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TECHNICAL MEMORANDUM DISCRETE GROUNDWATER SAMPLINH RESULTS NWIRP FRIDLEY MN
10/1/2012
AGVIQ/CH2M HILL

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Technical Memorandum

Discrete Groundwater Sampling Results

Naval Industrial Reserve Ordnance Plant
Fridley, Minnesota

Contract No. N62470-08-D-1006
Task Order No. F270

October 2012

PREPARED FOR

NAVFAC
Naval Facilities Engineering Command

NAVFAC Midwest
201 Decatur Avenue
Building 1A
Great Lakes, IL 60088

AGVIQ
CH2M HILL

TECHNICAL MEMORANDUM

Discrete Groundwater Sampling Results, Naval Industrial Reserve Ordnance Plant (NIROP) Fridley, Minnesota

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DATE: November 2, 2012

Introduction

This technical memorandum summarizes the results of a discrete groundwater investigation effort conducted by AGVIQ-CH2M HILL Constructors, Inc. Joint Venture III (AGVIQ-CH2M HILL) for the U.S. Naval Facilities Engineering Command (NAVFAC) Midwest, Great Lakes, Illinois, at the NIROP Fridley site in Fridley, Minnesota. This sampling effort was performed in accordance with the *Remedial Action Work Plan Addendum #1, Discrete Groundwater Sampling* (AGVIQ-CH2M HILL, 2012) to evaluate the vertical distribution of chlorinated solvent concentrations in site groundwater at location NIROP-SB101. This work was performed under Contract Number N62470-08-D-1006, Task Order No. F270.

Site Background

The NIROP Fridley site is located in the northern portion of the Minneapolis-St. Paul Metropolitan Area in an industrial and commercial area within the city limits of Fridley, Minnesota (**Figure 1**). The site is 82.6 acres in size, and most of the site is covered with buildings or pavement. The site is located on a broad, flat, fluvial terrace approximately 1,000 feet east of the Mississippi River and 30 feet higher than the average Mississippi River stage elevation. The City of Minneapolis Water Treatment Plant intake, which draws water from the Mississippi River, is located less than 1 mile downstream from the Former NIROP site.

This site began operating as a naval ordnance manufacturing facility in 1940. Environmental investigations have identified trichloroethene (TCE) and other chlorinated solvent contamination in site groundwater. A groundwater extraction and treatment system has been in operation since 1991 with extraction wells located along the western site

boundary to hydraulically contain the contaminant plume. The site is currently occupied by BAE Systems, Armament Systems Division.

Discrete Groundwater Sampling Effort

Discrete groundwater samples were collected at depth intervals ranging from 45 to 80 feet below ground surface (bgs) at soil boring location SB101 (**Figure 1**). A second borehole (also defined as SB101) was installed immediately adjacent to the initial groundwater sampling boring to collect split-spoon samples for soil characterization along the length of the borehole. The purpose of this one time sampling effort was to evaluate the chlorinated solvent concentrations in site groundwater at various depths, and to characterize the vertical extent of contamination and site lithology in this area.

Mobilization and Site Setup

AGVIQ-CH2M HILL mobilized to the site on August 14, 2012 with personnel, equipment and materials. The drilling subcontractor, Bergerson Caswell, constructed a decontamination pad and mobilized a hollow stem auger rig to the site. The drill rig was cleaned and decontaminated prior to delivery to the site.

Soil Boring Location and Utility Clearance

The soil/groundwater sampling boring was located along the south side of the main site building (**Figure 1**). The location of the boring was identified using a hand held global positioning system (GPS) device. Upon identification, the proposed location was visually assessed to evaluate accessibility for drilling equipment and that the area was clear of utilities and overhead lines. A third-party utility locator was contracted to identify subsurface utilities near the boring. BAE Systems personnel were also contacted to identify runoff drain pipes located on engineering drawings. The Minnesota public utility locating service was also alerted prior to the commencement of drilling activities. The coordinates for the NIROP-SB101 groundwater sampling location are 1078172.69, 2811283.55 in North American Datum of 1983 (NAD83) Minnesota State Plane South.

Boring Installation and Discrete Groundwater Sampling

Discrete groundwater samples were collected every 5 feet from 45 feet to 80 feet bgs using an auger rig using 4.25-inch inside diameter hollow stem augers. The lead 5-foot auger consisted of a customized screened auger with slots cut in the auger sides and a capped bottom. Once the auger string was advanced to the target interval, an inflatable packer was set immediately above the lead, screened auger and inflated to isolate the 5-foot screened interval. Prior to sampling each discrete zone, 10 packed casing volumes of water were purged using a whaler pump to move formation water into the auger and to attempt to remove turbidity from the samples. Once the discrete intervals were purged, the zone was sampled using low flow techniques using a ¾-inch geotechnical bladder pump with control box within the packed interval. A YSI 600 XL was connected to a flow through cell to measure water quality during the sample event. Turbidity was measured separately with a Hach turbidity unit. Sampling equipment was decontaminated between each 5-foot interval. During the groundwater sampling efforts, field parameters of pH, conductivity, dissolved oxygen, turbidity, oxidation reduction potential and temperature were measured and documented (Table 1). Although each zone was purged prior to the start of low flow

sampling over 10 packed casing volumes, none of the zones was able to clear turbidity to typical low flow sampling standard of below 10 NTUs for a typical installed well. The elevated turbidity is not expected to impact the groundwater VOC analytical results. Seven discrete groundwater samples were collected at 5-foot intervals from 45 feet to 80 feet bgs from this soil boring.

Groundwater samples were analyzed for volatile organic compounds (VOCs) via EPA Method 8260B. Four VOC vials were collected for each groundwater grab sample, to allow for re-analysis if needed. Quality Assurance (QA)/Quality Control (QC) samples for the discrete groundwater sampling included a field blank, trip blank, matrix spike, matrix spike duplicate, and a duplicate sample. Groundwater samples were analyzed on a 2-day turnaround time and data validation was performed within two days of receipt of the sample results to allow for expedited reporting. Analytical results were uploaded into the Naval Installation Restoration Information Solution (NIRIS) database.

A second soil boring was advanced in the immediate vicinity of the first boring to characterize soil lithology to a depth of 80 feet bgs utilizing a hollow stem auger rig and split spoon sampling. The soil boring was logged by an AGVIQ-CH2M HILL field geologist. The field geologist oversaw the advancement of the boring and monitored the split spoon samples for the presence of VOCs during drilling operations with a photoionization detector (PID). The boring log, NIROP SB-101, is included as Attachment A.

Once total depth was attained, each borehole was abandoned in accordance with Minnesota well abandonment rules (Minnesota Rules 4725.7450). The saturated sandy portions of each borehole collapsed naturally while the upper unsaturated portions were sealed using bentonite. Topsoil from the first couple of feet of each boring was used to cover the area disturbed during drilling.

Following completion of site activities, the augers and the drill rig were decontaminated using a high pressure spray washer. Water used for drilling and decontamination was containerized. Purge water was captured and run through the groundwater treatment system at on-site Building 52/53.

Groundwater Sampling Results

Groundwater samples were analyzed by TriMatrix Laboratories in Grand Rapids, Michigan. Data validation was performed by DataQual Environmental Services, located in St. Louis, Missouri. A subset of the validated analytical results presenting the primary site contaminants is presented in Table 2, and raw analytical results are presented in Attachment B. The data validation results are presented in Attachment C.

TCE and its daughter products were the primary constituents detected in site groundwater. TCE, trans-1,2-dichloroethene, and cis-1,2-dichloroethene were detected at the highest concentrations. In general, contaminant concentrations increased with depth with the maximum VOC concentrations being present in the 70 – 75 foot interval. TCE was detected at the highest concentration (710 micrograms per liter [μg/L]) within this interval. Concentrations decreased slightly in the 75 – 80 foot interval.

Poorly graded sands were observed in split spoon samples collected between 45 and 72 feet bgs, while gravely clays were observed between 72 and 80 feet bgs. The highest

contaminant concentrations were observed within the transition interval between sand and gravely clay.

Waste Management

Soil cuttings and decontamination fluid generated during the installation of the soil borings were containerized onsite and were characterized as required under the Resource Conservation and Recovery Act (RCRA) for appropriate disposal. Eight Department of Transportation (DOT) rated 55-gallon drums of soil cuttings were generated during drilling activities. One 55-gallon drum of decontamination water was generated during drilling activities. One composite soil sample was collected from the soil cutting drums, and one water sample was collected from the decontamination water. These investigation derived waste (IDW) samples were analyzed for full toxicity characteristic leachate procedure (TCLP) including VOCs, semi-volatile organic compounds (SVOCs), pesticides, herbicides and metals, in addition to ignitability, corrosivity, and reactivity. IDW drums were staged adjacent to Building 52/53 awaiting characterization and disposal. The soil and water generated during drilling activities were determined to be non-hazardous waste and were disposed of at the Solvent Recovery Corporation facility in Kansas City, Missouri on October 17, 2012. The IDW analytical results and shipping manifest are presented in Attachment D.

References

AGVIQ-CH2M HILL. 2012. *Remedial Action Work Plan Addendum #1, Discrete Groundwater Sampling, Former Naval Industrial Reserve Ordnance Plan, Fridley, Minnesota.* July 2012.

Tables

TABLE 1
Water Quality Parameters
Discrete Groundwater Sampling Results Technical Memorandum
NIROP Fridley, Minnesota

Sample Depth Interval	45 - 50 feet	50 - 55 feet	55 - 60 feet	60 - 65 feet	65 - 70 feet	70 - 75 feet	75 - 80 feet
Date	8/15/2012	8/15/2012	8/16/2012	8/16/2012	8/16/2012	8/16/2012	8/16/2012
Water Quality Parameters							
Temperature (degrees Celsius)	25.51	23.11	16.80	17.28	20.4	19.54	19.00
Conductivity (mS/cm)	1.196	1.011	0.985	1.042	1.145	1.102	1.049
Dissolved Oxygen (%)	11.6	6.8	5.1	6.2	8.4	7	5.9
pH	7.1	7.41	7.36	7.28	7.22	7.31	7.37
Oxygen-Reduction Potential (mV)	-138	-181	-186	-190	-175	-212	-214
Turbidity (NTU)	99.9+	99.9+	99.9+	99.9+	99.9+	99.9+	99.9+

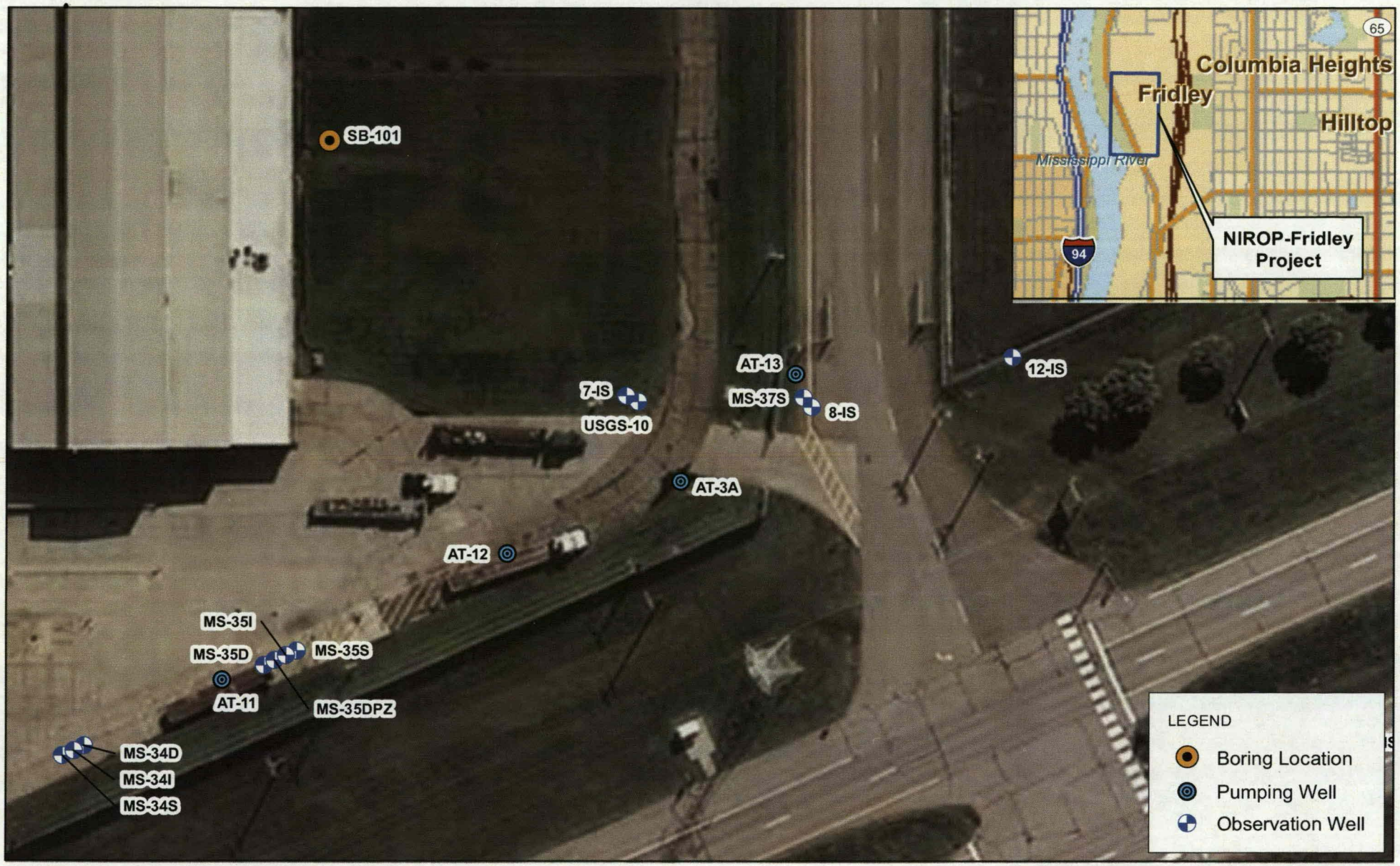
mS/cm - Millisiemens per centimeter
mV - Millivolts
NTU - Nephelometric Turbidity Unit

TABLE 2
Select Groundwater Analytical Results
Discrete Groundwater Sampling Results Technical Memorandum
NIROP Fridley, Minnesota

Sample ID	GW-101-4550-081512	GW-101-5055-081512	GW-101-5560-081612	GW-101-6065-081612	GW-101-6570-081612	GW-101-7075-081612	GW-101-7075-081612
Sample Depth	45 - 50 feet	50 - 55 feet	55 - 60 feet	60 - 65 feet	65 - 70 feet	70 - 75 feet	75 - 80 feet
Sample Date	8/15/2012	8/15/2012	8/16/2012	8/16/2012	8/16/2012	8/16/2012	8/16/2012
Volatile Organic Compounds, USEPA Method 8260B (µg/L)							
1,1-Dichloroethane	2.2	1	1.6	2.2	2.8	2.2	2
1,1-Dichloroethene	0.85 J	0.34 J	0.48 J	1	2.1	2	1.5
1,2-Dichloroethane	1 U	1 U	1 U	1 U	2.9	3.2	1.6
cis-1,2-Dichloroethene	31	16	20	28	57	59	42
trans-1,2-Dichloroethene	70	36	43	68	140	160	110
Trichloroethene	3.2	6.5	6.6	18	380	710	420
Vinyl Chloride	2	0.49 J	3.8	3.5	2.4	2.3	2.2

J - Analyte present below detection limit
µg/L - Micrograms per liter
U - The material was analyzed for, but not detected

Figures



N

0 50 100
Feet

Figure 1
Discrete Groundwater Sampling Results
Technical Memorandum
NIROP Fridley Project
Fridley, MN

AGVIQ ENVIRONMENTAL SERVICES
CH2M HILL JOINT VENTURE

E:\424225_NIROPFRIDLEYPROJECT\MAPFILES\REVISED_6192012\RH_REQUESTS\FIG01_DISCRETEGWSAMPLINGLOCATION.MXD MPETERSH 8/28/2012 8:22:18 AM

Attachment A
Soil Boring Log

AGVIQ / CH2M HILL	PROJECT NUMBER 424425.04.07.15.03	BORING NUMBER SB-101	SHEET 1 OF 3

SOIL BORING LOG

PROJECT : SB-101 Soil Boring and GW Sampling — LOCATION : NIROP Fridley — DATE: 8-17-12

WEATHER: Warm Sunny 70s. — DRILLING CONTRACTOR : Bergerson Caswell

DRILLING METHOD AND EQUIPMENT USED : Hollow stem auger 1100 AR, split spooning with 2-inch split spoons

WATER LEVEL : 36' bgs (estimated) — START : 8/16/2012 — END : 8/17/12 — LOGGER : Mike Niebauer

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm): Breathing Zone / Above Hole
	0-2	0.3	SS-1	6-8-12-10	0-0.3 SM Topsoil, grass, organic	0
2	2-4	2.0	SS-2	4-4-6-6	2-4' ML brown, organic soil with clay, sand and silt, moist	0
4	4-6	2.0	SS-3	3-3-3-3	4-5.5' ML brown clay/silt little sand medium sand	
					5.5-6 SP gray poorly graded sand with gravel, dry, loose	0
6	6-8	2.0	SS-4	9-5-4-4	6-8 SP gray poorly graded sand with gravel, dry	0
8	8-10	2.0	SS-5	5-5-4-4	8-10' CL brown clay, medium dense, moist little sand	0
10	10-12	2.0	SS-6	4-4-4-4	10-12' CL clay with gravel, moist, v. dense	0
12	12-14	2.0	SS-7	3-3-3-7	same as above 13' medium dense clay	0
14	14-16	2.0	SS-8	6-6-6-6	same as above	0
16	16-18	2.0	SS-9	3-3-3-3	16-18' CL brown clay with increasing gravel, moist v. dense	0
18	18-20	2.0			18-18.5 same as above	0
			SS-10	30-100-6-6	18.5 -19.5 gravel layer, coarse, wet (limited recovery)	
					19.5 - 20 SW well graded fine sand, wet, loose	
20	20-22	2.0	SS-11	3-3-3-3	20- 22' SM or CL interbedded clay and fine sand wet, loose	2-3 feet of water in auger when drilling resumed in the morning 0
22	22-24	2.0	SS-12	3-3-3-3	22-24' SM gray to brown silty sand, wet, loose grading to fine sand at 24'	0
24	24-26	2.0	SS-13	6-6-6-6	24-26' SM gray fine sand with silt, wet, loose	0
26	26-28	2.0	SS-14	6-8-12-20	26-28' GM gravel, sand and silt, moist, stiff	0
28	28-30	1.5	SS-15	8-15-100/5"	28-30' ML gravelly silt, moist, v. stiff	0
30						

AGVIQ CH2M HILL	PROJECT NUMBER 424425.04.07.15.03	BORING NUMBER SB-101	SHEET 2 OF 3

SOIL BORING LOG

PROJECT : SB-101 Soil Boring and GW Sampling LOCATION : NIROP Fridley DATE: 8-17-12

WEATHER: Warm, sunny 70s. DRILLING CONTRACTOR : Bergerson Caswell

DRILLING METHOD AND EQUIPMENT USED : Hollow stem auger, split spooning with 2-inch split spoons.

WATER LEVEL : 36' bgs (estimated) START : 8/16/2012 END : 8/17/12 LOGGER : Mike Niebauer

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm): Breathing Zone Above Hole
	30-32	2.0	SS-16	5-6-6-12	30-32' ML gravelly silt, moist, v. stiff increasing fine sand at 31.5 feet	0
32	32-34	2.0	SS-17	4-4-4-4	32- 34' SM interbedded silt and sand layers, moist	0
34	34-36	2.0	SS-18	9-8-8-8	34-36' SW well graded coarse sand w/gravel wet, loose	0
36	36-38	2.0	SS-19	7-7-7-7	36-38' SP poorly graded coarse sand, wet, loose	0
38	38-40	2.0	SS-20	7-7-7-7	38-40' SP poorly graded sand, wet, loose increase in fine sand	0
40	40-42	2.0	SS-21	3-4-6-6	40-42' SP poorly graded sand, wet, loose	0
42	42-44	2.0	SS-22	4-4-4-4	same as above	0
44	44-46	2.0	SS-23	3-3-3-3	same as above	0
46	46-48	2.0	SS-24	3-3-3-3	same as above	0
48	48-50	2.0	SS-25	4-4-4-4	same as above	0
50	50-52	2.0	SS-26	4-4-4-4	50-52' SP poorly graded sand, wet, loose	0
52	52-54	2.0	SS-27	4-4-4-4	same as above	0
54	54-56	2.0	SS-28	4-4-4-4	same as above	0
56	56-58	2.0	SS-29	4-4-4-4	same as above	0
58	58-60	2.0	SS-30	4-4-4-4	same as above	0
						0

AGVIQ / CH2M HILL	PROJECT NUMBER 424425.04.07.15.03	BORING NUMBER SB-101	SHEET 3 OF 3

SOIL BORING LOG

PROJECT : SB-101 Soil Boring and GW Sampling | LOCATION : NIROP Fridley | DATE: 8-17-12

WEATHER: Warm, Sunny 70s. | DRILLING CONTRACTOR : Bergerson Caswell

DRILLING METHOD AND EQUIPMENT USED : Hollow Stem Auger, split spooning with 2-inch split spoons.

WATER LEVELS 36' bgs | START : 8/16/2012 | END : 8/17/12 | LOGGER : Mike Niebauer

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID (ppm): Breathing Zone Above Hole
60		2	SS-31	4-4-4-4	60-62' SP poorly graded sand, wet, loose	
62	62-64	2	SS-32	4-4-4-4	62-64' SP poorly graded, wet, loose increase in fine sand	0
64	64-66	2	SS-33	4-4-4-4	64-66' SP poorly graded, wet, loose, fine sand	0
66	66-68	2	SS-34	5-5-5-5	same as above	0
68	68-70	2	SS-35	5-5-5-5	same as above	0
70	70-72	2	SS-36	NM	same as above	0
72	72-74	2	SS-37	NM	72-74 GC gravelly clay, v. dense, moist, gray, angular gravel	0
74	74-76	2	SS-38	NM	same as above	0
76	76-78	2	SS-39	NM	same as above	0
78	78-80	0.5	SS-40	NM	78-80 GC gravelly clay	0
80					80' - Total Depth of SB-101	
82						
84						
86						
88						

Attachment B
Raw Analytical Results

Groundwater Results
Naval Industrial Reserve Ordnance Plant
Fridley, Minnesota

Location		GW-101-4550	GW-101-5055	GW-101-5560	GW-101-6065		GW-101-6570	GW-101-7075	GW-101-7580
Sample ID		NIROP-GW-101-4550-081512	NIROP-GW-101-5055-081512	NIROP-GW-101-5560-081612	NIROP-GW-101-6065-081612	NIROP-GW-101-6065-081612-D	NIROP-GW-101-6570-081612	NIROP-GW-101-7075-081612	NIROP-GW-101-7580-081612
Sample Depth (ft)		45 50	50 - 55	55 - 60	60 -65	60 - 65	65 - 70	70 - 75	75 - 80
Sample Date		8/15/2012	8/15/2012	8/16/2012	8/16/2012	8/16/2012	8/16/2012	8/16/2012	8/16/2012
Analyte									
SW8260B (UG/L)									
1,1,1-Trichloroethane	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroeth	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	UG/L	**2.2**	**1**	**1.6**	**2.2**	**2.1**	**2.8**	**2.2**	**2**
1,1-Dichloroethene	UG/L	**0.85 J**	**0.34 J**	**0.48 J**	**1**	**1**	**2.1**	**2**	**1.5**
1,2,4-Trichlorobenzene	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dibromo-3-chloropropane	UG/L	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
1,2-Dibromoethane	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	UG/L	1 U	1 U	1 U	1 U	1 U	**2.9**	**3.2**	**1.6**
1,2-Dichloropropane	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone (MEK)	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	UG/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
4-Methyl-2-pentanone (MIBK)	UG/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Acetone	UG/L	**4.2 J**	3.8 U	3.7 U	**4.2 J**	**4.1 J**	**4.7 J**	**4.5 J**	**4.3 J**
Benzene	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Bromomethane	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Carbon Disulfide	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	UG/L	**31**	**16**	**20**	**28**	**27**	**57**	**59**	**42**
cis-1,3-Dichloropropene	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Cyclohexane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Dichlorodifluoromethane	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl Acetate	UG/L	1 U	5 UJ	5 UJ	5 UJ	1 U	5 UJ	5 UJ	5 UJ
Methyl tert-Butyl Ether	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylcyclohexane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methylene Chloride	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Styrene	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	UG/L	**0.19 J**	**3.1**	**5**	**3.8**	**3.8**	**2.2**	**2.4**	**2.9**
trans-1,2-Dichloroethene	UG/L	**70**	**36**	**43**	**68**	**65**	**140**	**160**	**110**
trans-1,3-Dichloropropene	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Trichloroethene	UG/L	**3.2**	**6.5**	**6.6**	**18**	**17**	**290**	**540**	**330**
Trichlorofluoromethane	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	UG/L	**2**	**0.49 J**	**3.8**	**3.5**	**3.3**	**2.4**	**2.3**	**2.2**
Xylene (Total)	UG/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U

Notes:

NA = Not analyzed

J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ = The analyte was below the reported sample quantitation limit. However, the reported value is approximate.

ug/l = Micrograms per Liter

Bold indicates the analyte was detected

Attachment C
Data Validation Summary

DataQual

Environmental Services, LLC

CH2M HILL
15010 Conference Center Drive
Suite 200
Chantilly, VA 20151

August 23, 2012
SDG# NIROP0812 (November sampling), TriMatrix
NIROP Fridley, TO-F270

Dear Ms. Morrison,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # NIROP0812. The data validation was performed in accordance with the SW846 Method 8260B for volatiles and good professional judgment. Also used in the validation of these samples were The National Functional Guidelines for Organic Data Review (June, 2008), as applicable. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	VOA
NIROP-GW-101-4550-081512	1208289-01	water	X
NIROP-GW-101-5055-081512	1208289-02	water	X
NIROP-GW-101-5560-081612	1208289-03	water	X
NIROP-GW-101-6065-081612	1208289-04	water	X
NIROP-GW-101-6065-081612-D	1208289-05	water	X
NIROP-GW-101-6570-081612	1208289-06	water	X
NIROP-GW-101-7075-081612	1208289-07	water	X
NIROP-GW-101-7580-081612	1208289-08	water	X
Trip Blank	1208289-09	water	X
NIROP-GW-101-081612-FB	1208289-10	water	X
NIROP-GW-101-5560-081612 MS	1208289-03MS	water	X
NIROP-GW-101-5560-081612 MSD	1208289-03MSD	water	X

The following quality control samples were provided with this SDG: sample NIROP-GW-101-6065-081612-D -field duplicate of sample NIROP-GW-101-6065-081612-; sample NIROP-GW-101-081612-FB - field blank; sample Trip Blank- trip blank.

