2014 OU2 GROUNDWATER INVESTIGATION
VPB 145
BETHPAGE, NY

Prepared for:

Department of the Navy
Naval Facilities Engineering Command, Mid-Atlantic
9742 Maryland Ave.
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CTO WE15

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List of Acronyms and Abbreviations

AOC	Area of Concern
bgs	below ground surface
DoD	Department of Defense
ELAP	Environmental Laboratory Accreditation Program
EPA	Environmental Protection Agency, United States
ft	feet
GOCO	Government-Owned Contractor-Operated
IDW	Investigation Derived Waste
IR	Installation Restoration
Katahdin	Katahdin Analytical Services, Inc
NAD	North American Datum
NAVD	North American Vertical Datum
NAVFAC	Naval Facilities Engineering Command
NG	Northrop Grumman
NWIRP	Naval Weapons Industrial Reserve Plant
NYSDEC	New York State Department of Environmental Conservation
ONCT	On-site Containment Treatment System
OU	Operable Unit
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethene
PID	Photoionization Detector
POTW	Publicly Owned Treatment Works
PPE	Personal Protective Equipment
RTN	Real Time Networks
SAP	Sampling and analysis plan
SVOC	Semivolatile Organic Compounds
TCE	Trichloroethene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TOC	Total Organic Carbon
UFP	United Federal Programs
VOC	Volatile Organic Compounds
VPB	Vertical Profile Boring

1.0 PROJECT BACKGROUND

Resolution Consultants has prepared this Data Summary Report for the Naval Facilities Engineering Command, Mid-Atlantic under contract task order WE15 Contract N62470-11-D-8013. This report describes vertical profile boring (VPB) installation activities (specifically at the VPB 145 location) in 2014 for the Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage Operable Unit (OU) 2 Site 1 offsite plume. NWIRP Bethpage is located in east-central Nassau County, Long Island, New York, approximately 30 miles east of New York City (Figure 1).

1.1 Scope and Objectives

This data summary report provides information on the installation of VPB 145. The purpose of the VPB 145 investigation was to ascertain subsurface conditions and contaminant levels upgradient of the Massapequa Water District wells and to design outpost wells that will be used to provide early warning of plume migration toward the Massapequa Water District wellfield. VPB locations within the general vicinity of VPB 145 are shown in Figure 2. VPB 145 was completed to 1025 feet (ft) below ground surface (bgs).

Field tasks were conducted in 2014 in accordance with the *United Federal Programs Sampling and Analysis Plan (UFP SAP)*, Bethpage, New York and the UFP SAP Addendum Installation of Vertical Profile Borings and Monitoring Wells (Resolution Consultants, 2013). The field investigation included completing one vertical profile boring, groundwater grab samples, geophysical logging and surveying.

Documentation of these activities is included in Appendix A of this report.

1.2 Site History

NWIRP Bethpage is in the Hamlet of Bethpage, Town of Oyster Bay, New York. Since its inception in 1941, the plant's primary mission was the research prototyping, testing, design, engineering, fabrication, and primary assembly of military aircraft. The facilities at NWIRP included four plants used for assembly and prototype testing, a group of quality control laboratories, two warehouse complexes (north and south), a salvage storage area, water recharge basins, the Industrial Wastewater Treatment Plant, and several smaller support buildings.

The Navy's property originally totaled 109.5 acres and was formerly a Government-Owned Contractor-Operated (GOCO) facility that was operated by Northrop Grumman (NG) until September 1998. Prior to 2002, the NWIRP property was bordered on the north, west, and south

by current or former NG facilities, and on the east by a residential neighborhood. By March 2008, approximately 100 acres of NWIRP property were transferred to Nassau County in three separate actions. The remaining 9 acres and access easements were retained by the Navy to continue remedial efforts at Installation Restoration (IR) Site 1 – Former Drum Marshalling Area and Site 4 – Former Underground Storage Tanks (Area of Concern [AOC] 22). A parcel of land connecting the two sites was also retained. Currently, the 9-acre parcel of NWIRP is bordered on the east by the residential neighborhood and on the north, south, and west by Nassau County property. Access to the NWIRP is from South Oyster Bay Road.

1.3 Geology and Hydrogeology

Overburden at the site consists of well over 1,000 ft of Cretaceous deposits overlying crystalline bedrock of the Hartland Formation. Overburden is divided into four geologic units: the upper Pleistocene deposits, the Magothy Formation, the clay member of the Raritan Formation ("Raritan Clay") and the Lloyd Sand member of the Raritan Formation ("Lloyd Sand") (Geraghty and Miller, 1994).

The upper Pleistocene ranges in thickness from approximately 50 to 100 ft and consists of till and outwash deposits of medium to coarse sand and gravel with lenses of fine sand, silt and clay (Smolensky and Feldman, 1990); these deposits form the Upper Glacial Aquifer. Directly underlying this unit is the Magothy Formation with a thickness of 650 to 900 ft bgs observed onsite. The Magothy is characterized by fine to medium sands and silts interbedded with zones of clays, silty sands and sandy clays. Sand and gravel lenses are found in some areas between depths of 600 and 875 ft bgs; these deposits form the Magothy Aquifer.

Investigations performed by the Navy since 2012 indicate that the bottom of the Magothy (top of the Raritan Clay) can extend to depths of 700 to greater than 1,000 ft bgs. The top of the Raritan Clay deepens to the south southeast, as evidenced by clay depths of 1,000 ft bgs (or more) in borings installed in the offsite plume to date. The Raritan Clay Unit is of continental origin and consists of clay, silty clay, clayey silt, and fine silty sand. This member acts as a confining layer over the Lloyd Sand Unit. The Lloyd Sand Unit is also of continental origin, having been deposited in a large fresh water lacustrine environment. The material consists of fine to coarse-grained sands, gravel, inter-bedded clay, and silty sand. These deposits form the Lloyd Aquifer.

The Upper Glacial Aquifer and the Magothy Aquifer comprise the aquifers of interest at the NWIRP. Regionally, these formations are generally considered to form a common, interconnected aquifer as

the coarse nature of each unit near their contact and the lack of any regionally confining clay unit allows for the unrestricted flow of groundwater between the formations.

The Magothy Aquifer is the major source of public water in Nassau County. The most productive water bearing zones are the discontinuous lenses of sand and gravel that occur within the siltier matrix. The major water-bearing zones are course sand and gravel lenses located in the lower portion of the Magothy. The Magothy Aquifer is commonly regarded to function overall as an unconfined aquifer at shallow depths and a confined aquifer at deeper depths. The drilling program at the NWIRP has revealed that clay zones beneath the facility are common but laterally discontinuous. No confining clay units of facility-wide extent have been encountered.

Groundwater is encountered at a depth of approximately 50 ft bgs at the facility. Historically, because of pumping and recharge at the facility, groundwater depths have been measured to range from 40 to 60 ft bgs. The regional groundwater flow in the area is to the south-southeast.

2.0 FIELD PROGRAM

Field investigation activities at VPB 145 consisted of drilling, sampling, soil/groundwater analysis, geophysical logging, and surveying. Drilling during this investigation was performed by Delta Well and Pump Company of Ronkonkoma, New York. A description of these tasks is provided below.

2.1 Vertical Profile Borings

One vertical profile boring (VPB 145) was completed during this field effort between April 3, 2014 and May 20, 2014. The total depth of VPB 145 was 1025 ft. The location is shown in Figure 2 and details are summarized in Table 1.

2.1.1 Drilling

VPB 145 was installed by drilling an 8-inch diameter hole using mud rotary drilling techniques. Drilling mud consisted of potable water and polymer-free sodium bentonite or equivalent. Drilling mud was contained and re-circulated in baffled, high capacity mud tubs. A sand separator was used intermittently to remove fines from circulation.

2.1.2 Sampling

A total of 15 split spoon samples were collected from ground surface to the bottom of the boring. A change in geology was observed by the field geologist at 993 ft bgs and five split spoon samples were subsequently collected to confirm the presence of the Raritan Clay. Samples were logged by the field geologist and screened for Volatile Organic Compounds (VOCs) utilizing a photoionization detector (PID). A detailed boring log for VPB 145 is included in Appendix A.

Groundwater grab samples were collected every 50 ft for the first 200 ft of borehole depth. After the first 200 ft, groundwater grab samples were collected approximately every 20 ft until the boring terminated in the Raritan. Groundwater grab samples were collected with a hydropunch sampler and analyzed for VOCs using Environmental Protection Agency (EPA) Method 8260B. The groundwater grab samples were analyzed by Katahdin Analytical Services (Katahdin), a Department of Defense (DoD), Environmental Laboratory Accreditation Program (ELAP), and New York State Department of Environmental Conservation (NYSDEC)-certified laboratory. During the collection of groundwater grab samples, field parameters were measured (pH, temperature, specific conductivity, oxidation reduction potential, dissolved oxygen, and turbidity). Data validation was performed by Resolution Consultants. Groundwater grab sample logs, data validation packages, and analytical data tables are included in Appendix A.

One soil sample was collected for laboratory analysis for total organic carbon (TOC) by EPA series SW-846 method 9060A. During drilling, air sampling was conducted under a Community Air Monitoring Plan. One air sample was collected per VPB using Summa canisters and submitted for laboratory analysis by EPA Method TO-15. All analyses were performed or sub-contracted by Katahdin. Data validation of both TOC and air data was performed by Resolution Consultants. Data validation packages and analytical data tables are included in Appendix A.

2.1.3 Geophysics

Borehole geophysical logs (gamma) were recorded after the borehole was drilled but prior to the removal of drill rods. A Mount Sopris Instrument model 2PGA-100 poly gamma was used. Starting at the top of the hole, the probe was advanced at a maximum rate of 12 ft per minute. A copy of the log was printed in the field for review once the probe reached the bottom of the borehole. The instrument was then raised to the top of the boring and a second log was generated and printed in the field. The down hole gamma log sheets and plots comparing the gamma log with trichloroethene (TCE) and tetrachloroethene (PCE) concentrations from hydropunch samples are included in Appendix A.

2.2 Decontamination and Investigation Derived Waste (IDW)

Resolution Consultants utilized dedicated and disposable sampling equipment when possible to avoid the potential for cross-contamination of samples. The sampling equipment included dedicated plastic scoops, disposable Teflon or polyethylene tubing, disposable gloves, and laboratory supplied sample bottles. Hand held equipment, split spoons, and the hydropunch were decontaminated using Liquinox and water wash, a potable water rinse, followed by a distilled water rinse. Water was collected in 5-gallon pails or 55-gallon drums.

As part of the IDW management practices and in accordance with the SAP, the investigation waste (consisting of soil cuttings, drilling muds, IDW fluids, and personal protective equipment (PPE)) generated during the boring installation was containerized and staged at NWIRP Bethpage. IDW solids were characterized and disposed of properly. Representative samples from each roll off were submitted to Katahdin for analysis of:

- Target Compound List (TCL) VOCs
- TCL Semi-volatile Organic Compounds (SVOCs)
- Toxicity Characteristic Leaching Procedure (TCLP) Metals

- Polychlorinated Biphenyls (PCBs)
- Total petroleum hydrocarbons
- Corrosivity
- Ignitability
- Reactive Cyanide
- Reactive Sulfide
- Paint Filter

IDW water was containerized in frac tanks and stored at NWIRP Bethpage for characterization and ultimate disposal to the Publicly Owned Treatment Works (POTW), in accordance with the facilities existing discharge permit. A representative water sample was collected from each frac tank and submitted to Katahdin for analysis of VOCs via Method SW 624, pH via Method SW 9040B, PCBs via Method 8082 and Total Metals via Method SW 846 (all waters). To the extent feasible, soil and water were not mixed. All analytical criteria were met for disposal of soil and water.

2.3 Surveying

A survey of the boring location was conducted at the end of fieldwork by C. T. Male, Inc., of Latham, NY, under the direct supervision of Resolution Consultants. The location was tied into the existing base map developed for this investigation. The survey elevation is referenced to the North American Vertical Datum (NAVD) 1988 and has a vertical accuracy of 0.01 foot. Vertical control is based on observations of COR Stations Queens and Central Islip. The horizontal location is referenced to the North American Datum (NAD) 1983 (2011) N.Y. Long Island Zone 3104 and has an accuracy of 0.1 foot. Local horizontal and vertical control is based on GPS observations using the NYS Net Real Time Network.

A table of survey data (ground, latitude/longitude and northing/easting) and a survey map is included in Appendix A.

3.0 REFERENCES

Geraghty and Miller, Inc., 1994. *Remedial Investigation Report, Grumman Aerospace Corporation, Bethpage, New York*. Revised September 1994.

Naval Facilities Engineering Command (NAVFAC), 2003. *Record of Decision Naval Weapons Industrial Reserve Plant Bethpage, New York, Operable Unit 2 – Groundwater*, NYS Registry: 1-30-003B. April.

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Resolution Consultants, 2013. UFP SAP Addendum, *Groundwater Sampling Using Low Stress (Low Flow) Purging and Sampling* Protocol. November.

Resolution Consultants, 2013. UFP SAP Addendum*, Installation of Vertical Profile Borings and Monitoring Wells.* December.

Smolensky, D., and Feldman, S., 1990. *Geohydrology of the Bethpage-Hicksville-Levittown Area, Long Island, New York, U.S*. Geological Survey Water-Resourced Investigations Report 88-4135, 25 pp.

Tables

TABLE 1
VERTICAL PROFILE BORING SUMMARY
2014 OU2 GROUNDWATER INVESTIGATION
NWIRP BETHPAGE, NY

BORING	BORING START DATE	BORING COMPLETION DATE	GROUND ELEVATION (MSL)	TOTAL DEPTH (ft bgs)	SURFACE CASING SET AT (ft bgs)	NO. OF SPOON SAMPLES	GAMMA LOG (ft bgs)	NO. GW SAMPLES COLLECTED/ ATTEMPTED	TOC SAMPLES	DATE OF AIR SAMPLE	MONITORING WELLS INSTALLED AT LOCATION
VP 145	4/3/2014	5/20/2014	44.20	1025	53	15	1024.9	39/48*	1 (363-365 ft bgs)	5/7/2014	Pending

* includes 2 field duplicates

Figures

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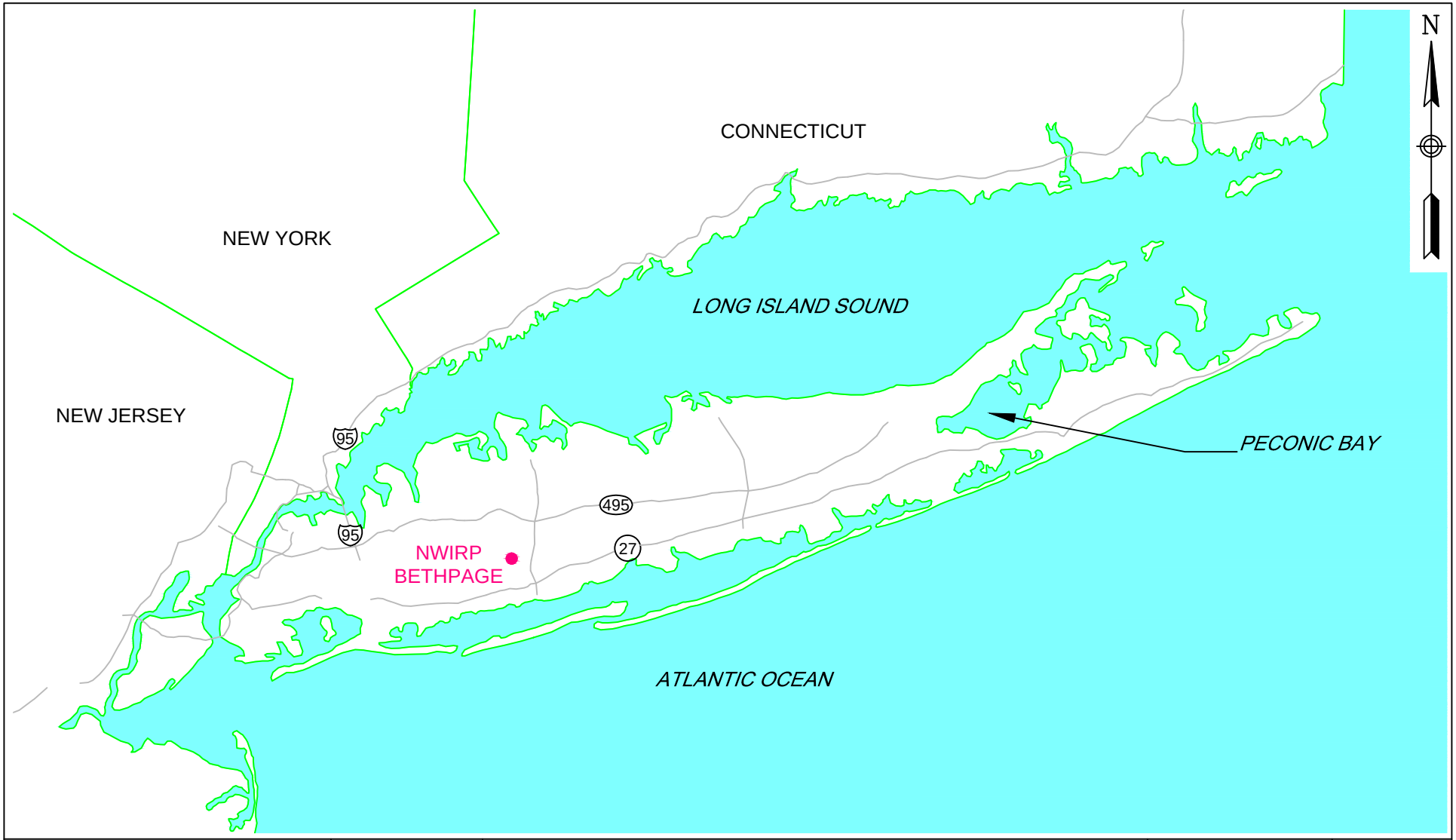


0 15 30

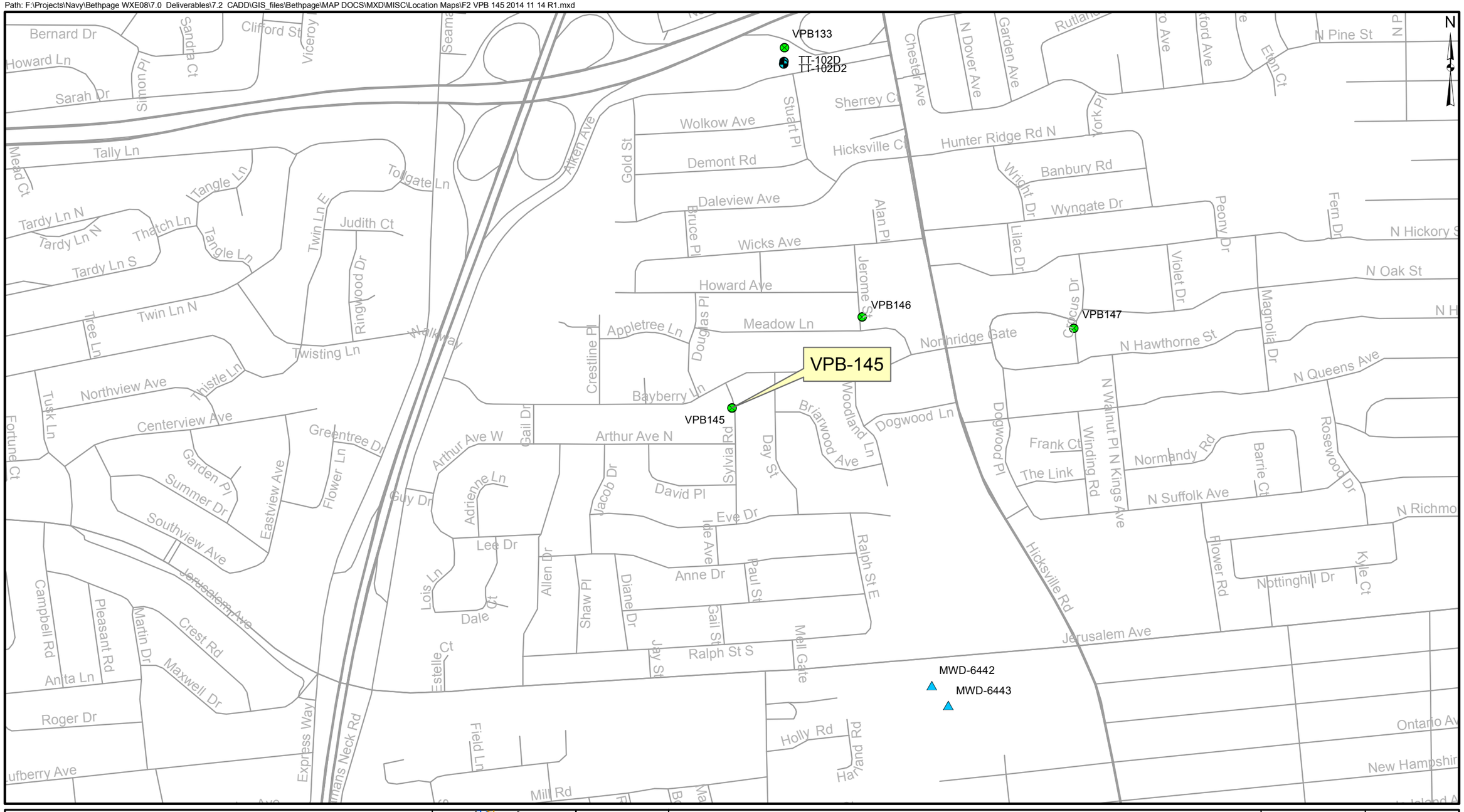
SCALE IN MILES

NAVFAC

GENERAL LOCATION MAP
NWIRP BETHPAGE
BETHPAGE, NEW YORK

CONTRACT NUMBER	CTO NUMBER
N62470-11-D-8013	WE15
APPROVED BY --	DATE --
APPROVED BY --	DATE --
FIGURE NO. 1	REV 0

Path: F:\Projects\Navy\Bethpage WXE08\7.0 Deliverables\7.2 CADD\GIS_files\Bethpage\MAP DOCS\MXD\MISC\Location Maps\F2 VPB 145 2014 11 14 R1.mxd



VPB 145 LOCATION MAP
OPERABLE UNIT 2 (SITE 1)
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

CONTRACT NUMBER	CTO NUMBER
N62470-11-D-8013	WE15
APPROVED BY: PS	DATE: 11/24/2014
APPROVED BY: —	DATE: —
FIGURE NO.: 2	REV: 1

Appendix A

VPB 145

Section 1

VPB 145 Boring and Gamma Logs

Resolution Consultants

Boring Log

BORING #: VPB145

Client: Department of the Navy, Naval Facilities Engineering Command, Mid-Atlantic		**Logged By:** V. Thayer
Location: Bayberry Lane and Sylvia Road, Bethpage, NY	**Northing:** 193153.53 **Easting:** 1126821.88	**Drilling Company:** Delta Well & Pump
Project #: 60266526	**Ground Elevation (ft amsl):** 44.2	**Well Screen Interval (ft):** NA
Start Date: 4/12/2014	**Drilling Method:** Auger (0-50' bgs) Mud Rotary (>50' bgs)	**Water Level (ft):** NA
Finish Date: 5/20/2014		**Total Depth (ft):** 1025.0

Mud Rotary Drilling Note: Unless denoted by a splitspoon sample (indicated by the presence of a PID reading), boundaries between strata are approximate only and may be transitional because they are based on screened wash samples collected during mud rotary drilling at 5 ft. intervals.

