-Isopropyl Toluene	ND	0.5	0.04
1,3-Dichlorobenzene	ND	0.5	0.1
1,4-Dichlorobenzene	ND	0.5	0.2
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.06
1,2-Dibromo-3-Chloropropane	ND	2.0	0.1
1,2,4-Trichlorobenzene	ND	0.5	0.2
Hexachlorobutadiene	ND	0.5	0.2
Naphthalene	ND	2.0	0.2
1,2,3-Trichlorobenzene	ND	0.5	0.3

Surrogate	%REC	Limits
Dibromofluoromethane	108	80-120
1,2-Dichloroethane-d4	112	80-130
Toluene-d8	101	80-120
Bromofluorobenzene	103	80-122

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

5.1

Flag Summary Table

Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	090506023001A	190171-1	N	189171	bromoform	0.2J	U	1.0U	Method Blank Contamination

Notes:

N - (normal) Primary Sample FD - Field Duplicate EB - Equipment Rinsate Blank SDG - Sample Delivery Group

Qualifier Codes:

J -Estimated value. Usually a number reported between Practical Quantitaion Limit (PQL) and Method Detection Limit (MDL).

< (reporting limit), J - Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit, and the reporting limit is estimated. The notation '< (reporting limit) J' is equivalent to the 'UJ (reporting limit)' notation used in the data validation reports (DVRs).

< (reporting limit) -Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit. The notation '< (reporting limit) is equivalent to the 'U (reporting limit)' notation used in the data validation reports (DVRs).

VALIDATA

Chemical Services, Inc.

4070 Balleycastle Lane, Duluth, GA 30097

(770) 232-0130
(770) 232-5082 (Fax)
www.datavalidator.com

DATA VALIDATION SUMMARY
REPORT

COMPANY:	ITSI
SITE NAME:	Alameda IR Data Gap Investigation
CONTRACTED LAB:	Curtis & Tompkins, LTD.
QA/QC LEVEL:	EPA Level III
EPA SOW/METHODS:	SW-846 & EPA Methodology
VALIDATION GUIDELINES:	*USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* 1999; *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* 1994
SAMPLE MATRIX:	Water
TYPES OF ANALYSES:	Volatile Organics (VOA)
SDG NUMBER:	189203

OVERVIEW

SAMPLES:

Client Sample #	Lab Sample #	Matrix	VOA
090606026001A	189203-001	Water	X
090606026002	189203-002	Water	X
090606026003	189203-003	Water	X
090606026004	189203-004	Water	X
090606026005	189203-005	Water	X
090606026006	189203-006	Water	X
090606026007	189203-007	Water	X
090606026008	189203-008	Water	X
090606026009	189203-009	Water	X
090606026010	189203-010	Water	X
090606026011	189203-011	Water	X
090606026012	189203-012	Water	X
090606026012RE	189203-012RE	Water	X
090606026013	189203-013	Water	X
090606026013RE	189203-013RE	Water	X
090606026014	189203-014	Water	X
090606026015	189203-015	Water	X
090606026002MS	189203-002MS	Water	X
090606026002MSD	189203-002MSD	Water	X

DATA REVIEWER(S): Amy L. Hogan, Kevin C. Harmon, Monalisa B. Beasley

RELEASE SIGNATURE: Monalisa Beasley

Data Qualifier Definitions

J	-	The associated numerical value is an estimated quantity.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

Curtis & Tompkins, LTD. - 189203 Organics

SAMPLES: 090606026001A, 090606026002, 090606026003, 090606026004, 090606026005, 090606026006, 090606026007, 090606026008, 090606026009, 090606026010, 090606026011, 090606026012, 090606026013, 090606026014, 090606026015

VOLATILE ORGANICS

SUMMARY

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no major problems associated with this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. It was noted by the laboratory that the samples were received at 6 degrees and that several samples were tested at a pH of greater than 2. Since the samples were analyzed immediately, using professional judgment, the validator determined that data qualification was not merited.

II.) GC / MS Tuning:

All GC / MS Tuning criteria were met. No action was necessary.

III.) Calibration:

Initial Calibration:

The Percent Difference (%D) of 39% for vinyl acetate in the second source calibration on 8/9/06 on instrument MSVOA08 exceeded the 25% QC limit. Since there were no positive results for this compound in the associated samples, no action was required.

Continuing Calibration:

The Percent Difference (%RD) of 26% for carbon disulfide for the standards run on 9/7/06 at 09:30 on instrument MSVOA08 exceeded the 25% QC limit. The positive and non-detect results for this compound in associated samples 090606026006 and 090606026015 were flagged as estimated (J) and (UJ).

The Percent Differences (%Ds) of 29% for acetone, 26% for 2-butanone and 29% for 2-hexanone for the standards run on 9/6/06 at 11:19 on instrument MSVOA09 exceeded the 25% QC limit. All positive and non-detect results for these compounds in the associated samples were flagged as estimated (J) and (UJ). Only the result for acetone in associated sample 090606026012 was flagged, since the results for the other listed compounds for this sample were taken from another analysis. The other associated samples were 090606026002, 090606026004, 090606026006, 090606026008 and 090606026010.

The Percent Difference (%D) of 30% for vinyl acetate for the standards run on 9/7/06 at 13:21 on instrument MSVOA10 exceeded the 25% QC limit. The non-detect result for this compound in associated sample 090606026012 was flagged as estimated (UJ).

IV.) Blanks:

Method Blanks:

Bromoform was detected at 0.2 ug/L in method blank QC354760. There were no positive results for this compound in the associated samples, so no action was required.

Acetone was detected at 0.6 ug/L in method blank QC354769. All positive results for acetone in the associated samples, which were less than 10X the blank amount, were flagged as undetected (U) with the results less than the CRQL being raised to the CRQL. The associated samples were: 090606026002, 090606026004, 090606026008, 090606026010 and 090606026012.

Methylene chloride was detected at 0.2 ug/L in method blank QC354934. There were no positive results for this compound in the associated samples, so no action was required.

Bromoform was detected at 0.2 ug/L in method blank QC354941. The positive results for this compound in associated samples 090606026006 and 090606026015, which were less than 5X the blank contamination, were flagged as undetected (U) with the results less than the CRQL being raised to the CRQL.

Tentatively Identified Compounds (TIC):

TIC data were not supplied for this SDG. No action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was required.

VI.) Laboratory Control Samples (LCS):

Four LCSs and one LCS/LCSD set were analyzed by the laboratory. The Percent Recoveries (%Rs) of 135% and 131% for tetrachloroethene in the LCS/LCSD samples exceeded the 75-125% QC limits. Data qualification based on LCS criteria was not required. No action was taken.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed on SDG sample 090606026002. The Percent Recoveries (%Rs) of

141% and 139% for tetrachloroethene exceeded the 75-125% QC limits. Taken in conjunction with the LCS data, using professional judgment, the validator determined that data qualification was not merited based on the absence of tetrachloroethene in the associated samples. No action was taken.

Batch MS/MSD analyses were also submitted for this fraction of the SDG. The results for tetrachloroethene were not usable since the parent sample results were greater than 4X the blank concentration. The Percent Recovery (%R) of trichloroethene was 121%, which exceeded the 70-120% QC limits. It was noted by the validator that the sample result exceeded the linear calibration range of the instrument. Data qualification based on MS/MSD criteria alone was not required. No action was taken.

VIII.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

IX.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No action was required.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was taken.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

Two separate analyses were performed for samples 090606026012 and 090606026013, with the reported results being a composite of the best results. No action was required.

All other CRQL criteria were met. No action was required.

XII.) Tentatively Identified Compounds (TICs):

TIC data were not submitted for this SDG. No action was taken.

XIII.) Contract Compliance:

All Contract Compliance criteria were met.

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026001A	Batch#:	117110
Lab ID:	189203-001	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L	Analyzed:	09/06/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.09
Vinyl Chloride	ND	0.5	0.2
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.1
Acetone	ND	10	0.5
Freon 113	ND	0.5	0.09
1,1-Dichloroethene	ND	0.5	0.09
Methylene Chloride	ND	10	0.2
Carbon Disulfide	ND	0.5	0.04
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.06
2-Butanone	ND	10	0.3
Chloroform	ND	0.5	0.04
1,1,1-Trichloroethane	ND	0.5	0.04
Carbon Tetrachloride	ND	0.5	0.06
1,2-Dichloroethane	ND	0.5	0.06
Benzene	ND	0.5	0.03
Trichloroethene	0.1 J	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.07
4-Methyl-2-Pentanone	ND	10	0.3
cis-1,3-Dichloropropene	ND	0.5	0.04
Toluene	ND	0.5	0.05
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.06
2-Hexanone	ND	10	0.1
Tetrachloroethene	0.1 J	0.5	0.09
Dibromochloromethane	ND	0.5	0.06
Chlorobenzene	ND	0.5	0.05
Ethylbenzene	ND	0.5	0.1
Styrene	ND	0.5	0.06
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.06
1,2-Dichloroethene (total)	ND	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	107	86-118
1,2-Dichloroethane-d4	111	80-120
Toluene-d8	100	88-110
Bromofluorobenzene	105	86-115

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026002	Batch#:	117112
Lab ID:	189203-002	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L	Analyzed:	09/06/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.3
Vinyl Chloride	ND	0.5	0.1
Bromomethane	ND	1.0	0.3
Chloroethane	ND	1.0	0.5
Acetone	~~4.4 J~~	10	0.2
Freon 113	ND	0.5	0.2
1,1-Dichloroethene	ND	0.5	0.2
Methylene Chloride	ND	10	0.3
Carbon Disulfide	ND	0.5	0.1
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	1.1 J	10	0.2
Chloroform	ND	0.5	0.2
1,1,1-Trichloroethane	ND	0.5	0.1
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.2
Benzene	0.2 J	0.5	0.1
Trichloroethene	ND	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.2
Bromodichloromethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.1
cis-1,3-Dichloropropene	ND	0.5	0.09
Toluene	0.3 J	0.5	0.09
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.2
2-Hexanone	0.1 J	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.2
Chlorobenzene	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.1
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.2
1,2-Dichloroethene (total)	ND	0.5	
Xylene (total)	0.09 J	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	92	86-118
1,2-Dichloroethane-d4	87	80-120
Toluene-d8	105	88-110
Bromofluorobenzene	93	86-115

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026003	Batch#:	117110
Lab ID:	189203-003	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L	Analyzed:	09/06/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.09
Vinyl Chloride	ND	0.5	0.2
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.1
Acetone	ND	10	0.5
Freon 113	ND	0.5	0.09
1,1-Dichloroethene	ND	0.5	0.09
Methylene Chloride	ND	10	0.2
Carbon Disulfide	0.2 J	0.5	0.04
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.06
2-Butanone	ND	10	0.3
Chloroform	0.09 J	0.5	0.04
1,1,1-Trichloroethane	ND	0.5	0.04
Carbon Tetrachloride	ND	0.5	0.06
1,2-Dichloroethane	ND	0.5	0.06
Benzene	0.07 J	0.5	0.03
Trichloroethene	ND	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.07
4-Methyl-2-Pentanone	ND	10	0.3
cis-1,3-Dichloropropene	ND	0.5	0.04
Toluene	0.08 J	0.5	0.05
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.06
2-Hexanone	ND	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.06
Chlorobenzene	ND	0.5	0.05
Ethylbenzene	ND	0.5	0.1
Styrene	ND	0.5	0.06
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.06
1,2-Dichloroethene (total)	ND	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	111	86-118
1,2-Dichloroethane-d4	114	80-120
Toluene-d8	101	88-110
Bromofluorobenzene	105	86-115

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026004	Batch#:	117112
Lab ID:	189203-004	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L	Analyzed:	09/06/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.3
Vinyl Chloride	ND	0.5	0.1
Bromomethane	ND	1.0	0.3
Chloroethane	ND	1.0	0.5
Acetone	10 ~~1.6~~ J	10	0.2
Freon 113	ND	0.5	0.2
1,1-Dichloroethene	ND	0.5	0.2
Methylene Chloride	ND	10	0.3
Carbon Disulfide	ND	0.5	0.1
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	0.5 J	10	0.2
Chloroform	ND	0.5	0.2
1,1,1-Trichloroethane	ND	0.5	0.1
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.2
Benzene	ND	0.5	0.1
Trichloroethene	ND	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.2
Bromodichloromethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.1
cis-1,3-Dichloropropene	ND	0.5	0.09
Toluene	ND	0.5	0.09
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.2
2-Hexanone	ND UJ	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.2
Chlorobenzene	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.1
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.2
1,2-Dichloroethene (total)	ND	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	96	86-118
1,2-Dichloroethane-d4	90	80-120
Toluene-d8	103	88-110
Bromofluorobenzene	93	86-115

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026005	Batch#:	117110
Lab ID:	189203-005	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L	Analyzed:	09/06/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.09
Vinyl Chloride	ND	0.5	0.2
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.1
Acetone	ND	10	0.5
Freon 113	ND	0.5	0.09
1,1-Dichloroethene	ND	0.5	0.09
Methylene Chloride	ND	10	0.2
Carbon Disulfide	ND	0.5	0.04
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	0.08 J	0.5	0.06
2-Butanone	1.1 J	10	0.3
Chloroform	ND	0.5	0.04
1,1,1-Trichloroethane	ND	0.5	0.04
Carbon Tetrachloride	ND	0.5	0.06
1,2-Dichloroethane	ND	0.5	0.06
Benzene	0.2 J	0.5	0.03
Trichloroethene	0.1 J	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.07
4-Methyl-2-Pentanone	ND	10	0.3
cis-1,3-Dichloropropene	ND	0.5	0.04
Toluene	0.1 J	0.5	0.05
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.06
2-Hexanone	ND	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.06
Chlorobenzene	ND	0.5	0.05
Ethylbenzene	ND	0.5	0.1
Styrene	ND	0.5	0.06
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.06
1,2-Dichloroethene (total)	2.4	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	110	86-118
1,2-Dichloroethane-d4	112	80-120
Toluene-d8	99	88-110
Bromofluorobenzene	104	86-115

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026006	Batch#:	117154
Lab ID:	189203-006	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L	Analyzed:	09/07/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.1
Vinyl Chloride	ND	0.5	0.1
Bromomethane	ND	1.0	0.3
Chloroethane	ND	1.0	0.1
Acetone	ND	10	0.2
Freon 113	ND	0.5	0.07
1,1-Dichloroethene	ND	0.5	0.1
Methylene Chloride	ND	10	0.2
Carbon Disulfide	ND	0.5	0.1
Vinyl Acetate	ND	10	0.4
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	0.9 J	10	0.1
Chloroform	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.06
Carbon Tetrachloride	ND	0.5	0.2
1,2-Dichloroethane	ND	0.5	0.1
Benzene	0.2 J	0.5	0.1
Trichloroethene	ND	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.1
cis-1,3-Dichloropropene	ND	0.5	0.2
Toluene	0.1 J	0.5	0.06
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.1
Tetrachloroethene	ND	0.5	0.1
Dibromochloromethane	ND	0.5	0.06
Chlorobenzene	ND	0.5	0.2
Ethylbenzene	ND	0.5	0.04
Styrene	ND	0.5	0.2
Bromoform	~~0.1 J~~	1.0	0.09
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2-Dichloroethene (total)	2.5	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	105	86-118
1,2-Dichloroethane-d4	103	80-120
Toluene-d8	100	88-110
Bromofluorobenzene	102	86-115

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

7.1

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026007	Batch#:	117110
Lab ID:	189203-007	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L	Analyzed:	09/06/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.09
Vinyl Chloride	ND	0.5	0.2
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.1
Acetone	ND	10	0.5
Freon 113	ND	0.5	0.09
1,1-Dichloroethene	ND	0.5	0.09
Methylene Chloride	ND	10	0.2
Carbon Disulfide	ND	0.5	0.04
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.06
2-Butanone	ND	10	0.3
Chloroform	0.05 J	0.5	0.04
1,1,1-Trichloroethane	ND	0.5	0.04
Carbon Tetrachloride	ND	0.5	0.06
1,2-Dichloroethane	ND	0.5	0.06
Benzene	0.1 J	0.5	0.03
Trichloroethene	ND	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.07
4-Methyl-2-Pentanone	ND	10	0.3
cis-1,3-Dichloropropene	ND	0.5	0.04
Toluene	0.08 J	0.5	0.05
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.06
2-Hexanone	ND	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.06
Chlorobenzene	ND	0.5	0.05
Ethylbenzene	0.5 J	0.5	0.1
Styrene	0.08 J	0.5	0.06
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.06
1,2-Dichloroethene (total)	ND	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	110	86-118
1,2-Dichloroethane-d4	114	80-120
Toluene-d8	102	88-110
Bromofluorobenzene	104	86-115

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026008	Batch#:	117112
Lab ID:	189203-008	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L	Analyzed:	09/06/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.3
Vinyl Chloride	ND	0.5	0.1
Bromomethane	ND	1.0	0.3
Chloroethane	ND	1.0	0.5
Acetone	10 1.8 J U5	10	0.2
Freon 113	ND	0.5	0.2
1,1-Dichloroethene	ND	0.5	0.2
Methylene Chloride	ND	10	0.3
Carbon Disulfide	ND	0.5	0.1
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	ND U5	10	0.2
Chloroform	ND	0.5	0.2
1,1,1-Trichloroethane	ND	0.5	0.1
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.2
Benzene	ND	0.5	0.1
Trichloroethene	ND	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.2
Bromodichloromethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.1
cis-1,3-Dichloropropene	ND	0.5	0.09
Toluene	ND	0.5	0.09
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.2
2-Hexanone	ND U5	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.2
Chlorobenzene	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.1
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.2
1,2-Dichloroethene (total)	ND	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	94	86-118
1,2-Dichloroethane-d4	91	80-120
Toluene-d8	103	88-110
Bromofluorobenzene	93	86-115

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026009	Batch#:	117110
Lab ID:	189203-009	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L	Analyzed:	09/06/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.09
Vinyl Chloride	ND	0.5	0.2
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.1
Acetone	ND	10	0.5
Freon 113	ND	0.5	0.09
1,1-Dichloroethene	ND	0.5	0.09
Methylene Chloride	ND	10	0.2
Carbon Disulfide	ND	0.5	0.04
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.06
2-Butanone	0.9 J	10	0.3
Chloroform	ND	0.5	0.04
1,1,1-Trichloroethane	ND	0.5	0.04
Carbon Tetrachloride	ND	0.5	0.06
1,2-Dichloroethane	ND	0.5	0.06
Benzene	0.1 J	0.5	0.03
Trichloroethene	ND	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.07
4-Methyl-2-Pentanone	ND	10	0.3
cis-1,3-Dichloropropene	ND	0.5	0.04
Toluene	0.07 J	0.5	0.05
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.06
2-Hexanone	ND	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.06
Chlorobenzene	ND	0.5	0.05
Ethylbenzene	ND	0.5	0.1
Styrene	ND	0.5	0.06
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.06
1,2-Dichloroethene (total)	ND	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	109	86-118
1,2-Dichloroethane-d4	112	80-120
Toluene-d8	101	88-110
Bromofluorobenzene	106	86-115

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026010	Batch#:	117112
Lab ID:	189203-010	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L	Analyzed:	09/06/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.3
Vinyl Chloride	ND	0.5	0.1
Bromomethane	ND	1.0	0.3
Chloroethane	ND	1.0	0.5
Acetone	~~0.8 J~~ 10 U5	10	0.2
Freon 113	ND	0.5	0.2
1,1-Dichloroethene	ND	0.5	0.2
Methylene Chloride	ND	10	0.3
Carbon Disulfide	ND	0.5	0.1
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	ND U5	10	0.2
Chloroform	ND	0.5	0.2
1,1,1-Trichloroethane	ND	0.5	0.1
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.2
Benzene	ND	0.5	0.1
Trichloroethene	ND	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.2
Bromodichloromethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.1
cis-1,3-Dichloropropene	ND	0.5	0.09
Toluene	ND	0.5	0.09
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.2
2-Hexanone	ND U5	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.2
Chlorobenzene	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.1
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.2
1,2-Dichloroethene (total)	ND	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	97	86-118
1,2-Dichloroethane-d4	93	80-120
Toluene-d8	104	88-110
Bromofluorobenzene	91	86-115

ALL
all 8 lbs

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026011	Batch#:	117110
Lab ID:	189203-011	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L	Analyzed:	09/06/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.09
Vinyl Chloride	ND	0.5	0.2
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.1
Acetone	ND	10	0.5
Freon 113	ND	0.5	0.09
1,1-Dichloroethene	ND	0.5	0.09
Methylene Chloride	ND	10	0.2
Carbon Disulfide	ND	0.5	0.04
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.06
2-Butanone	ND	10	0.3
Chloroform	0.06 J	0.5	0.04
1,1,1-Trichloroethane	ND	0.5	0.04
Carbon Tetrachloride	ND	0.5	0.06
1,2-Dichloroethane	ND	0.5	0.06
Benzene	ND	0.5	0.03
Trichloroethene	ND	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.07
4-Methyl-2-Pentanone	ND	10	0.3
cis-1,3-Dichloropropene	ND	0.5	0.04
Toluene	ND	0.5	0.05
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.06
2-Hexanone	ND	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.06
Chlorobenzene	ND	0.5	0.05
Ethylbenzene	ND	0.5	0.1
Styrene	ND	0.5	0.06
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.06
1,2-Dichloroethene (total)	ND	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	111	86-118
1,2-Dichloroethane-d4	115	80-120
Toluene-d8	102	88-110
Bromofluorobenzene	106	86-115

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026012	Diln Fac:	1.000
Lab ID:	189203-012	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L		

Analyte	Result	RL	MDL	Batch#	Analyzed
Chloromethane	ND	1.0	0.09	117156	09/07/06
Vinyl Chloride	ND	0.5	0.2	117156	09/07/06
Bromomethane	ND	1.0	0.2	117156	09/07/06
Chloroethane	ND	1.0	0.1	117156	09/07/06
Acetone	10 ~~3.1 J~~ UJ	10	0.2	117112	09/06/06
Freon 113	0.3 J	0.5	0.09	117156	09/07/06
1,1-Dichloroethene	ND	0.5	0.09	117156	09/07/06
Methylene Chloride	ND	10	0.2	117156	09/07/06
Carbon Disulfide	0.8	0.5	0.04	117156	09/07/06
Vinyl Acetate	ND UJ	10	0.1	117156	09/07/06
1,1-Dichloroethane	0.4 J	0.5	0.06	117156	09/07/06
2-Butanone	ND	10	0.3	117156	09/07/06
Chloroform	ND	0.5	0.04	117156	09/07/06
1,1,1-Trichloroethane	ND	0.5	0.04	117156	09/07/06
Carbon Tetrachloride	ND	0.5	0.06	117156	09/07/06
1,2-Dichloroethane	ND	0.5	0.06	117156	09/07/06
Benzene	0.07 J	0.5	0.03	117156	09/07/06
Trichloroethene	ND	0.5	0.09	117156	09/07/06
1,2-Dichloropropane	ND	0.5	0.1	117156	09/07/06
Bromodichloromethane	ND	0.5	0.07	117156	09/07/06
4-Methyl-2-Pentanone	ND	10	0.3	117156	09/07/06
cis-1,3-Dichloropropene	ND	0.5	0.04	117156	09/07/06
Toluene	0.1 J	0.5	0.05	117156	09/07/06
trans-1,3-Dichloropropene	ND	0.5	0.06	117156	09/07/06
1,1,2-Trichloroethane	ND	0.5	0.06	117156	09/07/06
2-Hexanone	ND	10	0.1	117156	09/07/06
Tetrachloroethene	ND	0.5	0.09	117156	09/07/06
Dibromochloromethane	ND	0.5	0.06	117156	09/07/06
Chlorobenzene	ND	0.5	0.05	117156	09/07/06
Ethylbenzene	ND	0.5	0.1	117156	09/07/06
Styrene	ND	0.5	0.06	117156	09/07/06
Bromoform	ND	1.0	0.1	117156	09/07/06
1,1,2,2-Tetrachloroethane	ND	0.5	0.06	117156	09/07/06
1,2-Dichloroethene (total)	0.2 J	0.5		117156	
Xylene (total)	0.2 J	0.5		117156	

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	106	86-118	117156	09/07/06
1,2-Dichloroethane-d4	110	80-120	117156	09/07/06
Toluene-d8	101	88-110	117156	09/07/06
Bromofluorobenzene	102	86-115	117156	09/07/06

UJ water

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026013	Diln Fac:	1.000
Lab ID:	189203-013	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L		

Analyte	Result	RL	MDL	Batch#	Analyzed
Chloromethane	ND	1.0	0.09	117110	09/06/06
Vinyl Chloride	ND	0.5	0.2	117110	09/06/06
Bromomethane	ND	1.0	0.2	117110	09/06/06
Chloroethane	ND	1.0	0.1	117110	09/06/06
Acetone	3.6 J	10	0.9	117152	09/07/06
Freon 113	0.3 J	0.5	0.09	117110	09/06/06
1,1-Dichloroethene	ND	0.5	0.09	117110	09/06/06
Methylene Chloride	ND	10	0.2	117110	09/06/06
Carbon Disulfide	0.5 J	0.5	0.04	117110	09/06/06
Vinyl Acetate	ND	10	0.1	117110	09/06/06
1,1-Dichloroethane	0.4 J	0.5	0.06	117110	09/06/06
2-Butanone	1.1 J	10	0.3	117110	09/06/06
Chloroform	ND	0.5	0.04	117110	09/06/06
1,1,1-Trichloroethane	ND	0.5	0.04	117110	09/06/06
Carbon Tetrachloride	ND	0.5	0.06	117110	09/06/06
1,2-Dichloroethane	ND	0.5	0.06	117110	09/06/06
Benzene	ND	0.5	0.03	117110	09/06/06
Trichloroethene	ND	0.5	0.09	117110	09/06/06
1,2-Dichloropropane	ND	0.5	0.1	117110	09/06/06
Bromodichloromethane	ND	0.5	0.07	117110	09/06/06
4-Methyl-2-Pentanone	ND	10	0.3	117110	09/06/06
cis-1,3-Dichloropropene	ND	0.5	0.04	117110	09/06/06
Toluene	0.06 J	0.5	0.05	117110	09/06/06
trans-1,3-Dichloropropene	ND	0.5	0.06	117110	09/06/06
1,1,2-Trichloroethane	ND	0.5	0.06	117110	09/06/06
2-Hexanone	ND	10	0.1	117110	09/06/06
Tetrachloroethene	ND	0.5	0.09	117110	09/06/06
Dibromochloromethane	ND	0.5	0.06	117110	09/06/06
Chlorobenzene	ND	0.5	0.05	117110	09/06/06
Ethylbenzene	ND	0.5	0.1	117110	09/06/06
Styrene	ND	0.5	0.06	117110	09/06/06
Bromoform	ND	1.0	0.1	117110	09/06/06
1,1,2,2-Tetrachloroethane	ND	0.5	0.06	117110	09/06/06
1,2-Dichloroethene (total)	0.2 J	0.5		117110	
Xylene (total)	ND	0.5		117110	

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	111	86-118	117110	09/06/06
1,2-Dichloroethane-d4	113	80-120	117110	09/06/06
Toluene-d8	101	88-110	117110	09/06/06
Bromofluorobenzene	104	86-115	117110	09/06/06

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026014	Batch#:	117110
Lab ID:	189203-014	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L	Analyzed:	09/06/06
Diln Fac:	5.000		

Analyte	Result	RL	MDL
Chloromethane	ND	5.0	0.4
Vinyl Chloride	2.0 J	2.5	0.8
Bromomethane	ND	5.0	1.0
Chloroethane	ND	5.0	0.6
Acetone	ND	50	2.4
Freon 113	ND	2.5	0.5
1,1-Dichloroethene	0.6 J	2.5	0.4
Methylene Chloride	ND	50	1.1
Carbon Disulfide	ND	2.5	0.2
Vinyl Acetate	ND	50	0.5
1,1-Dichloroethane	0.4 J	2.5	0.3
2-Butanone	ND	50	1.3
Chloroform	ND	2.5	0.2
1,1,1-Trichloroethane	ND	2.5	0.2
Carbon Tetrachloride	ND	2.5	0.3
1,2-Dichloroethane	ND	2.5	0.3
Benzene	0.7 J	2.5	0.1
Trichloroethene	32	2.5	0.4
1,2-Dichloropropane	ND	2.5	0.6
Bromodichloromethane	ND	2.5	0.3
4-Methyl-2-Pentanone	ND	50	1.3
cis-1,3-Dichloropropene	ND	2.5	0.2
Toluene	ND	2.5	0.3
trans-1,3-Dichloropropene	ND	2.5	0.3
1,1,2-Trichloroethane	ND	2.5	0.3
2-Hexanone	ND	50	0.7
Tetrachloroethene	2.2 J	2.5	0.5
Dibromochloromethane	ND	2.5	0.3
Chlorobenzene	ND	2.5	0.2
Ethylbenzene	ND	2.5	0.5
Styrene	ND	2.5	0.3
Bromoform	ND	5.0	0.7
1,1,2,2-Tetrachloroethane	ND	2.5	0.3
1,2-Dichloroethene (total)	310	2.5	
Xylene (total)	ND	2.5	

Surrogate	%REC	Limits
Dibromofluoromethane	111	86-118
1,2-Dichloroethane-d4	114	80-120
Toluene-d8	100	88-110
Bromofluorobenzene	103	86-115

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189203	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	090606026015	Batch#:	117154
Lab ID:	189203-015	Sampled:	09/06/06
Matrix:	Water	Received:	09/06/06
Units:	ug/L	Analyzed:	09/07/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.1
Vinyl Chloride	ND	0.5	0.1
Bromomethane	ND	1.0	0.3
Chloroethane	ND	1.0	0.1
Acetone	ND	10	0.2
Freon 113	5.1	0.5	0.07
1,1-Dichloroethene	ND	0.5	0.1
Methylene Chloride	ND	10	0.2
Carbon Disulfide	0.1 J	0.5	0.1
Vinyl Acetate	ND	10	0.4
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	1.0 J	10	0.1
Chloroform	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.06
Carbon Tetrachloride	ND	0.5	0.2
1,2-Dichloroethane	ND	0.5	0.1
Benzene	ND	0.5	0.1
Trichloroethene	0.2 J	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.1
cis-1,3-Dichloropropene	ND	0.5	0.2
Toluene	0.09 J	0.5	0.06
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.1
Tetrachloroethene	0.5	0.5	0.1
Dibromochloromethane	ND	0.5	0.06
Chlorobenzene	ND	0.5	0.2
Ethylbenzene	0.7	0.5	0.04
Styrene	ND	0.5	0.2
Bromoform	0.2 J	1.0	0.09
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2-Dichloroethene (total)	1.3	0.5	
Xylene (total)	6.2	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	114	86-118
1,2-Dichloroethane-d4	118	80-120
Toluene-d8	105	88-110
Bromofluorobenzene	104	86-115

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Flag Summary Table

Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	90606026002	189203-2	N	189203	acetone	4.4J	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026002	189203-2	N	189203	2-butanone	1.1J	J	1.1J	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026002	189203-2	N	189203	2-hexanone	0.1J	J	0.1J	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	9060606026004	189203-4	N	189203	acetone	1.6J	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	9060606026004	189203-4	N	189203	2-butanone	0.5J	J	0.5J	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	9060606026004	189203-4	N	189203	2-hexanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026006	189203-6	N	189203	carbon disulfide	0.5	UJ	0.05UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026006	189203-6	N	189203	bromoform	0.1	U	1.0U	Method Blank Contamination
IR26	90606026008	189203-8	N	189203	acetone	1.8J	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026008	189203-8	N	189203	2-butanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026008	189203-8	N	189203	2-hexanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)

IR26	90606026010	189203-10	N	189203	acetone	0.8J	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026010	189203-10	N	189203	2-butanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026010	189203-10	N	189203	2-hexanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026012	189203-12	N	189203	acetone	3.1J	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026012	189203-13	N	189203	vinyl acetate	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026015	189203-15	N	189203	carbon disulfide	0.1J	J	0.1J	Continuing Calibration J (all detects), UJ (all non-detects)

Notes:

N - (normal) Primary Sample FD - Field Duplicate EB - Equipment Rinsate Blank SDG - Sample Delivery Group

Qualifier Codes:

J -Estimated value. Usually a number reported between Practical Quantitaion Limit (PQL) and Method Detection Limit (MDL).

< (reporting limit), J - Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit, and the reporting limit is estimated. The notation '< (reporting limit) J' is equivalent to the 'UJ (reporting limit)' notation used in the data validation reports (DVRs).

< (reporting limit) -Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit. The notation '< (reporting limit) is equivalent to the 'U (reporting limit)' notation used in the data validation reports (DVRs).

VALIDATA

Chemical Services, Inc.

4070 Balleycastle Lane, Duluth, GA 30097

(770) 232-0130
(770) 232-5082 (Fax)
www.datavalidator.com

DATA VALIDATION SUMMARY
REPORT

COMPANY:	ITSI
SITE NAME:	Alameda IR26 Data Gap Investigation
CONTRACTED LAB:	Curtis & Tompkins, LTD.
QA/QC LEVEL:	EPA Level III
EPA SOW/METHODS:	SW-846 & EPA Methodology
VALIDATION GUIDELINES:	*USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* 1999; *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* 1994
SAMPLE MATRIX:	Water
TYPES OF ANALYSES:	Total Metals, Alkalinity, Total Dissolved Solids (TDS)
SDG NUMBER:	189839

OVERVIEW

SAMPLES:

Client Sample #	Lab Sample #	Matrix	Total Metals*	Alkalinity	TDS
100206026001	189839-001	Water	X	X	X
100306026003	189839-002	Water	X	X	X
100306026004	189839-003	Water	X	X	X
100306026005	189839-004	Water	X	X	X
100306026006	189839-005	Water	X	X	X

* - total metals consisted of 15 analytes by Method 6020, one analyte by Method 6010 and mercury by Method 7470A

DATA REVIEWER(S): Amy L. Hogan, Kevin C. Harmon, Monalisa B. Beasley

RELEASE SIGNATURE: 

Data Qualifier Definitions

J	-	The associated numerical value is an estimated quantity.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

Curtis & Tompkins, LTD. - 189839 Inorganics

SAMPLES: 100206026001, 100306026003, 100306026004, 100306026005, 100306026006

TOTAL METALS

SUMMARY

All laboratory data were acceptable with qualification.

MAJOR ISSUES

There were no major issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Calibration:

All Calibration criteria were met. No action was required.

III.) CRDL Standards for ICP:

All CRDL criteria were met. No action was required.

IV.) Blanks:

The following results were the highest blank contamination levels associated with the samples:

Blank ID	Analyte	Blank Result	Action Level
CCB3	antimony	0.0217 ug/L	0.11 ug/L
CCB3	barium	0.0357 ug/L	0.18 ug/L
CCB2	cadmium	0.02257 ug/L	0.11 ug/L
CCB2	chromium	0.01252 ug/L	0.06 ug/L
CCB2	cobalt	0.01755 ug/L	0.09 ug/L
CCB2	lead	0.01966 ug/L	0.10 ug/L
PBW	molybdenum	0.19 ug/L	0.95 ug/L
CCB3	selenium	0.02451 ug/L	0.12 ug/L
CCB2	silver	0.01879 ug/L	0.09 ug/L
PBW	vanadium	0.058 ug/L	0.29 ug/L
PBW	zinc	1.3 ug/L	6.5 ug/L

All positive results for these analytes in the SDG samples less than 5X the blank amount were flagged as undetected (U).

V.) ICP Interference Check Sample Results:

All ICP Interference Check Sample Recovery criteria were met. No action was required.

VI.) ICP Serial Dilution Analysis:

Batch Serial Dilution Analysis was submitted for this fraction of the SDG. The Percent Differences (%Ds) for molybdenum at 46% and vanadium at 24% exceeded the 10% QC limit. Since the parent sample was not a client sample and the client site specific QC from other SDGs was within QC limits, using professional judgment, the validator determined that data qualification was not merited.

VII.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No action was necessary.

VIII.) Duplicate Sample Analysis:

All Duplicate Sample Analysis criteria were met. No action was required.

IX.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

Batch MS/MSD analyses were submitted for this fraction of the SDG. The following Percent Recoveries (%Rs) were below the 75-125% QC limits:

Analyte	MS, %R	MSD, %R
lead	65%	67%
molybdenum	71%	75%

Since the parent sample was not a client sample and the client site specific QC from other SDGs was within QC limits, using professional judgment, the validator determined that data qualification was not merited.

X.) Internal Standards Performance:

All Internal Standards Performance criteria were met. No action was required.

XI.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

XII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No action was required.

XIII.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRDL criteria were met. No action was taken.

XIV.) Quarterly Verification of Instrumental Parameters:

Quarterly Verification data were not submitted for this SDG. No action was required.

XV.) Contract Compliance:

All Contract Compliance criteria were met.

ALKALINITY

SUMMARY

All laboratory data were acceptable without qualification.

MAJOR ISSUES

There were no major issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Calibration:

Calibration criteria were not required for this fraction of the SDG. No action was taken.

III.) Blanks:

There were no detections in the blanks associated with this SDG. No action was required.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No action was necessary.

V.) Duplicate Sample Analysis:

All Duplicate Sample Analysis criteria were met. No action was required.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

Batch matrix spike and matrix spike duplicate analyses were submitted for this fraction of the SDG.

All MS/MSD criteria were met. No action was required.

VII.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

VIII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No action was required.

IX.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRDL criteria were met. No action was taken.

X.) Contract Compliance:

All Contract Compliance criteria were met.

TOTAL DISSOLVED SOLIDS

SUMMARY

All laboratory data were acceptable without qualification.

MAJOR ISSUES

There were no major issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Calibration:

Calibration criteria were not required for this fraction of the SDG. No action was taken.

III.) Blanks:

There were no detections in the blanks associated with this SDG. No action was required.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No action was necessary.

V.) Duplicate Sample Analysis:

All Duplicate Sample Analysis criteria were met. No action was required.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

An LCS / LCSD pair were submitted for this fraction of the SDG. All accuracy and precision criteria were met. No action was required.

VII.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

VIII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No action was required.

IX.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRDL criteria were met. No action was taken.

X.) Contract Compliance:

All Contract Compliance criteria were met.

Qualified Form I's

Curtis & Tompkins, Ltd.

Dissolved California Title 26 Metals

Lab #: 189839		Project#:	35-103.03
Client: Innovative Technical Solutions,Inc.		Location:	IR26 Site, Alameda Point
Field ID:	100206026001	Units:	ug/L
Lab ID:	189839-001	Sampled:	10/02/06
Matrix:	Filtrate	Received:	10/03/06

Analyte	Result	RL	MDL	Dil. Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	0.17 J	1.0	0.093	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Arsenic	12	1.0	0.34	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Barium	490	1.0	0.23	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Beryllium	ND	2.0	0.68	1.000	118097	10/04/06	10/07/06	200.8	EPA 6010B
Cadmium	ND	1.0	0.058	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Chromium	0.39 J	1.0	0.38	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Cobalt	1.4	1.0	0.072	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Copper	ND	1.0	0.28	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Lead	ND	1.0	0.13	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Mercury	ND	0.20	0.058	1.000	118202	10/06/06	10/06/06	METHOD	EPA 7470A
Molybdenum	2.4	1.0	0.063	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Nickel	2.0	1.0	0.29	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Selenium	ND	1.0	0.27	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Silver	ND	1.0	0.079	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Thallium	ND	1.0	0.30	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Vanadium	5.1	1.0	0.26	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Zinc	ND	5.0	0.62	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

2.0

Curtis & Tompkins, Ltd.

Dissolved California Title 26 Metals

Lab #:	189839	Project#:	35-103.03
Client:	Innovative Technical Solutions, Inc.	Location:	IR26 Site, Alameda Point
Field ID:	100306026003	Units:	ug/L
Lab ID:	189839-002	Sampled:	10/03/06
Matrix:	Filtrate	Received:	10/03/06

Analyte	Result	RL	MDL	Dil'n Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	0.31 J	1.0	0.093	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Arsenic	8.5	1.0	0.34	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Barium	610	1.0	0.23	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Beryllium	ND	2.0	0.68	1.000	118097	10/04/06	10/07/06	200.8	EPA 6010B
Cadmium	ND	1.0	0.058	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Chromium	1.0 J	1.0	0.38	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Cobalt	1.4	1.0	0.072	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Copper	ND	1.0	0.28	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Lead	ND	1.0	0.13	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Mercury	ND	0.20	0.058	1.000	118202	10/06/06	10/06/06	METHOD	EPA 7470A
Molybdenum	1.4	1.0	0.063	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Nickel	1.9	1.0	0.29	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Selenium	0.28 J	1.0	0.27	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Silver	ND	1.0	0.079	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Thallium	ND	1.0	0.30	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Vanadium	7.6	1.0	0.26	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Zinc	5.7 U	5.0	0.62	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

3.0

Curtis & Tompkins, Ltd.

Dissolved California Title 26 Metals

Lab #:	189839	Project#:	35-103.03
Client:	Innovative Technical Solutions, Inc.	Location:	IR26 Site, Alameda Point
Field ID:	100306026004	Units:	ug/L
Lab ID:	189839-003	Sampled:	10/03/06
Matrix:	Filtrate	Received:	10/03/06

Analyte		Result	RL	MDL	Dil'n Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony		0.42 J	1.0	0.093	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Arsenic		11	1.0	0.34	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Barium		290	1.0	0.23	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Beryllium	ND		2.0	0.68	1.000	118097	10/04/06	10/07/06	200.8	EPA 6010B
Cadmium	ND		1.0	0.058	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Chromium	ND		1.0	0.38	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Cobalt		1.1	1.0	0.072	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Copper	ND		1.0	0.28	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Lead	ND		1.0	0.13	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Mercury	ND		0.20	0.058	1.000	118202	10/06/06	10/06/06	METHOD	EPA 7470A
Molybdenum		8.6	1.0	0.063	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Nickel		3.4	1.0	0.29	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Selenium	ND		1.0	0.27	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Silver	ND		1.0	0.079	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Thallium	ND		1.0	0.30	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Vanadium		7.7	1.0	0.26	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Zinc		5.9 U	5.0	0.62	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

4.0

Curtis & Tompkins, Ltd.

Dissolved California Title 26 Metals

Lab #:	189839	Project#:	35-103.03
Client:	Innovative Technical Solutions, Inc.	Location:	IR26 Site, Alameda Point
Field ID:	100306026005	Units:	ug/L
Lab ID:	189839-004	Sampled:	10/03/06
Matrix:	Filtrate	Received:	10/03/06

Analyte	Result	RL	MDL	Diln Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	0.31 J	1.0	0.093	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Arsenic	11	1.0	0.34	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Barium	780	1.0	0.23	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Beryllium	ND	2.0	0.68	1.000	118097	10/04/06	10/07/06	200.8	EPA 6010B
Cadmium	ND	1.0	0.058	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Chromium	ND	1.0	0.38	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Cobalt	0.68 J	1.0	0.072	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Copper	ND	1.0	0.28	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Lead	ND	1.0	0.13	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Mercury	ND	0.20	0.058	1.000	118202	10/06/06	10/06/06	METHOD	EPA 7470A
Molybdenum	34	1.0	0.063	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Nickel	1.5	1.0	0.29	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Selenium	ND	1.0	0.27	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Silver	ND	1.0	0.079	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Thallium	ND	1.0	0.30	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Vanadium	3.9	1.0	0.26	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Zinc	6.3 J	5.0	0.62	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

5.0

Curtis & Tompkins, Ltd.

Dissolved California Title 26 Metals

Lab #: 189839		Project#:	35-103.03
Client: Innovative Technical Solutions, Inc.		Location:	IR26 Site, Alameda Point
Field ID:	100306026006	Units:	ug/L
Lab ID:	189839-005	Sampled:	10/03/06
Matrix:	Filtrate	Received:	10/03/06

Analyte	Result	RL	MDL	Dilu Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	0.44 J	1.0	0.093	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Arsenic	10	1.0	0.34	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Barium	1,000	1.0	0.23	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Beryllium	ND	2.0	0.68	1.000	118097	10/04/06	10/07/06	200.8	EPA 6010B
Cadmium	ND	1.0	0.058	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Chromium	0.44 J	1.0	0.38	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Cobalt	2.1	1.0	0.072	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Copper	0.31 J	1.0	0.28	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Lead	ND	1.0	0.13	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Mercury	ND	0.20	0.058	1.000	118202	10/06/06	10/06/06	METHOD	EPA 7470A
Molybdenum	4.9	1.0	0.063	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Nickel	5.9	1.0	0.29	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Selenium	ND	1.0	0.27	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Silver	ND	1.0	0.079	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Thallium	ND	1.0	0.30	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Vanadium	13	1.0	0.26	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020
Zinc	7.2	5.0	0.62	10.00	118097	10/04/06	10/05/06	200.8	EPA 6020

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

6.0

Curtis & Tompkins, Ltd.

Alkalinity

Lab #:	189839	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	METHOD
Project#:	35-103.03	Analysis:	EPA 310.1
Matrix:	Water	Batch#:	118409
Units:	mg/L	Received:	10/03/06
Diln Fac:	1.000	Analyzed:	10/13/06

Field ID: 100206026001 Lab ID: 189839-001
Type: SAMPLE Sampled: 10/02/06

Analyte	Result	RL
Alkalinity, Bicarbonate	1,500	6.7
Alkalinity, Carbonate	ND	6.7
Alkalinity, Hydroxide	ND	6.7
Alkalinity, Total as CaCO3	1,500	6.7

Field ID: 100306026003 Lab ID: 189839-002
Type: SAMPLE Sampled: 10/03/06

Analyte	Result	RL
Alkalinity, Bicarbonate	2,200	10
Alkalinity, Carbonate	ND	10
Alkalinity, Hydroxide	ND	10
Alkalinity, Total as CaCO3	2,200	10

Field ID: 100306026004 Lab ID: 189839-003
Type: SAMPLE Sampled: 10/03/06

Analyte	Result	RL
Alkalinity, Bicarbonate	1,800	10
Alkalinity, Carbonate	ND	10
Alkalinity, Hydroxide	ND	10
Alkalinity, Total as CaCO3	1,800	10

ND= Not Detected
RL= Reporting Limit

15.0

Curtis & Tompkins, Ltd.

Alkalinity

Lab #:	189839	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	METHOD
Project#:	35-103.03	Analysis:	EPA 310.1
Matrix:	Water	Batch#:	118409
Units:	mg/L	Received:	10/03/06
Diln Fac:	1.000	Analyzed:	10/13/06

Field ID: 100306026005 Lab ID: 189839-004
Type: SAMPLE Sampled: 10/03/06

Analyte	Result	RL
Alkalinity, Bicarbonate	1,400	10
Alkalinity, Carbonate	ND	10
Alkalinity, Hydroxide	ND	10
Alkalinity, Total as CaCO3	1,400	10

Field ID: 100306026006 Lab ID: 189839-005
Type: SAMPLE Sampled: 10/03/06

Analyte	Result	RL
Alkalinity, Bicarbonate	1,900	10
Alkalinity, Carbonate	ND	10
Alkalinity, Hydroxide	ND	10
Alkalinity, Total as CaCO3	1,900	10

Type: BLANK Lab ID: QC360209

Analyte	Result	RL
Alkalinity, Bicarbonate	ND	1.0
Alkalinity, Carbonate	ND	1.0
Alkalinity, Hydroxide	ND	1.0
Alkalinity, Total as CaCO3	ND	1.0

ND= Not Detected
RL= Reporting Limit

15.0

Curtis & Tompkins, Ltd.

Total Dissolved Solids (TDS)

Lab #:	189839	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	METHOD
Project#:	35-103.03	Analysis:	EPA 160.1
Analyte:	Total Dissolved Solids	Batch#:	118236
Matrix:	Water	Received:	10/03/06
Units:	mg/L	Analyzed:	10/06/06
Diln Fac:	1.000		

Field ID	Type	Lab ID	Result	RL	Sampled
100206026001	SAMPLE	189839-001	13,300	10	10/02/06
100306026003	SAMPLE	189839-002	19,900	10	10/03/06
100306026004	SAMPLE	189839-003	15,000	10	10/03/06
100306026005	SAMPLE	189839-004	10,500	10	10/03/06
100306026006	SAMPLE	189839-005	15,900	10	10/03/06
	BLANK	QC359481	ND	10	

ND= Not Detected
RL= Reporting Limit

Flag Summary Table

Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	100306026003	189839-2	N	189839	zinc	5.7	U	5.7U	Method Blank Contamination
IR26	100306026004	189839-3	N	189839	zinc	5.9	U	5.9U	Method Blank Contamination
IR26	100306026005	189839-4	N	189839	zinc	6.3	U	6.3U	Method Blank Contamination

Notes:

N - (normal) Primary Sample FD - Field Duplicate EB - Equipment Rinsate Blank SDG - Sample Delivery Group

Qualifier Codes:

J -Estimated value. Usually a number reported between Practical Quantitaion Limit (PQL) and Method Detection Limit (MDL).

< (reporting limit), J - Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit, and the reporting limit is estimated. The notation '< (reporting limit) J' is equivalent to the 'UJ (reporting limit)' notation used in the data validation reports (DVRs).

< (reporting limit) -Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit. The notation '< (reporting limit) is equivalent to the 'U (reporting limit)' notation used in the data validation reports (DVRs).

VALIDATA

Chemical Services, Inc.

4070 Balleycastle Lane, Duluth, GA 30097

(770) 232-0130
(770) 232-5082 (Fax)
www.datavalidator.com

DATA VALIDATION SUMMARY
REPORT

COMPANY:	ITSI
SITE NAME:	Alameda IR Data Gap Investigation
CONTRACTED LAB:	Curtis & Tompkins, LTD.
QA/QC LEVEL:	EPA Level III
EPA SOW/METHODS:	SW-846 & EPA Methodology
VALIDATION GUIDELINES:	*USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* 1999; *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* 1994
SAMPLE MATRIX:	Water
TYPES OF ANALYSES:	Volatile Organics (VOA)
SDG NUMBER:	189840

OVERVIEW

SAMPLES:

Client Sample #	Lab Sample #	Matrix	VOA
100206026001	189840-001	Water	X
100206026002A	189840-002	Water	X
100306026003	189840-003	Water	X
100306026004	189840-004	Water	X
100306026005	189840-005	Water	X
100306026006	189840-006	Water	X

DATA REVIEWER(S): Amy L. Hogan, Kevin C. Harmon, Monalisa B. Beasley

RELEASE SIGNATURE: Monalisa B. Beasley

Data Qualifier Definitions

J	-	The associated numerical value is an estimated quantity.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

Curtis & Tompkins, LTD. - 189840 Organics

SAMPLES: 100206026001, 100206026002A, 100306026003, 100306026004, 100306026005, 100306026006

VOLATILE ORGANICS

SUMMARY

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no major problems associated with this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. It was noted by the laboratory that the samples were submitted to the laboratory unpreserved. Since the samples were analyzed immediately, using professional judgment, the validator determined that data qualification was not merited.