The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- GC/MS Tunes *
- Initial/Continuing Calibrations
- Blanks
- Internal Standards *
- Surrogates *

- Laboratory Control Samples *
- Matrix Spike Recoveries *
- Matrix Duplicate RPDs *
- Field Duplicates *
- Identification/Quantitation
- Reporting Limits *
- Tentatively Identified Compounds NA

* - indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page.

VOA

The initial standards exhibited non-compliant %RSDs. Qualifications were required in the samples.

Blank contamination was noted in the method and/or QC blanks associated with samples in this batch. Qualifications were added to the data.

Three samples required a dilution to obtain results within the calibration range.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 08/15-16/12 and samples were received at the laboratory 08/17/12. All sample preparation and analysis was performed within method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited %RSDs that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results were qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q code
IC 08/10/12	bromoform	27.06	all samples	J/UJ	ICH
	bromomethane	16.02			
	1,2-dibromo-3-chloropropane	19.53			
	dibromochloromethane	17.48			
	cis-1,3-dichloropropene	18.82			
	trans-1,3-dichloropropene	25.36			
	2-hexanone	21.60			
	methyl acetate	44.35			
	methylene chloride	67.21			
	4-methyl-2-pentanone	20.12			

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit
1210126-BLK1	acetone	3.4J ug/L	2.0 ug/L
Trip Blank	methyl acetate	0.70J	1.0

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Qual Code
NIROP-GW-101-5055-081512, NIROP-GW-101-5560-081612	acetone	U at value	MBL
NIROP-GW-101-4550-081512, NIROP-GW-101-6065-081612-D	methyl acetate	U at LOD	TBL

Identification/Quantitation

VOA

A dilution was required for samples NIROP-GW-101-6570-081612, NIROP-GW-101-7075-081612 and NIROP-GW-101-7580-081612 to obtain results within the calibration range; therefore, the E-flagged results in the initial analyses were excluded in favor of the corresponding D-flagged results in the diluted analysis (qualifier code: DL).

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q-Flag	Q code
all samples	bromoform bromomethane 1,2-dibromo-3-chloropropane dibromochloromethane cis-1,3-dichloropropene trans-1,3-dichloropropene 2-hexanone methyl acetate methylene chloride 4-methyl-2-pentanone	+/-	J/UJ	ICH
NIROP-GW-101-5055-081512, NIROP-GW-101-5560-081612	acetone	+	U at value	MBL
NIROP-GW-101-4550-081512, NIROP-GW-101-6065-081612-D	methyl acetate	+	U at LOD	TBL
NIROP-GW-101-6570-081612, NIROP-GW-101-7075-081612, NIROP-GW-101-7580-081612	all E-flagged compounds	+E	exclude	DL
NIROP-GW-101-6570-081612RE, NIROP-GW-101-7075-081612RE, NIROP-GW-101-7580-081612	all compounds except D-flagged results	+/-	exclude	DL

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high

Inorganic Field/Lab Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 10X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
RL-U	The sample result for the blank contaminant is less than the sample RL and the result is raised to the RL and flagged U.
R or J+	The blank contaminant concentration was greater than the RL and the sample result is greater than the RL but less than 10X the blank contaminant concentration. The reported results are flagged either as rejected R or biased high J+ based on the professional judgment of the validator. (see NFG, Rev. date 10/04, p. 17 for extracted blanks (PB))

Organic Field/Lab Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X (10X for common laboratory contaminants) the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
RL-U	The sample result for the blank contaminant is less than the sample RL but is less than 5X (10X for common laboratory contaminants) the blank value, so the result is raised to the RL and flagged U.
U	The sample result for the blank contaminant is greater than the sample RL but is less than 5X (10X for common laboratory contaminants) the blank value, so the result is flagged U at the reported value.

General Abbreviations

RL / MDL	reporting limit/method detection limit
CRQL	contract required quantitation limit
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - High Recovery
BSH	Blank Spike/LCS - Low Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%SOL	High moisture content

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-4550-081512

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-01 File ID: 1208289-01.D

Sampled: 08/15/12 12:00 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 12:17

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	1	4.2	1.1	2.0	5.0	~~JB~~
71-43-2	Benzene	1	0.20	0.11	0.20	1.0	U
75-27-4	Bromodichloromethane	1	0.50	0.13	0.50	1.0	U
75-25-2	Bromoform	1	1.0	0.26	1.0	1.0	~~U~~ UJ ICH
74-83-9	Bromomethane	1	0.50	0.21	0.50	1.0	~~U~~ UJ ICH
75-15-0	Carbon Disulfide	1	1.0	0.23	1.0	5.0	U
56-23-5	Carbon Tetrachloride	1	0.50	0.26	0.50	1.0	U
108-90-7	Chlorobenzene	1	0.50	0.17	0.50	1.0	U
75-00-3	Chloroethane	1	0.50	0.14	0.50	1.0	U
67-66-3	Chloroform	1	0.20	0.098	0.20	1.0	U
74-87-3	Chloromethane	1	0.50	0.29	0.50	1.0	U
110-82-7	Cyclohexane	1	0.50	0.18	0.50	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	1	0.50	0.13	0.50	2.0	~~U~~ UJ ICH
124-48-1	Dibromochloromethane	1	0.50	0.15	0.50	1.0	~~U~~ UJ ICH
106-93-4	1,2-Dibromoethane	1	0.50	0.15	0.50	1.0	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
106-46-7	1,4-Dichlorobenzene	1	0.50	0.25	0.50	1.0	U
75-71-8	Dichlorodifluoromethane	1	0.50	0.21	0.50	1.0	U
75-34-3	1,1-Dichloroethane	1	2.2	0.18	0.50	1.0	
107-06-2	1,2-Dichloroethane	1	0.50	0.21	0.50	1.0	U
75-35-4	1,1-Dichloroethene	1	0.85	0.21	0.50	1.0	J
156-59-2	cis-1,2-Dichloroethene	1	31	0.12	0.50	1.0	
156-60-5	trans-1,2-Dichloroethene	1	70	0.20	0.50	1.0	
78-87-5	1,2-Dichloropropane	1	0.50	0.28	0.50	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
10061-02-6	trans-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
100-41-4	Ethylbenzene	1	0.50	0.21	0.50	1.0	U
591-78-6	2-Hexanone	1	1.0	0.49	1.0	5.0	~~U~~ UJ ICH
98-82-8	Isopropylbenzene	1	0.50	0.22	0.50	1.0	U
79-20-9	Methyl Acetate	1	~~0.58~~ 1.0	0.42	1.0	5.0	~~J~~ UL TPL
1634-04-4	Methyl tert-Butyl Ether	1	0.50	0.19	0.50	1.0	U
108-87-2	Methylcyclohexane	1	1.0	0.37	1.0	5.0	U
75-09-2	Methylene Chloride	1	1.0	0.24	1.0	1.0	~~U~~ UJ ICH
78-93-3	2-Butanone (MEK)	1	1.0	0.63	1.0	5.0	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	1.0	0.40	1.0	5.0	~~U~~ UJ I
100-42-5	Styrene	1	0.50	0.20	0.50	1.0	U

WM 08/23/12

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-4550-081512

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-01 File ID: 1208289-01.D

Sampled: 08/15/12 12:00 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 12:17

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
79-34-5	1,1,2,2-Tetrachloroethane	1	0.50	0.26	0.50	1.0	U
127-18-4	Tetrachloroethene	1	0.50	0.23	0.50	1.0	U
108-88-3	Toluene	1	0.19	0.18	0.50	1.0	J
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.13	0.50	2.0	U
71-55-6	1,1,1-Trichloroethane	1	0.50	0.14	0.50	1.0	U
79-00-5	1,1,2-Trichloroethane	1	0.50	0.20	0.50	1.0	U
79-01-6	Trichloroethene	1	3.2	0.21	0.50	1.0	
75-69-4	Trichlorofluoromethane	1	0.50	0.27	0.50	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1	0.50	0.24	0.50	1.0	U
75-01-4	Vinyl Chloride	1	2.0	0.21	0.50	1.0	
1330-20-7	Xylene (Total)	1	1.2	0.39	1.2	3.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.3	101	85 - 115	
1,2-Dichloroethane-d4	40.0	40.5	101	70 - 120	
Toluene-d8	40.0	39.3	98	85 - 120	
4-Bromofluorobenzene	40.0	35.4	88	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	684317	5.866	909533	5.872	
Chlorobenzene-d5	494287	10.286	688673	10.292	
1,4-Dichlorobenzene-d4	202245	13.286	361828	13.292	

* Values outside of QC limits

WM 082212

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-5055-081512

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-02 File ID: 1208289-02.D

Sampled: 08/15/12 16:30 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 12:44

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	1	3.8	1.1	2.0	5.0	~~JB~~ UL MBL
71-43-2	Benzene	1	0.20	0.11	0.20	1.0	U
75-27-4	Bromodichloromethane	1	0.50	0.13	0.50	1.0	U
75-25-2	Bromoform	1	1.0	0.26	1.0	1.0	~~U~~ UJ ICH
74-83-9	Bromomethane	1	0.50	0.21	0.50	1.0	~~U~~ UJ ICH
75-15-0	Carbon Disulfide	1	1.0	0.23	1.0	5.0	U
56-23-5	Carbon Tetrachloride	1	0.50	0.26	0.50	1.0	U
108-90-7	Chlorobenzene	1	0.50	0.17	0.50	1.0	U
75-00-3	Chloroethane	1	0.50	0.14	0.50	1.0	U
67-66-3	Chloroform	1	0.20	0.098	0.20	1.0	U
74-87-3	Chloromethane	1	0.50	0.29	0.50	1.0	U
110-82-7	Cyclohexane	1	0.50	0.18	0.50	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	1	0.50	0.13	0.50	2.0	~~U~~ UJ ICH
124-48-1	Dibromochloromethane	1	0.50	0.15	0.50	1.0	~~U~~ UJ ICH
106-93-4	1,2-Dibromoethane	1	0.50	0.15	0.50	1.0	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
106-46-7	1,4-Dichlorobenzene	1	0.50	0.25	0.50	1.0	U
75-71-8	Dichlorodifluoromethane	1	0.50	0.21	0.50	1.0	U
75-34-3	1,1-Dichloroethane	1	1.0	0.18	0.50	1.0	
107-06-2	1,2-Dichloroethane	1	0.50	0.21	0.50	1.0	U
75-35-4	1,1-Dichloroethene	1	0.34	0.21	0.50	1.0	J
156-59-2	cis-1,2-Dichloroethene	1	16	0.12	0.50	1.0	
156-60-5	trans-1,2-Dichloroethene	1	36	0.20	0.50	1.0	
78-87-5	1,2-Dichloropropane	1	0.50	0.28	0.50	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
10061-02-6	trans-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
100-41-4	Ethylbenzene	1	0.50	0.21	0.50	1.0	U
591-78-6	2-Hexanone	1	1.0	0.49	1.0	5.0	~~U~~ UJ ICH
98-82-8	Isopropylbenzene	1	0.50	0.22	0.50	1.0	U
79-20-9	Methyl Acetate	1	1.0	0.42	1.0	5.0	~~U~~ UJ ICH
1634-04-4	Methyl tert-Butyl Ether	1	0.50	0.19	0.50	1.0	U
108-87-2	Methylcyclohexane	1	1.0	0.37	1.0	5.0	U
75-09-2	Methylene Chloride	1	1.0	0.24	1.0	1.0	~~U~~ UJ ICH
78-93-3	2-Butanone (MEK)	1	1.0	0.63	1.0	5.0	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	1.0	0.40	1.0	5.0	~~U~~ UJ I
100-42-5	Styrene	1	0.50	0.20	0.50	1.0	U

MM 08/23/12

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-5055-081512

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-02 File ID: 1208289-02.D

Sampled: 08/15/12 16:30 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 12:44

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
79-34-5	1,1,2,2-Tetrachloroethane	1	0.50	0.26	0.50	1.0	U
127-18-4	Tetrachloroethene	1	0.50	0.23	0.50	1.0	U
108-88-3	Toluene	1	3.1	0.18	0.50	1.0	
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.13	0.50	2.0	U
71-55-6	1,1,1-Trichloroethane	1	0.50	0.14	0.50	1.0	U
79-00-5	1,1,2-Trichloroethane	1	0.50	0.20	0.50	1.0	U
79-01-6	Trichloroethene	1	6.5	0.21	0.50	1.0	
75-69-4	Trichlorofluoromethane	1	0.50	0.27	0.50	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1	0.50	0.24	0.50	1.0	U
75-01-4	Vinyl Chloride	1	0.49	0.21	0.50	1.0	J
1330-20-7	Xylene (Total)	1	1.2	0.39	1.2	3.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.4	101	85 - 115	
1,2-Dichloroethane-d4	40.0	41.0	103	70 - 120	
Toluene-d8	40.0	39.2	98	85 - 120	
4-Bromofluorobenzene	40.0	35.0	88	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	675958	5.866	909533	5.872	
Chlorobenzene-d5	489415	10.286	688673	10.292	
1,4-Dichlorobenzene-d4	199402	13.286	361828	13.292	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-5560-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-03 File ID: 1208289-03.D

Sampled: 08/16/12 09:00 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 11:49

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	1	3.7	1.1	2.0	5.0	~~JB~~ U MGL
71-43-2	Benzene	1	0.20	0.11	0.20	1.0	U
75-27-4	Bromodichloromethane	1	0.50	0.13	0.50	1.0	U
75-25-2	Bromoform	1	1.0	0.26	1.0	1.0	~~U~~ UJ ICH
74-83-9	Bromomethane	1	0.50	0.21	0.50	1.0	~~U~~ UJ ICH
75-15-0	Carbon Disulfide	1	1.0	0.23	1.0	5.0	U
56-23-5	Carbon Tetrachloride	1	0.50	0.26	0.50	1.0	U
108-90-7	Chlorobenzene	1	0.50	0.17	0.50	1.0	U
75-00-3	Chloroethane	1	0.50	0.14	0.50	1.0	U
67-66-3	Chloroform	1	0.20	0.098	0.20	1.0	U
74-87-3	Chloromethane	1	0.50	0.29	0.50	1.0	U
110-82-7	Cyclohexane	1	0.50	0.18	0.50	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	1	0.50	0.13	0.50	2.0	~~U~~ UJ ICH
124-48-1	Dibromochloromethane	1	0.50	0.15	0.50	1.0	~~U~~ UJ ICH
106-93-4	1,2-Dibromoethane	1	0.50	0.15	0.50	1.0	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
106-46-7	1,4-Dichlorobenzene	1	0.50	0.25	0.50	1.0	U
75-71-8	Dichlorodifluoromethane	1	0.50	0.21	0.50	1.0	U
75-34-3	1,1-Dichloroethane	1	1.6	0.18	0.50	1.0	
107-06-2	1,2-Dichloroethane	1	0.50	0.21	0.50	1.0	U
75-35-4	1,1-Dichloroethene	1	0.48	0.21	0.50	1.0	J
156-59-2	cis-1,2-Dichloroethene	1	20	0.12	0.50	1.0	
156-60-5	trans-1,2-Dichloroethene	1	43	0.20	0.50	1.0	
78-87-5	1,2-Dichloropropane	1	0.50	0.28	0.50	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
10061-02-6	trans-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
100-41-4	Ethylbenzene	1	0.50	0.21	0.50	1.0	U
591-78-6	2-Hexanone	1	1.0	0.49	1.0	5.0	~~U~~ UJ ICH
98-82-8	Isopropylbenzene	1	0.50	0.22	0.50	1.0	U
79-20-9	Methyl Acetate	1	1.0	0.42	1.0	5.0	~~U~~ UJ ICH
1634-04-4	Methyl tert-Butyl Ether	1	0.50	0.19	0.50	1.0	U
108-87-2	Methylcyclohexane	1	1.0	0.37	1.0	5.0	U
75-09-2	Methylene Chloride	1	1.0	0.24	1.0	1.0	~~U~~ UJ ICH
78-93-3	2-Butanone (MEK)	1	1.0	0.63	1.0	5.0	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	1.0	0.40	1.0	5.0	~~U~~ UJ I
100-42-5	Styrene	1	0.50	0.20	0.50	1.0	U

MM 08/29/12

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-5560-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-03 File ID: 1208289-03.D

Sampled: 08/16/12 09:00 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 11:49

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
79-34-5	1,1,2,2-Tetrachloroethane	1	0.50	0.26	0.50	1.0	U
127-18-4	Tetrachloroethene	1	0.50	0.23	0.50	1.0	U
108-88-3	Toluene	1	5.0	0.18	0.50	1.0	
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.13	0.50	2.0	U
71-55-6	1,1,1-Trichloroethane	1	0.50	0.14	0.50	1.0	U
79-00-5	1,1,2-Trichloroethane	1	0.50	0.20	0.50	1.0	U
79-01-6	Trichloroethene	1	6.6	0.21	0.50	1.0	
75-69-4	Trichlorofluoromethane	1	0.50	0.27	0.50	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1	0.50	0.24	0.50	1.0	U
75-01-4	Vinyl Chloride	1	3.8	0.21	0.50	1.0	
1330-20-7	Xylene (Total)	1	1.2	0.39	1.2	3.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.2	100	85 - 115	
1,2-Dichloroethane-d4	40.0	40.5	101	70 - 120	
Toluene-d8	40.0	39.3	98	85 - 120	
4-Bromofluorobenzene	40.0	35.0	88	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	689317	5.866	909533	5.872	
Chlorobenzene-d5	497637	10.286	688673	10.292	
1,4-Dichlorobenzene-d4	200574	13.286	361828	13.292	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-6065-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-04 File ID: 1208289-04.D

Sampled: 08/16/12 10:15 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 13:12

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	1	4.2	1.1	2.0	5.0	~~J~~
71-43-2	Benzene	1	0.20	0.11	0.20	1.0	U
75-27-4	Bromodichloromethane	1	0.50	0.13	0.50	1.0	U
75-25-2	Bromoform	1	1.0	0.26	1.0	1.0	~~U~~ UJ ICH
74-83-9	Bromomethane	1	0.50	0.21	0.50	1.0	~~U~~ UJ ICH
75-15-0	Carbon Disulfide	1	1.0	0.23	1.0	5.0	U
56-23-5	Carbon Tetrachloride	1	0.50	0.26	0.50	1.0	U
108-90-7	Chlorobenzene	1	0.50	0.17	0.50	1.0	U
75-00-3	Chloroethane	1	0.50	0.14	0.50	1.0	U
67-66-3	Chloroform	1	0.20	0.098	0.20	1.0	U
74-87-3	Chloromethane	1	0.50	0.29	0.50	1.0	U
110-82-7	Cyclohexane	1	0.50	0.18	0.50	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	1	0.50	0.13	0.50	2.0	~~U~~ UJ ICH
124-48-1	Dibromochloromethane	1	0.50	0.15	0.50	1.0	~~U~~ UJ ICH
106-93-4	1,2-Dibromoethane	1	0.50	0.15	0.50	1.0	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
106-46-7	1,4-Dichlorobenzene	1	0.50	0.25	0.50	1.0	U
75-71-8	Dichlorodifluoromethane	1	0.50	0.21	0.50	1.0	U
75-34-3	1,1-Dichloroethane	1	2.2	0.18	0.50	1.0	
107-06-2	1,2-Dichloroethane	1	0.50	0.21	0.50	1.0	U
75-35-4	1,1-Dichloroethene	1	1.0	0.21	0.50	1.0	
156-59-2	cis-1,2-Dichloroethene	1	28	0.12	0.50	1.0	
156-60-5	trans-1,2-Dichloroethene	1	68	0.20	0.50	1.0	
78-87-5	1,2-Dichloropropane	1	0.50	0.28	0.50	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
10061-02-6	trans-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
100-41-4	Ethylbenzene	1	0.50	0.21	0.50	1.0	U
591-78-6	2-Hexanone	1	1.0	0.49	1.0	5.0	~~U~~ UJ ICH
98-82-8	Isopropylbenzene	1	0.50	0.22	0.50	1.0	U
79-20-9	Methyl Acetate	1	1.0	0.42	1.0	5.0	~~U~~ UJ ICH
1634-04-4	Methyl tert-Butyl Ether	1	0.50	0.19	0.50	1.0	U
108-87-2	Methylcyclohexane	1	1.0	0.37	1.0	5.0	U
75-09-2	Methylene Chloride	1	1.0	0.24	1.0	1.0	~~U~~ UJ ICH
78-93-3	2-Butanone (MEK)	1	1.0	0.63	1.0	5.0	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	1.0	0.40	1.0	5.0	~~U~~ UJ I
100-42-5	Styrene	1	0.50	0.20	0.50	1.0	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-6065-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-04 File ID: 1208289-04.D

Sampled: 08/16/12 10:15 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 13:12

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
79-34-5	1,1,2,2-Tetrachloroethane	1	0.50	0.26	0.50	1.0	U
127-18-4	Tetrachloroethene	1	0.50	0.23	0.50	1.0	U
108-88-3	Toluene	1	3.8	0.18	0.50	1.0	
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.13	0.50	2.0	U
71-55-6	1,1,1-Trichloroethane	1	0.50	0.14	0.50	1.0	U
79-00-5	1,1,2-Trichloroethane	1	0.50	0.20	0.50	1.0	U
79-01-6	Trichloroethene	1	18	0.21	0.50	1.0	
75-69-4	Trichlorofluoromethane	1	0.50	0.27	0.50	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1	0.50	0.24	0.50	1.0	U
75-01-4	Vinyl Chloride	1	3.5	0.21	0.50	1.0	
1330-20-7	Xylene (Total)	1	1.2	0.39	1.2	3.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.6	102	85 - 115	
1,2-Dichloroethane-d4	40.0	40.8	102	70 - 120	
Toluene-d8	40.0	39.1	98	85 - 120	
4-Bromofluorobenzene	40.0	35.6	89	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	669617	5.866	909533	5.872	
Chlorobenzene-d5	483012	10.286	688673	10.292	
1,4-Dichlorobenzene-d4	198220	13.286	361828	13.292	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-6065-081612-D

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-05 File ID: 1208289-05.D

Sampled: 08/16/12 10:20 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 13:40