DEPTH (ft)	Gamma Ray	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	30 60 90							
2					Upper Glacial	SM		Brown 10YR 5/3 Topsoil
						SM		10YR 5/6 Strong brown SILTY SAND, fine Sand, little silt
4						SW		10YR 5/6 Strong brown well graded SAND with Gravel, medium to coarse sand, little fine sand, little fine subrounded gravel, trace subrounded coarse gravel
10						SP		10YR 5/6 Strong brown poorly graded SAND, fine to medium Sand, little coarse sand, trace fine to coarse subrounded gravel, few silt
20						SW		10YR 5/8 Yellowish brown well graded SAND with Gravel, fine to coarse sand, little subrounded fine gravel, trace coarse gravel
30						SW		10YR 6/4 Light yellowish brown well graded SAND with Gravel, medium to coarse sand, little subrounded fine gravel, trace coarse gravel
40						SW		10 YR 6/4 Light yellowish brown well graded SAND with Gravel, medium to coarse sand, little subrounded fine gravel, trace coarse gravel
50						SW		10YR 6/4 Light yellowish brown well graded SAND with Gravel, medium to coarse sand, little subrounded fine gravel, trace coarse gravel
54						SP		

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DEPTH (ft)	Gamma Ray (30 60 90)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
54					Upper Glacial	SP		Very pale brown (10YR 7/3) and yellow (10YR 7/6) poorly graded SAND with Gravel, coarse sand, little subrounded to rounded fine gravel *(continued)*
58			<0.5	<0.5		SP		Very pale brown (10YR 7/3) and yellow (10YR 7/6) poorly graded SAND with Gravel, coarse sand, little subrounded to rounded fine gravel
64						GP		Very pale brown (10YR 7/3) and yellow (10YR 7/6) poorly graded GRAVEL with Sand, subrounded to rounded fine gravel, some coarse sand
70						SM		Greyish brown (10YR 5/2) SILTY SAND, fine to medium Sand, few fine subrounded gravel, little silt
74						SM		Greyish brown (10YR 5/2) SILTY SAND, fine to medium Sand, few fine subrounded gravel, little silt
80						SM		Light brownish gray (10YR 6/2) SILTY SAND, fine to coarse Sand, little silt or clay
84						SM		Yellowish brown (10YR 5/4) SILTY SAND, fine to coarse Sand, iron nodules, few fine gravel, little silt
90						SP-SC		Yellowish brown SAND with Clay, fine to coarse sand, lignite trace angular fine gravel, 1 chunk of lignite
96						SP-SC		Dark gray (10YR 4/1) SAND with Clay, fine to coarse angular sand, pyrite, lignite flakes, trace fine gravel, clay
100			<0.5	<0.5		SP-SM		Dark gray (10YR 4/1) SAND with Silt, fine to medium sand, trace coarse sand, few silt or clay
102					Magothy			
106						SM		Dark gray (10YR 4/1) SILTY SAND, medium to coarse angular Sand, lignite flakes, little silty clay
110						SP/SC		Dark gray (10YR 4/1) CLAYEY SAND, angular fine to coarse Sand, pyrite, silt/clay (60%), lignite, muscovite flakes, interbedded
114								

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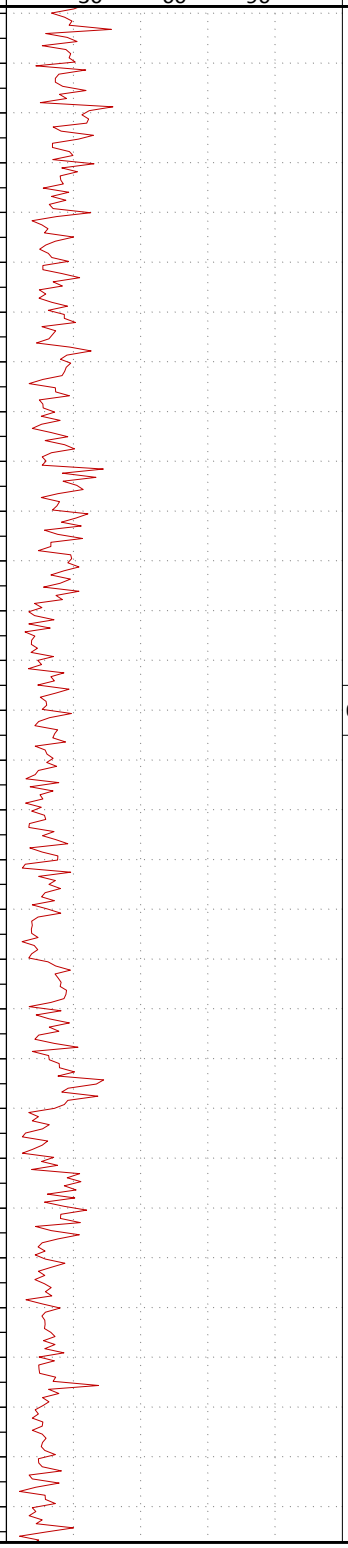
Boring Log

BORING #: VPB145



DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
116				Magothy	SP/SC		
118							Gray (10YR 5/1) CLAYEY SAND, interbedded Sand, clay, lignite
120					SP/SC		
122							Gray (10YR 5/1) CLAYEY SAND, angular medium to coarse Sand, lignite (30%), woodchips, interbedded
124					SP/SC		
126							Gray (10YR 5/1) CLAYEY SAND, fine to coarse Sand, lignite, pyrite, little silt/clay, interbedded
128					SP/SC		
130							Gray (10YR 5/1) CLAYEY SAND, fine to coarse Sand, large chunk of lignite, pyrite, little silt/clay, interbedded
132					SP/SC		
134							Gray (10YR 5/1) poorly graded SAND, angular medium to coarse Sand, lignite flakes, muscovite flakes
136					SP		
138							Gray (10YR 5/1) SILTY SAND, fine to coarse Sand, little silt, lignite
140	0.0 - 0.1				SM		
142							Gray (10YR 5/1) poorly graded SAND, medium to coarse Sand, lignite, wood
144		<0.5	<0.5		SP		
146							Gray poorly graded and subangular to angular medium to coarse SAND, pyrite, lignite
148					SP		
150							Gray poorly graded SAND, subangular to angular medium to coarse SAND, Lignite
152					SP		
154							Gray (10YR 5/1) poorly graded SAND, fine to medium Sand, trace angular coarse sand, pyrite
156					SP		
158							Gray (10YR 5/1) poorly graded SAND, angular medium Sand, few silt
160					SP-SM		
162							Gray (10YR 5/1) poorly graded SAND, angular medium Sand, trace coarse sand, several small clumps of clay
164							
166							
168							
170							
172							
174							
176					SP-SC		

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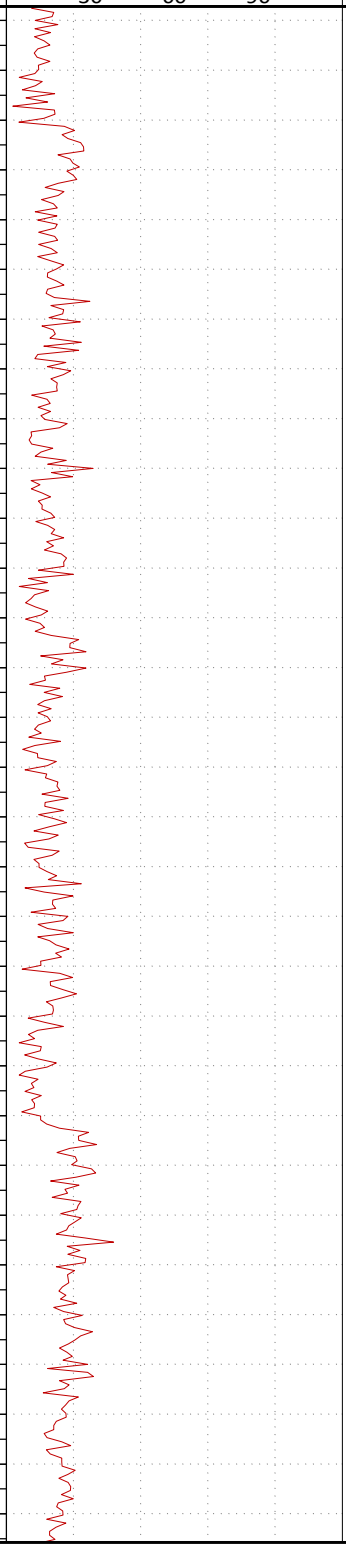
Boring Log

BORING #: VPB145



DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
178				Magothy			
180					SP-SC		Gray (10YR 5/1) poorly graded SAND, angular medium Sand, trace coarse sand, several small clumps of clay
182							
184					SP-SC		Gray (10YR 5/1) poorly graded SAND, angular medium Sand, trace coarse sand, several small clumps of clay
186							
188							
190					SP		Gray (10YR 5/1) poorly graded SAND, angular medium Sand, lignite flakes
192							
194							
196							
198							
200		<0.5	<0.5		SP		Light gray (10YR 7/1) poorly graded SAND, angular medium Sand, lignite flakes
202							
204					SP		Light gray (10YR 7/1) poorly graded SAND, angular medium Sand, lignite flakes
206							
208					SP		Gray (10YR 5/2) poorly graded SAND, medium Sand, little fine sand
210							
212							
214					SP		Gray (10YR 5/2) poorly graded SAND, angular medium Sand, trace clay
216							
218							
220		<0.5	<0.5		SP/CL		Gray (10YR 5/2) poorly graded SAND, clumps of Clay, interbedded clay
222							
224					ML		Dark gray SANDY SILT
226							
228							
230					ML		Dark gray (10YR 4/1) SANDY SILT, Clay, chunks of lignite, laminated
232							
234					ML		Dark gray (10YR 4/1) SANDY SILT, Clay, chunks of lignite, laminated
236							
238							
		<0.5	<0.5		SP		

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Resolution Consultants

Boring Log

BORING #: VPB145

DEPTH (ft)	Gamma Ray (30 60 90)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
240			<0.5	<0.5	Magothy	SP		Grayish brown (10YR 5/2) poorly graded SAND, angular medium Sand, trace coarse sand, lignite flakes *(continued)*
242								
244						SP		Grayish brown (10YR 5/2) poorly graded SAND, angular medium Sand, trace coarse sand, lignite flakes
246								
248								
250						SP-SM		Poorly graded SAND with Silt, medium sand, little fine sand, few coarse sand, few silt, lignite flakes
252								
254						SP-SM		Poorly graded SAND with Silt, medium sand, little fine sand, few silt, lignite flakes
256								
258								
260			<0.5	<0.5		SC		Dark gray (10YR 4/1) CLAYEY SAND, fine to medium Sand, little silt or clay
262								
264						CL/SM		Very dark gray (10YR 3/1) CLAYEY SAND, Clay interbedded with sand, lignite
266								
268								
270						CL/SM		Very dark gray (10YR 3/1) SANDY CLAY, Clay interbedded with fine to medium Sand, lignite
272								
274						CL/SM		Very dark gray (10YR 3/1) SANDY CLAY, Clay interbedded with fine to medium Sand, lignite, laminated chunks of clay, little fine to medium sand
276								
278								
280			<0.5	<0.5		SM		Very dark gray (10YR 3/1) SILTY SAND, fine to medium Sand, muscovite flakes, little silt, lignite, pyrite, little silt
282								
284						SM		Very dark gray (10YR 3/1) SILTY SAND, fine to coarse Sand, pyrite, lignite, little silt
286								
288								
290						SM		Very dark gray (10YR 3/1) SILTY SAND, fine to coarse Sand, pyrite, lignite, little silt
292								
294						CL		Very dark gray (10YR 3/1) SANDY CLAY, subangular fine to coarse Sand, lignite silt, clay
296								
298								
300			<0.5	<0.5		CL		Very dark gray (10YR 3/1) SANDY CLAY fine to medium Sand, trace coarse sand, muscovite flakes, lignite

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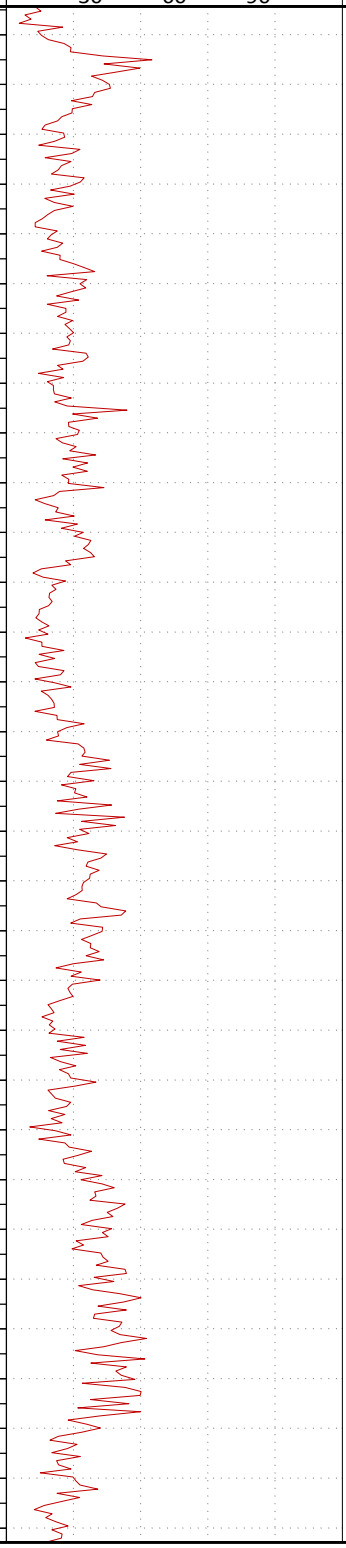
Boring Log

BORING #: VPB145



DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
302				Magothy	CL		Very dark gray (10YR 3/1) SANDY CLAY fine to medium Sand, trace coarse sand, muscovite flakes, lignite *(continued)*
304					SM		Gray (7.5YR 5/1) SILTY SAND, fine to medium Sand, trace coarse sand, little silt, lignite
306							
308							
310					SP		Gray (7.5YR 5/1) poorly graded SAND, medium Sand, little fine sand, trace subangular coarse sand, lignite
312							
314					SM		Gray (2.5YR 5/1) SILTY SAND, medium Sand, little fine sand, little silt
316							
318							
320		<0.5	<0.5		SM		Gray (2.5YR 5/1) SILTY SAND, medium Sand, little fine sand, little silt
322							
324					SP-SM		Very dark gray (10YR 3/6) poorly graded SAND with Silt, fine to medium sand, lignite, few to little silt
326							
328							
330					SM		SILTY SAND
332							
334					SM		Very dark gray (5Y 3/1) fine to medium SAND, some Silt
336							
338							
340		<0.5	<0.5		SM		Gray (7.5YR 5/1) SILTY SAND, angular fine to mediumSand, muscovite flakes, lignite flakes, some silt
342							
344					CL		Gray (7.5YR 5/1) SANDY CLAY, fine to medium Sand, muscovite flakes, lignite, clay/silt (60%)
346							
348							
350					CL		Dark gray (2.5Y 4/1) SANDY CLAY fine to medium Sand, trace subrounded coarse sand, lignite, few silt
352							
354							
356					CL		Dark gray (2.5Y 4/1) SANDY CLAY, fine to medium Sand interbedded with clay
358							
360		<0.5	<0.5				
362							

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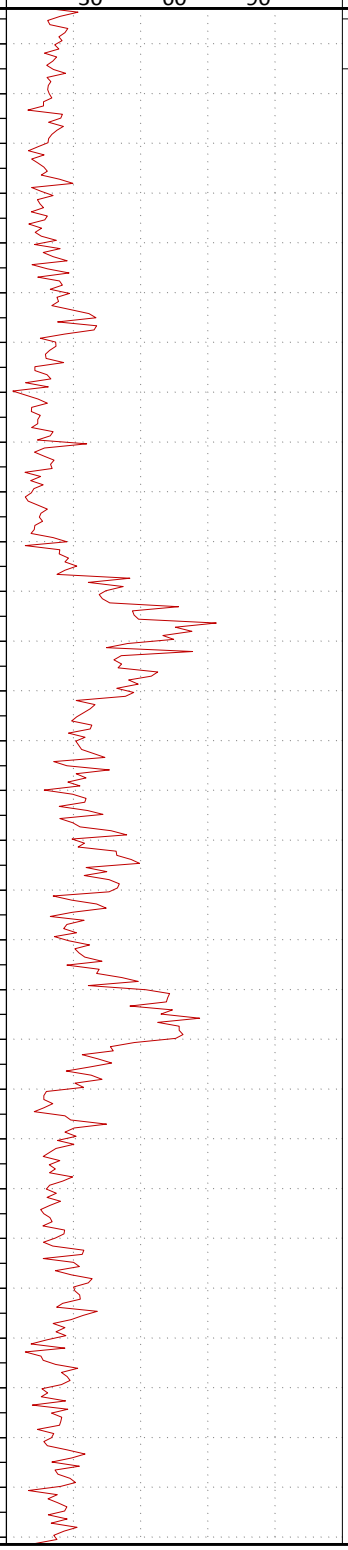

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
364	0.0-0.1			Magothy	SP/CL		Gray (7.5YR 5/1) poorly graded SAND with Silt, fine to medium sand, few silt, several lignite seams (0.25") forms sharp contact with clay (2")
366							Gray (10YR 5/1) SAND, fine to medium Sand, interbedded with laminated lignite clay, silt
368					SP		
370							
372							
374							Gray (10YR 5/1) SAND, fine to medium Sand, interbedded with laminated lignite clay, silt
376					SP/SC		
378							
380		<0.5	<0.5		SC		Gray CLAYEY SAND, fine to medium Sand, few subangular coarse sand, lignite, little silt, clay
382							
384					CL		Gray CLAY, Lignite, fine sand, clay laminated
386							
388							
390					SP/CL		(10YR 5/1) Gray SAND, fine to medium Sand, interbedded with chunks of lignite, clay, silt
392							
394					SP/CL		(10YR 5/1) Gray SANDY CLAY, some fine to medium Sand, pyrite, lignite, silt, clay (60%) possibly interbedded
396							
398							
400		<0.5	<0.5		SP/CL		(2.5Y 4/1) Dark gray SANDY CLAY, laminated fine to medium Sand, lignite silt, clay
402							
404							
406							
408							
410					SM		Dark gray (2.5Y 4/1) SILTY SAND, medium Sand, little fine sand, lignite, pyrite, some silt
412							
414					SM		Dark gray (2.5Y 4/1) SILTY SAND, medium Sand, little fine sand, lignite, pyrite, some silt
416							
418							
420		<0.5	<0.5		SM		Dark gray (2.5Y 4/1) SILTY SAND, medium Sand, little fine sand, lignite, silt
422							
424					SM		

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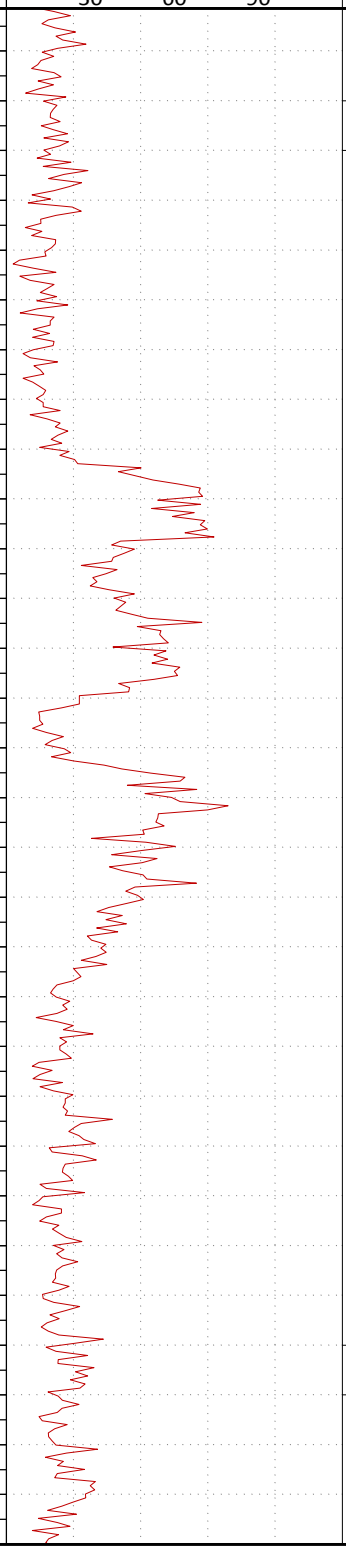