II.) GC / MS Tuning:

All GC / MS Tuning criteria were met. No action was necessary.

III.) Calibration:

Initial Calibration:

The Percent Difference (%D) of 27% for carbon disulfide in the second source calibration on 9/29/06 on instrument MSVOA08 exceeded the 25% QC limit. The positive result for carbon disulfide in associated sample 100306026004 was flagged as estimated (J).

Continuing Calibration:

The Percent Differences (%Ds) of 31% for freon 113, 26% for 1,1,1-trichloroethane and 34% for carbon tetrachloride for the standards run on 10/8/06 at 20:03 on instrument MSVOA08 exceeded the 25% QC limit. The results for these compounds in associated sample 100306026004, which consisted entirely of non-detects, were flagged as estimated (UJ).

The Percent Differences (%Ds) of 32% for bromomethane, 26% for 2-butanone and 40% for carbon tetrachloride for the standards run on 10/5/06 at 09:13 on instrument MSVOA11 exceeded the 25% QC

limit. All positive and non-detect results for these compounds in the associated samples were flagged as estimated (J) and (UJ). The associated samples were 100206026001, 100206026002A, 100306026003, 100306026005 and 100306026006.

IV.) Blanks:

Method Blanks:

Acetone and chloroform were detected at 0.3 ug/L and 0.09 ug/L, respectively, in method blank QC359092. All positive results for acetone in the associated samples, which were less than 10X the blank amount, were flagged as undetected (U) with the results less than the CRQL being raised to the CRQL. There were no positive results for chloroform in the associated samples, so no further action was required. The associated samples were 100206026001, 100206026002A, 100306026003, 100306026005 and 100306026006.

Acetone was detected at 0.9 ug/L in method blank QC359440. The positive result for acetone in associated sample 100306026004, which was less than 10X the blank amount, was flagged as undetected (U) with the results less than the CRQL being raised to the CRQL.

Tentatively Identified Compounds (TIC):

TIC data were not supplied for this SDG. No action was required.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) of 1,2-dichloroethane-d4 exceeded the 80-120% QC limits for the following samples:

Sample	1,2-dichloroethane-d4, %R
100206026001	126%
100206026002A	125%
100306026003	129%
100306026005	128%
100306026006	127%

All positive results for these samples were flagged as estimated (J).

VI.) Laboratory Control Samples (LCS):

Two LCS/LCSD sets were analyzed by the laboratory. All LCS criteria were met. No action was required.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were not submitted for this SDG. Data qualification based on MS/MSD criteria was not required. No action was taken.

VIII.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

IX.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No action was required.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was taken.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No action was required.

XII.) Tentatively Identified Compounds (TICs):

TIC data were not submitted for this SDG. No action was taken.

XIII.) Contract Compliance:

All Contract Compliance criteria were met.

Qualified Form I's

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189840	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	100206026001	Batch#:	118152
Lab ID:	189840-001	Sampled:	10/02/06
Matrix:	Water	Received:	10/03/06
Units:	ug/L	Analyzed:	10/05/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.2
Vinyl Chloride	ND	0.5	0.04
Bromomethane	ND U5	1.0	0.2
Chloroethane	ND	1.0	0.2
Acetone	10 ~~1.3 J~~ U	10	0.2
Freon 113	ND	0.5	0.2
1,1-Dichloroethene	ND	0.5	0.1
Methylene Chloride	ND	10	0.09
Carbon Disulfide	ND	0.5	0.07
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	0.6 J J	10	0.08
Chloroform	ND	0.5	0.08
1,1,1-Trichloroethane	ND	0.5	0.1
Carbon Tetrachloride	ND U5	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.09
Benzene	ND	0.5	0.08
Trichloroethene	ND	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.09
Bromodichloromethane	ND	0.5	0.09
4-Methyl-2-Pentanone	ND	10	0.07
cis-1,3-Dichloropropene	ND	0.5	0.08
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.09
Chlorobenzene	ND	0.5	0.07
Ethylbenzene	ND	0.5	0.07
Styrene	ND	0.5	0.05
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2-Dichloroethene (total)	ND	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	102	86-118
1,2-Dichloroethane-d4	126 *	80-120
Toluene-d8	100	88-110
Bromofluorobenzene	104	86-115

Lab water

*= Value outside of QC limits; see narrative
J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189840	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	100206026002A	Batch#:	118152
Lab ID:	189840-002	Sampled:	10/02/06
Matrix:	Water	Received:	10/03/06
Units:	ug/L	Analyzed:	10/05/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.2
Vinyl Chloride	ND	0.5	0.04
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.2
Acetone	10 2.3 J	10	0.2
Freon 113	ND	0.5	0.2
1,1-Dichloroethene	ND	0.5	0.1
Methylene Chloride	0.1 J	10	0.09
Carbon Disulfide	ND	0.5	0.07
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	ND	10	0.08
Chloroform	ND	0.5	0.08
1,1,1-Trichloroethane	ND	0.5	0.1
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.09
Benzene	ND	0.5	0.08
Trichloroethene	ND	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.09
Bromodichloromethane	ND	0.5	0.09
4-Methyl-2-Pentanone	ND	10	0.07
cis-1,3-Dichloropropene	ND	0.5	0.08
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.09
Chlorobenzene	ND	0.5	0.07
Ethylbenzene	ND	0.5	0.07
Styrene	ND	0.5	0.05
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2-Dichloroethene (total)	ND	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	105	86-118
1,2-Dichloroethane-d4	125 *	80-120
Toluene-d8	98	88-110
Bromofluorobenzene	105	86-115

*= Value outside of QC limits; see narrative
J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

3.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189840	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	100306026003	Batch#:	118152
Lab ID:	189840-003	Sampled:	10/03/06
Matrix:	Water	Received:	10/03/06
Units:	ug/L	Analyzed:	10/05/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.2
Vinyl Chloride	0.2 J	0.5	0.04
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.2
Acetone	0.9 J	10	0.2
Freon 113	ND	0.5	0.2
1,1-Dichloroethene	ND	0.5	0.1
Methylene Chloride	ND	10	0.09
Carbon Disulfide	ND	0.5	0.07
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	ND	10	0.08
Chloroform	ND	0.5	0.08
1,1,1-Trichloroethane	ND	0.5	0.1
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.09
Benzene	0.5 J	0.5	0.08
Trichloroethene	ND	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.09
Bromodichloromethane	ND	0.5	0.09
4-Methyl-2-Pentanone	ND	10	0.07
cis-1,3-Dichloropropene	ND	0.5	0.08
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.09
Chlorobenzene	ND	0.5	0.07
Ethylbenzene	ND	0.5	0.07
Styrene	ND	0.5	0.05
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2-Dichloroethene (total)	0.2 J	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	107	86-118
1,2-Dichloroethane-d4	129 *	80-120
Toluene-d8	98	88-110
Bromofluorobenzene	104	86-115

*= Value outside of QC limits; see narrative
J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

4.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189840	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	100306026004	Batch#:	118227
Lab ID:	189840-004	Sampled:	10/03/06
Matrix:	Water	Received:	10/03/06
Units:	ug/L	Analyzed:	10/08/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.1
Vinyl Chloride	0.7	0.5	0.1
Bromomethane	ND	1.0	0.3
Chloroethane	ND	1.0	0.1
Acetone	~~1.9 J~~ U	10	0.2
Freon 113	ND	0.5	0.07
1,1-Dichloroethene	ND	0.5	0.1
Methylene Chloride	ND	10	0.2
Carbon Disulfide	0.1 ~~J~~	0.5	0.1
Vinyl Acetate	ND	10	0.4
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	0.4 J	10	0.1
Chloroform	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.06
Carbon Tetrachloride	ND	0.5	0.2
1,2-Dichloroethane	ND	0.5	0.1
Benzene	0.7	0.5	0.1
Trichloroethene	10	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.1
cis-1,3-Dichloropropene	ND	0.5	0.2
Toluene	ND	0.5	0.06
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.1
Tetrachloroethene	ND	0.5	0.1
Dibromochloromethane	ND	0.5	0.06
Chlorobenzene	ND	0.5	0.2
Ethylbenzene	0.09 J	0.5	0.04
Styrene	ND	0.5	0.2
Bromoform	0.1 J	1.0	0.09
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2-Dichloroethene (total)	4.2	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	100	86-118
1,2-Dichloroethane-d4	93	80-120
Toluene-d8	97	88-110
Bromofluorobenzene	108	86-115

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189840	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	100306026005	Batch#:	118152
Lab ID:	189840-005	Sampled:	10/03/06
Matrix:	Water	Received:	10/03/06
Units:	ug/L	Analyzed:	10/05/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.2
Vinyl Chloride	ND	0.5	0.04
Bromomethane	ND UJ	1.0	0.2
Chloroethane	ND	1.0	0.2
Acetone	~~1.6 J~~ 10 U	10	0.2
Freon 113	ND	0.5	0.2
1,1-Dichloroethene	ND	0.5	0.1
Methylene Chloride	ND	10	0.09
Carbon Disulfide	ND	0.5	0.07
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	0.4 J	10	0.08
Chloroform	ND	0.5	0.08
1,1,1-Trichloroethane	ND	0.5	0.1
Carbon Tetrachloride	ND UJ	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.09
Benzene	ND	0.5	0.08
Trichloroethene	ND	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.09
Bromodichloromethane	ND	0.5	0.09
4-Methyl-2-Pentanone	ND	10	0.07
cis-1,3-Dichloropropene	ND	0.5	0.08
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.09
Chlorobenzene	ND	0.5	0.07
Ethylbenzene	ND	0.5	0.07
Styrene	ND	0.5	0.05
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2-Dichloroethene (total)	ND	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	105	86-118
1,2-Dichloroethane-d4	128 *	80-120
Toluene-d8	99	88-110
Bromofluorobenzene	103	86-115

Lee Wilkes

*= Value outside of QC limits; see narrative
J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189840	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	100306026006	Batch#:	118152
Lab ID:	189840-006	Sampled:	10/03/06
Matrix:	Water	Received:	10/03/06
Units:	ug/L	Analyzed:	10/05/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Chloromethane	ND	1.0	0.2
Vinyl Chloride	ND	0.5	0.04
Bromomethane	ND UJ	1.0	0.2
Chloroethane	ND	1.0	0.2
Acetone	10 ~~0.9 J~~ UJ	10	0.2
Freon 113	ND	0.5	0.2
1,1-Dichloroethene	ND	0.5	0.1
Methylene Chloride	ND	10	0.09
Carbon Disulfide	ND	0.5	0.07
Vinyl Acetate	ND	10	0.1
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	ND UJ	10	0.08
Chloroform	ND	0.5	0.08
1,1,1-Trichloroethane	ND	0.5	0.1
Carbon Tetrachloride	ND UJ	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.09
Benzene	ND	0.5	0.08
Trichloroethene	ND	0.5	0.09
1,2-Dichloropropane	ND	0.5	0.09
Bromodichloromethane	ND	0.5	0.09
4-Methyl-2-Pentanone	ND	10	0.07
cis-1,3-Dichloropropene	ND	0.5	0.08
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.06
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.1
Tetrachloroethene	ND	0.5	0.09
Dibromochloromethane	ND	0.5	0.09
Chlorobenzene	ND	0.5	0.07
Ethylbenzene	ND	0.5	0.07
Styrene	ND	0.5	0.05
Bromoform	ND	1.0	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2-Dichloroethene (total)	ND	0.5	
Xylene (total)	ND	0.5	

Surrogate	%REC	Limits
Dibromofluoromethane	107	86-118
1,2-Dichloroethane-d4	127 *	80-120
Toluene-d8	99	88-110
Bromofluorobenzene	102	86-115

*= Value outside of QC limits; see narrative
J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

7.0

Flag Summary Table

Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	100206026001	189840-1	N	189840	bromomethane	1	UJ	1.0UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100206026001	189840-1	N	189840	acetone	1.3J	U	10U	Method Blank Contamination
IR26	100206026001	189840-1	N	189840	2-butanone	0.6J	J	0.6J	Surrogate Recoveries J (all detects), UJ (all non-detects)
IR26	100206026001	189840-1	N	189840	carbon tetrachloride	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100206026002A	189840-2	N	189840	bromomethane	1	UJ	1.0UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100206026002A	189840-2	N	189840	acetone	2.3J	U	10U	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100206026002A	189840-2	N	189840	methylene chloride	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100206026002A	189840-2	N	189840	carbon tetrachloride	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026003	189840-3	N	189840	vinyl chloride	0.2J	J	0.2J	Surrogate Recoveries J (all detects), UJ (all non-detects)
IR26	100306026003	189840-3	N	189840	bromomethane	1	UJ	1.0UJ	Method Blank Contamination
IR26	100306026003	189840-3	N	189840	acetone	0.9J	U	10U	Continuing Calibration J (all detects), UJ (all non-detects)

IR26	100306026003	189840-3	N	189840	2-butanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026003	189840-3	N	189840	carbon tetrachloride	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026003	189840-3	N	189840	benzene	0.5J	J	0.5J	Surrogate Recoveries J (all detects), UJ (all non-detects)
IR26	100306026004	189840-4	N	189840	acetone	1.9J	U	10U	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026004	189840-4	N	189840	freon 113	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026004	189840-4	N	189840	carbon disulfide	0.1J	J	0.1J	Initial Calibration J (all detects), UJ (all non-detects)
IR26	100306026004	189840-4	N	189840	1,1,1-trichloroethane	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026004	189840-4	N	189840	carbon tetrachloride	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026005	189840-5	N	189840	bromomethane	1	UJ	1.0UJ	Continuing Calibration J (all detects), UJ (all non-detects)
	100306026005	189840-5	N	189840	acetone	1.6J	U	10U	
IR26	100306026005	189840-5	N	189840	2-butanone	0.4J	J	0.4J	Surrogate Recoveries J (all detects), UJ (all non-detects)
IR26	100306026005	189840-5	N	189840	carbon tetrachloride	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026006	189840-6	N	189840	bromomethane	1	UJ	1.0UJ	Continuing Calibration J (all detects), UJ (all non-detects)

IR26	100306026006	189840-6	N	189840	acetone	0.9J	U	10U	Method Blank Contamination
IR26	100306026006	189840-6	N	189840	2-butanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026006	189840-6	N	189840	carbon tetrachloride	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)

Notes:

N - (normal) Primary Sample FD - Field Duplicate EB - Equipment Rinsate Blank SDG - Sample Delivery Group

Qualifier Codes:

J -Estimated value. Usually a number reported between Practical Quantitaion Limit (PQL) and Method Detection Limit (MDL).

< (reporting limit), J - Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit, and the reporting limit is estimated. The notation '< (reporting limit) J' is equivalent to the 'UJ (reporting limit)' notation used in the data validation reports (DVRs).

< (reporting limit) -Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit. The notation '< (reporting limit) is equivalent to the 'U (reporting limit)' notation used in the data validation reports (DVRs).

VALIDATA

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DATA VALIDATION SUMMARY
REPORT

COMPANY:	ITSI
SITE NAME:	Alameda IR26 Data Gap INV.
CONTRACTED LAB:	Curtis & Tompkins, LTD.
QA/QC LEVEL:	EPA Level IV
EPA SOW/METHODS:	SW-846 & EPA Methodology
VALIDATION GUIDELINES:	*USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* 1999; *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* 1994
SAMPLE MATRIX:	Water
TYPES OF ANALYSES:	Total Metals, Alkalinity, Total Dissolved Solids (TDS)
SDG NUMBER:	189863

OVERVIEW

SAMPLES:

Client Sample #	Lab Sample #	Matrix	Total Metals*	Alkalinity	TDS
100406026007	189863-001	Water	X	X	X
100406026008D	189863-002	Water	X	X	X
100406026009	189863-003	Water	X	X	X

* - total metals consisted of 15 analytes by method 6010, one analyte by method 6020 and mercury by method 7470A

DATA REVIEWER(S): Amy L. Hogan, Kevin C. Harmon, Monalisa B. Beasley

RELEASE SIGNATURE:

Data Qualifier Definitions

J	-	The associated numerical value is an estimated quantity.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

Curtis & Tompkins, LTD. - 189863 Inorganics

SAMPLES: 100406026007, 100406026008D, 100406026009

TOTAL METALS

SUMMARY

All laboratory data were acceptable with qualification.

MAJOR ISSUES

There were no major issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Calibration:

All Calibration criteria were met. No action was required.

III.) CRDL Standards for ICP:

All CRDL criteria were met. No action was required.

IV.) Blanks:

The following results were the highest blank contamination levels associated with the samples:

Blank ID	Analyte	Blank Result	Action Level
CCB1	arsenic	1.886 ug/L	9.43 ug/L
ICB	copper	1.053 ug/L	5.27 ug/L
CCB2	lead	1.384 ug/L	6.92 ug/L
CCB1	molybdenum	4.468 ug/L	22.3 ug/L
ICB(10/20/06)	thallium	0.0228 ug/L	0.11 ug/L
CCB1(10/23/06)	thallium	0.02412 ug/L	0.12 ug/L
CCB1	selenium	2.646 ug/L	13.2 ug/L
CCB2	zinc	3.393 ug/L	17.0 ug/L

All positive results for these analytes in the SDG samples that were less than 5X the blank amount were

flagged as undetected (U).

V.) ICP Interference Check Sample Results:

All ICP Interference Check Sample Recovery criteria were met. No action was required.

VI.) ICP Serial Dilution Analysis:

All Serial Dilution Analysis criteria was met. No action was required.

VII.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No action was necessary.

VIII.) Duplicate Sample Analysis:

All Duplicate Sample Analysis criteria were met. No action was required.

IX.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

Batch matrix spike and matrix spike duplicate analyses were submitted for this fraction of the SDG. All MS/MSD criteria were met. No action was required.

X.) Internal Standards Performance:

All Internal Standards Performance criteria were met. No action was required.

XI.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

XII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No action was required.

XIII.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The barium result for sample 100406026007 was taken from the analysis performed on 10/23/06 at 09:40, while the results for all other ICP analytes were taken from the analysis performed on 10/23/06 at 10:15. The Form I is a composite of the results, so no action was required.

All other CRDL criteria were met. No action was taken.

XIV.) Quarterly Verification of Instrumental Parameters:

Quarterly Verification data were not submitted for this SDG. No action was required.

XV.) Contract Compliance:

All Contract Compliance criteria were met.

ALKALINITY

SUMMARY

All laboratory data were acceptable without qualification.

MAJOR ISSUES

There were no major issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Calibration:

Calibration criteria were not required for this fraction of the SDG. No action was taken.

III.) Blanks:

There were no detections in the blanks associated with this SDG. No action was required.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No action was necessary.

V.) Duplicate Sample Analysis:

All Duplicate Sample Analysis criteria were met. No action was required.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

Batch matrix spike and matrix spike duplicate analyses were submitted for this fraction of the SDG. All MS/MSD criteria were met. No action was required.

VII.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

VIII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No action was required.

IX.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRDL criteria were met. No action was taken.

X.) Contract Compliance:

All Contract Compliance criteria were met.

TOTAL DISSOLVED SOLIDS

SUMMARY

All laboratory data were acceptable without qualification.

MAJOR ISSUES

There were no major issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Calibration:

Calibration criteria were not required for this fraction of the SDG. No action was taken.

III.) Blanks:

There were no detections in the blanks associated with this SDG. No action was required.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No action was necessary.

V.) Duplicate Sample Analysis:

All Duplicate Sample Analysis criteria were met. No action was required.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

An LCS / LCSD pair were submitted for this fraction of the SDG. All accuracy and precision criteria

were met. No action was required.

VII.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

VIII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No action was required.

IX.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRDL criteria were met. No action was taken.

X.) Contract Compliance:

All Contract Compliance criteria were met.

Qualified Form I's

Curtis & Tompkins, Ltd.

Dissolved California Title 26 Metals

Lab #:	189863	Project#:	STANDARD
Client:	Innovative Technical Solutions, Inc.	Location:	Data Gap Investigation IR26
Field ID:	100406026007	Sampled:	10/04/06
Lab ID:	189863-001	Received:	10/04/06
Matrix:	Filtrate	Prepared:	10/06/06
Units:	ug/L		

Analyte	Result	RL	MDL	Dil'n Fac	Batch#	Analyzed	Prep	Analysis
Antimony	19 J	60	3.6	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Arsenic	8.4 U	5.0	1.0	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Barium	1,300	10	0.41	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Beryllium	ND	2.0	0.21	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Cadmium	ND	5.0	0.55	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Chromium	ND	10	0.56	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Cobalt	ND	20	0.46	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Copper	4.1 J U	10	0.71	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Lead	ND	3.0	0.57	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Mercury	ND	0.20	0.058	1.000	118202	10/06/06	METHOD	EPA 7470A
Molybdenum	12 J U	20	0.43	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Nickel	3.7 J	20	0.92	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Selenium	ND	5.0	1.6	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Silver	ND	5.0	1.4	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Thallium	ND	1.0	0.30	10.00	118193	10/23/06	EPA 3010A	EPA 6020
Vanadium	ND	10	0.42	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Zinc	2.6 J U	20	1.5	1.000	118193	10/23/06	EPA 3010A	EPA 6010B

J= Estimated value
ND= Not Detected
RL= Reporting Limit
IDL= Method Detection Limit

Revised 10/24/06 -TKM

5.3

Curtis & Tompkins, Ltd.

Dissolved California Title 26 Metals

Lab #:	189863	Project#:	STANDARD
Client:	Innovative Technical Solutions, Inc.	Location:	Data Gap Investigation IR26
Field ID:	100406026008D	Sampled:	10/04/06
Lab ID:	189863-002	Received:	10/04/06
Matrix:	Filtrate	Prepared:	10/06/06
Units:	ug/L		

Analyte	Result	RL	MDL	Dil'n Fac	Batch#	Analyzed	Prep	Analysis
Antimony	13 J	60	3.6	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Arsenic	11	5.0	1.0	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Barium	1,400	10	0.41	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Beryllium	ND	2.0	0.21	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Cadmium	ND	5.0	0.55	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Chromium	ND	10	0.56	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Cobalt	ND	20	0.46	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Copper	4.5 J U	10	0.71	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Lead	ND	3.0	0.57	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Mercury	ND	0.20	0.058	1.000	118202	10/06/06	METHOD	EPA 7470A
Molybdenum	16 J U	20	0.43	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Nickel	4.7 J	20	0.92	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Selenium	ND	5.0	1.6	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Silver	ND	5.0	1.4	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Thallium	ND	1.0	0.30	10.00	118193	10/20/06	EPA 3010A	EPA 6020
Vanadium	ND	10	0.42	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Zinc	16 J U	20	1.5	1.000	118193	10/23/06	EPA 3010A	EPA 6010B

J= Estimated value
U= Not Detected
RL= Reporting Limit
DL= Method Detection Limit

Revised 10/24/06 - TK

6.4

Curtis & Tompkins, Ltd.

Dissolved California Title 26 Metals

Lab #:	189863	Project#:	STANDARD
Client:	Innovative Technical Solutions, Inc.	Location:	Data Gap Investigation IR26
Field ID:	100406026009	Sampled:	10/04/06
Lab ID:	189863-003	Received:	10/04/06
Matrix:	Filtrate	Prepared:	10/06/06
Units:	ug/L		

Analyte	Result	RL	MDL	Dil Fac	Batch#	Analyzed	Prep	Analysis
Antimony	11 J	60	3.6	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Arsenic	32	5.0	1.0	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Barium	450	10	0.41	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Beryllium	ND	2.0	0.21	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Cadmium	ND	5.0	0.55	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Chromium	ND	10	0.56	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Cobalt	0.90 J	20	0.46	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Copper	5.8 J	10	0.71	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Lead	ND	3.0	0.57	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Mercury	ND	0.20	0.058	1.000	118202	10/06/06	METHOD	EPA 7470A
Molybdenum	8.4 J	20	0.43	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Nickel	4.8 J	20	0.92	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Selenium	ND	5.0	1.6	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Silver	ND	5.0	1.4	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Thallium	ND	1.0	0.30	10.00	118193	10/20/06	EPA 3010A	EPA 6020
Vanadium	ND	10	0.42	1.000	118193	10/23/06	EPA 3010A	EPA 6010B
Zinc	3.4 J	20	1.5	1.000	118193	10/23/06	EPA 3010A	EPA 6010B

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Revised 10/24/06

7.5

Curtis & Tompkins, Ltd.

Alkalinity

Lab #:	189863	Location:	Data Gap Investigation IR26
Client:	Innovative Technical Solutions,Inc.	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 310.1
Matrix:	Water	Sampled:	10/04/06
Units:	mg/L	Received:	10/04/06
Diln Fac:	1.000	Analyzed:	10/13/06
Batch#:	118409		

Field ID: 100406026007 Lab ID: 189863-001
Type: SAMPLE

Analyte	Result	RL
Alkalinity, Bicarbonate	1,400	6.7
Alkalinity, Carbonate	ND	6.7
Alkalinity, Hydroxide	ND	6.7
Alkalinity, Total as CaCO3	1,400	6.7

Field ID: 100406026008D Lab ID: 189863-002
Type: SAMPLE

Analyte	Result	RL
Alkalinity, Bicarbonate	1,600	10
Alkalinity, Carbonate	ND	10
Alkalinity, Hydroxide	ND	10
Alkalinity, Total as CaCO3	1,600	10

Field ID: 100406026009 Lab ID: 189863-003
Type: SAMPLE

Analyte	Result	RL
Alkalinity, Bicarbonate	1,300	10
Alkalinity, Carbonate	ND	10
Alkalinity, Hydroxide	ND	10
Alkalinity, Total as CaCO3	1,300	10

Type: BLANK Lab ID: QC360209

Analyte	Result	RL
Alkalinity, Bicarbonate	ND	1.0
Alkalinity, Carbonate	ND	1.0
Alkalinity, Hydroxide	ND	1.0
Alkalinity, Total as CaCO3	ND	1.0

ND= Not Detected
RL= Reporting Limit

Flag Summary Table

Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	100406026007	189863-1	N	189863	arsenic	8.4	U		Blank contamination
IR26	100406026007	189863-1	N	189863	copper	4.1J	U		Blank contamination
IR26	100406026007	189863-1	N	189863	molybdenum	12J	U		Blank contamination
IR26	100406026007	189863-1	N	189863	zinc	2.6J	U		Blank contamination
IR26	100406026008D	189863-2	N	189863	copper	4.5J	U		Blank contamination
IR26	100406026008D	189863-2	N	189863	molybdenum	16J	U		Blank contamination
IR26	100406026008D	189863-2	N	189863	zinc	16J	U		Blank contamination
IR26	100406026009	189863-3	N	189863	molybdenum	8.4J	U		Blank contamination
IR26	100406026009	189863-3	N	189863	zinc	3.4J	U		Blank contamination

Notes:

N - (normal) Primary Sample FD - Field Duplicate EB - Equipment Rinsate Blank SDG - Sample Delivery Group

Qualifier Codes:

J -Estimated value. Usually a number reported between Practical Quantitaion Limit (PQL) and Method Detection Limit (MDL).

< (reporting limit), J - Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit, and the reporting limit is estimated. The notation '< (reporting limit) J' is equivalent to the 'UJ (reporting limit)' notation used in the data validation reports (DVRs).

< (reporting limit) -Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit. The notation '< (reporting limit) is equivalent to the 'U (reporting limit)' notation used in the data validation reports (DVRs).

VALIDATA

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(770) 232-5082 (Fax)
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DATA VALIDATION SUMMARY
REPORT

COMPANY:	ITSI
SITE NAME:	Alameda IR Data Gap Investigation
CONTRACTED LAB:	Curtis & Tompkins, LTD.
QA/QC LEVEL:	EPA Level III
EPA SOW/METHODS:	SW-846 & EPA Methodology
VALIDATION GUIDELINES:	*USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* 1999; *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* 1994
SAMPLE MATRIX:	Soil
TYPES OF ANALYSES:	Volatile Organics (VOA), Semivolatile Organics (SVOA), Total Petroleum Hydrocarbons - Diesel Range Organics (TPH-DRO), Total Metals
SDG NUMBER:	189908

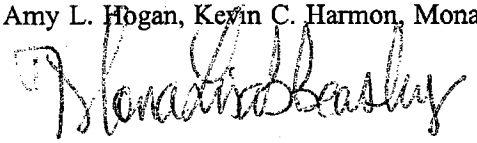
OVERVIEW

SAMPLES:

Client Sample #	Lab Sample #	Matrix	VOA	SVOA
100506026011	189908-001	Soil	X	X
100506026012	189908-002	Soil	X	X
100506026013	189908-003	Soil	X	X
100506026013MS	189908-003MS	Soil		X
100506026013MSD	189908-003MSD	Soil		X

Client Sample #	Lab Sample #	Matrix	TPH-DRO	Total Metals
100506026011	189908-001	Soil	X	X
100506026012	189908-002	Soil	X	X
100506026013	189908-003	Soil	X	X
100506026013MS	189908-003MS	Soil	X	
100506026013MSD	189908-003MSD	Soil	X	
100506026011MS	189908-001MS	Soil		X
100506026011MSD	189908-001MSD	Soil		X

DATA REVIEWER(S): Amy L. Hogan, Kevin C. Harmon, Monalisa B. Beasley

RELEASE SIGNATURE: 

Data Qualifier Definitions

J	-	The associated numerical value is an estimated quantity.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

Curtis & Tompkins, LTD. - 189908 Organics & Inorganics

SAMPLES: 100506026011, 100506026012, 100506026013

VOLATILE ORGANICS

SUMMARY

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no major problems associated with this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) GC / MS Tuning:

All GC / MS Tuning criteria were met. No action was necessary.

III.) Calibration:

Initial Calibration:

The Percent Difference (%D) of 26% for hexachlorobutadiene in the second source calibration on 9/21/06 on instrument MSVOA02 exceeded the 25% QC limit. Since there were no positive results for this compound in the SDG samples, no action was required.

Continuing Calibration:

The Percent Differences (%Ds) of 28% for acetone and 31% for 2-butanone for the standards run on 10/6/06 at 10:07 on instrument MSVOA02 exceeded the 25% QC limit. All positive and non-detect results for these compounds in associated samples 100506026011 and 100506026012 were flagged as estimated (J) and (UJ).

The Percent Difference (%D) of 28% for 2-hexanone for the standards run on 10/16/06 at 08:50 on instrument MSVOA2 exceeded the 25% QC limit. The non-detect result for this compound in associated sample 10506026013 was flagged as estimated (UJ).

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V.) Blanks:

Method Blanks:

Methylene chloride was detected at 0.90 ug/kg in method blank QC359292. The positive result for methylene chloride in associated sample 100506026012, which was less than 10X the blank contamination, was flagged as undetected (U) with the result being raised to the CRQL.

Tentatively Identified Compounds (TIC):

TIC data were not supplied for this SDG. No action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was required.

VI.) Laboratory Control Samples (LCS):

Two LCS were analyzed by the laboratory. All LCS criteria were met. No action was required.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

Two sets of batch MS / MSD analyses were submitted for this SDG. The Percent Recoveries (%Rs) of trichloroethene at 149% for both replicates in one set of the MS/MSD samples exceeded the 65-131% QC limits. Data qualification based on MS/MSD criteria was not required. No action was taken.

VIII.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

IX.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No action was required.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was taken.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No action was required.

XII.) Tentatively Identified Compounds (TICs):

TIC data were not submitted for this SDG. No action was taken.

XIII.) Contract Compliance:

All Contract Compliance criteria were met.

SEMIVOLATILE ORGANICS

SUMMARY

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no major problems associated with this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) GC / MS Tuning:

All GC / MS Tuning criteria were met. No action was necessary.

III.) Calibration:

All Initial and Continuing Calibration criteria were met. No action was required.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks associated with this fraction of the SDG. No action was required.

Tentatively Identified Compounds (TIC):

TIC data were not supplied for this SDG. No action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was required.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory. All LCS criteria were met. No action was required.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS/MSD analyses were performed on SDG sample 100506026013. All MS/MSD criteria were met. No action was required.

VIII.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

IX.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No action was required.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was taken.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No action was required.

XII.) Tentatively Identified Compounds (TICs):

TIC data were not submitted for this SDG. No action was taken.

XIII.) Contract Compliance:

All Contract Compliance criteria were met.

TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS (TPH-DRO)

SUMMARY

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no major problems associated with this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Instrument Performance:

All Instrument Performance criteria were met. No action was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No action was required.

Continuing Calibration:

The Percent Difference (%D) of 17% for hexacosane in the standards run on 10/15/06 at 12:23 on instrument GC17A exceeded the 15% QC limit. Since the compound is a surrogate, no action was required.

IV.) Blanks:

Method Blanks:

Diesel Range Organics were reported at 0.54 mg/kg for method blank QC359818. All positive results for diesel range organics in the SDG samples were greater than 5X the blank contamination, so no further action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was required.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory. All LCS criteria were met. No action was required.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed on SDG sample 100506026013. All MS/MSD criteria were met. No action was required.

VIII.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was taken.

X.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No action was required.

XI.) Contract Compliance:

All Contract Compliance criteria were met.

TOTAL METALS

SUMMARY

All laboratory data were acceptable with qualification.

MAJOR ISSUES

There were no major issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Calibration:

All Calibration criteria were met. No action was required.

III.) CRDL Standards for ICP:

All CRDL criteria were met. No action was required.

IV.) Blanks:

The following results were the highest blank contamination levels associated with the samples:

Blank ID	Analyte	Blank Result	Action Level
CCB2	arsenic	2.107 ug/L	10.5 mg/kg
CCB2	lead	2.466 ug/L	12.3 mg/kg
PBS	molybdenum	0.027 mg/kg	0.135 mg/kg
CCB2	vanadium	1.197 ug/L	6.0 mg/kg

All positive results for these analytes in the SDG samples that were less than 5X the blank amount were flagged as undetected (U).

V.) ICP Interference Check Sample Results:

All ICP Interference Check Sample Recovery criteria were met. No action was required.

VI.) ICP Serial Dilution Analysis:

Two separate Serial Dilution Analyses were submitted for this fraction of the SDG. All Serial dilution analysis criteria were met for sample 100506026011. The Percent Differences (%Ds) exceeded the 10% QC limit for the batch serial dilution analysis for the following analytes:

Analyte	%D
arsenic	14%
barium	28%
beryllium	22%
chromium	23%
copper	12%
lead	27%
nickel	27%
vanadium	19%
zinc	29%

Since the parent sample was not a client sample, using professional judgment, the validator determined that data qualification was not merited.

VII.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No action was necessary.

VIII.) Duplicate Sample Analysis:

All Duplicate Sample Analysis criteria were met. No action was required.

IX.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS/MSD analyses were performed on SDG sample 100506026011. The Percent Recoveries (%Rs) were 44% and 45% for copper, which were below the 75-125% QC limits. All positive and non-detect results for copper in the SDG samples were flagged as estimated (J) and (UJ).

Batch MS/MSD analyses were also submitted for this fraction of the SDG. The following Percent Recoveries (%Rs) were below the 75-125% QC limits:

Analyte	MS, %R	MSD, %R
arsenic	66%	48%
beryllium	69%	64%
cadmium	62%	59%
chromium	56%	51%
cobalt	45%	40%
copper	43%	48%

1

Analyte	MS, %R	MSD, %R
lead		38%
molybdenum	61%	57%
selenium	64%	58%
silver	62%	52%
thallium	56%	

Since the parent sample was not a client sample, using professional judgment, the validator determined that data qualification was not merited.

X.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

XI.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No action was required.

XIII.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No action was required.

XIV.) Quarterly Verification of Instrumental Parameters:

Quarterly Verification data were not submitted for this SDG. No action was required.

XV.) Contract Compliance:

All Contract Compliance criteria were met.

Qualified Form I's

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5035
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	100506026011	Diln Fac:	0.8065
Lab ID:	189908-001	Batch#:	118197
Matrix:	Soil	Sampled:	10/05/06
Units:	ug/Kg	Received:	10/05/06
Basis:	dry	Analyzed:	10/06/06

Moisture: 21%

Analyte	Result	RL	MDL
Freon 12	ND	10	0.63
Chloromethane	ND	10	0.16
Vinyl Chloride	ND	10	0.24
Bromomethane	ND	10	0.77
Chloroethane	ND	10	1.4
Trichlorofluoromethane	ND	5.1	0.55
Acetone	4.0 J	20	1.6
Freon 113	ND	5.1	0.49
1,1-Dichloroethene	ND	5.1	0.58
Methylene Chloride	ND	20	0.68
Carbon Disulfide	ND	5.1	0.39
MTBE	ND	5.1	0.20
trans-1,2-Dichloroethene	ND	5.1	0.40
Vinyl Acetate	ND	51	0.29
1,1-Dichloroethane	ND	5.1	0.19
2-Butanone	ND	10	1.0
cis-1,2-Dichloroethene	ND	5.1	0.31
2,2-Dichloropropane	ND	5.1	0.32
Chloroform	ND	5.1	0.26
Bromochloromethane	ND	5.1	0.34
1,1,1-Trichloroethane	ND	5.1	0.29
1,1-Dichloropropene	ND	5.1	0.26
Carbon Tetrachloride	ND	5.1	0.41
1,2-Dichloroethane	ND	5.1	0.20
Benzene	ND	5.1	0.14
Trichloroethene	ND	5.1	0.33
1,2-Dichloropropane	ND	5.1	0.20
Bromodichloromethane	ND	5.1	0.14
Dibromomethane	ND	5.1	0.25
4-Methyl-2-Pentanone	ND	10	0.50
cis-1,3-Dichloropropene	ND	5.1	0.21
Toluene	ND	5.1	0.56
trans-1,3-Dichloropropene	ND	5.1	0.13
1,1,2-Trichloroethane	ND	5.1	0.54
2-Hexanone	ND	10	0.70
1,3-Dichloropropane	ND	5.1	0.25
Tetrachloroethene	ND	5.1	0.50
Dibromochloromethane	ND	5.1	0.31
1,2-Dibromoethane	ND	5.1	0.23
Chlorobenzene	ND	5.1	0.53
1,1,1,2-Tetrachloroethane	ND	5.1	0.53
Ethylbenzene	ND	5.1	0.60
m,p-Xylenes	ND	5.1	1.3
o-Xylene	ND	5.1	0.53
Styrene	ND	5.1	0.54
Bromoform	ND	5.1	0.16
Isopropylbenzene	ND	5.1	0.73
1,1,2,2-Tetrachloroethane	ND	5.1	0.37
1,2,3-Trichloropropane	ND	5.1	0.48
Propylbenzene	ND	5.1	0.80

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5035
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	100506026011	Diln Fac:	0.8065
Lab ID:	189908-001	Batch#:	118197
Matrix:	Soil	Sampled:	10/05/06
Units:	ug/Kg	Received:	10/05/06
Basis:	dry	Analyzed:	10/06/06

Analyte	Result	RL	MDL
Bromobenzene	ND	5.1	0.67
1,3,5-Trimethylbenzene	ND	5.1	0.85
2-Chlorotoluene	ND	5.1	0.73
4-Chlorotoluene	ND	5.1	0.87
tert-Butylbenzene	ND	5.1	0.83
1,2,4-Trimethylbenzene	ND	5.1	0.85
sec-Butylbenzene	ND	5.1	1.0
para-Isopropyl Toluene	ND	5.1	0.95
1,3-Dichlorobenzene	ND	5.1	0.86
1,4-Dichlorobenzene	ND	5.1	0.71
n-Butylbenzene	ND	5.1	0.94
1,2-Dichlorobenzene	ND	5.1	0.71
1,2-Dibromo-3-Chloropropane	ND	5.1	0.60
1,2,4-Trichlorobenzene	ND	5.1	0.97
Hexachlorobutadiene	ND	5.1	1.4
Naphthalene	1.9 J	5.1	0.67
1,2,3-Trichlorobenzene	ND	5.1	0.94

Surrogate	%REC	Limits
Dibromofluoromethane	95	79-120
1,2-Dichloroethane-d4	98	76-130
Toluene-d8	98	80-120
Bromofluorobenzene	100	80-126

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5035
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	100506026012	Diln Fac:	0.9804
Lab ID:	189908-002	Batch#:	118197
Matrix:	Soil	Sampled:	10/05/06
Units:	ug/Kg	Received:	10/05/06
Basis:	dry	Analyzed:	10/06/06

Moisture: 29%

Analyte	Result	RL	MDL
Freon 12	ND	14	0.85
Chloromethane	ND	14	0.21
Vinyl Chloride	ND	14	0.33
Bromomethane	ND	14	1.0
Chloroethane	ND	14	1.9
Trichlorofluoromethane	ND	6.9	0.74
Acetone	6.9 ~~J~~ J	28	2.2
Freon 113	ND	6.9	0.66
1,1-Dichloroethene	ND	6.9	0.79
Methylene Chloride	28 ~~0.98 J~~ U	28	0.91
Carbon Disulfide	ND	6.9	0.53
MTBE	ND	6.9	0.26
trans-1,2-Dichloroethene	ND	6.9	0.55
Vinyl Acetate	ND	69	0.39
1,1-Dichloroethane	ND	6.9	0.25
2-Butanone	1.5 ~~J~~ J	14	1.4
cis-1,2-Dichloroethene	ND	6.9	0.42
2,2-Dichloropropane	ND	6.9	0.44
Chloroform	ND	6.9	0.35
Bromochloromethane	ND	6.9	0.46
1,1,1-Trichloroethane	ND	6.9	0.39
1,1-Dichloropropene	ND	6.9	0.35
Carbon Tetrachloride	ND	6.9	0.56
1,2-Dichloroethane	ND	6.9	0.27
Benzene	ND	6.9	0.19
Trichloroethene	ND	6.9	0.45
1,2-Dichloropropane	ND	6.9	0.27
Bromodichloromethane	ND	6.9	0.18
Dibromomethane	ND	6.9	0.33
4-Methyl-2-Pentanone	ND	14	0.68
cis-1,3-Dichloropropene	ND	6.9	0.29
Toluene	ND	6.9	0.76
trans-1,3-Dichloropropene	ND	6.9	0.18
1,1,2-Trichloroethane	ND	6.9	0.73
2-Hexanone	ND	14	0.95
1,3-Dichloropropane	ND	6.9	0.34
Tetrachloroethene	ND	6.9	0.67
Dibromochloromethane	ND	6.9	0.41
1,2-Dibromoethane	ND	6.9	0.31
Chlorobenzene	ND	6.9	0.71
1,1,1,2-Tetrachloroethane	ND	6.9	0.72
Ethylbenzene	ND	6.9	0.80
m,p-Xylenes	ND	6.9	1.8
o-Xylene	ND	6.9	0.71
Styrene	ND	6.9	0.73
Bromoform	ND	6.9	0.22
Isopropylbenzene	ND	6.9	0.99
1,1,2,2-Tetrachloroethane	ND	6.9	0.51
1,2,3-Trichloropropane	ND	6.9	0.65
Propylbenzene	ND	6.9	1.1

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

27.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5035
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	100506026012	Diln Fac:	0.9804
Lab ID:	189908-002	Batch#:	118197
Matrix:	Soil	Sampled:	10/05/06
Units:	ug/Kg	Received:	10/05/06
Basis:	dry	Analyzed:	10/06/06

Analyte	Result	RL	MDL
Bromobenzene	ND	6.9	0.91
1,3,5-Trimethylbenzene	ND	6.9	1.1
2-Chlorotoluene	ND	6.9	0.98
4-Chlorotoluene	ND	6.9	1.2
tert-Butylbenzene	ND	6.9	1.1
1,2,4-Trimethylbenzene	ND	6.9	1.2
sec-Butylbenzene	ND	6.9	1.4
para-Isopropyl Toluene	ND	6.9	1.3
1,3-Dichlorobenzene	ND	6.9	1.2
1,4-Dichlorobenzene	ND	6.9	0.97
n-Butylbenzene	ND	6.9	1.3
1,2-Dichlorobenzene	ND	6.9	0.95
1,2-Dibromo-3-Chloropropane	ND	6.9	0.81
1,2,4-Trichlorobenzene	ND	6.9	1.3
Hexachlorobutadiene	ND	6.9	2.0
Naphthalene	ND	6.9	0.91
1,2,3-Trichlorobenzene	ND	6.9	1.3

Surrogate	%REC	Limits
Dibromofluoromethane	94	79-120
1,2-Dichloroethane-d4	100	76-130
Toluene-d8	98	80-120
Bromofluorobenzene	94	80-126

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5035
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	100506026013	Diln Fac:	25.00
Lab ID:	189908-003	Batch#:	118444
Matrix:	Soil	Sampled:	10/05/06
Units:	ug/Kg	Received:	10/05/06
Basis:	dry	Analyzed:	10/16/06

Moisture: 26%

Analyte	Result	RL	MDL
Freon 12	ND	340	38
Chloromethane	ND	340	25
Vinyl Chloride	ND	340	46
Bromomethane	ND	340	23
Chloroethane	ND	340	120
Trichlorofluoromethane	ND	170	38
Acetone	ND	680	120
Freon 113	50 J	170	49
1,1-Dichloroethene	ND	170	32
Methylene Chloride	ND	680	29
Carbon Disulfide	ND	170	23
MTBE	ND	170	18
trans-1,2-Dichloroethene	ND	170	23
Vinyl Acetate	ND	1,700	37
1,1-Dichloroethane	ND	170	22
2-Butanone	ND	340	87
cis-1,2-Dichloroethene	ND	170	19
2,2-Dichloropropane	ND	170	24
Chloroform	ND	170	33
Bromochloromethane	ND	170	24
1,1,1-Trichloroethane	ND	170	30
1,1-Dichloropropene	ND	170	26
Carbon Tetrachloride	ND	170	26
1,2-Dichloroethane	ND	170	20
Benzene	ND	170	20
Trichloroethene	ND	170	18
1,2-Dichloropropane	ND	170	21
Bromodichloromethane	ND	170	16
Dibromomethane	ND	170	15
4-Methyl-2-Pentanone	ND	340	25
cis-1,3-Dichloropropene	ND	170	18
Toluene	ND	170	15
trans-1,3-Dichloropropene	ND	170	15
1,1,2-Trichloroethane	ND	170	11
2-Hexanone	ND	340	25
1,3-Dichloropropane	ND	170	33
Tetrachloroethene	ND	170	38
Dibromochloromethane	ND	170	30
1,2-Dibromoethane	ND	170	35
Chlorobenzene	ND	170	24
1,1,1,2-Tetrachloroethane	ND	170	20
Ethylbenzene	ND	170	12
m,p-Xylenes	ND	170	34
o-Xylene	ND	170	17
Styrene	ND	170	17
Bromoform	ND	170	20
Isopropylbenzene	ND	170	17
1,1,2,2-Tetrachloroethane	ND	170	20
1,2,3-Trichloropropane	ND	170	28
Propylbenzene	ND	170	20

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5035
Project#:	35-103.03	Analysis:	EPA 8260B
Field ID:	100506026013	Diln Fac:	25.00
Lab ID:	189908-003	Batch#:	118444
Matrix:	Soil	Sampled:	10/05/06
Units:	ug/Kg	Received:	10/05/06
Basis:	dry	Analyzed:	10/16/06

Analyte	Result	RL	MDL
Bromobenzene	ND	170	23
1,3,5-Trimethylbenzene	69 J	170	16
2-Chlorotoluene	ND	170	19
4-Chlorotoluene	ND	170	22
tert-Butylbenzene	ND	170	20
1,2,4-Trimethylbenzene	190	170	19
sec-Butylbenzene	34 J	170	16
para-Isopropyl Toluene	79 J	170	18
1,3-Dichlorobenzene	ND	170	10
1,4-Dichlorobenzene	ND	170	14
n-Butylbenzene	160 J	170	16
1,2-Dichlorobenzene	ND	170	16
1,2-Dibromo-3-Chloropropane	ND	170	21
1,2,4-Trichlorobenzene	ND	170	12
Hexachlorobutadiene	ND	170	20
Naphthalene	590	170	7.9
1,2,3-Trichlorobenzene	ND	170	12

Surrogate	%REC	Limits
Dibromofluoromethane	101	79-120
1,2-Dichloroethane-d4	110	76-130
Toluene-d8	96	80-120
Bromofluorobenzene	99	80-126
Trifluorotoluene (MeOH)	92	53-133

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 3550B
Project#:	35-103.03	Analysis:	EPA 8270C
Field ID:	100506026011	Batch#:	118242
Lab ID:	189908-001	Sampled:	10/05/06
Matrix:	Soil	Received:	10/05/06
Units:	ug/Kg	Prepared:	10/09/06
Basis:	dry	Analyzed:	10/09/06
Diln Fac:	1.000		

Moisture: 21%

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	430	38
Phenol	ND	430	47
bis(2-Chloroethyl)ether	ND	430	39
2-Chlorophenol	ND	430	89
1,3-Dichlorobenzene	ND	430	42
1,4-Dichlorobenzene	ND	430	47
Benzyl alcohol	ND	430	43
1,2-Dichlorobenzene	ND	430	45
2-Methylphenol	ND	430	51
bis(2-Chloroisopropyl) ether	ND	430	38
4-Methylphenol	ND	430	56
N-Nitroso-di-n-propylamine	ND	430	42
Hexachloroethane	ND	430	46
Nitrobenzene	ND	430	35
Isophorone	ND	430	60
2-Nitrophenol	ND	850	89
2,4-Dimethylphenol	ND	430	88
Benzoic acid	ND	2,100	120
bis(2-Chloroethoxy)methane	ND	430	43
2,4-Dichlorophenol	ND	430	66
1,2,4-Trichlorobenzene	ND	430	45
Naphthalene	ND	85	43
4-Chloroaniline	ND	430	24
Hexachlorobutadiene	ND	430	44
4-Chloro-3-methylphenol	ND	430	91
2-Methylnaphthalene	ND	85	49
Hexachlorocyclopentadiene	ND	850	66
2,4,6-Trichlorophenol	ND	430	70
2,4,5-Trichlorophenol	ND	430	74
2-Chloronaphthalene	ND	430	44
2-Nitroaniline	ND	850	49
Dimethylphthalate	ND	430	40
Acenaphthylene	32 J	85	28
2,6-Dinitrotoluene	ND	430	42
3-Nitroaniline	ND	850	25
Acenaphthene	57 J	85	40
2,4-Dinitrophenol	ND	850	40
4-Nitrophenol	ND	850	85
Dibenzofuran	ND	430	47
2,4-Dinitrotoluene	ND	430	38
Diethylphthalate	ND	430	42
Fluorene	55 J	85	39
4-Chlorophenyl-phenylether	ND	430	46
4-Nitroaniline	ND	850	22
4,6-Dinitro-2-methylphenol	ND	850	49
N-Nitrosodiphenylamine	ND	430	40
Azobenzene	ND	430	30
4-Bromophenyl-phenylether	ND	430	43
Hexachlorobenzene	ND	430	44