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	1	4.1	1.1	2.0	5.0	JB
71-43-2	Benzene	1	0.20	0.11	0.20	1.0	U
75-27-4	Bromodichloromethane	1	0.50	0.13	0.50	1.0	U
75-25-2	Bromoform	1	1.0	0.26	1.0	1.0	~~U~~ UJ ICH
74-83-9	Bromomethane	1	0.50	0.21	0.50	1.0	~~U~~ UJ ICH
75-15-0	Carbon Disulfide	1	1.0	0.23	1.0	5.0	U
56-23-5	Carbon Tetrachloride	1	0.50	0.26	0.50	1.0	U
108-90-7	Chlorobenzene	1	0.50	0.17	0.50	1.0	U
75-00-3	Chloroethane	1	0.50	0.14	0.50	1.0	U
67-66-3	Chloroform	1	0.20	0.098	0.20	1.0	U
74-87-3	Chloromethane	1	0.50	0.29	0.50	1.0	U
110-82-7	Cyclohexane	1	0.50	0.18	0.50	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	1	0.50	0.13	0.50	2.0	~~U~~ UJ ICH
124-48-1	Dibromochloromethane	1	0.50	0.15	0.50	1.0	~~U~~ UJ ICH
106-93-4	1,2-Dibromoethane	1	0.50	0.15	0.50	1.0	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
106-46-7	1,4-Dichlorobenzene	1	0.50	0.25	0.50	1.0	U
75-71-8	Dichlorodifluoromethane	1	0.50	0.21	0.50	1.0	U
75-34-3	1,1-Dichloroethane	1	2.1	0.18	0.50	1.0	
107-06-2	1,2-Dichloroethane	1	0.50	0.21	0.50	1.0	U
75-35-4	1,1-Dichloroethene	1	1.0	0.21	0.50	1.0	
156-59-2	cis-1,2-Dichloroethene	1	27	0.12	0.50	1.0	
156-60-5	trans-1,2-Dichloroethene	1	65	0.20	0.50	1.0	
78-87-5	1,2-Dichloropropane	1	0.50	0.28	0.50	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
10061-02-6	trans-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
100-41-4	Ethylbenzene	1	0.50	0.21	0.50	1.0	U
591-78-6	2-Hexanone	1	1.0	0.49	1.0	5.0	~~U~~ UJ ICH
98-82-8	Isopropylbenzene	1	0.50	0.22	0.50	1.0	U
79-20-9	Methyl Acetate	1	~~0.75~~ 1.0	0.42	1.0	5.0	~~U~~ U TPV
1634-04-4	Methyl tert-Butyl Ether	1	0.50	0.19	0.50	1.0	U
108-87-2	Methylcyclohexane	1	1.0	0.37	1.0	5.0	U
75-09-2	Methylene Chloride	1	1.0	0.24	1.0	1.0	~~U~~ UJ ICH
78-93-3	2-Butanone (MEK)	1	1.0	0.63	1.0	5.0	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	1.0	0.40	1.0	5.0	~~U~~ UJ I
100-42-5	Styrene	1	0.50	0.20	0.50	1.0	U

WM 8/27/12

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-6065-081612-D

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-05 File ID: 1208289-05.D

Sampled: 08/16/12 10:20 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 13:40

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
79-34-5	1,1,2,2-Tetrachloroethane	1	0.50	0.26	0.50	1.0	U
127-18-4	Tetrachloroethene	1	0.50	0.23	0.50	1.0	U
108-88-3	Toluene	1	3.8	0.18	0.50	1.0	
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.13	0.50	2.0	U
71-55-6	1,1,1-Trichloroethane	1	0.50	0.14	0.50	1.0	U
79-00-5	1,1,2-Trichloroethane	1	0.50	0.20	0.50	1.0	U
79-01-6	Trichloroethene	1	17	0.21	0.50	1.0	
75-69-4	Trichlorofluoromethane	1	0.50	0.27	0.50	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1	0.50	0.24	0.50	1.0	U
75-01-4	Vinyl Chloride	1	3.3	0.21	0.50	1.0	
1330-20-7	Xylene (Total)	1	1.2	0.39	1.2	3.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.3	101	85 - 115	
1,2-Dichloroethane-d4	40.0	40.8	102	70 - 120	
Toluene-d8	40.0	39.2	98	85 - 120	
4-Bromofluorobenzene	40.0	35.5	89	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	686118	5.866	909533	5.872	
Chlorobenzene-d5	495773	10.286	688673	10.292	
1,4-Dichlorobenzene-d4	204365	13.286	361828	13.292	

* Values outside of QC limits

WM 8/27/12

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-6570-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-06 File ID: 1208289-06.D

Sampled: 08/16/12 11:30 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 14:07

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	1	4.7	1.1	2.0	5.0	JB
71-43-2	Benzene	1	0.20	0.11	0.20	1.0	U
75-27-4	Bromodichloromethane	1	0.50	0.13	0.50	1.0	U
75-25-2	Bromoform	1	1.0	0.26	1.0	1.0	U VJ ICH
74-83-9	Bromomethane	1	0.50	0.21	0.50	1.0	U VJ ICH
75-15-0	Carbon Disulfide	1	1.0	0.23	1.0	5.0	U
56-23-5	Carbon Tetrachloride	1	0.50	0.26	0.50	1.0	U
108-90-7	Chlorobenzene	1	0.50	0.17	0.50	1.0	U
75-00-3	Chloroethane	1	0.50	0.14	0.50	1.0	U
67-66-3	Chloroform	1	0.20	0.098	0.20	1.0	U
74-87-3	Chloromethane	1	0.50	0.29	0.50	1.0	U
110-82-7	Cyclohexane	1	0.50	0.18	0.50	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	1	0.50	0.13	0.50	2.0	U VJ ICH
124-48-1	Dibromochloromethane	1	0.50	0.15	0.50	1.0	U VJ ICH
106-93-4	1,2-Dibromoethane	1	0.50	0.15	0.50	1.0	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
106-46-7	1,4-Dichlorobenzene	1	0.50	0.25	0.50	1.0	U
75-71-8	Dichlorodifluoromethane	1	0.50	0.21	0.50	1.0	U
75-34-3	1,1-Dichloroethane	1	2.8	0.18	0.50	1.0	
107-06-2	1,2-Dichloroethane	1	2.9	0.21	0.50	1.0	
75-35-4	1,1-Dichloroethene	1	2.1	0.21	0.50	1.0	
156-59-2	cis-1,2-Dichloroethene	1	57	0.12	0.50	1.0	
156-60-5	trans-1,2-Dichloroethene	1	140	0.20	0.50	1.0	
78-87-5	1,2-Dichloropropane	1	0.50	0.28	0.50	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	U VJ ICH
10061-02-6	trans-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	U
100-41-4	Ethylbenzene	1	0.50	0.21	0.50	1.0	U
591-78-6	2-Hexanone	1	1.0	0.49	1.0	5.0	U VJ ICH
98-82-8	Isopropylbenzene	1	0.50	0.22	0.50	1.0	U
79-20-9	Methyl Acetate	1	1.0	0.42	1.0	5.0	U VJ ICH
1634-04-4	Methyl tert-Butyl Ether	1	0.50	0.19	0.50	1.0	U
108-87-2	Methylcyclohexane	1	1.0	0.37	1.0	5.0	U
75-09-2	Methylene Chloride	1	1.0	0.24	1.0	1.0	U VJ ICH
78-93-3	2-Butanone (MEK)	1	1.0	0.63	1.0	5.0	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	1.0	0.40	1.0	5.0	U VJ IC
100-42-5	Styrene	1	0.50	0.20	0.50	1.0	U

LMM 8/22/12

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-6570-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-06 File ID: 1208289-06.D

Sampled: 08/16/12 11:30 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 14:07

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
79-34-5	1,1,2,2-Tetrachloroethane	1	0.50	0.26	0.50	1.0	U
127-18-4	Tetrachloroethene	1	0.50	0.23	0.50	1.0	U
108-88-3	Toluene	1	2.2	0.18	0.50	1.0	
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.13	0.50	2.0	U
71-55-6	1,1,1-Trichloroethane	1	0.50	0.14	0.50	1.0	U
79-00-5	1,1,2-Trichloroethane	1	0.50	0.20	0.50	1.0	U
79-01-6	Trichloroethene	1	380	0.21	0.50	1.0	~~E~~ X DL
75-69-4	Trichlorofluoromethane	1	0.50	0.27	0.50	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1	0.50	0.24	0.50	1.0	U
75-01-4	Vinyl Chloride	1	2.4	0.21	0.50	1.0	
1330-20-7	Xylene (Total)	1	1.2	0.39	1.2	3.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.6	101	85 - 115	
1,2-Dichloroethane-d4	40.0	41.3	103	70 - 120	
Toluene-d8	40.0	39.6	99	85 - 120	
4-Bromofluorobenzene	40.0	35.2	88	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	668466	5.866	909533	5.872	
Chlorobenzene-d5	485407	10.286	688673	10.292	
1,4-Dichlorobenzene-d4	196581	13.286	361828	13.292	

* Values outside of QC limits

MM 10/23/12

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-6570-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-06RE1 File ID: 1208289-06.D

Sampled: 08/16/12 11:30 Prepared: 08/21/12 08:00 Analyzed: 08/21/12 11:26

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21036 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	5	16	5.4	10	25	J ~~X~~ DL
71-43-2	Benzene	5	1.0	0.57	1.0	5.0	U
75-27-4	Bromodichloromethane	5	2.5	0.64	2.5	5.0	U
75-25-2	Bromoform	5	5.0	1.3	5.0	5.0	U
74-83-9	Bromomethane	5	2.5	1.1	2.5	5.0	U
75-15-0	Carbon Disulfide	5	5.0	1.2	5.0	25	U
56-23-5	Carbon Tetrachloride	5	2.5	1.3	2.5	5.0	U
108-90-7	Chlorobenzene	5	2.5	0.84	2.5	5.0	U
75-00-3	Chloroethane	5	2.5	0.72	2.5	5.0	U
67-66-3	Chloroform	5	1.0	0.49	1.0	5.0	U
74-87-3	Chloromethane	5	2.5	1.4	2.5	5.0	U
110-82-7	Cyclohexane	5	2.5	0.92	2.5	25	U
96-12-8	1,2-Dibromo-3-chloropropane	5	2.5	0.64	2.5	10	U
124-48-1	Dibromochloromethane	5	2.5	0.76	2.5	5.0	U
106-93-4	1,2-Dibromoethane	5	2.5	0.76	2.5	5.0	U
95-50-1	1,2-Dichlorobenzene	5	2.5	1.2	2.5	5.0	U
541-73-1	1,3-Dichlorobenzene	5	2.5	1.2	2.5	5.0	U
106-46-7	1,4-Dichlorobenzene	5	2.5	1.2	2.5	5.0	U
75-71-8	Dichlorodifluoromethane	5	2.5	1.1	2.5	5.0	U
75-34-3	1,1-Dichloroethane	5	2.4	0.92	2.5	5.0	J
107-06-2	1,2-Dichloroethane	5	2.7	1.1	2.5	5.0	J
75-35-4	1,1-Dichloroethene	5	1.8	1.0	2.5	5.0	J
156-59-2	cis-1,2-Dichloroethene	5	46	0.60	2.5	5.0	
156-60-5	trans-1,2-Dichloroethene	5	110	1.0	2.5	5.0	
78-87-5	1,2-Dichloropropane	5	2.5	1.4	2.5	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5	2.5	0.95	2.5	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5	2.5	0.94	2.5	5.0	U
100-41-4	Ethylbenzene	5	2.5	1.0	2.5	5.0	U
591-78-6	2-Hexanone	5	5.0	2.5	5.0	25	U
98-82-8	Isopropylbenzene	5	2.5	1.1	2.5	5.0	U
79-20-9	Methyl Acetate	5	5.0	2.1	5.0	25	U
1634-04-4	Methyl tert-Butyl Ether	5	2.5	0.95	2.5	5.0	U
108-87-2	Methylcyclohexane	5	5.0	1.8	5.0	25	U
75-09-2	Methylene Chloride	5	5.0	1.2	5.0	5.0	U
78-93-3	2-Butanone (MEK)	5	5.0	3.2	5.0	25	U
108-10-1	4-Methyl-2-pentanone (MIBK)	5	5.0	2.0	5.0	25	U
100-42-5	Styrene	5	2.5	1.0	2.5	5.0	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-6570-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-06RE1 File ID: 1208289-06.D

Sampled: 08/16/12 11:30 Prepared: 08/21/12 08:00 Analyzed: 08/21/12 11:26

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21036 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
79-34-5	1,1,2,2-Tetrachloroethane	5	2.5	1.3	2.5	5.0	U X DL
127-18-4	Tetrachloroethene	5	2.5	1.1	2.5	5.0	U
108-88-3	Toluene	5	1.9	0.92	2.5	5.0	J
120-82-1	1,2,4-Trichlorobenzene	5	2.5	0.63	2.5	10	U
71-55-6	1,1,1-Trichloroethane	5	2.5	0.69	2.5	5.0	U
79-00-5	1,1,2-Trichloroethane	5	2.5	1.0	2.5	5.0	U
79-01-6	Trichloroethene	5	290	1.1	2.5	5.0	
75-69-4	Trichlorofluoromethane	5	2.5	1.3	2.5	5.0	U X DL
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	2.5	1.2	2.5	5.0	U
75-01-4	Vinyl Chloride	5	2.1	1.0	2.5	5.0	J
1330-20-7	Xylene (Total)	5	6.0	2.0	6.0	15	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.2	101	85 - 115	
1,2-Dichloroethane-d4	40.0	41.1	103	70 - 120	
Toluene-d8	40.0	39.6	99	85 - 120	
4-Bromofluorobenzene	40.0	35.6	89	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	675196	5.86	909533	5.872	
Chlorobenzene-d5	495142	10.28	688673	10.292	
1,4-Dichlorobenzene-d4	207240	13.279	361828	13.292	

* Values outside of QC limits

LMA 08/28/12

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-7075-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-07 File ID: 1208289-07.D

Sampled: 08/16/12 12:40 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 14:35

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	1	4.5	1.1	2.0	5.0	~~J~~
71-43-2	Benzene	1	0.20	0.11	0.20	1.0	U
75-27-4	Bromodichloromethane	1	0.50	0.13	0.50	1.0	U
75-25-2	Bromoform	1	1.0	0.26	1.0	1.0	~~U~~ UJ ICH
74-83-9	Bromomethane	1	0.50	0.21	0.50	1.0	~~U~~ UJ ICH
75-15-0	Carbon Disulfide	1	1.0	0.23	1.0	5.0	U
56-23-5	Carbon Tetrachloride	1	0.50	0.26	0.50	1.0	U
108-90-7	Chlorobenzene	1	0.50	0.17	0.50	1.0	U
75-00-3	Chloroethane	1	0.50	0.14	0.50	1.0	U
67-66-3	Chloroform	1	0.20	0.098	0.20	1.0	U
74-87-3	Chloromethane	1	0.50	0.29	0.50	1.0	U
110-82-7	Cyclohexane	1	0.50	0.18	0.50	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	1	0.50	0.13	0.50	2.0	~~U~~ UJ ICH
124-48-1	Dibromochloromethane	1	0.50	0.15	0.50	1.0	~~U~~ UJ ICH
106-93-4	1,2-Dibromoethane	1	0.50	0.15	0.50	1.0	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
106-46-7	1,4-Dichlorobenzene	1	0.50	0.25	0.50	1.0	U
75-71-8	Dichlorodifluoromethane	1	0.50	0.21	0.50	1.0	U
75-34-3	1,1-Dichloroethane	1	2.2	0.18	0.50	1.0	
107-06-2	1,2-Dichloroethane	1	3.2	0.21	0.50	1.0	
75-35-4	1,1-Dichloroethene	1	2.0	0.21	0.50	1.0	
156-59-2	cis-1,2-Dichloroethene	1	59	0.12	0.50	1.0	
156-60-5	trans-1,2-Dichloroethene	1	160	0.20	0.50	1.0	
78-87-5	1,2-Dichloropropane	1	0.50	0.28	0.50	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
10061-02-6	trans-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
100-41-4	Ethylbenzene	1	0.50	0.21	0.50	1.0	U
591-78-6	2-Hexanone	1	1.0	0.49	1.0	5.0	~~U~~ UJ ICH
98-82-8	Isopropylbenzene	1	0.50	0.22	0.50	1.0	U
79-20-9	Methyl Acetate	1	1.0	0.42	1.0	5.0	~~U~~ UJ ICH
1634-04-4	Methyl tert-Butyl Ether	1	0.50	0.19	0.50	1.0	U
108-87-2	Methylcyclohexane	1	1.0	0.37	1.0	5.0	U
75-09-2	Methylene Chloride	1	1.0	0.24	1.0	1.0	~~U~~ UJ ICH
78-93-3	2-Butanone (MEK)	1	1.0	0.63	1.0	5.0	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	1.0	0.40	1.0	5.0	~~U~~ UJ IC
100-42-5	Styrene	1	0.50	0.20	0.50	1.0	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-7075-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-07 File ID: 1208289-07.D

Sampled: 08/16/12 12:40 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 14:35

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
79-34-5	1,1,2,2-Tetrachloroethane	1	0.50	0.26	0.50	1.0	U
127-18-4	Tetrachloroethene	1	0.50	0.23	0.50	1.0	U
108-88-3	Toluene	1	2.4	0.18	0.50	1.0	
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.13	0.50	2.0	U
71-55-6	1,1,1-Trichloroethane	1	0.50	0.14	0.50	1.0	U
79-00-5	1,1,2-Trichloroethane	1	0.50	0.20	0.50	1.0	U
79-01-6	Trichloroethene	1	710	0.21	0.50	1.0	~~E~~ X DL
75-69-4	Trichlorofluoromethane	1	0.50	0.27	0.50	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1	0.50	0.24	0.50	1.0	U
75-01-4	Vinyl Chloride	1	2.3	0.21	0.50	1.0	
1330-20-7	Xylene (Total)	1	1.2	0.39	1.2	3.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.5	101	85 - 115	
1,2-Dichloroethane-d4	40.0	41.3	103	70 - 120	
Toluene-d8	40.0	40.1	100	85 - 120	
4-Bromofluorobenzene	40.0	35.2	88	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	681664	5.866	909533	5.872	
Chlorobenzene-d5	498535	10.286	688673	10.292	
1,4-Dichlorobenzene-d4	201794	13.286	361828	13.292	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-7075-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-07RE1 File ID: 1208289-07.D

Sampled: 08/16/12 12:40 Prepared: 08/21/12 08:00 Analyzed: 08/21/12 11:54

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21036 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	10	27	11	20	50	JB X
71-43-2	Benzene	10	2.0	1.1	2.0	10	U
75-27-4	Bromodichloromethane	10	5.0	1.3	5.0	10	U
75-25-2	Bromoform	10	10	2.6	10	10	U
74-83-9	Bromomethane	10	5.0	2.1	5.0	10	U
75-15-0	Carbon Disulfide	10	10	2.3	10	50	U
56-23-5	Carbon Tetrachloride	10	5.0	2.6	5.0	10	U
108-90-7	Chlorobenzene	10	5.0	1.7	5.0	10	U
75-00-3	Chloroethane	10	5.0	1.4	5.0	10	U
67-66-3	Chloroform	10	2.0	0.98	2.0	10	U
74-87-3	Chloromethane	10	5.0	2.9	5.0	10	U
110-82-7	Cyclohexane	10	5.0	1.8	5.0	50	U
96-12-8	1,2-Dibromo-3-chloropropane	10	5.0	1.3	5.0	20	U
124-48-1	Dibromochloromethane	10	5.0	1.5	5.0	10	U
106-93-4	1,2-Dibromoethane	10	5.0	1.5	5.0	10	U
95-50-1	1,2-Dichlorobenzene	10	5.0	2.4	5.0	10	U
541-73-1	1,3-Dichlorobenzene	10	5.0	2.4	5.0	10	U
106-46-7	1,4-Dichlorobenzene	10	5.0	2.5	5.0	10	U
75-71-8	Dichlorodifluoromethane	10	5.0	2.1	5.0	10	U
75-34-3	1,1-Dichloroethane	10	1.9	1.8	5.0	10	J
107-06-2	1,2-Dichloroethane	10	2.9	2.1	5.0	10	J
75-35-4	1,1-Dichloroethene	10	5.0	2.1	5.0	10	U
156-59-2	cis-1,2-Dichloroethene	10	48	1.2	5.0	10	I
156-60-5	trans-1,2-Dichloroethene	10	140	2.0	5.0	10	I
78-87-5	1,2-Dichloropropane	10	5.0	2.8	5.0	10	U
10061-01-5	cis-1,3-Dichloropropene	10	5.0	1.9	5.0	10	U
10061-02-6	trans-1,3-Dichloropropene	10	5.0	1.9	5.0	10	U
100-41-4	Ethylbenzene	10	5.0	2.1	5.0	10	U
591-78-6	2-Hexanone	10	10	4.9	10	50	U
98-82-8	Isopropylbenzene	10	5.0	2.2	5.0	10	U
79-20-9	Methyl Acetate	10	10	4.2	10	50	U
1634-04-4	Methyl tert-Butyl Ether	10	5.0	1.9	5.0	10	U
108-87-2	Methylcyclohexane	10	10	3.7	10	50	U
75-09-2	Methylene Chloride	10	10	2.4	10	10	U
78-93-3	2-Butanone (MEK)	10	10	6.3	10	50	U
108-10-1	4-Methyl-2-pentanone (MIBK)	10	10	4.0	10	50	U
100-42-5	Styrene	10	5.0	2.0	5.0	10	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-7075-081612 PC

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-07RE1 File ID: 1208289-07.D

Sampled: 08/16/12 12:40 Prepared: 08/21/12 08:00 Analyzed: 08/21/12 11:54

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21036 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
79-34-5	1,1,2,2-Tetrachloroethane	10	5.0	2.6	5.0	10	U X DL
127-18-4	Tetrachloroethene	10	5.0	2.3	5.0	10	U
108-88-3	Toluene	10	2.2	1.8	5.0	10	J
120-82-1	1,2,4-Trichlorobenzene	10	5.0	1.3	5.0	20	U
71-55-6	1,1,1-Trichloroethane	10	5.0	1.4	5.0	10	U
79-00-5	1,1,2-Trichloroethane	10	5.0	2.0	5.0	10	U
79-01-6	Trichloroethene	10	540	2.1	5.0	10	
75-69-4	Trichlorofluoromethane	10	5.0	2.7	5.0	10	U X DL
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	5.0	2.4	5.0	10	U
75-01-4	Vinyl Chloride	10	5.0	2.1	5.0	10	U
1330-20-7	Xylene (Total)	10	12	3.9	12	30	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.3	101	85 - 115	
1,2-Dichloroethane-d4	40.0	40.5	101	70 - 120	
Toluene-d8	40.0	39.6	99	85 - 120	
4-Bromofluorobenzene	40.0	35.5	89	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	663163	5.86	909533	5.872	
Chlorobenzene-d5	484539	10.28	688673	10.292	
1,4-Dichlorobenzene-d4	199468	13.279	361828	13.292	

* Values outside of QC limits

WM 08/23/12

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-7580-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-08 File ID: 1208289-08.D

Sampled: 08/16/12 14:00 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 15:03

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	1	4.3	1.1	2.0	5.0	~~JB~~
71-43-2	Benzene	1	0.20	0.11	0.20	1.0	U
75-27-4	Bromodichloromethane	1	0.50	0.13	0.50	1.0	U
75-25-2	Bromoform	1	1.0	0.26	1.0	1.0	~~U~~ UJ ICH
74-83-9	Bromomethane	1	0.50	0.21	0.50	1.0	~~U~~ UJ ICH
75-15-0	Carbon Disulfide	1	1.0	0.23	1.0	5.0	U
56-23-5	Carbon Tetrachloride	1	0.50	0.26	0.50	1.0	U
108-90-7	Chlorobenzene	1	0.50	0.17	0.50	1.0	U
75-00-3	Chloroethane	1	0.50	0.14	0.50	1.0	U
67-66-3	Chloroform	1	0.20	0.098	0.20	1.0	U
74-87-3	Chloromethane	1	0.50	0.29	0.50	1.0	U
110-82-7	Cyclohexane	1	0.50	0.18	0.50	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	1	0.50	0.13	0.50	2.0	~~U~~ UJ ICH
124-48-1	Dibromochloromethane	1	0.50	0.15	0.50	1.0	~~U~~ UJ ICH
106-93-4	1,2-Dibromoethane	1	0.50	0.15	0.50	1.0	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
106-46-7	1,4-Dichlorobenzene	1	0.50	0.25	0.50	1.0	U
75-71-8	Dichlorodifluoromethane	1	0.50	0.21	0.50	1.0	U
75-34-3	1,1-Dichloroethane	1	2.0	0.18	0.50	1.0	
107-06-2	1,2-Dichloroethane	1	1.6	0.21	0.50	1.0	
75-35-4	1,1-Dichloroethene	1	1.5	0.21	0.50	1.0	
156-59-2	cis-1,2-Dichloroethene	1	42	0.12	0.50	1.0	
156-60-5	trans-1,2-Dichloroethene	1	110	0.20	0.50	1.0	
78-87-5	1,2-Dichloropropane	1	0.50	0.28	0.50	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
10061-02-6	trans-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
100-41-4	Ethylbenzene	1	0.50	0.21	0.50	1.0	U
591-78-6	2-Hexanone	1	1.0	0.49	1.0	5.0	~~U~~ UJ ICH
98-82-8	Isopropylbenzene	1	0.50	0.22	0.50	1.0	U
79-20-9	Methyl Acetate	1	1.0	0.42	1.0	5.0	~~U~~ UJ ICH
1634-04-4	Methyl tert-Butyl Ether	1	0.50	0.19	0.50	1.0	U
108-87-2	Methylcyclohexane	1	1.0	0.37	1.0	5.0	U
75-09-2	Methylene Chloride	1	1.0	0.24	1.0	1.0	~~U~~ UJ ICH
78-93-3	2-Butanone (MEK)	1	1.0	0.63	1.0	5.0	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	1.0	0.40	1.0	5.0	~~U~~ UJ IC
100-42-5	Styrene	1	0.50	0.20	0.50	1.0	U