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
426				Magothy	SM		Dark gray (2.5Y 4/1) SILTY SAND, fine to medium Sand, few coarse sand, lignite flakes *(continued)*
428							
430	0.0-0.1				SM		Dark gray (2.5Y 4/1) SILTY SAND, fine to medium Sand, trace subrounded coarse sand, lignite, silt
432							
434		<0.5	<0.5		SM		Dark gray (2.5Y 4/1) SILTY SAND, fine to medium Sand, some silt, lignite
436							
438							
440							
442							
444					ML		Dark gray (2.5Y 4/1) SILT, Clay, fine sand, lignite laminated
446							
448							
450					ML		Dark gray (2.5Y 4/1) SILT, Clay
452							
454					ML		Dark gray (2.5Y 4/1) SANDY SILT, some fine Sand, muscovite, silt
456							
458							
460					ML		Dark gray (2.5Y 4/1) SANDY SILT, fine Sand, little medium sand, lignite, silt, lignite laminated
462							
464					SM		Dark gray (2.5Y 4/1) SILTY SAND, fine Sand, interbedded with lignite
466							
468							
470		<0.5	<0.5		SM		Dark gray (2.5Y 4/1) SILTY SAND, fine to medium Sand, pyrite, lignite, silt, clay laminated
472							
474					SM		(Gley 1 6/1) SILTY SAND, fine Sand, little silt
476							Dark gray (2.5Y 4/1) SILTY SAND, fine to medium Sand, trace coarse sand, chunks of friable lignite, laminated
478							
480	0.0-0.1	<4	<4		SM		
482							
484							
486							

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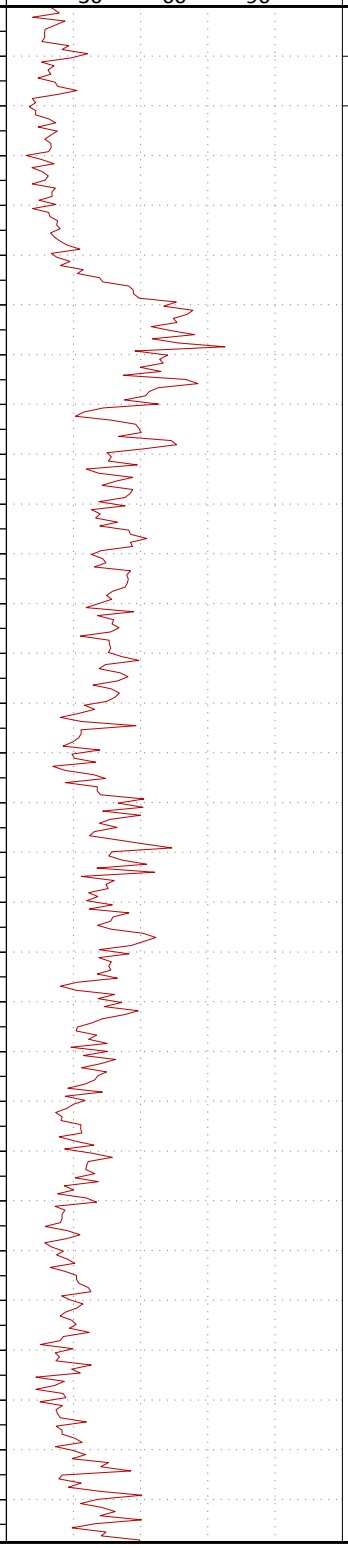

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
486				Magothy	SM		Dark gray (2.5Y 4/1) SILTY SAND, fine to medium Sand, trace coarse sand, chunks of friable lignite, laminated *(continued)*
488							
490	0				SP-SM		Gray (5/1) poorly graded SAND with Silt, medium sand, little fine sand, few-little silt
492					SM		Gray (10YR 5/1) SILTY SAND, fine to medium Sand, trace coarse sand, silt (30%)
494		<0.5	<0.5				
496							
498							
500					SM/CL		Dark gray (10YR 4/1) SILTY SAND, fine to medium Sand, silt (45%), lignite
502							
504					SM/CL		Dark gray (Gley 4/1) SANDY CLAY, interbedded fine Sand and clay, laminated
506							
508							
510					CL		Dark gray SANDY CLAY, fine Sand, lignite, clay laminated
512							
514		<0.5	<0.5				
516							
518							
520					CL		Dark gray SANDY CLAY, fine Sand, lignite, clay laminated
522							
524					SP-SM		Dark gray (10YR 4/1) poorly graded SAND with Silt, subangular medium sand, little fine sand, lignite flakes
526							
528							
530					SM		Dark gray (Gley 1 4/1) SILTY SAND, fine Sand, few coarse sand lignite some silt
532							
534		<0.5	<0.5				
536					SM		Dark gray (10YR 4/1), SILTY SAND, laminated fine Sand, lignite
538							
540					SM		Dark gray (10YR 4/1) SILTY SAND, little fine to medium Sand, lignite
542							
544					SM		Dark gray (10YR 4/1) subangular medium SAND, little fine Sand, trace coarse sand, lignite, little silt
546							

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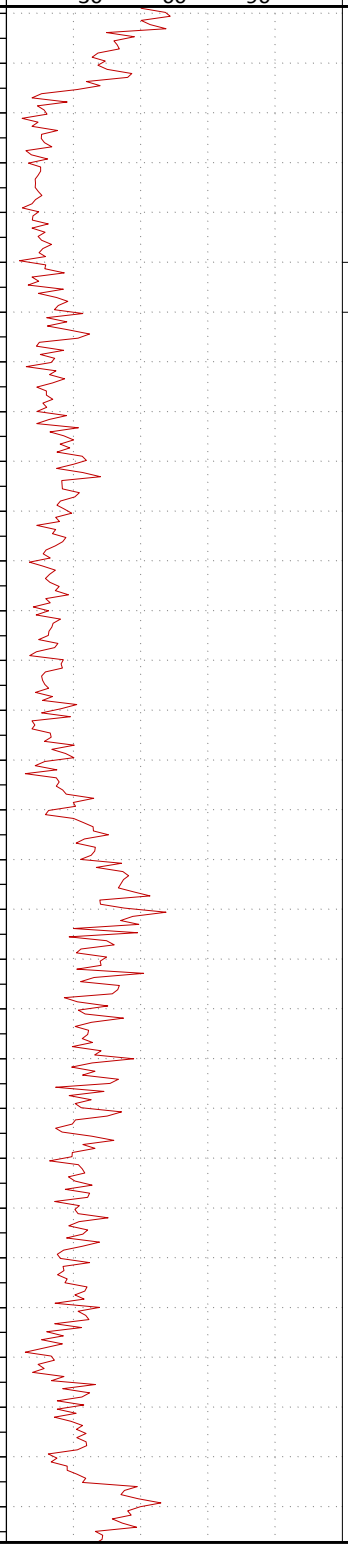

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
548				Magothy	SM		Dark gray (10YR 4/1) subangular medium SAND, little fine Sand, trace coarse sand, lignite, little silt
550							
552							
554		<0.5	<0.5		SP		Dark gray (10YR 4/1) medium SAND, little fine Sand, lignite, trace silt
556							
558							
560	0				SP		Dark gray (5Y 4/1) poorly graded SAND, angular medium sand, little fine sand, trace to few silt
562					SP		Dark gray (5Y 4/1) poorly graded SAND, angular medium sand, little fine sand, trace to few silt
564					SW-SM		Dark gray (10YR 4/1) widely graded SAND with Silt, fine to coarse sand, lignite, silt, clay
566							
568							
570					SP		Poorly graded SAND, medium Sand, trace coarse sand, lignite
572							
574		<0.5	<0.5		SM		(Gley 1 5/N) Gray silty medium-fine SAND, some clay nodules, lignite
576					SM		(Gley 1 5/N) Gray silty medium-fine SAND, clay lense
578							
580							
582					CL		(Gley 1 5/N) Gray CLAY, soft, some medium-fine sand layers
584							
586					SC		(Gley 1 4/N) Gray clayey medium-fine SAND
588							
590							
592							
594		<0.5	<0.5				
596					SC		(Gley 1 4/N) Gray clayey medium-fine SAND
598							
600							
602					SC		Gray clayey medium-fine SAND, layer of Gley 1 5/N, dark gray fine sand, clay (N-3), lignite
604							
606					CL		(Gley 1 5/N) Gray CLAY, some fine Sand, trace lignite
608							

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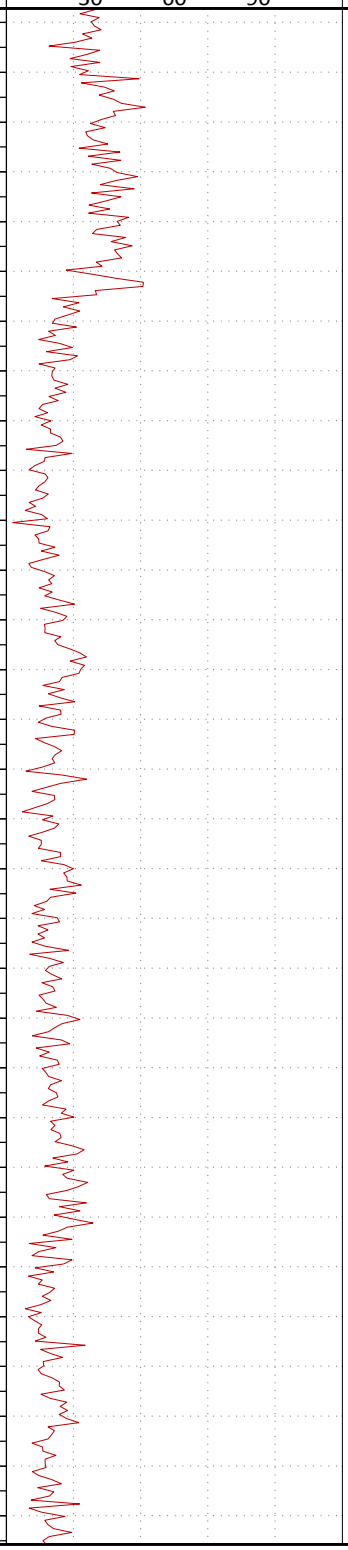

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
610				Magothy			
612					SC		(5YR 4/1) Gray clayey medium-fine SAND, some coarse sand, trace lignite
614		<0.5	<0.5				
616					SC		(Gley 1 4/N) Gray clayey fine SAND
618							
620							
622					SM		(Gley 1 5/N) Gray silty coarse-fine SAND, some lignite
624							
626					SM		(Gley 1 5/N) Gray silty coarse-fine SAND, some lignite
628							
630							
632					SM		(Gley 1 5/N) Gray silty coarse-fine SAND, trace lignite, layer of gray clayey coarse sand
634		<0.5	<0.5				
636					SC		(Gley 1 4/N) Gray clayey fine SAND, some lignite, trace coarse sand
638							
640							
642					SC		(Gley 1 4/N) Gray clayey fine SAND, some lignite, trace coarse sand
644							
646					SC		(Gley 1 4/N) Gray clayey fine SAND, some lignite, trace coarse sand
648							
650							
652					SM		(Gley 1 4/N) Gray silty medium-fine SAND, some lignite
654							
656					SM		(Gley 1 4/N) Gray silty medium-fine SAND, some lignite
658							
660							
662					SM		Gray silty medium-fine SAND, some lignite, trace coarse sand
664		<0.5	<0.5				
666					SM		Dark gray (10YR 4/1) SILTY SAND, angular medium Sand, little fine sand, silt, lignite
668							
670					SP-SM		Dark gray (10YR 4/1) SAND with Silt, subangular medium sand, little fine sand, lignite, few silt

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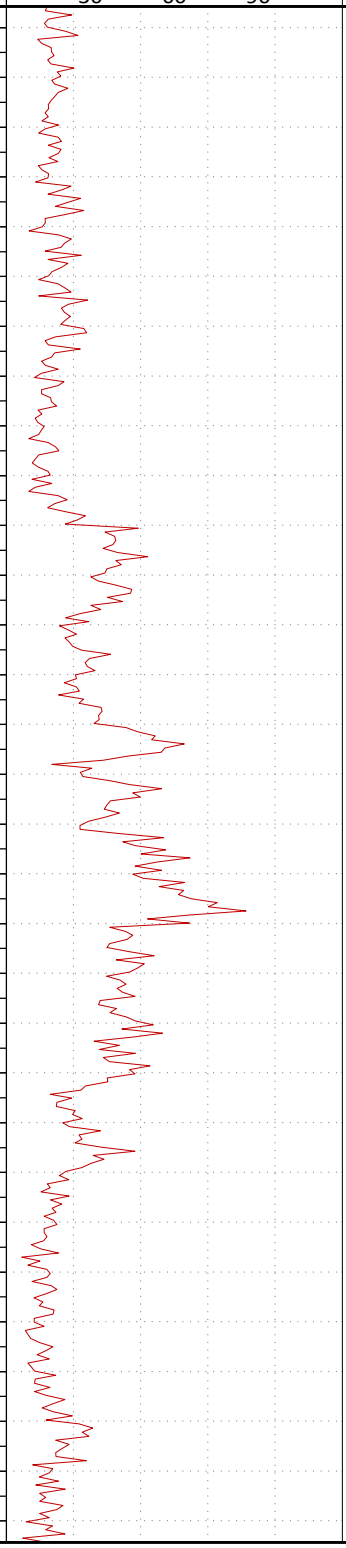

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
672				Magothy	SP-SM		Dark gray (10YR 4/1) SAND with Silt, subangular medium sand, little fine sand, lignite, few silt *(continued)*
674					SP-SM		Dark gray (10YR 4/1) SAND with Silt, subangular medium sand, little fine sand, lignite, few silt
676							
678							
680		<0.5	<0.5		SP-SM		Gray (7.5YR 5/1) poorly graded SAND, medium Sand, little fine sand, little silt
682							
684					SP-SM		Gray (7.5YR 5/1) poorly graded SAND, angular medium Sand, few silt, lignite
686							
688							
690					SM		Gray (Gley 1) SILTY SAND, fine to coarse Sand, some silt, pyrite
692							
694					SP-SM		Gray (Gley 1) poorly graded SAND, angular medium Sand, lignite flakes, few silt
696							
698							
700		<0.5	<0.5		SM		Gray (10YR 5/1) SILTY SAND, fine to medium Sand, trace coarse sand, little silt, lignite
702							
704					ML		Gray (10YR 5/1) SANDY SILT, some fine Sand, little medium sand, silt
706							
708							
710					SM		Gray (10YR 4/1) SILTY SAND, fine to medium Sand, muscovite flakes, lignite, some silt
712							
714					SW-SM		Gray (10YR 4/1) well graded SAND with Silt and gravel; fine-coarse sand, little fine gravel, few silt
716							
718							
720							
722							
724					SW-SM		Gray (10YR 4/1) well graded SAND with Silt and gravel; fine-coarse sand, little fine gravel, few silt
726							
728							
730					GM		Gray SILTY GRAVEL (7.5YR 5/1) with Sand, subangular fine gravel, little fine to coarse sand, little silt
732							

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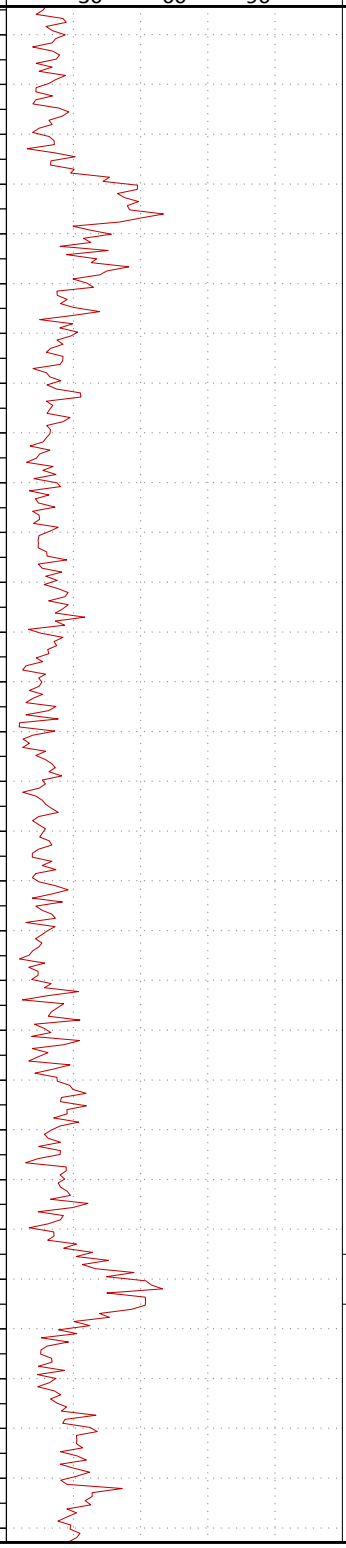

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
734				Magothy	SW-SC		Gray (7.5YR 5/1) well graded SAND with Clay and gravel, fine to coarse sand, little subrounded to subangular gravel
736							
738							
740					SC		Gray (7.5YR 5/1) CLAYEY SAND, well graded Sand, subangular sand, little clay
742							
744					SM		Gray (7.5YR 5/1) SILTY SAND, well graded Sand, little silt, clay, trace fine gravel
746							
748							
750					SP		Gray (7.5YR 5/1) poorly graded SAND with Gravel; subangular coarse sand, little fine gravel
752							
754					SW-SM		Gray (7.5YR 5/1) well graded SAND with Silt and gravel; fine to coarse sand, few fine gravel, few silt
756							
758							
760					SW		Gray (7.5YR 5/1) well graded SAND, subangular to angular coarse Sand, little medium sand, trace silt
762							
764					SW		Gray (7.5YR 5/1) well graded SAND, subangular to angular coarse Sand, little medium sand, trace silt
766							
768							
770					SW		Gray (7.5YR 5/1) well graded SAND, subangular to angular coarse Sand, little medium sand, trace silt
772							
774					GP-GC		Light gray (7.5YR 7/1) poorly graded GRAVEL with Clay and sand, fine gravel, coarse sand
776							
778							
780					GP-GC		Light gray (7.5YR 7/1) poorly graded GRAVEL with Clay and sand, fine gravel, coarse sand
782							
784	0				CL		Light gray (7.5YR 7/1) SANDY CLAY, Clay; little fine sand, few angular medium sand, laminated
786							Light gray (7.5YR 7/1) well graded GRAVEL with Clay and sand, fine to coarse subrounded gravel, little coarse sand, clay
788							
790					GW-GC		
792							
794					GW-GC		

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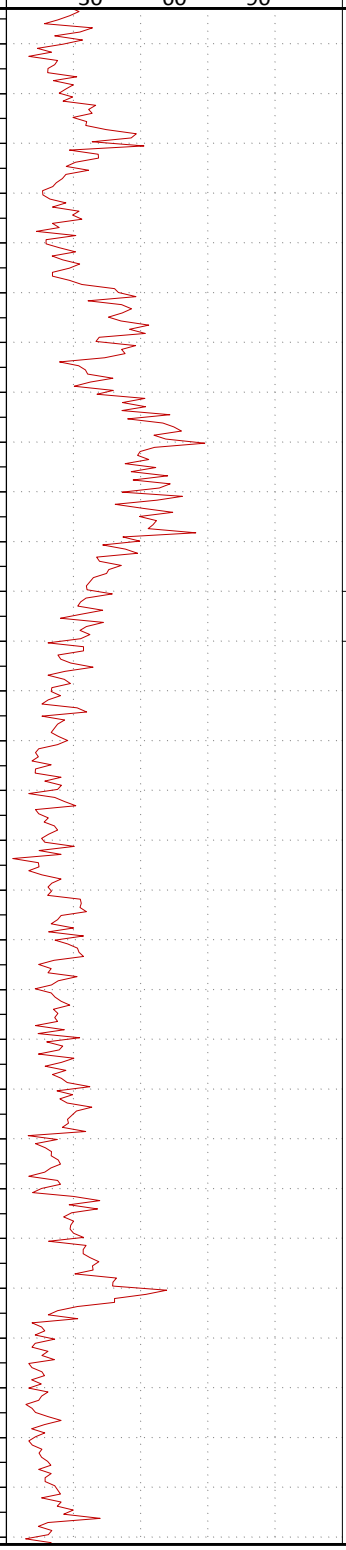

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
796				Magothy	GW-GC		Light gray (7.5YR 7/1) well graded GRAVEL with Clay and sand, fine to coarse subrounded gravel, little coarse sand, clay *(continued)*
798							
800					GP-GC		Light gray (7.5YR 7/1) poorly graded GRAVEL with Clay and sand, subrounded fine gravel, coarse sand, few clay
802							
804							
806							
808							
810					GC		Light gray (7.5YR 7/1) CLAYEY GRAVEL, fine Gravel, little coarse gravel, little fine sand, little clay
812							
814					SM		Light gray (Gley 1 7/1) SILTY SAND, trace fine Gravel
816							
818							
820	0				SM		Light gray (Gley 1 7/1) SILTY SAND, fine to medium Sand, little silt
822					SM		Light gray (Gley 1 7/1) SILTY SAND, medium Sand, trace coarse sand, little silt
824		<0.5	<0.5		SP		Gray (7.5YR 6/1) Poorly graded angular medium to coarse SAND
826							
828							
830							
832					SM		Light gray (Gley 1 7/1) SILTY SAND
834							
836							
838							
840					SM		Light gray (Gley 1 7/1) SILTY SAND, medium Sand, little fine sand, little coarse sand, trace fine gravel
842							
844					SM		Light gray (Gley 1 7/1) SILTY SAND, fine Sand, few medium sand, some silt
846							
848							
850		<40	<40				
852							
854					SM		Light gray (Gley 1 7/1) SILTY SAND
856							