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 3550B
Project#:	35-103.03	Analysis:	EPA 8270C
Field ID:	100506026011	Batch#:	118242
Lab ID:	189908-001	Sampled:	10/05/06
Matrix:	Soil	Received:	10/05/06
Units:	ug/Kg	Prepared:	10/09/06
Basis:	dry	Analyzed:	10/09/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Pentachlorophenol	ND	850	170
Phenanthrene	700	85	40
Anthracene	86	85	26
Di-n-butylphthalate	48 J	430	33
Fluoranthene	930	85	41
Pyrene	1,500	85	44
Butylbenzylphthalate	ND	430	48
3,3'-Dichlorobenzidine	ND	850	41
Benzo(a)anthracene	220	85	35
Chrysene	350	85	35
bis(2-Ethylhexyl)phthalate	1,200	430	66
Di-n-octylphthalate	ND	430	38
Benzo(b)fluoranthene	390	85	31
Benzo(k)fluoranthene	480	85	34
Benzo(a)pyrene	630	85	27
Indeno(1,2,3-cd)pyrene	240	85	37
Dibenz(a,h)anthracene	ND	85	35
Benzo(g,h,i)perylene	ND	85	33

Surrogate	%REC	Limits
2-Fluorophenol	69	38-120
Phenol-d5	64	36-120
2,4,6-Tribromophenol	60	30-120
Nitrobenzene-d5	60	46-120
2-Fluorobiphenyl	71	49-120
Terphenyl-d14	70	36-120

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

2.0

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 3550B
Project#:	35-103.03	Analysis:	EPA 8270C
Field ID:	100506026012	Batch#:	118242
Lab ID:	189908-002	Sampled:	10/05/06
Matrix:	Soil	Received:	10/05/06
Units:	ug/Kg	Prepared:	10/09/06
Basis:	dry	Analyzed:	10/09/06
Diln Fac:	1.000		

Moisture: 29%

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	470	42
Phenol	ND	470	52
bis(2-Chloroethyl)ether	ND	470	44
2-Chlorophenol	ND	470	98
1,3-Dichlorobenzene	ND	470	47
1,4-Dichlorobenzene	ND	470	52
Benzyl alcohol	ND	470	48
1,2-Dichlorobenzene	ND	470	50
2-Methylphenol	ND	470	57
bis(2-Chloroisopropyl) ether	ND	470	42
4-Methylphenol	ND	470	63
N-Nitroso-di-n-propylamine	ND	470	47
Hexachloroethane	ND	470	51
Nitrobenzene	ND	470	39
Isophorone	ND	470	67
2-Nitrophenol	ND	950	99
2,4-Dimethylphenol	ND	470	98
Benzoic acid	ND	2,400	130
bis(2-Chloroethoxy)methane	ND	470	48
2,4-Dichlorophenol	ND	470	74
1,2,4-Trichlorobenzene	ND	470	50
Naphthalene	ND	95	48
4-Chloroaniline	ND	470	27
Hexachlorobutadiene	ND	470	49
4-Chloro-3-methylphenol	ND	470	100
2-Methylnaphthalene	ND	95	55
Hexachlorocyclopentadiene	ND	950	74
2,4,6-Trichlorophenol	ND	470	78
2,4,5-Trichlorophenol	ND	470	82
2-Chloronaphthalene	ND	470	48
2-Nitroaniline	ND	950	54
Dimethylphthalate	ND	470	45
Acenaphthylene	ND	95	31
2,6-Dinitrotoluene	ND	470	47
3-Nitroaniline	ND	950	28
Acenaphthene	ND	95	44
2,4-Dinitrophenol	ND	950	45
4-Nitrophenol	ND	950	95
Dibenzofuran	ND	470	52
2,4-Dinitrotoluene	ND	470	43
Diethylphthalate	ND	470	46
Fluorene	ND	95	43
4-Chlorophenyl-phenylether	ND	470	51
4-Nitroaniline	ND	950	25
4,6-Dinitro-2-methylphenol	ND	950	55
N-Nitrosodiphenylamine	ND	470	45
Azobenzene	ND	470	34
4-Bromophenyl-phenylether	ND	470	48
Hexachlorobenzene	ND	470	48

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

3.0

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 3550B
Project#:	35-103.03	Analysis:	EPA 8270C
Field ID:	100506026012	Batch#:	118242
Lab ID:	189908-002	Sampled:	10/05/06
Matrix:	Soil	Received:	10/05/06
Units:	ug/Kg	Prepared:	10/09/06
Basis:	dry	Analyzed:	10/09/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Pentachlorophenol	ND	950	180
Phenanthrene	ND	95	45
Anthracene	ND	95	29
Di-n-butylphthalate	ND	470	37
Fluoranthene	46 J	95	45
Pyrene	140	95	49
Butylbenzylphthalate	ND	470	53
3,3'-Dichlorobenzidine	ND	950	46
Benzo(a)anthracene	ND	95	39
Chrysene	ND	95	38
bis(2-Ethylhexyl)phthalate	ND	470	74
Di-n-octylphthalate	ND	470	42
Benzo(b)fluoranthene	ND	95	34
Benzo(k)fluoranthene	39 J	95	38
Benzo(a)pyrene	61 J	95	30
Indeno(1,2,3-cd)pyrene	ND	95	41
Dibenz(a,h)anthracene	ND	95	38
Benzo(g,h,i)perylene	65 J	95	37

Surrogate	%REC	Limits
2-Fluorophenol	63	38-120
Phenol-d5	59	36-120
2,4,6-Tribromophenol	62	30-120
Nitrobenzene-d5	55	46-120
2-Fluorobiphenyl	65	49-120
Terphenyl-d14	66	36-120

J = Estimated value
ND = Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

3.0

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 3550B
Project#:	35-103.03	Analysis:	EPA 8270C
Field ID:	100506026013	Batch#:	118242
Lab ID:	189908-003	Sampled:	10/05/06
Matrix:	Soil	Received:	10/05/06
Units:	ug/Kg	Prepared:	10/09/06
Basis:	dry	Analyzed:	10/09/06
Diln Fac:	1.000		

Moisture: 26%

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	460	41
Phenol	ND	460	51
bis(2-Chloroethyl)ether	ND	460	42
2-Chlorophenol	ND	460	95
1,3-Dichlorobenzene	ND	460	45
1,4-Dichlorobenzene	ND	460	50
Benzyl alcohol	ND	460	46
1,2-Dichlorobenzene	ND	460	48
2-Methylphenol	ND	460	55
bis(2-Chloroisopropyl) ether	ND	460	41
4-Methylphenol	ND	460	61
N-Nitroso-di-n-propylamine	ND	460	45
Hexachloroethane	ND	460	49
Nitrobenzene	ND	460	38
Isophorone	ND	460	65
2-Nitrophenol	ND	910	95
2,4-Dimethylphenol	ND	460	95
Benzoic acid	ND	2,300	130
bis(2-Chloroethoxy)methane	ND	460	46
2,4-Dichlorophenol	ND	460	71
1,2,4-Trichlorobenzene	ND	460	48
Naphthalene	190	91	46
4-Chloroaniline	ND	460	26
Hexachlorobutadiene	ND	460	48
4-Chloro-3-methylphenol	ND	460	98
2-Methylnaphthalene	200	91	53
Hexachlorocyclopentadiene	ND	910	71
2,4,6-Trichlorophenol	ND	460	76
2,4,5-Trichlorophenol	ND	460	80
2-Chloronaphthalene	ND	460	47
2-Nitroaniline	ND	910	53
Dimethylphthalate	ND	460	43
Acenaphthylene	ND	91	30
2,6-Dinitrotoluene	ND	460	46
3-Nitroaniline	ND	910	27
Acenaphthene	ND	91	43
2,4-Dinitrophenol	ND	910	43
4-Nitrophenol	ND	910	91
Dibenzofuran	ND	460	50
2,4-Dinitrotoluene	ND	460	41
Diethylphthalate	ND	460	45
Fluorene	ND	91	42
4-Chlorophenyl-phenylether	ND	460	49
4-Nitroaniline	ND	910	24
4,6-Dinitro-2-methylphenol	ND	910	53
N-Nitrosodiphenylamine	ND	460	43
Azobenzene	ND	460	33
4-Bromophenyl-phenylether	ND	460	47
Hexachlorobenzene	ND	460	47

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 3550B
Project#:	35-103.03	Analysis:	EPA 8270C
Field ID:	100506026013	Batch#:	118242
Lab ID:	189908-003	Sampled:	10/05/06
Matrix:	Soil	Received:	10/05/06
Units:	ug/Kg	Prepared:	10/09/06
Basis:	dry	Analyzed:	10/09/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Pentachlorophenol	ND	910	180
Phenanthrene	240	91	43
Anthracene	32 J	91	28
Di-n-butylphthalate	ND	460	36
Fluoranthene	290	91	44
Pyrene	690	91	47
Butylbenzylphthalate	ND	460	51
3,3'-Dichlorobenzidine	ND	910	44
Benzo(a)anthracene	84 J	91	38
Chrysene	120	91	37
bis(2-Ethylhexyl)phthalate	620	460	71
Di-n-octylphthalate	ND	460	41
Benzo(b)fluoranthene	150	91	33
Benzo(k)fluoranthene	180	91	37
Benzo(a)pyrene	270	91	29
Indeno(1,2,3-cd)pyrene	160	91	40
Dibenz(a,h)anthracene	ND	91	37
Benzo(g,h,i)perylene	240	91	35

Surrogate	%REC	Limits
2-Fluorophenol	61	38-120
Phenol-d5	57	36-120
2,4,6-Tribromophenol	53	30-120
Nitrobenzene-d5	55	46-120
2-Fluorobiphenyl	60	49-120
Terphenyl-d14	63	36-120

J = Estimated value
ND = Not Detected
RL = Reporting Limit
MDL = Method Detection Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	SHAKER TABLE
Project#:	35-103.03	Analysis:	EPA 8015B
Field ID:	100506026011	Batch#:	118319
Lab ID:	189908-001	Sampled:	10/05/06
Matrix:	Soil	Received:	10/05/06
Units:	mg/Kg	Prepared:	10/11/06
Basis:	dry	Analyzed:	10/16/06
Diln Fac:	3.000		

Moisture: 21%

Analyte	Result	RL	MDL
Diesel C10-C24	220 H Y	3.8	1.4

Surrogate	%REC	Limits
Hexacosane	104	48-130

H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
RL= Reporting Limit
MDL= Method Detection Limit

21.0

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	SHAKER TABLE
Project#:	35-103.03	Analysis:	EPA 8015B
Field ID:	100506026012	Batch#:	118319
Lab ID:	189908-002	Sampled:	10/05/06
Matrix:	Soil	Received:	10/05/06
Units:	mg/Kg	Prepared:	10/11/06
Basis:	dry	Analyzed:	10/16/06
Diln Fac:	1.000		

Moisture: 29%

Analyte	Result	RL	MDL
Diesel C10-C24	9.7 H Y	1.4	0.18

Surrogate	%REC	Limits
Hexacosane	114	48-130

H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	189908	Location:	IR26 Site, Alameda Point
Client:	Innovative Technical Solutions,Inc.	Prep:	SHAKER TABLE
Project#:	35-103.03	Analysis:	EPA 8015B
Field ID:	100506026013	Batch#:	118319
Lab ID:	189908-003	Sampled:	10/05/06
Matrix:	Soil	Received:	10/05/06
Units:	mg/Kg	Prepared:	10/11/06
Basis:	dry	Analyzed:	10/15/06
Diln Fac:	1.000		

Moisture: 26%

Analyte	Result	RL	MDL
Diesel C10-C24	200 H L Y	1.4	0.49

Surrogate	%REC	Limits
Hexacosane	77	48-130

H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
RL= Reporting Limit
MDL= Method Detection Limit

23.0

Curtis & Tompkins, Ltd.

California Title 26 Metals

Lab #:	189908	Project#:	35-103.03
Client:	Innovative Technical Solutions,Inc.	Location:	IR26 Site, Alameda Point
Field ID:	100506026011	Diln Fac:	1.000
Lab ID:	189908-001	Sampled:	10/05/06
Matrix:	Soil	Received:	10/05/06
Units:	mg/Kg	Prepared:	10/09/06
Basis:	dry		

Moisture: 21%

Analyte	Result	RL	MDL	Batch#	Analyzed	Prep	Analysis
Antimony	0.21 J	3.8	0.12	118264	10/10/06	EPA 3050B	EPA 6010B
Arsenic	2.9 U	0.32	0.11	118264	10/10/06	EPA 3050B	EPA 6010B
Barium	55	0.63	0.055	118264	10/10/06	EPA 3050B	EPA 6010B
Beryllium	0.19	0.13	0.011	118264	10/10/06	EPA 3050B	EPA 6010B
Cadmium	0.16 J	0.32	0.025	118264	10/10/06	EPA 3050B	EPA 6010B
Chromium	38	0.63	0.036	118264	10/10/06	EPA 3050B	EPA 6010B
Cobalt	6.5	1.3	0.027	118264	10/10/06	EPA 3050B	EPA 6010B
Copper	18 J	0.63	0.051	118264	10/10/06	EPA 3050B	EPA 6010B
Lead	5.6 U	0.19	0.057	118264	10/10/06	EPA 3050B	EPA 6010B
Mercury	0.060	0.025	0.0096	118253	10/09/06	METHOD	EPA 7471A
Molybdenum	0.39 J	1.3	0.024	118264	10/10/06	EPA 3050B	EPA 6010B
Nickel	37	1.3	0.032	118264	10/10/06	EPA 3050B	EPA 6010B
Selenium	ND	0.32	0.083	118264	10/10/06	EPA 3050B	EPA 6010B
Silver	ND	0.32	0.046	118264	10/10/06	EPA 3050B	EPA 6010B
Thallium	ND	0.32	0.033	118264	10/10/06	EPA 3050B	EPA 6010B
Vanadium	27	0.63	0.034	118264	10/10/06	EPA 3050B	EPA 6010B
Zinc	36	1.3	0.11	118264	10/10/06	EPA 3050B	EPA 6010B

J = Estimated value
U = Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

8.0

Curtis & Tompkins, Ltd.

California Title 26 Metals

Lab #:	189908	Project#:	35-103.03
Client:	Innovative Technical Solutions, Inc.	Location:	IR26 Site, Alameda Point
Field ID:	100506026012	Diln Fac:	1.000
Lab ID:	189908-002	Sampled:	10/05/06
Matrix:	Soil	Received:	10/05/06
Units:	mg/Kg	Prepared:	10/09/06
Basis:	dry		

Moisture: 29%

Analyte	Result	RL	MDL	Batch#	Analyzed	Prep	Analysis
Antimony	0.14 J	4.2	0.13	118264	10/10/06	EPA 3050B	EPA 6010B
Arsenic	4.1 U	0.35	0.12	118264	10/10/06	EPA 3050B	EPA 6010B
Barium	46	0.70	0.061	118264	10/10/06	EPA 3050B	EPA 6010B
Beryllium	0.25	0.14	0.012	118264	10/10/06	EPA 3050B	EPA 6010B
Cadmium	0.16 J	0.35	0.027	118264	10/10/06	EPA 3050B	EPA 6010B
Chromium	44	0.70	0.040	118264	10/10/06	EPA 3050B	EPA 6010B
Cobalt	8.5	1.4	0.030	118264	10/10/06	EPA 3050B	EPA 6010B
Copper	17 J	0.70	0.056	118264	10/10/06	EPA 3050B	EPA 6010B
Lead	5.5 U	0.21	0.062	118264	10/10/06	EPA 3050B	EPA 6010B
Mercury	0.042	0.028	0.012	118253	10/09/06	METHOD	EPA 7471A
Molybdenum	0.59 J	1.4	0.026	118264	10/10/06	EPA 3050B	EPA 6010B
Nickel	47	1.4	0.036	118264	10/10/06	EPA 3050B	EPA 6010B
Selenium	ND	0.35	0.092	118264	10/10/06	EPA 3050B	EPA 6010B
Silver	ND	0.35	0.051	118264	10/10/06	EPA 3050B	EPA 6010B
Thallium	ND	0.35	0.036	118264	10/10/06	EPA 3050B	EPA 6010B
Vanadium	36	0.70	0.037	118264	10/10/06	EPA 3050B	EPA 6010B
Zinc	40	1.4	0.13	118264	10/10/06	EPA 3050B	EPA 6010B

J= Estimated value
ND= Not Detected
RL= Reporting Limit
DL= Method Detection Limit

9.0

Curtis & Tompkins, Ltd.

California Title 26 Metals

Lab #:	189908	Project#:	35-103.03
Client:	Innovative Technical Solutions,Inc.	Location:	IR26 Site, Alameda Point
Field ID:	100506026013	Diln Fac:	1.000
Lab ID:	189908-003	Sampled:	10/05/06
Matrix:	Soil	Received:	10/05/06
Units:	mg/Kg	Prepared:	10/09/06
Basis:	dry		

Moisture: 26%

Analyte	Result	RL	MDL	Batch#	Analyzed	Prep	Analysis
Antimony	ND	4.1	0.13	118264	10/10/06	EPA 3050B	EPA 6010B
Arsenic	2.8	0.34	0.12	118264	10/10/06	EPA 3050B	EPA 6010B
Barium	54	0.68	0.061	118264	10/10/06	EPA 3050B	EPA 6010B
Beryllium	0.16	0.14	0.012	118264	10/10/06	EPA 3050B	EPA 6010B
Cadmium	0.20 J	0.34	0.027	118264	10/10/06	EPA 3050B	EPA 6010B
Chromium	35	0.68	0.040	118264	10/10/06	EPA 3050B	EPA 6010B
Cobalt	8.1	1.4	0.030	118264	10/10/06	EPA 3050B	EPA 6010B
Copper	11 J	0.68	0.056	118264	10/10/06	EPA 3050B	EPA 6010B
Lead	5.6	0.20	0.063	118264	10/10/06	EPA 3050B	EPA 6010B
Mercury	0.038	0.027	0.012	118253	10/09/06	METHOD	EPA 7471A
Molybdenum	0.52 J	1.4	0.027	118264	10/10/06	EPA 3050B	EPA 6010B
Nickel	36	1.4	0.036	118264	10/10/06	EPA 3050B	EPA 6010B
Selenium	ND	0.34	0.092	118264	10/10/06	EPA 3050B	EPA 6010B
Silver	ND	0.34	0.051	118264	10/10/06	EPA 3050B	EPA 6010B
Thallium	ND	0.34	0.036	118264	10/10/06	EPA 3050B	EPA 6010B
Vanadium	27	0.68	0.037	118264	10/10/06	EPA 3050B	EPA 6010B
Zinc	32	1.4	0.13	118264	10/10/06	EPA 3050B	EPA 6010B

J = Estimated value
ND = Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Flag Summary Table

Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	100506026011	189908-1	N	189908	acetone	4.0J	J	4.0J	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026011	189908-1	N	189908	2-butanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026012	189908-2	N	189908	acetone	6.9J	J	6.9J	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026012	189908-2	N	189908	methylene chloride	0.98J	U	28U	Method Blank Contamination
IR26	100506026012	189908-2	N	189908	2-butanone	1.5J	J	1.5J	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026013	189908-3	N	188908	2-hexanone	340	UJ	340UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026011	189908-1	N	188908	arsenic	2.9	U	2.9U	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026011	189908-1	N	188908	copper	18	J	18J	MS/MSD below recovery limits
IR26	100506026011	189908-1	N	188908	lead	5.6	U	5.6U	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026012	189908-2	N	188908	arsenic	4.1	U	4.1U	Method Blank Contamination
IR26	100506026012	189908-2	N	188908	copper	17	J	17J	MS/MSD below recovery limits
IR26	100506026012	189908-2	N	188908	lead	5.5	U	5.5U	Method Blank Contamination
IR26	100506026013	189908-3	N	188908	arsenic	2.8	U	2.8U	Method Blank Contamination
IR26	100506026013	189908-3	N	188908	copper	11	J	11J	MS/MSD below recovery limits
IR26	100506026013	189908-3	N	188908	lead	5.6	U	5.6U	Method Blank Contamination

Notes:

N - (normal) Primary Sample FD - Field Duplicate EB - Equipment Rinsate Blank SDG - Sample Delivery Group

Qualifier Codes:

J -Estimated value. Usually a number reported between Practical Quantitaion Limit (PQL) and Method Detection Limit (MDL).

< (reporting limit), J - Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit, and the reporting limit is estimated. The notation '< (reporting limit) J' is equivalent to the 'UJ (reporting limit)' notation used in the data validation reports (DVRs).

< (reporting limit) -Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit. The notation '< (reporting limit) is equivalent to the 'U (reporting limit)' notation used in the data validation reports (DVRs).

VALIDATA

Chemical Services, Inc.

4070 Balleycastle Lane, Duluth, GA 30097

(770) 232-0130
(770) 232-5082 (Fax)
www.datavalidator.com

DATA VALIDATION SUMMARY
REPORT

COMPANY:	ITSI
SITE NAME:	Alameda IR Data Gap INV.
CONTRACTED LAB:	Curtis & Tompkins, LTD.
QA/QC LEVEL:	EPA Level IV
EPA SOW/METHODS:	SW-846 & EPA Methodology
VALIDATION GUIDELINES:	*USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* 1999; *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* 1994
SAMPLE MATRIX:	Water
TYPES OF ANALYSES:	Volatile Organics (VOA)
SDG NUMBER:	190137

OVERVIEW

SAMPLES:

Client Sample #	Lab Sample #	Matrix	VOA
101706026017A	190137-001	Water	X
101706026014	190137-002	Water	X
101706026015D	190137-003	Water	X
101706026016	190137-004	Water	X

DATA REVIEWER(S): Amy L. Hogan, Kevin C. Harmon, Monalisa B. Beasley

RELEASE SIGNATURE:

Data Qualifier Definitions

J	-	The associated numerical value is an estimated quantity.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

Curtis & Tompkins, LTD. - 190137 Organics

SAMPLES: 101706026017A, 101706026014, 101706026015D, 101706026016

VOLATILE ORGANICS

SUMMARY

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no major problems associated with this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. It was noted by the validator that samples 101706026014, 101706026015D and 101706026016 were not preserved. No action was required.

II.) GC / MS Tuning:

All GC / MS Tuning criteria were met. No action was necessary.

III.) Calibration:

All Initial and Continuing Calibration criteria were met. No action was required.

IV.) Blanks:

Method Blanks:

The following compounds were detected in method blank QC360692:

Compound	Result
acetone	1.2 ug/L
freon 113	0.2 ug/L
carbon disulfide	0.1 ug/L
propylbenzene	0.08 ug/L
1,3,5-trimethylbenzene	0.05 ug/L
4-chlorotoluene	0.06 ug/L
sec-butylbenzene	0.07 ug/L

Compound	Result
1,3-dichlorobenzene	0.1 ug/L
1,4-dichlorobenzene	0.2 ug/L
n-butylbenzene	0.2 ug/L
1,2-dichlorobenzene	0.09 ug/L
1,2,4-trichlorobenzene	0.3 ug/L
hexachlorobutadiene	0.3 ug/L
naphthalene	0.2 ug/L
1,2,3-trichlorobenzene	0.3 ug/L

All positive results for these compounds in associated samples 101706026017A, 101706026015D and 101706026016, which were less than 10X the acetone result and 5X the other listed compound results, were flagged as undetected (U) with the results less than the CRQL being raised to the CRQL.

The following compounds were detected in method blank QC360693:

Compound	Result
acetone	1.2 ug/L
carbon disulfide	0.1 ug/L
propylbenzene	0.07 ug/L
1,3,5-trimethylbenzene	0.05 ug/L
4-chlorotoluene	0.08 ug/L
1,3-dichlorobenzene	0.1 ug/L
1,4-dichlorobenzene	0.1 ug/L
n-butylbenzene	0.2 ug/L
1,2-dichlorobenzene	0.1 ug/L
1,2,4-trichlorobenzene	0.3 ug/L
naphthalene	0.2 ug/L
1,2,3-trichlorobenzene	0.2 ug/L

All positive results for these compounds in associated sample 101706026014, which were less than 10X the acetone result and 5X the other listed compound results, were flagged as undetected (U) with the results less than the CRQL being raised to the CRQL.

Tentatively Identified Compounds (TIC):

TIC data were not supplied for this SDG. No action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was required.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory. All LCS criteria were met. No action was taken.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

One set of batch MS / MSD analyses were submitted for this fraction of the SDG. All MS/MSD criteria were met. No action was required.

VIII.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No action was required.

IX.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No action was required.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was taken.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No action was required.

XII.) Tentatively Identified Compounds (TICs):

TIC data were not submitted for this SDG. No action was taken.

XIII.) Contract Compliance:

All Contract Compliance criteria were met.

Qualified Form I's

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	190137	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	101706026017A	Batch#:	118517
Lab ID:	190137-001	Sampled:	10/17/06
Matrix:	Water	Received:	10/17/06
Units:	ug/L	Analyzed:	10/18/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Freon 12	ND	1.0	0.2
Chloromethane	ND	1.0	0.1
Vinyl Chloride	ND	0.5	0.1
Bromomethane	ND	1.0	0.3
Chloroethane	ND	1.0	0.1
Trichlorofluoromethane	ND	1.0	0.2
Acetone	~~0.7 J~~ ND U	10	0.2
Freon 113	ND	0.5	0.1
1,1-Dichloroethene	ND	0.5	0.06
Methylene Chloride	ND	10	0.1
Carbon Disulfide	ND	0.5	0.09
MTBE	ND	0.5	0.06
trans-1,2-Dichloroethene	ND	0.5	0.2
Vinyl Acetate	ND	10	0.08
1,1-Dichloroethane	ND	0.5	0.05
2-Butanone	ND	10	0.2
cis-1,2-Dichloroethene	ND	0.5	0.08
2,2-Dichloropropane	ND	0.5	0.08
Chloroform	ND	0.5	0.09
Bromochloromethane	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.1
1,1-Dichloropropene	ND	0.5	0.08
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.1
Benzene	ND	0.5	0.06
Trichloroethene	ND	0.5	0.2
1,2-Dichloropropane	ND	0.5	0.08
Bromodichloromethane	ND	0.5	0.07
Dibromomethane	ND	0.5	0.09
4-Methyl-2-Pentanone	ND	10	0.06
cis-1,3-Dichloropropene	ND	0.5	0.06
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.04
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.05
1,3-Dichloropropane	ND	0.5	0.06
Tetrachloroethene	ND	0.5	0.1
Dibromochloromethane	ND	0.5	0.1
1,2-Dibromoethane	ND	0.5	0.1
Chlorobenzene	ND	0.5	0.1
1,1,1,2-Tetrachloroethane	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.07
m,p-Xylenes	ND	0.5	0.1
o-Xylene	ND	0.5	0.09
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.1
Isopropylbenzene	ND	0.5	0.09
1,1,2,2-Tetrachloroethane	ND	0.5	0.09
1,2,3-Trichloropropane	ND	0.5	0.07
Propylbenzene	ND	0.5	0.06
Bromobenzene	ND	0.5	0.1
1,3,5-Trimethylbenzene	ND	0.5	0.05

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

2.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	190137	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	101706026017A	Batch#:	118517
Lab ID:	190137-001	Sampled:	10/17/06
Matrix:	Water	Received:	10/17/06
Units:	ug/L	Analyzed:	10/18/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
2-Chlorotoluene	ND	0.5	0.07
4-Chlorotoluene	ND	0.5	0.04
tert-Butylbenzene	ND	0.5	0.08
1,2,4-Trimethylbenzene	ND	0.5	0.07
sec-Butylbenzene	ND	0.5	0.06
para-Isopropyl Toluene	ND	0.5	0.1
1,3-Dichlorobenzene	ND	0.5	0.1
1,4-Dichlorobenzene	ND	0.5	0.1
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.08
1,2-Dibromo-3-Chloropropane	ND	2.0	0.2
1,2,4-Trichlorobenzene	ND	0.5	0.1
Hexachlorobutadiene	ND	0.5	0.3
Naphthalene	ND	2.0	0.06
1,2,3-Trichlorobenzene	ND	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-120
1,2-Dichloroethane-d4	105	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	107	80-122

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

2.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	190137	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	101706026014	Batch#:	118517
Lab ID:	190137-002	Sampled:	10/17/06
Matrix:	Water	Received:	10/17/06
Units:	ug/L	Analyzed:	10/18/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Freon 12	ND	1.0	0.2
Chloromethane	ND	1.0	0.1
Vinyl Chloride	5.6	0.5	0.1
Bromomethane	ND	1.0	0.3
Chloroethane	ND	1.0	0.1
Trichlorofluoromethane	ND	1.0	0.2
Acetone	~~1.5 J~~	10	0.2
Freon 113	ND	0.5	0.1
1,1-Dichloroethene	0.3 J	0.5	0.06
Methylene Chloride	ND	10	0.1
Carbon Disulfide	~~0.3 J~~	0.5	0.09
MTBE	ND	0.5	0.06
trans-1,2-Dichloroethene	1.7	0.5	0.2
Vinyl Acetate	ND	10	0.08
1,1-Dichloroethane	ND	0.5	0.05
2-Butanone	0.4 J	10	0.2
cis-1,2-Dichloroethene	38	0.5	0.08
2,2-Dichloropropane	ND	0.5	0.08
Chloroform	ND	0.5	0.09
Bromochloromethane	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.1
1,1-Dichloropropene	ND	0.5	0.08
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.1
Benzene	1.6	0.5	0.06
Trichloroethene	25	0.5	0.2
1,2-Dichloropropane	ND	0.5	0.08
Bromodichloromethane	ND	0.5	0.07
Dibromomethane	ND	0.5	0.09
4-Methyl-2-Pentanone	ND	10	0.06
cis-1,3-Dichloropropene	ND	0.5	0.06
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.04
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.05
1,3-Dichloropropane	ND	0.5	0.06
Tetrachloroethene	0.8	0.5	0.1
Dibromochloromethane	ND	0.5	0.1
1,2-Dibromoethane	ND	0.5	0.1
Chlorobenzene	0.2 J	0.5	0.1
1,1,1,2-Tetrachloroethane	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.07
m,p-Xylenes	ND	0.5	0.1
o-Xylene	ND	0.5	0.09
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.1
Isopropylbenzene	ND	0.5	0.09
1,1,2,2-Tetrachloroethane	ND	0.5	0.09
1,2,3-Trichloropropane	ND	0.5	0.07
Propylbenzene	ND	0.5	0.06
Bromobenzene	ND	0.5	0.1
1,3,5-Trimethylbenzene	~~0.06 J~~	0.5	0.05

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

3.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	190137	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	101706026014	Batch#:	118517
Lab ID:	190137-002	Sampled:	10/17/06
Matrix:	Water	Received:	10/17/06
Units:	ug/L	Analyzed:	10/18/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
2-Chlorotoluene	ND	0.5	0.07
4-Chlorotoluene	ND	0.5	0.04
tert-Butylbenzene	ND	0.5	0.08
1,2,4-Trimethylbenzene	ND	0.5	0.07
sec-Butylbenzene	ND	0.5	0.06
para-Isopropyl Toluene	ND	0.5	0.1
1,3-Dichlorobenzene	ND	0.5	0.1
1,4-Dichlorobenzene	~~0.1 J~~ 0.50	0.5	0.1
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.08
1,2-Dibromo-3-Chloropropane	ND	2.0	0.2
1,2,4-Trichlorobenzene	ND	0.5	0.1
Hexachlorobutadiene	ND	0.5	0.3
Naphthalene	ND	2.0	0.06
1,2,3-Trichlorobenzene	ND	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-120
1,2-Dichloroethane-d4	108	80-130
Toluene-d8	102	80-120
Bromofluorobenzene	107	80-122

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

3.0

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Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	190137	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	101706026015D	Batch#:	118517
Lab ID:	190137-003	Sampled:	10/17/06
Matrix:	Water	Received:	10/17/06
Units:	ug/L	Analyzed:	10/18/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Freon 12	ND	1.0	0.2
Chloromethane	ND	1.0	0.1
Vinyl Chloride	5.2	0.5	0.1
Bromomethane	ND	1.0	0.3
Chloroethane	ND	1.0	0.1
Trichlorofluoromethane	ND	1.0	0.2
Acetone	~~1.6 J~~ ND	10	0.2
Freon 113	ND	0.5	0.1
1,1-Dichloroethene	0.3 J	0.5	0.06
Methylene Chloride	ND	10	0.1
Carbon Disulfide	~~0.3 J~~ 0.5U	0.5	0.09
MTBE	ND	0.5	0.06
trans-1,2-Dichloroethene	1.7	0.5	0.2
Vinyl Acetate	ND	10	0.08
1,1-Dichloroethane	ND	0.5	0.05
2-Butanone	0.4 J	10	0.2
cis-1,2-Dichloroethene	36	0.5	0.08
2,2-Dichloropropane	ND	0.5	0.08
Chloroform	ND	0.5	0.09
Bromochloromethane	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.1
1,1-Dichloropropene	ND	0.5	0.08
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.1
Benzene	1.5	0.5	0.06
Trichloroethene	24	0.5	0.2
1,2-Dichloropropane	ND	0.5	0.08
Bromodichloromethane	ND	0.5	0.07
Dibromomethane	ND	0.5	0.09
4-Methyl-2-Pentanone	ND	10	0.06
cis-1,3-Dichloropropene	ND	0.5	0.06
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.04
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.05
1,3-Dichloropropane	ND	0.5	0.06
Tetrachloroethene	0.8	0.5	0.1
Dibromochloromethane	ND	0.5	0.1
1,2-Dibromoethane	ND	0.5	0.1
Chlorobenzene	ND	0.5	0.1
1,1,1,2-Tetrachloroethane	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.07
m,p-Xylenes	ND	0.5	0.1
o-Xylene	ND	0.5	0.09
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.1
Isopropylbenzene	ND	0.5	0.09
1,1,2,2-Tetrachloroethane	ND	0.5	0.09
1,2,3-Trichloropropane	ND	0.5	0.07
Propylbenzene	ND	0.5	0.06
Bromobenzene	ND	0.5	0.1
1,3,5-Trimethylbenzene	~~0.08 J~~ 0.5U	0.5	0.05

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

4.0

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Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	190137	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	1017060260150	Batch#:	118517
Lab ID:	190137-003	Sampled:	10/17/06
Matrix:	Water	Received:	10/17/06
Units:	ug/L	Analyzed:	10/18/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
2-Chlorotoluene	ND	0.5	0.07
4-Chlorotoluene	ND	0.5	0.04
tert-Butylbenzene	ND	0.5	0.08
1,2,4-Trimethylbenzene	0.1 J	0.5	0.07
sec-Butylbenzene	ND	0.5	0.06
para-Isopropyl Toluene	ND	0.5	0.1
1,3-Dichlorobenzene	ND	0.5	0.1
1,4-Dichlorobenzene	~~0.1 J~~ 0.5U	0.5	0.1
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.08
1,2-Dibromo-3-Chloropropane	ND	2.0	0.2
1,2,4-Trichlorobenzene	~~0.3 J~~ 0.5U	0.5	0.1
Hexachlorobutadiene	ND	0.5	0.3
Naphthalene	~~0.4 J~~ 2.0U	2.0	0.06
1,2,3-Trichlorobenzene	~~0.2 J~~ 0.5U	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-120
1,2-Dichloroethane-d4	108	80-130
Toluene-d8	101	80-120
Bromofluorobenzene	106	80-122

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

4.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	190137	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	101706026016	Batch#:	118517
Lab ID:	190137-004	Sampled:	10/17/06
Matrix:	Water	Received:	10/17/06
Units:	ug/L	Analyzed:	10/18/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Freon 12	ND	1.0	0.2
Chloromethane	ND	1.0	0.1
Vinyl Chloride	0.6	0.5	0.1
Bromomethane	ND	1.0	0.3
Chloroethane	ND	1.0	0.1
Trichlorofluoromethane	ND	1.0	0.2
Acetone	~~1.1 J~~ KU	10	0.2
Freon 113	ND	0.5	0.1
1,1-Dichloroethene	ND	0.5	0.06
Methylene Chloride	ND	10	0.1
Carbon Disulfide	~~0.1 J~~ 0.5U	0.5	0.09
MTBE	ND	0.5	0.06
trans-1,2-Dichloroethene	ND	0.5	0.2
Vinyl Acetate	ND	10	0.08
1,1-Dichloroethane	ND	0.5	0.05
2-Butanone	ND	10	0.2
cis-1,2-Dichloroethene	2.2	0.5	0.08
2,2-Dichloropropane	ND	0.5	0.08
Chloroform	ND	0.5	0.09
Bromochloromethane	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.1
1,1-Dichloropropene	ND	0.5	0.08
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.1
Benzene	ND	0.5	0.06
Trichloroethene	1.0	0.5	0.2
1,2-Dichloropropane	ND	0.5	0.08
Bromodichloromethane	ND	0.5	0.07
Dibromomethane	ND	0.5	0.09
4-Methyl-2-Pentanone	ND	10	0.06
cis-1,3-Dichloropropene	ND	0.5	0.06
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.04
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.05
1,3-Dichloropropane	ND	0.5	0.06
Tetrachloroethene	ND	0.5	0.1
Dibromochloromethane	ND	0.5	0.1
1,2-Dibromoethane	ND	0.5	0.1
Chlorobenzene	ND	0.5	0.1
1,1,1,2-Tetrachloroethane	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.07
m,p-Xylenes	ND	0.5	0.1
o-Xylene	ND	0.5	0.09
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.1
Isopropylbenzene	ND	0.5	0.09
1,1,2,2-Tetrachloroethane	ND	0.5	0.09
1,2,3-Trichloropropane	ND	0.5	0.07
Propylbenzene	ND	0.5	0.06
Bromobenzene	ND	0.5	0.1
1,3,5-Trimethylbenzene	ND	0.5	0.05

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

5.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	190137	Location:	IR26 Data Gap Inv.
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	101706026016	Batch#:	118517
Lab ID:	190137-004	Sampled:	10/17/06
Matrix:	Water	Received:	10/17/06
Units:	ug/L	Analyzed:	10/18/06
Diln Fac:	1.000		

Analyte	Result	RL	MDL
2-Chlorotoluene	ND	0.5	0.07
4-Chlorotoluene	ND	0.5	0.04
tert-Butylbenzene	ND	0.5	0.08
1,2,4-Trimethylbenzene	ND	0.5	0.07
sec-Butylbenzene	ND	0.5	0.06
para-Isopropyl Toluene	ND	0.5	0.1
1,3-Dichlorobenzene	ND	0.5	0.1
1,4-Dichlorobenzene	ND	0.5	0.1
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.08
1,2-Dibromo-3-Chloropropane	ND	2.0	0.2
1,2,4-Trichlorobenzene	~~0.1 J~~ 0.5U	0.5	0.1
Hexachlorobutadiene	ND	0.5	0.3
Naphthalene	~~0.2 J~~ 2.0U	2.0	0.06
1,2,3-Trichlorobenzene	ND	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-120
1,2-Dichloroethane-d4	107	80-130
Toluene-d8	101	80-120
Bromofluorobenzene	106	80-122

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5.0

Flag Summary Table

Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	101706026017A	190137-1	N	190137	acetone	0.7J	U	10U	Method Blank Contamination
IR26	101706026014	190137-2	N	190137	acetone	1.5J	U	10U	Method Blank Contamination
IR26	101706026014	190137-2	N	190137	carbon disulfide	0.3J	U	0.5U	Method Blank Contamination
IR26	101706026014	190137-2	N	190137	1,3,5-Trimethylbenzene	0.06J	U	0.5U	Method Blank Contamination
IR26	101706026014	190137-2	N	190137	1,4-Dichlorobenzene	0.1J	U	0.5U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	acetone	1.6J	U	10U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	carbon disulfide	0.3J	U	0.5U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	1,3,5-Trimethylbenzene	0.08J	U	0.5U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	1,4-Dichlorobenzene	0.1J	U	0.5U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	1,2,4-Trichlorobenzene	0.3J	U	0.5U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	Napthalene	0.4J	U	2.0U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	1,2,3-Trichlorobenzene	0.2J	U	0.5U	Method Blank Contamination
IR26	101706026016	190137-4	N	190137	acetone	1.1J	U	10U	Method Blank Contamination
IR26	101706026016	190137-4	N	190137	carbon disulfide	0.1J	U	0.5U	Method Blank Contamination
IR26	101706026016	190137-4	N	190137	1,2,4-Trichlorobenzene	0.1J	U	0.5U	Method Blank Contamination
IR26	101706026016	190137-4	N	190137	Napthalene	0.2J	U	2.0U	Method Blank Contamination

Notes:

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ATTACHMENT 2

QUALIFIED DATA SUMMARY

Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	090506023001A	190171-1	N	189171	bromoform	0.2J	U	1.0U	Method Blank Contamination

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Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	90606026002	189203-2	N	189203	acetone	4.4J	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026002	189203-2	N	189203	2-butanone	1.1J	J	1.1J	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026002	189203-2	N	189203	2-hexanone	0.1J	J	0.1J	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	9060606026004	189203-4	N	189203	acetone	1.6J	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	9060606026004	189203-4	N	189203	2-butanone	0.5J	J	0.5J	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	9060606026004	189203-4	N	189203	2-hexanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026006	189203-6	N	189203	carbon disulfide	0.5	UJ	0.05UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026006	189203-6	N	189203	bromoform	0.1	U	1.0U	Method Blank Contamination
IR26	90606026008	189203-8	N	189203	acetone	1.8J	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026008	189203-8	N	189203	2-butanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026008	189203-8	N	189203	2-hexanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)

IR26	90606026010	189203-10	N	189203	acetone	0.8J	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026010	189203-10	N	189203	2-butanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026010	189203-10	N	189203	2-hexanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026012	189203-12	N	189203	acetone	3.1J	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026012	189203-13	N	189203	vinyl acetate	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	90606026015	189203-15	N	189203	carbon disulfide	0.1J	J	0.1J	Continuing Calibration J (all detects), UJ (all non-detects)

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Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	100306026003	189839-2	N	189839	zinc	5.7	U	5.7U	Method Blank Contamination
IR26	100306026004	189839-3	N	189839	zinc	5.9	U	5.9U	Method Blank Contamination
IR26	100306026005	189839-4	N	189839	zinc	6.3	U	6.3U	Method Blank Contamination

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Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	100206026001	189840-1	N	189840	bromomethane	1	UJ	1.0UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100206026001	189840-1	N	189840	acetone	1.3J	U	10U	Method Blank Contamination
IR26	100206026001	189840-1	N	189840	2-butanone	0.6J	J	0.6J	Surrogate Recoveries J (all detects), UJ (all non-detects)
IR26	100206026001	189840-1	N	189840	carbon tetrachloride	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100206026002A	189840-2	N	189840	bromomethane	1	UJ	1.0UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100206026002A	189840-2	N	189840	acetone	2.3J	U	10U	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100206026002A	189840-2	N	189840	methylene chloride	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100206026002A	189840-2	N	189840	carbon tetrachloride	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026003	189840-3	N	189840	vinyl chloride	0.2J	J	0.2J	Surrogate Recoveries J (all detects), UJ (all non-detects)
IR26	100306026003	189840-3	N	189840	bromomethane	1	UJ	1.0UJ	Method Blank Contamination
IR26	100306026003	189840-3	N	189840	acetone	0.9J	U	10U	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026003	189840-3	N	189840	2-butanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026003	189840-3	N	189840	carbon tetrachloride	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026003	189840-3	N	189840	benzene	0.5J	J	0.5J	Surrogate Recoveries J (all detects), UJ (all non-detects)
IR26	100306026004	189840-4	N	189840	acetone	1.9J	U	10U	Continuing Calibration J (all detects), UJ (all non-detects)

IR26	100306026004	189840-4	N	189840	freon 113	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026004	189840-4	N	189840	carbon disulfide	0.1J	J	0.1J	Initial Calibration J (all detects), UJ (all non-detects)
IR26	100306026004	189840-4	N	189840	1,1,1-trichloroethane	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026004	189840-4	N	189840	carbon tetrachloride	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026005	189840-5	N	189840	bromomethane	1	UJ	1.0UJ	Continuing Calibration J (all detects), UJ (all non-detects)
	100306026005	189840-5	N	189840	acetone	1.6J	U	10U	
IR26	100306026005	189840-5	N	189840	2-butanone	0.4J	J	0.4J	Surrogate Recoveries J (all detects), UJ (all non-detects)
IR26	100306026005	189840-5	N	189840	carbon tetrachloride	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026006	189840-6	N	189840	bromomethane	1	UJ	1.0UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026006	189840-6	N	189840	acetone	0.9J	U	10U	Method Blank Contamination
IR26	100306026006	189840-6	N	189840	2-butanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100306026006	189840-6	N	189840	carbon tetrachloride	0.5	UJ	0.5UJ	Continuing Calibration J (all detects), UJ (all non-detects)

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Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	100406026007	189863-1	N	189863	arsenic	8.4	U		Blank contamination
IR26	100406026007	189863-1	N	189863	copper	4.1J	U		Blank contamination
IR26	100406026007	189863-1	N	189863	molybdenum	12J	U		Blank contamination
IR26	100406026007	189863-1	N	189863	zinc	2.6J	U		Blank contamination
IR26	100406026008D	189863-2	N	189863	copper	4.5J	U		Blank contamination
IR26	100406026008D	189863-2	N	189863	molybdenum	16J	U		Blank contamination
IR26	100406026008D	189863-2	N	189863	zinc	16J	U		Blank contamination
IR26	100406026009	189863-3	N	189863	molybdenum	8.4J	U		Blank contamination
IR26	100406026009	189863-3	N	189863	zinc	3.4J	U		Blank contamination

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Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	100506026011	189908-1	N	189908	acetone	4.0J	J	4.0J	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026011	189908-1	N	189908	2-butanone	10	UJ	10UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026012	189908-2	N	189908	acetone	6.9J	J	6.9J	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026012	189908-2	N	189908	methylene chloride	0.98J	U	28U	Method Blank Contamination
IR26	100506026012	189908-2	N	189908	2-butanone	1.5J	J	1.5J	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026013	189908-3	N	188908	2-hexanone	340	UJ	340UJ	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026011	189908-1	N	188908	arsenic	2.9	U	2.9U	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026011	189908-1	N	188908	copper	18	J	18J	MS/MSD below recovery limits
IR26	100506026011	189908-1	N	188908	lead	5.6	U	5.6U	Continuing Calibration J (all detects), UJ (all non-detects)
IR26	100506026012	189908-2	N	188908	arsenic	4.1	U	4.1U	Method Blank Contamination
IR26	100506026012	189908-2	N	188908	copper	17	J	17J	MS/MSD below recovery limits
IR26	100506026012	189908-2	N	188908	lead	5.5	U	5.5U	Method Blank Contamination
IR26	100506026013	189908-3	N	188908	arsenic	2.8	U	2.8U	Method Blank Contamination
IR26	100506026013	189908-3	N	188908	copper	11	J	11J	MS/MSD below recovery limits
IR26	100506026013	189908-3	N	188908	lead	5.6	U	5.6U	Method Blank Contamination

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Site	Sample	Laboratory ID	Type	SDG	Parameter	Original Reported Concentration (µg/L)	STATUS	Modified Final Concentration (µg/L)	Reason
IR26	101706026017A	190137-1	N	190137	acetone	0.7J	U	10U	Method Blank Contamination
IR26	101706026014	190137-2	N	190137	acetone	1.5J	U	10U	Method Blank Contamination
IR26	101706026014	190137-2	N	190137	carbon disulfide	0.3J	U	0.5U	Method Blank Contamination
IR26	101706026014	190137-2	N	190137	1,3,5-Trimethylbenzene	0.06J	U	0.5U	Method Blank Contamination
IR26	101706026014	190137-2	N	190137	1,4-Dichlorobenzene	0.1J	U	0.5U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	acetone	1.6J	U	10U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	carbon disulfide	0.3J	U	0.5U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	1,3,5-Trimethylbenzene	0.08J	U	0.5U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	1,4-Dichlorobenzene	0.1J	U	0.5U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	1,2,4-Trichlorobenzene	0.3J	U	0.5U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	Napthalene	0.4J	U	2.0U	Method Blank Contamination
IR26	101706026015D	190137-3	N	190137	1,2,3-Trichlorobenzene	0.2J	U	0.5U	Method Blank Contamination
IR26	101706026016	190137-4	N	190137	acetone	1.1J	U	10U	Method Blank Contamination
IR26	101706026016	190137-4	N	190137	carbon disulfide	0.1J	U	0.5U	Method Blank Contamination
IR26	101706026016	190137-4	N	190137	1,2,4-Trichlorobenzene	0.1J	U	0.5U	Method Blank Contamination
IR26	101706026016	190137-4	N	190137	Napthalene	0.2J	U	2.0U	Method Blank Contamination

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J -Estimated value. Usually a number reported between Practical Quantitaion Limit (PQL) and Method Detection Limit (MDL).

< (reporting limit), J - Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit, and the reporting limit is estimated. The notation '< (reporting limit) J' is equivalent to the 'UJ (reporting limit)' notation used in the data validation reports (DVRs).

< (reporting limit) -Analyte was analyzed for, but not detected. The associated numerical value is below the reporting limit. The notation '< (reporting limit) is equivalent to the 'U (reporting limit)' notation used in the data validation reports (DVRs).

ATTACHMENT 3

FIELD DUPLICATE RESULTS ABOVE REPORTING LIMITS

FIELD DUPLICATE RESULTS

DATA GAP SAMPLING
INSTALLATION RESTORATION SITE 26
ALAMEDA POINT, ALAMEDA, CALIFORNIA

Location	Sample Number	Duplicate Sample Number	Sampling Date	Analyte	Original Sample Result*	Qualifier	Field Duplicate Result*	Qualifier2	RPD (%)	Evaluation
B20-SB-004	189203-005	189203-006	9/6/06	1,2-Dichloroethene (total)	2.4		2.5		4	Agreement
26MW03	190137-002	190137-003	10/18/06	Vinyl Chloride	5.6		5.2		7	Agreement
26MW03	190137-002	190137-003	10/18/06	trans-1,2-Dichloroethene	1.7		1.7		0	Agreement
26MW03	190137-002	190137-003	10/18/06	cis-1,2-Dichloroethene	38		36		5	Agreement
26MW03	190137-002	190137-003	10/18/06	Benzene	1.6		1.5		6	Agreement
26MW03	190137-002	190137-003	10/18/06	Trichloroethene	25		24		4	Agreement
26MW03	190137-002	190137-003	10/18/06	Tetrachloroethene	0.8		0.8		0	Agreement
26MW07	189863-001	189863-002	10/18/06	Barium	1300		1400		7	Agreement
26MW07	189863-001	189863-002	10/18/06	Alkalinity, Bicarbonate	1400		1600		13	Agreement
26MW07	189863-001	189863-002	10/18/06	Alkalinity, Total as CaCO3	1400		1600		13	Agreement
26MW07	189863-001	189863-002	10/18/06	Total Dissolved Solids	14500		15000		3	Agreement

RPD Relative percent difference
NA Not applicable

* Units are in either milligrams per liter (mg/L) or micrograms per liter (µg/L) as appropriate

Only results above the reporting limit are shown.