UMV 08/27/12

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-7580-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-08 File ID: 1208289-08.D

Sampled: 08/16/12 14:00 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 15:03

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
79-34-5	1,1,2,2-Tetrachloroethane	1	0.50	0.26	0.50	1.0	U
127-18-4	Tetrachloroethene	1	0.50	0.23	0.50	1.0	U
108-88-3	Toluene	1	2.9	0.18	0.50	1.0	
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.13	0.50	2.0	U
71-55-6	1,1,1-Trichloroethane	1	0.50	0.14	0.50	1.0	U
79-00-5	1,1,2-Trichloroethane	1	0.50	0.20	0.50	1.0	U
79-01-6	Trichloroethene	1	420	0.21	0.50	1.0	E
75-69-4	Trichlorofluoromethane	1	0.50	0.27	0.50	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1	0.50	0.24	0.50	1.0	U
75-01-4	Vinyl Chloride	1	2.2	0.21	0.50	1.0	
1330-20-7	Xylene (Total)	1	1.2	0.39	1.2	3.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.6	101	85 - 115	
1,2-Dichloroethane-d4	40.0	41.3	103	70 - 120	
Toluene-d8	40.0	39.6	99	85 - 120	
4-Bromofluorobenzene	40.0	34.9	87	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	682276	5.866	909533	5.872	
Chlorobenzene-d5	493111	10.286	688673	10.292	
1,4-Dichlorobenzene-d4	202269	13.285	361828	13.292	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-7580-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-08RE1 File ID: 1208289-08.D

Sampled: 08/16/12 14:00 Prepared: 08/21/12 08:00 Analyzed: 08/21/12 12:22

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21036 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	5	16	5.4	10	25	JB X DL
71-43-2	Benzene	5	1.0	0.57	1.0	5.0	U
75-27-4	Bromodichloromethane	5	2.5	0.64	2.5	5.0	U
75-25-2	Bromoform	5	5.0	1.3	5.0	5.0	U
74-83-9	Bromomethane	5	2.5	1.1	2.5	5.0	U
75-15-0	Carbon Disulfide	5	5.0	1.2	5.0	25	U
56-23-5	Carbon Tetrachloride	5	2.5	1.3	2.5	5.0	U
108-90-7	Chlorobenzene	5	2.5	0.84	2.5	5.0	U
75-00-3	Chloroethane	5	2.5	0.72	2.5	5.0	U
67-66-3	Chloroform	5	1.0	0.49	1.0	5.0	U
74-87-3	Chloromethane	5	2.5	1.4	2.5	5.0	U
110-82-7	Cyclohexane	5	2.5	0.92	2.5	25	U
96-12-8	1,2-Dibromo-3-chloropropane	5	2.5	0.64	2.5	10	U
124-48-1	Dibromochloromethane	5	2.5	0.76	2.5	5.0	U
106-93-4	1,2-Dibromoethane	5	2.5	0.76	2.5	5.0	U
95-50-1	1,2-Dichlorobenzene	5	2.5	1.2	2.5	5.0	U
541-73-1	1,3-Dichlorobenzene	5	2.5	1.2	2.5	5.0	U
106-46-7	1,4-Dichlorobenzene	5	2.5	1.2	2.5	5.0	U
75-71-8	Dichlorodifluoromethane	5	2.5	1.1	2.5	5.0	U
75-34-3	1,1-Dichloroethane	5	1.8	0.92	2.5	5.0	J
107-06-2	1,2-Dichloroethane	5	1.4	1.1	2.5	5.0	J
75-35-4	1,1-Dichloroethene	5	2.5	1.0	2.5	5.0	U
156-59-2	cis-1,2-Dichloroethene	5	33	0.60	2.5	5.0	
156-60-5	trans-1,2-Dichloroethene	5	92	1.0	2.5	5.0	
78-87-5	1,2-Dichloropropane	5	2.5	1.4	2.5	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5	2.5	0.95	2.5	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5	2.5	0.94	2.5	5.0	U
100-41-4	Ethylbenzene	5	2.5	1.0	2.5	5.0	U
591-78-6	2-Hexanone	5	5.0	2.5	5.0	25	U
98-82-8	Isopropylbenzene	5	2.5	1.1	2.5	5.0	U
79-20-9	Methyl Acetate	5	5.0	2.1	5.0	25	U
1634-04-4	Methyl tert-Butyl Ether	5	2.5	0.95	2.5	5.0	U
108-87-2	Methylcyclohexane	5	5.0	1.8	5.0	25	U
75-09-2	Methylene Chloride	5	5.0	1.2	5.0	5.0	U
78-93-3	2-Butanone (MEK)	5	5.0	3.2	5.0	25	U
108-10-1	4-Methyl-2-pentanone (MIBK)	5	5.0	2.0	5.0	25	U
100-42-5	Styrene	5	2.5	1.0	2.5	5.0	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-7580-081612

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Ground Water Laboratory ID: 1208289-08RE1 File ID: 1208289-08.D

Sampled: 08/16/12 14:00 Prepared: 08/21/12 08:00 Analyzed: 08/21/12 12:22

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21036 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
79-34-5	1,1,2,2-Tetrachloroethane	5	2.5	1.3	2.5	5.0	U X DL
127-18-4	Tetrachloroethene	5	2.5	1.1	2.5	5.0	U
108-88-3	Toluene	5	2.6	0.92	2.5	5.0	J
120-82-1	1,2,4-Trichlorobenzene	5	2.5	0.63	2.5	10	U
71-55-6	1,1,1-Trichloroethane	5	2.5	0.69	2.5	5.0	U
79-00-5	1,1,2-Trichloroethane	5	2.5	1.0	2.5	5.0	U
79-01-6	Trichloroethene	5	330	1.1	2.5	5.0	
75-69-4	Trichlorofluoromethane	5	2.5	1.3	2.5	5.0	U X DL
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	2.5	1.2	2.5	5.0	U
75-01-4	Vinyl Chloride	5	1.8	1.0	2.5	5.0	J
1330-20-7	Xylene (Total)	5	6.0	2.0	6.0	15	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.4	101	85 - 115	
1,2-Dichloroethane-d4	40.0	41.3	103	70 - 120	
Toluene-d8	40.0	39.5	99	85 - 120	
4-Bromofluorobenzene	40.0	35.1	88	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	656902	5.86	909533	5.872	
Chlorobenzene-d5	484142	10.28	688673	10.292	
1,4-Dichlorobenzene-d4	197598	13.28	361828	13.292	

* Values outside of QC limits

8/21/12

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

Trip Blank

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Water Laboratory ID: 1208289-09 File ID: 1208289-09.D

Sampled: 08/16/12 09:10 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 10:53

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	1	2.2	1.1	2.0	5.0	~~JB~~
71-43-2	Benzene	1	0.20	0.11	0.20	1.0	U
75-27-4	Bromodichloromethane	1	0.50	0.13	0.50	1.0	U
75-25-2	Bromoform	1	1.0	0.26	1.0	1.0	~~U~~ UJ ICH
74-83-9	Bromomethane	1	0.50	0.21	0.50	1.0	~~U~~ UJ ICH
75-15-0	Carbon Disulfide	1	1.0	0.23	1.0	5.0	U
56-23-5	Carbon Tetrachloride	1	0.50	0.26	0.50	1.0	U
108-90-7	Chlorobenzene	1	0.50	0.17	0.50	1.0	U
75-00-3	Chloroethane	1	0.50	0.14	0.50	1.0	U
67-66-3	Chloroform	1	0.20	0.098	0.20	1.0	U
74-87-3	Chloromethane	1	0.50	0.29	0.50	1.0	U
110-82-7	Cyclohexane	1	0.50	0.18	0.50	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	1	0.50	0.13	0.50	2.0	~~U~~ UJ ICH
124-48-1	Dibromochloromethane	1	0.50	0.15	0.50	1.0	~~U~~ UJ ICH
106-93-4	1,2-Dibromoethane	1	0.50	0.15	0.50	1.0	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
106-46-7	1,4-Dichlorobenzene	1	0.50	0.25	0.50	1.0	U
75-71-8	Dichlorodifluoromethane	1	0.50	0.21	0.50	1.0	U
75-34-3	1,1-Dichloroethane	1	0.50	0.18	0.50	1.0	U
107-06-2	1,2-Dichloroethane	1	0.50	0.21	0.50	1.0	U
75-35-4	1,1-Dichloroethene	1	0.50	0.21	0.50	1.0	U
156-59-2	cis-1,2-Dichloroethene	1	0.50	0.12	0.50	1.0	U
156-60-5	trans-1,2-Dichloroethene	1	0.50	0.20	0.50	1.0	U
78-87-5	1,2-Dichloropropane	1	0.50	0.28	0.50	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
10061-02-6	trans-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
100-41-4	Ethylbenzene	1	0.50	0.21	0.50	1.0	U
591-78-6	2-Hexanone	1	1.0	0.49	1.0	5.0	~~U~~ UJ ICH
98-82-8	Isopropylbenzene	1	0.50	0.22	0.50	1.0	U
79-20-9	Methyl Acetate	1	0.70	0.42	1.0	5.0	~~J~~ J ICH
1634-04-4	Methyl tert-Butyl Ether	1	0.50	0.19	0.50	1.0	U
108-87-2	Methylcyclohexane	1	1.0	0.37	1.0	5.0	U
75-09-2	Methylene Chloride	1	1.0	0.24	1.0	1.0	~~U~~ UJ ICH
78-93-3	2-Butanone (MEK)	1	1.0	0.63	1.0	5.0	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	1.0	0.40	1.0	5.0	~~U~~ UJ ICH
100-42-5	Styrene	1	0.50	0.20	0.50	1.0	U

VM 08/23/12

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

Trip Blank

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Water Laboratory ID: 1208289-09 File ID: 1208289-09.D

Sampled: 08/16/12 09:10 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 10:53

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
79-34-5	1,1,2,2-Tetrachloroethane	1	0.50	0.26	0.50	1.0	U
127-18-4	Tetrachloroethene	1	0.50	0.23	0.50	1.0	U
108-88-3	Toluene	1	0.50	0.18	0.50	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.13	0.50	2.0	U
71-55-6	1,1,1-Trichloroethane	1	0.50	0.14	0.50	1.0	U
79-00-5	1,1,2-Trichloroethane	1	0.50	0.20	0.50	1.0	U
79-01-6	Trichloroethene	1	0.50	0.21	0.50	1.0	U
75-69-4	Trichlorofluoromethane	1	0.50	0.27	0.50	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1	0.50	0.24	0.50	1.0	U
75-01-4	Vinyl Chloride	1	0.50	0.21	0.50	1.0	U
1330-20-7	Xylene (Total)	1	1.2	0.39	1.2	3.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.8	100	85 - 115	
1,2-Dichloroethane-d4	40.0	40.6	102	70 - 120	
Toluene-d8	40.0	39.3	98	85 - 120	
4-Bromofluorobenzene	40.0	36.0	90	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	698148	5.866	909533	5.872	
Chlorobenzene-d5	504384	10.286	688673	10.292	
1,4-Dichlorobenzene-d4	210880	13.286	361828	13.292	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-081612-FB

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Water Laboratory ID: 1208289-10 File ID: 1208289-10.D

Sampled: 08/16/12 12:01 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 11:21

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	1	3.1	1.1	2.0	5.0	~~JB~~
71-43-2	Benzene	1	0.20	0.11	0.20	1.0	U
75-27-4	Bromodichloromethane	1	0.50	0.13	0.50	1.0	U
75-25-2	Bromoform	1	1.0	0.26	1.0	1.0	~~U~~ UJ ICH
74-83-9	Bromomethane	1	0.50	0.21	0.50	1.0	~~U~~ UJ ICH
75-15-0	Carbon Disulfide	1	1.0	0.23	1.0	5.0	U
56-23-5	Carbon Tetrachloride	1	0.50	0.26	0.50	1.0	U
108-90-7	Chlorobenzene	1	0.50	0.17	0.50	1.0	U
75-00-3	Chloroethane	1	0.50	0.14	0.50	1.0	U
67-66-3	Chloroform	1	0.20	0.098	0.20	1.0	U
74-87-3	Chloromethane	1	0.50	0.29	0.50	1.0	U
110-82-7	Cyclohexane	1	0.50	0.18	0.50	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	1	0.50	0.13	0.50	2.0	~~U~~ UJ ICH
124-48-1	Dibromochloromethane	1	0.50	0.15	0.50	1.0	~~U~~ UJ ICH
106-93-4	1,2-Dibromoethane	1	0.50	0.15	0.50	1.0	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.24	0.50	1.0	U
106-46-7	1,4-Dichlorobenzene	1	0.50	0.25	0.50	1.0	U
75-71-8	Dichlorodifluoromethane	1	0.50	0.21	0.50	1.0	U
75-34-3	1,1-Dichloroethane	1	0.50	0.18	0.50	1.0	U
107-06-2	1,2-Dichloroethane	1	0.50	0.21	0.50	1.0	U
75-35-4	1,1-Dichloroethene	1	0.50	0.21	0.50	1.0	U
156-59-2	cis-1,2-Dichloroethene	1	0.50	0.12	0.50	1.0	U
156-60-5	trans-1,2-Dichloroethene	1	0.50	0.20	0.50	1.0	U
78-87-5	1,2-Dichloropropane	1	0.50	0.28	0.50	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
10061-02-6	trans-1,3-Dichloropropene	1	0.50	0.19	0.50	1.0	~~U~~ UJ ICH
100-41-4	Ethylbenzene	1	0.50	0.21	0.50	1.0	U
591-78-6	2-Hexanone	1	1.0	0.49	1.0	5.0	~~U~~ UJ ICH
98-82-8	Isopropylbenzene	1	0.50	0.22	0.50	1.0	U
79-20-9	Methyl Acetate	1	1.0	0.42	1.0	5.0	~~U~~ UJ ICH
1634-04-4	Methyl tert-Butyl Ether	1	0.50	0.19	0.50	1.0	U
108-87-2	Methylcyclohexane	1	1.0	0.37	1.0	5.0	U
75-09-2	Methylene Chloride	1	1.0	0.24	1.0	1.0	~~U~~ UJ ICH
78-93-3	2-Butanone (MEK)	1	1.0	0.63	1.0	5.0	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1	1.0	0.40	1.0	5.0	~~U~~ UJ I
100-42-5	Styrene	1	0.50	0.20	0.50	1.0	U

WW 08/28/12

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

NIROP-GW-101-081612-FB

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Water Laboratory ID: 1208289-10 File ID: 1208289-10.D

Sampled: 08/16/12 12:01 Prepared: 08/20/12 07:00 Analyzed: 08/20/12 11:21

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
79-34-5	1,1,2,2-Tetrachloroethane	1	0.50	0.26	0.50	1.0	U
127-18-4	Tetrachloroethene	1	0.50	0.23	0.50	1.0	U
108-88-3	Toluene	1	0.50	0.18	0.50	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.13	0.50	2.0	U
71-55-6	1,1,1-Trichloroethane	1	0.50	0.14	0.50	1.0	U
79-00-5	1,1,2-Trichloroethane	1	0.50	0.20	0.50	1.0	U
79-01-6	Trichloroethene	1	0.50	0.21	0.50	1.0	U
75-69-4	Trichlorofluoromethane	1	0.50	0.27	0.50	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1	0.50	0.24	0.50	1.0	U
75-01-4	Vinyl Chloride	1	0.50	0.21	0.50	1.0	U
1330-20-7	Xylene (Total)	1	1.2	0.39	1.2	3.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.7	99	85 - 115	
1,2-Dichloroethane-d4	40.0	40.4	101	70 - 120	
Toluene-d8	40.0	39.0	98	85 - 120	
4-Bromofluorobenzene	40.0	35.5	89	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	704323	5.866	909533	5.872	
Chlorobenzene-d5	509835	10.286	688673	10.292	
1,4-Dichlorobenzene-d4	208408	13.285	361828	13.292	

* Values outside of QC limits

VM 8/23/12

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B)

Laboratory: TriMatrix

Holding Times

Sampling Date: 08/15-16/12
Received Date: 08/17/12
Analysis Dates: 08/20-21/12
Cooler Temp: 5.4°C

All prep and analysis holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations calibration due to high %RSD and %Ds; qualifications were required, see attached forms.

Internal Standards

All criteria met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying criteria.
- Qualification/Action codes where applied as stated in table below:

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Field	Detects	Not detected	No qualifications
	< LOD*	< LOD*	Report LOD value with a U
		≥ LOD*	Use professional judgment
	> LOD*	< LOD*	Report LOD value with a U
		≥ LOD* and < blank concentration	Report the concentration for the sample with a U, or qualify the data as unusable R
		≥ LOD* and ≥ blank concentration	Use professional judgment
	= LOD*	< LOD*	Report LOD value with a U
		≥ LOD*	Use professional judgment
	Gross contamination	Detects	Qualify results as unusable R

*2x the LOD for methylene chloride, 2-butanone and acetone

Contamination was exhibited in the method blank. QC blanks associated with the samples in this data package: NIROP-GW-101-081612-FB- field blank and Trip Blank- trip blank.

Blank Contamination and Qualification Summaries

Blank ID	Compound	Concentration	Reporting Limit
1210126-BLK1	acetone	3.4J ug/L	2.0 ug/L
1210126-BLK2	acetone	7.5	2.0
	methyl acetate	0.61J	1.0
Trip Blank	acetone	2.2	2.0
	methyl acetate	0.70J	1.0
NIROP-GW-101-081612-FB	acetone	3.1	2.0

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Qual Code
NIROP-GW-101-5055-081512, NIROP-GW-101-5560-081612	acetone	U at value	MBL
NIROP-GW-101-4550-081512, NIROP-GW-101-6065-081612-D	methyl acetate	U at LOD	TBL

Surrogates

All criteria were met.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample NIROP-GW-101-5560-081612; one recovery was high for the MS/MSD and there was no positive result for the associated sample therefore there was no qualification required-see attached Form III for details.

Field Duplicate Sample

A field duplicate was submitted for sample NIROP-GW-101-6065-081612-no qualifications, see attached form.

Specific Comments:

All sample results were reported within the calibration range of the instruments. A dilution was required for samples NIROP-GW-101-6570-081612, NIROP-GW-101-7075-081612 and NIROP-GW-101-7580-081612 to obtain results within the calibration range.

Detection limits were acceptable. Raw data and calculations were verified. We have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications were required.

Validator Signature: Laura Musselwhite **Date:** 8/22/12

INITIAL CALIBRATION DATA (Continued)

USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc.

Client: CH2M HILL - VA

Calibration: 2H20008

SDG: NIROP0812

Project: NIROP Fridley TO-F270

Calibration Date: 08/10/12 00:00

Instrument: 328

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	Limit	Q
Acetone	8.952867E-02	12.07045	2.038	2.048206E-02	0.99911		0.99	
Acrolein NT	3.032615E-02	7.165494	1.912571	0.167831			15	
Acrylonitrile	0.1021703	4.707376	2.632429	0.1214107			15	
Benzene	1.234797	3.309183	5.341143	4.444386E-02			15	
Bromobenzene	1.350012	2.619846	11.99214	1.444386E-02			15	
Bromochloromethane	0.2657564	1.59937	4.212286	0.0676882			15	
Bromodichloromethane	0.3895142	9.58	7.311857	2.651792E-02			15	
Bromoform	0.207063	27.0635	11.39686	2.997364E-02	0.99882		SPCC (0.1)	
Bromomethane	0.1856866	16.01807	1.385143	2.219545E-02	0.99613		0.99	
n-Butylbenzene	1.750943	13.29209	13.81686	3.571086E-03			15	
sec-Butylbenzene	2.557414	10.3695	13.109	3.399981E-03			15	
tert-Butylbenzene	2.006516	7.490523	12.82886	1.950126E-02			15	
Carbon Disulfide	0.6287447	14.55199	2.153857	1.296006E-02			15	
Carbon Tetrachloride	0.4555434	11.32953	4.94	9.980475E-02			15	
Chlorobenzene	1.068822	2.703245	10.329	1.838514E-02			SPCC (0.3)	
Chloroethane	0.2116915	10.21103	1.447857	0.1968395			15	
2-Chloroethyl Vinyl Ether	3.855168E-02	35.74372 N	7.842143	3.166401E-02	0.99877		0.99	
Chloroform	0.5812858	3.297494	4.385857	5.529191E-02			CCC (30)	
1-Chlorohexane	0.3959879	7.138304	10.377	2.403363E-02			15	
Chloromethane	0.3833592	6.857997	1.135143	2.847142E-02			SPCC (0.1)	
2-Chlorotoluene	0.769239	4.526009	12.26186	5.542349E-03			15	
4-Chlorotoluene	2.566856	6.83324	12.408	0.0115666			15	
Cyclohexane	0.5440977	6.896212	4.720857	4.958827E-02			15	
1,2-Dibromo-3-chloropropane	0.103427	19.52256	14.75586	5.275538E-03	0.99946		0.99	
Dibromochloromethane	0.3559629	17.4759	9.542143	1.102977E-02	0.99945		0.99	
1,2-Dibromoethane	0.3085619	8.491928	9.649429	2.763108E-02			15	
Dibromomethane	0.1859066	4.19191	7.013857	4.081011E-02			15	
trans-1,4-Dichloro-2-butene	0.1943059	21.22644 N	12.15114	1.404605E-02	0.99955		0.99	
1,2-Dichlorobenzene	1.292992	6.471857	13.773	1.495806E-02			15	
1,3-Dichlorobenzene	1.433521	3.914315	13.20086	6.692932E-03			15	
1,4-Dichlorobenzene	1.604976	2.685958	13.32029	2.767199E-02			15	
Dichlorodifluoromethane	0.3817319	5.271992	1.001	2.324812E-02			15	

INITIAL CALIBRATION DATA (Continued)
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Calibration: 2H20008

SDG: NIROP0812
Project: NIROP Fridley TO-F270
Calibration Date: 08/10/12 00:00
Instrument: 328

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	Limit	Q
1,1-Dichloroethane	0.5755279	3.31407	3.100286	0.1065247			SPCC (0.1)	
1,2-Dichloroethane	0.4565524	3.256771	5.403	6.410066E-02			15	
1,1-Dichloroethene	0.2841241	3.880425	1.989	0.0184812			CCC (30)	
cis-1,2-Dichloroethene	0.3441236	3.802445	3.856143	0.0859365			15	
trans-1,2-Dichloroethene	0.3348322	2.714462	2.649714	0.1174141			15	
1,2-Dichloroethene (Total)	0.3394779	3.132791	3.856143	0.0859365			15	
1,2-Dichloropropane	0.2866197	6.753871	6.837571	4.576564E-02			CCC (30)	
1,3-Dichloropropane	0.589909	4.955279	9.25	0			15	
2,2-Dichloropropane	0.3593157	11.76602	3.842	9.132771E-02			15	
1,1-Dichloropropene	0.4504385	7.261983	4.961429	0.0652553			15	
cis-1,3-Dichloropropene	0.4219898	18.82341	7.988857	3.020147E-02	0.99953		0.99	
trans-1,3-Dichloropropene	0.331398	25.36083	8.811	1.590585E-02	0.99908		0.99	
Ethylbenzene	1.927629	8.216516	10.512	1.418023E-02			CCC (30)	
Ethyl Ether	0.1654057	2.390248	1.824	1.418601E-02			15	
Hexachlorobutadiene	0.2683766	5.719845	16.02386	1.051422E-02			15	
2-Hexanone	0.1854953	21.60295	9.449	2.771232E-02	0.99917		0.99	
Iodomethane	0.2963098	45.62873 NT	2.104143	0.1070825	0.99881		0.99	
Isopropylbenzene	3.115372	9.976241	11.66486	0.0256677	0.99968		0.99	
4-Isopropyltoluene	2.235914	8.380114	13.30657	2.558102E-02			15	
Methyl Acetate	0.2448901	44.34549	2.312857	9.746431E-02	0.99964		0.99	
Methyl tert-Butyl Ether	0.6937851	7.890439	2.666	5.834225E-03			15	
Methylcyclohexane	0.4646788	9.269163	6.762143	1.508134E-02			15	
Methylene Chloride	0.6284564	67.20564	2.396286	9.794997E-02	0.99951		0.99	
2-Butanone (MEK)	0.1053971	9.38255	3.921714	0.1847956			15	
4-Methyl-2-pentanone (MIBK)	0.2004837	20.11688	8.274	2.235022E-02	0.99932		0.99	
Naphthalene	1.235561	9.739063	16.072	1.348743E-02			15	
n-Propylbenzene	0.8086886	10.53883	12.194	2.399456E-02			15	
Styrene	1.13879	15.65122	11.201	1.789005E-02	0.99976		0.99	
1,1,1,2-Tetrachloroethane	0.3650723	13.53454	10.46129	2.581229E-02			15	
1,1,2,2-Tetrachloroethane	0.7658121	2.702906	12.07814	1.499154E-02			SPCC (0.3)	
Tetrachloroethene	0.5137172	3.05405	9.178714	3.486254E-02			15	
Toluene	1.302091	3.844433	8.438143	2.104555E-02			CCC (30)	