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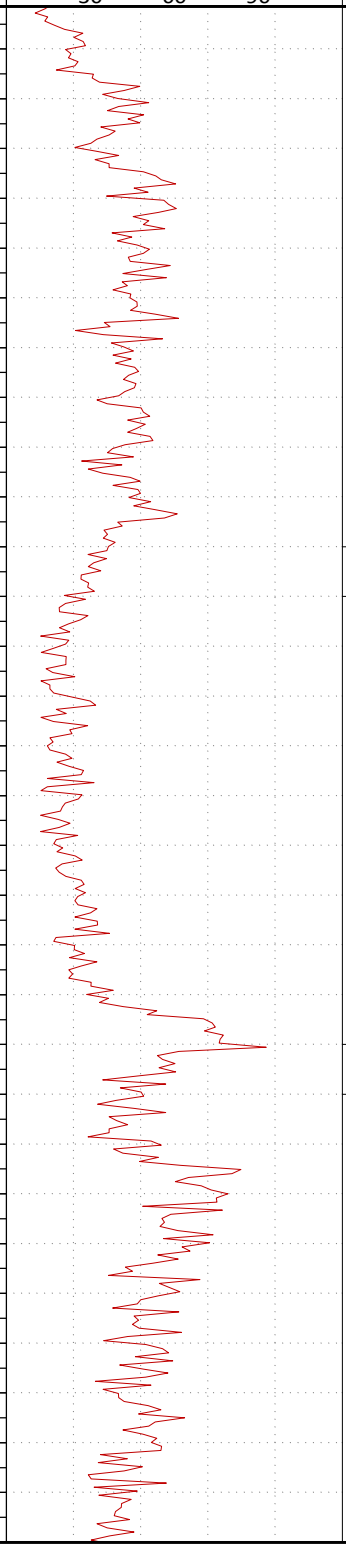

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
858				Magothy	SM		Light gray (Gley 1 7/1) SILTY SAND *(continued)*
860					SM		Light gray (Gley 1 7/1) SILTY SAND
862							
864					ML		Light gray (Gley 1 7/1) SANDY SILT
866							
868							
870		<40	<40		ML		Light gray SANDY SILT, fine Sand, silt, laminated
872							
874					ML		Light gray SANDY SILT, fine Sand, silt, laminated
876							
878							
880	0				SM		Gray SILTY SAND, fine Sand, few medium sand, several black lignite seams
882					SM		Light gray (Gley 1 7/1) SILTY SAND, fine Sand, little medium sand, lignite laminae
884							
886							
888							
890		<0.5	<0.5				
892							
894							
896							
898							
900	0				SM		SILTY SAND
902							
904					CL		(Gley 1 7/1) Light gray CLAY, laminated fine Sand, lignite
906							
908							
910					SM		(Gley 1 7/1) Light gray angular fine to coarse SAND, little Silt
912							
914							(Gley 1 7/1) Light gray angular fine to coarse SAND, little Silt
916					SM		
918							

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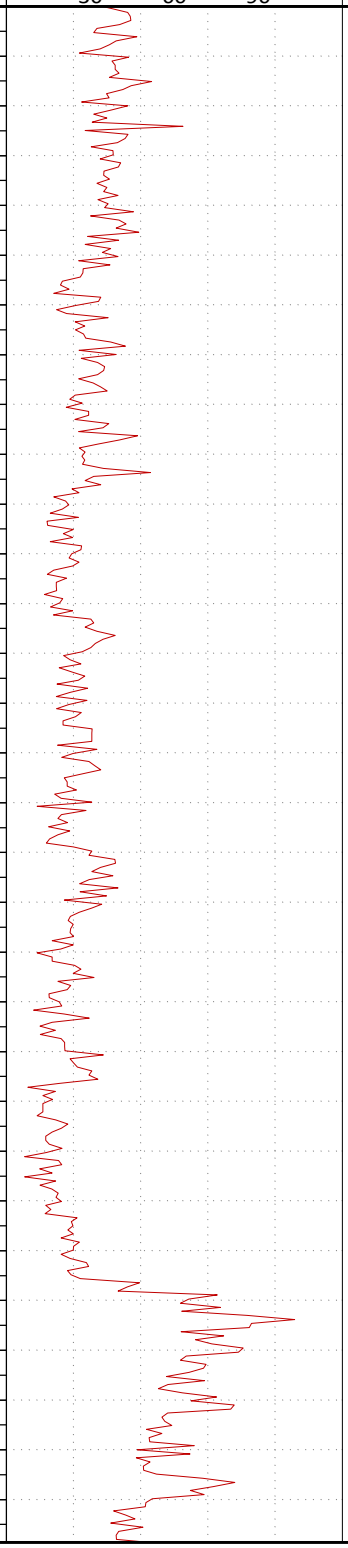

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
918							
920		<10	<10	Magothy	SM		(Gley 1 6/1) Gray SILTY SAND
922							
924					SM		(Gley 1 6/1) Gray SILTY SAND, fine Sand, some silt, laminae, fine sand, silt, lignite
926							
928							
930					SM		(Gley 1 6/1) Gray SILTY SAND, fine to medium Sand, silt
932							
934							
936							
938							
940		<0.5	<0.5		SM		Gray SILTY SAND, fine Sand, trace medium to coarse sand, silt
942							
944					SM		(10YR 5/1) Gray SILTY SAND, fine Sand, laminated
946							
948							
950					SW-SM		(10YR 5/1) Gray SILTY SAND, fine Sand, little medium sand, few-little silt
952							
954					SW		(Gley 1 7/7) Light gray well graded SAND, fine to coarse Sand, subangular coarse sand
956							
958							
960		<0.5	<0.5		SW		(Gley 1 7/7) Light gray well graded SAND, fine to coarse Sand, subangular coarse sand
962							
964					SW		(Gley 1 7/7) Light gray well graded SAND, fine to coarse Sand, subangular coarse sand
966							
968							
970					SM		(10YR 5/1) Gray SILTY SAND, fine to coarse Sand, some silt (30%)
972							
974					ML		(10YR 5/1) Gray SANDY SILT, fine Sand, little medium sand, silt
976							
978							
		<10	<10		ML		(10YR 5/1) Gray SANDY SILT, fine Sand, lignite, laminated, silt

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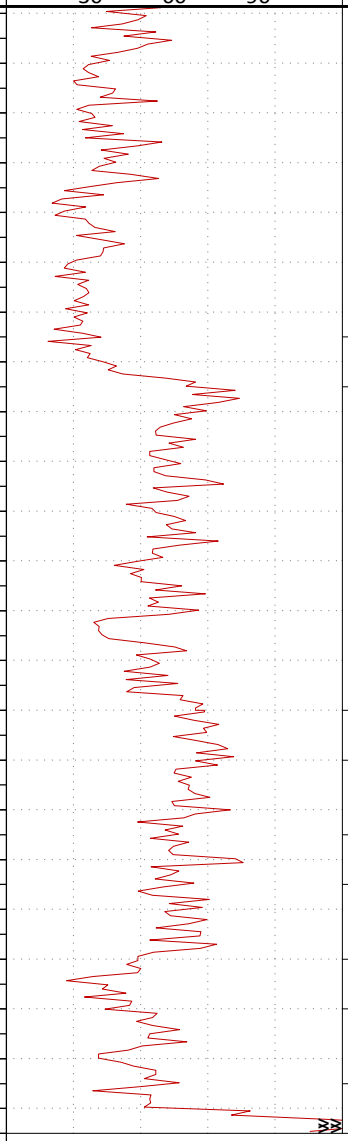
Resolution Consultants

Boring Log

BORING #: VPB145

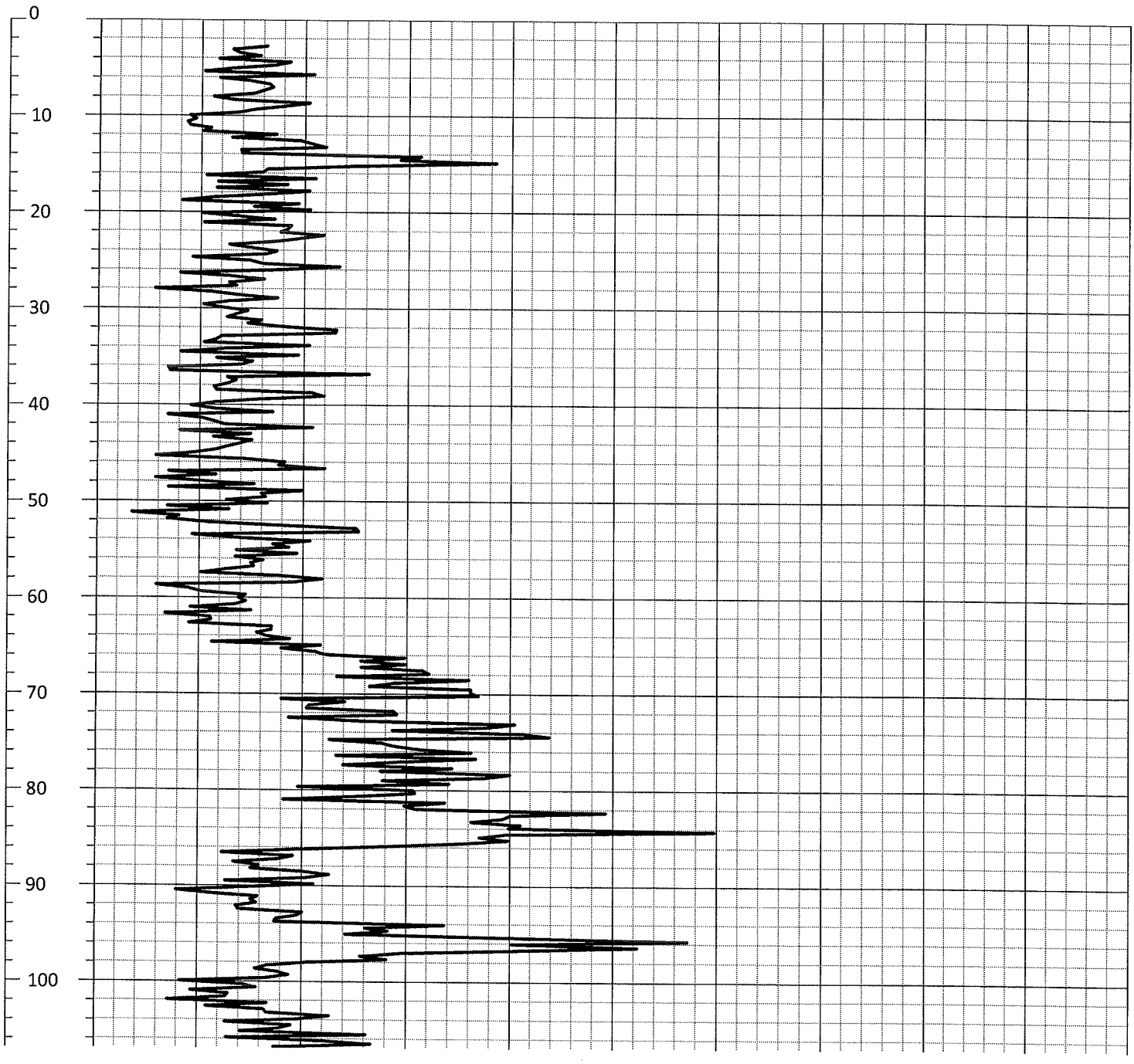


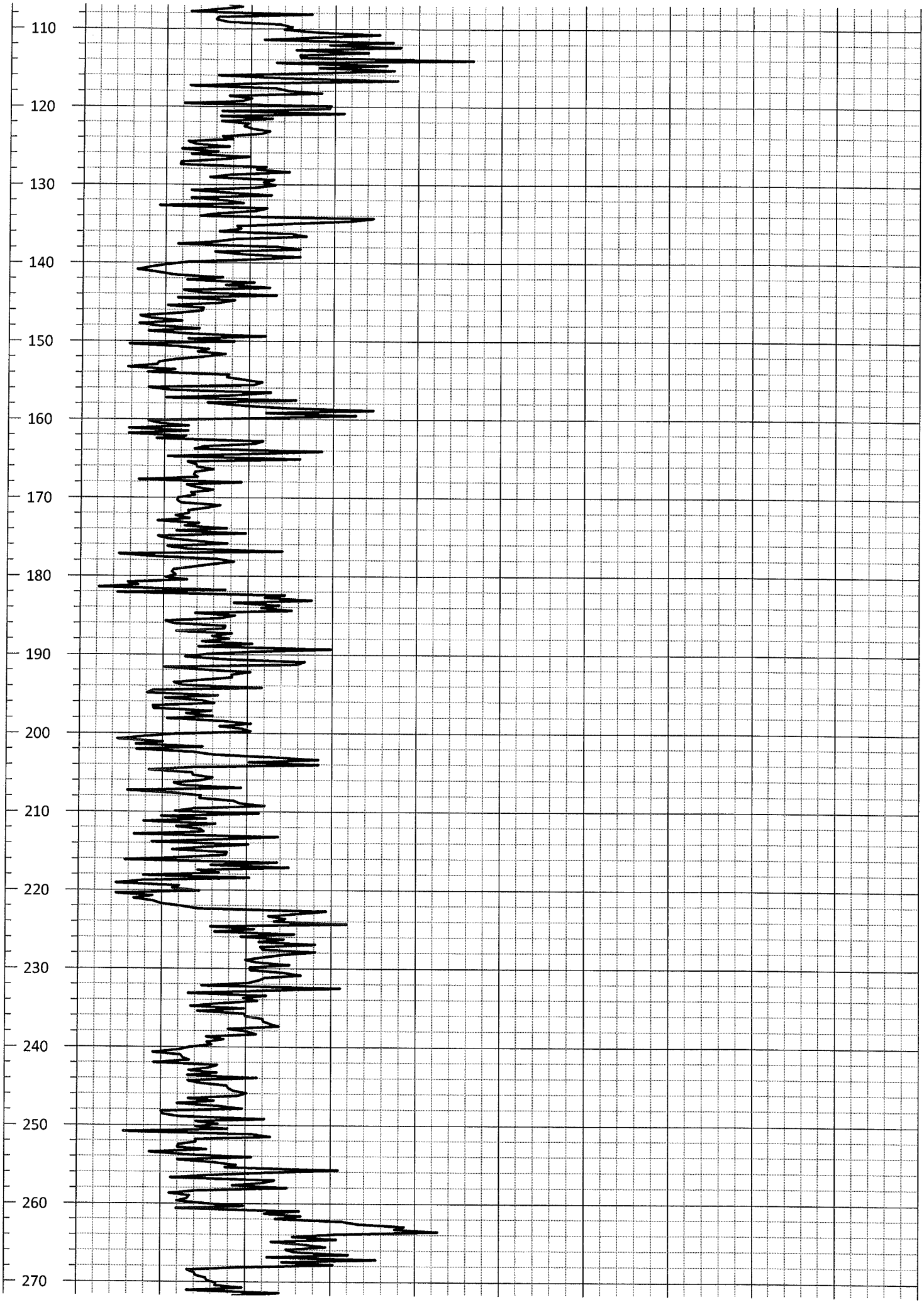
DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
980				Magothy	ML		(10YR 5/1) Gray SANDY SILT, fine Sand, lignite, laminated, silt *(continued)*
982							
984					SM		(Gley 1 7/1) Light gray SAND, fine Sand, lignite, laminated, some silt
986							
988							
990							
992							
994	0				CH		(Gley 1 6/6) Gray CLAY, laminated, lignite seams
996				Raritan	CH		(Gley 6/6) Gray SANDY CLAY
998							
1000							
1002							
1004					CH		(Gley 6/6) Gray CLAY, interbedded with fine Sand, lignite, laminated
1006							
1008							
1010	0				CH		(Gley 1 3/3) Very dark gray CLAY, laminated, medium stiff
1012							
1014	0				CH		(Gley 5/1) Gray with red mottling, Clay, laminated
1016							
1018							
1020	0				CH		(7.5YR 6/1) Gray, white, with red mottling (2.5YR 4/6) CLAY with Sand, laminated, few medium sand
1022							
1024	0				CH		(7.5YR 5/1) Gray CLAY laminated, medium stiff
							End of boring at 1025.0 ft. bgs.

DOWN HOLE

COMPANY:	DELTA WELL & PUMP CO., INC.
LOCATION:	NWIRP SYLVIA ST
Well: VPB145	Depth Driller:
	Depth Logger:
Date: 05/16/2014 Time:	Logged by: CMO
File Name: 739	Witness: VAL