APPENDIX F

AQUIFER TESTING DOCUMENTATION

AQUIFER TESTING REPORT
Data Gap Sampling at Installation Restoration Site 26

Alameda Point, Alameda, California

Prepared For:

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

Prepared under:

Naval Facilities Engineering Command, Southwest
Contract No. N68711-05-D-6403
Delivery Order 0003

Prepared By:

Innovative Technical Solutions, Inc.
2730 Shadelands Drive
Walnut Creek, California 94598

January 2007

ITSI Project No. 35103.0300

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ATTACHMENTS

1.0 INTRODUCTION AND SITE BACKGROUND

Aquifer testing was conducted from 30 October through 2 November 2006 at Installation Restoration Site 26 (IR26) in order to establish a radius of influence during pumping for the aquifer and to determine site-specific hydraulic properties such as hydraulic conductivity, specific yield and transmissivity to support the Remedial Design (RD). A field kickoff meeting was held on October 26, 2006 detailing the planned effort (see Attachment 1). Aquifer tests at IR26 consisted of a step test and a 24-hour pump test; step tests were conducted to determine an optimal pumping rate to be used during the subsequent pump test. These tests were conducted in accordance with procedures presented in the Draft Final Workplan (ITSI, 2006, Section 3.6).

Section 4.1 of the Data Gap Investigation Report presents the subsurface geology/hydrogeology within the area of investigation at the site. The targeted zone for the aquifer test is the fill material that is present to depths of approximately 15-feet below ground surface (bgs). The fill is mainly comprised of olive colored poorly-graded sands (SP), with subordinate amounts of silty sand (SM), clayey sand (SC) and both low-plasticity and high-plasticity clays (CL and CH). The poorly-graded sands that comprise the bulk of the fill contain little to no fines (generally < 5%) and minor quantities of very small shell fragments, typical of locally-derived hydraulic fill. The Bay Sediment Unit (BSU) underlies the fill at depths of 15 to 15.5 feet bgs and functions as an aquitard at the site. The depth to water at IR26 is approximately 2.5 feet bgs and the saturated thickness of the unconfined aquifer is estimated to be 13-feet.

The following sections present the field implementation, data evaluation and results of the aquifer testing.

2.0 FIELD IMPLEMENTATION

The aquifer testing consisted of a step test and a 24-hour pump test followed by collection of well recovery data. Well 26MW-03 was selected as the pumping well due to its location at or near the center of the highest VOC concentration. Three piezometers, 26PZ-01, 26PZ-02 and 26PZ-03 were installed to depths of 15-feet (bgs) with similar well construction as that of 26MW-03 and monitored for water levels during the pump test. Three additional monitoring wells, 26MW-01, 26MW-04 and 26MW-07 were also monitored for water levels during the pump test. Figure 1 illustrates the location of the pumping well and the observation wells used for the aquifer test at IR 26. Table 1 lists the well IDs, well types and the distances of each piezometer/monitoring well from the pumping well and its relative location with respect to the VOC plume.

Table 1
List of Wells, Distances from Pumping Well and Location

Well ID	Type	Location with respect to VOC plume
26MW-03	Pumping Well	Located at the center of mass of the VOC plume
26PZ-01	Piezometer	Located 10-feet downgradient and northeast of 26MW-03
26PZ-02	Piezometer	Located 20-feet downgradient and northeast of 26MW-03
26PZ-03	Piezometer	Located 10-feet cross-gradient and south of 26MW-03
26MW-01	Observation Well	Located approximately 60 feet upgradient and west of 26MW-03
26MW-04	Observation Well	Located approximately 40 feet cross gradient and southeast of 26MW-03
26MW-07	Observation Well	Located approximately 60 feet cross gradient and northeast of 26MW-03

The pumping system consisted of a submersible pump, totalizing flowmeter, hoses, and connections to a 500-gallon portable water tank. Accumulated water was transferred into a 21,000 gallon Baker tank placed near IR26 frequently during the pump test. The pump was equipped with a check valve to prevent backflow of pumped water in the pumping well. Electronic pressure transducers (see Attachment 1 for transducer specifications) were installed in each observation well for continuous water level monitoring during the aquifer test. The effects of barometric pressure were accounted for by the intrinsic design of the pressure transducers thereby not requiring a manual correction. Water level

measurements were viewed and recorded as head in feet (above transducer) using software provided by INW. Pressure transducers were operated, calibrated, maintained, and stored in accordance with the manufacturer's specifications (specification sheet presented in Attachment 1). The depth to water in the wells and piezometers at the time of transducer placement was measured with a Solinst water level meter and recorded. The transducer calibration was checked in the field by lowering it exactly 1 foot into the water column and noting the change in the meter response. Water levels were also checked periodically using a water level meter during the aquifer test and immediately prior to transducer removal upon completion of field work. The aquifer test consisted of a step test and a pump test.

2.1 STEP TESTS

The step tests were conducted on 31 October 2006. For the step test, well 26MW-03 was pumped at incremental rates of 0.5, 1.0, 3.0 and 2.2 gallons per minute (gpm) for approximately one-hour durations. The water level in 26MW-03 was measured continuously during the step test to determine the rate of drawdown and a plot of drawdown versus time was generated for each stepped rate. The plots of drawdown versus time were extrapolated over a 24-hour period to confirm if 26MW-03 could be pumped for a 24-hour period at the desired rate without running dry.

A pumping rate of 0.5 and 1.0 gpm resulted in a maximum drawdown of 0.5-feet and 1-feet respectively after two hours of pumping (see Chart A in Attachment 2). A pumping rate of 3.0 gpm resulted in a rapid drawdown of approximately 6-feet in a half-hour of pumping. After reducing the pumping rate to 2.2 gpm, a slower drawdown of approximately 0.5 feet in approximately 2 hours of pumping resulted. This pumping rate of 2.2 gpm was extrapolated to 24-hours as shown in Chart B (Attachment 2) and indicated a projected head of 0.4 feet at the end of 24-hours. Therefore, a rate of 2.0 gpm was selected as the optimal sustainable pumping rate for the aquifer test. The pump controller settings were fixed at 2.0 gpm upon completion of the step test.

2.2 PUMP TEST

The pump test was conducted on 1 and 2 November 2006. The pumping well, 26MW-03 recovered within 6 hours after the completion of the step test. Baseline water levels were collected prior to beginning the pump test. Six observation wells (listed in Table 1) were monitored using pressure transducers during the entire pump test. In addition, 26MW-02, 26MW-05 and 26-MW-06 were

monitored for water levels every 6-8 hours to ascertain the extent of the outer radius of influence during pumping. Well 26PZ-01 had to be discontinued from monitoring after 10-hours of pumping due to boatyard wash operations initiated by the tenant. Storm and rain conditions after 19 hours of pumping resulted in a pump outage (short circuit) for 25 minutes. These events and readings were noted for correction of data during the evaluation phase of this work. Upon completion of the 24-hour pumping period, data collection from transducers continued for 4.5 hours until the wells recovered to 90% of the static water levels (or baseline levels) for analysis of recovery data. Attachment 2 presents the water level data collected during the pump test.

3.0 DATA EVALUATION

The pump test data were plotted on drawdown versus time charts and analyzed using AQTESOLV™ (version 4.02.002; Hydrosolve, Inc.) software designed for analysis of pump test data. Three solution methods were used for evaluation of pump test data: Theis, Cooper-Jacob and Neuman. The Cooper-Jacob and Neuman solution methods were used to evaluate recovery test data.

The primary assumptions for these methods are listed below:

Theis and Cooper-Jacob:

- Aquifer has infinite areal extent,
- Aquifer is homogeneous, isotropic and of uniform thickness,
- Pumping well is fully penetrating and flow to pumping well is horizontal,
- Aquifer is unconfined,
- Water is released instantaneously from storage with decline of hydraulic head,
- Diameter of pumping well is very small so that storage in the well can be neglected,
- No delayed gravity response in aquifer,
- Flow is horizontal and uniform in a vertical section through the axis of the well,
- Flow is unsteady,
- Displacement is small relative to saturated thickness of aquifer.

Neuman:

- Aquifer has infinite areal extent, homogeneous and has uniform thickness,
- Aquifer potentiometric surface is initially horizontal,
- Pumping well is fully penetrating,
- Aquifer is unconfined with delayed gravity response,
- Flow is unsteady,
- Diameter of pumping well is very small so that storage in the well can be neglected.

Site-specific aquifer parameter information such as transmissivity and specific yield were obtained and is presented in data plots contained in Attachment 3. The radius of influence was obtained using the Jacob straight-line distance-drawdown method as shown in Attachment 3.

4.0 AQUIFER TEST RESULTS AND DISCUSSION

Aquifer test results including hydraulic conductivity (K), specific yield and radius of influence (ROI) estimates are summarized in Table 1. The K values were derived from the transmissivity (T) data obtained from AQTESOLV™ and the estimated saturated thickness (b=13 feet) of the unconfined aquifer (i.e., K=T/b). The Theis and Cooper-Jacob solution methods provide preliminary estimates on aquifer parameter ranges. The Neuman solution method evaluates the delayed yield responses typical of most unconfined aquifers. Therefore, the hydraulic conductivities obtained from the Neuman solution method are considered most representative of the unconfined aquifer at IR26.

The calculated hydraulic conductivities ranged from 0.023 feet/minute - 0.09 feet/minute. These corresponded with the higher range of hydraulic conductivities for silty sands and fine sands obtained from literature values (Domenico and Schwarz, 1990; Fetter, 2001). Lithologic logs of monitoring wells at IR 26 indicate predominantly fine sands (SP) with some thin interspersed plastic clay (CH) at 26PZ-01, 26PZ-02 and 26PZ-03. Therefore, hydraulic conductivity ranges obtained from the aquifer test evaluation are considered to be reasonably representative of the shallow unconfined aquifer at IR26.

Specific yield (S_y), or effective porosity estimates ranged from 0.07 to 0.37 for the shallow unconfined aquifer at IR26. Literature values of specific yield for fine sand range from 0.1 to 0.28 with an average of 0.21 (Fetter, 1994) and in some cases as high as 0.33 (Morris and Johnson, 1967). Literature ranges for clay/sandy clay range from 0 to 0.12 with an average of 0.03 (Fetter, 1994). The specific yield ranges obtained from this evaluation are consistently within these ranges.

The ROI is estimated to be approximately 110 feet after 100 minutes of pumping. A comparison of water level measurements collected at 26MW-05 located approximately 50-feet downgradient (northeasterly) of 26MW-03 indicated a drawdown of 0.14 feet and 0.13 feet after 5.5 hours and 14.5 hours of pumping respectively. Well 26MW-06 located approximately 160-feet downgradient (northeasterly) of 26MW-03 however, indicated no drawdown during the 24-hour pump test.

5.0 REFERENCES

AQTESOLV™ , Version 4.02.002; Hydrosolve, Inc

Domenico, P.A. and F.W. Schwartz, 1990. *Physical and Chemical Hydrogeology*, John Wiley & Sons, New York, 824 p.

Fetter, C.W., 2001. *Applied Hydrogeology (4th ed.)*, Prentice-Hall, Upper Saddle River, New Jersey, 598p.

Innovative Technical Solutions, Inc. (ITSI), 2006. *Field Workplan for Data Gap Sampling, Installation Restoration Site 26, Alameda Point, Alameda, California.* Draft Final, August.

Morris, D.A. and A.I. Johnson, 1967. Summary of hydrologic and physical properties of rock and soil materials as analyzed by the Hydrologic Laboratory of the U.S. Geological Survey, U.S. Geological Survey Water-Supply Paper 1839-D, 42p.

TABLES

TABLE 1
IR 26 Aquifer Test Summary Results
IR26 Aquifer Test
Alameda Point, Alameda, California

Hydraulic Conductivity (K) Results (Feet/Minute) (See Note 1)

	Solution Method							
	Theis	Cooper-Jacob		Neuman A Type Curve	Neuman B Type Curve	Neuman Recovery	Observed Lithology	Literature K Values and Source
	Pumping	Pumping	Recovery					
Pumping Well								Range for Fine Sand
26MW-03	NA	NA	7.37E-03	NA	NA	1.92E-03	SP	Low - 3.94E-05
Observation Wells								High - 3.94E-02
26PZ-01	5.56E-02	7.15E-02	See Note 2	5.29E-02	4.29E-02	See Note 2	SP/Thin CH	Reference:
26PZ-02	2.66E-02	1.35E-02	1.39E-02	1.46E-02	3.00E-02	2.62E-02	SP/Thin CH	Domenico and Schwarz, 1990
26PZ-03	3.33E-02	2.85E-02	6.91E-03	2.98E-02	2.98E-02	3.29E-02	SP/Thin CH	Range for Silty Sands, Fine Sands
26MW-01	2.89E-02	6.33E-03	6.58E-03	2.68E-02	3.94E-03	2.30E-02	SP	Low - 1.97E-04
26MW-04	4.23E-02	3.04E-02	1.89E-02	4.98E-02	3.75E-02	4.44E-02	SP	High - 1.97E-02
26MW-07	1.91E-01	1.82E-02	2.49E-02	1.81E-01	4.91E-02	9.08E-02	SP	Reference: Fetter, 2001

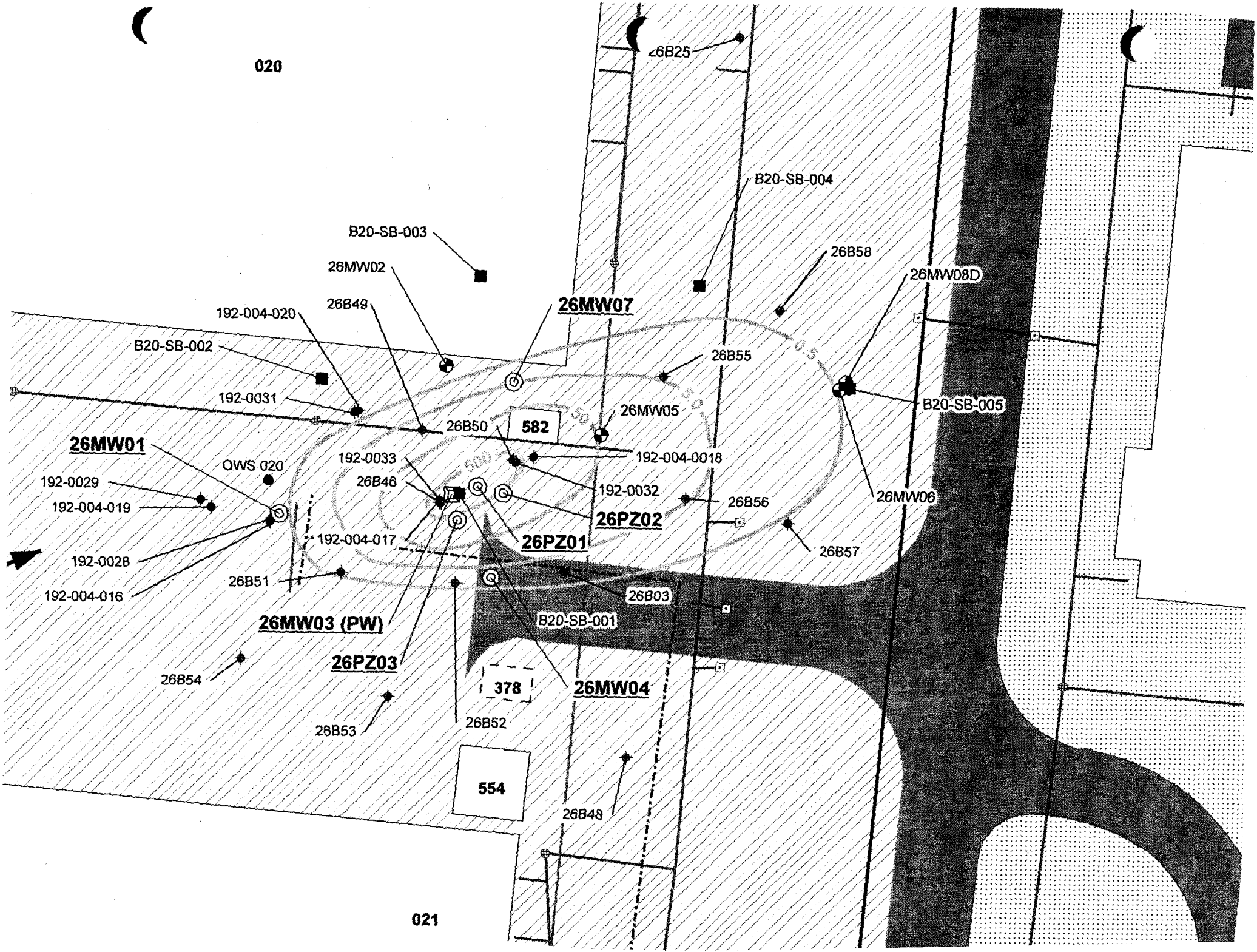
Radius of Influence (Distance-Drawdown Plots)
Pumping Rate 2.0 GPM

Time (minutes)	Distance (Feet)
100	110
1000	175
1371	150

Specific Yield Results	
0.07 - 0.37	Literature Values Fine Sand -- 0.1 - 0.28 (Fetter, 2001) Fine Sand -- 0.33 (Morris and Johnson, 1967) Clay/Sandy Clay -- 0 - 0.12 (Fetter, 2001)

Notes:
1) K=Transmissivity (T)/Saturated Thickness (b); T is obtained from plots and b = 13 feet
2) PZ-01 measurements were discontinued after 10 hours due to flooding
Yellow highlights indicate selected values

FIGURES


020
26B25
B20-SB-004
B20-SB-003
26MW02
26B58
26MW08D
26MW07
26B49
192-004-020
B20-SB-002
26B55
192-0031
26MW05
B20-SB-005
26B50
582
26MW01
192-0033
192-004-0018
OWS 020
192-0029
26B46
192-0032
26B56
192-004-019
26MW06
26PZ02
26PZ01
192-004-017
26B57
192-0028
26B51
26B03
192-004-016
B20-SB-001
26MW03 (PW)
26PZ03
26B54
378
26MW04
26B53
26B52
554
26B48
021

ATTACHMENTS

ATTACHMENT 1

FIELD DOCUMENTS

Meeting Minutes
IR26 Aquifer Pump Test Kickoff Meeting
IR26 Data Gap Sampling
Blg 20, IR26, Alameda Point, Alameda, California
10:00AM, Thursday, October 26, 2006

Attendee	Organization	E-mail Address/Phone
Bob Perricone	NAVFAC ROICC	bob@navy.mil /
Arvind Acharya	ITSI, Technical Lead	aacharya@itsi.com / 510-719-6858
Ray Spencer	ITSI, Field Team Leader	rspencer@itsi.com / 925-260-5072
Eric Ehlers	ITSI, Field Team	eehlers@itsi.com / 650-333-9393
Brian Dee	ITSI, Field Team	bdee@itsi.com / 925-525-3322
Robyn Chapple	ITSI, Field Team	rchapple@itsi.com / 408-836-9971
Robert Overly	ITSI, Field Team	roverly@itsi.com / 925-250-7708
Clare Gilmore	ITSI, Field Team	cgilmore@itsi.com / 925-250-3221

Miscellaneous
Gregory Grace will be the main contact for the RIOCC's office.

Staging of equipment and materials
The fenced area on the southeast corner of building 20 in the Protector Boat yard will be the primary work area for the step test and 24-hr pump test to establish an aquifer radius of influence in the IR-26 plume area.

The equipment that will be implemented will consist of a trailer mounted power generator, a 600-gallon trailer mounted water tank, submersible groundwater pump and six data logging transducers that will be installed in the IR-26 area monitoring wells and piezometers. The pressure transducers will be used to record level responses during the 24-hr pump test. Outdoor lighting will be provided to light the entire work area during to required night work.

The first phase of the aquifer will consist of a pump step test at varying pumping rates to determine an optimal pumping rate to be implemented in the subsequent pump test. The pump will equipped with a totalizing flow meter to measure pump rates and total gallons removed. Discharge water will be pumped into the 600-gallon trailer mounted tank and transferred into a 20,000-gallon tank located in a fenced staging area adjacent to the IR-26 site.

Work hours
The step test is scheduled to begin on Tuesday, October 31 at 8am. The subsequent pump test is scheduled to begin on Wednesday, November 1 at 7am and continue through Thursday November 2. The pump test work schedule will consist of two person teams that will remain on site at all times during the 24-hr pump test. Pump rates and water levels will be monitored and recorded periodically during the test. The building 20 tenants (Protector Boats) were informed of the work schedule.

Action Items

- ROICC has requested that flashing barricades be placed around the fenced work area during night work for traffic control.

Meeting/Site Walk Adjourned at 3:00pm
Meeting Minutes by Brian Dee

AGENDA
IR26 Field Meeting for Implementation of the Aquifer Tests
Blg 20, IR26, Alameda Point, Alameda California
10:30 AM, Thursday October 26, 2006
held at the ITSI Alameda Point Field Office

1.0 Introductions

2.0 Brief Description and Schedule of Aquifer Test Activities

Tuesday October 31, 2006 Step Test (start 8am to 4pm)
The key component of this test is establishing the pump rate. The pumping well, 26MW03, must remain barricaded off and clear of any obstructions after the step test is completed to ensure efficient start of the 24-hour pump test the following morning.

Wed Nov 1, 2006 (7am) through Thurs Nov 2, 2006 (3pm) 24-hour Pump Test
Arrive by 0700 AM and set up transducers in observation wells.
Confirm setting on ball valve throttle and start generator for the pump test

- Record flow rate every half-hour
- Download data from transducers every hour for the first 4-hours followed by every 2-4 hour interval.
- Check transducer data vs. field measurements using water level meter every hour
- Empty water buffalo into baker tank every 4-hours (use 55-g drum at Pumping well when emptying water buffalo)
- Set up GFI rated lighting prior to dark for night work

Wednesday November 1, 2006 Shifts:
0700 AM - 1500 PM - Ray Spencer and Scott Lovesy
1400 PM - 1200 AM - Brian Dee and Robyn Chapple
Thursday November 2, 2006 Shifts:
1100 PM - 0800 AM - Eric Ehlers and Robert Overly
0700 AM - 1500 PM - Ray Spencer and Scott Lovesy.

3.0 Traffic/Site Control

ITSI must have continual site access for the duration of pump testing.

4.0 Site Safety Concerns

4.0 Questions or Comments

ITSI Project Contact Numbers:
Project Manager - Rachel Hess (510-715-7842 cel)
Technical Lead - Arvind Acharya (510-719-6858 cel)
Health and Safety Mgt – Jeff Lott (510-719-6858 cel)
Emergency Contact (for night work only) – Clare Gilmore (925-250-3221 cel)

ITSI Field Team Support
Field Team Leader - Ray Spencer (925-260-5072 cel)
Brian Dee (925-525-3322 cel)
Eric Ehlers (650-333-9393 cel)
Scott Lovesy (925-250-5972 cel)
Robert Overly (925-250-7708 cel)
Robyn Chapple (408-836-9971 cel)

Navy Project Contact Numbers:
Navy Project Manager – Lou Ocampo (619-532-0969 office)
Navy ROICC – Gregory Grace (510-755-5884 cel)
Navy CSO – Doug DeLong (510-772-8832 cel)

Tenant (Blg 20) Contact (Protector Boats):
Mark Stott (510-749-9300 office or 415-793-4658 cel)

Innovative Technical Solutions, Inc.

Lighting
Safe Work Procedures

CONTENTS

1. REGULATIONS

- 29 CFR 1926.56, Illumination
- 8 CCR 3317, Illumination
- 8 CCR 1523, Illumination
- U.S. Army Corps of Engineers (USACE) Safety and Health Requirements Manual (EM-385-1-1), November, 2003

2. PURPOSE AND SCOPE

The requirements of this procedure apply to employees involved in all operations when portable lighting is (or may be) required, such as work at night or indoors, and describes minimum safety requirements for use of portable lighting at project work sites.

3. DEFINITIONS

- *Intrinsically safe:* This means that the equipment or instrumentation is designed to prevent fire or explosions when being used in a flammable atmosphere by containing any spark producing action internally.

4. RESPONSIBILITIES

4.1. Health and Safety Staff

The Health and Safety staff is responsible for assisting site supervisors in enforcing safe work practices and providing training and guidance for activities which may require portable lighting.

4.2. Site Supervisors

Site supervisors are responsible for verifying that all portable lighting functions correctly, meets the required safety standards, and supplies the necessary illumination for operations.

5. LIGHTING LEVELS FOR CONSTRUCTION PROJECTS

Portable lighting must, as a minimum, meet the regulatory requirements found in the OSHA Construction Standard for illumination. For ITSI project sites, work areas must be lighted to not less than the minimum illumination intensities in the following Table while work is in progress:

Area or Operation	Foot-Candles
General construction area lighting, low activity.	3
Outdoor active construction areas, concrete placement, excavation and waste areas, accessways, active storage areas, loading platforms, refueling, and field maintenance areas.	5
Indoors: warehouses, corridors, hallways, stairways, and exit-ways.	5
General construction plant and shops (e.g. batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active storerooms, barracks or living quarters, locker or dressing rooms, mess halls and indoor toilets and workrooms).	10
First–aid stations, infirmaries, and offices	30

6. PORTABLE LIGHTING EQUIPMENT

Portable lighting equipment used on construction sites must be operated according with the following safety considerations:

- Portable lighting for confined spaces, where a potential for flammable atmospheres exists, will require intrinsically-safe "explosion proof" lighting.
- Portable lighting set up for night work near roadways will be positioned so that it does not blind oncoming traffic.
- Lighting equipment must be inspected daily.
- Fueling of lighting equipment must be performed in accordance with fueling safety provisions.
- Light towers will be set up with jacks extended, especially in areas with high wind conditions.
- Lighting equipment run indoors will be electrical, with the generator position outside to prevent buildup of carbon monoxide and other exhaust gases.

Innovative Technical Solutions, Inc.

TAILGATE SAFETY MEETING

DIVISION/SUBSIDIARY FACILITY NAS ALAMEDA

DATE 10/31/06 TIME 0700 JOB NUMBER 35102.0200

CUSTOMER FPM Group NAVFAC SWDIV ADDRESS Alameda Pt. Alameda, CA.

SPECIFIC LOCATION IR-26

TYPE OF WORK STEP TEST

CHEMICALS USED None

SAFETY TOPICS PRESENTED

PROTECTIVE CLOTHING/EQUIPMENT Modified Level D

CHEMICAL HAZARDS Metals, TCE, and trace chemicals in GW.

PHYSICAL HAZARDS Slips, Trips, and Falls. Splashing and IDW Handling.

EMERCENCY PROCEDURES CALL 911

HOSPITAL Alameda General PHONE (510) 523-4357 AMBULANCE PHONE 911

HOSPITAL ADDRESS 2070 Clinton Ave

SPECIAL EQUIPMENT Safety Station, TRAUMA kit

OTHER —

ATTENDEES

PRINTED NAME	SIGNATURE
Scott Lovesy	
Arvind Acharya	
Robyn Chapple	
Brian Dee	
Eric Ehlers	

CONDUCTED BY: R. Spencer SIGNATURE:

SUPERVISOR

Innovative Technical Solutions, Inc.

TAILGATE SAFETY MEETING

Date: 11.01.06 Time: 0630 Page: 1 of 1
Customer: NAVY Project: 35103.0300 Contract #: N68711-05-D-6403 Proj. #: 35103.0300
Work Description: Data Gap Investigation Pump Test

EMERGENCY PROCEDURES

Emergency Contact: R. Hess Emergency Number: (925) 946-3105
Hospital/Clinic: Alameda Hospital Address: 2070 Clinton Ave
Evacuation Procedures: Muster to Hangar 24 parking lot

OTHER EMERGENCY CONTACTS

Name	Phone	Name	Phone
Alameda Hospital	(510) 523-4357		

SITE HAZARDS

Physical Hazards	Chemical Hazards (include chemical products)
Slips Trips and Falls Splash Hazards	TCE, Metals and trace Chemicals in ground water.

SITE ENTRY REQUIREMENTS

Check-In Procedures: Sign Tailgate SM Form
Training Requirements: 40 HR / Medical Clearance
Minimum PPE Required: Level D
Special Precautions: Rubber gloves, splash guards

TODAY'S SPECIFIC SAFETY ISSUES

Today's work: 24 Hr Pump Test on 26MW03
Specific safety issues/work practices: Traffic, Night Work
See AHA's in HSP

ATTENDEES

Name (print)	Signature	Company	Name (print)	Signature	Company
Scott Lovesy		ITSI			
ARVIND ACHARYA		ITSI			
ROBIN CHAPPLE		ITSI			
Brian Dee		ITSI			
Eric Ehlers		ITSI			

MEETING CONDUCTED BY

Health & Safety Officer: Raymond Spencer (Name (printed)) (Signature)
Site Superintendent: (Name (printed)) (Signature)

CONTRACTOR PRODUCTION REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE: 10/31/06

CONTRACT NO	TITLE AND LOCATION	REPORT NO
N68711-05-D6403	IR-26 Data Gap Investigation, Aquifer pump test, Alameda Point, Alameda, Ca	01

CONTRACTOR	SUPERINTENDENT
Innovative Technical Solutions Inc.	A. Acharya

AM WEATHER	PM WEATHER	MAX TEMP (F)	MIN TEMP (F)
Cool, Sunny 65°F	Warm Sunny 75°F	75	65

WORK PERFORMED TODAY

Schedule Activity No.	WORK LOCATION AND DESCRIPTION	EMPLOYER	NUMBER	TRADE	HRS
3.6	IR-26 - 26MW03 - Step Test	ITSI	1	Tech lead	8
			2	Field Team	8
			3	" "	8
			4	" "	8
			5	" "	8

JOB SAFETY

WAS A JOB SAFETY MEETING HELD THIS DATE? (If YES attach copy of the meeting minutes)	☒ YES	☐ NO
WERE THERE ANY LOST TIME ACCIDENTS THIS DATE? (If YES attach copy of completed OSHA report)	☐ YES	☐ NO
WAS CRANE/MANLIFT/TRENCHING/SCAFFOLD/HV ELEC/HIGH WORK/ HAZMAT WORK DONE? (If YES attach statement or checklist showing inspection performed.)	☐ YES	☐ NO
WAS HAZARDOUS MATERIAL/WASTE RELEASED INTO THE ENVIRONMENT? (If YES attach description of incident and proposed action.)	☐ YES	☐ NO

TOTAL WORK HOURS ON JOB SITE, THIS DATE, INCL CONT SHEETS	40
CUMULATIVE TOTAL OF WORK HOURS FROM PREVIOUS REPORT	0
TOTAL WORK HOURS FROM START OF CONSTRUCTION	40

Schedule Activity No.	LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED	☒ SAFETY REQUIREMENTS HAVE BEEN MET.
3.6	Morning Tailgate safety meeting prior to the start of work - water tank safety inspection	

EQUIPMENT/MATERIAL RECEIVED TODAY TO BE INCORPORATED IN JOB (INDICATE SCHEDULE ACTIVITY NUMBER)

Schedule Activity No.	Submittal #	Description of Equipment/Material Received
3.6		- 600-gal Tank trailer - Traffic control barricades

CONSTRUCTION AND PLANT EQUIPMENT ON JOB SITE TODAY. INDICATE HOURS USED AND SCHEDULE ACTIVITY NUMBER.

Schedule Activity No.	Owner	Description of Construction Equipment Used Today (Incl Make and Model)	Hours Used
3.6	Hertz	60K power generator for nightwork lighting	0
"	"	600-gallon Water tank-Trailer	8
"	"	Traffic Control barricades	8

Schedule Activity No.	REMARKS

CONTRACTOR/SUPERINTENDENT — DATE: 10/31/06

CONTRACTOR QUALITY CONTROL REPORT

NAS ALAMEDA 35703.0300

Phase	Y-Yes, N-No, Blank-Not Applicable		Identify Definable Features of Work and Work Location
PREPARATORY	THE PLANS AND SPECS HAVE BEEN REVIEWED		
	THE SUBMITTALS HAVE BEEN APPROVED		
	MATERIALS COMPLY WITH APPROVED SUBMITTALS		
	MATERIALS ARE STORED PROPERLY		
	PRELIMINARY WORK WAS DONE CORRECTLY		
	TESTING PLAN HAS BEEN REVIEWED		
	WORK METHOD AND SCHEDULE DISCUSSED		

			Tests Performed
INITIAL	PRELIMINARY WORK WAS DONE CORRECTLY		
	SAMPLE HAS BEEN PREPARED/APPROVED		
	WORKMANSHIP IS SATISFACTORY		
	TEST RESULTS ARE ACCEPTABLE		
	WORK IN COMPLIANCE WITH THE CONTRACT		

			Tests Performed
FOLLOW UP	WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	X	STEP TEST OF IR-26

STEP TEST PREFORMED BY ATUIND ACHARYA AND RAY SPENCER. IR-26, HANGER 20, NASALAMEDA

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)

NONE

REWORK ITEMS CORRECTED TODAY (FROM WORK LIST)

REMARKS:

STEP TEST PREFORMED PRIOR TO PUMP TEST

On behalf of the contractor, I certify that the report is complete and correct and the equipment and material used and work performed during the reporting period are in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Scott Long 10/31/06

Authorized QC Manager at Site Date

GOVERNMENT QUALITY ASSURANCE REPORT

DATE:

QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT:

GOVERNMENT QUALITY CONTROL MANAGER DATE

Qual Con Rpt

CONTRACTOR PRODUCTION REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE: 11/01/06

CONTRACT NO	TITLE AND LOCATION	REPORT NO
N68711-05-D6403	IR-26 Data Gap Investigation, Aquifer pump test, Alameda Point, Alameda, Ca	02

CONTRACTOR	SUPERINTENDENT
Innovative Technical Solutions Inc.	R. Spencer

AM WEATHER	PM WEATHER	MAX TEMP (F)	MIN TEMP (F)
Fog / cool	Part-Sun / cool / light rain	80°F	60°F

WORK PERFORMED TODAY

Schedule Activity No.	WORK LOCATION AND DESCRIPTION	EMPLOYER	NUMBER	TRADE	HRS
3.6	IR-26 Pump Test.	ITSI	1		8
			2		8
			3		8
			4		10
			5		10

JOB SAFETY				
	WAS A JOB SAFETY MEETING HELD THIS DATE? (If YES attach copy of the meeting minutes)	☑ YES	☐ NO	TOTAL WORK HOURS ON JOB SITE, THIS DATE, INCL CON'T SHEETS: 44
	WERE THERE ANY LOST TIME ACCIDENTS THIS DATE? (If YES attach copy of completed OSHA report)	☐ YES	☐ NO	CUMULATIVE TOTAL OF WORK HOURS FROM PREVIOUS REPORT: 40
	WAS CRANE/MANLIFT/TRENCHING/SCAFFOLD/HV ELEC/HIGH WORK/ HAZMAT WORK DONE? (If YES attach statement or checklist showing inspection performed.)	☐ YES	☐ NO	
	WAS HAZARDOUS MATERIAL/WASTE RELEASED INTO THE ENVIRONMENT? (If YES attach description of incident and proposed action.)	☐ YES	☐ NO	TOTAL WORK HOURS FROM START OF CONSTRUCTION: 84

Schedule Activity No.	LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED	☑ SAFETY REQUIREMENTS HAVE BEEN MET.
3.6	Morning Safety meeting	

EQUIPMENT/MATERIAL RECEIVED TODAY TO BE INCORPORATED IN JOB (INDICATE SCHEDULE ACTIVITY NUMBER)

Schedule Activity No.	Submittal #	Description of Equipment/Material Received
3.6		- Replacement traffic control barricades

CONSTRUCTION AND PLANT EQUIPMENT ON JOB SITE TODAY. INDICATE HOURS USED AND SCHEDULE ACTIVITY NUMBER.

Schedule Activity No.	Owner	Description of Construction Equipment Used Today (Incl Make and Model)	Hours Used
3.6	Herts	60K Power generator	7
		600-gallon Tank trailer	17
		- 6in. pump.	17

Schedule Activity No.	REMARKS

R Spencer 11/01/06

CONTRACTOR/SUPERINTENDENT DATE

CONTRACTOR QUALITY CONTROL REPORT

NAS ALAMEDA 35103.0300

Phase	Y-Yes, N-No, Blank-Not Applicable		Identify Definable Features of Work and Work Location
PREPARATORY	THE PLANS AND SPECS HAVE BEEN REVIEWED		
	THE SUBMITTALS HAVE BEEN APPROVED		
	MATERIALS COMPLY WITH APPROVED SUBMITTALS		
	MATERIALS ARE STORED PROPERLY		
	PRELIMINARY WORK WAS DONE CORRECTLY		
	TESTING PLAN HAS BEEN REVIEWED		
	WORK METHOD AND SCHEDULE DISCUSSED		

			Tests Performed
INITIAL	PRELIMINARY WORK WAS DONE CORRECTLY		
	SAMPLE HAS BEEN PREPARED/APPROVED		
	WORKMANSHIP IS SATISFACTORY		
	TEST RESULTS ARE ACCEPTABLE		
	WORK IN COMPLIANCE WITH THE CONTRACT		

			Tests Performed
FOLLOW UP	WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	X	PUMP TEST OF IR-26

PUMP TEST PREFORMED BY RAY SPENCER, BRIAN DEE, ROBYN CHAPPLE, ERIC EHLERS, ARVIND ACHARYA AND ROBERT OVERLY OF ITSI, IR-26, HANGER 20, NAS ALAMEDA.

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)

NONE

REWORK ITEMS CORRECTED TODAY (FROM WORK LIST)

REMARKS:

On behalf of the contractor, I certify that the report is complete and correct and the equipment and material used and work performed during the reporting period are in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Scott Long 11/1/06
Authorized QC Manager at Site Date

GOVERNMENT QUALITY ASSURANCE REPORT

DATE:

QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT:

GOVERNMENT QUALITY CONTROL MANAGER DATE

CONTRACTOR PRODUCTION REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE: 11/02

CONTRACT NO: N68711-05-D6403

TITLE AND LOCATION: IR-26 Data Gap Investigation, Aquifer pump test, Alameda Point, Alameda, Ca

REPORT NO: 03

CONTRACTOR: Innovative Technical Solutions Inc.

SUPERINTENDENT: R. Spencer

AM WEATHER: Rain/Cool

PM WEATHER: Light Rain/Cool

MAX TEMP (F): 62°F

MIN TEMP (F): 55

WORK PERFORMED TODAY

Schedule Activity No.	WORK LOCATION AND DESCRIPTION	EMPLOYER	NUMBER	TRADE	HRS
3.6	IR-26 pump test	ITSI	1		9
			2		9
			3		8
			4		8

JOB SAFETY	WAS A JOB SAFETY MEETING HELD THIS DATE? (If YES attach copy of the meeting minutes)	☐ YES	☒ NO	TOTAL WORK HOURS ON JOB SITE, THIS DATE, INCL CON'T SHEETS: 34
	WERE THERE ANY LOST TIME ACCIDENTS THIS DATE? (If YES attach copy of completed OSHA report)	☐ YES	☐ NO	CUMULATIVE TOTAL OF WORK HOURS FROM PREVIOUS REPORT: 84
	WAS CRANE/MANLIFT/TRENCHING/SCAFFOLD/HV ELEC/HIGH WORK/ HAZMAT WORK DONE? (If YES attach statement or checklist showing inspection performed.)	☐ YES	☐ NO	
	WAS HAZARDOUS MATERIAL/WASTE RELEASED INTO THE ENVIRONMENT? (If YES attach description of incident and proposed action.)	☐ YES	☐ NO	TOTAL WORK HOURS FROM START OF CONSTRUCTION: 118

Schedule Activity No.	LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED	☒ SAFETY REQUIREMENTS HAVE BEEN MET.
3.6	Tailgate Safety meeting	

EQUIPMENT/MATERIAL RECEIVED TODAY TO BE INCORPORATED IN JOB (INDICATE SCHEDULE ACTIVITY NUMBER)

Schedule Activity No.	Submittal #	Description of Equipment/Material Received
3.6		

CONSTRUCTION AND PLANT EQUIPMENT ON JOB SITE TODAY. INDICATE HOURS USED AND SCHEDULE ACTIVITY NUMBER.

Schedule Activity No.	Owner	Description of Construction Equipment Used Today (Incl Make and Model)	Hours Used
3.6	Herlz	60K power generator	10
		600-gal tank trailer	15
		Submersible pump.	15

Schedule Activity No.	REMARKS

R Spencer — CONTRACTOR/SUPERINTENDENT

11/02/06 — DATE

CONTRACTOR QUALITY CONTROL REPORT

NAS ALAMEDA 85103.0300

Phase	Y-Yes, N-No, Blank-Not Applicable		Identify Definable Features of Work and Work Location
PREPARATORY	THE PLANS AND SPECS HAVE BEEN REVIEWED		
	THE SUBMITTALS HAVE BEEN APPROVED		
	MATERIALS COMPLY WITH APPROVED SUBMITTALS		
	MATERIALS ARE STORED PROPERLY		
	PRELIMINARY WORK WAS DONE CORRECTLY		
	TESTING PLAN HAS BEEN REVIEWED		
	WORK METHOD AND SCHEDULE DISCUSSED		

			Tests Performed
INITIAL	PRELIMINARY WORK WAS DONE CORRECTLY		
	SAMPLE HAS BEEN PREPARED/APPROVED		
	WORKMANSHIP IS SATISFACTORY		
	TEST RESULTS ARE ACCEPTABLE		
	WORK IN COMPLIANCE WITH THE CONTRACT		

			Tests Performed
FOLLOW UP	WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	X	PUMP TEST OF IR-26

PUMP TEST PREFORMED BY RAY SPENCER, ERIC EHLERS AND ROBERT OVERLY OF ITSI, IR-26, Hanger 20, NAS ALAMEDA

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)	REWORK ITEMS CORRECTED TODAY (FROM WORK LIST)

REMARKS:

RECOVERY OF IR-26 PREFORMED BY RAY SPENCER, IR-26 Hanger 20, NAS ALAMEDA

On behalf of the contractor, I certify that the report is complete and correct and the equipment and material used and work performed during the reporting period are in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Authorized QC Manager at Site — Date: 11/2/06

GOVERNMENT QUALITY ASSURANCE REPORT

DATE:

QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT:

GOVERNMENT QUALITY CONTROL MANAGER — DATE

IR-26, Alameda Pt. Alameda, Ca.
Contract No. N68711-05-D-6430 TO-0003

Step Test Data Sheet

IR 26
Combination
Outside Gate 2628

Job# 35103.0300

Pumping Rate (gpm) VARIABLE

Drawdown Data

Date	Time	Pumping Rate (gpm)	Time Since Pump Start-up (mins)	Depth to Water Below Measuring Point (Static)	Comments
					Flow Meter # 00107008 START
					Flow Meter # 0011072 End
10/31	12:00	0.5	0.0	2.51	Step Test Started at 12:01
10/31	12:02	0.6	12	(10.049)	
10/31	13:03	0.5	63	3.67	
10/31	13:09	1.0	69	—	Up rate to 1.0 gpm (90.0 Hz)
10/31	13:15	1.0	75	4.94	
10/31	13:39	1.0	99	5.03	
10/31	14:08	1.0	127	5.07	
10/31	14:18	3.0	137	9.0	(170.00 Hz)
10/31	14:25	2.4	145	6.15	(138.58 Hz)
10/31	14:47	2.4	167	8.82	
10/31	15:15	2.3	195	8.84	(138.58 Hz)
10/31	15:35	2.3	215	8.87	0.184 Ft. drawdown in 20 hr. / = 4.4 feet in 24 hr
10/31	15:45	= 2.0			130 Hz. - Pumping Rate for Test
10/31	1600	Stop	Pump.		@ 2.0 gpm.
Extrapolate data = Optimal					Flowmeter
			Rate = 2.0		gpm 11072
					-372 gallons pumped 10700
					372

NAME RS, EF, BD, SL, AA
DATE 10.31.06

ITSI Innovative Technical Solutions, Inc.

www.itsi.com

By PS & JL Date 10.31.05 Subject STEP TEST. IR-26 Sheet No. 1 of 1

Chkd. By _____ Date MW WATER LEVEL MEASUREMENTS Project No. _____

26-MW06	-	2.20	BTOC	(Below TOC Top of Casing)
26MW05	-	3.20	BTOC	
26MW04	-	3.46	BTOC	CAP (broken)
26PZ02	-	3.21	BTOC	CAP (wrong kind)
26-PZ-01		2.52	BTOC	
26-MW-03		2.51	BTOC	
26-PZ-03		2.66	BTOC	
26MW01		3.08	BTOC	
26MW02		6.21	BTOC	
26MW01		2.42	BTOC	

NAS ALAMEDA

24 Hour Pump test water levels.

1 & 2 Nov 2006

7:15	2:00	23:00
26MWO1= 2.42	**26MWO1= 2.58**	**26MWO1 = 2.57**
26MWO2= 3.22	26MWO2 = 3.35	26MWO2 = 3.37
26MWO3= 2.52	26MWO3 = 8.61	26MWO3 = 8.57
26MWO4= 2.52	26MWO4 = 2.50	26MWO4 = 2.82
26MWO5= 3.18	26MWO5 = 3.32	26MWO5 = 3.31
26MWO6= 2.22	26MWO6 = 2.20	26MWO6 = 2.26
26MWO7= 3.24	26MWO7 = 3.32	26MWO7 = 3.34
26P201 = 2.68	26P201 = 3.75	26P201 = No Data
26P202 = 3.22	26P202 = 3.71	26P202 = 3.72
26P203 = 2.63	26P203 = 3.80	26P203 = 3.82

04:00	10:45
26MWO1 = 2.58	26MWO1 = 2.40
26MWO2 = 3.40	26MWO2 = 3.25
26MWO3 = 9.05	26MWO3 = 2.68
26MWO4 = 2.81	26MWO4 = 2.54
26MWO5 = 3.31	26MWO5 = 2.20
26MWO6 = 2.20	26MWO6 = 2.20
26MWO7 = 3.35	26MWO7 = 3.15
26P201 No Data	26P201 No Data
26P202 = 3.75	26P202 = 3.32
26P203 = 3.86	26P203 = 2.76

IR-26, Alameda Pt. Alameda, Ca.
Contract No. N68711-05-D-6430 TO-0003

Pump Test Data Sheet

Job# 35103.0300

Pumping Rate (gpm) 2.2

Drawdown Data

Date	Time	Pumping Rate (gpm)	Time Since Pump Start-up (mins)	Depth to Water Below Measuring Point (Static)	Comments
11/01	0830	~~2.2~~ (± 2.01)	~~0~~	~~0~~ 11.5	
11/01	0900	—	—	—	26PZ-01 - Rained for 20 secs to test if functioned
11/01	0910	~~2.12~~ 2.12	40	5.20	26MW03
11/01	~~0945~~	~~2.12~~ 2.12 gpm	~~0~~ 75	5.50	Checked flow rate @ 26MW03 w/stopwatch
11/01	1020	2.12	110	5.58	26MW03
11/01	1100	2.12	150	5.68	
11/01	1215	2.12	225	6.47	26MW03, also checked flow Rate w/ stop watch
11/01	1200	2.12	—	—	Conducted Round of data Collection & Upload
11/01	1430	2.12	483	6.06	Conducted Round of H_2O level measurements
11/01	1620	2.12	593	6.18	CHECKED FLOW RATE @ 26MW03 w/stopwatch
11/01	1725	2.00	658	6.13	Raised VFD Hz to 131.00 - From 130.00
11/01	1839	2.10	732	6.15	CHECKED FLOW RATE @ 26MW03 W/STOPWATCH
11/01	2014	2.10	837	5.92	" " " "
11/01	2108	2.10	891	6.00	" " " "
11/01	2203	2.10	946	6.00	" " " " & COLLECTED DATA
11/01	2303	2.10	1006	6.05	" " " "
11/02	0030	2.1	1093	8.94	checked flow, emptied tank, water levels,
11/02	0200	2.1	1183	8.98	" " , checked DTW, checked tank level raining steady
11/02	0254	2.1	1237	8.26	raining harder water overflowing top of well get pump to pump down water in vault
11/02	0330	2.1	~~130~~ 3	7.34	pump fault HW ground fault on controller reset and restarted
11/02	0409	2.1	1342	9.05	
11/02	0617	2.1	1470	9.04	
11/02	0707	2.1	1520	8.93	

NAME _____
DATE _____

ITSI Innovative Technical Solutions, Inc.

www.itsi.com

By B. Lee Date 11/01/06 Subject Daily log. Sheet No. 1 of 1

Chkd. By _____ Date _____ Project No. 3505-03

1400: R. Chapple & B. Lee arrived on site with a archaeya - to relieve the 1st field crew of the pump test.

1500: First field crew left the site with a archaeya.

1700: Logged transducer data from all wells.

1800: Protector boat crew was performing maintenance on 225 hp. outboard motors in their yard adjacent to our pump test area.

- They started a fresh water flush on one outboard motor, after approx 3 minutes of run time I noticed flush water run off had cascaded over the top of the PZ-01 piezometer casing and flooded the entire casing column.
- I let the Protect workers stop the water flow as soon as the submerged piezometer was discovered. - Stopped logging data on the PZ-01 transducer. Sealed the casing as tightly as possible with the well seal to prevent further water ingress. no other piezometers or wells were impacted.
- The PZ-01 data logger indicated flooding occured at 1808 after speaking to the workers it was agreed that our water flushing activities would be postponed until the end of our pump test.

2300: E. Ehlers and Robert arrived on site.

Recorded final transducer readings and water level measurements.

- Installed a rain canopy over the work area.

2400: Left site with Eric and Robert to take over the next shift.

PT2X Smart Sensor

Range: 0-15 PSIG **Checkout Sheet** Sales/Rental Order #: 24754

S/N #: PT2X 26P203 Customer #: INN000

Testing

Date 10-26-6

Initial SS

- [x] Check battery level. 100 % — For Rental - Replace if less than 80%; For Sale - Replace if less than 98%
- [x] Verify serial number.
- [x] Verify range.
- [x] Firmware revision: 18
- [x] Set sensor clock.
- [x] Remove any field calibrations.
- [x] With dead-weight tester and real time monitor, verify calibration is within .1% FSO
  - Zero: deadweight psi: 0.00 PT2X psi: _____
  - Half scale: deadweight psi: 7.50 PT2X psi: _____
  - Full scale: deadweight psi: 15.00 PT2X psi: _____
- [x] Start a session.
- [x] Upload and view data.
- [x] Erase all sessions.
- [x] Desiccant packs in housing.
- [x] If Rental - Desiccant tube refilled.