INITIAL CALIBRATION DATA (Continued)
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Calibration: 2H20008

SDG: NIROP0812
Project: NIROP Fridley TO-F270
Calibration Date: 08/10/12 00:00
Instrument: 328

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	Limit	Q
1,2,3-Trichlorobenzene	0.4933722	4.603696	16.37614	2.021074E-02			15	
1,2,4-Trichlorobenzene	0.6168445	6.994221	15.785	1.702936E-02			15	
1,1,1-Trichloroethane	0.5106535	7.919304	4.642714	6.499019E-02			15	
1,1,2-Trichloroethane	0.2051714	5.58371	9.039571	3.189614E-02			15	
Trichloroethene	0.3520189	5.932225	6.488857	3.482388E-02			15	
Trichlorofluoromethane	0.5457371	3.184008	1.619571	0.1973732			15	
1,2,3-Trichloropropane	0.2569554	1.960953	12.097	2.122208E-02			15	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.3117033	3.905084	1.995	9.982982E-03			15	
1,2,4-Trimethylbenzene	2.567629	12.84146	12.89071	0.0121532			15	
1,3,5-Trimethylbenzene	2.769041	9.478273	12.432	1.070736E-02			15	
Vinyl Acetate	0.4013449	12.4368	3.190857	7.341137E-02			15	
Vinyl Chloride	0.3905216	3.677546	1.178	2.061107E-02			CCC (30)	
Xylene, Meta + Para	0.7160899	9.487326	10.67086	1.652038E-02			15	
Xylene, Ortho	0.6323319	13.86272	11.17171	2.183461E-02			15	
Xylene (Total)	0.6881706	10.78659	11.17171	2.183461E-02			15	
Dichlorobenzenes (Total)							15	
Dibromofluoromethane	0.2841478	1.602722	4.660714	6.071269E-02			15	
1,2-Dichloroethane-d4	0.1708913	0.7770893	5.260429	6.191278E-02			15	
Toluene-d8	0.977396	0.5748552	8.346286	2.191884E-02			15	
4-Bromofluorobenzene	0.5006128	3.185482	11.835	1.897278E-02			15	

ANALYSIS BATCH (SEQUENCE) SUMMARY
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Sequence: 2H21012

SDG: NIROP0812
Project: NIROP Fridley TO-F270
Calibration: 2H20008
Instrument: 328

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	2H21012-TUN1	BFB0820.D	08/20/12 07:40
Calibration Check	2H21012-CCV1	BS0820.D	08/20/12 08:35
LCS	1210126-BS1	BS0820.D	08/20/12 08:35
Blank	1210126-BLK1	BLK0820.D	08/20/12 09:30
Instrument RL Check	2H21012-CRL1	1pMRL.D	08/20/12 09:58
Instrument RL Check	2H21012-CRL2	5pMRL.D	08/20/12 10:26
Trip Blank	1208289-09	1208289-09.D	08/20/12 10:53
NIROP-GW-101-081612-FB	1208289-10	1208289-10.D	08/20/12 11:21
NIROP-GW-101-5560-081612	1208289-03	1208289-03.D	08/20/12 11:49
NIROP-GW-101-4550-081512	1208289-01	1208289-01.D	08/20/12 12:17
NIROP-GW-101-5055-081512	1208289-02	1208289-02.D	08/20/12 12:44
NIROP-GW-101-6065-081612	1208289-04	1208289-04.D	08/20/12 13:12
NIROP-GW-101-6065-081612-D	1208289-05	1208289-05.D	08/20/12 13:40
NIROP-GW-101-6570-081612	1208289-06	1208289-06.D	08/20/12 14:07
NIROP-GW-101-7075-081612	1208289-07	1208289-07.D	08/20/12 14:35
NIROP-GW-101-7580-081612	1208289-08	1208289-08.D	08/20/12 15:03
NIROP-GW-101-5560-081612	1210126-MS1	1208289-03MS.D	08/20/12 18:17
NIROP-GW-101-5560-081612	1210126-MSD1	1208289-03MD.D	08/20/12 18:45

CONTINUING CALIBRATION CHECK
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc.
SDG: NIROP0812
Client: CH2M HILL - VA
Project: NIROP Fridley TO-F270
Lab Sample ID: 2H21012-CCV1
Lab File ID: BS0820.D
Injection Date: 08/20/12
Injection Time: 08:35
Calibration Date: 08/10/12 00:00
Calibration: 2H20008
Sequence: 2H21012
Instrument ID: 328

Analyte	Type	CONC. (ug/L)		Response Factor			% Diff. / Drift	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Acetone	L	40.0	39.4	8.952867E-02	8.826584E-02		-1.4	20
Benzene	A	40.0	42.6	1.234797	1.313934		6.4	20
Bromobenzene	A	40.0	44.0	1.350012	1.48619		10.1	20
Bromochloromethane	A	40.0	44.1	0.2657564	0.2927616		10.2	20
Bromodichloromethane	A	40.0	43.3	0.3895142	0.4219324		8.3	20
Bromoform	L	40.0	35.8	0.207063	0.2260657	0.1	-10.6	20
Bromomethane	L	40.0	54.5	0.1856866	0.218596		36.3	20 *
n-Butylbenzene	A	40.0	40.3	1.750943	1.763558		0.7	20
sec-Butylbenzene	A	40.0	41.2	2.557414	2.635717		3.1	20
tert-Butylbenzene	A	40.0	41.3	2.006516	2.072957		3.3	20
Carbon Disulfide	A	40.0	46.1	0.6287447	0.7242497		15.2	20
Carbon Tetrachloride	A	40.0	43.3	0.4555434	0.4926915		8.2	20
Chlorobenzene	A	40.0	40.9	1.068822	1.092285	0.3	2.2	20
Chloroethane	A	40.0	46.9	0.2116915	0.2483923		17.3	20
Chloroform	A	40.0	42.7	0.5812858	0.6206953		6.8	20
Chloromethane	A	40.0	43.4	0.3833592	0.4162812	0.1	8.6	20
2-Chlorotoluene	A	40.0	43.1	0.769239	0.8294357		7.8	20
4-Chlorotoluene	A	40.0	43.8	2.566856	2.809805		9.5	20
1,2-Dibromo-3-chloropropane	L	40.0	35.3	0.103427	0.1057488		-11.7	20
Dibromochloromethane	L	40.0	38.4	0.3559629	0.3927324		-4.0	20
1,2-Dibromoethane	A	40.0	41.6	0.3085619	0.3208378		4.0	20
Dibromomethane	A	40.0	43.0	0.1859066	0.2000166		7.6	20
1,2-Dichlorobenzene	A	40.0	41.4	1.292992	1.33998		3.6	20
1,3-Dichlorobenzene	A	40.0	41.0	1.433521	1.468822		2.5	20
1,4-Dichlorobenzene	A	40.0	40.0	1.604976	1.604621		-0.02	20
Dichlorodifluoromethane	A	40.0	41.3	0.3817319	0.3940086		3.2	20
1,1-Dichloroethane	A	40.0	43.8	0.5755279	0.629675	0.1	9.4	20
1,2-Dichloroethane	A	40.0	42.5	0.4565524	0.484685		6.2	20
1,1-Dichloroethene	A	40.0	45.5	0.2841241	0.3232068		13.8	20

CONTINUING CALIBRATION CHECK
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc.
SDG: NIROP0812
Client: CH2M HILL - VA
Project: NIROP Fridley TO-F270
Lab Sample ID: 2H21012-CCV1
Lab File ID: BS0820.D
Injection Date: 08/20/12
Injection Time: 08:35
Calibration Date: 08/10/12 00:00
Calibration: 2H20008
Sequence: 2H21012
Instrument ID: 328

Analyte	Type	CONC. (ug/L)		Response Factor			% Diff. / Drift	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
cis-1,2-Dichloroethene	A	40.0	43.4	0.3441236	0.3737441		8.6	20
trans-1,2-Dichloroethene	A	40.0	44.0	0.3348322	0.3678842		9.9	20
1,2-Dichloropropane	A	40.0	43.6	0.2866197	0.3126853		9.1	20
1,3-Dichloropropane	A	40.0	42.3	0.589909	0.6241707		5.8	20
2,2-Dichloropropane	A	40.0	47.8	0.3593157	0.4294598		19.5	20
1,1-Dichloropropene	A	40.0	43.4	0.4504385	0.4885116		8.5	20
cis-1,3-Dichloropropene	L	40.0	39.4	0.4219898	0.4830515		-1.4	20
trans-1,3-Dichloropropene	L	40.0	38.2	0.331398	0.383633		-4.6	20
Ethylbenzene	A	40.0	42.2	1.927629	2.035015		5.6	20
Hexachlorobutadiene	A	40.0	37.8	0.2683766	0.2539206		-5.4	20
2-Hexanone	L	40.0	32.4	0.1854953	0.1663549		-18.9	20
Isopropylbenzene	L	40.0	44.2	3.115372	3.442026		10.5	20
4-Isopropyltoluene	A	40.0	40.1	2.235914	2.241545		0.3	20
Methyl tert-Butyl Ether	A	40.0	44.5	0.6937851	0.7720973		11.3	20
Methylene Chloride	L	40.0	45.8	0.6284564	0.4808346		14.4	20
2-Butanone (MEK)	A	40.0	36.3	0.1053971	9.568504E-02		-9.2	20
4-Methyl-2-pentanone (MIBK)	L	40.0	34.1	0.2004837	0.1883043		-14.8	20
Naphthalene	A	40.0	35.4	1.235561	1.094946		-11.4	20
n-Propylbenzene	A	40.0	42.1	0.8086886	0.8504214		5.2	20
Styrene	L	40.0	37.8	1.13879	1.204228		-5.6	20
1,1,1,2-Tetrachloroethane	A	40.0	42.3	0.3650723	0.3857111		5.7	20
1,1,2,2-Tetrachloroethane	A	40.0	45.6	0.7658121	0.8737897	0.3	14.1	20
Tetrachloroethene	A	40.0	41.2	0.5137172	0.5284968		2.9	20
Toluene	A	40.0	42.0	1.302091	1.368729		5.1	20
1,2,3-Trichlorobenzene	A	40.0	34.7	0.4933722	0.4277468		-13.3	20
1,2,4-Trichlorobenzene	A	40.0	36.4	0.6168445	0.5609431		-9.1	20
1,1,1-Trichloroethane	A	40.0	43.2	0.5106535	0.551483		8.0	20
1,1,2-Trichloroethane	A	40.0	42.8	0.2051714	0.2194486		7.0	20
Trichloroethene	A	40.0	40.5	0.3520189	0.3564221		1.3	20

CONTINUING CALIBRATION CHECK
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc.
SDG: NIROP0812
Client: CH2M HILL - VA
Project: NIROP Fridley TO-F270
Lab Sample ID: 2H21012-CCV1
Lab File ID: BS0820.D
Injection Date: 08/20/12
Injection Time: 08:35
Calibration Date: 08/10/12 00:00
Calibration: 2H20008
Sequence: 2H21012
Instrument ID: 328

Analyte	Type	CONC. (ug/L)		Response Factor			% Diff. / Drift	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Trichlorofluoromethane	A	40.0	45.4	0.5457371	0.6199722		13.6	20
1,2,3-Trichloropropane	A	40.0	43.3	0.2569554	0.2782027		8.3	20
1,2,4-Trimethylbenzene	A	40.0	42.6	2.567629	2.734097		6.5	20
1,3,5-Trimethylbenzene	A	40.0	43.6	2.769041	3.019968		9.1	20
Vinyl Chloride	A	40.0	45.7	0.3905216	0.4458084		14.2	20
Xylene, Meta + Para	A	80.0	86.1	0.7160899	0.7707971		7.6	20
Xylene, Ortho	A	40.0	42.9	0.6323319	0.677557		7.2	20
Xylene (Total)	A	120	129	0.6881706	0.739717		7.5	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS BATCH (SEQUENCE) SUMMARY
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Sequence: 2H21036

SDG: NIROP0812
Project: NIROP Fridley TO-F270
Calibration: 2H20008
Instrument: 328

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	2H21036-TUN1	BFB0821.D	08/21/12 08:13
Calibration Check	2H21036-CCV1	BS0821.D	08/21/12 09:08
LCS	1210126-BS2	BS0821.D	08/21/12 09:08
Instrument RL Check	2H21036-CRL2	5pMRL.D	08/21/12 10:03
Instrument RL Check	2H21036-CRL1	1pMRL.D	08/21/12 10:31
Blank	1210126-BLK2	BLK0821.D	08/21/12 10:59
NIROP-GW-101-6570-081612	1208289-06RE1	1208289-06.D	08/21/12 11:26
NIROP-GW-101-7075-081612	1208289-07RE1	1208289-07.D	08/21/12 11:54
NIROP-GW-101-7580-081612	1208289-08RE1	1208289-08.D	08/21/12 12:22

CONTINUING CALIBRATION CHECK
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc.
SDG: NIROP0812
Client: CH2M HILL - VA
Project: NIROP Fridley TO-F270
Lab Sample ID: 2H21036-CCV1
Lab File ID: BS0821.D
Injection Date: 08/21/12
Injection Time: 09:08
Calibration Date: 08/10/12 00:00
Calibration: 2H20008
Sequence: 2H21036
Instrument ID: 328

Analyte	Type	CONC. (ug/L)		Response Factor			% Diff. / Drift	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Acetone	L	40.0	36.1	8.952867E-02	8.072307E-02		-9.8	20
Benzene	A	40.0	40.7	1.234797	1.255677		1.7	20
Bromobenzene	A	40.0	41.3	1.350012	1.394763		3.3	20
Bromochloromethane	A	40.0	42.4	0.2657564	0.2819204		6.1	20
Bromodichloromethane	A	40.0	40.4	0.3895142	0.3936269		1.1	20
Bromoform	L	40.0	32.4	0.207063	0.2022928	0.1	-19.0	20
Bromomethane	L	40.0	53.4	0.1856866	0.2143145		33.5	20 *
n-Butylbenzene	A	40.0	40.6	1.750943	1.778132		1.6	20
sec-Butylbenzene	A	40.0	40.1	2.557414	2.561299		0.2	20
tert-Butylbenzene	A	40.0	39.2	2.006516	1.965949		-2.0	20
Carbon Disulfide	A	40.0	40.5	0.6287447	0.6365841		1.2	20
Carbon Tetrachloride	A	40.0	39.2	0.4555434	0.4469931		-1.9	20
Chlorobenzene	A	40.0	38.9	1.068822	1.039559	0.3	-2.7	20
Chloroethane	A	40.0	46.4	0.2116915	0.2458245		16.1	20
Chloroform	A	40.0	40.4	0.5812858	0.5875332		1.1	20
Chloromethane	A	40.0	40.2	0.3833592	0.3849218	0.1	0.4	20
2-Chlorotoluene	A	40.0	40.8	0.769239	0.783989		1.9	20
4-Chlorotoluene	A	40.0	41.3	2.566856	2.648409		3.2	20
1,2-Dibromo-3-chloropropane	L	40.0	34.3	0.103427	0.1025019		-14.2	20
Dibromochloromethane	L	40.0	35.5	0.3559629	0.3612604		-11.2	20
1,2-Dibromoethane	A	40.0	40.3	0.3085619	0.3108703		0.7	20
Dibromomethane	A	40.0	40.6	0.1859066	0.1886788		1.5	20
1,2-Dichlorobenzene	A	40.0	39.4	1.292992	1.274912		-1.4	20
1,3-Dichlorobenzene	A	40.0	38.8	1.433521	1.390656		-3.0	20
1,4-Dichlorobenzene	A	40.0	38.9	1.604976	1.559978		-2.8	20
Dichlorodifluoromethane	A	40.0	35.9	0.3817319	0.342728		-10.2	20
1,1-Dichloroethane	A	40.0	41.7	0.5755279	0.6002909	0.1	4.3	20
1,2-Dichloroethane	A	40.0	40.9	0.4565524	0.4669191		2.3	20
1,1-Dichloroethene	A	40.0	45.2	0.2841241	0.3211933		13.0	20

CONTINUING CALIBRATION CHECK
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Lab Sample ID: 2H21036-CCV1
Injection Date: 08/21/12
Calibration Date: 08/10/12 00:00
Sequence: 2H21036

SDG: NIROP0812
Project: NIROP Fridley TO-F270
Lab File ID: BS0821.D
Injection Time: 09:08
Calibration: 2H20008
Instrument ID: 328

Analyte	Type	CONC. (ug/L)		Response Factor			% Diff. / Drift	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
cis-1,2-Dichloroethene	A	40.0	40.9	0.3441236	0.3515168		2.1	20
trans-1,2-Dichloroethene	A	40.0	42.4	0.3348322	0.3549277		6.0	20
1,2-Dichloropropane	A	40.0	42.1	0.2866197	0.3018006		5.3	20
1,3-Dichloropropane	A	40.0	40.9	0.589909	0.6037107		2.3	20
2,2-Dichloropropane	A	40.0	43.1	0.3593157	0.3871905		7.8	20
1,1-Dichloropropene	A	40.0	40.9	0.4504385	0.4610512		2.4	20
cis-1,3-Dichloropropene	L	40.0	37.0	0.4219898	0.4503479		-7.6	20
trans-1,3-Dichloropropene	L	40.0	35.9	0.331398	0.3585112		-10.3	20
Ethylbenzene	A	40.0	40.5	1.927629	1.952216		1.3	20
Hexachlorobutadiene	A	40.0	36.7	0.2683766	0.2463874		-8.2	20
2-Hexanone	L	40.0	29.0	0.1854953	0.1462736		-27.4	20 *
Isopropylbenzene	L	40.0	41.0	3.115372	3.196368		2.6	20
4-Isopropyltoluene	A	40.0	39.7	2.235914	2.217188		-0.8	20
Methyl tert-Butyl Ether	A	40.0	42.6	0.6937851	0.7387766		6.5	20
Methylene Chloride	L	40.0	47.6	0.6284564	0.4992538		19.1	20
2-Butanone (MEK)	A	40.0	32.7	0.1053971	8.606557E-02		-18.3	20
4-Methyl-2-pentanone (MIBK)	L	40.0	30.5	0.2004837	0.1658725		-23.7	20 *
Naphthalene	A	40.0	37.6	1.235561	1.162078		-5.9	20
n-Propylbenzene	A	40.0	39.7	0.8086886	0.8027994		-0.7	20
Styrene	L	40.0	36.3	1.13879	1.155463		-9.3	20
1,1,1,2-Tetrachloroethane	A	40.0	39.6	0.3650723	0.3614435		-1.0	20
1,1,2,2-Tetrachloroethane	A	40.0	43.9	0.7658121	0.8405047	0.3	9.8	20
Tetrachloroethene	A	40.0	38.4	0.5137172	0.4929056		-4.1	20
Toluene	A	40.0	40.3	1.302091	1.312824		0.8	20
1,2,3-Trichlorobenzene	A	40.0	36.6	0.4933722	0.4508044		-8.6	20
1,2,4-Trichlorobenzene	A	40.0	36.8	0.6168445	0.5673526		-8.0	20
1,1,1-Trichloroethane	A	40.0	39.8	0.5106535	0.5086594		-0.4	20
1,1,2-Trichloroethane	A	40.0	40.6	0.2051714	0.2080336		1.4	20
Trichloroethene	A	40.0	37.5	0.3520189	0.3301115		-6.2	20

CONTINUING CALIBRATION CHECK

USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc.
SDG: NIROP0812
Client: CH2M HILL - VA
Project: NIROP Fridley TO-F270
Lab Sample ID: 2H21036-CCV1
Lab File ID: BS0821.D
Injection Date: 08/21/12
Injection Time: 09:08
Calibration Date: 08/10/12 00:00
Calibration: 2H20008
Sequence: 2H21036
Instrument ID: 328

Analyte	Type	CONC. (ug/L)		Response Factor			% Diff. / Drift	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Trichlorofluoromethane	A	40.0	44.0	0.5457371	0.6003693		10.0	20
1,2,3-Trichloropropane	A	40.0	41.2	0.2569554	0.2648571		3.1	20
1,2,4-Trimethylbenzene	A	40.0	40.9	2.567629	2.628204		2.4	20
1,3,5-Trimethylbenzene	A	40.0	41.4	2.769041	2.866303		3.5	20
Vinyl Chloride	A	40.0	43.4	0.3905216	0.4241111		8.6	20
Xylene, Meta + Para	A	80.0	82.2	0.7160899	0.7361252		2.8	20
Xylene, Ortho	A	40.0	40.5	0.6323319	0.6396938		1.2	20
Xylene (Total)	A	120	123	0.6881706	0.7039814		2.3	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk.