Depth (ft.) 0.0 GAMMA (cps) 100.0

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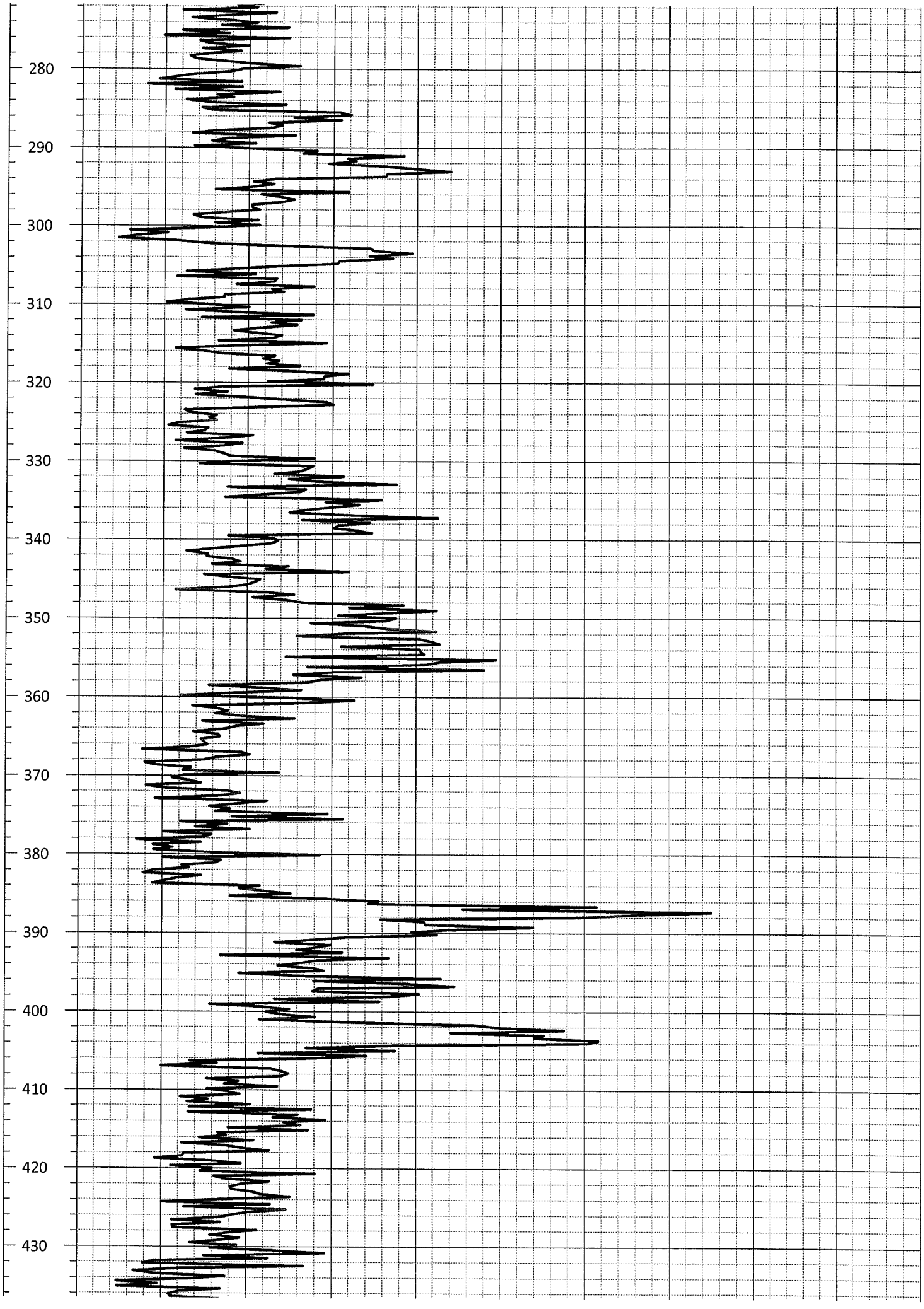
260
270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330
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360
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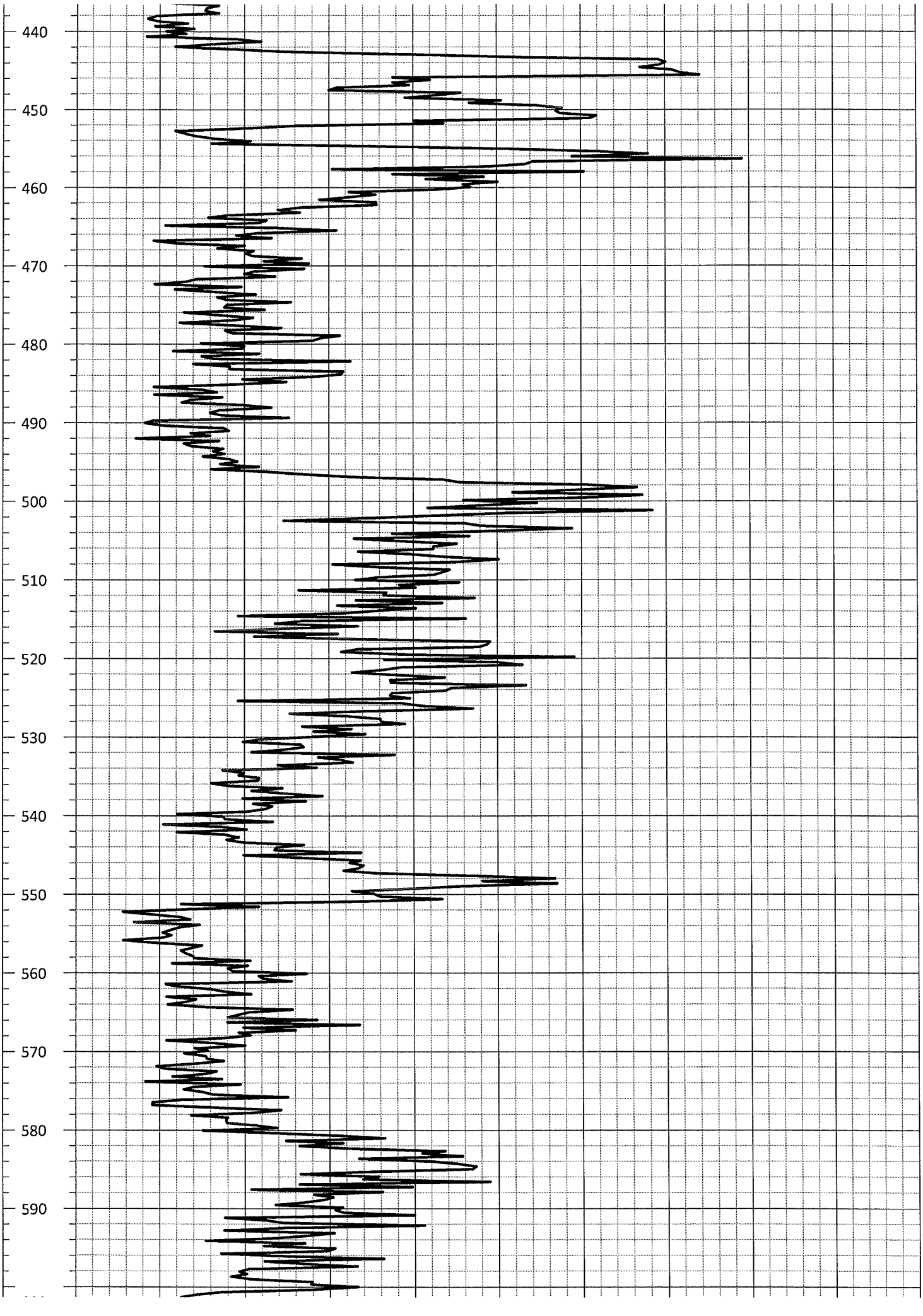
380
390
400
410
420
430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480
490
500
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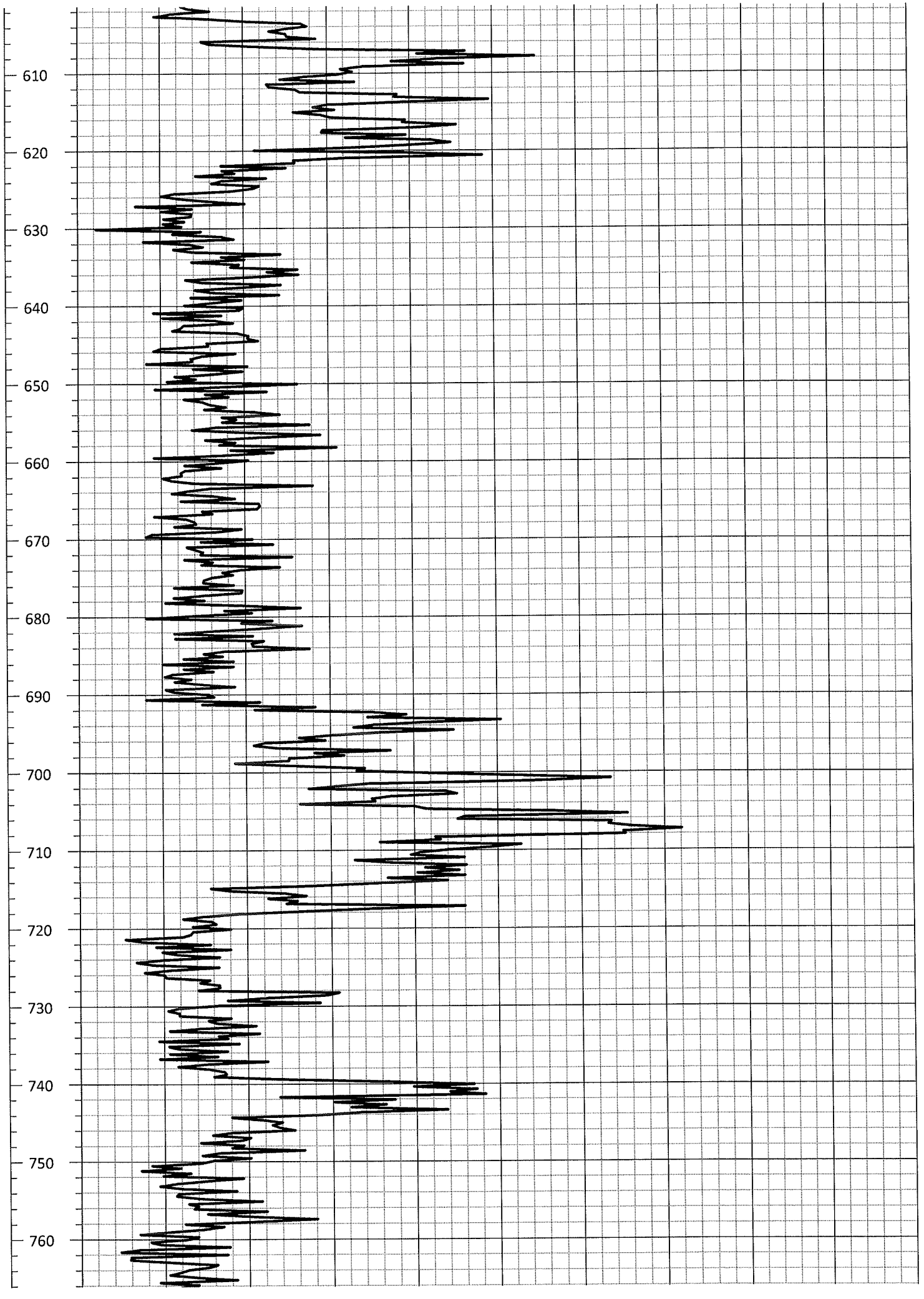
550
560
570
580
590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620
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660
670
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690
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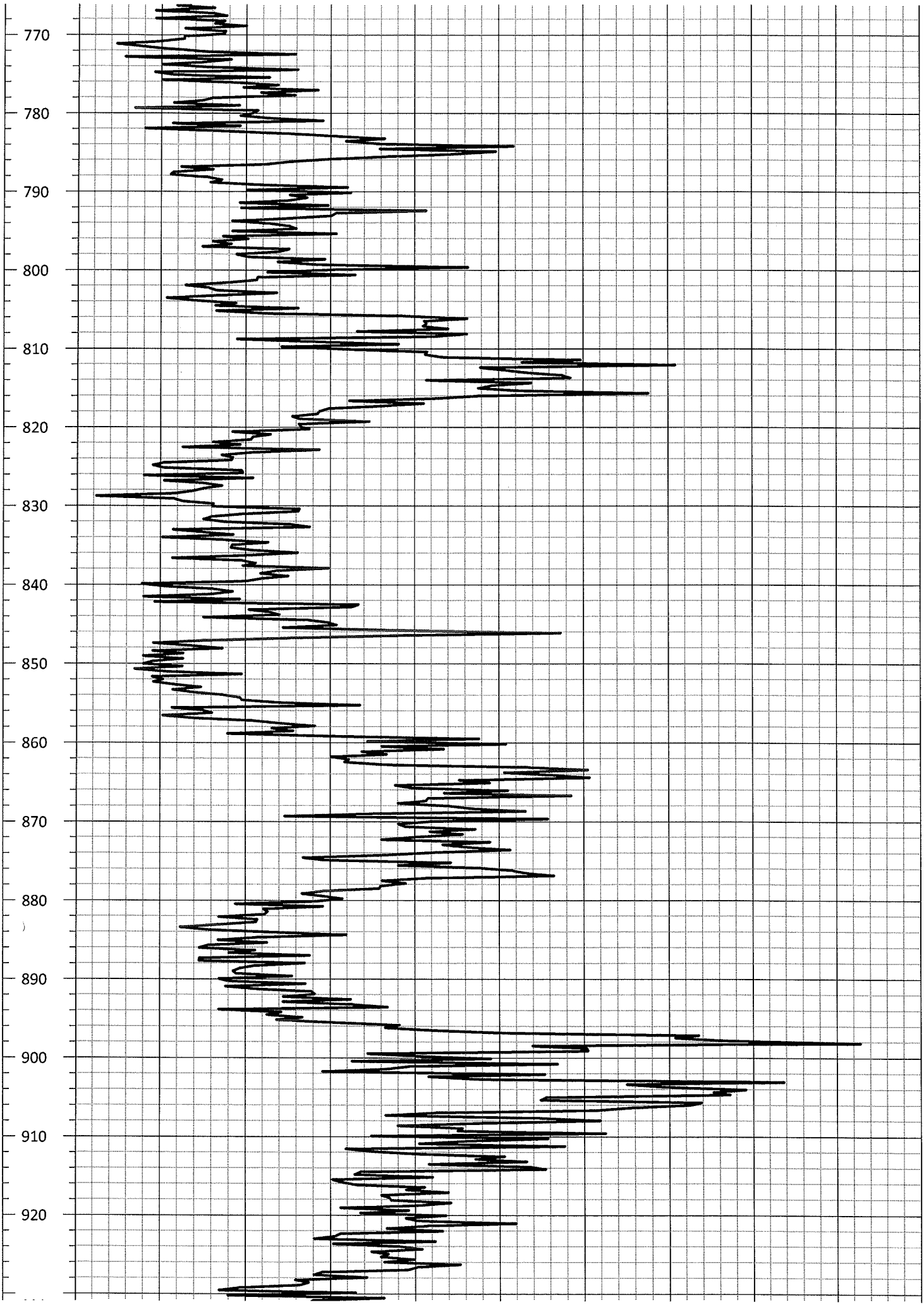
730
740
750
760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790
800
810
820
830
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850
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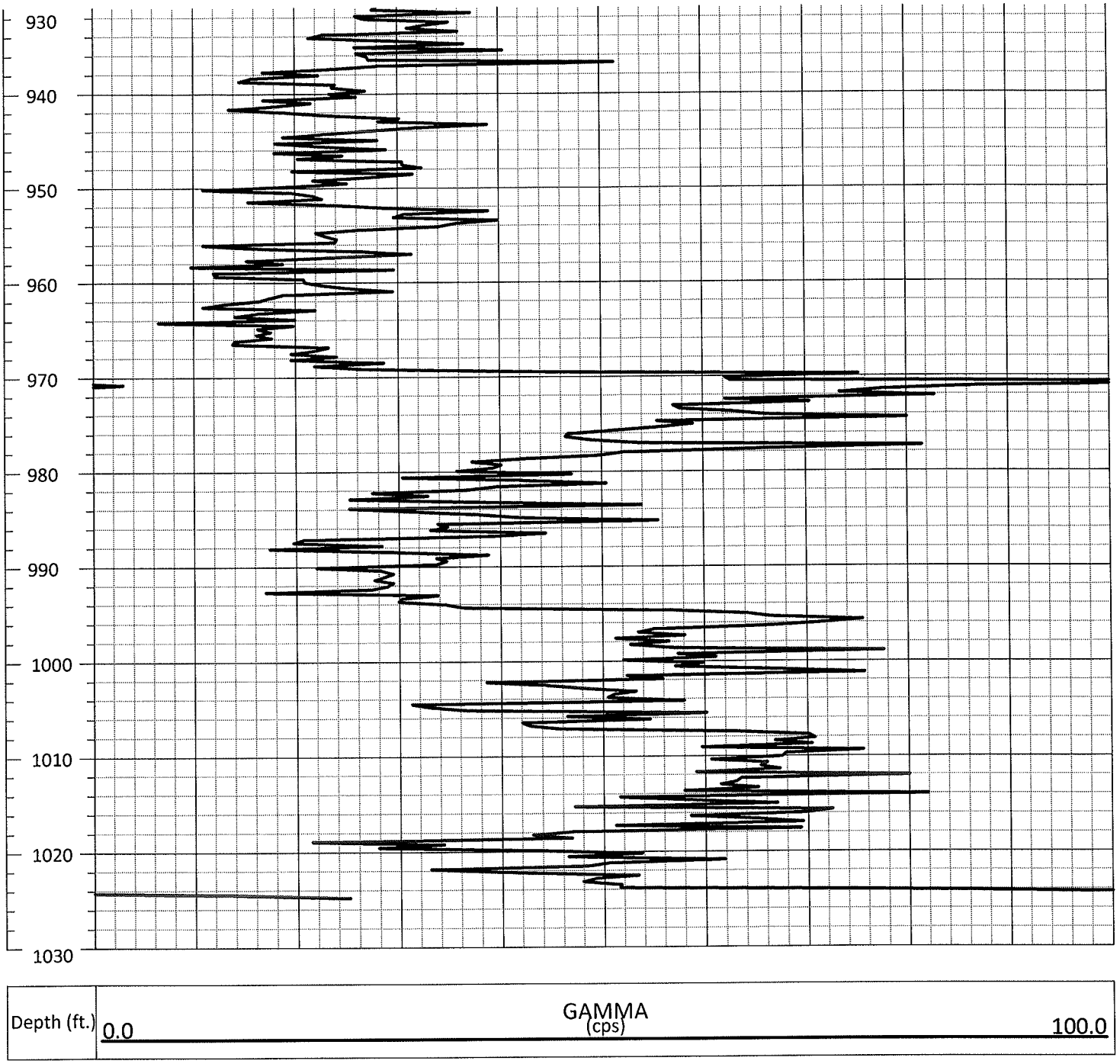
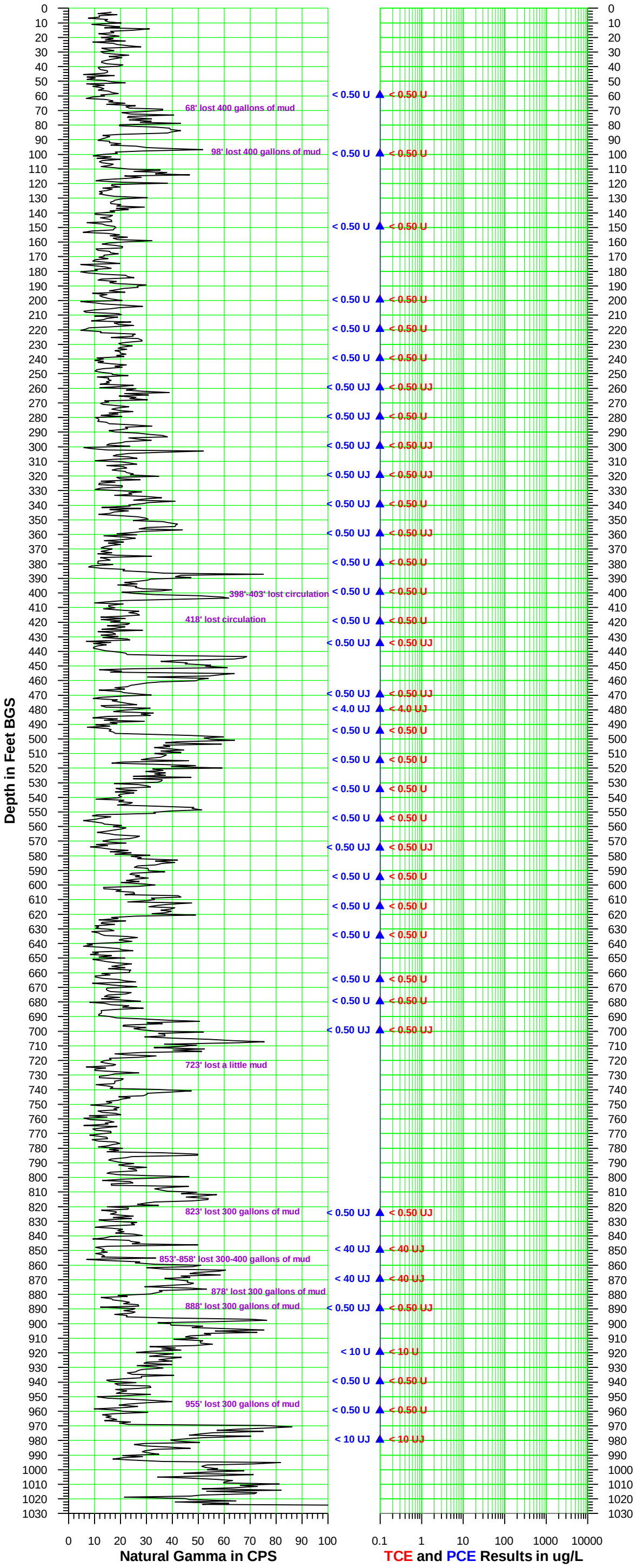
870
880
890
900
910
920


930
940
950
960
970
980
990
1000
1010
1020
1030
Depth (ft.)
0.0
GAMMA
(cps)
100.0

Section 2

VPB 145 Gamma and PCE/TCE Plot

Vertical Profile Boring VPB-145
Downward Run - May 16, 2014
Validated Analytical Data



Section 3

VPB 145 Groundwater Sample Log Sheets

Hydropunch Sample

Client: Navy (ResCon)
Project No: 60266526
Site Location: Sylvia & Barberry Lane North Massapequa
Weather Conds: Variable - Spring

Date: See below
VPB: 145
Collector(s): Valerie Thayer

Sample Date	Time	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Starting depth(ft)	Ending depth(ft)	Color
4/10/2014	12:45	5.73	7.00	6.38	6.21	-49	221.5	58	60	TAN
4/10/2014	16:00		not enough recovery					98	100	
4/11/2014	11:30	20.70	6.83	725	2.27	-92.4	1000+	148	150	
4/11/2014	15:00	16.81	5.25	382	5.05	105.1	626	198	200	Pale brown
4/14/2014	11:00	not enough for YSI & Turbidity meter					218	220	Pale grayish brown	
4/14/2014	14:00	22.38	6.36	442	2.23	-91.5	1000+	238	240	
4/16/2014	9:45	10.37	7.69	291	5.46	-147.5	1000+	258	260	Dark Gray
4/16/2014	12:30	12.69	5.44	272	13.50	16.7	113	278	280	very clear
4/16/2014	14:30	11.5	5.86	345	7.18	-11.6	1000+	298	300	
4/17/2014	not enough sample for YSI							318	320	Dark Gray
4/17/2014	12:20	15.35	6.92	216	8.06	-10.1	230.4	338	340	

Hydropunch Sample

Client: Navy (ResCon)
Project No: 60266526
Site Location: Sylvia & Barbara Lane
Weather Conds: variable-Spring

Date: see below
VPB: 145
Collector(s): Val Thayer

Sample Date	Time	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Starting depth(ft)	Ending depth(ft)	Color
4/17/14	16:00	not enough sample for YSI						358	360	Very dark Gray
4/18/14	11:15	12.06	6.91	117	6.36	38.5	274	378	380	clear
4/18/14	14:00	13.46	5.54	84	7.14	66.4	363.1	398	400	slightly cloudy
4/21/14	10:45	18.48	7.43	124	8.34	70.0	244.6	418	420	clear
4/21/14	13:30	16.59	5.7	266	6.8	72.3	1000+	433	435	Pale Gray Color
4/22/14	12:15	poor recovery - not enough sample						468	470	Dark gray
4/22/14	15:00	poor recovery - not enough sample						478	480	
4/23/14	12:00	16.53	8.9	144	5.44	34	484.6	493	495	pale gray
4/24/14	10:30	16.98	7.1	238	4.62	107	507.4	513	515	pale gray
4/24/14	13:00	not enough recovery						533	535	
4/24/14	15:19	14.56	6.83	119	5.27	0.5	731.1	553	555	

Hydropunch Sample

Client: Navy (ResCon)
Project No: 60266526
Site Location: Sylvia & Bayberry Lane
Weather Conds: variable - Spring

Date: see below
VPB: 145
Collector(s): Val Thayer, Karel Kovalik

Sample Date	Time	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Starting depth(ft)	Ending depth(ft)	Color
April 25, 2014	16:00	14.62	8.48	593	0.77	18.6	1000+	573	575	
4/25/2014	11:00	17.14	13.92	607	6.22	146.1	420	593	595	
4/28/2014	12:00	17.0	11.49	157	157	61.6	342	613	615	
4/28/2014	16:00	15.7	7.41	854	8.49	46.4	450	633	635	
4/29/2014	10:25	no recovery						653	655	
4/30/2014	11:30	9.75	—	128	—	—	425.6	663	665	Grey
4/30/2014	19:00	not enough recovery						678	680	
5/1/2014	9:30	14.12°	7.75	611	6.44	125.5	1000+	698	700	Very silty grey
5/1/2014	13:30	no recovery						718	720	
5/1/2014	15:30	no recovery						728	730	
5/2/2014	14:00	no recovery						758	760	

parameters - would not calibrate on YSI

Hydropunch Sample

Client: Navy (ResCon)
Project No: 60266526
Site Location: Sylvia & Bayberry Lane
Weather Conds: Variable Spring

Date: see below
VPB: 145
Collector(s): VAL Thayer

Sample Date	Time	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Starting depth(ft)	Ending depth(ft)	Color
5/6/2014	15:15		no recovery					768	770	
5/7/2014	10:20		no recovery					778	780	
5/7/2014	13:30		no recovery					798	800	
5/8/2014	15:30	15.76	7.9	155	7.30	75.8	1000+	823	825	Grey
5/9/2014	10:30		no recovery					838	840	
5/9/2014	13:00		not enough recovery					848	850	Grey
5/12/2014	11:00		poor recovery					868	870	Grey mud
5/12/2014	15:15		no recovery					888	890	
5/13/2014	12:45	19.08	8.85	780	8.53	157.3	1000+	918	920	Dark Gray
5/13/2014	15:15	17.86	7.68	173	5.82	-57.7	565.1	938	940	Clear
5/14/2014	11:15		not enough recovery for YSI					958	960	
5/14/2014	13:45		not enough recovery for YSI					978	980	
5/14/2014	15:45		not enough recovery for YSI					988	990	

Section 4

VPB 145 Analytical Data Validation

- Analytical Data Sheets
- Chain of Custody Records
- Validation Letter and Table

RESOLUTION CONSULTANTS

Resolution Consultants
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Scarborough, Maine	
Service Request:	SH2351	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)	
Validation Level:	Limited	
RESCON Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/RESCON	Completed on: 9/1/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH2351_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants (RESCON) from the Regional Groundwater Investigation - NWIRP Bethpage site on April 10, 11, and 14, 2014.