Packaging

Date 10-26-6

Initial SS

- [x] PT2X with 25 feet of cable
- [x] If Rental - Laminated Kit List
- [ ] If Sale - Registration Card
- [x] RS485/232 adapter
- [x] Communication cable
- Software Package
  - CD
  - Manual
  - Getting Stated Guide
  - Notes and Flyers

May only be one per order

Instrumentation Northwest, Inc.

www.inwusa.com info@inwusa.com

8902 122nd Avenue NE, Kirkland WA 98033 (425) 822-4434 Fax (425) 822-8384

4620 Northgate Blvd. # 170, Sacramento CA 95834 (916) 922-2900 Fax (916) 648-7766

PT2X Smart Sensor

Range: 15 PSIG

Checkout Sheet
Rentals

Rental Order #: DWN000

S/N #: 2609035 26PZ02

Customer #: 24754

Testing

Date 10/26/06

Initial JC

- [x] Check battery level. 81 % — For Rental - Replace if less than 80%; For Repair - Replace if less than 98%
- [x] Verify serial number.
- [x] Verify range.
- [x] Firmware revision: 0.22
- [x] Set sensor clock.
- [x] Remove any field calibrations.
- [x] With dead-weight tester and real time monitor, verify calibration is within .1% FSO

Zero:	deadweight psi:	0	PT2X psi:	-0.009
Half scale:	deadweight psi:	7.5	PT2X psi:	7.505
Full scale:	deadweight psi:	15	PT2X psi:	14.996

- [x] Start a session.
- [x] Upload and view data.
- [x] Erase all sessions.
- [x] Desiccant packs in housing.
- [x] Desiccant tube filled.

Packaging

Date 10/26/06

Initial JC

- [x] PT2X with 25 feet of cable
- [ ] If Rental - Laminated Kit List

- [ ] RS485/232 adapter
- [ ] Communication cable
- [ ] Software Package
  - Version # _____
  - CD
  - Manual
  - Getting Stated Guide
  - Notes and Flyers

May only be one per order

Instrumentation Northwest, Inc.
www.inwusa.com info@inwusa.com
8902 122nd Avenue NE, Kirkland WA 98033 (425) 822-4434 Fax (425) 822-8384
4620 Northgate Blvd. # 170, Sacramento CA 95834 (916) 922-2900 Fax (916) 648-7766

PT2X Smart Sensor

Range: 15 PSIG

S/N #: 2605035 2PT2001

Checkout Sheet
Rentals

Rental Order #: IH1000

Customer #: 2475Y

Testing

Date 10/26/06

Initial TC

- [x] Check battery level. 91 % For Rental - Replace if less than 80%; For Repair - Replace if less than 98%
- [x] Verify serial number.
- [x] Verify range.
- [x] Firmware revision: 0.22
- [x] Set sensor clock.
- [x] Remove any field calibrations.
- [x] With dead-weight tester and real time monitor, verify calibration is within .1% FSO

Zero:	deadweight psi:	0	PT2X psi:	-0.014
Half scale:	deadweight psi:	7.5	PT2X psi:	7.509
Full scale:	deadweight psi:	15	PT2X psi:	14.989

- [x] Start a session.
- [x] Upload and view data.
- [x] Erase all sessions.
- [x] Desiccant packs in housing.
- [x] Desiccant tube filled.

Packaging

Date 10/26/06

Initial TC

- [x] PT2X with 25 feet of cable
- [ ] If Rental - Laminated Kit List

- [ ] RS485/232 adapter
- [ ] Communication cable
- [ ] Software Package
  - Version # _____
  - CD
  - Manual
  - Getting Stated Guide
  - Notes and Flyers

May only be one per order

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PT2X Smart Sensor

Range: 15 PSIG

Checkout Sheet
Rentals

Rental Order #: IN1000

S/N #: 2315012 26MW07

Customer #: 24754

Testing

Date 10/26/06

Initial JVL

- [x] Check battery level. 85 % — For Rental - Replace if less than 80%; For Repair - Replace if less than 98%
- [x] Verify serial number.
- [x] Verify range.
- [x] Firmware revision: 0.22
- [x] Set sensor clock.
- [x] Remove any field calibrations.
- [x] With dead-weight tester and real time monitor, verify calibration is within .1% FSO

Zero:	deadweight psi:	0	PT2X psi:	-0.011
Half scale:	deadweight psi:	7.5	PT2X psi:	7.501
Full scale:	deadweight psi:	15	PT2X psi:	15.005

- [x] Start a session.
- [x] Upload and view data.
- [x] Erase all sessions.
- [x] Desiccant packs in housing.
- [x] Desiccant tube filled.

Packaging

Date 10/26/06

Initial JVL

- [x] PT2X with 25 feet of cable
- [x] If Rental - Laminated Kit List

- [x] RS485/232 adapter
- [x] Communication cable
- [x] Software Package
  - Version # 1.5.18
  - CD
  - Manual
  - Getting Stated Guide
  - Notes and Flyers

May only be one per order

Instrumentation Northwest, Inc.
www.inwusa.com info@inwusa.com
8902 122nd Avenue NE, Kirkland WA 98033 (425) 822-4434 Fax (425) 822-8384
4620 Northgate Blvd. # 170, Sacramento CA 95834 (916) 922-2900 Fax (916) 648-7766

PT2X Smart Sensor

Range: 0-15 PSIG **Checkout Sheet** Sales/Rental Order #: 24754

S/N #: PT2X 2346017 (26 MW03) Customer #: INNO 00

Testing

Date 10-26-6

Initial SS

- [X] Check battery level. 82 % — For Rental - Replace if less than 80%; For Sale - Replace if less than 98%
- [X] Verify serial number.
- [X] Verify range.
- [X] Firmware revision: 1.18
- [X] Set sensor clock.
- [X] Remove any field calibrations.
- [X] With dead-weight tester and real time monitor, verify calibration is within .1% FSO

Zero:	deadweight psi: 0.00	PT2X psi: 0.00
Half scale:	deadweight psi: 7.50	PT2X psi: 7.52
Full scale:	deadweight psi: 15.00	PT2X psi: 15.02

- [X] Start a session.
- [X] Upload and view data.
- [X] Erase all sessions.
- [ ] Desiccant packs in housing.
- [X] If Rental - Desiccant tube refilled.

Packaging

Date 10-26-6

Initial SS

- [X] PT2X with 25 feet of cable
- [X] If Rental - Laminated Kit List
- [ ] If Sale - Registration Card
- [X] RS485/232 adapter
- [X] Communication cable
- Software Package
  - CD
  - Manual
  - Getting Stated Guide
  - Notes and Flyers

May only be one per order

Instrumentation Northwest, Inc.

www.inwusa.com info@inwusa.com

8902 122nd Avenue NE, Kirkland WA 98033 (425) 822-4434 Fax (425) 822-8384

4620 Northgate Blvd. # 170, Sacramento CA 95834 (916) 922-2900 Fax (916) 648-7766

PT2X Smart Sensor

Range: 15 PSIG

Checkout Sheet

Rentals

Rental Order #: IN4000

S/N #: 2327015 (26MW04)

Customer #: 24754

Testing

Date 10/26/06

Initial TK

- [x] Check battery level. 100 % — For Rental - Replace if less than 80%; For Repair - Replace if less than 98%
- [x] Verify serial number.
- [x] Verify range.
- [x] Firmware revision: 6.22
- [x] Set sensor clock.
- [x] Remove any field calibrations.
- [x] With dead-weight tester and real time monitor, verify calibration is within .1% FSO

Zero:	deadweight psi:	0	PT2X psi:	-0.007
Half scale:	deadweight psi:	7.5	PT2X psi:	7.505
Full scale:	deadweight psi:	15	PT2X psi:	14.986

- [x] Start a session.
- [x] Upload and view data.
- [x] Erase all sessions.
- [x] Desiccant packs in housing.
- [x] Desiccant tube filled.

Packaging

Date 10/26/06

Initial TK

- [x] PT2X with 25 feet of cable
- [ ] If Rental - Laminated Kit List

- [ ] RS485/232 adapter
- [ ] Communication cable
- [ ] Software Package
  - Version # _____
  - CD
  - Manual
  - Getting Stated Guide
  - Notes and Flyers

May only be one per order

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www.inwusa.com info@inwusa.com

8902 122nd Avenue NE, Kirkland WA 98033 (425) 822-4434 Fax (425) 822-8384

4620 Northgate Blvd. # 170, Sacramento CA 95834 (916) 922-2900 Fax (916) 648-7766

PT2X Smart Sensor

Range: 15 PSIG

Checkout Sheet
Rentals

Rental Order #: _____

S/N #: 2409000 (26MW01)

Customer #: _____

Testing

Date 10/26/06

Initial TLC

- [x] Check battery level: 82 % For Rental - Replace if less than 80%; For Repair - Replace if less than 98%
- [x] Verify serial number.
- [x] Verify range.
- [x] Firmware revision: 022
- [x] Set sensor clock.
- [x] Remove any field calibrations.
- [x] With dead-weight tester and real time monitor, verify calibration is within .1% FSO

Zero:	deadweight psi:	0	PT2X psi:	-0.007
Half scale:	deadweight psi:	7.5	PT2X psi:	7.509
Full scale:	deadweight psi:	15	PT2X psi:	14.993

- [x] Start a session.
- [x] Upload and view data.
- [x] Erase all sessions.
- [x] Desiccant packs in housing.
- [x] Desiccant tube filled.

Packaging

Date 10/26/06

Initial TLC

- [x] PT2X with 50 feet of cable
- [ ] If Rental - Laminated Kit List

- [ ] RS485/232 adapter
- [ ] Communication cable
- [ ] Software Package
  - Version # _____
  - CD
  - Manual
  - Getting Stated Guide
  - Notes and Flyers

May only be one per order

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4620 Northgate Blvd. # 170, Sacramento CA 95834 (916) 922-2900 Fax (916) 648-7766

ITTER RANGES

57	100 PSIG
58	100 PSIA
59	300 PSIG
60	300 PSIA

Vented HDPE

ORIES

ll seal to computer
nd 1500' cable reels

port

d a wide range
our water
nely manner.

via telephone
ce with our

IW sales
for cost saving
ading your
to a PT2X!

9355
om

able!

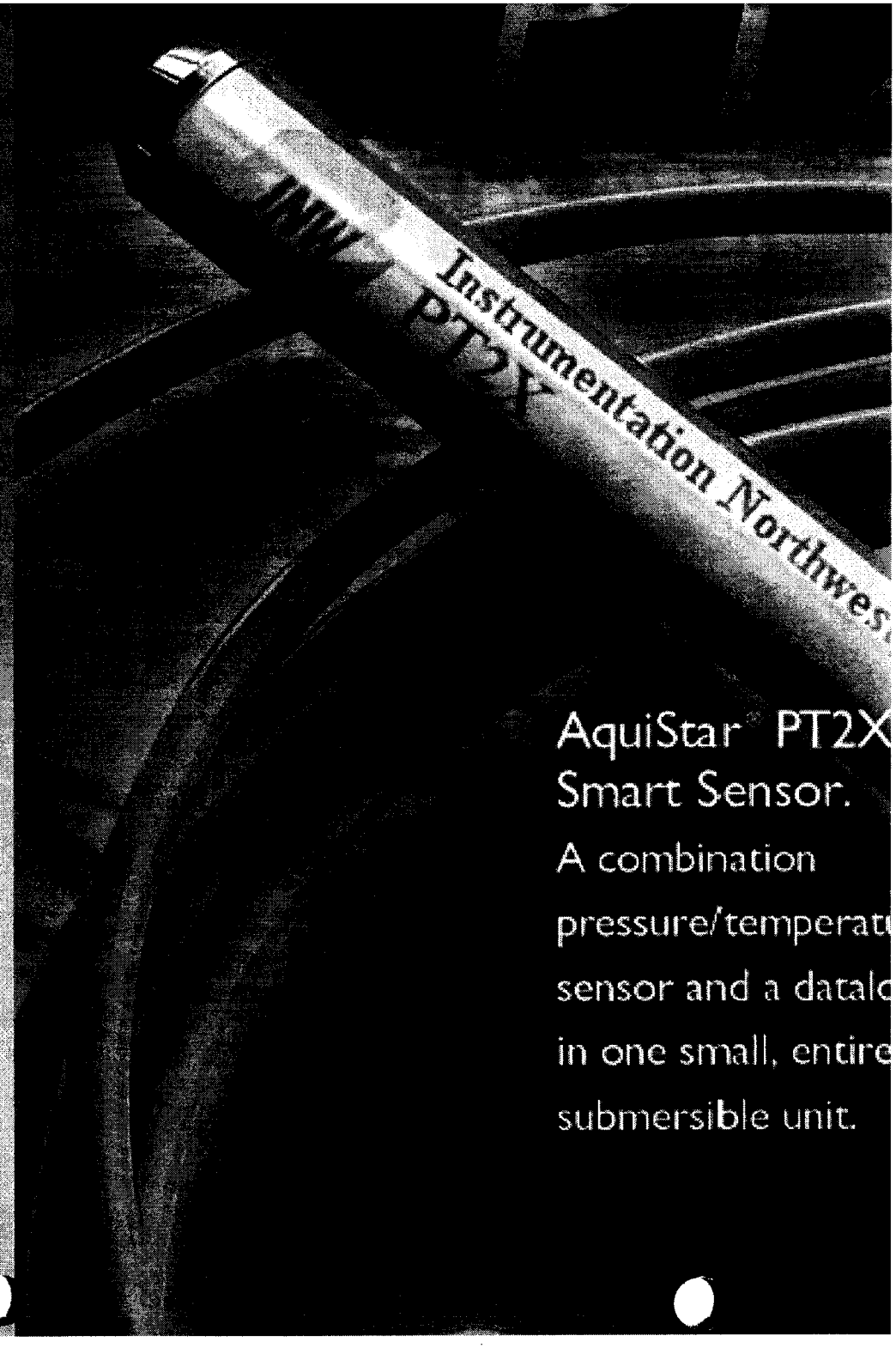
clean, calibrated,
ipment.
g available.

MECHANICAL

TRANSMITTER	
Body Material	316 stainless steel
Wire Seal Materials	Viton® and Teflon®
Desiccant	High- and standard-capacity packs available
Terminating Connector	Available
Weight	.80 lbs.
CABLE	
OD	0.28" maximum
Break Strength	138 lbs.
Maximum Length	2000 feet
Weight	4 lbs. per 100 feet

ELECTRICAL

PRESSURE	
Static Accuracy (B.F.S.L. 25° C)	±0.1% FSO (maximum) ±0.06% FSO (typical) 0.06% available on request.
Temperature Error (reference 25° C)	±0.5% FSO (maximum) ±0.25% FSO (typical)
Maximum Zero Offset at 25° C	±0.25% FSO
Resolution	16 bit
Over Range Protection	2x (except 300 PSIA)
TEMPERATURE	
Accuracy	±0.75° C (maximum)
Resolution	0.1° C
TIME	
Accuracy	±4 min/yr (maximum) ±2 min/yr (typical)
Recommended Operating Temperature Range	0° C to 40° C Contact factory for extended temperature ranges.



AquiStar® PT2X
Smart Sensor.

A combination
pressure/temperatu
sensor and a datalo
in one small, entire
submersible unit.

need for separate logger.
time

emory

nel
applications

eight reel

ld use

Patented
Cable Harness

Service
Connector

User-replaceable
AA batteries

10.75"

PT2X
Sensor/Datalogger
Circuit Board,
containing 1 MB
of non-volatile memory

Pressure Elements Available
15, 30, 50, 100, or 300 PSI

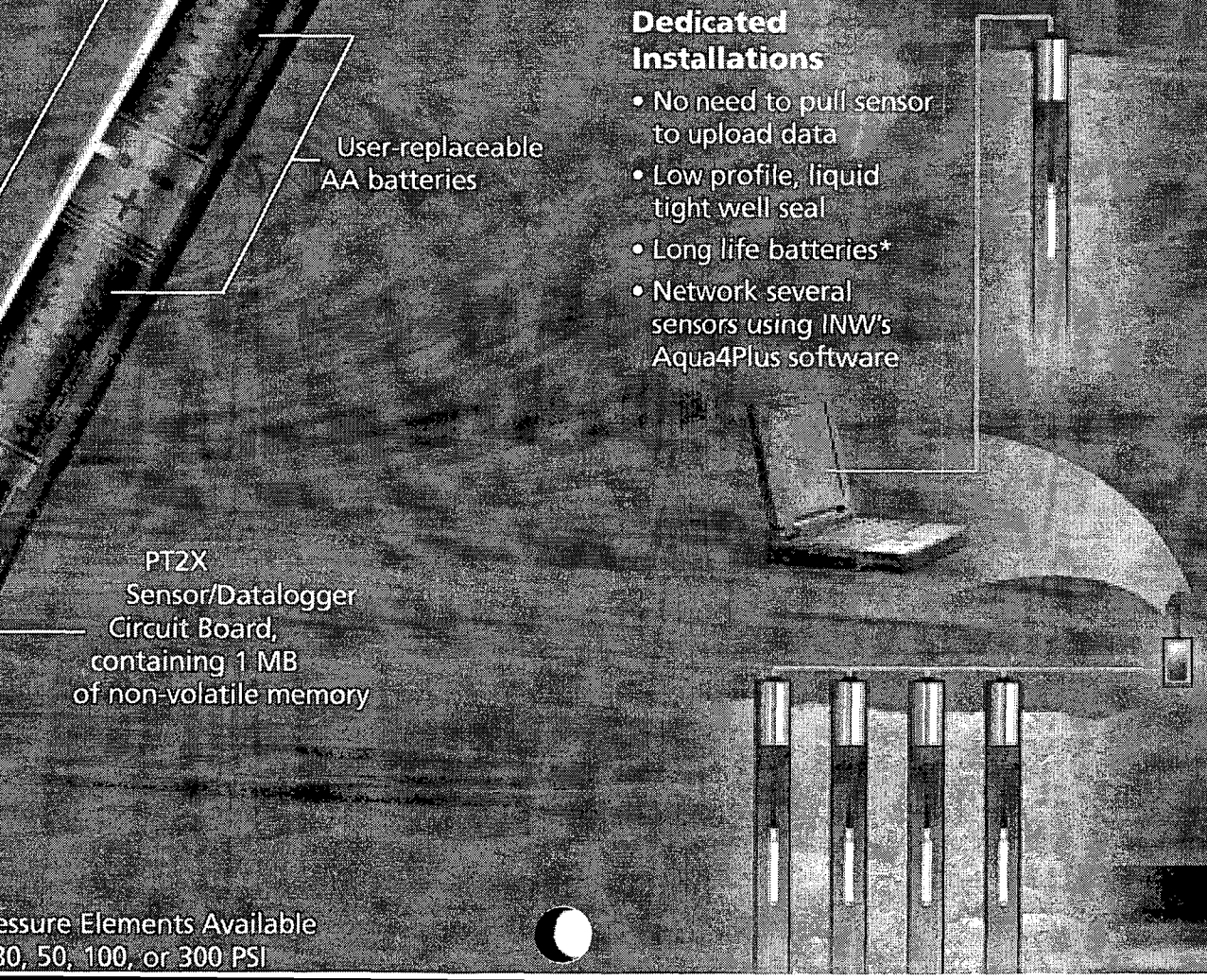
Vented Cable

Uses

- *Groundwater monitoring*
- Leachate monitoring
- Pump testing
- Tide monitoring
- River flow and level observations
- Tank level control
- Reservoir level monitoring
- Thermal profiling

Dedicated Installations

- No need to pull sensor to upload data
- Low profile, liquid tight well seal
- Long life batteries*
- Network several sensors using INW's Aqua4Plus software

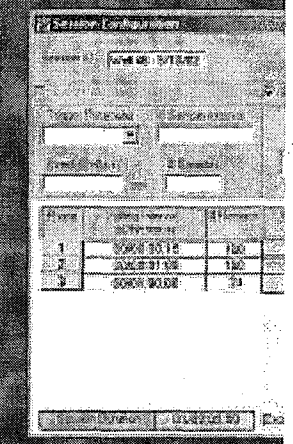


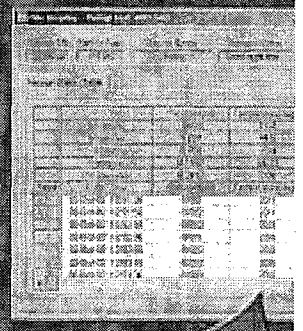
program can access se
port can connect to se
several test sessions. E

Access to up to 16
sensors, each with
multiple test sessions.

View sensor status

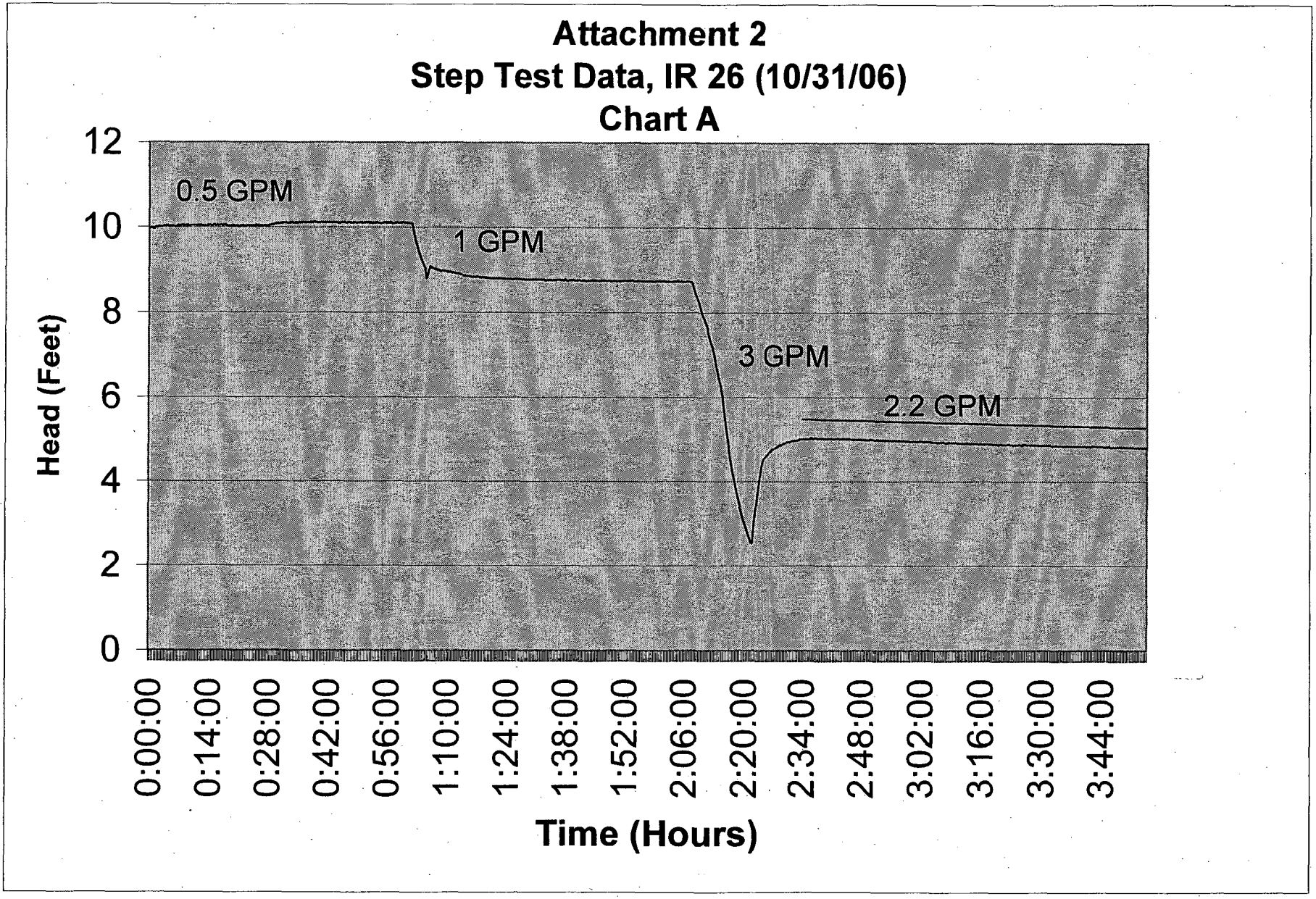
Monitor real time dat



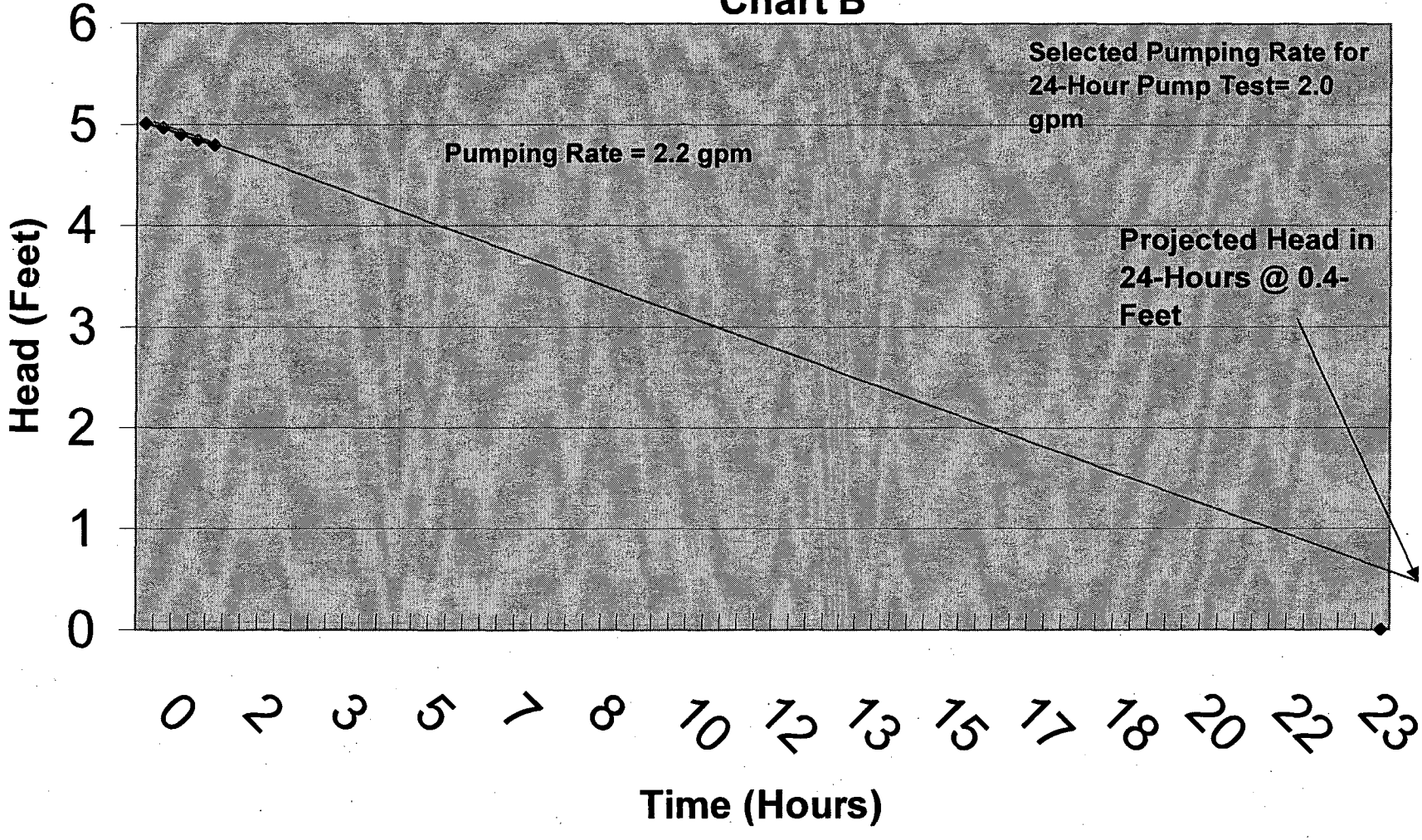


ATTACHMENT 2

A – STEP TEST DATA


Attachment 2
Step Test Data, IR 26 (10/31/06)
Chart A
0.5 GPM
1 GPM
3 GPM
2.2 GPM
Head (Feet)
12
10
8
6
4
2
0
0:00:00
0:14:00
0:28:00
0:42:00
0:56:00
1:10:00
1:24:00
1:38:00
1:52:00
2:06:00
2:20:00
2:34:00
2:48:00
3:02:00
3:16:00
3:30:00
3:44:00
Time (Hours)

Attachment 2
Step Test, IR 26, Projected Head (Feet) in 24-hours
Chart B



ATTACHMENT 2

B – PUMP TEST DATA

APPENDIX F – AQUIFER TESTING DOCUMENTATION

ATTACHMENT 2 – B-PUMP TEST DATA

THIS RECORD CONTAINS LARGE VOLUMES OF DATA AND IS NOT REQUIRED TO BE PHYSICALLY LOCATED WITH THE ADMINISTRATIVE RECORD DOCUMENT.

DUE TO EXTENSIVE VOLUME, THIS DATA WILL NOT BE IMAGED.

TO VIEW THE DATA, CONTACT:

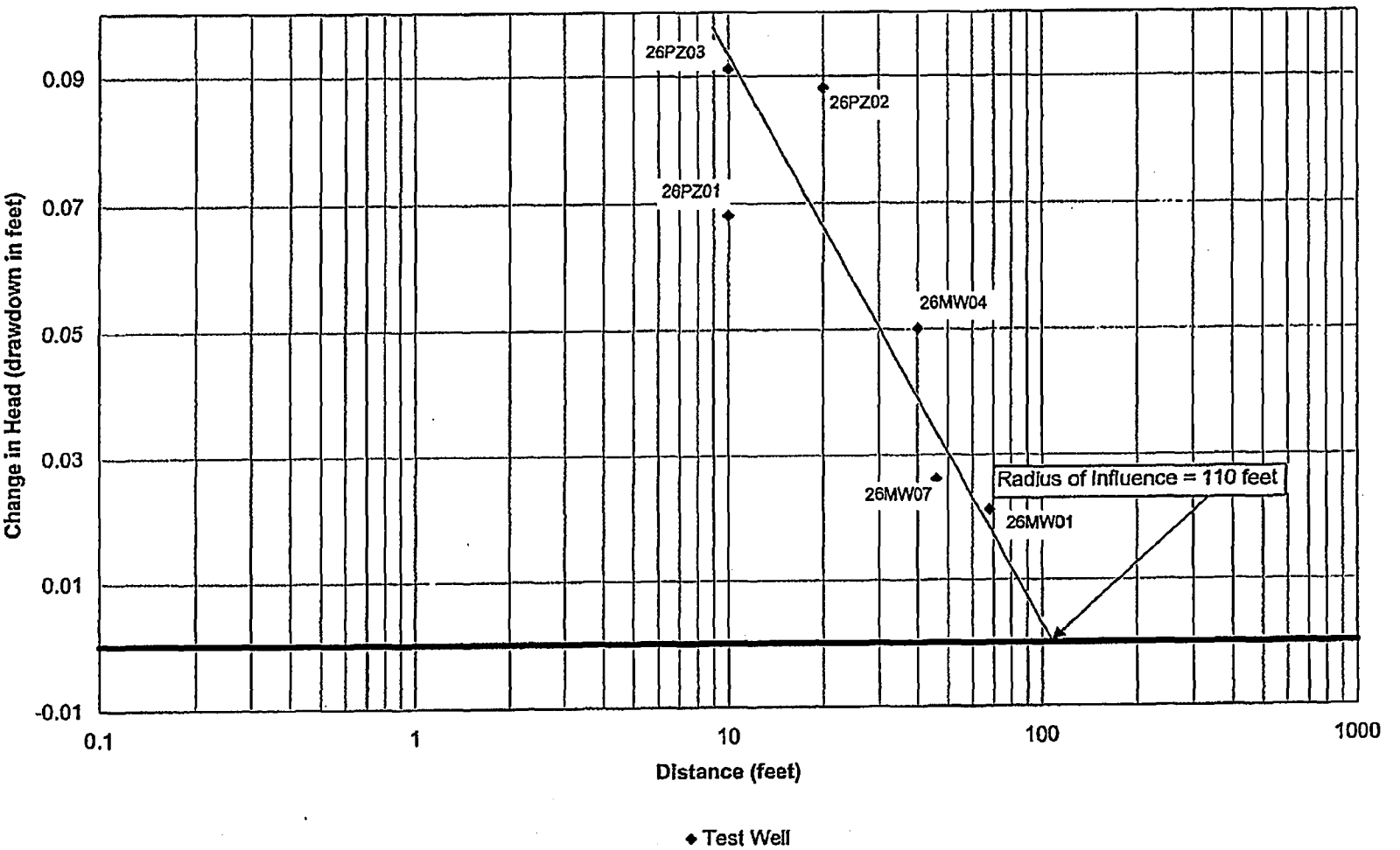
DIANE C. SILVA
RECORDS MANAGEMENT SPECIALIST
NAVAL FACILITIES ENGINEERING COMMAND SOUTHWEST
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132

TELEPHONE: (619) 532-3676

ATTACHMENT 3

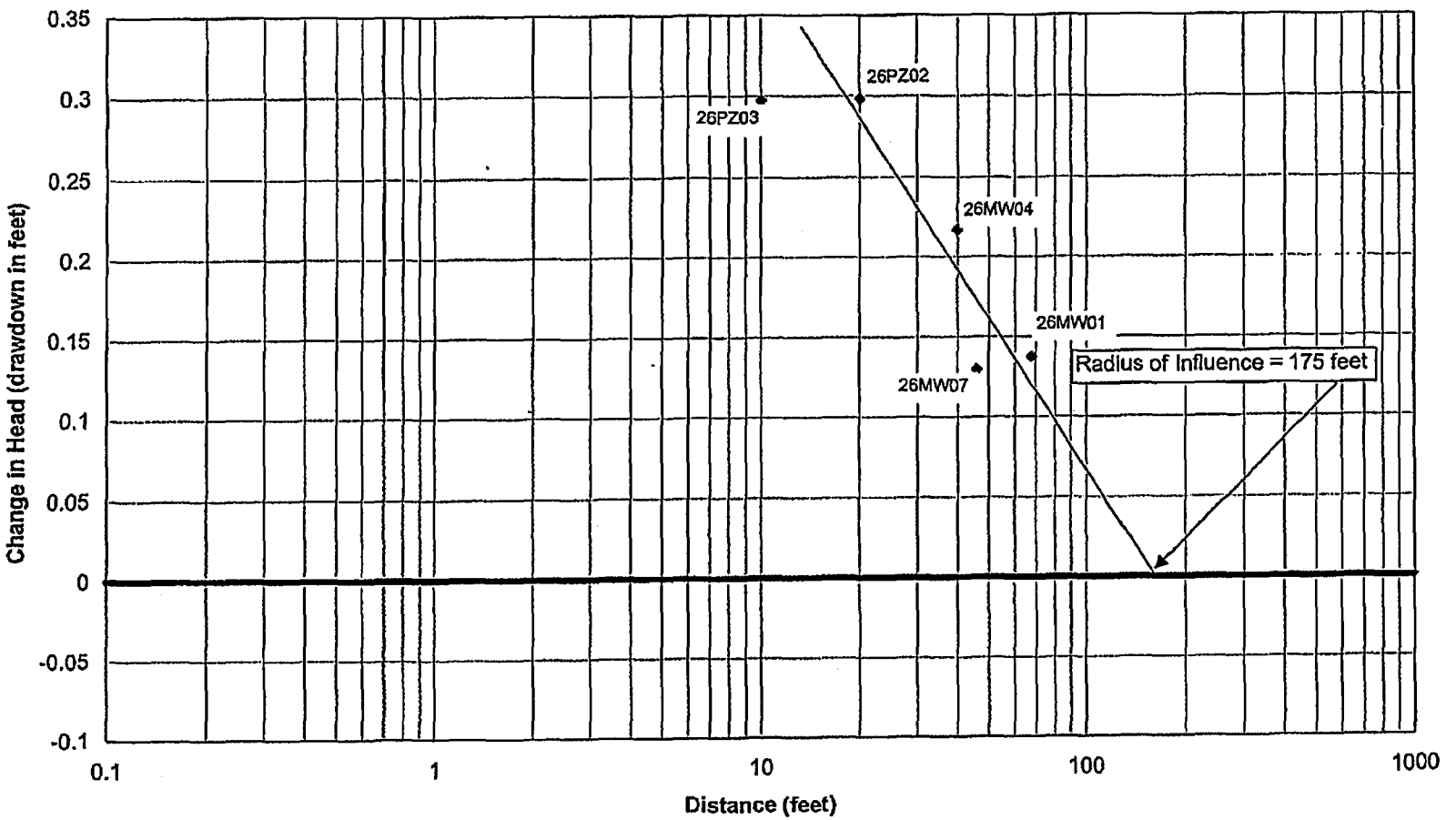
A – DISTANCE DRAWDOWN PLOTS

Distance Drawdown Plot
at time = 100 minutes

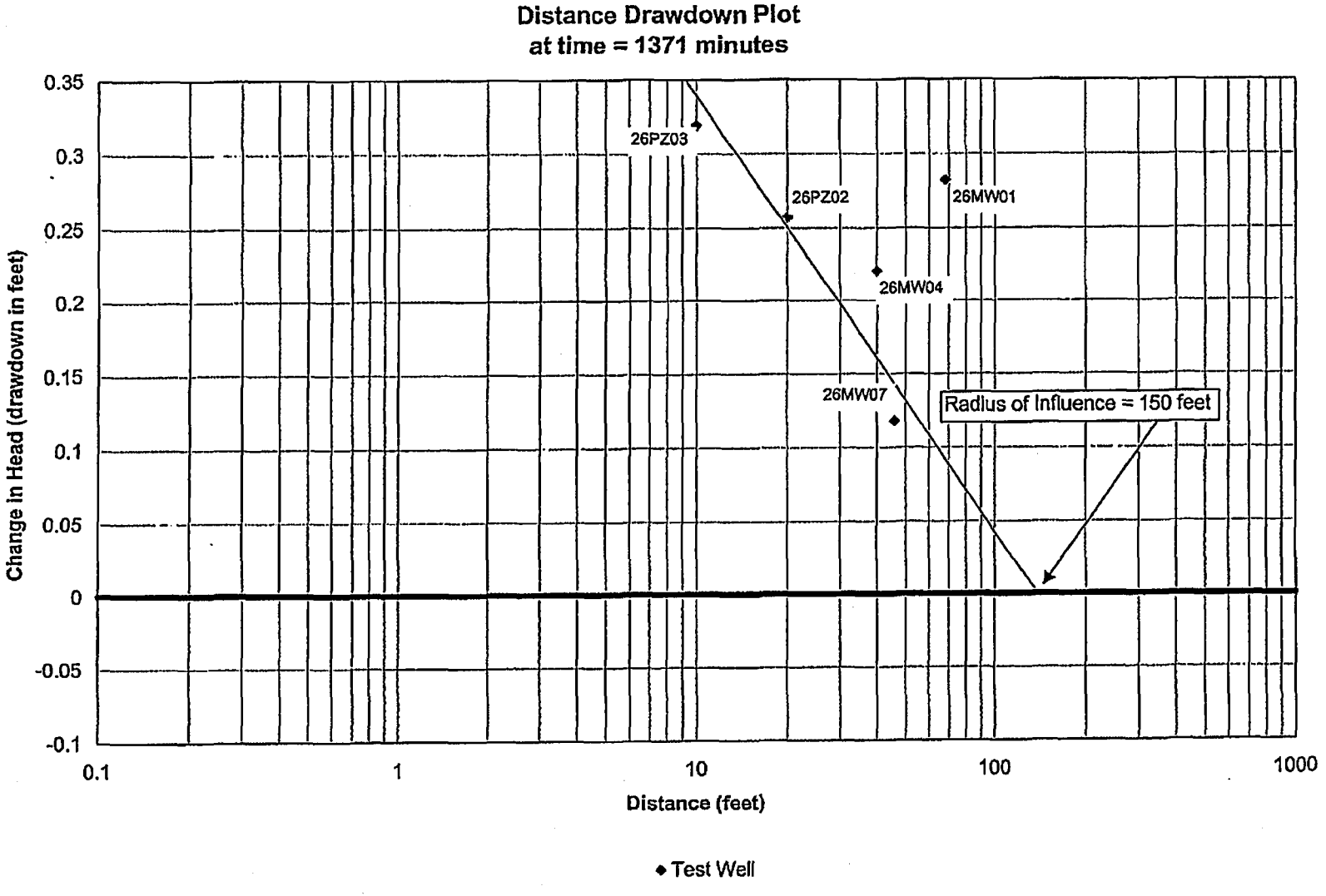


Innovative Technical Solutions, Inc.

Distance Drawdown Plot
at time = 1000 minutes



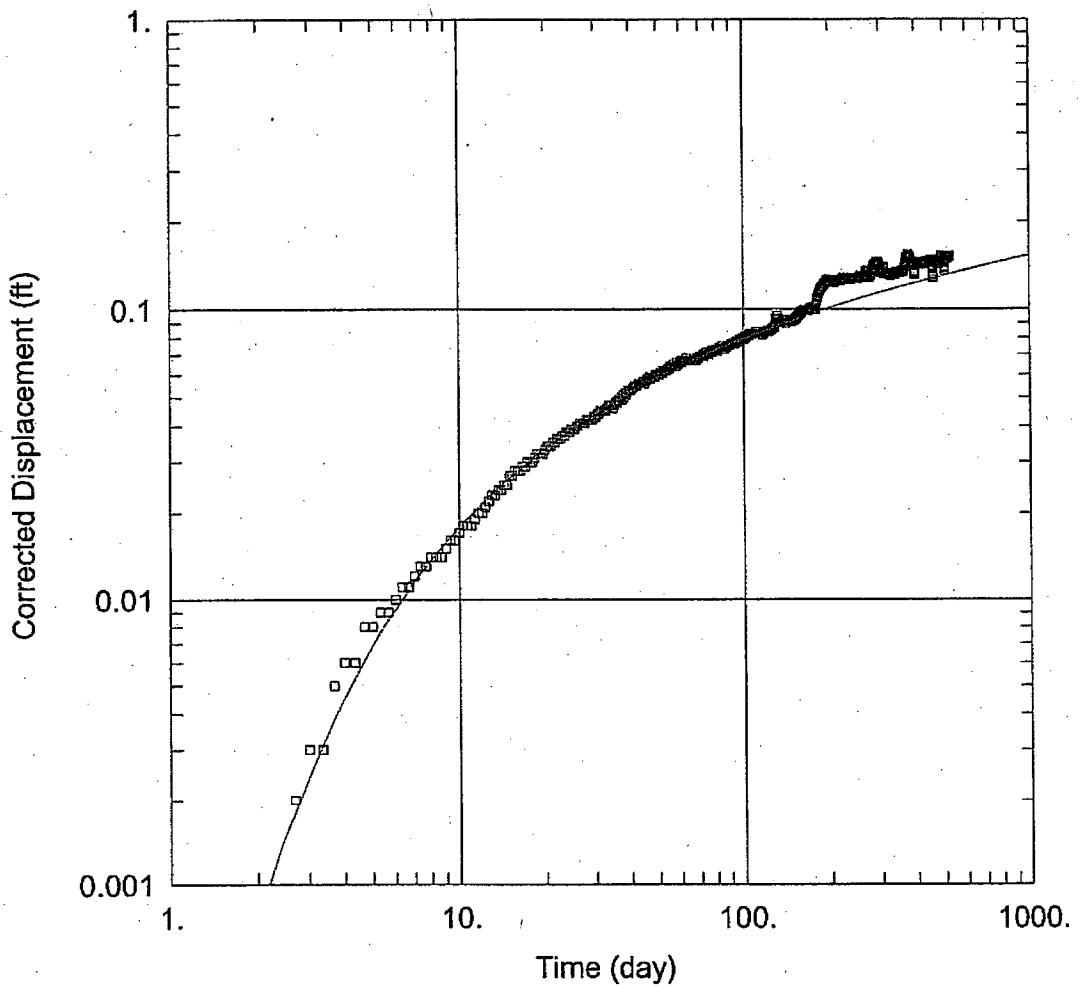
Innovative Technical Solutions, Inc.



Innovative Technical Solutions, Inc.