* Values outside of QC limits

QC BATCH SUMMARY
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

QC Batch: 1210126 QC Batch Matrix: Water Preparation: 5030B Aqueous Purge & Trap

Sample Name	Lab Sample ID	Date Prepared	Observations
NIROP-GW-101-4550-081512	1208289-01	08/20/12 07:00	MRL check
NIROP-GW-101-5055-081512	1208289-02	08/20/12 07:00	MRL check
NIROP-GW-101-5560-081612	1208289-03	08/20/12 07:00	MRL check
NIROP-GW-101-6065-081612	1208289-04	08/20/12 07:00	MRL check
NIROP-GW-101-6065-081612-D	1208289-05	08/20/12 07:00	MRL check
NIROP-GW-101-6570-081612	1208289-06	08/20/12 07:00	MRL check
NIROP-GW-101-6570-081612	1208289-06RE1	08/21/12 08:00	MRL check
NIROP-GW-101-7075-081612	1208289-07	08/20/12 07:00	MRL check
NIROP-GW-101-7075-081612	1208289-07RE1	08/21/12 08:00	MRL check
NIROP-GW-101-7580-081612	1208289-08	08/20/12 07:00	MRL check
NIROP-GW-101-7580-081612	1208289-08RE1	08/21/12 08:00	MRL check
Trip Blank	1208289-09	08/20/12 07:00	MRL check
NIROP-GW-101-081612-FB	1208289-10	08/20/12 07:00	MRL check
Blank	1210126-BLK1	08/20/12 07:00	
Blank	1210126-BLK2	08/21/12 08:00	
LCS	1210126-BS1	08/20/12 07:00	
LCS	1210126-BS2	08/21/12 08:00	
NIROP-GW-101-5560-081612	1210126-MS1	08/20/12 07:00	
NIROP-GW-101-5560-081612	1210126-MSD1	08/20/12 07:00	

METHOD BLANK DATA SHEET
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL – VA Project: NIROP Fridley TO-F270

Matrix: Water Laboratory ID: 1210126-BLK2 File ID: BLK0821.D

Prepared: 08/21/12 08:00 Analyzed: 08/21/12 10:59

Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21036 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Concentration	Unit	DL	LOD	LOQ	Q
67-64-1	Acetone	3.4	ug/L	1.1	2.0	5.0	J
71-43-2	Benzene	0.20	ug/L	0.11	0.20	1.0	U
75-27-4	Bromodichloromethane	0.50	ug/L	0.13	0.50	1.0	U
75-25-2	Bromoform	1.0	ug/L	0.26	1.0	1.0	U
74-83-9	Bromomethane	0.50	ug/L	0.21	0.50	1.0	U
75-15-0	Carbon Disulfide	1.0	ug/L	0.23	1.0	5.0	U
56-23-5	Carbon Tetrachloride	0.50	ug/L	0.26	0.50	1.0	U
108-90-7	Chlorobenzene	0.50	ug/L	0.17	0.50	1.0	U
75-00-3	Chloroethane	0.50	ug/L	0.14	0.50	1.0	U
67-66-3	Chloroform	0.20	ug/L	0.098	0.20	1.0	U
74-87-3	Chloromethane	0.50	ug/L	0.29	0.50	1.0	U
110-82-7	Cyclohexane	0.50	ug/L	0.18	0.50	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	ug/L	0.13	0.50	2.0	U
124-48-1	Dibromochloromethane	0.50	ug/L	0.15	0.50	1.0	U
106-93-4	1,2-Dibromoethane	0.50	ug/L	0.15	0.50	1.0	U
95-50-1	1,2-Dichlorobenzene	0.50	ug/L	0.24	0.50	1.0	U
541-73-1	1,3-Dichlorobenzene	0.50	ug/L	0.24	0.50	1.0	U
106-46-7	1,4-Dichlorobenzene	0.50	ug/L	0.25	0.50	1.0	U
75-71-8	Dichlorodifluoromethane	0.50	ug/L	0.21	0.50	1.0	U
75-34-3	1,1-Dichloroethane	0.50	ug/L	0.18	0.50	1.0	U
107-06-2	1,2-Dichloroethane	0.50	ug/L	0.21	0.50	1.0	U
75-35-4	1,1-Dichloroethene	0.50	ug/L	0.21	0.50	1.0	U
156-59-2	cis-1,2-Dichloroethene	0.50	ug/L	0.12	0.50	1.0	U
156-60-5	trans-1,2-Dichloroethene	0.50	ug/L	0.20	0.50	1.0	U
78-87-5	1,2-Dichloropropane	0.50	ug/L	0.28	0.50	1.0	U
10061-01-5	cis-1,3-Dichloropropene	0.50	ug/L	0.19	0.50	1.0	U
10061-02-6	trans-1,3-Dichloropropene	0.50	ug/L	0.19	0.50	1.0	U
100-41-4	Ethylbenzene	0.50	ug/L	0.21	0.50	1.0	U
591-78-6	2-Hexanone	1.0	ug/L	0.49	1.0	5.0	U
98-82-8	Isopropylbenzene	0.50	ug/L	0.22	0.50	1.0	U
79-20-9	Methyl Acetate	1.0	ug/L	0.42	1.0	5.0	U
1634-04-4	Methyl tert-Butyl Ether	0.50	ug/L	0.19	0.50	1.0	U
108-87-2	Methylcyclohexane	1.0	ug/L	0.37	1.0	5.0	U
75-09-2	Methylene Chloride	1.0	ug/L	0.24	1.0	1.0	U
78-93-3	2-Butanone (MEK)	1.0	ug/L	0.63	1.0	5.0	U

METHOD BLANK DATA SHEET
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Water Laboratory ID: 1210126-BLK2 File ID: BLK0821.D

Prepared: 08/21/12 08:00 Analyzed: 08/21/12 10:59

Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21036 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Concentration	Unit	DL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.40	1.0	5.0	U
100-42-5	Styrene	0.50	ug/L	0.20	0.50	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	ug/L	0.26	0.50	1.0	U
127-18-4	Tetrachloroethene	0.50	ug/L	0.23	0.50	1.0	U
108-88-3	Toluene	0.50	ug/L	0.18	0.50	1.0	U
120-82-1	1,2,4-Trichlorobenzene	0.50	ug/L	0.13	0.50	2.0	U
71-55-6	1,1,1-Trichloroethane	0.50	ug/L	0.14	0.50	1.0	U
79-00-5	1,1,2-Trichloroethane	0.50	ug/L	0.20	0.50	1.0	U
79-01-6	Trichloroethene	0.50	ug/L	0.21	0.50	1.0	U
75-69-4	Trichlorofluoromethane	0.50	ug/L	0.27	0.50	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	ug/L	0.24	0.50	1.0	U
75-01-4	Vinyl Chloride	0.50	ug/L	0.21	0.50	1.0	U
1330-20-7	Xylene (Total)	1.2	ug/L	0.39	1.2	3.0	U

System Monitoring Compound	Added (ug/L)	Conc. (ug/L)	% REC	QC Limits	Q
Dibromofluoromethane	40.0	40.3	101	85 - 115	
1,2-Dichloroethane-d4	40.0	41.1	103	70 - 120	
Toluene-d8	40.0	39.4	98	85 - 120	
4-Bromofluorobenzene	40.0	35.4	89	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	678249	5.86	909533	5.872	
Chlorobenzene-d5	499227	10.28	688673	10.292	
1,4-Dichlorobenzene-d4	212019	13.279	361828	13.292	

METHOD BLANK DATA SHEET
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Water Laboratory ID: 1210126-BLK1 File ID: BLK0820.D

Prepared: 08/20/12 07:00 Analyzed: 08/20/12 09:30

Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Concentration	Unit	DL	LOD	LOQ	Q
67-64-1	Acetone	7.5	ug/L	1.1	2.0	5.0	
71-43-2	Benzene	0.20	ug/L	0.11	0.20	1.0	U
75-27-4	Bromodichloromethane	0.50	ug/L	0.13	0.50	1.0	U
75-25-2	Bromoform	1.0	ug/L	0.26	1.0	1.0	U
74-83-9	Bromomethane	0.50	ug/L	0.21	0.50	1.0	U
75-15-0	Carbon Disulfide	1.0	ug/L	0.23	1.0	5.0	U
56-23-5	Carbon Tetrachloride	0.50	ug/L	0.26	0.50	1.0	U
108-90-7	Chlorobenzene	0.50	ug/L	0.17	0.50	1.0	U
75-00-3	Chloroethane	0.50	ug/L	0.14	0.50	1.0	U
67-66-3	Chloroform	0.20	ug/L	0.098	0.20	1.0	U
74-87-3	Chloromethane	0.50	ug/L	0.29	0.50	1.0	U
110-82-7	Cyclohexane	0.50	ug/L	0.18	0.50	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	ug/L	0.13	0.50	2.0	U
124-48-1	Dibromochloromethane	0.50	ug/L	0.15	0.50	1.0	U
106-93-4	1,2-Dibromoethane	0.50	ug/L	0.15	0.50	1.0	U
95-50-1	1,2-Dichlorobenzene	0.50	ug/L	0.24	0.50	1.0	U
541-73-1	1,3-Dichlorobenzene	0.50	ug/L	0.24	0.50	1.0	U
106-46-7	1,4-Dichlorobenzene	0.50	ug/L	0.25	0.50	1.0	U
75-71-8	Dichlorodifluoromethane	0.50	ug/L	0.21	0.50	1.0	U
75-34-3	1,1-Dichloroethane	0.50	ug/L	0.18	0.50	1.0	U
107-06-2	1,2-Dichloroethane	0.50	ug/L	0.21	0.50	1.0	U
75-35-4	1,1-Dichloroethene	0.50	ug/L	0.21	0.50	1.0	U
156-59-2	cis-1,2-Dichloroethene	0.50	ug/L	0.12	0.50	1.0	U
156-60-5	trans-1,2-Dichloroethene	0.50	ug/L	0.20	0.50	1.0	U
78-87-5	1,2-Dichloropropane	0.50	ug/L	0.28	0.50	1.0	U
10061-01-5	cis-1,3-Dichloropropene	0.50	ug/L	0.19	0.50	1.0	U
10061-02-6	trans-1,3-Dichloropropene	0.50	ug/L	0.19	0.50	1.0	U
100-41-4	Ethylbenzene	0.50	ug/L	0.21	0.50	1.0	U
591-78-6	2-Hexanone	1.0	ug/L	0.49	1.0	5.0	U
98-82-8	Isopropylbenzene	0.50	ug/L	0.22	0.50	1.0	U
79-20-9	Methyl Acetate	0.61	ug/L	0.42	1.0	5.0	J
1634-04-4	Methyl tert-Butyl Ether	0.50	ug/L	0.19	0.50	1.0	U
108-87-2	Methylcyclohexane	1.0	ug/L	0.37	1.0	5.0	U
75-09-2	Methylene Chloride	1.0	ug/L	0.24	1.0	1.0	U
78-93-3	2-Butanone (MEK)	1.0	ug/L	0.63	1.0	5.0	U

METHOD BLANK DATA SHEET
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Water Laboratory ID: 1210126-BLK1 File ID: BLK0820.D

Prepared: 08/20/12 07:00 Analyzed: 08/20/12 09:30

Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1210126 Sequence: 2H21012 Calibration: 2H20008 Instrument: 328

CAS No.	Analyte	Concentration	Unit	DL	LOD	LOQ	Q
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.40	1.0	5.0	U
100-42-5	Styrene	0.50	ug/L	0.20	0.50	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	ug/L	0.26	0.50	1.0	U
127-18-4	Tetrachloroethene	0.50	ug/L	0.23	0.50	1.0	U
108-88-3	Toluene	0.50	ug/L	0.18	0.50	1.0	U
120-82-1	1,2,4-Trichlorobenzene	0.50	ug/L	0.13	0.50	2.0	U
71-55-6	1,1,1-Trichloroethane	0.50	ug/L	0.14	0.50	1.0	U
79-00-5	1,1,2-Trichloroethane	0.50	ug/L	0.20	0.50	1.0	U
79-01-6	Trichloroethene	0.50	ug/L	0.21	0.50	1.0	U
75-69-4	Trichlorofluoromethane	0.50	ug/L	0.27	0.50	1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	ug/L	0.24	0.50	1.0	U
75-01-4	Vinyl Chloride	0.50	ug/L	0.21	0.50	1.0	U
1330-20-7	Xylene (Total)	1.2	ug/L	0.39	1.2	3.0	U

System Monitoring Compound	Added (ug/L)	Conc. (ug/L)	% REC	QC Limits	Q
Dibromofluoromethane	40.0	39.7	99	85 - 115	
1,2-Dichloroethane-d4	40.0	40.3	101	70 - 120	
Toluene-d8	40.0	39.0	97	85 - 120	
4-Bromofluorobenzene	40.0	35.7	89	75 - 120	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene	742578	5.866	909533	5.872	
Chlorobenzene-d5	534574	10.286	688673	10.292	
1,4-Dichlorobenzene-d4	222715	13.285	361828	13.292	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY
USEPA-8260B

NIROP-GW-101-5560-081612

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Water
QC Batch: 1210126

SDG: NIROP0812
Project: NIROP Fridley TO-F270
Laboratory ID: 1210126-MS1
Preparation: 5030B Aqueous Purge & Trap
Initial/Final: 5 mL / 5 mL

Analyte	Spike Added	Sample Conc.	MS Conc.	MS % Rec. #	QC Limits Rec.	Units
Acetone	40.0	3.68	41.8	95	40 - 140	ug/L
Benzene	40.0	ND	44.6	111	80 - 120	ug/L
Bromodichloromethane	40.0	ND	44.3	111	75 - 120	ug/L
Bromoform	40.0	ND	33.8	85	70 - 130	ug/L
Bromomethane	40.0	ND	61.4	154 *	30 - 145	ug/L
Carbon Disulfide	40.0	ND	51.8	130	35 - 160	ug/L
Carbon Tetrachloride	40.0	ND	43.2	108	65 - 140	ug/L
Chlorobenzene	40.0	ND	42.2	105	80 - 120	ug/L
Chloroethane	40.0	ND	48.0	120	60 - 135	ug/L
Chloroform	40.0	ND	44.0	110	65 - 135	ug/L
Chloromethane	40.0	ND	43.8	110	40 - 125	ug/L
Cyclohexane	40.0	ND	45.6	114	77 - 125	ug/L
1,2-Dibromo-3-chloropropane	40.0	ND	35.8	90	50 - 130	ug/L
Dibromochloromethane	40.0	ND	37.6	94	60 - 135	ug/L
1,2-Dibromoethane	40.0	ND	43.7	109	80 - 120	ug/L
1,2-Dichlorobenzene	40.0	ND	40.7	102	70 - 120	ug/L
1,3-Dichlorobenzene	40.0	ND	40.3	101	75 - 125	ug/L
1,4-Dichlorobenzene	40.0	ND	40.1	100	75 - 125	ug/L
Dichlorodifluoromethane	40.0	ND	38.0	95	30 - 155	ug/L
1,1-Dichloroethane	40.0	1.62	45.6	110	70 - 135	ug/L
1,2-Dichloroethane	40.0	ND	44.4	111	70 - 130	ug/L
1,1-Dichloroethene	40.0	0.480	48.2	119	70 - 130	ug/L
cis-1,2-Dichloroethene	40.0	19.7	64.4	112	70 - 125	ug/L
trans-1,2-Dichloroethene	40.0	42.6	84.7	105	60 - 140	ug/L
1,2-Dichloropropane	40.0	ND	46.0	115	75 - 125	ug/L
cis-1,3-Dichloropropene	40.0	ND	38.5	96	70 - 130	ug/L
trans-1,3-Dichloropropene	40.0	ND	37.8	94	55 - 140	ug/L
Ethylbenzene	40.0	ND	43.7	109	75 - 125	ug/L
2-Hexanone	40.0	ND	40.1	100	55 - 130	ug/L
Isopropylbenzene	40.0	ND	43.6	109	75 - 125	ug/L
Methyl Acetate	40.0	ND	44.8	112	70 - 130	ug/L
Methyl tert-Butyl Ether	40.0	ND	46.5	116	65 - 125	ug/L
Methylcyclohexane	40.0	ND	45.1	113	70 - 130	ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY
USEPA-8260B

NIROP-GW-101-5560-081612

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Water

SDG: NIROP0812
Project: NIROP Fridley TO-F270
Laboratory ID: 1210126-MS1
Preparation: 5030B Aqueous Purge & Trap
Initial/Final: 5 mL / 5 mL

QC Batch: 1210126

Analyte	Spike Added	Sample Conc.	MS Conc.	MS % Rec. #	QC Limits Rec.	Units
Methylene Chloride	40.0	ND	48.3	121	55 - 140	ug/L
2-Butanone (MEK)	40.0	ND	44.1	110	30 - 150	ug/L
4-Methyl-2-pentanone (MIBK)	40.0	ND	42.1	105	60 - 135	ug/L
Styrene	40.0	ND	39.0	97	65 - 135	ug/L
1,1,2,2-Tetrachloroethane	40.0	ND	47.0	118	65 - 130	ug/L
Tetrachloroethene	40.0	ND	41.7	104	45 - 150	ug/L
Toluene	40.0	4.99	49.6	112	75 - 120	ug/L
1,2,4-Trichlorobenzene	40.0	ND	32.4	81	65 - 135	ug/L
1,1,1-Trichloroethane	40.0	ND	43.2	108	65 - 130	ug/L
1,1,2-Trichloroethane	40.0	ND	45.2	113	75 - 125	ug/L
Trichloroethene	40.0	6.59	48.3	104	70 - 125	ug/L
Trichlorofluoromethane	40.0	ND	44.6	112	60 - 145	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	40.0	ND	47.6	119	50 - 150	ug/L
Vinyl Chloride	40.0	3.83	50.3	116	50 - 145	ug/L
Xylene (Total)	120	ND	133	111	75 - 130	ug/L

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

USEPA-8260B

NIROP-GW-101-5560-081612

Laboratory: TriMatrix Laboratories, Inc.

Client: CH2M HILL - VA

Matrix: Water

QC Batch: 1210126

SDG: NIROP0812

Project: NIROP Fridley TO-F270

Laboratory ID: 1210126-MSD1

Preparation: 5030B Aqueous Purge & Trap

Initial/Final: 5 mL / 5 mL

Analyte	Spike Added	MSD Conc.	MSD % Rec. #	% RPD #	QC Limits RPD	QC Limits Rec.	Units
Acetone	40.0	43.8	100	5	30	40 - 140	ug/L
Benzene	40.0	43.6	109	2	30	80 - 120	ug/L
Bromodichloromethane	40.0	43.0	107	3	30	75 - 120	ug/L
Bromoform	40.0	33.6	84	0.6	30	70 - 130	ug/L
Bromomethane	40.0	58.9	147 *	4	30	30 - 145	ug/L
Carbon Disulfide	40.0	53.1	133	2	30	35 - 160	ug/L
Carbon Tetrachloride	40.0	42.6	106	1	30	65 - 140	ug/L
Chlorobenzene	40.0	41.7	104	1	30	80 - 120	ug/L
Chloroethane	40.0	49.1	123	2	30	60 - 135	ug/L
Chloroform	40.0	43.6	109	0.8	30	65 - 135	ug/L
Chloromethane	40.0	43.8	110	0.02	30	40 - 125	ug/L
Cyclohexane	40.0	44.9	112	2	30	77 - 125	ug/L
1,2-Dibromo-3-chloropropane	40.0	37.2	93	4	30	50 - 130	ug/L
Dibromochloromethane	40.0	37.1	93	1	30	60 - 135	ug/L
1,2-Dibromoethane	40.0	43.8	110	0.3	30	80 - 120	ug/L
1,2-Dichlorobenzene	40.0	40.7	102	0.02	30	70 - 120	ug/L
1,3-Dichlorobenzene	40.0	39.9	100	0.9	30	75 - 125	ug/L
1,4-Dichlorobenzene	40.0	39.8	99	0.8	30	75 - 125	ug/L
Dichlorodifluoromethane	40.0	38.4	96	1	30	30 - 155	ug/L
1,1-Dichloroethane	40.0	45.8	110	0.4	30	70 - 135	ug/L
1,2-Dichloroethane	40.0	43.7	109	2	30	70 - 130	ug/L
1,1-Dichloroethene	40.0	48.3	119	0.1	30	70 - 130	ug/L
cis-1,2-Dichloroethene	40.0	63.4	109	2	30	70 - 125	ug/L
trans-1,2-Dichloroethene	40.0	83.9	103	1	30	60 - 140	ug/L
1,2-Dichloropropane	40.0	45.1	113	2	30	75 - 125	ug/L
cis-1,3-Dichloropropene	40.0	37.3	93	3	30	70 - 130	ug/L
trans-1,3-Dichloropropene	40.0	37.4	93	1	30	55 - 140	ug/L
Ethylbenzene	40.0	43.2	108	1	30	75 - 125	ug/L
2-Hexanone	40.0	40.9	102	2	30	55 - 130	ug/L
Isopropylbenzene	40.0	43.7	109	0.1	30	75 - 125	ug/L
Methyl Acetate	40.0	45.5	114	2	30	70 - 130	ug/L
Methyl tert-Butyl Ether	40.0	47.5	119	2	30	65 - 125	ug/L
Methylcyclohexane	40.0	43.1	108	4	30	70 - 130	ug/L
Methylene Chloride	40.0	47.7	119	1	30	55 - 140	ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY
USEPA-8260B

NIROP-GW-101-5560-081612

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Water
QC Batch: 1210126

SDG: NIROP0812
Project: NIROP Fridley TO-F270
Laboratory ID: 1210126-MSD1
Preparation: 5030B Aqueous Purge & Trap
Initial/Final: 5 mL / 5 mL

Analyte	Spike Added	MSD Conc.	MSD % Rec. #	% RPD #	QC Limits RPD	QC Limits Rec.	Units
2-Butanone (MEK)	40.0	44.8	112	2	30	30 - 150	ug/L
4-Methyl-2-pentanone (MIBK)	40.0	42.4	106	0.6	30	60 - 135	ug/L
Styrene	40.0	38.3	96	2	30	65 - 135	ug/L
1,1,2,2-Tetrachloroethane	40.0	48.7	122	3	30	65 - 130	ug/L
Tetrachloroethene	40.0	41.0	103	2	30	45 - 150	ug/L
Toluene	40.0	48.1	108	3	30	75 - 120	ug/L
1,2,4-Trichlorobenzene	40.0	33.4	83	3	30	65 - 135	ug/L
1,1,1-Trichloroethane	40.0	42.9	107	0.7	30	65 - 130	ug/L
1,1,2-Trichloroethane	40.0	44.1	110	2	30	75 - 125	ug/L
Trichloroethene	40.0	47.2	101	2	30	70 - 125	ug/L
Trichlorofluoromethane	40.0	46.2	115	3	30	60 - 145	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	40.0	47.3	118	0.5	30	50 - 150	ug/L
Vinyl Chloride	40.0	50.2	116	0.2	30	50 - 145	ug/L
Xylene (Total)	120	131	109	2	30	75 - 130	ug/L

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

No Q result extrapolated for non-compliant compd w/ high rec.; no qual required

HOLDING TIME SUMMARY
USEPA-8260B

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP0812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Method: Volatile Organic Compounds by EPA Method 8260B

Sample Name	Date Collected	Date Received	Date Leached	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
NIROP-GW-101-4550-081512	08/15/12	08/17/12		08/20/12	5	NA	08/20/12	5	14	
NIROP-GW-101-5055-081512	08/15/12	08/17/12		08/20/12	5	NA	08/20/12	5	14	
NIROP-GW-101-5560-081612	08/16/12	08/17/12		08/20/12	4	NA	08/20/12	4	14	
NIROP-GW-101-6065-081612	08/16/12	08/17/12		08/20/12	4	NA	08/20/12	4	14	
NIROP-GW-101-6065-081612-D	08/16/12	08/17/12		08/20/12	4	NA	08/20/12	4	14	
NIROP-GW-101-6570-081612	08/16/12	08/17/12		08/20/12	4	NA	08/20/12	4	14	
NIROP-GW-101-6570-081612	08/16/12	08/17/12		08/21/12	5	NA	08/21/12	5	14	
NIROP-GW-101-7075-081612	08/16/12	08/17/12		08/20/12	4	NA	08/20/12	4	14	
NIROP-GW-101-7075-081612	08/16/12	08/17/12		08/21/12	5	NA	08/21/12	5	14	
NIROP-GW-101-7580-081612	08/16/12	08/17/12		08/20/12	4	NA	08/20/12	4	14	
NIROP-GW-101-7580-081612	08/16/12	08/17/12		08/21/12	5	NA	08/21/12	5	14	
Trip Blank	08/16/12	08/17/12		08/20/12	4	NA	08/20/12	4	14	
NIROP-GW-101-081612-FB	08/16/12	08/17/12		08/20/12	4	NA	08/20/12	4	14	

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: NIROP-GW-101-6065-081612
Duplicate Sample ID: NIROP-GW-101-6065-081612-D

Water: RPD≥20%
Soil: RPD>30%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
acetone	4.2	4.1	2
1,1-dichloroethane	2.2	2.1	5
1,1-dichloroethene	1	1	0
cis-1,2-dichloroethene	28	27	4
trans-1,2-dichloroethene	68	65	5
toluene	3.8	3.8	0
trichloroethene	18	17	6
vinyl chloride	3.5	3.3	6
			#DIV/0!
			#DIV/0!
			#DIV/0!
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			#DIV/0!
			#DIV/0!

COMMENTS: No qualifications required.

* one of the results below the LOD

Initial Calibration Date: 8/10/2012

RRF and %RSD Calculations:

Compound Name: vinyl chloride
Lab Value: 0.3655

Area of Compound	1790862
Area of Internal STD	979955
Conc. of Internal STD	40
Conc. of Compound	200
Calculated RRF	0.365

Compound Name: 2-butanone
Lab Value: 9.38

RRF of STD 1	0.1135
RRF of STD 2	0.0924
RRF of STD 3	0.0996
RRF of STD 4	0.0989
RRF of STD 5	0.1001
RRF of STD 6	0.1166
RRF of STD 7	0.1165
Calculated % RSD	9.38

Continuing Calibration File ID: 8/20/2012

RRF and %D Calculations:

Compound Name: methylene chloride
Lab Value: 0.481

Area of Compound	382376
Area of Internal STD	795234
Conc. of Internal STD	40
Conc. of Compound	40
Calculated RRF	0.481

Compound Name: benzene
Lab Value: 6.4

Average RRF	1.235
Calibration Check RRF	1.314
Calculated % D	-6.4

TRIMATRIX LABORATORIES

SDG CASE NARRATIVE

CH2M HILL - VA
NIROP Fridley TO-F270

SDG Executive Summary

This case narrative applies to samples received on August 17, 2012. All samples were scheduled for analysis in accordance with parameters outlined on the field chain of custody record, the TriMatrix bid form, and/or oral and written correspondence between CH2M HILL - VA and TriMatrix Laboratories, Inc.

Each sample receipt event was assigned a unique TriMatrix work order number. Sample receipt documentation is included in section A of this data package.

Project Technical Issues/Problems

Project-related data qualification designations and reporting conventions are included in Attachment 1 - *Project Technical Narrative.*

QA/QC Data Qualifications/Narrations

Quality assurance issues and/or quality control data qualifications and narrations related to the analysis and reporting of this SDG are presented in Attachment 2 - *Statement of Data Qualifications.* The absence of a statement page for a particular analyte group (*e.g.* Percent Solids) implies that no qualifying statements were generated for that analyte.

Data Review and Approval

All data was peer-reviewed by a second analyst, and then by appropriate data management staff against laboratory quality control requirements and project specifications. It was then reviewed and approved by the group supervisor/manager prior to further review by the project chemist.