Sample ID	Matrix/Sample Type
VPB145-GWD-041114	Field Duplicate of VPB145-GW-041114-198-200
VPB145-GW-041014-58-60	Groundwater
VPB145-GW-041014-98-100	Groundwater
VPB145-GW-041114-148-150	Groundwater
VPB145-GW-041114-198-200	Groundwater
VPB145-GW-041414-218-220	Groundwater
VPB145-GW-041414-238-240	Groundwater
VPB145-041414-TRIP BLANKS	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996), *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), and Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (DoD, October 2010). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

- ✓ Data completeness (chain-of-custody [COC])/sample integrity
- ✓ Holding times and sample preservation
- ✓ GC/MS performance checks
- ✗ Initial calibration/continuing calibration verification

✓ Laboratory blanks/equipment blanks/trip blanks
✓ Surrogate spike recoveries
✗ Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓ Laboratory control sample (LCS) results
✓ Field duplicate results
✓ Internal standard results
✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness (COC)/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Due to limitations in the reporting system, the laboratory omitted the "VPB" prefix and the "GW" from the sample ID, and truncated the ID for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria. The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met. The QC acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the initial calibration verification standard (ICV) percent recoveries (%Rs) acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

Data qualification to the analytes associated with the specific ICV and/or CCV was as follows:

ICV Recovery Nonconformances:

Nonconformance	Actions	
	Detected Compounds	Nondetected Compounds
%R > 120%	J	No qualification
20% < %R < 80%	J	UJ
%R <20% (see note)	J	R*

Notes: Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) nondetects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift > 20%	J*	UJ*
* No guidance in NFG, thus professional judgment was used		

Qualified sample results are shown in Table 1. Nonconformances are summarized in Attachment A in Tables A-1a and A-1b.

Laboratory Blanks/Equipment Blanks/Trip Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

The QC acceptance criteria were met and/or qualification of the sample results was not required.

Surrogate Spike Recoveries

The surrogate recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

MS/MSD Results

The MS/MSD %Rs and relative percent differences (RPDs) were reviewed for conformance with the QC acceptance criteria.

Data qualification to the analytes associated with the specific MS/MSD nonconformances was as follows:

Criteria	Action	
	Detected Compounds	Nondetected Compounds
%R> UL	J	No qualification
20% ≤ %R < LL	J	UJ
%R <20% (see note 1)	J	R*
%RPD > UL (see note	J	No qualification
Note: Actions are applied to the native unspiked sample only (see note 3) *When the native sample concentration is >4X the concentration of the spike added (based on Region I criteria), evaluate the MS, MSD, and native sample with regards to %RSD rather than %R (AECOM professional judgment)		

Notes:
1. Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) nondetects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.
2. In the absence of Region 2 guidance, RPD actions are based on professional judgment.
3. If a field duplicate sample was also collected for the native sample chosen for MS/MSD analysis, professional judgment is used to apply MS/MSD actions to the corresponding field duplicate sample as well as the native sample.

Nonconformances are summarized in Attachment A in Table A-2. Qualified sample results are shown in Table 1.

LCS Results

The LCS %Rs were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

Field Duplicate Results

Field duplicate RPDs were reviewed for conformance with the QC criterion of ≤30% for aqueous matrices. This criterion applies if both results were greater than five times the Limit of Quantitation (LOQ). All QC acceptance criteria were met.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as undetected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-041414-TRIP BLANKS	WQ	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-041414-TRIP BLANKS	WQ	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-041414-TRIP BLANKS	WQ	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-041414-TRIP BLANKS	WQ	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
VPB145-041414-TRIP BLANKS	WQ	VINYL CHLORIDE		1.0	UG/L	UJ	c
VPB145-GW-041014-58-60	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-GW-041014-58-60	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-GW-041014-58-60	WG	ACETONE	9.9	2.5	UG/L	J	c
VPB145-GW-041014-58-60	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-GW-041014-58-60	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
VPB145-GW-041014-58-60	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c
VPB145-GW-041014-98-100	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-GW-041014-98-100	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-GW-041014-98-100	WG	ACETONE	6.7	2.5	UG/L	J	c
VPB145-GW-041014-98-100	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-GW-041014-98-100	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
VPB145-GW-041014-98-100	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c
VPB145-GW-041114-148-150	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-GW-041114-148-150	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-GW-041114-148-150	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	m
VPB145-GW-041114-148-150	WG	ACETONE	6.4	2.5	UG/L	J	c
VPB145-GW-041114-148-150	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-GW-041114-148-150	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
VPB145-GW-041114-148-150	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c
VPB145-GW-041114-198-200	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-GW-041114-198-200	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-GW-041114-198-200	WG	ACETONE	5.7	2.5	UG/L	J	c
VPB145-GW-041114-198-200	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-GW-041114-198-200	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
VPB145-GW-041114-198-200	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c
VPB145-GW-041414-218-220	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-GW-041414-218-220	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-GW-041414-218-220	WG	ACETONE	8.9	2.5	UG/L	J	c
VPB145-GW-041414-218-220	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-GW-041414-218-220	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
VPB145-GW-041414-218-220	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c
VPB145-GW-041414-238-240	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-GW-041414-238-240	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-GW-041414-238-240	WG	ACETONE	6.9	2.5	UG/L	J	c
VPB145-GW-041414-238-240	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-GW-041414-238-240	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
VPB145-GW-041414-238-240	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c
VPB145-GWD-041114	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-GWD-041114	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-GWD-041114	WG	ACETONE	5.1	2.5	UG/L	J	c
VPB145-GWD-041114	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-GWD-041114	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
VPB145-GWD-041114	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c

Attachment A

Nonconformance Summary Tables

Table A-1a - Initial Calibration Verification

ICV	Compound	% R	Limit
WG140896-7 GCMS-C	ACETONE	141.7	80-120%
Associated samples: All samples in the SDG			

Table A-1b - Continuing Calibration Verification

CCV ID	Compound	% D	Limit
WG141323-4 GCMS-C	DICHLORODIFLUOROMETHANE	21.0	< 20%
	VINYL CHLORIDE	21.0	< 20%
	CHLOROETHANE	39.0	< 20%
	1,2,4-TRICHLOROBENZENE	27.8	< 20%
	1,2-DIBROMO-3-CHLOROPROPANE	24.8	< 20%
Associated samples: All samples in Batch WG141323-4			

Table A-2 - Matrix Spikes

Sample ID	Compound	MS % Recovery	MSD % Recovery	Lower Limit	Upper Limit	RPD	RPD Limit
VPB145-GW-041114-148-150	1,4-DICHLOROBENZENE	74.4	83.6	75	125	12	30

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
co	Analyte carryover
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results
mc	Method compliance nonconformance

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client: Resolution Consultants
Contact: Eleanor Vivaudou
Phone #: ( )
Fax #: ( )
Address: 100 Red Schoolhouse Rd
City: Chestnut Ridge
State: NY
Zip Code:
Purchase Order #:
Proj. Name / No.: Bethpage 60266526
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Valerie THAYER Valerie Thayer
Copies To: Valerie Thayer

LAB USE ONLY
WORK ORDER #: SH2351
KATAHDIN PROJECT NUMBER:
REMARKS:
SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT
AIRBILL NO:
TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs (HCL)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	VPB145-GW-041414-218-220	04/14 / 11:00	GW	2	X										
	VPB145-GW-041414-238-240	04/14 / 14:00	GW	4	X										
	VPB145-041414-Trip blanks	/		3	X										
		/			X										
	Temperature Blank	/	W	1											
	VPB145-GW-041014-58-60	04/10 / 14:00	GW	4	X										
		/													
	VPB145-GW-041014-98-100	04/10 / 16:00	GW	4	X										
		/													
	VPB145-GW-041114-198-200	04/~~10~~ 11 VT / 15:00	GW	4	X										
		/													
	VPB145-GWD-041114	04/11 / 15:00	GW	3	X										
		/													
	VPB145-GW-041114-148-150	04/11 / 11:30	GW	3	X										
	VPB145-GW-~~041114~~ VT	/													
	MS/MSD-041114-148-150	04/11 / 11:30	GW	7	X										

COMMENTS: hydropunch groundwater samples

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	04/14/14 6:00	[signature] 4-15-14 09:00			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

ORIGINAL 0009

KAS-COC1

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-3
Client ID: VPB145-041414-TB
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6557.D

Sample Date: 14-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	J	1.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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4/22/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-3
Client ID: VPB145-041414-TB
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6557.D

Sample Date: 14-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		91.0	%					
Toluene-d8		96.9	%					
1,2-Dichloroethane-d4		101.	%					
Dibromofluoromethane		94.8	%					

8/22/14

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-4
Client ID: 145-041014-58-60
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6567.D

Sample Date: 10-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	9.9	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ACCREDITED IN ACCORDANCE WITH
melac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-4
Client ID: 145-041014-58-60
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6567.D

Sample Date: 10-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		93.7	%					
Toluene-d8		98.7	%					
1,2-Dichloroethane-d4		107.	%					
Dibromofluoromethane		101.	%					

R 9/22/14

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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-5
Client ID: 145-041014-98-100
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6568.D

Sample Date: 10-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	J	0.40	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	6.7	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	J	0.52	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane		2.5	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	J	0.35	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-5
Client ID: 145-041014-98-100
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6568.D

Sample Date: 10-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	J	0.35	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.4	%					
Toluene-d8		98.7	%					
1,2-Dichloroethane-d4		109.	%					
Dibromofluoromethane		99.7	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-8
Client ID: 145-041114-148-150
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6571.D

Sample Date: 11-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~UM~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	6.4	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-8
Client ID: 145-041114-148-150
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6571.D

Sample Date: 11-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	~~UM~~ UJ	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~UM~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		92.5	%					
Toluene-d8		97.3	%					
1,2-Dichloroethane-d4		106.	%					
Dibromofluoromethane		97.3	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-6
Client ID: 145-041114-198-200
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6569.D

Sample Date: 11-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	5.7	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	J	0.88	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-6
Client ID: 145-041114-198-200
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6569.D

Sample Date: 11-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.8	%					
Toluene-d8		99.5	%					
1,2-Dichloroethane-d4		107.	%					
Dibromofluoromethane		100.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-1
Client ID: 145-041414-218-220
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6565.D

Sample Date: 14-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	8.9	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-1
Client ID: 145-041414-218-220
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6565.D

Sample Date: 14-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		96.1	%					
Toluene-d8		100.	%					
1,2-Dichloroethane-d4		104.	%					
Dibromofluoromethane		100.	%					

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-2
Client ID: 145-041414-238-240
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6566.D

Sample Date: 14-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	6.9	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-2
Client ID: 145-041414-238-240
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6566.D

Sample Date: 14-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.6	%					
Toluene-d8		102.	%					
1,2-Dichloroethane-d4		109.	%					
Dibromofluoromethane		100.	%					

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ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-7
Client ID: VPB145-GWD-041114
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6570.D

Sample Date: 11-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	5.1	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	J	0.89	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2351-7
Client ID: VPB145-GWD-041114
Project: Navy Clean WE15-03-06 NW
SDG: SH2351
Lab File ID: C6570.D

Sample Date: 11-APR-14
Received Date: 15-APR-14
Extract Date: 16-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141323

Analysis Date: 16-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		85.0	%					
Toluene-d8		96.8	%					
1,2-Dichloroethane-d4		107.	%					
Dibromofluoromethane		99.1	%					

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RESOLUTION CONSULTANTS

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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Inc.	
Service Request:	SH2469	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)	
Validation Level:	Limited	
AECOM Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/AECOM	Completed on: 07/16/2014
Reviewed by:	Lori Herberich/AECOM	File Name: SH2469_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on April 16 and April 17, 2014.

Sample ID	Matrix/Sample Type
VPB145-GWD-041614	Field Duplicate of VPB145-GW-041614-298-300
VPB145-GW-041614-258-260	Groundwater
VPB145-GW-041614-278-280	Groundwater
VPB145-GW-041614-298-300	Groundwater
VPB145-GW-041714-318-320	Groundwater
VPB145-GW-041714-338-340	Groundwater
VPB145-GW-041714-358-360	Groundwater
VPB145-TRIP BLANK-041714	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996), *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), and Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (DoD, October 2010). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

✗ Data completeness (chain-of-custody [COC])/sample integrity
✓ Holding times and sample preservation
✓ GC/MS performance checks
✗ Initial calibration/continuing calibration verification

✓ Laboratory blanks/equipment blanks/trip blanks
✗ Surrogate spike recoveries
✓ Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✗ Laboratory control sample (LCS) results
✓ Field duplicate results
✓ Internal standard results
✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness (COC)/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Due to limitations in the reporting system, the laboratory omitted the "VPB" prefix from the sample ID, and truncated IDs for GW and Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Selected samples were mostly soil and had very little standing water.

- For samples VPB145-GW-041614-258-260, VPB145-GW-041614-298-300, and VPB145-GWD-041614 the laboratory decanted the water from the individual vials prior to analysis.
- For samples VPB145-GW-041714-358-360 and VPB145-GW-041714-318-320 the laboratory decanted the water from the 3 individual vials into one vial for analysis.

Positive and nondetect results for these samples were qualified as estimated (J and UJ) respectively, due to possible loss of sample integrity during the decanting procedure.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met. All QC acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the initial calibration verification standard (ICV) percent recoveries (%Rs) acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

Data qualification to the analytes associated with the specific ICAL, ICV or CCV was as follows:

ICAL Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%RSD > 15% and quantitation based on mean RF	J	UJ
r or r^2 < 0.99 and quantitation based on linear regression	J*	UJ*
* No guidance in NFG, thus professional judgment was used		

ICV Recovery Nonconformances:

Nonconformance	Actions	
	Detected Compounds	Nondetected Compounds
%R > 120%	J	No qualification
20% < %R < 80%	J	UJ
%R <20% (see note)	J	R*

Notes: Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift > 20%	J*	UJ*
* No guidance in NFG, thus professional judgment was used		

Qualified sample results are shown in Table 1. Nonconformances are summarized in Attachment A in Table A-1a and A1b.

Laboratory Blanks/Equipment Blanks/Trip Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

The QC acceptance criteria were met and/or qualification of the sample results was not required.

Surrogate Spike Recoveries

The surrogate %Rs were reviewed for conformance with the QC acceptance criteria.

Data qualification on the basis of surrogate recovery nonconformances was as follows:

	Action	
Nonconformance	Detected Compounds	Nondetected Compounds
%R > Upper Limit (UL)	J	No qualification
20% ≤%R < Lower Limit (LL)	J	UJ
%R < 20%	J	R

Nonconformances are summarized in Attachment A in Table A-2. Qualified sample results are shown in Table 1.

MS/MSD Results

The MS/MSD %Rs and relative percent differences (RPDs) were reviewed for conformance with the QC acceptance criteria.

For sample VPB145-GW-041714-338-340 the MS/MSD %Rs for chloroethane were above the upper QC limit. This compound was not detected in sample VPB145-GW-041714-338-340 and no validation action was required.

LCS Results

The LCS %Rs were reviewed for conformance with the QC acceptance criteria.

Data qualification to the analytes associated with the specific LCS %Rs was as follows:

Nonconformances[1]	Action	
	Detected Compounds	Nondetected Compounds
%R or RPD > UL	J	No qualification
%R < LL	J	UJ
%R < 20% (see note 1)	J	R
(LL = lower limit, UL = upper limit)		

Notes:
1. Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject sample results previously negated (U) on the basis of blank contamination.

Nonconformances are summarized in Attachment A in Table A-3. Qualified sample results are shown in Table 1.

Field Duplicate Results

Field duplicate RPDs were reviewed for conformance with the QC criterion of ≤30% for aqueous matrices. This criterion applies if both results were greater than five times the Limit of Quantitation (LOQ). All QC acceptance criteria were met.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as undetected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-041614-258-260	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	2-BUTANONE		2.5	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	ACETONE	15	2.5	UG/L	J	c,mc,s
VPB145-GW-041614-258-260	WG	BENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	BROMODICHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	BROMOMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	CARBON DISULFIDE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	CHLOROETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-258-260	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	METHYL ACETATE		0.75	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	O-XYLENE		0.50	UG/L	UJ	mc,s

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-041614-258-260	WG	STYRENE		0.50	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	TOLUENE		0.50	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc,s
VPB145-GW-041614-258-260	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c,mc,s
VPB145-GW-041614-258-260	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc,s
VPB145-GW-041614-278-280	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-GW-041614-278-280	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	l
VPB145-GW-041614-278-280	WG	ACETONE	7.1	2.5	UG/L	J	c
VPB145-GW-041614-278-280	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-GW-041614-278-280	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	c
VPB145-GW-041614-278-280	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	c
VPB145-GW-041614-278-280	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c
VPB145-GW-041614-298-300	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	2-BUTANONE		2.5	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	ACETONE	6.2	2.5	UG/L	J	c,mc
VPB145-GW-041614-298-300	WG	BENZENE		0.50	UG/L	U	mc
VPB145-GW-041614-298-300	WG	BROMODICHLOROMETHANE		0.50	UG/L	U	mc
VPB145-GW-041614-298-300	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	BROMOMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	CARBON DISULFIDE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-041614-298-300	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	CHLOROETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	METHYL ACETATE		0.75	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	O-XYLENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	STYRENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	TOLUENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041614-298-300	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c,mc
VPB145-GW-041614-298-300	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-041714-318-320	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	2-BUTANONE		2.5	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	ACETONE	27	2.5	UG/L	J	c,mc
VPB145-GW-041714-318-320	WG	BENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	BROMODICHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	BROMOMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	CARBON DISULFIDE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	CHLOROETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	METHYL ACETATE		0.75	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	O-XYLENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	STYRENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	TOLUENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041714-318-320	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c,mc
VPB145-GW-041714-318-320	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc
VPB145-GW-041714-338-340	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-GW-041714-338-340	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	l
VPB145-GW-041714-338-340	WG	ACETONE	9.8	2.5	UG/L	J	c

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-041714-338-340	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-GW-041714-338-340	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	c
VPB145-GW-041714-338-340	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	c
VPB145-GW-041714-338-340	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c
VPB145-GW-041714-358-360	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	2-BUTANONE		2.5	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	ACETONE	30	2.5	UG/L	J	c,mc,s
VPB145-GW-041714-358-360	WG	BENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	BROMODICHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	BROMOMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	CARBON DISULFIDE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	CHLOROETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-041714-358-360	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	METHYL ACETATE		0.75	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	O-XYLENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	STYRENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	TOLUENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-041714-358-360	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c,mc
VPB145-GW-041714-358-360	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	2-BUTANONE		2.5	UG/L	UJ	mc
VPB145-GWD-041614	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB145-GWD-041614	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc
VPB145-GWD-041614	WG	ACETONE	4.2	2.5	UG/L	J	c,mc
VPB145-GWD-041614	WG	BENZENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	BROMODICHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	BROMOMETHANE		1.0	UG/L	UJ	mc
VPB145-GWD-041614	WG	CARBON DISULFIDE		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GWD-041614	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	CHLOROETHANE		1.0	UG/L	UJ	mc
VPB145-GWD-041614	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GWD-041614	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GWD-041614	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc
VPB145-GWD-041614	WG	METHYL ACETATE		0.75	UG/L	UJ	mc
VPB145-GWD-041614	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc
VPB145-GWD-041614	WG	O-XYLENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	STYRENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	TOLUENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GWD-041614	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GWD-041614	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c,mc
VPB145-GWD-041614	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc
VPB145-TRIP BLANK-041714	WQ	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-TRIP BLANK-041714	WQ	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	l
VPB145-TRIP BLANK-041714	WQ	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-TRIP BLANK-041714	WQ	TETRACHLOROETHENE		0.50	UG/L	UJ	c
VPB145-TRIP BLANK-041714	WQ	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	c
VPB145-TRIP BLANK-041714	WQ	VINYL CHLORIDE		1.0	UG/L	UJ	c

Attachment A

Nonconformance Summary Tables

Table A-1a - Initial Calibration/Verification

ICAL	Compound	% RSD	Limit
GCMS-C	VINYL CHLORIDE	15.4	<15%
ICV	**Compound**	**% R**	**Limit**
WG140896	ACETONE	141.7	80-120%
Associated samples: All samples in the SDG			

Table A-1b - Continuing Calibration Verification

CCV	Compound	% D	Limit
WG141592	CHLOROETHANE	51.6	<20%
	TRANS-1,2-DICHLOROETHENE	21.3	<20%
	TETRACHLOROETHENE	21.6	<20%
	1,2,4-TRICHLOROBENZENE	27.2	<20%
Associated samples: All samples in the SDG			

Table A2 - Surrogates

Sample ID	Surrogate	% Recovery	Lower Limit	Upper Limit
VPB145-GW-041714-358-360	1,2-Dichloroethane-D4	122	70	120
VPB145-GW-041614-258-260	1,2-Dichloroethane-D4	126	70	120

Table A3 - Lab Control Samples

LCS ID	Compound	LCS % Recovery	Lower Limit	Upper Limit	Associated Samples
WG141592-1	1,2-DICHLOROETHENE, TOTAL	81.9	84	121	VPB145-GW-041614-278-280, VPB145-GW-041714-338-340, VPB145-TRIP BLANK-041714

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
co	Analyte carryover
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results
mc	Method compliance nonconformance

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

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Page ____ of ____

Client: Resolution Consultants	Contact: Eleanor Vivaudou	Phone #: ( )	Fax #: ( )
Address: 100 Red Schoolhouse Rd	City: Chestnut Ridge	State: NY	Zip Code:
Purchase Order #:	Proj. Name / No.: Bethpage KE026655.26		Katahdin Quote #:
Bill (if different than above)	Address:		
Sampler (Print / Sign): Valerie Thayer Val Thayer			Copies To:

LAB USE ONLY WORK ORDER #: J SH2469 J

KATAHDIN PROJECT NUMBER: _____

REMARKS: _____

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: _____

TEMP°C _____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: VOCs HCL	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
✓	VPB145-GWD-041614	04/16/14 14:15	GW	~~4~~ 3	X										
✓	VPB145-GW-041614-298-300	04/16/14 14:15	GW	~~3~~ 2	X										
✓	VPB145-GW-041614-278-280	04/16/14 12:30	GW	4	X										
✓	Temp Blank	/		1											
✓	VPB145-TripBlank-041614 VT	04/23/13 12:00	W	3	X										
✓	VPB145-GW-041714-318-320	4/17/14 11:30	GW	3	X										
✓	VPB145-GW-041714-338-340	4/17/14 13:30	GW	3	X										
✓	VPB145-GW-MS/MSD-041714-338-340	4/17/14 13:30	GW	7	X										
✓	VPB145-GW-041614-258-260	4/16/14 4:45	GW	2	X										
✓	VPB145-GW-041714-358-360	4/17/14 4:00	GW	3	X										

COMMENTS: small bubbles developed after sampling - although checked for bubbles in field (none)

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	04/17/14 6:00	4-18-14 0415			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

ORIGINAL

KAS-COC1

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-7
Client ID: 145-041614-258-260
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6644.D

Sample Date: 16-APR-14
Received Date: 18-APR-14
Extract Date: 21-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141533

Analysis Date: 21-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	15	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U UJ	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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9/25/14

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-7
Client ID: 145-041614-258-260
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6644.D

Sample Date: 16-APR-14
Received Date: 18-APR-14
Extract Date: 21-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141533

Analysis Date: 21-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		93.1	%					
Toluene-d8		102.	%					
1,2-Dichloroethane-d4	*	126.	%					
Dibromofluoromethane		107.	%					

U5

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-3RA
Client ID: 145-041614-278-280
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6660.D

Sample Date: 16-APR-14
Received Date: 18-APR-14
Extract Date: 22-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141592

Analysis Date: 22-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~UL~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	7.1	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-3RA
Client ID: 145-041614-278-280
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6660.D

Sample Date: 16-APR-14
Received Date: 18-APR-14
Extract Date: 22-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141592

Analysis Date: 22-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	~~UL~~ UJ	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		88.2	%					
Toluene-d8		93.8	%					
1,2-Dichloroethane-d4	*	120.	%					
Dibromofluoromethane		98.9	%					

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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-2
Client ID: 145-041614-298-300
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6640.D

Sample Date: 16-APR-14
Received Date: 18-APR-14
Extract Date: 21-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141533

Analysis Date: 21-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	6.2	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U UJ	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-2
Client ID: 145-041614-298-300
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6640.D

Sample Date: 16-APR-14
Received Date: 18-APR-14
Extract Date: 21-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141533

Analysis Date: 21-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UJ	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		94.7	%					
Toluene-d8		103.	%					
1,2-Dichloroethane-d4		118.	%					
Dibromofluoromethane		106.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-5
Client ID: 145-041714-318-320
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6642.D

Sample Date: 17-APR-14
Received Date: 18-APR-14
Extract Date: 21-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141533

Analysis Date: 21-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	27	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U UJ	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-5
Client ID: 145-041714-318-320
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6642.D

Sample Date: 17-APR-14
Received Date: 18-APR-14
Extract Date: 21-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141533

Analysis Date: 21-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U VJ	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		92.3	%					
Toluene-d8		101.	%					
1,2-Dichloroethane-d4		118.	%					
Dibromofluoromethane		105.	%					

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ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-6RA
Client ID: 145-041714-338-340
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6661.D

Sample Date: 17-APR-14
Received Date: 18-APR-14
Extract Date: 22-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141592

Analysis Date: 22-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~ULMM~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	9.8	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-6RA
Client ID: 145-041714-338-340
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6661.D

Sample Date: 17-APR-14
Received Date: 18-APR-14
Extract Date: 22-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141592

Analysis Date: 22-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ U5	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	~~U~~ U5	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		85.9	%					
Toluene-d8		90.9	%					
1,2-Dichloroethane-d4		119.	%					
Dibromofluoromethane		98.4	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-8
Client ID: 145-041714-358-360
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6645.D

Sample Date: 17-APR-14
Received Date: 18-APR-14
Extract Date: 21-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141533

Analysis Date: 21-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	30	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U UJ	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-8
Client ID: 145-041714-358-360
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6645.D

Sample Date: 17-APR-14
Received Date: 18-APR-14
Extract Date: 21-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141533

Analysis Date: 21-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		93.1	%					
Toluene-d8		102.	%					
1,2-Dichloroethane-d4	*	122.	%					
Dibromofluoromethane		108.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-1
Client ID: VPB145-GWD-041614
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6639.D

Sample Date: 16-APR-14
Received Date: 18-APR-14
Extract Date: 21-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141533

Analysis Date: 21-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J UJ	4.2	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U UJ	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-1
Client ID: VPB145-GWD-041614
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6639.D

Sample Date: 16-APR-14
Received Date: 18-APR-14
Extract Date: 21-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141533

Analysis Date: 21-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UT	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		94.5	%					
Toluene-d8		103.	%					
1,2-Dichloroethane-d4		115.	%					
Dibromofluoromethane		105.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-4
Client ID: VPB145-TB-041714
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6656.D

Sample Date: 17-APR-14
Received Date: 18-APR-14
Extract Date: 22-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141592

Analysis Date: 22-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~UL~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	J	2.1	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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9/25/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2469-4
Client ID: VPB145-TB-041714
Project: Navy Clean WE15-03-06 NW
SDG: SH2469
Lab File ID: C6656.D

Sample Date: 17-APR-14
Received Date: 18-APR-14
Extract Date: 22-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141592

Analysis Date: 22-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	~~UL~~ UJ	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		83.6	%					
Toluene-d8		89.6	%					
1,2-Dichloroethane-d4		109.	%					
Dibromofluoromethane		96.2	%					

4/25/14

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RESOLUTION CONSULTANTS

Resolution Consultants
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Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Inc.	
Service Request:	SH2529	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)	
Validation Level:	Limited	
RESCON Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/RESCON	Completed on: 06/10/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH2529_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants (RESCON) from the Regional Groundwater Investigation - NWIRP Bethpage site on April 18 and 21, 2014.

Sample ID	Matrix/Sample Type
VPB145-FB-042114	Field blank
VPB145-GW-041814-378-380	Ground water
VPB145-GW-041814-398-400	Ground water
VPB145-GW-042114-418-420	Ground water
VPB145-GW-042114-433-435	Ground water
VPB145-TRIP BLANK-042114	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or RESCON professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

✓	Data completeness (chain-of-custody (COC))/sample integrity
✓	Holding times and sample preservation
✓	GC/MS performance checks
✗	Initial calibration/continuing calibration verification
✓	Laboratory blanks/trip blanks/equipment blanks
✗	Surrogate spike recoveries
NA	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓	Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) results

NA Field duplicates
✓ Internal standards
✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Due to limitations in the reporting system, the laboratory omitted the "VPB" prefix and the GW from the sample ID, and truncated IDs for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Sample VPB145-GW-042114-433-435 was mostly soil and had very little standing water. The laboratory decanted the water from one of the vials and analyzed it. .Positive and nondetect results for this sample were qualified as estimated (J and UJ) respectively, due to possible loss of sample integrity during decanting.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

ICAL Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%RSD > 15% and quantitation based on mean RF	J	UJ
r or r^2 < 0.99 and quantitation based on linear regression	J*	UJ*
* No guidance in NFG, thus professional judgment was used		

ICV Recovery Nonconformances:

Nonconformance	Actions	
	Detected Compounds	Nondetected Compounds
%R > 120%	J	No qualification
20% < %R < 80%	J	UJ
%R <20% (see note)	J	R*

Notes: Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift	J*	UJ*
* No guidance in NFG, thus professional judgment was used		

Qualified sample results are shown in Table 1. Nonconformances are summarized in Attachment A in Table A-1, A-2, and A-3.

Laboratory Blanks/Equipment Blanks/Trip Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Surrogate Spike Recoveries

The surrogate percent recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

Data qualification on the basis of surrogate recovery nonconformances was as follows:

	Action	
Criteria	**Detected Compounds**	**Nondetected Compounds**
%R > Upper Limit (UL)	J	No qualification
20% ≤%R < Lower Limit (LL)	J	UJ
%R < 20%	J	R

Nonconformances are summarized in Attachment A in Table A-4. Qualified sample results are shown in Table 1.

MS/MSD Results

MS/MSD analyses were not performed on samples reported in this SDG. There were no validation actions taken on this basis.

LCS Results

The LCS %Rs were reviewed for conformance with the QC acceptance criteria.

All LCS %Rs, associated with the sample results reported, met the QC limits.

Field Duplicate Results

There were no field duplicate samples submitted with this data set. No validation actions were taken on this basis.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as undetected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-FB-042114	WQ	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-FB-042114	WQ	DIBROMOCHLOROMETHANE	0.43	0.50	UG/L	J	s
VPB145-FB-042114	WQ	TRICHLOROETHENE	0.30	0.50	UG/L	J	s
VPB145-FB-042114	WQ	VINYL CHLORIDE		1.0	UG/L	UJ	c
VPB145-GW-041814-378-380	WG	ACETONE	4.7	2.5	UG/L	J	c
VPB145-GW-041814-378-380	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-GW-041814-378-380	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c
VPB145-GW-041814-398-400	WG	ACETONE	4.2	2.5	UG/L	J	c
VPB145-GW-041814-398-400	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-GW-041814-398-400	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c
VPB145-GW-042114-418-420	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-GW-042114-418-420	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c
VPB145-GW-042114-433-435	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	2-BUTANONE		2.5	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	ACETONE	6.6	2.5	UG/L	J	mc,s,c
VPB145-GW-042114-433-435	WG	BENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	BROMODICHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	BROMOMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	CARBON DISULFIDE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-042114-433-435	WG	CHLOROETHANE		1.0	UG/L	UJ	c,mc
VPB145-GW-042114-433-435	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	METHYL ACETATE		0.75	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	O-XYLENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	STYRENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	TOLUENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-042114-433-435	WG	VINYL CHLORIDE		1.0	UG/L	UJ	c,mc
VPB145-GW-042114-433-435	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc
VPB145-TRIP BLANK-042114	WQ	CHLOROETHANE		1.0	UG/L	UJ	c
VPB145-TRIP BLANK-042114	WQ	VINYL CHLORIDE		1.0	UG/L	UJ	c

Attachment A

Non Conformance Summary Tables

Table A-1 – Initial Calibration

ICAL	Compound	% RSD	% RSD Limit
WG1140896	Vinyl Chloride	15.4	15
Associated samples: All samples in the SDG			

Table A-2 – Initial Calibration Verification

ICV	Compound	% R	Limit
WG1140896	Acetone	141.7	80-120%
	2-Butanone	122.4	80-120%
	4-Methyl-2- pentanone	121.1	80-120%
	2-Hexanonone	123.3	80-120%
Associated samples: All samples in the SDG			

Table A-3 - Continuing Calibration Verification

CCV ID	Compound	% D	Limit
WG141663	Chloroethane	38.3	< 20%
Associated samples: All samples in Batch WG141663			

Table A-4 - Surrogates

Sample ID	Surrogate	% Recovery	Lower Limit	Upper Limit
VPB145-FB-042114	1,2-DICHLOROETHANE-D4	121	70	120
VPB145-GW-042114-433-435	1,2-DICHLOROETHANE-D4	121	70	120

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
co	Analyte carryover
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results
mc	Method compliance deviation

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Fax: (207) 775-4029

CHAIN of CUSTODY

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Page ____ of ____

Client	Contact	Phone #	Fax #
RC	Eleanor Vivandou	( )	( )

Address	City	State	Zip Code
100 Red Schoolhouse Rd	Chestnut Ridge	NY	

Purchase Order #	Proj. Name / No.	Katahdin Quote #
	Bethpage 60266526	

Bill (if different than above) — Address

Sampler (Print / Sign) Valerie Thayer Valerie Thayer — Copies To:

LAB USE ONLY WORK ORDER #: SH2529 0

KATAHDIN PROJECT NUMBER ____

REMARKS: ____

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: ____

TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: VOCs HCL	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
✓	VPB145-Trip blanks-042114	11/25/13/12:00	W	3	X										
	Temp blank	/	W	1	X										
✓	VPB145-GW-041814-398-400'	04/18/14/14:00	GW	5	X										
		/													
✓	VPB145-GW-041814-378-380'	04/18/14/11:15	GW	5	X										
✓	VPB145-GW-042114-418-420	04/21/14/10:45	GW	4	X										
		/													
✓	VPB145-GW-042114-438-440	04/21/14/13:30	GW	4	X										
		/													
	VPB145-[illegible]FB-042114	04/21/14/14:40	W	3	X										
		/													
		/													
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		/													
		/													

COMMENTS

4-22-14/0930

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	04/21/14 6:00				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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ORIGINAL

KAS-COC1

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2529-3
Client ID: 145-041814-378-380
Project: Navy Clean WE15-03-06 NW
SDG: SH2529
Lab File ID: C6689.D

Sample Date: 18-APR-14
Received Date: 22-APR-14
Extract Date: 23-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141663

Analysis Date: 23-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	~~J~~ J	4.7	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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9/24/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2529-3
Client ID: 145-041814-378-380
Project: Navy Clean WE15-03-06 NW
SDG: SH2529
Lab File ID: C6689.D

Sample Date: 18-APR-14
Received Date: 22-APR-14
Extract Date: 23-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141663

Analysis Date: 23-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		83.8	%					
Toluene-d8		90.6	%					
1,2-Dichloroethane-d4		119.	%					
Dibromofluoromethane		101.	%					

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2529-2
Client ID: 145-041814-398-400
Project: Navy Clean WE15-03-06 NW
SDG: SH2529
Lab File ID: C6688.D

Sample Date: 18-APR-14
Received Date: 22-APR-14
Extract Date: 23-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141663

Analysis Date: 23-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	~~J~~ J	4.2	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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8/24/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2529-2
Client ID: 145-041814-398-400
Project: Navy Clean WE15-03-06 NW
SDG: SH2529
Lab File ID: C6688.D

Sample Date: 18-APR-14
Received Date: 22-APR-14
Extract Date: 23-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141663

Analysis Date: 23-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		84.7	%					
Toluene-d8		92.0	%					
1,2-Dichloroethane-d4		114.	%					
Dibromofluoromethane		98.4	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2529-4
Client ID: 145-042114-418-420
Project: Navy Clean WE15-03-06 NW
SDG: SH2529
Lab File ID: C6690.D

Sample Date: 21-APR-14
Received Date: 22-APR-14
Extract Date: 23-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141663

Analysis Date: 23-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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9/24/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2529-4
Client ID: 145-042114-418-420
Project: Navy Clean WE15-03-06 NW
SDG: SH2529
Lab File ID: C6690.D

Sample Date: 21-APR-14
Received Date: 22-APR-14
Extract Date: 23-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141663

Analysis Date: 23-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		85.3	%					
Toluene-d8		92.7	%					
1,2-Dichloroethane-d4		119.	%					
Dibromofluoromethane		102.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2529-5
Client ID: 145-042114-433-435
Project: Navy Clean WE15-03-06 NW
SDG: SH2529
Lab File ID: C6691.D

Sample Date: 21-APR-14
Received Date: 22-APR-14
Extract Date: 23-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141663

Analysis Date: 23-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 09-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	6.6	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U UJ	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2529-5
Client ID: 145-042114-433-435
Project: Navy Clean WE15-03-06 NW
SDG: SH2529
Lab File ID: C6691.D

Sample Date: 21-APR-14
Received Date: 22-APR-14
Extract Date: 23-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141663

Analysis Date: 23-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 09-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UJ	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		87.1	%					
Toluene-d8		92.6	%					
1,2-Dichloroethane-d4	*	121.	%					
Dibromofluoromethane		101.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2529-6
Client ID: VPB145-FB-042114
Project: Navy Clean WE15-03-06 NW
SDG: SH2529
Lab File ID: C6681.D

Sample Date: 21-APR-14
Received Date: 22-APR-14
Extract Date: 23-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141663

Analysis Date: 23-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	~~J~~ J	0.30	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	~~J~~ J	0.43	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2529-6
Client ID: VPB145-FB-042114
Project: Navy Clean WE15-03-06 NW
SDG: SH2529
Lab File ID: C6681.D

Sample Date: 21-APR-14
Received Date: 22-APR-14
Extract Date: 23-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141663

Analysis Date: 23-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		85.7	%					
Toluene-d8		92.6	%					
1,2-Dichloroethane-d4	*	121.	%					
Dibromofluoromethane		104.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2529-1
Client ID: VPB145-TB-042114
Project: Navy Clean WE15-03-06 NW
SDG: SH2529
Lab File ID: C6679.D

Sample Date: 21-APR-14
Received Date: 22-APR-14
Extract Date: 23-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141663

Analysis Date: 23-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	J	2.4	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2529-1
Client ID: VPB145-TB-042114
Project: Navy Clean WE15-03-06 NW
SDG: SH2529
Lab File ID: C6679.D

Sample Date: 21-APR-14
Received Date: 22-APR-14
Extract Date: 23-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141663

Analysis Date: 23-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 25-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		84.0	%					
Toluene-d8		90.4	%					
1,2-Dichloroethane-d4		117.	%					
Dibromofluoromethane		96.4	%					

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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Inc.	
Service Request:	SH2583	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)	
Validation Level:	Limited	
RESCON Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/RESCON	Completed on: 07/16/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH2583_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants (RESCON) from the Regional Groundwater Investigation - NWIRP Bethpage site on April 21, 22, and 23, 014.

Sample ID	Matrix/Sample Type
VPB145-EB-042114	Equipment blank
VPB145-GW-042214-468-470	Ground water
VPB145-GW-042214-478-480	Ground water
VPB145-GW-042314-493-495	Ground water
VPB145-TRIP BLANK-042314	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

✗	Data completeness (chain-of-custody (COC))/sample integrity
✓	Holding times and sample preservation
✓	GC/MS performance checks
✗	Initial calibration/continuing calibration verification
✓	Laboratory blanks/trip blanks/equipment blanks
✓	Surrogate spike recoveries
NA	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓	Laboratory control sample (LCS) results
NA	Field duplicate results

✓ Internal standard results
✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Due to limitations in the reporting system, the laboratory omitted the "VPB" prefix and the GW from the sample ID, and truncated IDs for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Sample VPB145-GW-042214-468-470 was mostly solid material and had very little standing water. The laboratory decanted the water from the individual vials into one vial. One vial for sample VPB145-GW-042214-478-480 was decanted and analyzed at an 8-fold dilution. Positive and non-detect results for these samples were qualified as estimated (J and UJ) respectively, due to possible loss of sample integrity during the decanting procedure.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

ICV Recovery Nonconformances:

Nonconformance	Actions	
	Detected Compounds	Nondetected Compounds
%R > 120%	J	No qualification
20% < %R < 80%	J	UJ
%R <20% (see note)	J	R*

Notes: Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift > 20%	J*	UJ*
* No guidance in NFG, thus professional judgment was used		

Qualified sample results are shown in Table 1. Nonconformances are summarized in Attachment A in Table A-1 and A-2.

Laboratory Blanks/Equipment Blanks/Trip Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Surrogate Spike Recoveries

The surrogate recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

MS/MSD Results

MS/MSD analyses were not performed on samples reported in this SDG. There were no validation actions taken on this basis.