ATTACHMENT 3

B – PUMP TEST DATA PLOTS



WELL TEST ANALYSIS

Data Set:
Date: 11/27/06 Time: 20:24:34

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

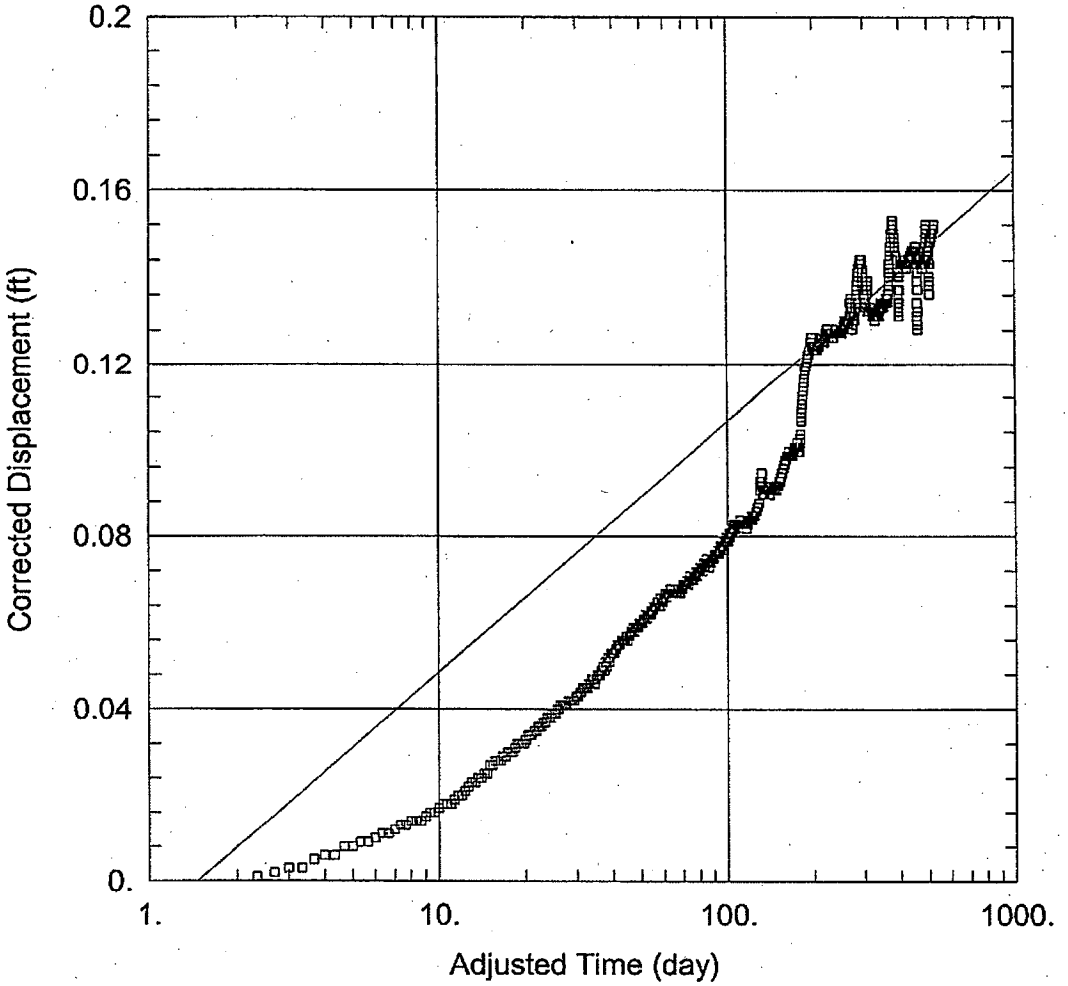
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-01	90	60

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 0.7224 ft^2/min
S = 424.
Kz/Kr = 1.
b = 13. ft



WELL TEST ANALYSIS

Data Set:
Date: 11/27/06 Time: 20:27:46

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

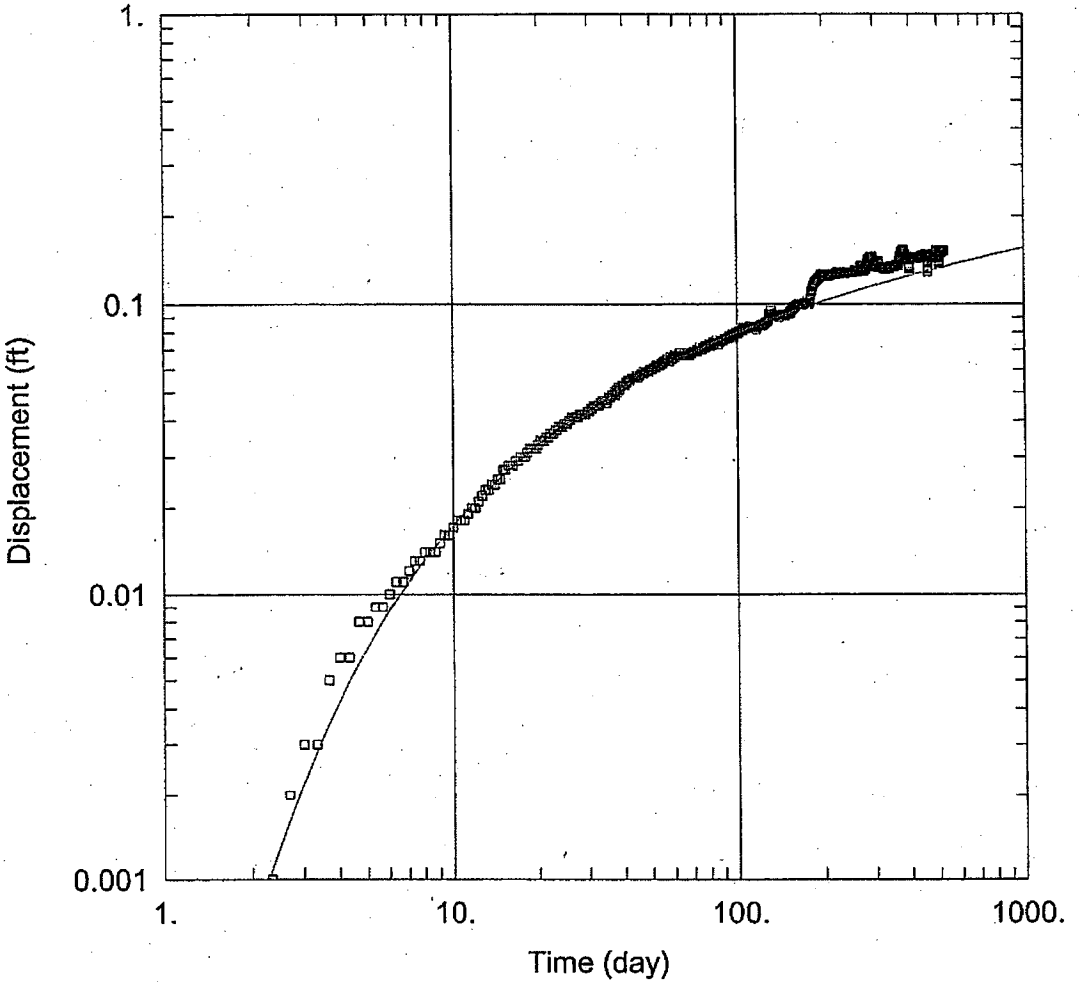
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-01	90	60

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 0.9289 ft^2/min S = 87.65



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_PZ-01.aqt
Date: 11/28/06 Time: 15:25:02

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

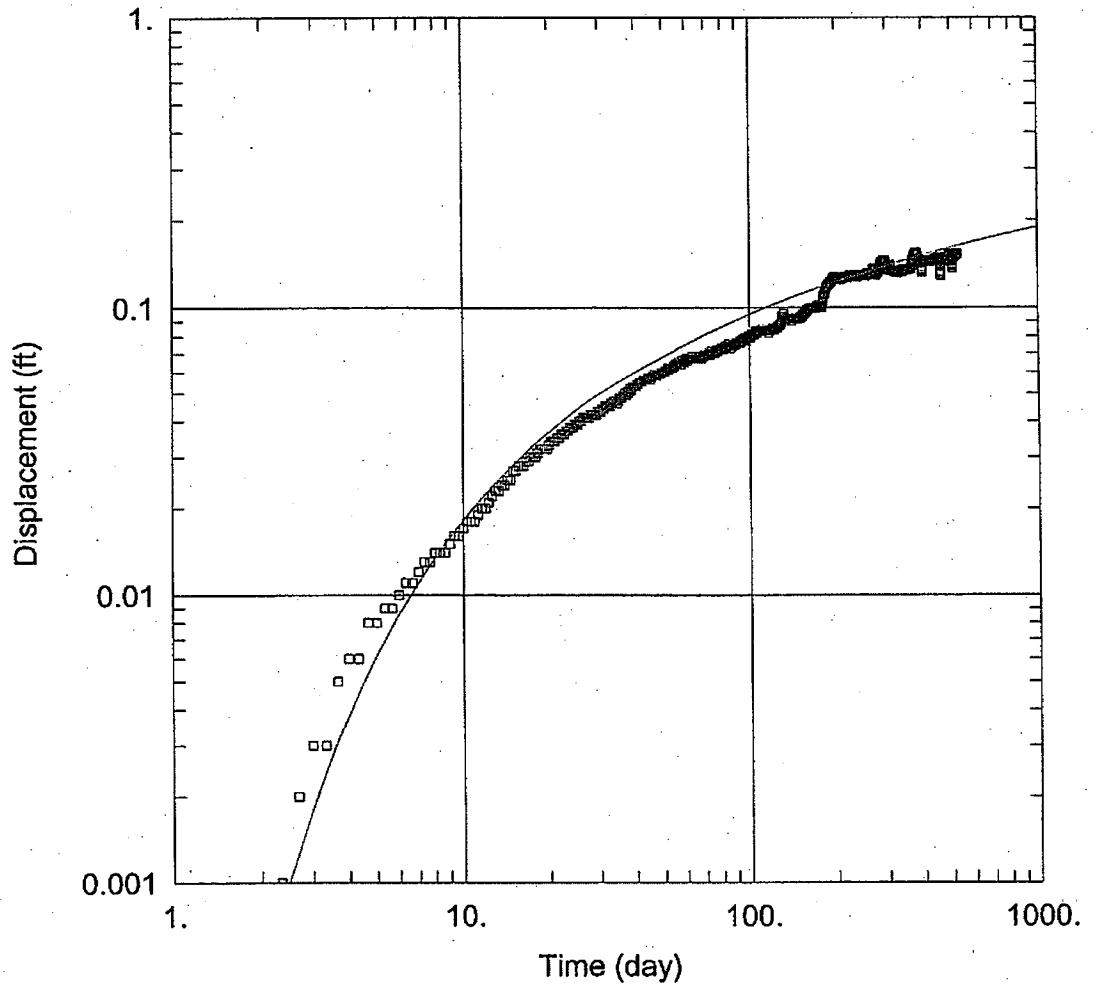
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-01	90	60

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.6879 ft^2/min
Sy = 35.13
S = 427.
ß = 0.001



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_PZ-01.aqt
Date: 11/29/06 Time: 17:19:50

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

Observation Wells

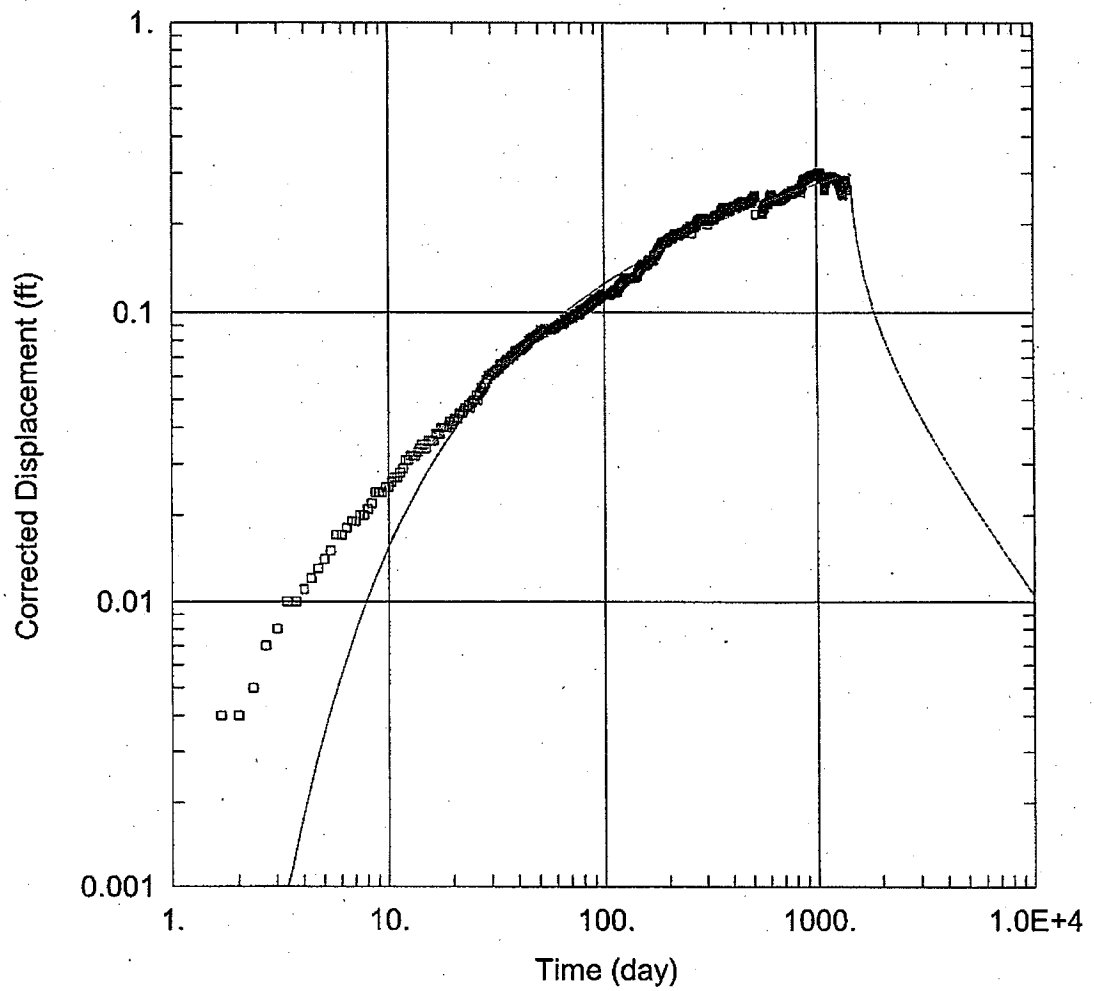
Well Name	X (ft)	Y (ft)
▫ 26PZ-01	90	60

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.5575 ft^2/min
Sy = 0.3338

S = 402.1
ß = 0.004



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_PZ-02.aqt
Date: 11/28/06 Time: 14:41:12

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

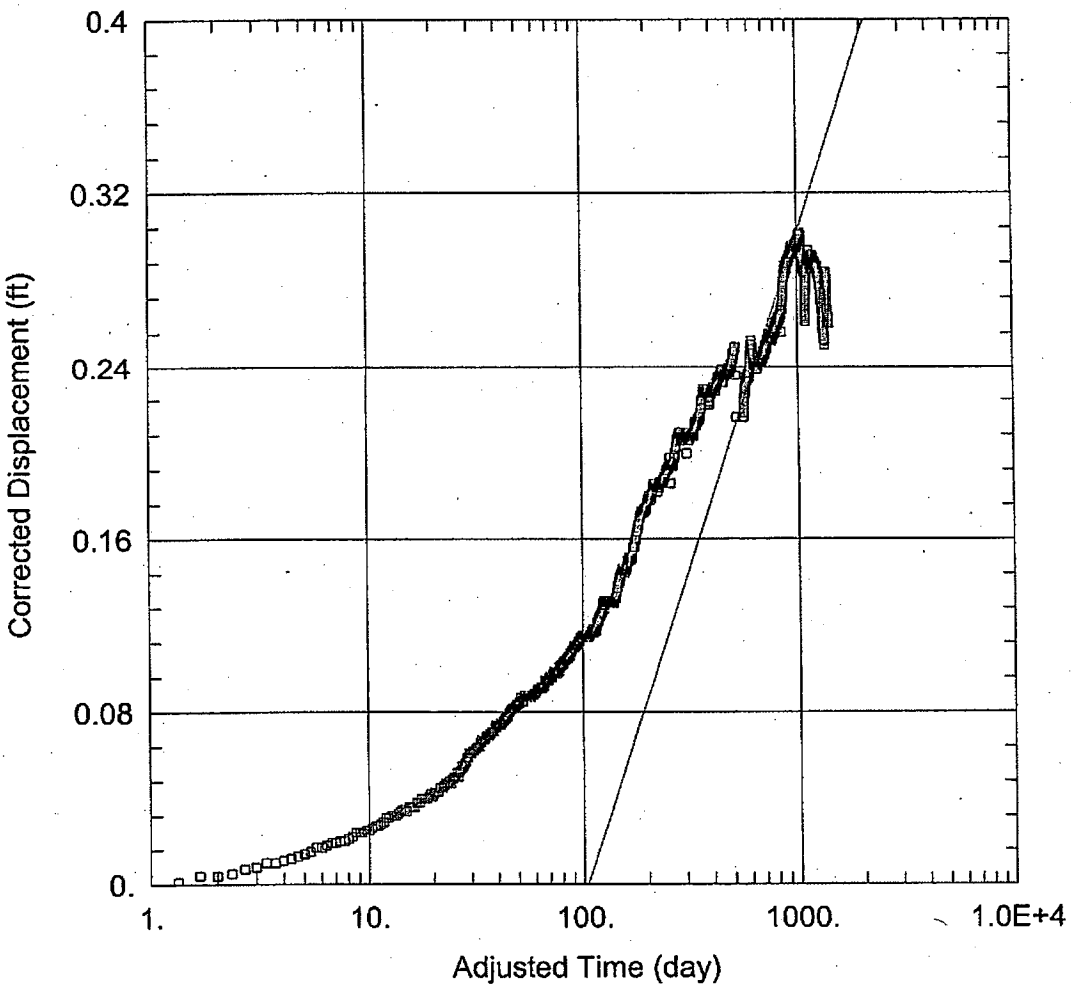
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-02	100	65

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 0.346 ft^2/min
S = 59.85
Kz/Kr = 1.56
b = 13. ft



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_PZ-02.aqt
Date: 11/27/06 Time: 21:13:07

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 0.01

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

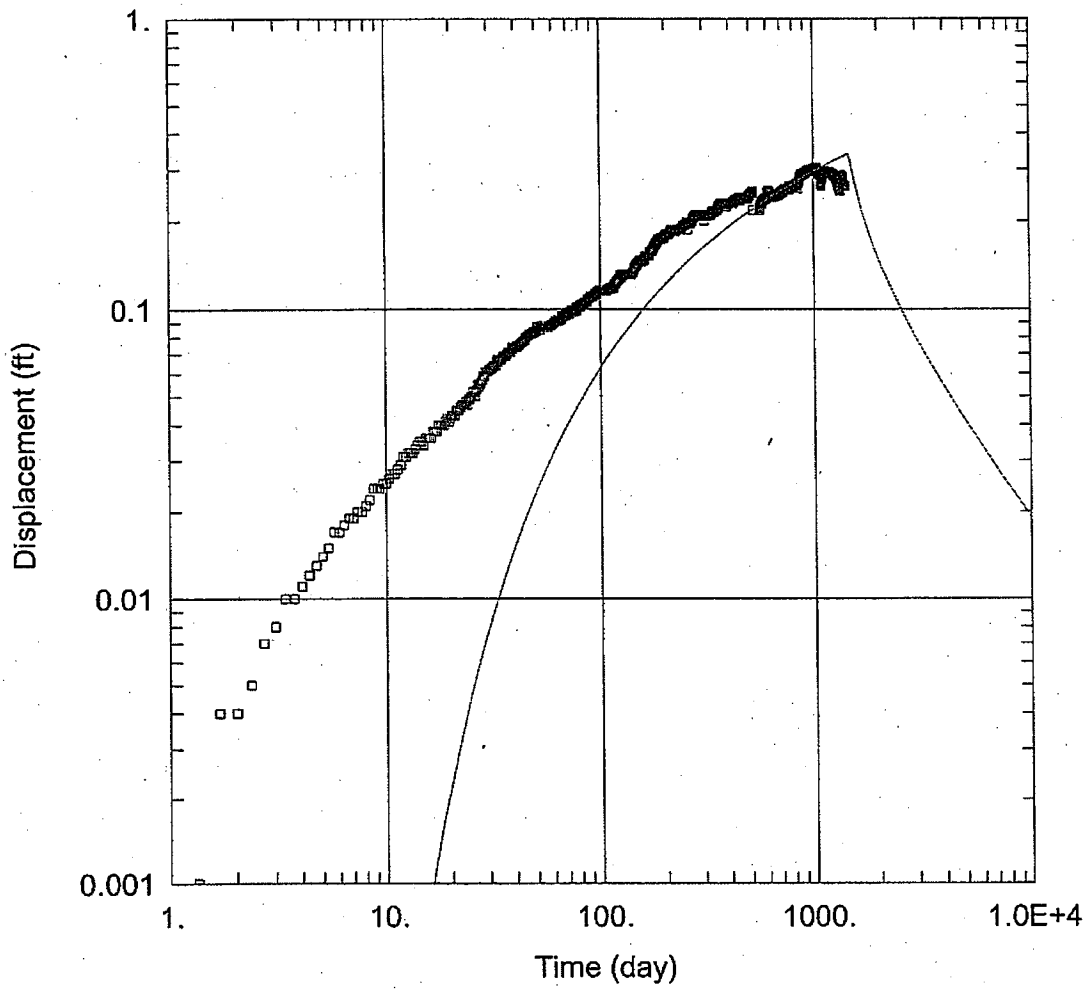
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-02	100	65

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 0.1755 ft^2/min S = 181.8



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_PZ-02.aqt
Date: 11/27/06 Time: 21:18:21

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

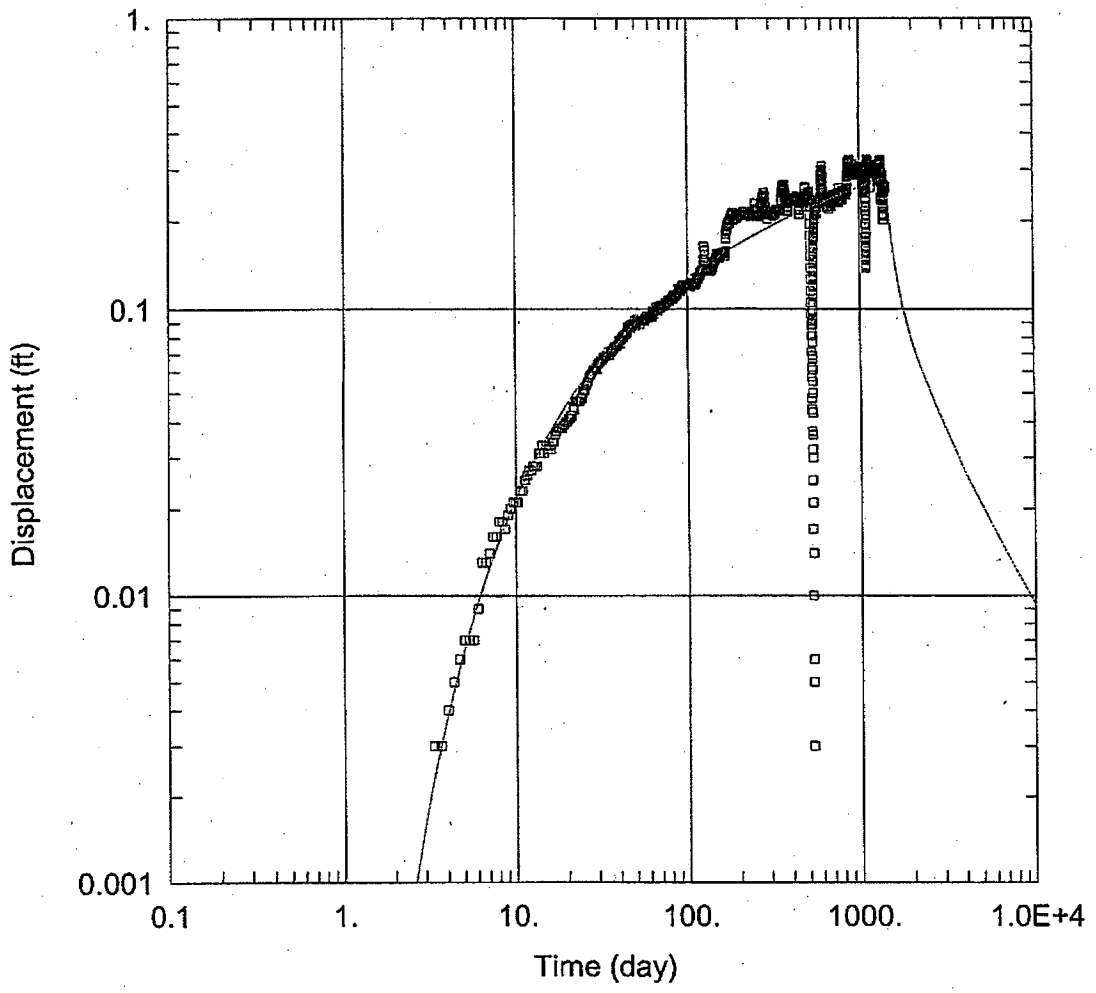
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-02	100	65

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.1897 ft^2/min
S = 181.8
Sy = 0.1091
ß = 3.



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_PZ-02.aqt
Date: 11/27/06 Time: 21:21:38

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

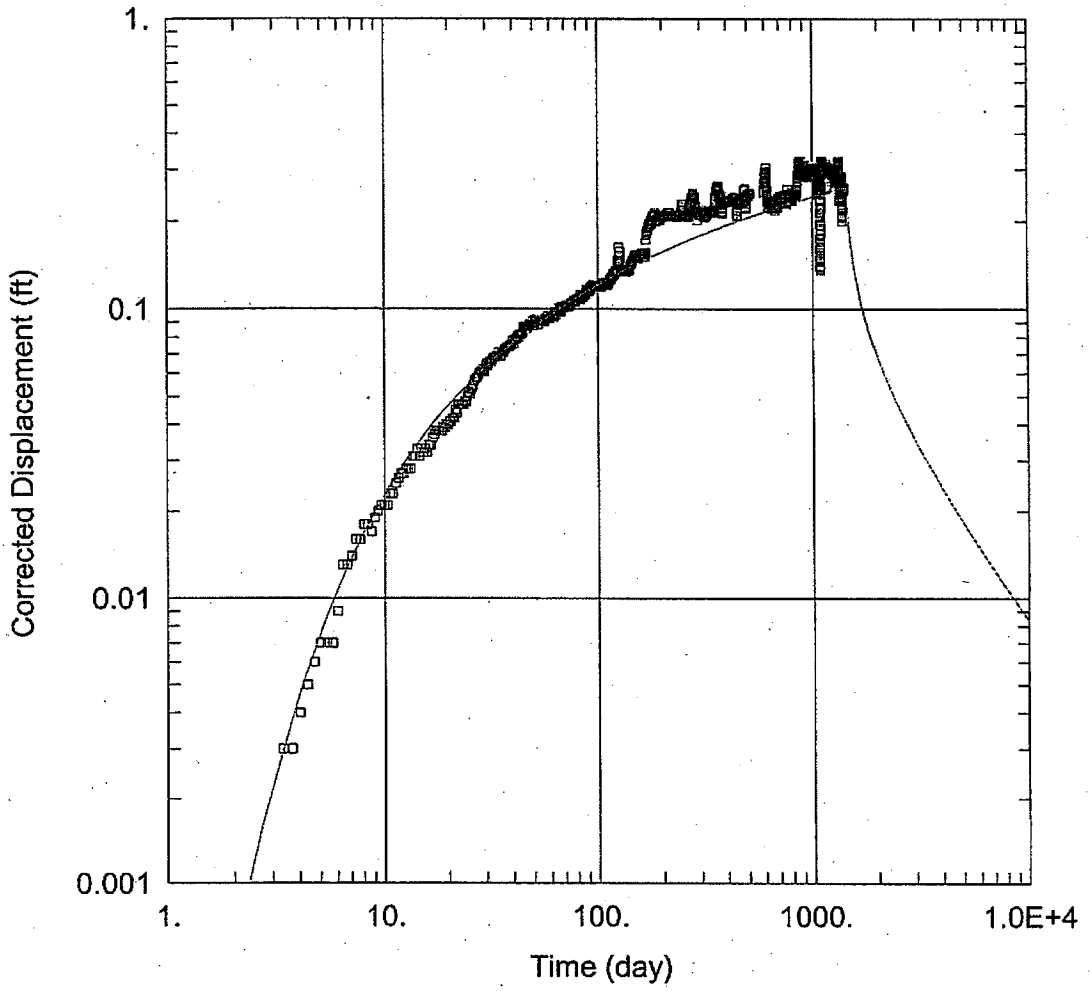
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-02	100	65

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.3901 ft^2/min
Sy = 0.02265
S = 49.98
ß = 0.004



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_PZ-03.aqt
Date: 11/28/06 Time: 14:54:47

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

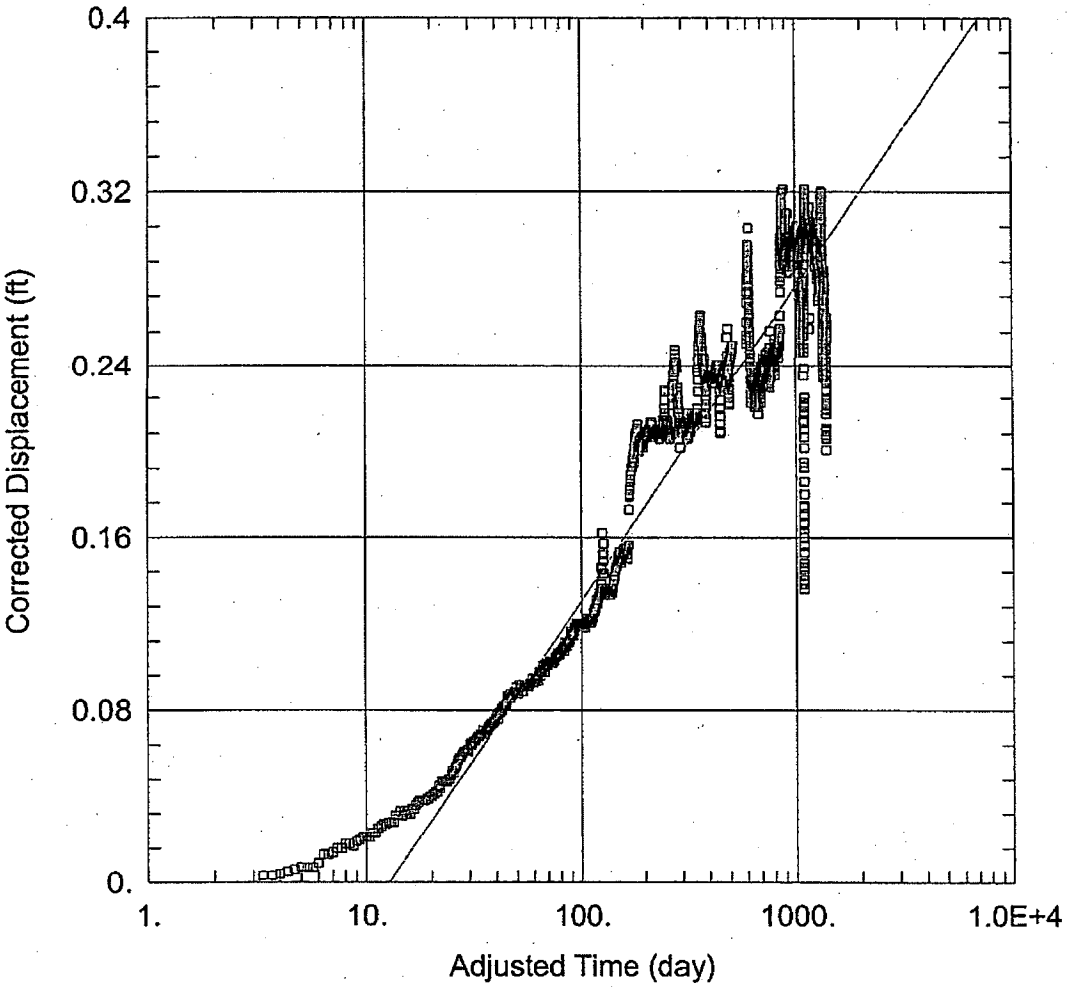
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-03	90	40

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 0.4334 ft^2/min
S = 63.6
Kz/Kr = 0.002704
b = 13. ft



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_PZ-03.aqt
Date: 11/28/06 Time: 14:56:38

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 0.002704

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

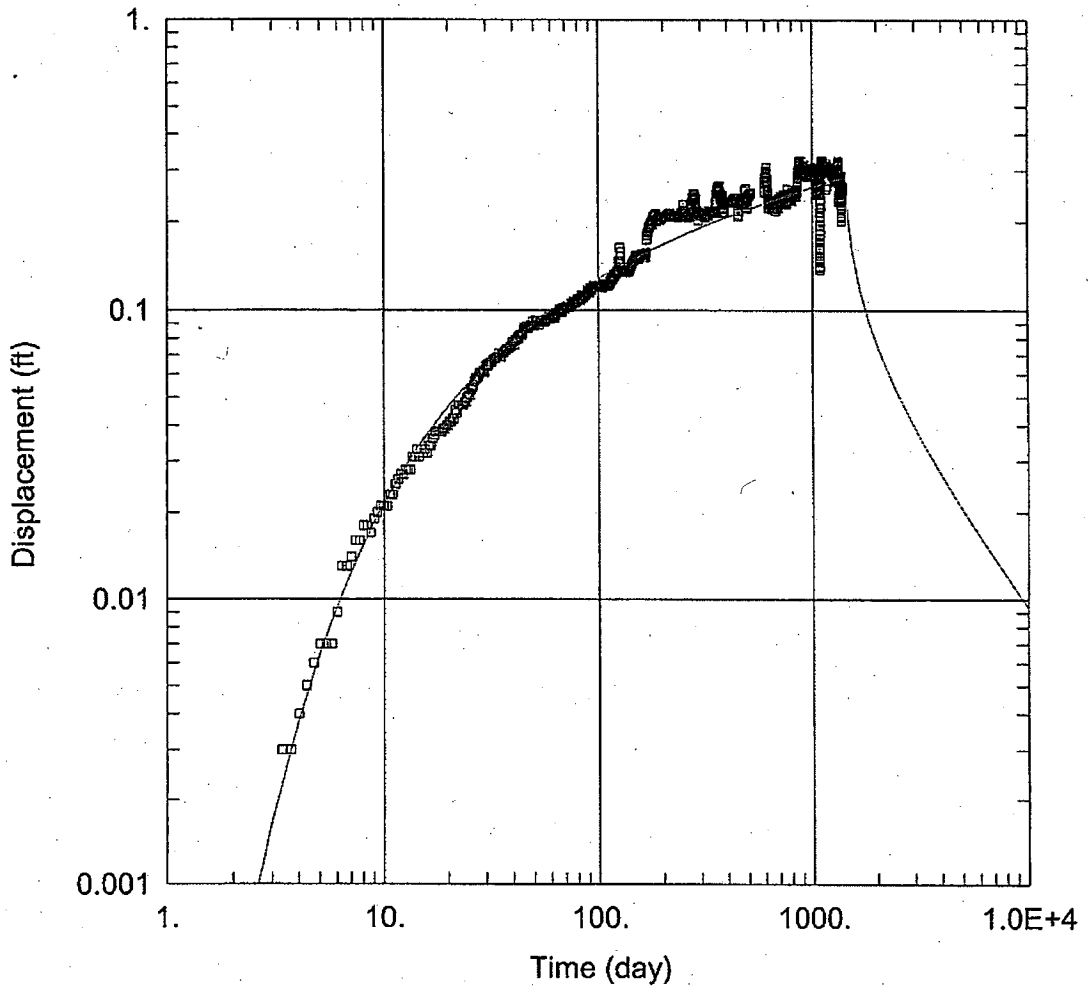
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-03	90	40

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 0.3699 ft^2/min S = 60.86



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_PZ-03.aqt
Date: 11/28/06 Time: 14:58:32

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

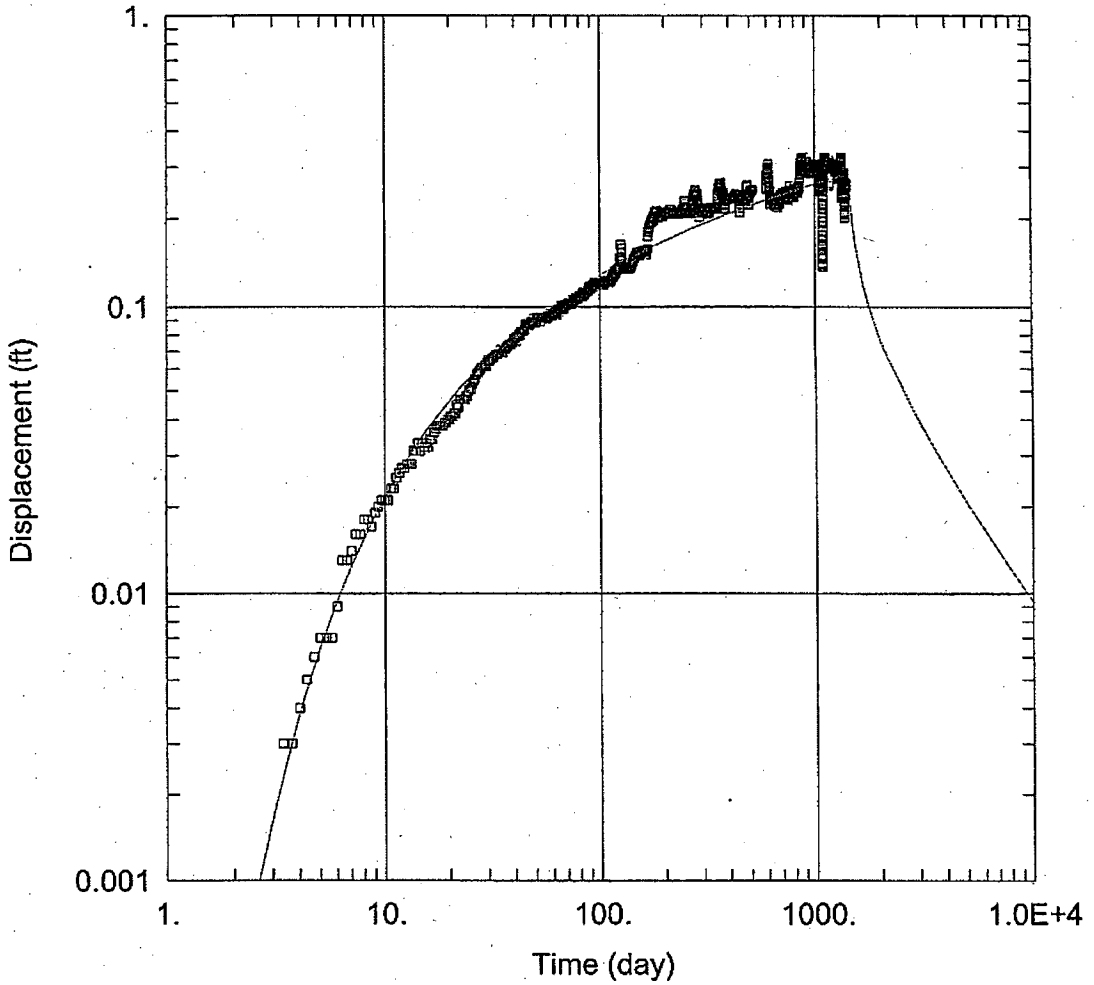
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-03	90	40

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.387 ft^2/min
Sy = 0.01164
S = 64.96
ß = 0.004



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_PZ-03.aqt
Date: 11/28/06 Time: 15:01:32

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

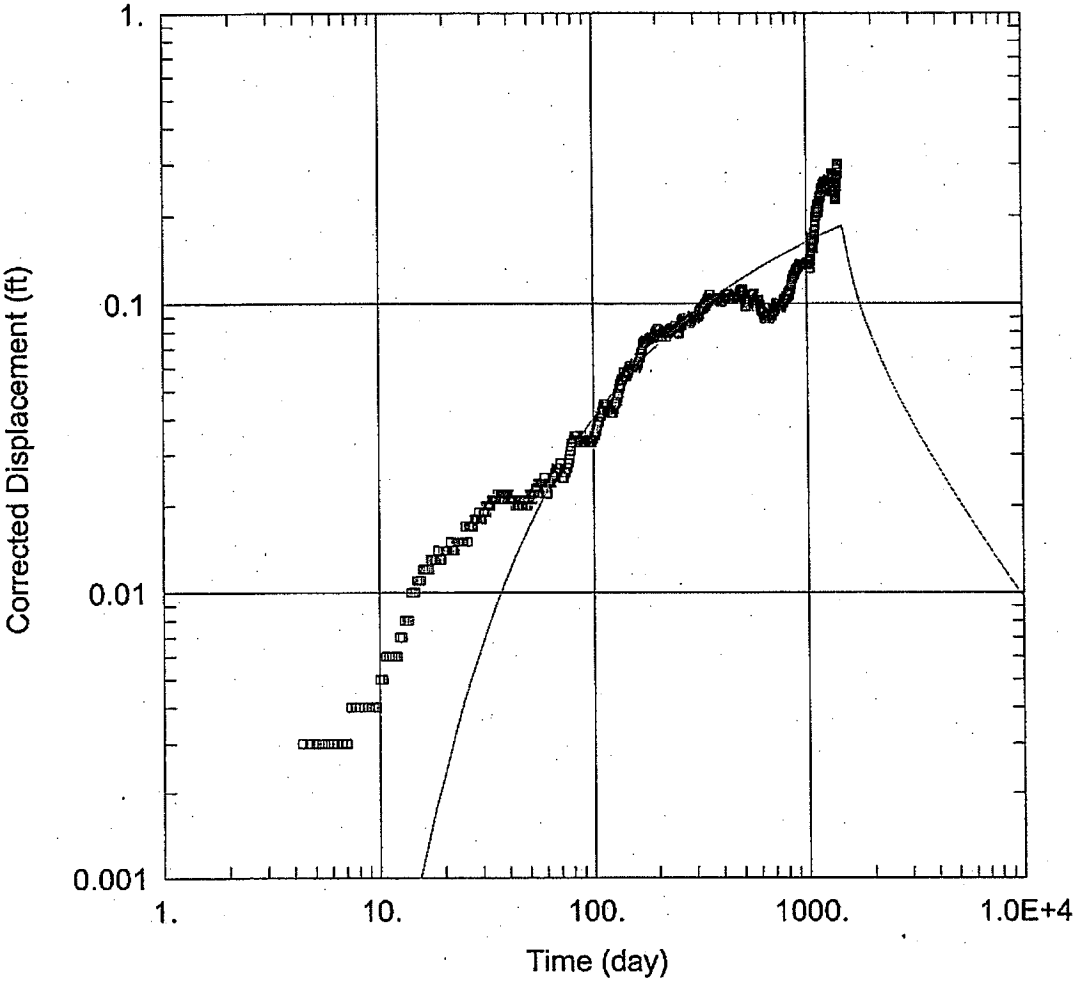
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-03	90	40

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.387 ft^2/min
S = 64.96
Sy = 0.0154
ß = 2.



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_MW-01.aqt
Date: 11/27/06 Time: 21:44:03

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

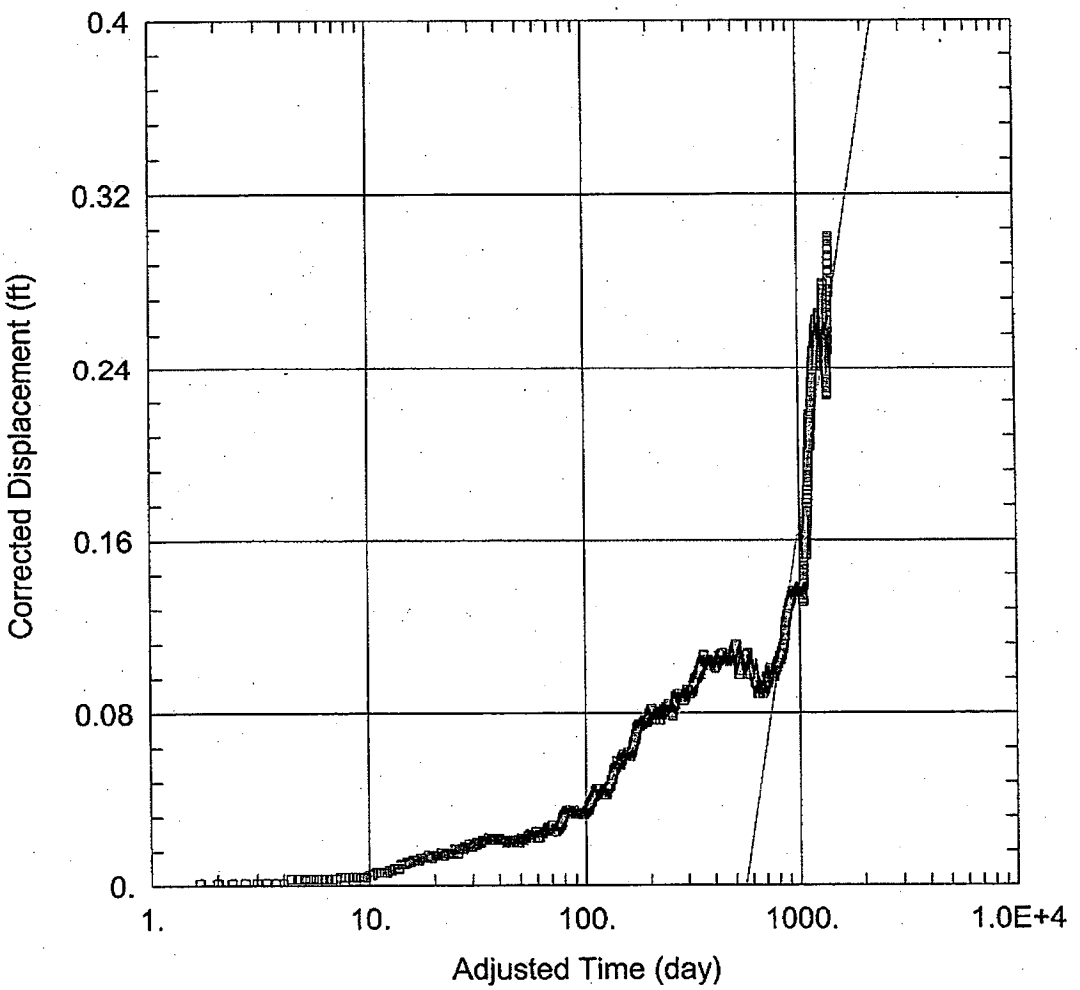
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-01	20	45

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 0.3756 ft^2/min
S = 21.83
Kz/Kr = 3.908E-5
b = 13. ft



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_MW-01.aqt
Date: 11/28/06 Time: 15:07:25

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 3.908E-5

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

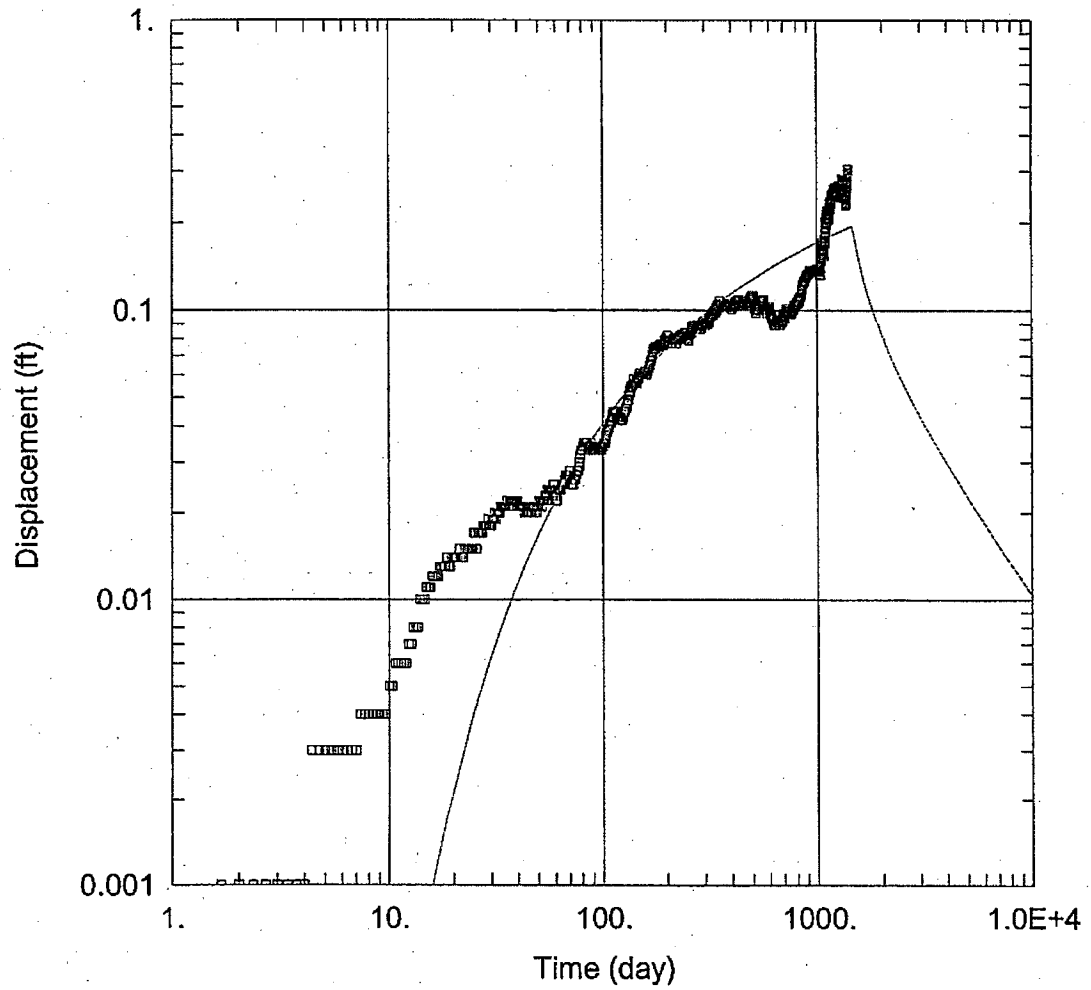
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-01	20	45

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 0.08227 ft^2/min S = 33.99



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_PZ-03.aqt
Date: 11/27/06 Time: 21:29:14

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

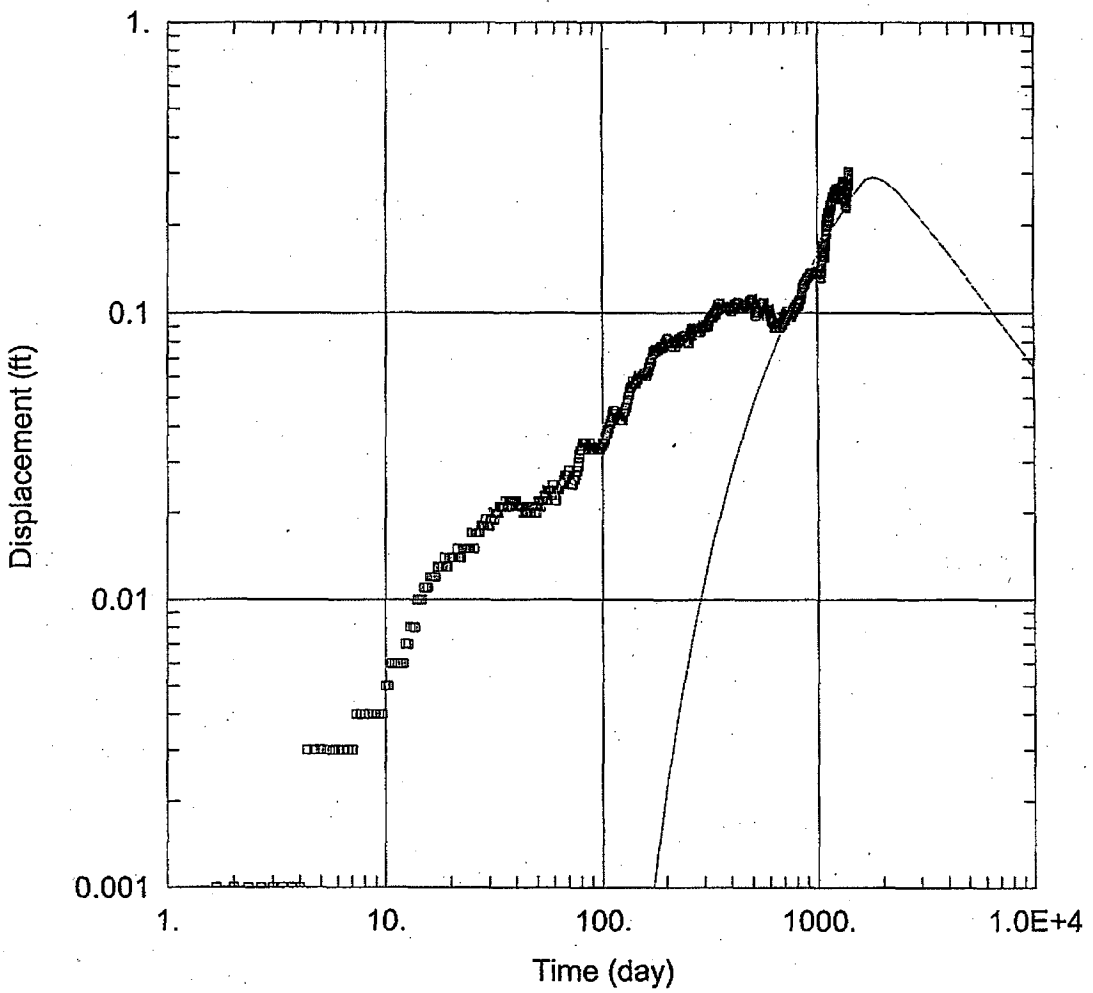
Observation Wells

Well Name	X (ft)	Y (ft)
26MW-01	20	45

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.3484 ft^2/min
S = 21.4
Sy = 0.01
ß = 0.004



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_MW-01.aqt
Date: 11/29/06 Time: 17:15:32

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

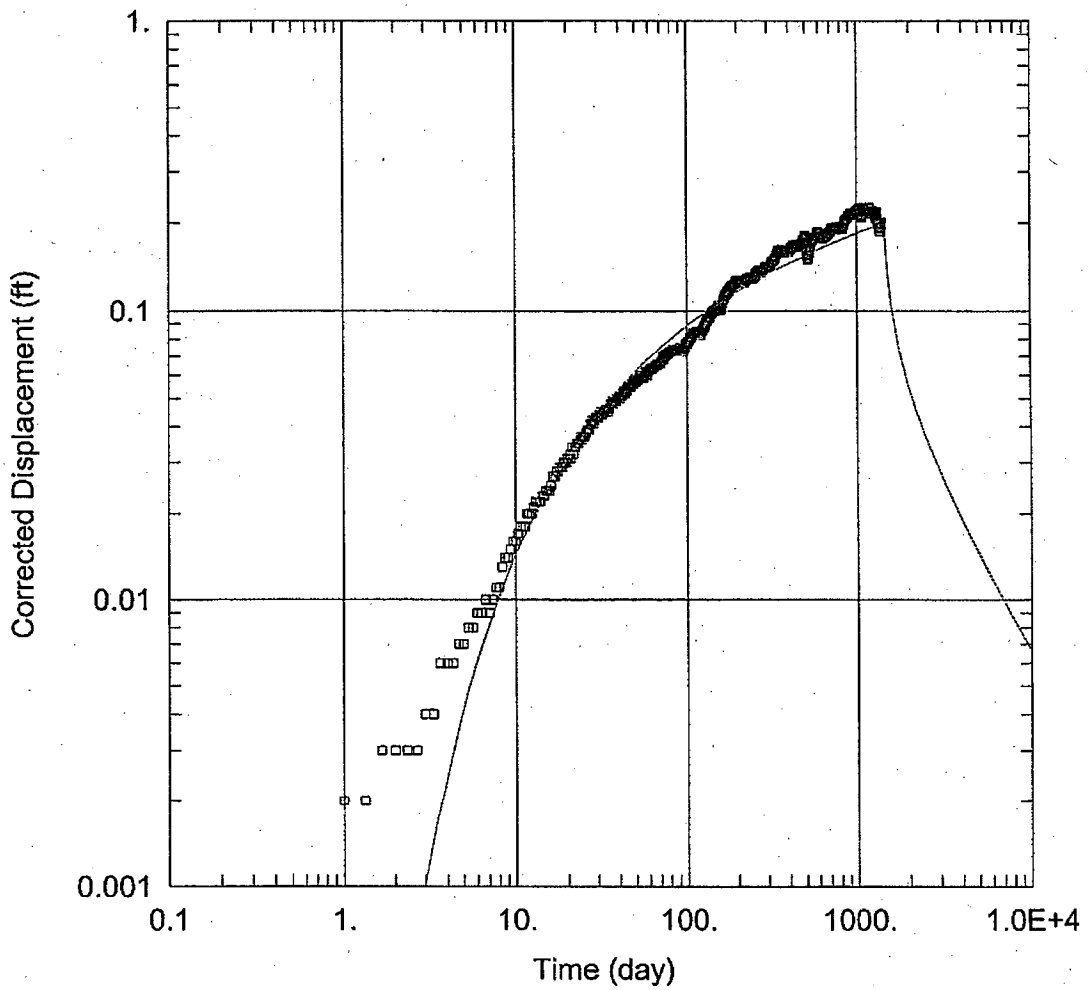
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-01	20	45