Data Deliverables

This report relates only to the sample(s) as received. Estimates of analytical uncertainties for the test results contained within this report are available upon request. Test results are in compliance with the requirements of the DoD Quality Systems Manual for Environmental Laboratories Version 4.2, the National Environmental Laboratory Accreditation Conference (NELAC), and one or more of the following certification programs:

ACLASS DoD-ELAP/ISO17025 (#ADE-1542); Arkansas DEP (#11-054-0); Florida DEP (#E87622-24); Georgia EPD (#E87622-24); Illinois DEP (#002841); Kansas DPH (#E-10302); Kentucky DEP (#0021); Louisiana DEP (#03068); Michigan DPH (#0034); Minnesota DPH (#367345); New York ELAP (#46503); North Carolina DNRE (#659); Texas CEQ (#T104704495-12-2); Virginia DCLS (#1622); Wisconsin DNR (#999472650); USDA Soil Import Permit (#P330-09-00163).

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TRIMATRIX LABORATORIES

SDG CASE NARRATIVE

The data deliverables, both hardcopy and/or electronic (EDD), that comprise this data package are intended to comply with the documents referenced in the introductory section of this narrative. The EDD, if requested, will be issued separately from this hardcopy report. Hold time reports for each test procedure are presented following the CLP-like forms section of this report.

Jennifer L. Rice, Project Chemist

8.21.12
Date

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TRIMATRIX LABORATORIES

SDG CASE NARRATIVE

Sample Receipt and Login -- Work Order: 1208289

TriMatrix Laboratories received the cooler(s) for this work order on August 17, 2012, at 08:30am. Receiving documents include field chain-of-custody (COC) record(s), sample receipt form(s), and FedEx shipping document(s). The condition of the custody seals, the type and location of the coolant, and the temperatures recorded for each cooler are presented on the TriMatrix *Sample Receiving / Log-In Checklist* provided in section A of this package. The receipt temperature of the samples was determined by using an infrared thermometer to record the temperature of three random samples of varying container types and the accompanying temperature blank, if present.

Samples were scheduled for the analyses listed on the corresponding COC form. Field IDs and assigned laboratory identifiers are presented in the table below.

Field Sample Name	Laboratory Sample ID	Matrix	Date Sampled
NIROP-GW-101-4550-081512	1208289-01	Ground Water	8/15/2012
NIROP-GW-101-5055-081512	1208289-02	Ground Water	8/15/2012
NIROP-GW-101-5560-081612	1208289-03	Ground Water	8/16/2012
NIROP-GW-101-6065-081612	1208289-04	Ground Water	8/16/2012
NIROP-GW-101-6065-081612-D	1208289-05	Ground Water	8/16/2012
NIROP-GW-101-6570-081612	1208289-06	Ground Water	8/16/2012
NIROP-GW-101-7075-081612	1208289-07	Ground Water	8/16/2012
NIROP-GW-101-7580-081612	1208289-08	Ground Water	8/16/2012
Trip Blank	1208289-09	Water	8/16/2012
NIROP-GW-101-081612-FB	1208289-10	Water	8/16/2012

No administrative issues were encountered during the receipt and analysis of this work order.

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SDG CASE NARRATIVE

Attachment 1
Project Technical Narrative

Sample Result Reporting Convention

Sample results are reported as LOD "U" (e.g. 0.001 U) if the target analyte was not detected above the detection limit (DL). The LOD is the Limit of Detection as defined in the DoD QSM and numerically determined by TriMatrix.

If a sample for an organic analyte is reanalyzed and also reported, the second analysis includes the suffix "RE*n*" where *n* = the first, second, etc. reanalysis. If a sample is reanalyzed for confirmation purposes but that confirmation was not performed simultaneously, the second set of sample results is reported on a second Form 1 since the confirmation analysis did not occur at the same time and/or date.

Data Qualifier Designation

If applicable, sample results are qualified with:

- a "U" flag as defined above;
- a "J" flag if the analyte was detected, but the concentration is greater than the DL and less than the LOQ (the Limit of Quantitation as defined in the DoD QSM);
- a "B" flag if the analyte was detected above one-half the LOQ (above the LOQ for a common laboratory contaminant) in the associated method blank, and the sample concentration was less than or equal to ten times the method blank result;
- a "E" flag if the analyte exceeded the instrument calibration range;
- a "N" flag for a non-target analyte identified as a tentatively identified compound using mass spectrometry;
- a LIMS-generated statement of qualification that will be reported in Attachment 2 to this narrative.

Batch and Analytical Batch Designation

A Quality Control (QC) Batch is a seven-digit number that associates all samples that have been prepared together (or analyzed together if there is no preparation). Quality Control batches are limited to no more than twenty samples, excluding batch QC (method blanks, control spikes, etc.). Some batches may contain multiple sets of method blanks (BLK) and laboratory control samples (BS), where a set of method quality control analyses were prepared in concert with each set of samples on a given day.

An Analytical Batch (or Sequence) is a seven-digit number that associates all samples analyzed as a set under one analytical run.

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TRIMATRIX LABORATORIES

SDG CASE NARRATIVE

Attachment 2
Statement of Data Qualifications

Volatile Organic Compounds by EPA Method 8260B

Qualification: The SCV for this initial calibration had a recovery outside the control limit. All results for this analyte in the associated calibration should be considered as estimated.

Analysis: USEPA-8260B

Sample/Analyte:		
	1208289-01 NIROP-GW-101-4550-081512	Carbon Disulfide
	1208289-02 NIROP-GW-101-5055-081512	Carbon Disulfide
	1208289-03 NIROP-GW-101-5560-081612	Carbon Disulfide
	1208289-04 NIROP-GW-101-6065-081612	Carbon Disulfide
	1208289-05 NIROP-GW-101-6065-081612-D	Carbon Disulfide
	1208289-06 NIROP-GW-101-6570-081612	Carbon Disulfide
	1208289-06RE1 NIROP-GW-101-6570-081612	Carbon Disulfide
	1208289-07 NIROP-GW-101-7075-081612	Carbon Disulfide
	1208289-07RE1 NIROP-GW-101-7075-081612	Carbon Disulfide
	1208289-08 NIROP-GW-101-7580-081612	Carbon Disulfide
	1208289-08RE1 NIROP-GW-101-7580-081612	Carbon Disulfide
	1208289-09 Trip Blank	Carbon Disulfide
	1208289-10 NIROP-GW-101-081612-FB	Carbon Disulfide

Qualification: The CCV for this analytical sequence had a recovery outside the control limit. All results for this analyte in the analytical sequence should be considered as estimated.

Analysis: USEPA-8260B

Sample/Analyte:		
	1208289-01 NIROP-GW-101-4550-081512	Bromomethane
	1208289-02 NIROP-GW-101-5055-081512	Bromomethane
	1208289-03 NIROP-GW-101-5560-081612	Bromomethane
	1208289-04 NIROP-GW-101-6065-081612	Bromomethane
	1208289-05 NIROP-GW-101-6065-081612-D	Bromomethane
	1208289-06 NIROP-GW-101-6570-081612	Bromomethane
	1208289-06RE1 NIROP-GW-101-6570-081612	2-Hexanone
	1208289-06RE1 NIROP-GW-101-6570-081612	4-Methyl-2-pentanone (MIBK)
	1208289-06RE1 NIROP-GW-101-6570-081612	Bromomethane
	1208289-07 NIROP-GW-101-7075-081612	Bromomethane
	1208289-07RE1 NIROP-GW-101-7075-081612	2-Hexanone
	1208289-07RE1 NIROP-GW-101-7075-081612	4-Methyl-2-pentanone (MIBK)
	1208289-07RE1 NIROP-GW-101-7075-081612	Bromomethane
	1208289-08 NIROP-GW-101-7580-081612	Bromomethane
	1208289-08RE1 NIROP-GW-101-7580-081612	2-Hexanone

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SDG CASE NARRATIVE

Attachment 2
Statement of Data Qualifications

Volatile Organic Compounds by EPA Method 8260B

Sample/Analyte:	1208289-08RE1 NIROP-GW-101-7580-081612	4-Methyl-2-pentanone (MIBK)
	1208289-08RE1 NIROP-GW-101-7580-081612	Bromomethane
	1208289-09 Trip Blank	Bromomethane
	1208289-10 NIROP-GW-101-081612-FB	Bromomethane

Qualification: The analyte concentration in the associated MB was greater than or equal to 1/2 the LOQ. The positive sample result, which was less than 10 times the MB value, is considered estimated.

Analysis: USEPA-8260B

Sample/Analyte:	1208289-01 NIROP-GW-101-4550-081512	Methyl Acetate
	1208289-05 NIROP-GW-101-6065-081612-D	Methyl Acetate
	1208289-09 Trip Blank	Methyl Acetate

Qualification: The analyte concentration in the associated MB for this common lab contaminant was greater than or equal to the LOQ. The positive sample result, which was less than 10 times the MB value, is considered estimated.

Analysis: USEPA-8260B

Sample/Analyte:	1208289-01 NIROP-GW-101-4550-081512	Acetone
	1208289-02 NIROP-GW-101-5055-081512	Acetone
	1208289-03 NIROP-GW-101-5560-081612	Acetone
	1208289-04 NIROP-GW-101-6065-081612	Acetone
	1208289-05 NIROP-GW-101-6065-081612-D	Acetone
	1208289-06 NIROP-GW-101-6570-081612	Acetone
	1208289-07 NIROP-GW-101-7075-081612	Acetone
	1208289-08 NIROP-GW-101-7580-081612	Acetone
	1208289-09 Trip Blank	Acetone
	1208289-10 NIROP-GW-101-081612-FB	Acetone

Qualification: The analyte concentration in the MB for this common lab contaminant was greater than 1/2 the LOQ, but less than the LOQ. The positive sample result, which was less than 10 times the MB value, is considered estimated.

Analysis: USEPA-8260B

Sample/Analyte:	1208289-06RE1 NIROP-GW-101-6570-081612	Acetone
	1208289-07RE1 NIROP-GW-101-7075-081612	Acetone
	1208289-08RE1 NIROP-GW-101-7580-081612	Acetone

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TRIMATRIX LABORATORIES

SDG CASE NARRATIVE

Attachment 2
Statement of Data Qualifications

Volatile Organic Compounds by EPA Method 8260B

Qualification: Concentration exceeds calibration range

Analysis: USEPA-8260B

Sample/Analyte:		
	1208289-06 NIROP-GW-101-6570-081612	Trichloroethene
	1208289-07 NIROP-GW-101-7075-081612	Trichloroethene
	1208289-08 NIROP-GW-101-7580-081612	Trichloroethene

Qualification: The MS and/or MSD recovery exceeded the upper control limit. The non-spiked sample result for the same analyte was non-detect and is not qualified.

Analysis: USEPA-8260B

Sample/Analyte:		
	1208289-03 NIROP-GW-101-5560-081612	Bromomethane

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Chain of Custody Record

COC No. 141922

Pg. 1 of 1

Analyses Requested

Client Name	CH2M HILL
Address	135 South 84th Street
City, State Zip	Milwaukee, WI 53214
Phone/Fax	414 272 2426 / 414 272 4408
Email	renee.hunt@ch2m.com
Project Name	NIROP-Fridley
Client Project No. / P.O. No.	
Invoice To	☑ Client ☐ Other (comments)
Contact/Report To	Renee Hunt

	Field Sample ID	Cooler ID	Sample Date	Sample Time	COMP	GRAB	Matrix	VOCs 8260 (D)	Total	Sample Comments
								Number of Containers Submitted		
1	NIROP-GW-101-4550-081512	1	8-15-12	12:00		✓	AQ	4		
2	NIROP-GW-101-5055-081512	1	8-15-12	16:30		✓	AQ	4		
3	NIROP-GW-101-5560-081612	1	8-16-12	9:00		✓	AQ	12		MS/MSD
4	NIROP-GW-101-6065-081612	1	"	1015		✓	AQ	4		
5	NIROP-GW-101-6065-081612-D	1	"	1020		✓	AQ	4		
6	NIROP-GW-101-6570-081612	1	"	1130		✓	AQ	4		
7	NIROP-GW-101-7075-081612	1	"	1240		✓	AQ	4		
8	NIROP-GW-101-7580-081612	1	"	1400		✓	AQ	4		
9	Trip Blank	1	8-16-12	0900		✓	AQ	1		
10	NIROP-GW-101-081612-FB	1	8/16/12	1201		✓	AQ	4		

PRESERVATIVES
A NONE pH~7
B HNO_3 pH<2
C H_2SO_4 pH<2
D 1+1 HCl pH<2
E NaOH pH>12
F ZnAc/NaOH pH>9
G MeOH
H Other (note below)

Sampled By (print)	Michael Niebauer
Sampler's Signature	[signature]
Company	CH2M HILL
How Shipped?	Hand ___ Carrier x Fed-ex
Tracking No.	
Comments	
1. Relinquished By	[signature] Date 1700 Time 8/16/12
1. Received By	Date Time
2. Relinquished By	Date Time
2. Received By	Date Time
3. Relinquished By	Date Time

WHITE COPY - REPORT YELLOW COPY - LABORATORY PINK COPY - FIELD

SAMPLE RECEIVING / LOG-IN CHECKLIST

TRIMATRIX LABORATORIES

Client	Chem Hill	Work Order #: New / Add To	1208289
Receipt Record Page/Line #	15.4	Project Chemist	WR
		Sample #s	

Recorded by (initials/date) WC 8-17-12	☑ Cooler ☐ Box ☐ Other	Qty Received 1	Thermometer Used ☑ IR Gun (#202) ☐ Digital Thermometer (#54) ☐ Other (#) ☐ See Additional Cooler Information Form

Cooler #	Cooler #	Cooler #	Cooler #
Time	Time	Time	Time
Tm1790 0900			
Custody Seals: ☐ None ☑ Present / Intact ☐ Present / Not Intact	Custody Seals: ☐ None ☐ Present / Intact ☐ Present / Not Intact	Custody Seals: ☐ None ☐ Present / Intact ☐ Present / Not Intact	Custody Seals: ☐ None ☐ Present / Intact ☐ Present / Not Intact
Coolant Location: Dispersed / Top / Middle / Bottom	Coolant Location: Dispersed / Top / Middle / Bottom	Coolant Location: Dispersed / Top / Middle / Bottom	Coolant Location: Dispersed / Top / Middle / Bottom
Coolant/Temperature Taken Via: ☐ Loose Ice / Avg 2-3 containers ☑ Bagged Ice / Avg 2-3 containers ☐ Blue Ice / Avg 2-3 containers ☐ None / Avg 2-3 containers	Coolant/Temperature Taken Via: ☐ Loose Ice / Avg 2-3 containers ☐ Bagged Ice / Avg 2-3 containers ☐ Blue Ice / Avg 2-3 containers ☐ None / Avg 2-3 containers	Coolant/Temperature Taken Via: ☐ Loose Ice / Avg 2-3 containers ☐ Bagged Ice / Avg 2-3 containers ☐ Blue Ice / Avg 2-3 containers ☐ None / Avg 2-3 containers	Coolant/Temperature Taken Via: ☐ Loose Ice / Avg 2-3 containers ☐ Bagged Ice / Avg 2-3 containers ☐ Blue Ice / Avg 2-3 containers ☐ None / Avg 2-3 containers
Alternate Temperature Taken Via: ☐ Temperature Blank (TB) ☐ 1 Container	Alternate Temperature Taken Via: ☐ Temperature Blank (TB) ☐ 1 Container	Alternate Temperature Taken Via: ☐ Temperature Blank (TB) ☐ 1 Container	Alternate Temperature Taken Via: ☐ Temperature Blank (TB) ☐ 1 Container
Recorded °C / Correction Factor °C / Actual °C	Recorded °C / Correction Factor °C / Actual °C	Recorded °C / Correction Factor °C / Actual °C	Recorded °C / Correction Factor °C / Actual °C
Temp Blank:	Temp Blank:	Temp Blank:	Temp Blank:
TB location: Representative / Not Representative	TB location: Representative / Not Representative	TB location: Representative / Not Representative	TB location: Representative / Not Representative
1 5.0 - 5.0	1	1	1
2 5.7 - 5.7	2	2	2
3 5.5 - 5.5	3	3	3
Average °C 5.4	Average °C	Average °C	Average °C
☐ Cooler ID on COC?	☐ Cooler ID on COC?	☐ Cooler ID on COC?	☐ Cooler ID on COC?
☑ VOC Trip Blank received?	☐ VOC Trip Blank received?	☐ VOC Trip Blank received?	☐ VOC Trip Blank received?

If any shaded areas checked, complete Sample Receiving Non-Conformance and/or Inventory Form

Paperwork Received

Yes	No	
☑	■	Chain of Custody record(s)? If No, Initiated By _____
☑		Received for Lab Signed/Date/Time?
☑	☐	Shipping document?
☐	☑	Other _____

COC Information

☑ TriMatrix COC ☐ Other _____

COC ID Numbers: 141922

Check Sample Preservation

N/A	Yes	No	
	☑	☐	Average sample temperature ≤6° C?
☑	■	☐	Was thermal preservation required?
☑		☐	If "No", Project Chemist Approval Initials: _____
☑		☐	If "Yes" Completed Non Con Cooler - Cont Inventory Form?
☑		☐	Completed Sample Preservation Verification Form?
☑		■	Samples chemically preserved correctly?
☑		☐	If "No", added orange tag?
		☐	Received pre-preserved VOC soils? ☐ MeOH ☐ Na_2SO_4

Check COC for Accuracy

Yes	No	
☑	☐	Analysis Requested?
☑	■	Sample ID matches COC?
☑	■	Sample Date and Time matches COC?
☑		Container type completed on COC?
☑	■	All container types indicated are received?

Check for Short Hold-Time Prep/Analyses

☐ Bacteriological
☐ Air Bags
☐ EnCores / Methanol Pre-Preserved
☐ Formaldehyde/Aldehyde
☐ Green-tagged containers
☐ Yellow/White-tagged 1L ambers (SV Prep-Lab)

AFTER HOURS ONLY: COPIES OF COC TO LAB AREA(S)
☑ NONE RECEIVED
☐ RECEIVED, COCs TO LAB(S)

Sample Condition Summary

N/A	Yes	No	
	■	☑	Broken containers/lids?
	■	☑	Missing or incomplete labels?
	■	☑	Illegible information on labels?
	■	☑	Low volume received?
	■	☑	Inappropriate or non-TriMatrix containers received?
☐	■	☑	VOC vials / TOX containers have headspace?
☐	■	☑	Extra sample locations / containers not listed on COC?

Notes

☑ Trip Blank received ☐ Trip Blank not listed on COC

Cooler Received (Date/Time)	Paperwork Delivered (Date/Time)	≤1 Hour Goal Met?
8-17-12 0830	8-17-12 0909	(Yes) / No

Attachment D
Investigation Derived Waste Documentation

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number N/A	2. Page 1 of 1	3. Emergency Response Phone 847-530-7573	4. Waste Tracking Number

5. Generator's Name and Mailing Address
NAVFAC MIDWEST Naval Station Great Lakes IL
201 Decatur Ave., BLDG 1A, EV3, Great Lakes, IL 60088-2801
Generator's Phone: 612 713-4649 Attn: Howard Hickey

Generator's Site Address (if different than mailing address)
NAVFAC
4800 East River Road
Fridley, MN 55421

6. Transporter 1 Company Name: Determan Brownie, Inc. — U.S. EPA ID Number: N/A

7. Transporter 2 Company Name: Nortru, LLC — U.S. EPA ID Number: MID 021 087 275

8. Designated Facility Name and Site Address
Solvent Recovery Corp.
700 Mulberry Street
816 474-1391 Kansas City, MO 64101
Facility's Phone:
U.S. EPA ID Number: MOD 000 610 766

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	RCRA Nonhazardous, DOT Nonregulated water		DM	6	G	
2.	RCRA Nonhazardous, DOT Nonregulated soil		DM	3	P	
3.						
4.						

13. Special Handling Instructions and Additional Information
1. 550998-00 Nonhaz. IDW water
2. 550963-00 Nonhaz. IDW soil
CESI Job# ROAN-TFORT-4205-21481

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: David C. Fredrichs — Signature: [signature] — Month 9 Day 20 Year 12

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Ryan Hertges — Signature: [signature] — Month 9 Day 20 Year 12
Transporter 2 Printed/Typed Name: Bruce Bliel — Signature: [signature] — Month 10 Day 2 Year 12

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Clay Ingram — Signature: [signature] — Month 10 Day 17 Year 12

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

169-BLS-C 8 10/97 (Rev. 8/06) DESIGNATED FACILITY TO GENERATOR

ORGANIC ANALYSIS DATA SHEET
USEPA-8082A

IDW-S-SB101

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP081812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Soil Laboratory ID: 1208319-03 File ID: AAUA016-0

Sampled: 08/17/12 12:00 Prepared: 08/21/12 08:36 Analyzed: 08/23/12 15:55

Solids: 86.70 Preparation: 3550C Sonication Extrac Initial/Final: 29.3 g / 10 mL

QC Batch: 1210127 Sequence: 2H24016 Calibration: 2H24002 Instrument: 144

CAS No.	Analyte	Dilution	CONC. (mg/kg dry)	DL	LOD	LOQ	Q
12674-11-2	Aroclor-1016	1	0.015	0.015	0.015	0.38	U
11104-28-2	Aroclor-1221	1	0.015	0.015	0.015	0.38	U
11141-16-5	Aroclor-1232	1	0.015	0.015	0.015	0.38	U
53469-21-9	Aroclor-1242	1	0.015	0.0080	0.015	0.38	U
12672-29-6	Aroclor-1248	1	0.015	0.015	0.015	0.38	U
11097-69-1	Aroclor-1254	1	0.015	0.0039	0.015	0.38	U
11096-82-5	Aroclor-1260	1	0.015	0.015	0.015	0.38	U

System Monitoring Compound	ADDED (mg/kg dry)	CONC (mg/kg dry)	% Rec.	QC Limits	Q
Decachlorobiphenyl	0.0394	0.0384	98	60 - 125	
Tetrachloro-m-xylene	0.0394	0.0356	90	32 - 129	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8082A

IDW-W-SB101

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP081812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Water Laboratory ID: 1208319-04 File ID: AAUA286-0

Sampled: 08/17/12 12:30 Prepared: 08/24/12 12:25 Analyzed: 08/30/12 00:01

Solids: Preparation: 3510C Liquid-Liquid Ex Initial/Final: 950 mL / 2 mL

QC Batch: 1210341 Sequence: 2H31032 Calibration: 2H24002 Instrument: 144

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
12674-11-2	PCB-1016	1	0.080	0.037	0.080	0.20	U
11104-28-2	PCB-1221	1	0.080	0.050	0.080	0.20	U
11141-16-5	PCB-1232	1	0.080	0.045	0.080	0.20	U
53469-21-9	PCB-1242	1	0.080	0.042	0.080	0.20	U
11097-69-1	PCB-1254	1	0.080	0.044	0.080	0.20	U
11096-82-5	PCB-1260	1	0.080	0.039	0.080	0.20	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% Rec.	QC Limits	Q
Decachlorobiphenyl	0.211	0.0619	29	40 - 135	*
Tetrachloro-m-xylene	0.211	0.0448	21	36 - 114	*

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8082A

IDW-W-SB101

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP081812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Water Laboratory ID: 1208319-04RE1 File ID: AAUA365-0

Sampled: 08/17/12 12:30 Prepared: 08/24/12 12:25 Analyzed: 08/31/12 11:16

Solids: Preparation: 3510C Liquid-Liquid Ex Initial/Final: 950 mL / 2 mL

QC Batch: 1210341 Sequence: 2H31039 Calibration: 2H31012 Instrument: 144

CAS No.	Analyte	Dilution	CONC. (ug/L)	DL	LOD	LOQ	Q
12672-29-6	PCB-1248	1	0.035	0.033	0.080	0.20	J

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% Rec.	QC Limits	Q
Decachlorobiphenyl	0.211	0.0583	28	40 - 135	*
Tetrachloro-m-xylene	0.211	0.0547	26	36 - 114	*

* Values outside of QC limits

INORGANIC ANALYSIS DATA SHEET
SM 4500-H B 20th

IDW-W-SB101

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Water
Sampled: 08/17/12 12:30
Solids: 0.00
QC Batch: 1210134

SDG: NIROP081812
Project: NIROP Fridley TO-F270
Laboratory ID: 1208319-04
Prepared: 08/21/12 08:54
Preparation: General Inorganic Prep
Initial/Final: 20 mL / 20 mL

CAS No.	Analyte	Dil. Factor	Conc.	Units	DL	LOD	LOQ	Q	Analyzed
	pH	1	8.6	pH Units		1.0	1.0		08/21/12 14:51

INORGANIC ANALYSIS DATA SHEET
USEPA-1020A

IDW-S-SB101

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Soil
Sampled: 08/17/12 12:00
Solids: 0.00
QC Batch: 1210144

SDG: NIROP081812
Project: NIROP Fridley TO-F270
Laboratory ID: 1208319-01
Prepared: 08/21/12 09:29
Preparation: Method Specific Preparation
Initial/Final: 2 g / 2 mL

CAS No.	Analyte	Dil. Factor	Conc.	Units	DL	LOD	LOQ	Q	Analyzed
	Flashpoint, Closed-Cup	1	> 200	°F			68		08/21/12 10:00

INORGANIC ANALYSIS DATA SHEET
USEPA-1020A

IDW-W-SB101

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Liquid Waste
Sampled: 08/17/12 12:30
Solids: 0.00
QC Batch: 1210144

SDG: NIROP081812
Project: NIROP Fridley TO-F270
Laboratory ID: 1208319-02
Prepared: 08/21/12 09:29
Preparation: Method Specific Preparation
Initial/Final: 2 g / 2 mL

CAS No.	Analyte	Dil. Factor	Conc.	Units	DL	LOD	LOQ	Q	Analyzed
	Flashpoint, Closed-Cup	1	> 200	°F			68		08/21/12 10:00

INORGANIC ANALYSIS DATA SHEET
USEPA-3550B

IDW-S-SB101

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Soil
Sampled: 08/17/12 12:00
Solids: 86.70
QC Batch: 1210443

SDG: NIROP081812
Project: NIROP Fridley TO-F270
Laboratory ID: 1208319-03
Prepared: 08/28/12 09:29
Preparation: General Inorganic Prep
Initial/Final: 10 g / 10 mL

CAS No.	Analyte	Dil. Factor	Conc.	Units	DL	LOD	LOQ	Q	Analyzed
	Percent Solids	1	87	%	0.1	0.1	0.1		08/28/12 10:00

INORGANIC ANALYSIS DATA SHEET
USEPA-7.3.3.2

IDW-S-SB101

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Soil
Sampled: 08/17/12 12:00
Solids: 0.00
QC Batch: 1210327

SDG: NIROP081812
Project: NIROP Fridley TO-F270
Laboratory ID: 1208319-01
Prepared: 08/24/12 07:40
Preparation: 9010C Cyanide Distillation
Initial/Final: 11.16 g / 250 mL

CAS No.	Analyte	Dil. Factor	Conc.	Units	DL	LOD	LOQ	Q	Analyzed
57-12-5	Cyanide Reactivity	1	0.02	mg/kg			10	J	08/24/12 12:34

INORGANIC ANALYSIS DATA SHEET
USEPA-7.3.3.2

IDW-W-SB101

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Liquid Waste
Sampled: 08/17/12 12:30
Solids: 0.00
QC Batch: 1210327

SDG: NIROP081812
Project: NIROP Fridley TO-F270
Laboratory ID: 1208319-02
Prepared: 08/24/12 07:40
Preparation: 9010C Cyanide Distillation
Initial/Final: 10.06 g / 250 mL

CAS No.	Analyte	Dil. Factor	Conc.	Units	DL	LOD	LOQ	Q	Analyzed
57-12-5	Cyanide Reactivity	1	0.01	mg/kg			10	J	08/24/12 12:34

INORGANIC ANALYSIS DATA SHEET
USEPA-7.3.4.2

IDW-S-SB101

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Soil
Sampled: 08/17/12 12:00
Solids: 0.00
QC Batch: 1210360

SDG: NIROP081812
Project: NIROP Fridley TO-F270
Laboratory ID: 1208319-01
Prepared: 08/24/12 14:30
Preparation: Method Specific Preparation
Initial/Final: 10.38 g / 50 mL

CAS No.	Analyte	Dil. Factor	Conc.	Units	DL	LOD	LOQ	Q	Analyzed
18496-25-8	Sulfide Reactivity	1	8	mg/kg			10	J	08/24/12 14:30

INORGANIC ANALYSIS DATA SHEET
USEPA-7.3.4.2

IDW-W-SB101

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Liquid Waste
Sampled: 08/17/12 12:30
Solids: 0.00
QC Batch: 1210360

SDG: NIROP081812
Project: NIROP Fridley TO-F270
Laboratory ID: 1208319-02
Prepared: 08/24/12 14:30
Preparation: Method Specific Preparation
Initial/Final: 10.05 g / 50 mL

CAS No.	Analyte	Dil. Factor	Conc.	Units	DL	LOD	LOQ	Q	Analyzed
18496-25-8	Sulfide Reactivity	1	4	mg/kg			10	J	08/24/12 14:30

INORGANIC ANALYSIS DATA SHEET
USEPA-9045D

IDW-S-SB101

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Soil
Sampled: 08/17/12 12:00
Solids: 0.00
QC Batch: 1210251

SDG: NIROP081812
Project: NIROP Fridley TO-F270
Laboratory ID: 1208319-01
Prepared: 08/23/12 08:10
Preparation: Method Specific Preparation
Initial/Final: 20 g / 20 mL

CAS No.	Analyte	Dil. Factor	Conc.	Units	DL	LOD	LOQ	Q	Analyzed
	pH	1	8.6	pH Units			0.1		08/23/12 11:01

INORGANIC ANALYSIS DATA SHEET
USEPA-6010C

IDW-S-SB101

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Soil
Sampled: 08/17/12 12:00
Solids: 0.00
QC Batch: 1210156

SDG: NIROP081812
Project: NIROP Fridley TO-F270
Laboratory ID: 1208319-01
Prepared: 08/21/12 07:00
Preparation: 3010A TCLP Digestion
Initial/Final: 25 mL / 25 mL

CAS No.	Analyte	Dil. Factor	Conc.	Units	DL	LOD	LOQ	Q	Analyzed
7440-38-2	Arsenic, TCLP	1	0.10	mg/L	0.035	0.10	0.50	U	08/27/12 09:14
7440-39-3	Barium, TCLP	1	0.34	mg/L	0.0027	0.010	0.35	J	08/27/12 09:14
7440-43-9	Cadmium, TCLP	1	0.0050	mg/L	0.0020	0.0050	0.050	U	08/27/12 09:14
7440-47-3	Chromium, TCLP	1	0.0053	mg/L	0.0046	0.010	0.25	J	08/27/12 09:14
7439-92-1	Lead, TCLP	1	0.026	mg/L	0.015	0.050	0.25	J	08/27/12 09:14
7782-49-2	Selenium, TCLP	1	0.089	mg/L	0.033	0.10	0.20	J	08/27/12 09:14
7440-22-4	Silver, TCLP	1	0.010	mg/L	0.0041	0.010	0.050	U	08/27/12 09:14

INORGANIC ANALYSIS DATA SHEET
USEPA-6010C

IDW-W-SB101

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Liquid Waste
Sampled: 08/17/12 12:30
Solids: 0.00
QC Batch: 1210170

SDG: NIROP081812
Project: NIROP Fridley TO-F270
Laboratory ID: 1208319-02
Prepared: 08/22/12 07:00
Preparation: 3010A TCLP Digestion
Initial/Final: 25 mL / 25 mL

CAS No.	Analyte	Dil. Factor	Conc.	Units	DL	LOD	LOQ	Q	Analyzed
7440-38-2	Arsenic, TCLP	1	0.10	mg/L	0.035	0.10	0.50	U	08/27/12 08:57
7440-39-3	Barium, TCLP	1	0.016	mg/L	0.0027	0.010	0.35	J	08/27/12 08:57
7440-43-9	Cadmium, TCLP	1	0.0050	mg/L	0.0020	0.0050	0.050	U	08/27/12 08:57
7440-47-3	Chromium, TCLP	1	0.0057	mg/L	0.0046	0.010	0.25	J	08/27/12 08:57
7439-92-1	Lead, TCLP	1	0.050	mg/L	0.015	0.050	0.25	U	08/27/12 08:57
7782-49-2	Selenium, TCLP	1	0.10	mg/L	0.033	0.10	0.20	U	08/27/12 08:57
7440-22-4	Silver, TCLP	1	0.010	mg/L	0.0041	0.010	0.050	U	08/27/12 08:57

INORGANIC ANALYSIS DATA SHEET
USEPA-7470A

IDW-S-SB101

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Soil
Sampled: 08/17/12 12:00
Solids: 0.00
QC Batch: 1210216

SDG: NIROP081812
Project: NIROP Fridley TO-F270
Laboratory ID: 1208319-01
Prepared: 08/23/12 13:00
Preparation: 7470A TCLP Digestion
Initial/Final: 30 mL / 30 mL

CAS No.	Analyte	Dil. Factor	Conc.	Units	DL	LOD	LOQ	Q	Analyzed
7439-97-6	Mercury, TCLP	1	0.00010	mg/L	0.000055	0.00010	0.00020	U	08/24/12 13:18

INORGANIC ANALYSIS DATA SHEET
USEPA-7470A

IDW-W-SB101

Laboratory: TriMatrix Laboratories, Inc.
Client: CH2M HILL - VA
Matrix: Liquid Waste
Sampled: 08/17/12 12:30
Solids: 0.00
QC Batch: 1210217

SDG: NIROP081812
Project: NIROP Fridley TO-F270
Laboratory ID: 1208319-02
Prepared: 08/23/12 07:00
Preparation: 7470A TCLP Digestion
Initial/Final: 30 mL / 30 mL

CAS No.	Analyte	Dil. Factor	Conc.	Units	DL	LOD	LOQ	Q	Analyzed
7439-97-6	Mercury, TCLP	1	0.00010	mg/L	0.000055	0.00010	0.00020	U	08/24/12 13:48

ORGANIC ANALYSIS DATA SHEET
USEPA-8081B

IDW-S-SB101

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP081812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Soil Laboratory ID: 1208319-01 File ID: AUG230000020.D

Sampled: 08/17/12 12:00 Prepared: 08/22/12 07:58 Analyzed: 08/23/12 23:03

Solids: Preparation: 3510C TCLP Liquid-Liq Initial/Final: 10 mL / 10 mL

QC Batch: 1210186 Sequence: 2H24023 Calibration: 2H27004 Instrument: 344

CAS No.	Analyte	Dilution	CONC. (mg/L)	DL	LOD	LOQ	Q
58-89-9	gamma-BHC (Lindane), TCLP	1	0.0050	0.0016	0.0050	0.0050	U
72-20-8	Endrin, TCLP	1	0.0050	0.0016	0.0050	0.0050	U
76-44-8	Heptachlor, TCLP	1	0.0050	0.0014	0.0050	0.0050	U
1024-57-3	Heptachlor Epoxide, TCLP	1	0.0050	0.0017	0.0050	0.0050	U
72-43-5	Methoxychlor, TCLP	1	0.0050	0.0023	0.0050	0.0050	U
57-74-9	technical-Chlordane, TCLP	1	0.0050	0.0048	0.0050	0.025	U
8001-35-2	Toxaphene, TCLP	1	0.062	0.016	0.062	0.062	U

System Monitoring Compound	ADDED (mg/L)	CONC (mg/L)	% Rec.	QC Limits	Q
Tetrachloro-m-xylene, TCLP	0.100	0.102	102	29 - 137	
Decachlorobiphenyl, TCLP	0.100	0.101	101	30 - 134	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8081B

IDW-W-SB101

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP081812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Liquid Waste Laboratory ID: 1208319-02 File ID: AUG230000021.D

Sampled: 08/17/12 12:30 Prepared: 08/22/12 07:58 Analyzed: 08/23/12 23:26

Solids: Preparation: 3510C TCLP Liquid-Liq Initial/Final: 10 mL / 10 mL

QC Batch: 1210186 Sequence: 2H24023 Calibration: 2H27004 Instrument: 344

CAS No.	Analyte	Dilution	CONC. (mg/L)	DL	LOD	LOQ	Q
58-89-9	gamma-BHC (Lindane), TCLP	1	0.0050	0.0016	0.0050	0.0050	U
72-20-8	Endrin, TCLP	1	0.0050	0.0016	0.0050	0.0050	U
76-44-8	Heptachlor, TCLP	1	0.0050	0.0014	0.0050	0.0050	U
1024-57-3	Heptachlor Epoxide, TCLP	1	0.0050	0.0017	0.0050	0.0050	U
72-43-5	Methoxychlor, TCLP	1	0.0050	0.0023	0.0050	0.0050	U
57-74-9	technical-Chlordane, TCLP	1	0.0050	0.0048	0.0050	0.025	U
8001-35-2	Toxaphene, TCLP	1	0.062	0.016	0.062	0.062	U

System Monitoring Compound	ADDED (mg/L)	CONC (mg/L)	% Rec.	QC Limits	Q
Tetrachloro-m-xylene, TCLP	0.100	0.101	101	29 - 137	
Decachlorobiphenyl, TCLP	0.100	0.101	101	30 - 134	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8151A

IDW-S-SB101

Laboratory: TriMatrix Laboratories, Inc.
SDG: NIROP081812
Client: CH2M HILL - VA
Project: NIROP Fridley TO-F270
Matrix: Soil
Laboratory ID: 1208319-01
File ID: AUG27A008-0
Sampled: 08/17/12 12:00
Prepared: 08/23/12 08:08
Analyzed: 08/27/12 13:13
Solids:
Preparation: 3510C TCLP Liquid-Liq
Initial/Final: 10 mL / 100 mL
QC Batch: 1210187
Sequence: 2H28006
Calibration: 2H28001
Instrument: 222

CAS No.	Analyte	Dilution	CONC. (mg/L)	DL	LOD	LOQ	Q
94-75-7	2,4-D, TCLP	1	0.62	0.19	0.62	0.62	U
93-72-1	2,4,5-TP (Silvex), TCLP	1	0.031	0.0095	0.031	0.062	U

System Monitoring Compound	ADDED (mg/L)	CONC (mg/L)	% Rec.	QC Limits	Q
2,4-Dichlorophenylacetic Acid, TCLP	20.0	19.0	95	33 - 153	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8151A

IDW-W-SB101

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP081812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Liquid Waste Laboratory ID: 1208319-02 File ID: AUG27A009-0

Sampled: 08/17/12 12:30 Prepared: 08/23/12 08:08 Analyzed: 08/27/12 13:41

Solids: Preparation: 3510C TCLP Liquid-Liq Initial/Final: 10 mL / 100 mL

QC Batch: 1210187 Sequence: 2H28006 Calibration: 2H28001 Instrument: 222

CAS No.	Analyte	Dilution	CONC. (mg/L)	DL	LOD	LOQ	Q
94-75-7	2,4-D, TCLP	1	0.62	0.19	0.62	0.62	U
93-72-1	2,4,5-TP (Silvex), TCLP	1	0.031	0.0095	0.031	0.062	U

System Monitoring Compound	ADDED (mg/L)	CONC (mg/L)	% Rec.	QC Limits	Q
2,4-Dichlorophenylacetic Acid, TCLP	20.0	20.2	101	33 - 153	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

IDW-S-SB101

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP081812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Soil Laboratory ID: 1208319-01 File ID: 1208319-01.D

Sampled: 08/17/12 12:00 Prepared: 08/22/12 08:00 Analyzed: 08/22/12 13:13

Solids: Preparation: 5030B MS TCLP Initial/Final: 5 g / 5 mL

QC Batch: 1210238 Sequence: 2H23003 Calibration: 2H22012 Instrument: 224

CAS No.	Analyte	Dilution	CONC. (mg/L)	DL	LOD	LOQ	Q
71-43-2	Benzene, TCLP	100	0.020	0.011	0.020	0.10	U
56-23-5	Carbon Tetrachloride, TCLP	100	0.050	0.026	0.050	0.10	U
108-90-7	Chlorobenzene, TCLP	100	0.050	0.017	0.050	0.10	U
67-66-3	Chloroform, TCLP	100	0.020	0.0098	0.020	0.10	U
107-06-2	1,2-Dichloroethane, TCLP	100	0.050	0.021	0.050	0.10	U
75-35-4	1,1-Dichloroethene, TCLP	100	0.050	0.021	0.050	0.10	U
78-93-3	2-Butanone (MEK), TCLP	100	0.10	0.063	0.10	5.0	U
127-18-4	Tetrachloroethene, TCLP	100	0.050	0.023	0.050	0.10	U
79-01-6	Trichloroethene, TCLP	100	0.050	0.021	0.050	0.10	U
75-01-4	Vinyl Chloride, TCLP	100	0.050	0.021	0.050	0.10	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane, TCLP	40.0	41.5	104	79 - 124	
1,2-Dichloroethane-d4, TCLP	40.0	44.8	112	75 - 128	
Toluene-d8, TCLP	40.0	39.2	98	87 - 113	
4-Bromofluorobenzene, TCLP	40.0	37.8	95	70 - 121	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene, TCLP	695003	6.6	621697	6.6	
Chlorobenzene-d5, TCLP	603365	10.8	552268	10.8	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

IDW-W-SB101

Laboratory: TriMatrix Laboratories, Inc.
SDG: NIROP081812
Client: CH2M HILL - VA
Project: NIROP Fridley TO-F270
Matrix: Liquid Waste
Laboratory ID: 1208319-02
File ID: 1208319-02.D
Sampled: 08/17/12 12:30
Prepared: 08/22/12 08:00
Analyzed: 08/22/12 13:40
Solids:
Preparation: 5030B MS TCLP
Initial/Final: 5 g / 5 mL
QC Batch: 1210238
Sequence: 2H23003
Calibration: 2H22012
Instrument: 224

CAS No.	Analyte	Dilution	CONC. (mg/L)	DL	LOD	LOQ	Q
71-43-2	Benzene, TCLP	100	0.020	0.011	0.020	0.10	U
56-23-5	Carbon Tetrachloride, TCLP	100	0.050	0.026	0.050	0.10	U
108-90-7	Chlorobenzene, TCLP	100	0.050	0.017	0.050	0.10	U
67-66-3	Chloroform, TCLP	100	0.020	0.0098	0.020	0.10	U
107-06-2	1,2-Dichloroethane, TCLP	100	0.050	0.021	0.050	0.10	U
75-35-4	1,1-Dichloroethene, TCLP	100	0.050	0.021	0.050	0.10	U
78-93-3	2-Butanone (MEK), TCLP	100	0.10	0.063	0.10	5.0	U
127-18-4	Tetrachloroethene, TCLP	100	0.050	0.023	0.050	0.10	U
79-01-6	Trichloroethene, TCLP	100	0.044	0.021	0.050	0.10	J
75-01-4	Vinyl Chloride, TCLP	100	0.050	0.021	0.050	0.10	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane, TCLP	40.0	40.8	102	79 - 124	
Dichloroethane-d4, TCLP	40.0	44.2	111	75 - 128	
Toluene-d8, TCLP	40.0	38.0	95	87 - 113	
4-Bromofluorobenzene, TCLP	40.0	38.5	96	70 - 121	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
Fluorobenzene, TCLP	734033	6.61	621697	6.6	
Chlorobenzene-d5, TCLP	597344	10.8	552268	10.8	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

IDW-S-SB101

Laboratory: TriMatrix Laboratories, Inc.
SDG: NIROP081812
Client: CH2M HILL - VA
Project: NIROP Fridley TO-F270
Matrix: Soil
Laboratory ID: 1208319-01
File ID: 1208319-01.D
Sampled: 08/17/12 12:00
Prepared: 08/24/12 08:57
Analyzed: 08/25/12 01:40
Solids:
Preparation: 3510C TCLP Liquid-Liqu
Initial/Final: 500 mL / 5 mL
QC Batch: 1210289
Sequence: 2H28065
Calibration: 2H28025
Instrument: 308

CAS No.	Analyte	Dilution	CONC. (mg/L)	DL	LOD	LOQ	Q
106-46-7	1,4-Dichlorobenzene, TCLP	1	0.00010	0.000043	0.00010	0.0050	U
121-14-2	2,4-Dinitrotoluene, TCLP	1	0.00010	0.000082	0.00010	0.0050	U
118-74-1	Hexachlorobenzene, TCLP	1	0.00010	0.000039	0.00010	0.0050	U
87-68-3	Hexachlorobutadiene, TCLP	1	0.000050	0.000030	0.000050	0.0050	U
67-72-1	Hexachloroethane, TCLP	1	0.00010	0.000042	0.00010	0.0050	U
98-95-3	Nitrobenzene, TCLP	1	0.00025	0.000061	0.00025	0.0050	U
110-86-1	Pyridine, TCLP	1	0.00050	0.00017	0.00050	0.050	U
87-86-5	Pentachlorophenol, TCLP	1	0.00050	0.00012	0.00050	0.0050	U
88-06-2	2,4,6-Trichlorophenol, TCLP	1	0.00050	0.00013	0.00050	0.0050	U
95-95-4	2,4,5-Trichlorophenol, TCLP	1	0.00050	0.00014	0.00050	0.0050	U
95-48-7	2-Methylphenol, TCLP	1	0.00010	0.000030	0.00010	0.0050	U
108-39-4	3+4-Methylphenol, TCLP	1	0.00050	0.00012	0.00050	0.0050	U

System Monitoring Compound	ADDED (mg/L)	CONC (mg/L)	% REC.	QC Limits	Q
2-Fluorophenol, TCLP	0.200	0.0948	47	20 - 121	
Phenol-d6, TCLP	0.200	0.0614	31	10 - 105	
Nitrobenzene-d5, TCLP	0.100	0.0855	86	38 - 141	
2-Fluorobiphenyl, TCLP	0.100	0.0823	82	41 - 132	
2,4,6-Tribromophenol, TCLP	0.201	0.141	70	20 - 142	
o-Terphenyl, TCLP	0.101	0.0892	88	39 - 148	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
1,4-Dichlorobenzene-d4, TCLP	434784	7.86	399382	8.01	
Naphthalene-d8, TCLP	1776438	10.606	1625940	10.755	
Acenaphthene-d10, TCLP	782163	14.727	717648	14.888	
Phenanthrene-d10, TCLP	1320541	18.119	1186295	18.245	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

IDW-W-SB101

Laboratory: TriMatrix Laboratories, Inc. SDG: NIROP081812

Client: CH2M HILL - VA Project: NIROP Fridley TO-F270

Matrix: Liquid Waste Laboratory ID: 1208319-02 File ID: 1208319-02.D

Sampled: 08/17/12 12:30 Prepared: 08/24/12 08:57 Analyzed: 08/25/12 02:15

Solids: Preparation: 3510C TCLP Liquid-Liqu Initial/Final: 500 mL / 5 mL

QC Batch: 1210289 Sequence: 2H28065 Calibration: 2H28025 Instrument: 308

CAS No.	Analyte	Dilution	CONC. (mg/L)	DL	LOD	LOQ	Q
106-46-7	1,4-Dichlorobenzene, TCLP	1	0.00010	0.000043	0.00010	0.0050	U
121-14-2	2,4-Dinitrotoluene, TCLP	1	0.00010	0.000082	0.00010	0.0050	U
118-74-1	Hexachlorobenzene, TCLP	1	0.00010	0.000039	0.00010	0.0050	U
87-68-3	Hexachlorobutadiene, TCLP	1	0.000050	0.000030	0.000050	0.0050	U
67-72-1	Hexachloroethane, TCLP	1	0.00010	0.000042	0.00010	0.0050	U
98-95-3	Nitrobenzene, TCLP	1	0.00025	0.000061	0.00025	0.0050	U
110-86-1	Pyridine, TCLP	1	0.00050	0.00017	0.00050	0.050	U
87-86-5	Pentachlorophenol, TCLP	1	0.00050	0.00012	0.00050	0.0050	U
88-06-2	2,4,6-Trichlorophenol, TCLP	1	0.00050	0.00013	0.00050	0.0050	U
95-95-4	2,4,5-Trichlorophenol, TCLP	1	0.00050	0.00014	0.00050	0.0050	U
95-48-7	2-Methylphenol, TCLP	1	0.00010	0.000030	0.00010	0.0050	U
108-39-4	3+4-Methylphenol, TCLP	1	0.00050	0.00012	0.00050	0.0050	U

stem Monitoring Compound	ADDED (mg/L)	CONC (mg/L)	% REC.	QC Limits	Q
2-Fluorophenol, TCLP	0.200	0.0937	47	20 - 121	
Phenol-d6, TCLP	0.200	0.0598	30	10 - 105	
Nitrobenzene-d5, TCLP	0.100	0.0822	82	38 - 141	
2-Fluorobiphenyl, TCLP	0.100	0.0800	80	41 - 132	
2,4,6-Tribromophenol, TCLP	0.201	0.153	76	20 - 142	
o-Terphenyl, TCLP	0.101	0.0883	87	39 - 148	

Internal Standard	Area	RT	Ref. Area	Ref. RT	Q
1,4-Dichlorobenzene-d4, TCLP	436829	7.86	399382	8.01	
Naphthalene-d8, TCLP	1781768	10.605	1625940	10.755	
Acenaphthene-d10, TCLP	792269	14.726	717648	14.888	
Phenanthrene-d10, TCLP	1340521	18.119	1186295	18.245	

* Values outside of QC limits