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.05118 ft^2/min
S = 50.23
Sy = 0.3711
ß = 0.4



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_MW-04.aqt
Date: 11/28/06 Time: 15:20:02

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

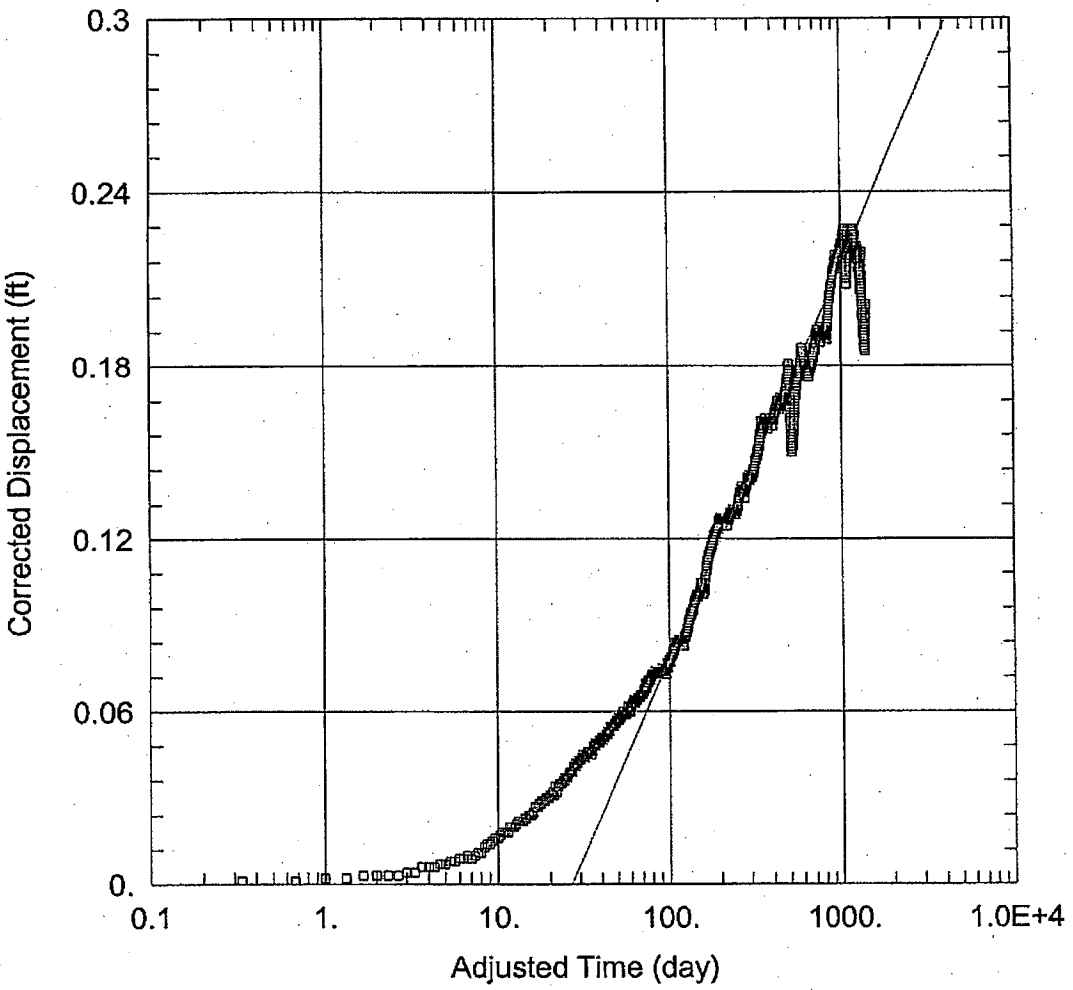
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-04	100	20

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 0.55 ft^2/min
S = 16.46
Kz/Kr = 0.01
b = 13. ft



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_MW-04.aqt
Date: 11/28/06 Time: 15:20:30

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 0.01

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

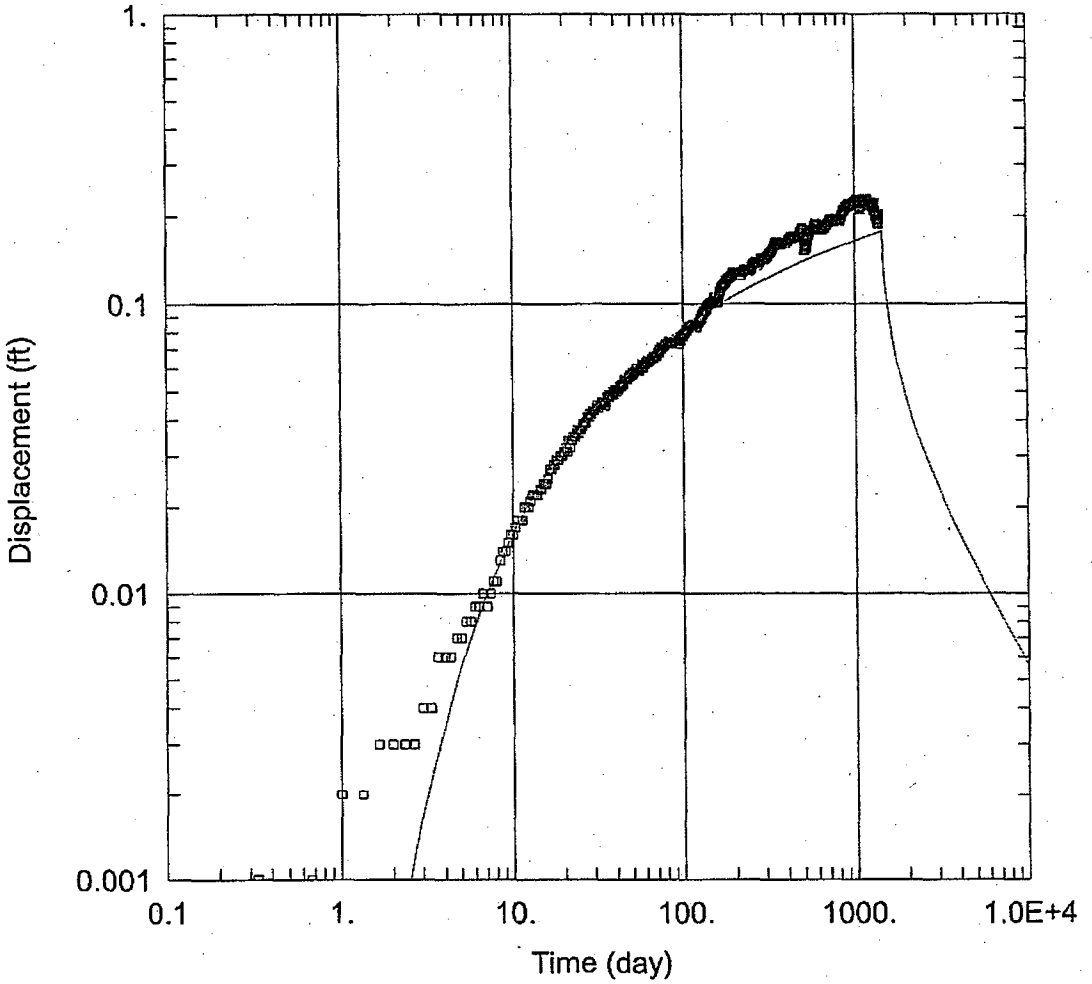
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-04	100	20

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 0.3947 ft^2/min S = 23.46



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_MW-04.aqt
Date: 11/28/06 Time: 15:21:35

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

Observation Wells

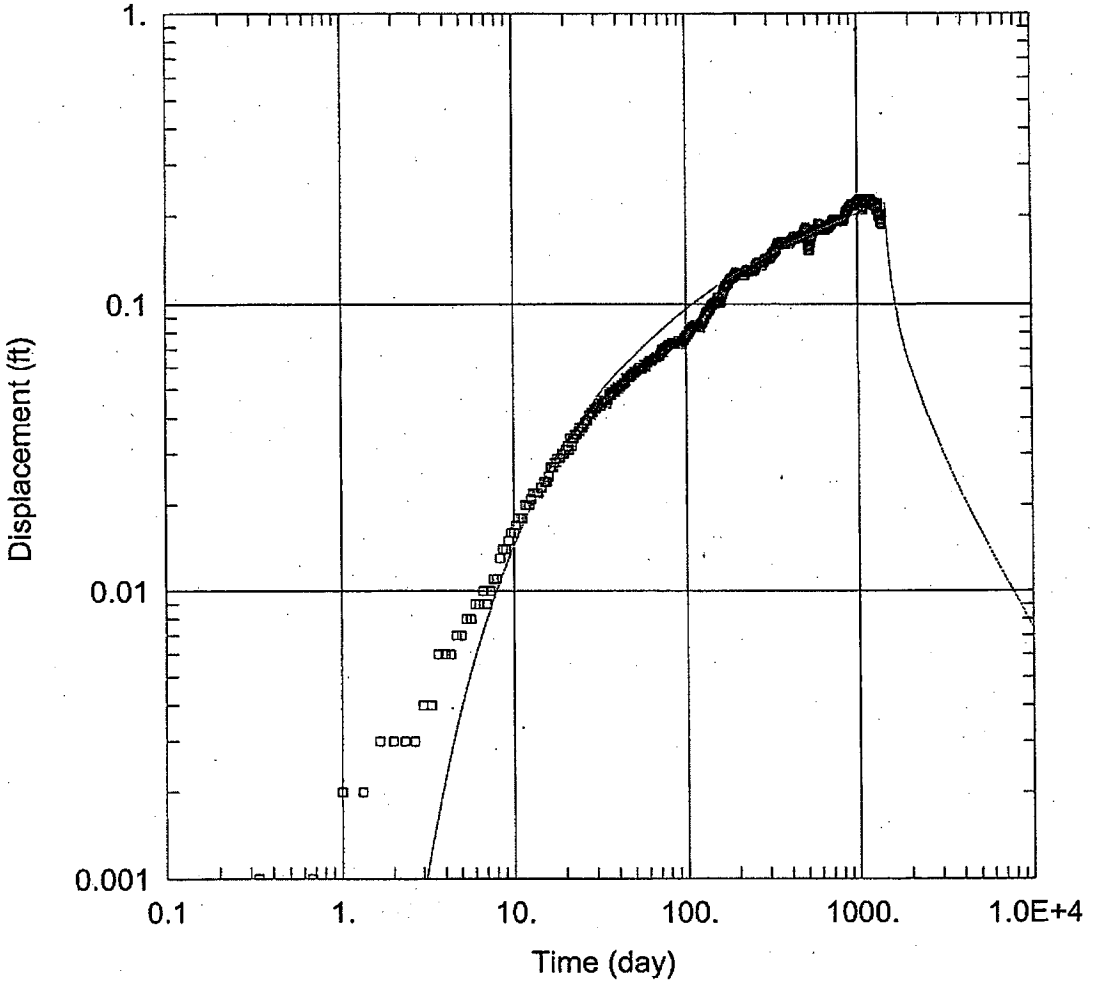
Well Name	X (ft)	Y (ft)
▫ 26MW-04	100	20

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.6479 ft^2/min
Sy = 0.0002545

S = 15.64
ß = 0.001



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_MW-04.aqt
Date: 11/29/06 Time: 17:22:58

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

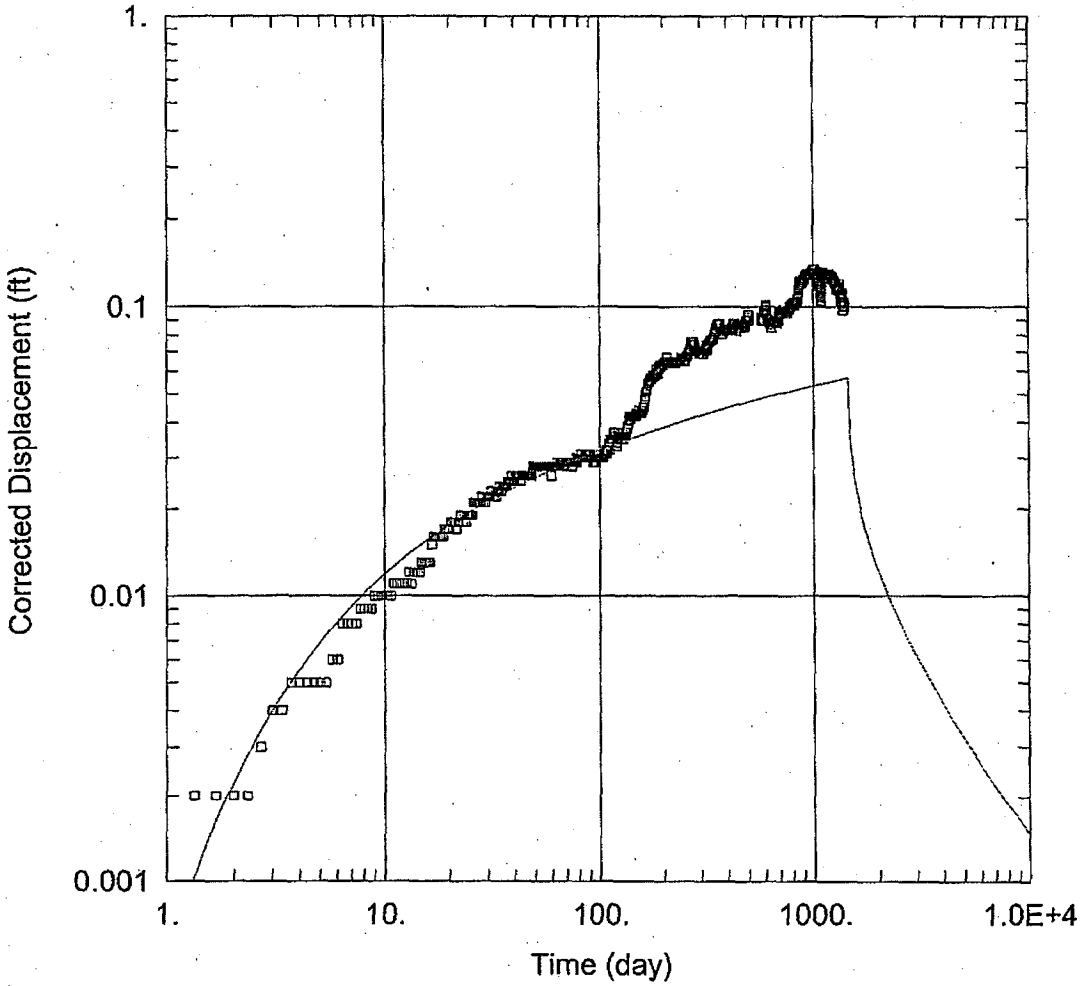
Observation Wells

Well Name	X (ft)	Y (ft)
26MW-04	100	20

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.4871 ft^2/min
Sy = 0.3137
S = 15.64
ß = 0.03



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_MW-07.aqt
Date: 11/28/06 Time: 16:20:48

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

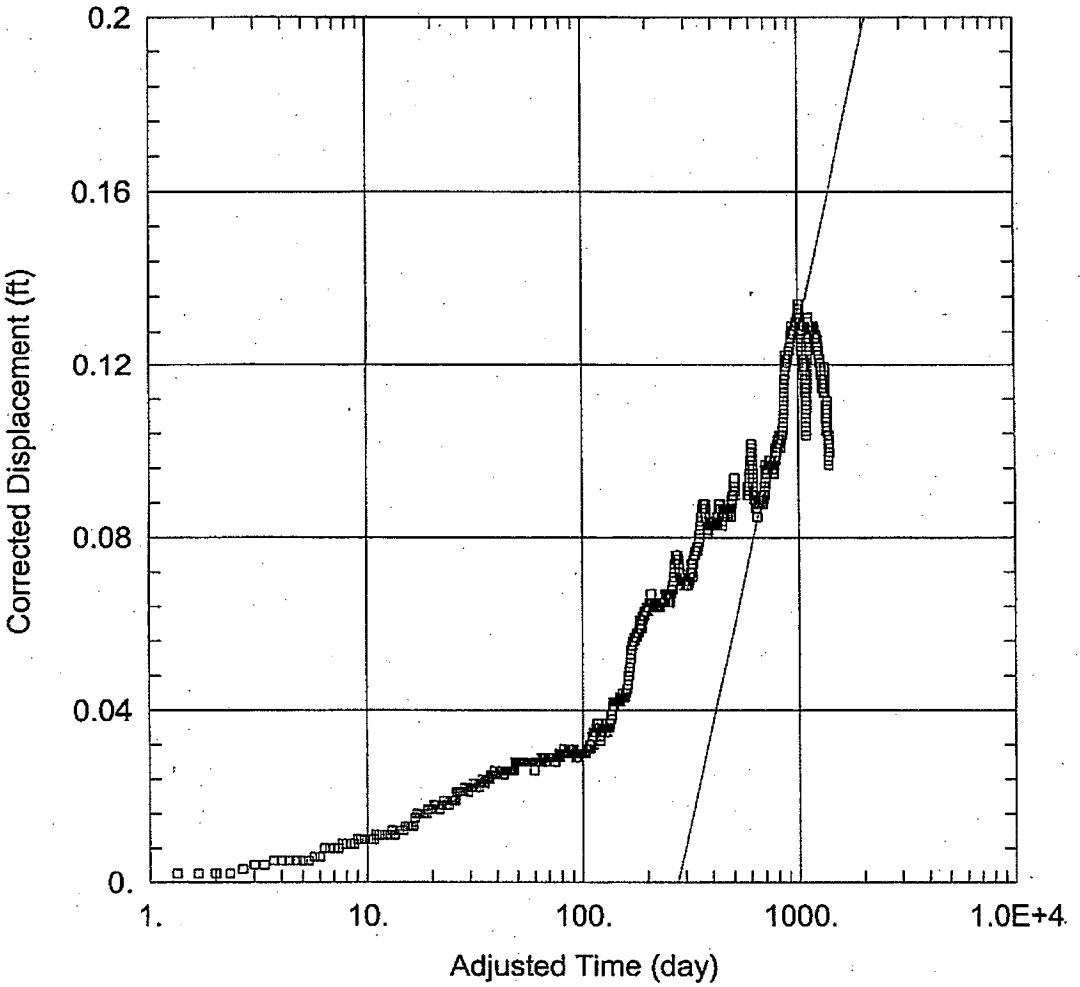
Observation Wells

Well Name	X (ft)	Y (ft)
26MW-07	105	100

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 2.485 ft^2/min
S = 11.25
Kz/Kr = 1.
b = 13. ft



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_MW-07.aqt
Date: 11/28/06 Time: 16:08:42

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 0.005

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

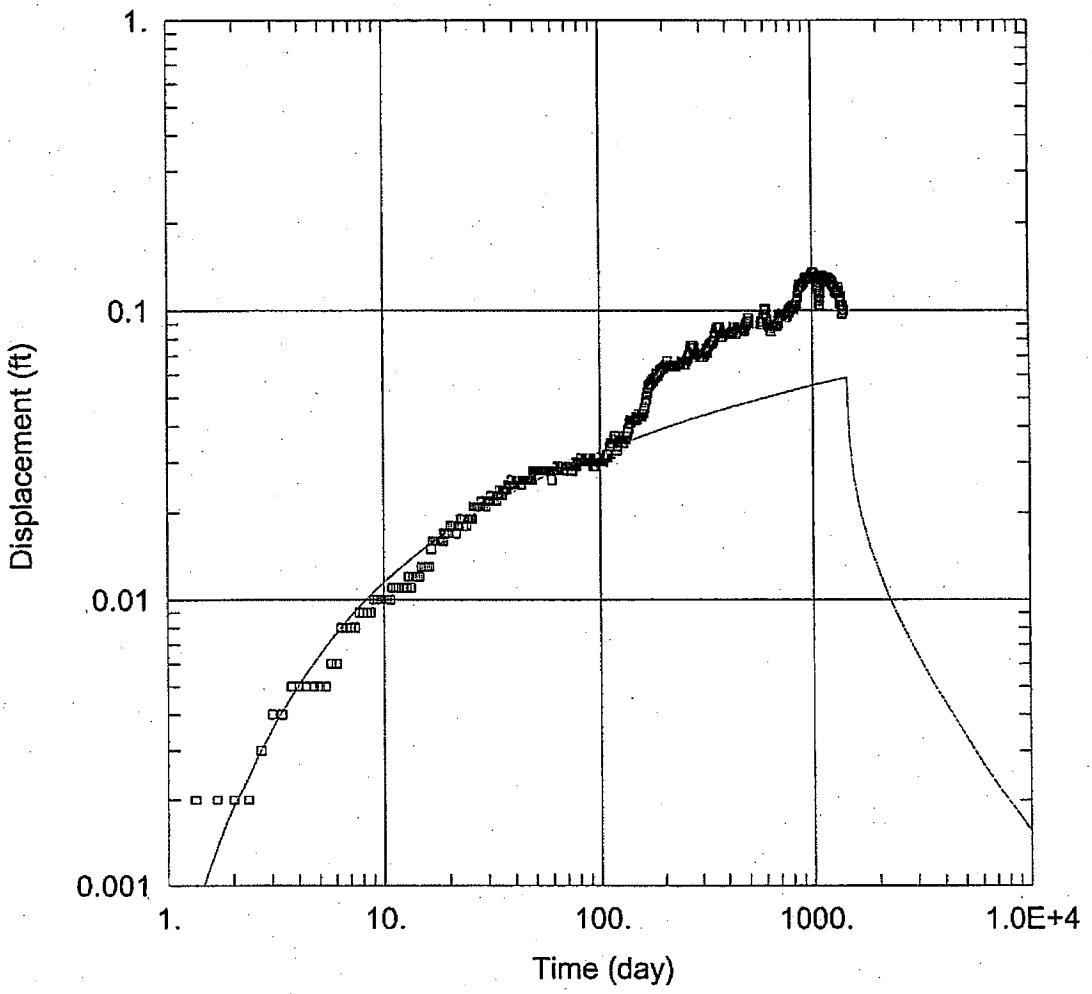
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-07	105	100

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 0.2366 ft^2/min S = 86.72



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_MW-07.aqt
Date: 11/28/06 Time: 16:10:47

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

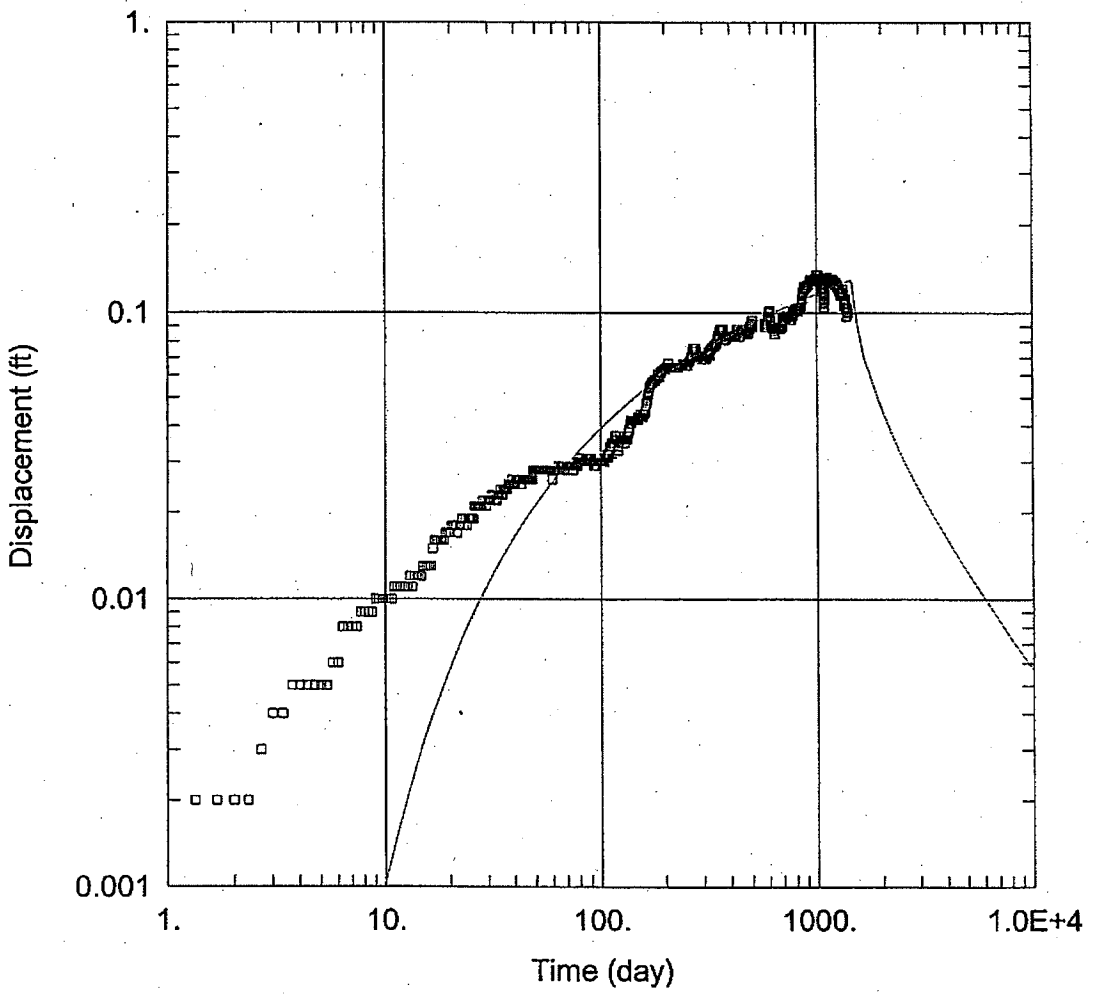
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-07	105	100

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 2.354 ft^2/min
S = 12.13
Sy = 0.01201
ß = 0.2



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_MW-07.aqt
Date: 11/29/06 Time: 17:27:31

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-07	105	100

SOLUTION

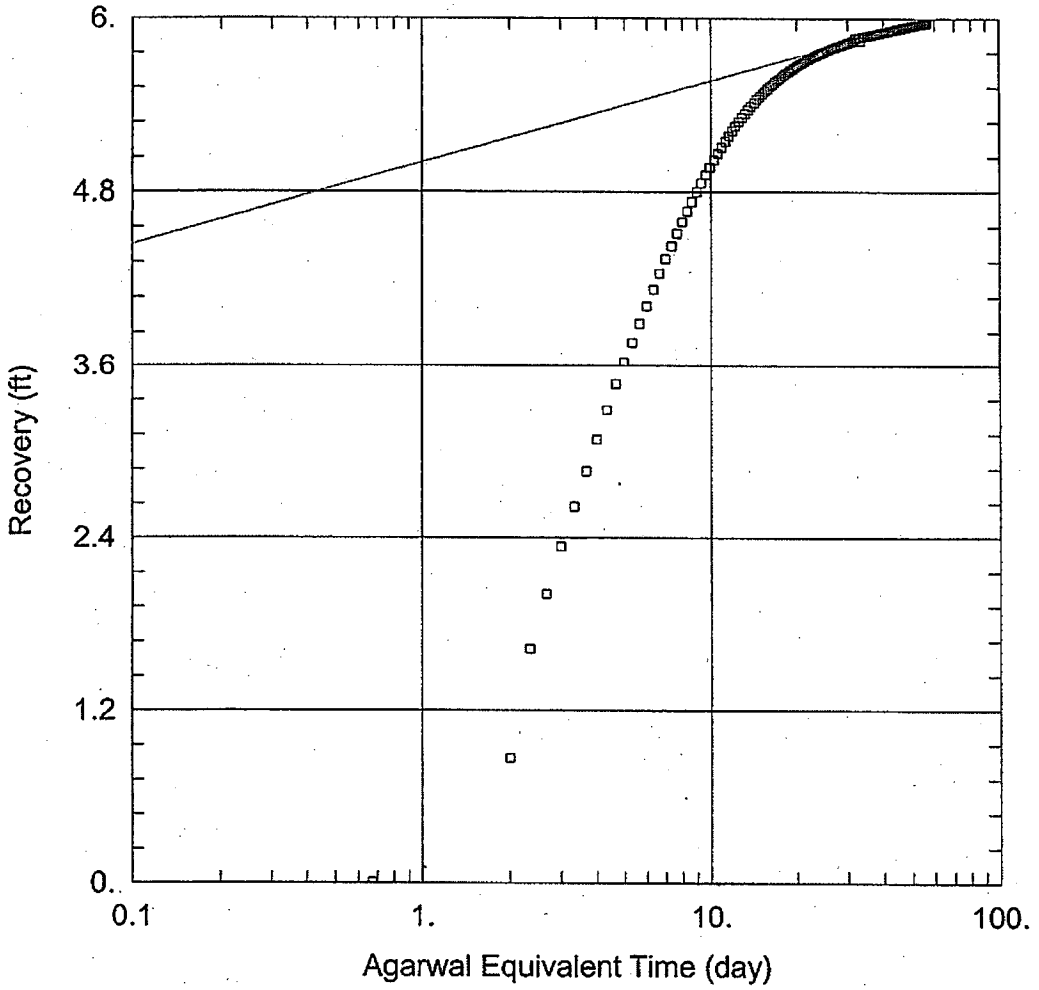
Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.6382 ft^2/min
Sy = 0.3041

S = 36.3
ß = 0.001

ATTACHMENT 3

C – RECOVERY TEST DATA PLOTS



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_MW03.aqt
Date: 11/29/06 Time: 15:26:48

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03 RECOVERY	85	55

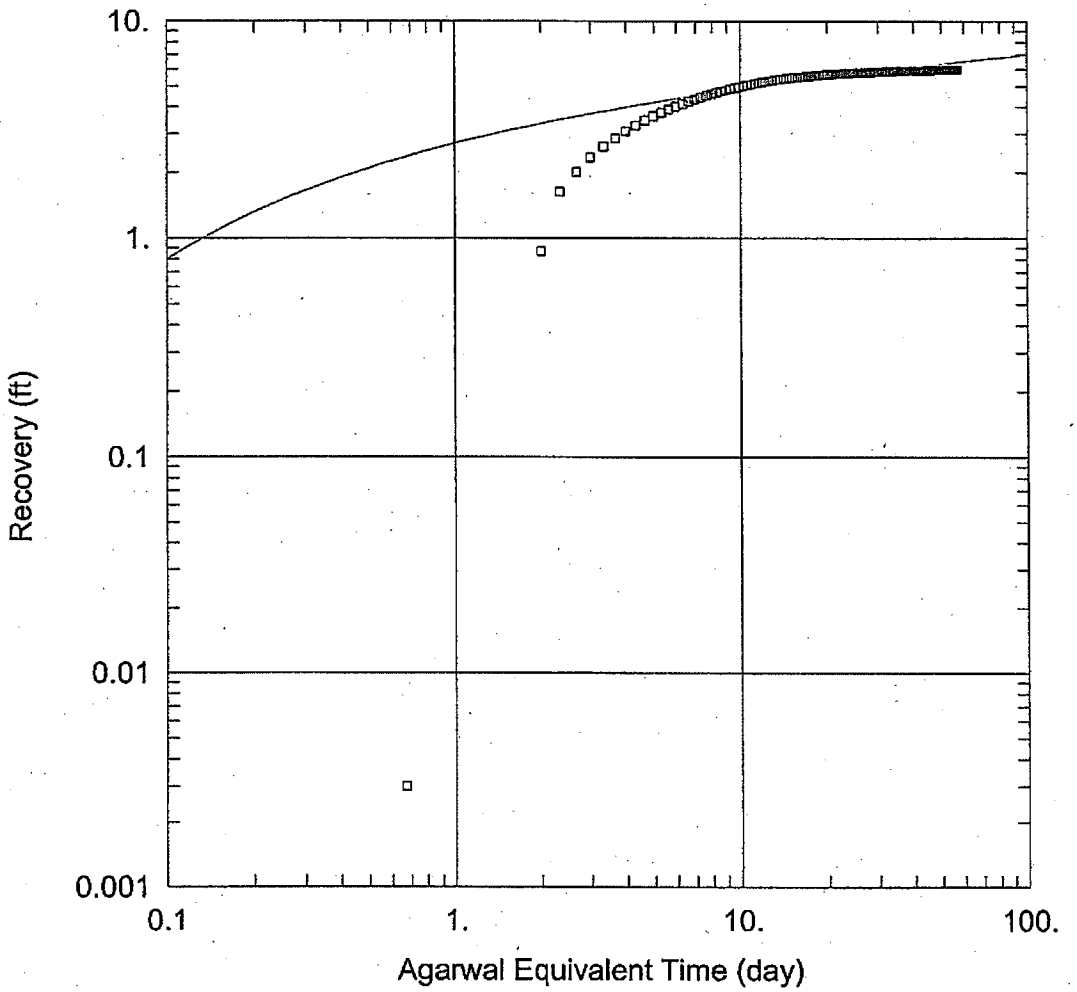
Observation Wells

Well Name	X (ft)	Y (ft)
26MW-03 RECOVERY	85	55

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 0.09582 ft^2/min S = 1.366E-5



WELL TEST ANALYSIS

Data Set: C:\Documents and Settings\aacharya\Desktop\IR26_PT_Data\Pump Test\IR26_MW03.aqt
Date: 11/29/06 Time: 15:17:46

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03 RECOVERY	85	55

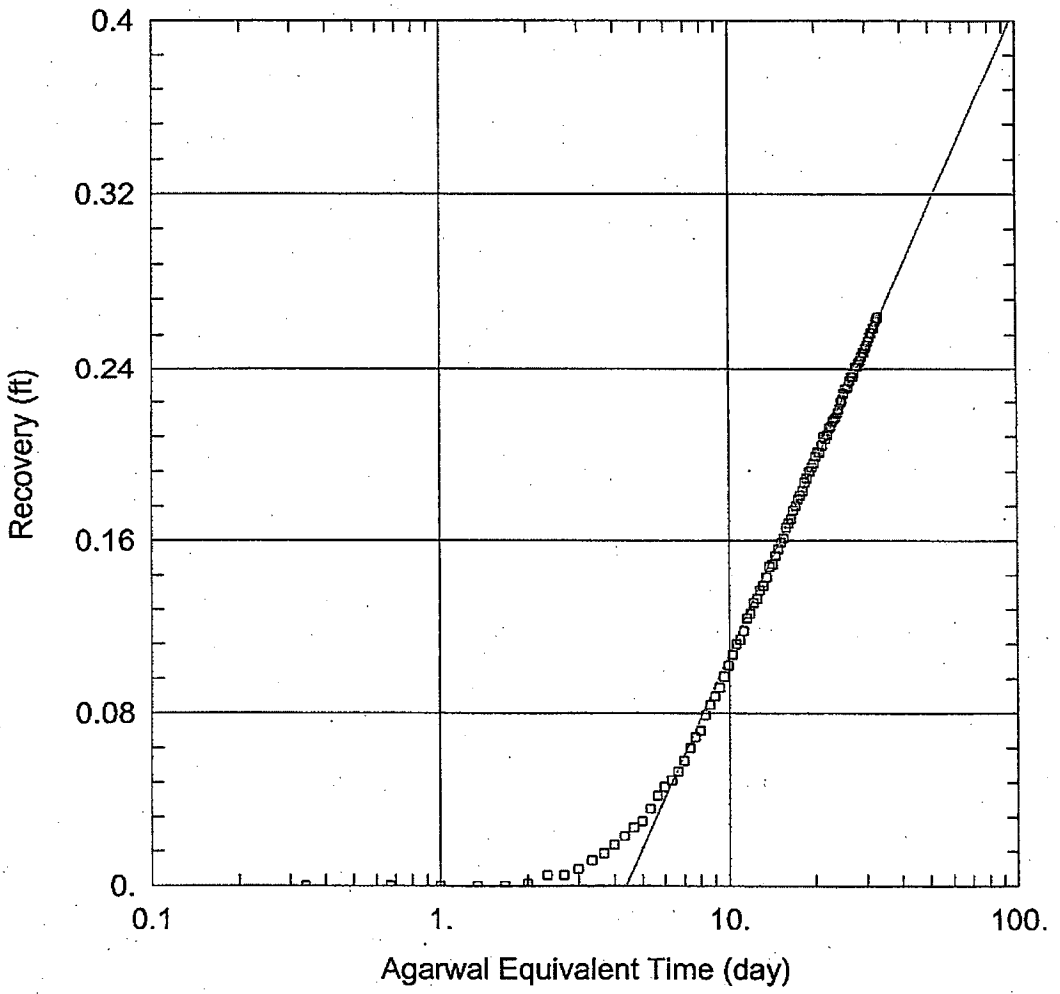
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-03 RECOVERY	85	55

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.02497 ft^2/min
S = 160.2
Sy = 0.1036
ß = 0.2



WELL TEST ANALYSIS

Data Set: C:\...\IR26_PZ-02_Rec.aqt
Date: 11/29/06 Time: 15:27:44

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

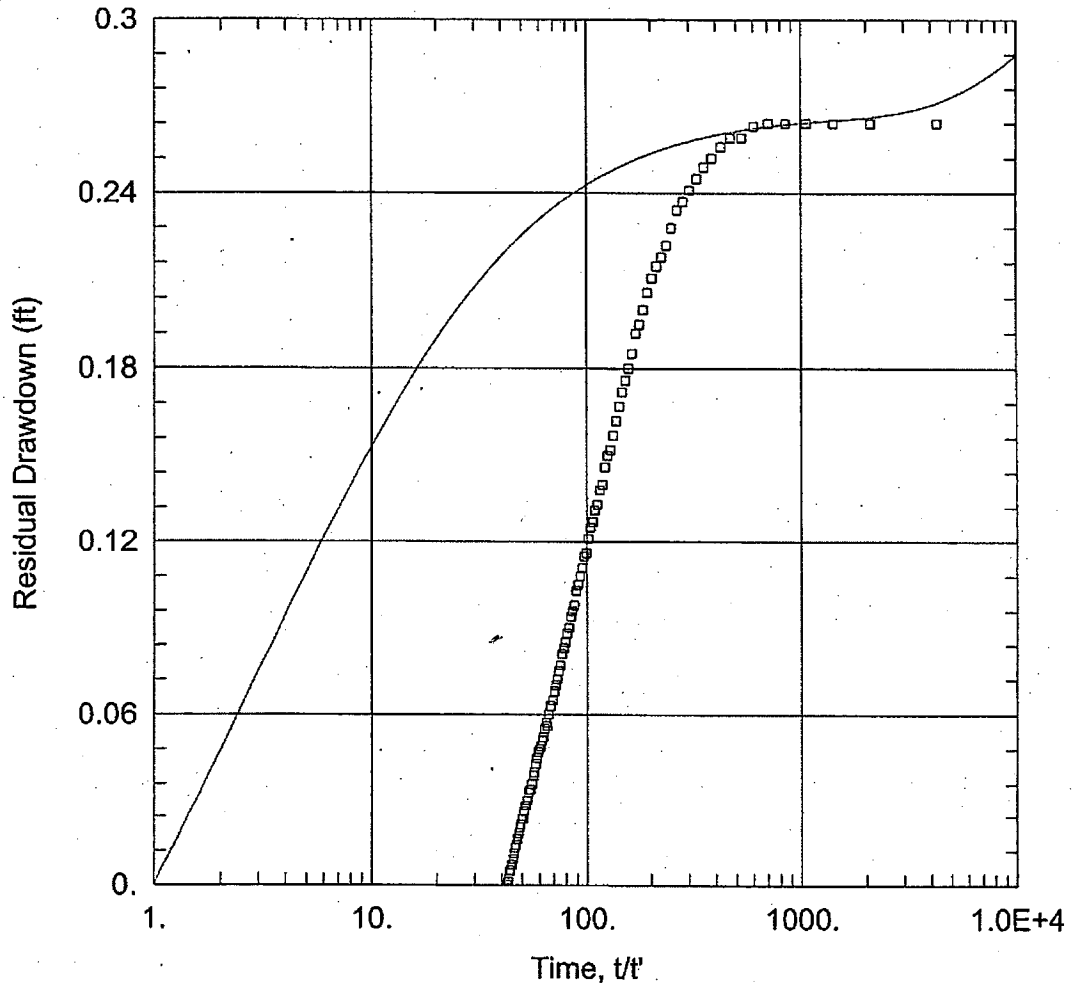
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-02_RECOVERY	100	65

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 0.1808 ft^2/min S = 7.857



WELL TEST ANALYSIS

Data Set: C:\...\IR26_PZ-02_Rec.aqt
Date: 11/29/06 Time: 14:25:42

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

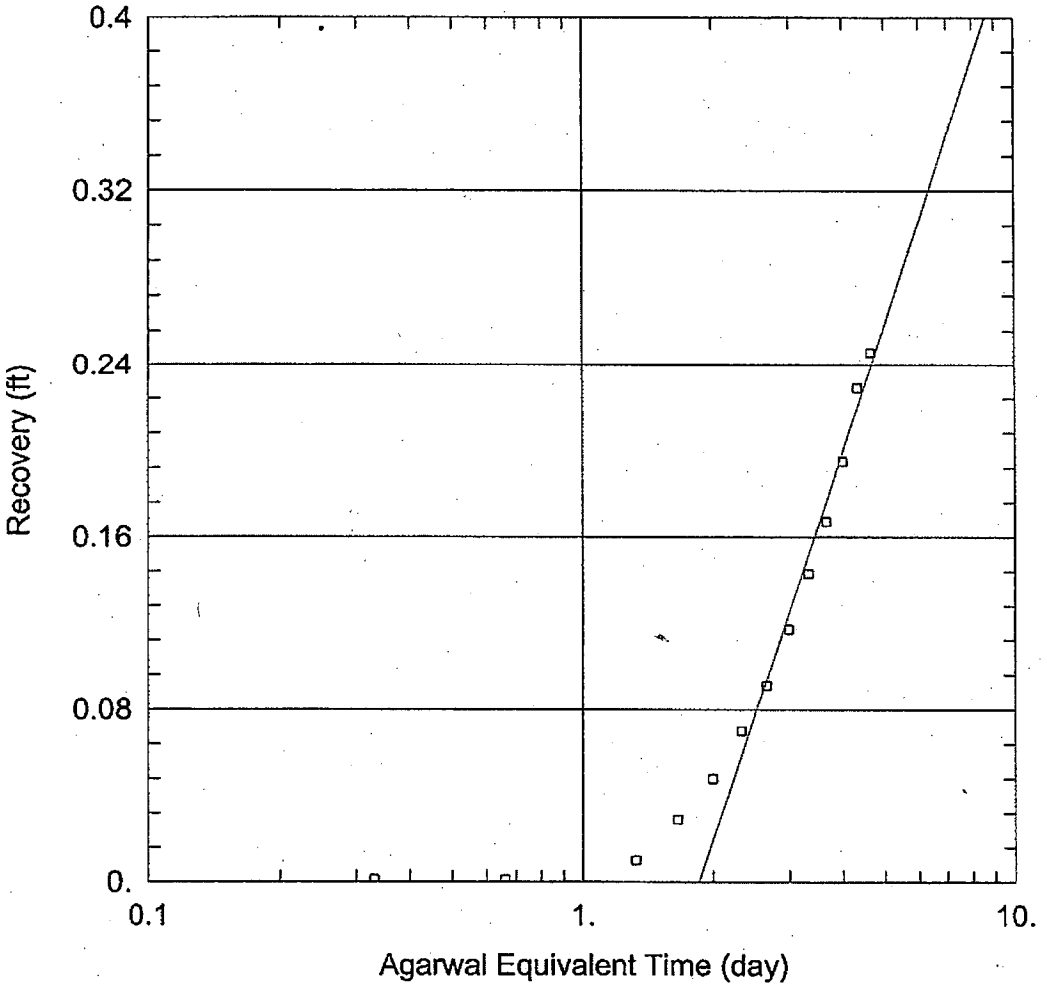
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-02_RECOVERY	100	65

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.3403 ft^2/min
Sy = 0.3565
S = 0.0007632
ß = 0.001



WELL TEST ANALYSIS

Data Set: C:\...\IR26_PZ-03 .Rec.aqt
Date: 11/29/06 Time: 15:38:13

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

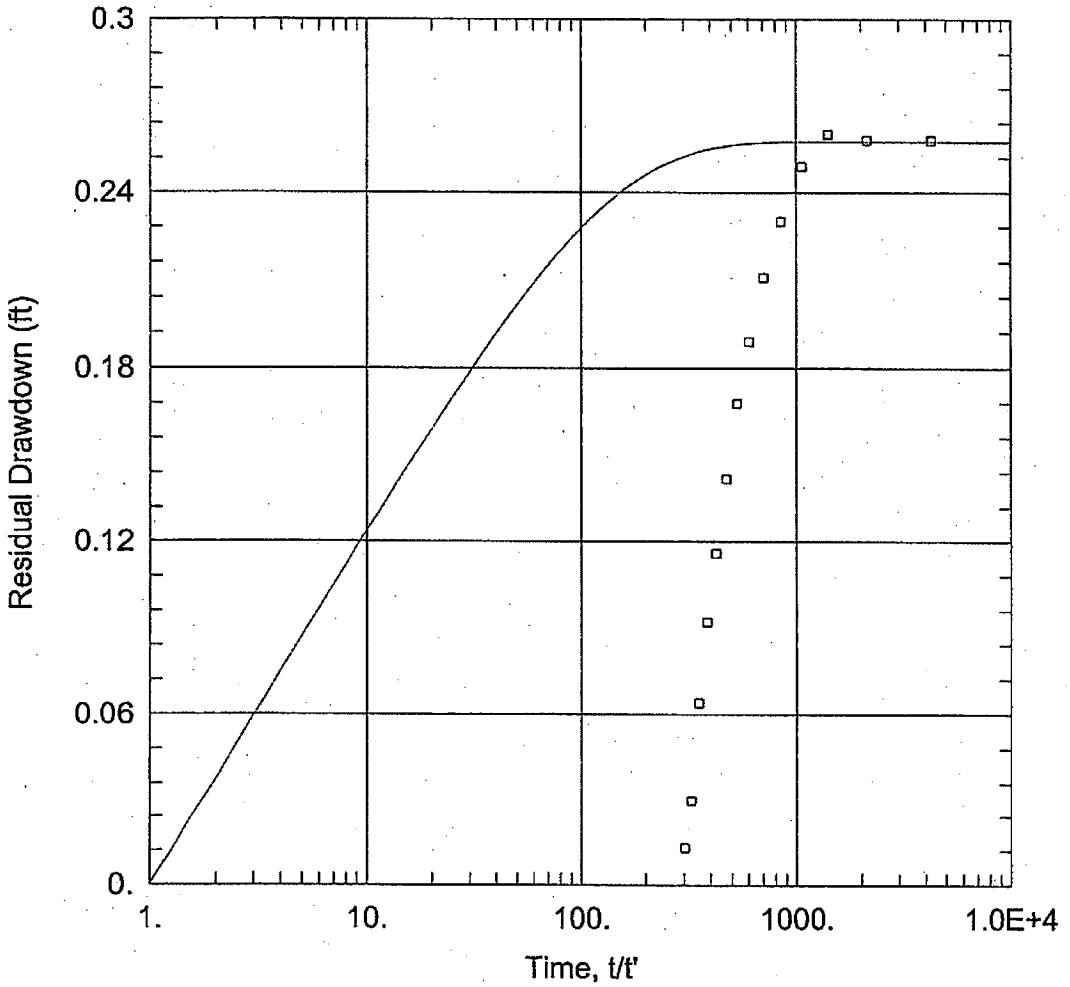
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26PZ-03 RECOVERY	90	40

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 0.08983 ft^2/min S = 2.154



WELL TEST ANALYSIS

Data Set: C:\...\IR26_PZ-03_Rec.aqt
Date: 11/29/06 Time: 14:29:35

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

Observation Wells

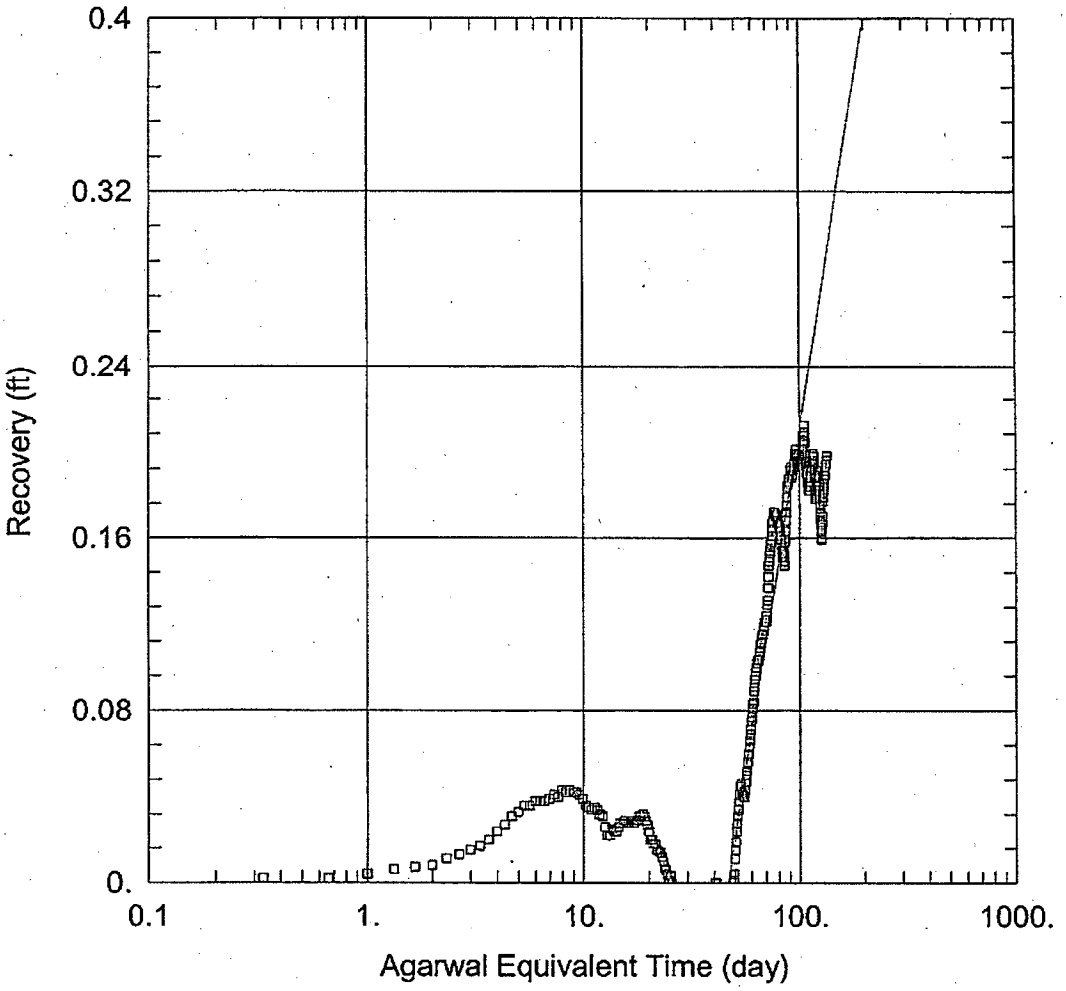
Well Name	X (ft)	Y (ft)
▫ 26PZ-03 RECOVERY	90	40

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.4276 ft^2/min
Sy = 0.1235

S = 70.98
ß = 0.001



WELL TEST ANALYSIS

Data Set: C:\...\IR26_MW-01_Rec.aqt
Date: 11/29/06 Time: 15:40:52

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

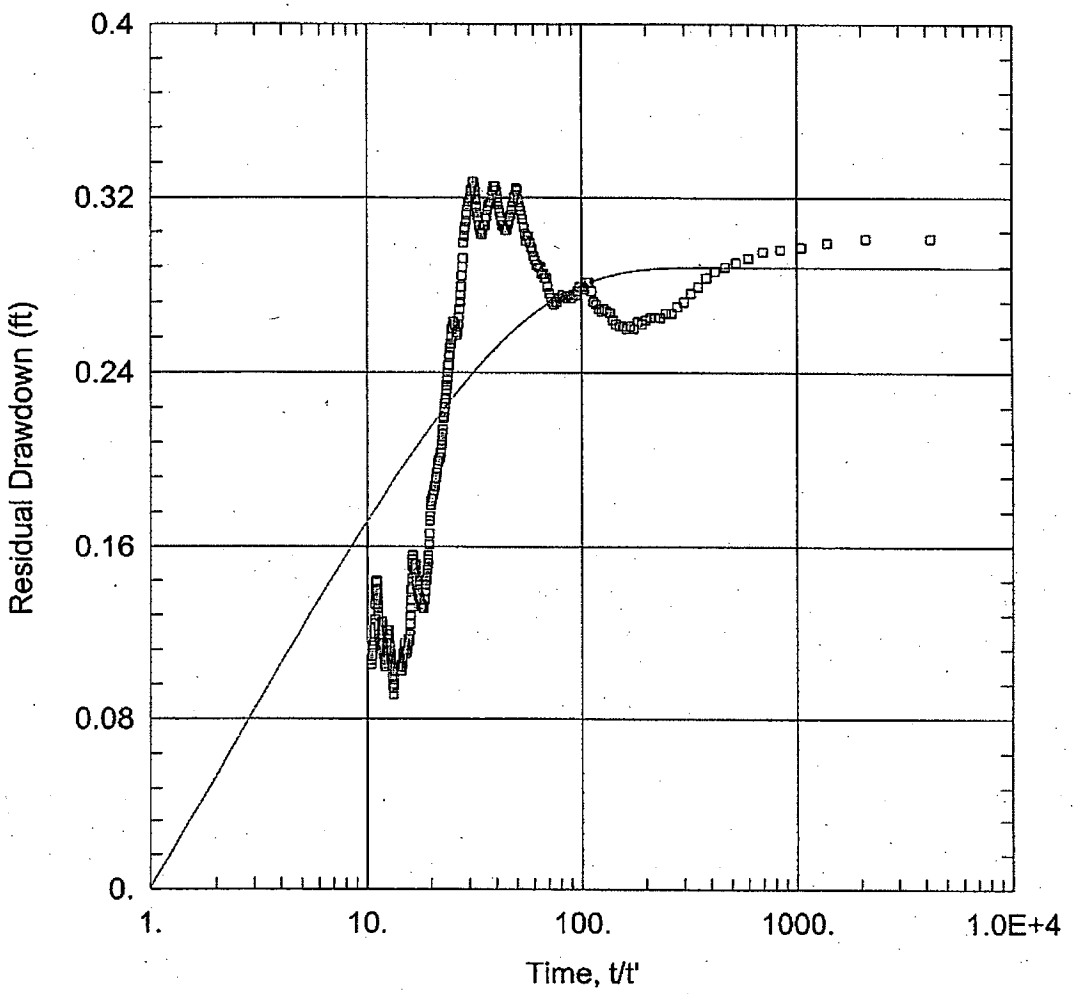
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-01 RECOVERY	20	45

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 0.08551 ft^2/min S = 2.955



WELL TEST ANALYSIS

Data Set: C:\...\IR26_MW-01_Rec.aqt
Date: 11/29/06 Time: 15:11:05

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

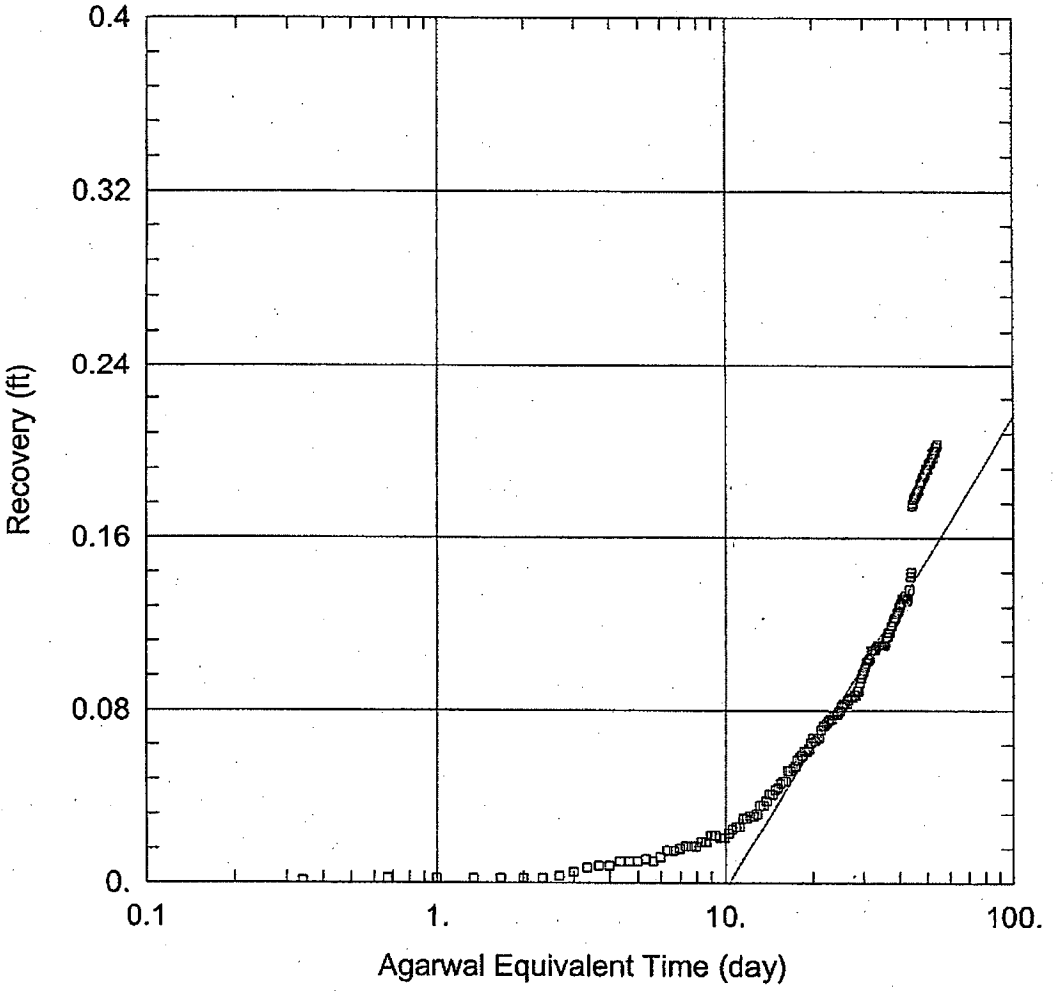
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-01 RECOVERY	20	45

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.2988 ft^2/min
Sy = 0.1882
S = 7.862
ß = 7.



WELL TEST ANALYSIS

Data Set: C:\...\IR26_MW-04_Rec.aqt
Date: 11/29/06 Time: 15:01:31

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 0.003497

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

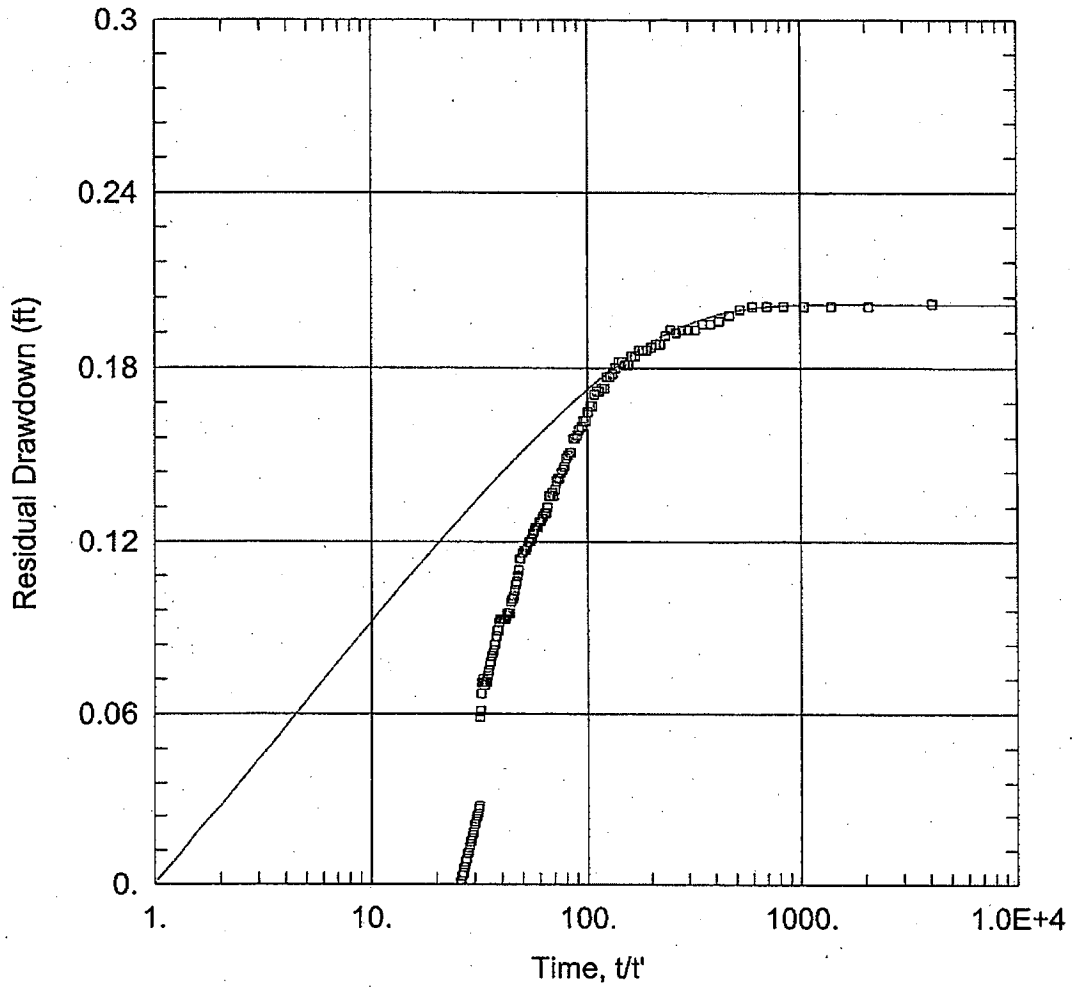
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-04 RECOVERY	100	20

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 0.2458 ft^2/min S = 5.656



WELL TEST ANALYSIS

Data Set: C:\...\IR26_MW-04_Rec.aqt
Date: 11/29/06 Time: 15:02:21

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

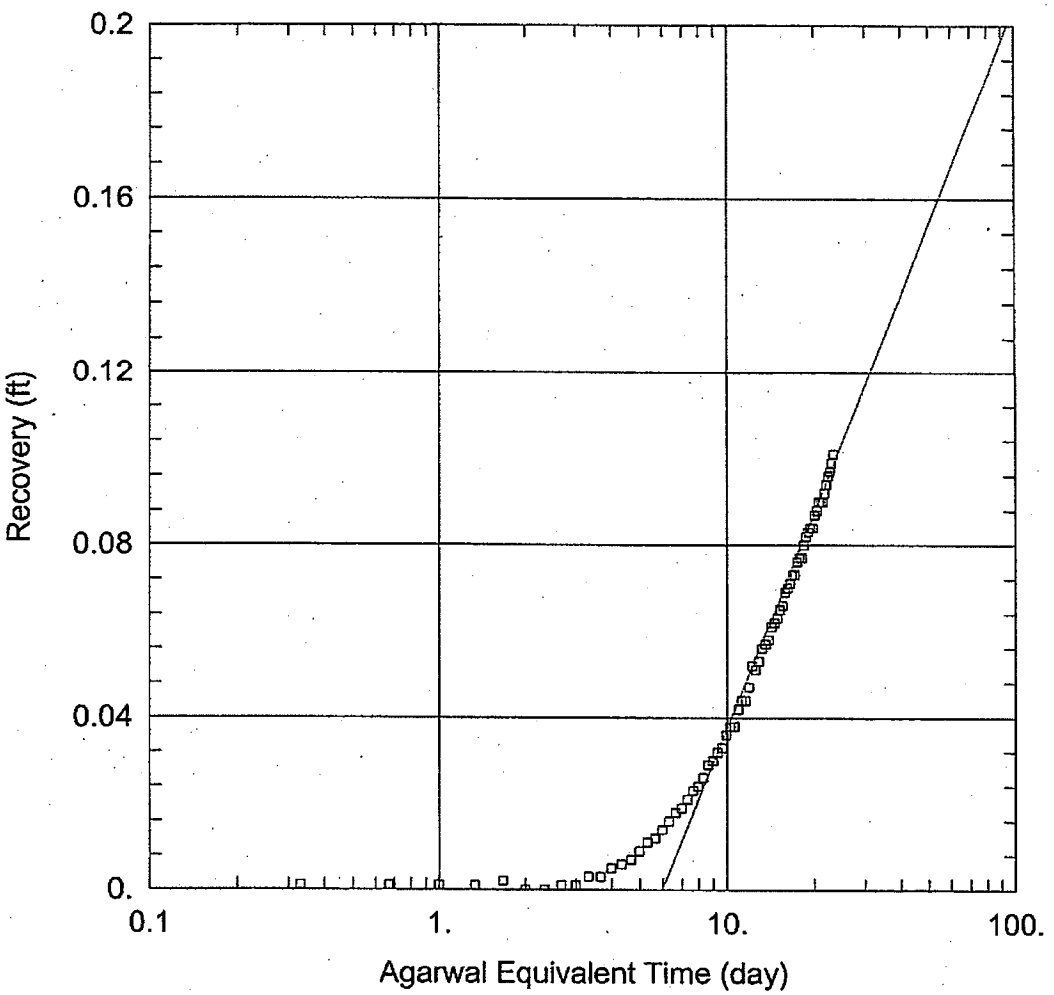
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-04 RECOVERY	100	20

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 0.5773 ft^2/min
Sy = 0.1091
S = 12.33
ß = 0.03



WELL TEST ANALYSIS

Data Set: C:\...\IR26_MW-07_Rec.aqt
Date: 11/29/06 Time: 15:06:23

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

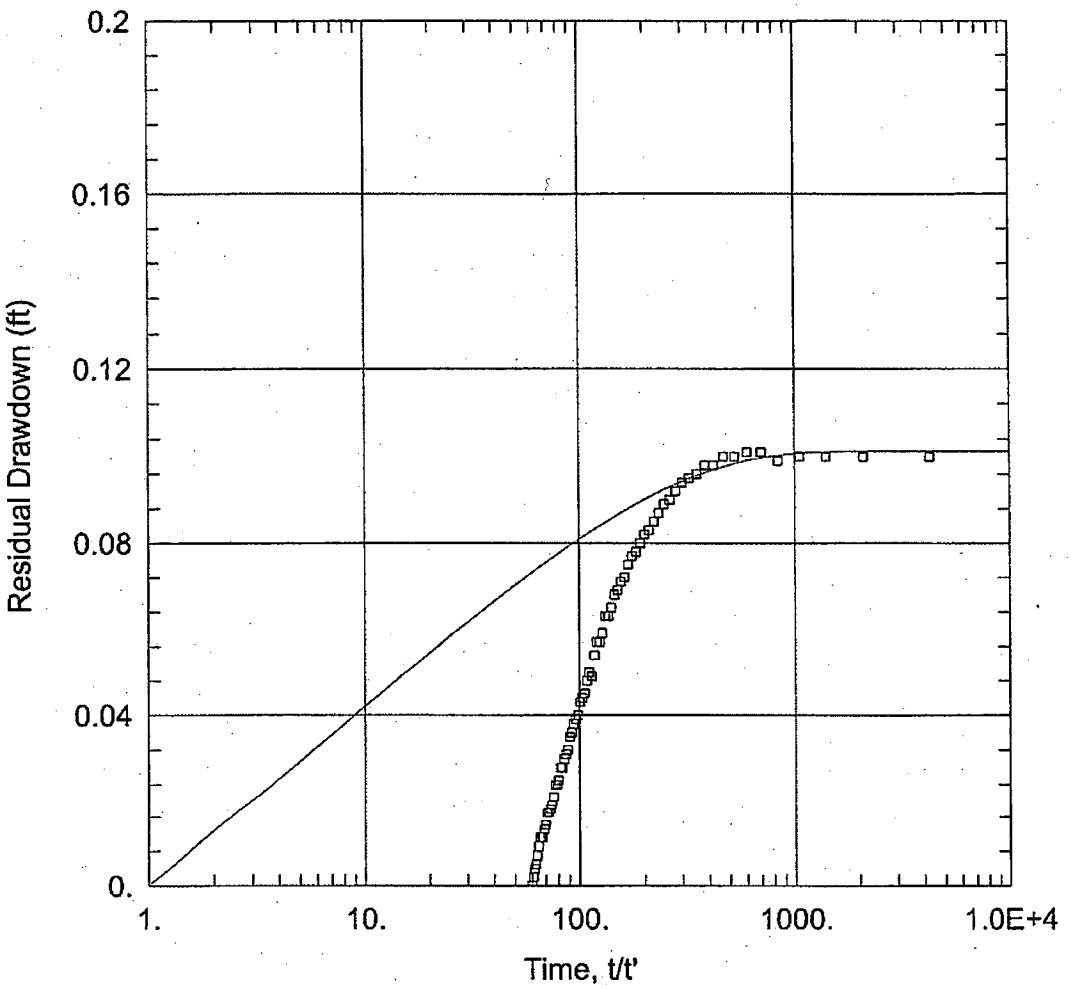
Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-07 RECOVERY	105	100

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 0.3234 ft^2/min S = 2.57



WELL TEST ANALYSIS

Data Set: C:\...\IR26_MW-07_Rec.aqt
Date: 11/29/06 Time: 15:08:30

PROJECT INFORMATION

Company: ITSI
Client: Navy
Project: IR26
Location: Alameda
Test Well: MW-03
Test Date: 11/1/06

AQUIFER DATA

Saturated Thickness: 13. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
26MW-03	85	55

Observation Wells

Well Name	X (ft)	Y (ft)
▫ 26MW-07 RECOVERY	105	100

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 1.271 ft^2/min
S = 9.65
Sy = 0.0706
ß = 7.

APPENDIX G

INVESTIGATION DERIVE WASTE DISPOSAL DOCUMENTS

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
CA2170023236	1	510-749-1390	15824

GENERATOR

Generator's Name and Mailing Address
BOB PERRICONE (ROICC SF)
2450 SARATOGA ST. SUITE 200, ALAMEDA, CA 94501
Generator's Phone: (510) 749-5942

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: NRC ENVIRONMENTAL SERVICES INC. ((510) 749-1390) — U.S. EPA ID Number: CAR000030114

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address: EAST BAY MUNICIPAL UTILITY DIST. OAKLAND FAC., OAKLAND CA. 94623 — U.S. EPA ID Number: CAB980584684
Facility's Phone: ((510) 287-1632)

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.	
	1. NON-HAZARDOUS WASTE (LIQUIDS	001	CT	~8,000	G	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information
NONE

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: Bob Perricone — Signature: B.L. Perricone — Month: 11 — Day: 30 — Year: 06

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Samuel Moore — Signature: [signature] — Month: 11 — Day: 30 — Year: 06

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

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 hazardous materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month — Day — Year

COPY

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1	
	15856		352091

GENERATOR

3. Generator's Name and Mailing Address
Alameda Naval Air Station
IR26 Site, Alameda Point, Alameda, CA 94501
4. Generator's Phone (925) 525-3322 Brian Dee, EFT SJ

5. Transporter 1 Company Name	6. US EPA ID Number	A. Transporter's Phone
Patriot Central Industries	C.A.D.9.8.2.0.3.0.1.7.3	510-235-1393
7. Transporter 2 Company Name	8. US EPA ID Number	B. Transporter's Phone

9. Designated Facility Name and Site Address	10. US EPA ID Number	C. Facility's Phone
Forward Landfill 9999 South Austin Rd Manteca, CA 95336		209-982-4291

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. Non Hazardous Waste Solid (Exploratory Borings / Monitoring Well Installation Soil)	22	DM	700e	P
b. Non Hazardous Waste Solid (Exploratory Borings / Monitoring Well Installation Soil)	3	DF	7.25	P
c.				
d.				

D. Additional Descriptions for Materials Listed Above
Approval # 6084
HA) 22 x 55 G
HB) 3 x 55 G in 85 G overpacks

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Wear Appropriate Personal Protective Equipment.
Proj # 5241429

16. 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.

Printed/Typed Name	Signature	Month	Day	Year
SHIRLEY NG	On Behalf of Navy	12	15	06

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Marvin Fuentes IV		12	15	06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACIL

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Mari Ramirez		12	16	06

TRANSPORTER #2

Profile Number: _____
Expiration Date: _____

WASTE PROFILE SHEET
TERMS & CONDITIONS

Service Agreement on File? ☐ Yes ☐ No

This form is to be used to comply with the requirements of governmental waste screening criteria.

Profile Addendum Attached? ☐ Yes ☒ No

1. Generator/Site Name: Alameda Naval Air Station
2. SIC Code: _____
3. Site Address: IR21 Site, Alameda Point
4. Site City: Alameda
5. Site State: CA
7. Zip Code: _____
6. Site County: _____
8. Generator USEPA/Federal ID#: N/A
9. Site Phone: 925.9440.3131
10. Customer Name: Ecology Control Industries
11. Customer Phone: 510.235.1393
12. Customer Contact: Regan Cortez
13. Customer FAX: 510.235.3709

1. Waste Description: Soil drums
3. Billing Address: 255 Parr Blvd., Richmond, CA
2. State Waste Code: N/A
4. Process Generating Waste: exploratory borings & monitoring well installation for low level TCE contamination. Site is an old aircraft hangar washdown area.
5. Transporter/Transfer Station: Ecology Control Ind.
6. Shipping Method: Drums
7. Estimated Quantity (Weight & Vol.): (21) soil drums per ☐ Job ☒ Year ☐ Other _____
8. Delivery Date(s): As soon as possible
9. Personal Protective Equipment Requirements: Level D
10. Is this a US Dept. of Transportation (USDOT) Hazardous Material? ☐ Yes ☒ No (If no, skip 10, 11 and 12)
11. Reportable Quantity: _____
12. Hazard Class / I.D. #: _____
13. Shipping Name: _____

☒ Check if additional information is attached. Indicate the number of attached pages: 43 pages (sent via email)

		Yes	No	
1.	Is the waste represented by this waste profile sheet a "Hazardous Waste" as defined by USEPA, Canadian, Mexican, State, or Provincial regulation?	☐	☒	
2.	Does the waste represented by this waste profile sheet contain regulated radioactive material or regulated concentrations of Polychlorinated Biphenyls (PCBs)?	☐	☒	
3.	Does this waste profile sheet and all attachments contain true and accurate descriptions of the waste material?	☒	☐	
4.	Has all relevant information within the possession of the Generator and Customer regarding known or suspected hazards pertaining to the waste been disclosed to the Contractor?	☒	☐	
5.	Is the analytical data attached hereto derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules?	☒	☐	☐ N/A
6.	Will all changes that occur in the character of the waste be identified by the Generator and disclosed to the Contractor prior to providing the waste to the Contractor?	☒	☐	
7.	Is this waste from a CERCLA site?	☐	☒	

1. Management Method: _____
2. Designated Facility: _____
3. Hours of acceptance: _____ ☐ N/A
4. Precautions, Special Handling Procedures, or Limitations on Approval: _____

Generic Approval: ☐ Yes ☐ No
Special Waste Decision: ☐ Approved ☐ Disapproved
Sales Person: _____ Date: _____
Technical Manager: _____ Date: _____

GENERATOR AND CUSTOMER MUST READ AND SIGN REVERSE HEREOF

INITIAL _____
INITIAL _____

TERMS AND CONDITIONS

1. **ACCEPTABLE WASTE.** Customer shall deliver and Company shall accept for disposal or other management purpose only Acceptable Waste. As used herein, "Customer" shall mean both Customer and Generator listed on the reverse hereof. Customer shall deliver the full quantity of Acceptable Waste generated and/or handled by Customer as estimated on the reverse hereof. Acceptable Waste means and includes only such waste as is described on the reverse and which is approved and permitted for management at the Designated Facility listed on the reverse, and shall not include any Nonconforming Waste. As used herein, Nonconforming Waste means waste that: (a) is not in conformance with the description and/or estimated quantity of the waste set forth on the reverse; (b) is or contains any infectious waste, or radioactive, volatile, corrosive, highly flammable, explosive, biomedical, biohazardous material or hazardous, dangerous, or toxic substances, as defined pursuant to or listed or regulated under applicable federal, state or local law, except as stated on the reverse; or (c) is prohibited from being received, managed or disposed of at the Designated Facility by federal, state or local law, regulation, rule, code, ordinance, order, permit or permit condition;

2. **REPRESENTATIONS & WARRANTIES.** Customer represents and warrants that: (a) the description of the waste set forth on the reverse hereof is true and correct in all material respects; (b) all waste delivered to the Designated Facility by Customer shall be Acceptable Waste as defined above and shall not be or contain Nonconforming Waste; (c) Customer shall, and shall cause any carrier with which it contracts to, handle and transport the waste in a safe and workmanlike manner in full compliance with all applicable federal, state and local laws, ordinances, decisions, orders, rules or regulations; and (d) Customer has advised its drivers of Company's prohibition on delivery of Nonconforming Waste, of the definitions and listing of hazardous waste and hazardous substances under applicable federal and state law and regulations and of the definition of Acceptable Waste herein. Company represents and warrants that it shall manage the Acceptable Waste in a safe and workmanlike manner in full compliance with all applicable federal, state and local laws, ordinances, decisions, orders, rules or regulations.

3. **WASTE REJECTION.** Company may inspect, analyze or test any waste delivered by Customer and/or may reject, refuse or revoke acceptance of any waste if, in the opinion of Company, the waste or tender of delivery fails to conform to or Customer fails to comply with the terms of this Agreement, including by delivery of Nonconforming Waste. Company may also reject any waste which (a) Company reasonably believes would, as a result of or upon disposal or other management, be a violation of local, state or federal law, regulation, ordinance or permits, including land use restrictions or conditions applicable to the Designated Facility; or (b) in Company's opinion would present a significant risk to human health or the environment, cause a nuisance or otherwise create or expose Company or Customer to potential liability. Company also shall have the right to refuse to accept or to reject any Acceptable Waste in the event of Customer's failure to pay fees owed by Customer hereunder. In the event Company rejects or revokes acceptance of waste hereunder, Customer shall, at its sole cost, immediately remove or arrange to have the rejected waste removed from Company's control or property. Customer shall pay and/or reimburse Company for any and all costs, damages and/or fines incurred as a result of or relating to Customer's tender or delivery of Nonconforming Waste or other failure to comply or conform to this Agreement, including costs of inspection, testing and analysis.

4. **SPECIAL HANDLING; TITLE.** If Company elects, in its sole discretion, to handle, rather than reject, Nonconforming Waste, Company shall have the right to manage such Nonconforming Waste in the manner deemed most appropriate by Company given the characteristics of the Nonconforming Waste. Company may assess and Customer shall pay additional fees associated with delivery of Nonconforming Waste, including, but not limited to, special handling or disposal charges, and costs associated with different quantities of waste, different delivery dates, modifications in operations, specialized equipment, and other operational, environmental, health, safety or regulatory requirements. Title to and ownership of Acceptable Waste shall transfer to Company upon its final acceptance of Acceptable Waste. Title to, ownership of and liability for Nonconforming Waste shall at all times remain with Customer. Revocation of acceptance by Company shall operate to re-vest all incidents of ownership in Customer.

5. **INDEMNITY.** Each party hereto (the "Indemnitor") hereby agrees to indemnify, hold harmless and defend the other party, and its owners, officers, directors, employees and agents (collectively, the "Indemnitees"), from and against any and all liabilities, penalties, fines, forfeitures, fees, demands, claims, causes of action, suits, judgments and costs and expenses incidental thereto, including attorneys' fees (collectively, "Damages"), which any or all of the Indemnitees may hereafter suffer, incur, be responsible for or pay out, including for personal injuries, property damage, or contamination of or adverse effects on the environment, to the extent caused by, or arising from or in connection with the breach of any representations or warranties of the Indemnitor set forth in this Agreement, or any negligent actions or omissions or willful misconduct of the Indemnitor, its employees, officers, owners, directors or agents, or the violation of any law, ordinance or regulation, including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601 et seq., as amended. Such indemnity shall exclude Damages to the extent they arise as a result of any negligent actions or omissions or willful misconduct of the Indemnitees or their employees, officers, owners, directors or agents. The indemnification obligation hereunder shall arise only in excess of any available and collectible insurance proceeds and the Indemnitor shall be liable hereunder to pay only its share of the amount of Damages, if any, that exceeds the total amount that all insurance has paid for the Damages, plus the total of all deductible and self-insured expenses paid under all insurance policies. The obligations in this Section 5 shall survive the performance and termination of this Agreement.

6. **UNCONTROLLABLE CIRCUMSTANCES; TERMINATION.** Except for the obligation to pay fees hereunder, the performance of this Agreement may be discontinued or temporarily suspended by either party, and neither party shall be deemed to be in breach of this Agreement, in the event performance is prevented by a cause or causes beyond the reasonable control of the affected party. Such causes shall include, but not be limited to, acts of God, acts of war, riot, fire, explosion, accident, flood or sabotage, governmental laws (including nuisance), permit conditions, regulations, restrictions (including land use), condition of the waste, injunction or actions or omissions of third party transporters or other contractors, suppliers or vendors. Company may immediately terminate management services hereunder upon written notice to Customer in the event Customer breaches any term, provision or obligation under this Agreement, in which case, Customer shall be liable for and shall pay to Company all costs and losses incurred by Company as a result of or relating to any such termination.

7. **MISCELLANEOUS.** This Agreement shall be governed by the laws of the state in which the Designated Facility is located. Every provision of this Agreement shall be severable. This Agreement represents the entire understanding and Agreement between the parties relating to the management of waste, except that, if the parties, or their parent companies, are parties to a national service agreement, the terms of such national service agreement shall govern over any inconsistent terms in this Agreement. No representations, statements or Agreements, unless agreed to by the parties in writing, shall modify, change, amend or otherwise affect the obligations undertaken in this Agreement. No waiver by either party of any one or more defaults or breaches by the other in the performance of this Agreement shall operate or be construed as a waiver of any future defaults or breaches. Customer may not assign this Agreement without the prior written consent of Company. This Agreement shall be binding upon and shall inure to the benefit of the parties' successors and assigns.

THIS IS A LEGALLY BINDING CONTRACT. EACH UNDERSIGNED INDIVIDUAL ACKNOWLEDGES THAT HE/SHE HAS READ AND UNDERSTANDS THE TERMS AND CONDITIONS OF THIS AGREEMENT SET FORTH ABOVE AND ON THE REVERSE HEREOF AND THAT HE/SHE HAS THE AUTHORITY TO SIGN ON BEHALF OF CUSTOMER/GENERATOR AND COMPANY. BY SIGNING BELOW, CUSTOMER AND GENERATOR INDICATE A FIRST HAND KNOWLEDGE OF THE WASTE'S CHARACTERISTICS AND CERTIFY THE TRUTH OF THE INFORMATION ON THE REVERSE HEREOF. AGREED TO AS OF THE DATES BELOW.

CUSTOMER:	GENERATOR:	COMPANY, Altamont Landfill:
Rosan Carter	Gregory J. Grace	
(AUTHORIZED SIGNATURE)	(AUTHORIZED SIGNATURE)	(AUTHORIZED SIGNATURE)
Colgan Control Fnd.	Gregory J. Grace, Env. Engr.	
(NAME, TITLE)	(NAME, TITLE)	(NAME, TITLE)
DATE: 11/30/06	DATE: 12/5/06	DATE:

Innovative Technical Solutions, Inc.

December 18, 2006

Project No. 35-103.0300

Mr. Joe Griffith
Allied Waste Company
1145 W. Charter Way, Stockton, CA 95206

RE: Waste Profile for IR26 Site Alameda Point, Alameda, California 94501
Generator: Alameda Naval Air Station (US Navy)
Disposal Facility: Forward Landfill

Dear Mr. Griffith:

This letter is in response your request to Innovative Technical Solutions, Inc. (ITSI), the Generator's contractor, for clarification of the estimated values of acetone and methylene chloride (common laboratory contaminants) reported in two of the composited samples and classification of the waste code designation.

The estimated values of acetone and methylene chloride in Field ID samples 100506026011 and 100506026012 are considered by ITSI and the Navy to be laboratory artifacts based on their extremely low levels, because both are used in large volumes by the laboratory to extract organics from soils and groundwater, and because their use is not historically associated with operations at the site.

Neither ITSI nor the Navy have any specific knowledge of the origins of the TCE present in the groundwater listed under the profile, and therefore classification of this waste as either an F-coded or U-coded RCRA waste is not appropriate. Classification of a waste as either an F-coded or U-coded RCRA waste requires specific knowledge of the origin of the solvents (e.g., an F001 requires the source to be a spent solvent mixture or blend used for degreasing which originally contained 10% by volume or more of specific halogenated solvents [PCE, TCE, 1,1,1-TCA, etc.]). Hence, without specific knowledge of the origins of the solvent used in operations at the site, a classification of the groundwater as either an F- or U-coding is not appropriate for the waste.

If you have any questions or comments, please contact Rachel Hess at (925) 946-3105.

Sincerely,

Innovative Technical Solutions, Inc

Rachel B. Hess
ID/IQ Project Manager

US Navy ROICC, San Francisco Bay Area

Shirley Ng
US Navy Environmental Engineer

2730 Shadelands Drive, Suite 100
Walnut Creek, California 94598

(925) 946-3100
(925) 256-8998
www.itsi.com

RESPONSE TO RWQCB COMMENTS

Draft Data Gap Sampling Report
Installation Restoration Site 26 (IR26), Alameda Point, Alameda, CA
February 2007

Review Comments from Erich Simon, Project Manager

Upon review of the *Draft Data Gap Sampling Installation Restoration Site 26*, dated October 2006 we have the following comments:

RWCQB Comment 1: Section 3.1 and Figure 4 – The Hydropunch investigation included sampling at 3 distinct depths to determine if contaminant plumes may be vertically distributed. The Hydropunch samples at the center of the plume (B20-SB-001) included sample depths at 4.5' to 7', 9.5' to 12', and 18.5' to 21', with the highest detections of all contaminants of concern detected in the 9.5' to 12' samples. All other Hydropunch samples, which were taken with the intent to help further delineate the plume both vertically and horizontally, were taken at depths of 7.5' to 10', 12.5' to 17', and 18.5' to 21'. As the B20-SB-001 Hydropunch samples at the center of the plume demonstrated that the highest concentrations may be limited to the 9.5' to 12' range, these other hydropunch samples do not help characterize the horizontal distribution of the plume. Please include more discussion/justification describing how Hydropunch depth-discreet sampling depths were selected, and clearly indicate the limitations of the data presented in characterizing the vertical and horizontal extent of contamination.

RESPONSE TO COMMENT 1:

Sample intervals for multiple discrete-depth hydropunch sampling were selected by the field geologist based on review of the soil lithology determined by collecting and logging continuous core samples from ground surface to the termination depth at each of the hydropunch boring locations. Hydropunch sample intervals were targeted to screen higher permeability sediments (mostly SP sands) and avoided screening clay layers or lower permeability sands. Boring B20-SB-001 was the last hydropunch boring to be drilled and sampled, and in any case, the analytical results from any of the borings were not immediately available to inform the targeting of the screening of hydropunches in the other borings. Please refer to the boring logs in Appendix A to see how the selected intervals for the hydropunch samples correlated with the specific lithology at each location. The text in Section 3.1 will be amended to clarify how hydropunch screen intervals were selected.

It should be noted that the 9.0 and 10 ft bgs sample intervals at the site have been well characterized by hydropunch samples collected prior to the current Data Gap Investigation. Hydropunch samples from those intervals have been collected from borings 192-0028, 192-0029,

192-0031, 192-0032, 193-0033, 26B49, 26B50, 26B51, 26B52, 26B53, 26B54, 26B55, 26B56, 26B57, and 26B58.

RWQCB Comment 2: Section 3.2 and Figure 4 – There needs to be further discussion/clarification on why groundwater monitoring wells were screened across entire aquifer thickness, especially considering the results of the Hydropunch investigation, showing that the vertical extent of the contamination at the center of the plume may be limited to the 9.5' to 12' range. Include discussion of how the dilution within groundwater monitoring wells may under-represent contaminant concentrations in the aquifer. Please elaborate on low flow sampling techniques used and clarify if EPA sampling procedures for low flow groundwater sampling[1] were followed. Also, please discuss how zones of higher contamination identified in the Hydropunch investigation were targeted.

RESPONSE TO COMMENT 2:

The well design used at IR Site 26 was selected based on input from regulatory agencies to address concerns that shorter well screens might miss zones of contaminated groundwater and provide false negative data. In the case of monitoring well 26MW03, located in the middle of the contaminant plume and intended for use as an aquifer test pumping well, ITSI received specific direction to screen the entire saturated thickness of the shallow groundwater zone.

Groundwater samples were collected from the monitoring wells in accordance with EPA guidance on low-flow sampling techniques. The EPA guidance paper, Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures (Puls and Barcelona, 1996) states that "isolation of the screened interval water from the overlying stagnant casing water may be accomplished using low-flow minimal drawdown techniques. If the pump intake is located within the screened interval, most of the water pumped will be drawn in directly from the formation with little mixing of casing water or disturbance to the sampling zone." Groundwater wells are monitored for drawdown, and drawdown of less than 0.1 foot are typically maintained. The combination of limited drawdown and stabilized water quality parameters is indicative of groundwater being removed under laminar flow directly from the formation. This assumption forms the underlying basis for following low-flow sampling protocols.

RWQCB Comment 3: Figure 4 – Please include non-detect results on this figure, especially for well 26MW03. These results are needed to demonstrate that 1,2-DCE in groundwater monitoring well 26MW03 was non-detect, whereas 1,2-DCE in the Hydropunch boring immediately adjacent to this well (B20-SB-001) at the 9.5' to 12' depth was 310 ug/L. This discrepancy needs to be addressed in the Section 4.3 of the text.

RESPONSE TO COMMENT 3:

Figure 4 will be revised to show all results (including NDs) for the three main constituents of concern: TCE, cis-1,2-DCE and vinyl chloride. Discussion will be added to the text in section

4.3 to address the apparent discrepancy in the results for well 26MW03 and adjacent hydropunch boring B20-SB-001. It is not uncommon for hydropunch results to show significantly higher contaminant concentration results than co-located monitoring wells. Hydropunch samples typically contain higher amounts of suspended sediments than groundwater samples collected from properly installed and developed groundwater monitoring wells. The higher sediment load in the hydropunch samples may contribute to higher detected contaminant concentrations due to desorption of contaminants from the suspended load during sample extraction at the laboratory. It should also be noted that the groundwater sample from 26MW03 was collected (in accordance with EPA guidance on low-flow sampling) by placing the pump intake at the midpoint of the well screen interval, at a depth of approximately 9 ft bgs; slightly above the screened interval used to collect the hydropunch sample. Future multiple discrete-depth sampling (conducted as part of remedial effectiveness monitoring) to further develop or re-establish a vertical groundwater profile of contamination may help to further explain the apparent discrepancy shown in the above referenced results.

RWQCB Comment 4: General – Clearly indicate on all figures and tables what the results in bold font indicated.

RESPONSE TO COMMENT 4:

Tables and figures will be corrected and revised to indicate that bold font is used to distinguish positive detections from non-detect results. Concentrations exceeding Remedial Goals or MCLs will be highlighted in yellow.

Electronic Mail From: Erich Simon (RWQCB) dated May 25, 2007
To: Peck, Steven A (BRAC PMO West)
Copied to Dot Lofstrom (DTSC) and Anna-Marie Cook (USEPA)

Subject: Comment on the Draft Final Report for Data Gap Sampling at IR Site 26

In response to the Navy's RTC to Water Board Comment #1 on the Draft Report, I reviewed the boring logs in Appendix A to evaluate if sampling at the 9.5' - 12' interval was appropriate only for B20-SB-001 at the center of the plume. Based on my review, I concur with the selection of sampling depths for the hydropunch samples at this site.

However, I do have an issue with how the sampling depth intervals for three hydropunch samples in Figure 4 of the Draft Final Report (B20-SB-001, -003, and -005) were modified from the Draft Report to make the sampling intervals all be the same. While this change may make the data in this figure look better on the surface, the sample collection logs in Appendix A clearly indicate that the sampling depths as shown in the Draft Report were correct and the sampling depths as revised in the Draft Final Report are incorrect. Please correct this misleading change made to Figure 4 of the Draft Final document, and include a brief discussion in the text of the report describing how the samping depth locations were selected.

RESPONSE to COMMENT: The depth intervals shown on Figure 4 were inadvertently all made the same while revisions were being made to the figure in response to previous Draft Report comments. These errors were unintentional, and were not an attempt to present misleading information. The errors on Figure 4 have been corrected to match the text and tables.

A brief discussion describing how the sampling depth locations were selected is presented on page 8, Section 3.1 Hydropunch Investigation, third paragraph, second

and third sentences: ***"The HydroPunch® sample intervals were selected (based upon a review of the continuous core logs) to screen zones of higher-permeability materials (mainly poorly-graded [SP] sands) overlying clay beds that might act as a barrier to downward vertical migration. The selected sample intervals were intended to target the presumed likely path of contaminant transport (i.e. higher permeability saturated zones) for chlorinated solvents mobilized as a dissolved phase in groundwater."***

A revised Figure 4 and replacement pages for the cover, and title and signature pages indicating a Final version will be submitted. This document is now considered final.

RESPONSE TO EPA COMMENTS

Draft Data Gap Sampling Report
Installation Restoration Site 26 (IR26), Alameda Point, Alameda, CA
February 2007

Review Comments from Anna-Marie Cook, Project Manager

SPECIFIC COMMENTS

EPA Comment 1:

Section 4.4, Contaminant Distribution in Groundwater, Page 15 and Figure 4, Sample Locations and Groundwater Analytical Results: Although the text states that groundwater analytical results "were consistent with previous interpretations of the lateral limits of the groundwater VOC plume as depicted in the relevant RI/FS documents for the site" and the contours on Figure 4 are the same as those used in the Remedial Investigation (RI) Report, the extent of contamination above the maximum contaminant level (MCL) is actually greater than the extent of contamination indicated in the RI. Specifically, the extent of contamination above the MCL (5 micrograms per liter [ug/L] for trichlorethene [TCE]) or the 5 ug/L total VOC contour line should be extended to the south to include new well 26MW04, where the TCE concentration was 10 ug/L. In addition, the total VOCs in hydropunch boring B20-SB-004 (2.6 ug/L) indicate that the 0.5 ug/L total VOC contour should be extended to the north to include this location. The second sentence of this section acknowledges that the extent of contamination is greater, but then the second part of the sentence contains a contradiction because it states that the data collected during the Data Gap Investigation "were consistent with t he VOC plume boundaries delineated during previous investigations." It appears that the axis of the plume may be oriented northeast/southwest rather than east-northeast to west-southwest as shown on Figure 4. Since the RI contours potentially conflict with the new data, Figure 4 should be updated to reflect the most recent data. In addition, the new data suggests that the extent of contamination may not have been determined south of well 26MW04. Please update the contour lines to reflect current VOC data and delete the quoted statements from the first and second sentences of Section 4.4 or revise them to clearly describe the extent of contamination. Please also clarify how the area for in-situ chemical oxidation and bioremediation will be determined since the extent of contamination does not appear to have been determined south of well 26MW04.

RESPONSE TO COMMENT 1:

The Data Gap Investigation was intended to be a limited and focused investigation to determine whether the plume extended beneath Building 20, and to further evaluate the lithology and depth of contamination within the 2006 Final ROD established plume boundaries. The site data obtained confirmed that the Final ROD plume boundaries are reasonably representative of current site conditions and provides sufficient additional information to support the development of the Remedial Design. Figure 4 will be revised to show the extent of concentrations exceeding Remedial Goals based on the more recent data. The figure will reflect the uncertainty of the plume boundary south of 26MW04 by showing a dashed contour. A new figure will be added (Figure 7) to compare the "new" extent to the extent of concentrations exceeding RGs as determined by the previous analytical results. The extent of groundwater exceeding RGs is the basis for determining areas of for remediation treatment areas, which will be discussed in the Remedial Design.

EPA Comment 2:

Figure 4, Sample Locations and Groundwater Analytical Results: It is unclear why the 10 ug/L concentration of TCE for Monitoring Well 26MW04 on this figure is not bolded, since it is above the Remedial Action Objective (RAO) of 5 ug/L. Please provide consistency with respect to bolded concentrations on this figure.

RESPONSE TO COMMENT 2:

Tables and figures will be corrected and revised to indicate that bold font is used to distinguish positive detections from non-detect results. Concentrations exceeding Remedial Goals or MCLs will be highlighted in yellow.

EPA Comment 3:

Table 4, Analytical Results for Groundwater Monitoring Wells: Dissolved Metals and Table 3, Analytical Results for Groundwater Monitoring Wells: Chlorinated VOCs: It is unclear why a duplicate sample is indicated in Table 4 for well 26MW07, when there are no primary sample results. It appears that the designation for a duplicate sample is appending a "D*" to the end of the "Sample ID," but the footnotes to Tables 3 and 4 indicate that a duplicate sample is designated only with an asterisk (*). Please provide the missing primary metals data for well 26MW07 and reconcile the footnotes for these tables with the designation used in the Sample ID.

In addition, it appears that on Table 4, the concentration of barium in IR26MW07, 1400 ug/L should also be in bold face type since this value exceeds the screening criteria of 1000 ug/L. Please make this change.

RESPONSE TO COMMENT 3:

The "D" designation noted above was part of the original sample ID assigned (incorrectly) by the field technician at the time of sampling. As noted in the table footnotes, duplicates are identified by an asterisk appended to the sample ID number. Tables 3 and 4 will be corrected to show results for primary samples and clearly and consistently distinguish them from duplicates. The barium concentration cited will be shown in bold and highlighted to indicate that it exceeds its screening criterion.

EPA Comment 4:

Appendix A, Sampling and Purge Forms: Although the purge and sample form for Well 26MW03 indicates negative turbidity values, it should be noted that turbidity can not be less than zero. Negative turbidity values may indicate that the meter is out of calibration. Please provide an explanation for the negative turbidity values.

Also, on the sampling forms, it is unclear why the multiplier for casing diameter is crossed out, since 0.64 gallons per linear foot is the approximate volume of a 4 inch diameter casing. As a result, the well volume appears to have been calculated incorrectly. Please resolve this apparent discrepancy.

RESPONSE TO COMMENT 4:

Negative turbidity values mean that the turbidimeter is detecting more light coming through the sample than it did through the standard that was used to calibrate it. This situation may arise if the turbidity meter is not calibrated correctly, possibly due to instrument drift or a slightly clouded (improperly prepared or contaminated) standard. However, ITSI does not believe that to be the case in this instance, since the negative values noted by EPA all fell within the standard accuracy of the instrument (+/- 2% of the reading or +/- 1 significant decimal).

The crossed out multiplier on the purging/sampling forms appears to be a carryover from the field development activity, which uses calculated well volumes (not casing volumes) to determine minimum amount of purging for development. The field crew has been alerted to this and the field forms will be revised to show well/casing volume multipliers as appropriate to the task. The field crew was following low-flow sampling procedures, which depends on stabilization of well parameters, not well or casing volumes, to determine if sufficient purging has been conducted to sample.

DTSC Comments on the Draft Data Gap Sampling for IR Site 26, Alameda Point

1) In Section 2.3 - Site Geology and Hydrogeology, the draft Report presents estimated average horizontal hydraulic gradient, flow direction, and groundwater flow velocity based on previous work at Installation Restoration Site 26. The Report should also present a location-specific analysis of groundwater flow directions, gradients, and velocities based on data from the new monitoring wells and piezometers installed during this investigation. Specifically, the draft final Report should include the following:

    - A location-specific water table elevation map.
    - Water level elevation measurements from a single event that corresponds to the water table elevation map.
    - A groundwater flow velocity or range of velocities estimated using data from the aquifer test and location-specific hydraulic gradients.

A potentiometric surface map (Figure 6) has been added to the report, including an inset table showing the relevant depth to water and groundwater elevation information. Groundwater flow velocity ranges are included in the section discussing the aquifer test results in the REMEDIAL DESIGN (see below).

2) Drawdown data from the aquifer test should be plotted on a figure and used to evaluate aquifer anisotropy. An evaluation of aquifer anisotropy and heterogeneity should be included in Section 6.0 of the draft final Report.

Information derived from treatments of the aquifer test data will be presented in the upcoming REMEDIAL DESIGN documents as part of the ongoing RD/RA for IR Site 26. The timing of the aquifer test precluded inclusion of the results in the Draft version of the Data Gap Investigation so the decision was made to defer a thorough analysis of the aquifer test data until preparation of the Remedial Design for IR Site 26.