LCS Results

The LCS were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Field Duplicate Results

There were no field duplicate samples submitted with this data set. No validation actions were taken on this basis.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as undetected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-EB-042114	WQ	ACETONE	4.8	2.5	UG/L	J	c
VPB145-EB-042114	WQ	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	c
VPB145-EB-042114	WQ	METHYL ACETATE		0.75	UG/L	UJ	c
VPB145-GW-042214-468-470	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	2-BUTANONE		2.5	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	ACETONE	25	2.5	UG/L	J	c,mc
VPB145-GW-042214-468-470	WG	BENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	BROMODICHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	BROMOMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	CARBON DISULFIDE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	CHLOROETHANE		1.0	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-042214-468-470	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	METHYL ACETATE		0.75	UG/L	UJ	c,mc
VPB145-GW-042214-468-470	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	c,mc
VPB145-GW-042214-468-470	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	O-XYLENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	STYRENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	TOLUENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	VINYL CHLORIDE		1.0	UG/L	UJ	mc
VPB145-GW-042214-468-470	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,1,1-TRICHLOROETHANE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,1,2,2-TETRACHLOROETHANE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,1,2-TRICHLOROETHANE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,1-DICHLOROETHANE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,1-DICHLOROETHENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,2,4-TRICHLOROBENZENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,2-DIBROMO-3-CHLOROPROPANE		6.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,2-DIBROMOETHANE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,2-DICHLOROBENZENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,2-DICHLOROETHANE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,2-DICHLOROETHENE, TOTAL		8.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,2-DICHLOROPROPANE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,3-DICHLOROBENZENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	1,4-DICHLOROBENZENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	2-BUTANONE		20	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	2-HEXANONE		20	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	4-METHYL-2-PENTANONE		20	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	ACETONE	23	20	UG/L	J	c,mc
VPB145-GW-042214-478-480	WG	BENZENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	BROMODICHLOROMETHANE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	BROMOFORM		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	BROMOMETHANE		8.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	CARBON DISULFIDE		4.0	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-042214-478-480	WG	CARBON TETRACHLORIDE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	CHLOROBENZENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	CHLOROETHANE		8.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	CHLOROFORM		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	CHLOROMETHANE		8.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	CIS-1,2-DICHLOROETHENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	CIS-1,3-DICHLOROPROPENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	CYCLOHEXANE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	DIBROMOCHLOROMETHANE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	DICHLORODIFLUOROMETHANE		8.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	ETHYLBENZENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	ISOPROPYLBENZENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	M- AND P-XYLENE		8.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	METHYL ACETATE		6.0	UG/L	UJ	c,mc
VPB145-GW-042214-478-480	WG	METHYL CYCLOHEXANE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	METHYL TERT-BUTYL ETHER		4.0	UG/L	UJ	c,mc
VPB145-GW-042214-478-480	WG	METHYLENE CHLORIDE		20	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	O-XYLENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	STYRENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	TETRACHLOROETHENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	TOLUENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	TRANS-1,2-DICHLOROETHENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	TRANS-1,3-DICHLOROPROPENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	TRICHLOROETHENE		4.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	TRICHLOROFLUOROMETHANE		8.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	VINYL CHLORIDE		8.0	UG/L	UJ	mc
VPB145-GW-042214-478-480	WG	XYLENES, TOTAL		12	UG/L	UJ	mc
VPB145-GW-042314-493-495	WG	ACETONE	14	2.5	UG/L	J	c
VPB145-GW-042314-493-495	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	c
VPB145-GW-042314-493-495	WG	METHYL ACETATE		0.75	UG/L	UJ	c
VPB145-TRIP BLANK-042314	WQ	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	c

Attachment A

Nonconformance Summary Tables

Table A-1 – Initial Calibration Verification

ICV	Compound	% R	Limit
WG141238	Bromomethane	120.1	80-120%
	Chloroethane	123.0	80-120%
	Acetone	158.1	80-120%
	Methyl acetate	77.5	80-120%
Associated samples: All samples in the SDG			

Table A-2 - Continuing Calibration Verification

CCV ID	Compound	% D	Limit
WG141786	MTBE	22.2	< 20%
Associated samples: All samples in Batch WG141663			

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
co	Analyte carryover
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results
mc	Method compliance issue

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2583-1
Client ID: 145-042314-493-495
Project: Navy Clean WE15-03-06 NW
SDG: SH2583
Lab File ID: D8315.D

Sample Date: 23-APR-14
Received Date: 24-APR-14
Extract Date: 25-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141786

Analysis Date: 25-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 28-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	14	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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5/26/14

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ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2583-1
Client ID: 145-042314-493-495
Project: Navy Clean WE15-03-06 NW
SDG: SH2583
Lab File ID: D8315.D

Sample Date: 23-APR-14
Received Date: 24-APR-14
Extract Date: 25-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141786

Analysis Date: 25-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 28-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		90.4	%					
Toluene-d8		106.	%					
1,2-Dichloroethane-d4		109.	%					
Dibromofluoromethane		106.	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2583-2DL
Client ID: 145-042214-478-480
Project: Navy Clean WE15-03-06 NW
SDG: SH2583
Lab File ID: D8316.D

Sample Date: 22-APR-14
Received Date: 24-APR-14
Extract Date: 25-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141786

Analysis Date: 25-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 28-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	8.0	ug/L	8	2	16.	1.9	8.0
Chloromethane	U	8.0	ug/L	8	2	16.	2.9	8.0
Vinyl Chloride	U	8.0	ug/L	8	2	16.	2.0	8.0
Bromomethane	U	8.0	ug/L	8	2	16.	3.9	8.0
Chloroethane	U	8.0	ug/L	8	2	16.	4.4	8.0
Trichlorofluoromethane	U	8.0	ug/L	8	2	16.	1.9	8.0
1,1-Dichloroethene	U	4.0	ug/L	8	1	8.0	2.8	4.0
Carbon Disulfide	U	4.0	ug/L	8	1	8.0	2.0	4.0
Freon-113	U	4.0	ug/L	8	1	8.0	2.5	4.0
Methylene Chloride	U	20	ug/L	8	5	40.	9.0	20.
Acetone	J J	23	ug/L	8	5	40.	18.	20.
trans-1,2-Dichloroethene	U UJ	4.0	ug/L	8	1	8.0	2.0	4.0
Methyl tert-butyl Ether	U	4.0	ug/L	8	1	8.0	2.9	4.0
1,1-Dichloroethane	U	4.0	ug/L	8	1	8.0	1.7	4.0
cis-1,2-Dichloroethene	U	4.0	ug/L	8	1	8.0	1.7	4.0
Chloroform	U	4.0	ug/L	8	1	8.0	2.6	4.0
1,1,1-Trichloroethane	U	4.0	ug/L	8	1	8.0	1.6	4.0
2-Butanone	U	20	ug/L	8	5	40.	10.	20.
Cyclohexane	U	4.0	ug/L	8	1	8.0	2.5	4.0
Carbon Tetrachloride	U	4.0	ug/L	8	1	8.0	1.8	4.0
Benzene	U	4.0	ug/L	8	1	8.0	2.1	4.0
1,2-Dichloroethane	U	4.0	ug/L	8	1	8.0	1.6	4.0
Trichloroethene	U	4.0	ug/L	8	1	8.0	2.2	4.0
1,2-Dichloropropane	U	4.0	ug/L	8	1	8.0	2.0	4.0
Bromodichloromethane	U	4.0	ug/L	8	1	8.0	2.6	4.0
cis-1,3-Dichloropropene	U	4.0	ug/L	8	1	8.0	1.5	4.0
Toluene	U	4.0	ug/L	8	1	8.0	2.2	4.0
4-Methyl-2-Pentanone	U	20	ug/L	8	5	40.	10.	20.
trans-1,3-Dichloropropene	U	4.0	ug/L	8	1	8.0	1.6	4.0
1,1,2-Trichloroethane	U	4.0	ug/L	8	1	8.0	2.6	4.0
Tetrachloroethene	U	4.0	ug/L	8	1	8.0	3.2	4.0
Dibromochloromethane	U	4.0	ug/L	8	1	8.0	2.4	4.0
2-Hexanone	U	20	ug/L	8	5	40.	14.	20.
Chlorobenzene	U	4.0	ug/L	8	1	8.0	1.8	4.0
Ethylbenzene	U	4.0	ug/L	8	1	8.0	1.7	4.0

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2583-2DL
Client ID: 145-042214-478-480
Project: Navy Clean WE15-03-06 NW
SDG: SH2583
Lab File ID: D8316.D

Sample Date: 22-APR-14
Received Date: 24-APR-14
Extract Date: 25-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141786

Analysis Date: 25-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 28-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UJ	12	ug/L	8	3	24.	2.0	12.
Styrene	U	4.0	ug/L	8	1	8.0	1.8	4.0
Bromoform	U	4.0	ug/L	8	1	8.0	1.8	4.0
Isopropylbenzene	U	4.0	ug/L	8	1	8.0	1.8	4.0
1,1,2,2-Tetrachloroethane	U	4.0	ug/L	8	1	8.0	3.0	4.0
1,3-Dichlorobenzene	U	4.0	ug/L	8	1	8.0	2.1	4.0
1,4-Dichlorobenzene	U	4.0	ug/L	8	1	8.0	1.9	4.0
1,2-Dichlorobenzene	U	4.0	ug/L	8	1	8.0	1.2	4.0
1,2,4-Trichlorobenzene	U	4.0	ug/L	8	1	8.0	3.0	4.0
Methyl Acetate	U	6.0	ug/L	8	1	8.0	4.2	6.0
Methylcyclohexane	U	4.0	ug/L	8	1	8.0	2.4	4.0
o-Xylene	U	4.0	ug/L	8	1	8.0	2.0	4.0
M+P-Xylenes	U	8.0	ug/L	8	2	16.	4.7	8.0
1,2-Dichloroethylene (Total)	U	8.0	ug/L	8	2	16.	1.7	8.0
1,2-Dibromoethane	U	4.0	ug/L	8	1	8.0	1.8	4.0
1,2-Dibromo-3-Chloropropane	U	6.0	ug/L	8	1	8.0	4.0	6.0
P-Bromofluorobenzene		89.3	%					
Toluene-d8		104.	%					
1,2-Dichloroethane-d4		106.	%					
Dibromofluoromethane		103.	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2583-3
Client ID: VPB145-EB-042114
Project: Navy Clean WE15-03-06 NW
SDG: SH2583
Lab File ID: D8314.D

Sample Date: 21-APR-14
Received Date: 24-APR-14
Extract Date: 25-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141786

Analysis Date: 25-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 28-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	~~J~~ J	4.8	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2583-3
Client ID: VPB145-EB-042114
Project: Navy Clean WE15-03-06 NW
SDG: SH2583
Lab File ID: D8314.D

Sample Date: 21-APR-14
Received Date: 24-APR-14
Extract Date: 25-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141786

Analysis Date: 25-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 28-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		86.4	%					
Toluene-d8		100.	%					
1,2-Dichloroethane-d4		103.	%					
Dibromofluoromethane		100.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2583-4
Client ID: 145-042214-468-470
Project: Navy Clean WE15-03-06 NW
SDG: SH2583
Lab File ID: D8317.D

Sample Date: 22-APR-14
Received Date: 24-APR-14
Extract Date: 25-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141786

Analysis Date: 25-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 28-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	25	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U UJ	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2583-4
Client ID: 145-042214-468-470
Project: Navy Clean WE15-03-06 NW
SDG: SH2583
Lab File ID: D8317.D

Sample Date: 22-APR-14
Received Date: 24-APR-14
Extract Date: 25-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141786

Analysis Date: 25-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 28-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UJ	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		83.7	%					
Toluene-d8		95.4	%					
1,2-Dichloroethane-d4		100.	%					
Dibromofluoromethane		101.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2583-5
Client ID: VPB145-TB-042314
Project: Navy Clean WE15-03-06 NW
SDG: SH2583
Lab File ID: D8313.D

Sample Date: 23-APR-14
Received Date: 24-APR-14
Extract Date: 25-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141786

Analysis Date: 25-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 28-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	J	2.2	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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5/20/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2583-5
Client ID: VPB145-TB-042314
Project: Navy Clean WE15-03-06 NW
SDG: SH2583
Lab File ID: D8313.D

Sample Date: 23-APR-14
Received Date: 24-APR-14
Extract Date: 25-APR-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG141786

Analysis Date: 25-APR-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 28-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		86.1	%					
Toluene-d8		98.6	%					
1,2-Dichloroethane-d4		100.	%					
Dibromofluoromethane		101.	%					

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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Inc.	
Service Request:	SH2619	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS) and Standard Method 5310 for Total Organic Carbon by High-Temperature Combustion	
Validation Level:	Limited	
RESCON Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/RESCON	Completed on: 07/16/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH2619_5310B and 8260B

SUMMARY

The samples listed below were collected by Resolution Consultants (RESCON) from the Regional Groundwater Investigation - NWIRP Bethpage site on April 24, 2014.

Sample ID	Matrix/Sample Type
VPB145-EB-042414	Equipment blank
VPB145-FB-042414	Field blank
VPB145-GW-042414-513-515	Ground water
VPB145-GW-042414-533-535	Ground water
VPB145-GW-042414-553-555	Ground water
VPB145-TRIP BLANK-042414	Trip Blank

The samples were analyzed in accordance with:

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846,* Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996).
- *Standard Methods for the Examination of Water and Wastewater, Method SM310B, Total Organic Carbon by High-Temperature Combustion*

Data validation activities were conducted with reference to these methods, *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (January 2010), and Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (DoD, October 2010) where applicable. In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

✓ Data completeness (chain-of-custody (COC))/sample integrity

✓	Holding times and sample preservation
✓	GC/MS performance checks
✗	Initial calibration/continuing calibration verification
✗	Laboratory blanks/trip blanks/equipment blanks/field blanks
✓	Surrogate spike recoveries
NA	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✗	Laboratory control sample (LCS) results
NA	Field duplicate results
✓	Internal standard results
✓	Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix and the GW from the sample ID, and truncated the ID for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

ICV Recovery Nonconformances:

Nonconformance	Actions	
	Detected Compounds	Nondetected Compounds
%R > 120%	J	No qualification
20% < %R < 80%	J	UJ
%R <20% (see note)	J	R*

Notes: Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.

Qualified sample results are shown in Table 1. Nonconformances are summarized in Attachment A in Table A-1.

Laboratory Blanks/Trip Blanks/Equipment Blanks/Field Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Sample results were qualified as follows:

Blank Type	Blank Result	Sample Result	Action for Samples
ICB/CCB	≥DL but ≤ LOQ	Nondetect	No action
		≥DL but ≤LOQ	Qualify as nondetect (U) at the LOQ
		> LOQ	Use professional judgment (see below [1])
	>LOQ	≥DL but ≤LOQ	Qualify as nondetect (U) at the LOQ
		> LOQ but < ICB/CCB Result	Qualify at level of Blank Result with a "U" or Qualify result as unusable
		>ICB/CCB but <10x the ICB/CCB result	Qualify as estimated (J)

Blank Type	Blank Result	Sample Result	Action for Samples
		≥10x ICB/CCB	No action is taken based on RESCON professional judgment

1] Establish an action level (AL) at 5x the blank contamination. If sample result is <AL, qualify the reported result with a U.
LOQ - Limit of Quantitation

Nonconformances are summarized in Attachment A in Table A-2. Qualified sample results are shown in Table 1.

Surrogate Spike Recoveries

The surrogate percent recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

MS/MSD Results

MS/MSD analyses were not performed on samples reported in this SDG. There were no validation actions taken on this basis.

LCS Results

The LCS %Rs were reviewed for conformance with the QC acceptance criteria.

Data qualification to the analytes associated with the specific LCS %Rs or RPDs was as follows:

Nonconformances[1]	Action	
	Detected Compounds	Nondetected Compounds
%R or RPD > UL	J	No qualification
%R < LL	J	UJ
%R < 20% (see note 1)	J	R
(LL = lower limit, UL = upper limit)		

Notes:
1. Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject sample results previously negated (U) on the basis of blank contamination.

Nonconformances are summarized in Attachment A in Table A-3. Qualified sample results are shown in Table 1.

Field Duplicate Results

There were no field duplicate samples submitted with this data set. No validation actions were taken on this basis.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as undetected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the DL were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-042414-513-515	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c,l
VPB145-GW-042414-513-515	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-GW-042414-513-515	WG	2-HEXANONE		2.5	UG/L	UJ	c
VPB145-GW-042414-513-515	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB145-GW-042414-513-515	WG	METHYL ACETATE		0.75	UG/L	UJ	c
VPB145-GW-042414-533-535	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c,l
VPB145-GW-042414-533-535	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-GW-042414-533-535	WG	2-HEXANONE		2.5	UG/L	UJ	c
VPB145-GW-042414-533-535	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB145-GW-042414-533-535	WG	METHYL ACETATE		0.75	UG/L	UJ	c
VPB145-GW-042414-553-555	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c,l
VPB145-GW-042414-553-555	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-GW-042414-553-555	WG	2-HEXANONE		2.5	UG/L	UJ	c
VPB145-GW-042414-553-555	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB145-GW-042414-553-555	WG	METHYL ACETATE		0.75	UG/L	UJ	c
VPB145-TRIP BLANK-042414	WQ	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c,l
VPB145-TRIP BLANK-042414	WQ	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-TRIP BLANK-042414	WQ	2-HEXANONE		2.5	UG/L	UJ	c
VPB145-TRIP BLANK-042414	WQ	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB145-TRIP BLANK-042414	WQ	METHYL ACETATE		0.75	UG/L	UJ	c
VPB145-EB-042414	WQ	TOTAL ORGANIC CARBON		1.0 LOQ	MG/L	U	bl
VPB145-FB-042414	WQ	TOTAL ORGANIC CARBON		1.0 LOQ	MG/L	U	bl

Attachment A

Nonconformance Summary Tables

Table A-1 - Initial Calibration Verification Standard

ICV	Compound	% R	Limit
WG141910	4-METHY-2-PENTANONE	65.5	80-120%
	2-HEXANONE	59.2	80-120%
	METHYL ACETATE	74.2	80-120%
	1,2,4-TRICHLOROBENZENE	61.0	80-120%
	1,2-DIBROMO-3-CHLOROPROPANE	72.8	80-120%
	O-XYLENE	121.9	80-120%
	ISOPROPYLBENZENE	124.2	80-120%
Associated samples: All samples in the SDG			

Table A-2 - Lab Blanks

Blank ID	Compound	Result	QL	Units	Associated Samples
WG141949-1	TOTAL ORGANIC CARBON	0.84	0.50	MG/L	VPB145-EB-042414 VPB145-FB-042414

Table A-3 - Lab Control Samples

LCS ID	Compound	LCS % Recovery	Lower Limit	Upper Limit	Associated Samples
WG141910-8	1,2,4-TRICHLOROBENZENE	61	65	135	VPB145-GW-042414-513-515 VPB145-GW-042414-533-535 VPB145-GW-042414-553-555 VPB145-TRIP BLANK-042414
WG141910-8	XYLENES, TOTAL	117	89	116	VPB145-GW-042414-513-515 VPB145-GW-042414-533-535 VPB145-GW-042414-553-555 VPB145-TRIP BLANK-042414
WG141910-8	O-XYLENE	122	80	120	VPB145-GW-042414-513-515 VPB145-GW-042414-533-535 VPB145-GW-042414-553-555 VPB145-TRIP BLANK-042414

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
co	Analyte carryover
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results

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CHAIN of CUSTODY

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Page ____ of ____

Client	Contact	Phone #	Fax #
~~Eberl~~ RC	Eleanor Vivaudou	( )	( )

Address	City	State	Zip Code
	Chestnut Ridge	NY	

Purchase Order #	Proj. Name / No.	Katahdin Quote #
	60266526; Battpage #1, WI	

Bill (if different than above)	Address

Sampler (Print / Sign)	Copies To:
Valerie Thayer, Valerie Thayer	Valerie Thayer

LAB USE ONLY

WORK ORDER #: SH2619

KATAHDIN PROJECT NUMBER: ____

REMARKS: ____

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: ____

TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: VOCs HCl	TOC Sulfuric Acid	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	VPB145-GW-042414-553-555	04/24/ 15:15	GW	4	X											
	VPB145-GW-042414-513-515	04/24/14 10:30	GW	3	X											
	VPB145-GW-042414-533-535	04/24/14 13:00	GW	6	X											
	VPB145-EB-042414	04/24/14 14:30	GW	3		X										
	VPB145-FB-042414	04/24/14 14:00	GW	3		X										
	Temp blank	/	W	1												
	VPB145-Trip blank-042414	11/25/13 13:00	W	3	X											
		/														
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		/														
		/														
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		/														

COMMENTS

4-25-14 0900

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	04/24/14 7:00	Don Meade			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2619-1
Client ID: 145-042414-553-555
Project: Navy Clean WE15-03-06 NW
SDG: SH2619
Lab File ID: C6738.D

Sample Date: 24-APR-14
Received Date: 25-APR-14
Extract Date: 28-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141910

Analysis Date: 28-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 29-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2619-1
Client ID: 145-042414-553-555
Project: Navy Clean WE15-03-06 NW
SDG: SH2619
Lab File ID: C6738.D

Sample Date: 24-APR-14
Received Date: 25-APR-14
Extract Date: 28-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141910

Analysis Date: 28-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 29-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	UL	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~UL~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	UL	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		93.7	%					
Toluene-d8		95.8	%					
1,2-Dichloroethane-d4		114.	%					
Dibromofluoromethane		104.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2619-2
Client ID: 145-042414-513-515
Project: Navy Clean WE15-03-06 NW
SDG: SH2619
Lab File ID: C6739.D

Sample Date: 24-APR-14
Received Date: 25-APR-14
Extract Date: 28-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141910

Analysis Date: 28-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 29-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2619-2
Client ID: 145-042414-513-515
Project: Navy Clean WE15-03-06 NW
SDG: SH2619
Lab File ID: C6739.D

Sample Date: 24-APR-14
Received Date: 25-APR-14
Extract Date: 28-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141910

Analysis Date: 28-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 29-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	UL	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~UL~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	UL	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		92.4	%					
Toluene-d8		94.7	%					
1,2-Dichloroethane-d4		106.	%					
Dibromofluoromethane		100.	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2619-3
Client ID: 145-042414-533-535
Project: Navy Clean WE15-03-06 NW
SDG: SH2619
Lab File ID: C6740.D

Sample Date: 24-APR-14
Received Date: 25-APR-14
Extract Date: 28-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141910

Analysis Date: 28-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 29-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	3.8	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2619-3
Client ID: 145-042414-533-535
Project: Navy Clean WE15-03-06 NW
SDG: SH2619
Lab File ID: C6740.D

Sample Date: 24-APR-14
Received Date: 25-APR-14
Extract Date: 28-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141910

Analysis Date: 28-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 29-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	UL	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~UL~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	UL	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		91.3	%					
Toluene-d8		93.2	%					
1,2-Dichloroethane-d4		109.	%					
Dibromofluoromethane		102.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2619-6
Client ID: VPB145-TB-042414
Project: Navy Clean WE15-03-06 NW
SDG: SH2619
Lab File ID: C6737.D

Sample Date: 24-NOV-13
Received Date: 25-APR-14
Extract Date: 28-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141910

Analysis Date: 28-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 29-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2619-6
Client ID: VPB145-TB-042414
Project: Navy Clean WE15-03-06 NW
SDG: SH2619
Lab File ID: C6737.D

Sample Date: 24-NOV-13
Received Date: 25-APR-14
Extract Date: 28-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG141910

Analysis Date: 28-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 29-APR-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	UL	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~UL~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	UL	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		93.7	%					
Toluene-d8		96.7	%					
1,2-Dichloroethane-d4		107.	%					
Dibromofluoromethane		103.	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Rick Purdy
AECOM
701 Edgewater Drive
Wakefield,MA 01880

Lab Sample ID: SH2619-4
Report Date: 12-MAY-14
Client PO: 16518
Project: Navy Clean WE15-03-0
SDG: SH2619

Sample Description	Matrix	Date Sampled	Date Received
VPB145-EB-042414	AQ	24-APR-14	25-APR-14

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Organic Carbon	~~10.15~~ 1.0 U mg/L	1.0	0.10	.5	SM5310B	WG141949	28-APR-14 17:45:46	N/A	N/A	

5/20/14

Katahdin Analytical Services 0000174

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Rick Purdy
AECOM
701 Edgewater Drive
Wakefield,MA 01880

Lab Sample ID: SH2619-5
Report Date: 12-MAY-14
Client PO: 16518
Project: Navy Clean WE15-03-0
SDG: SH2619

Sample Description	Matrix	Date Sampled	Date Received
VPB145-FB-042414	AQ	24-APR-14	25-APR-14

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Organic Carbon	~~0.25~~ 1.0 U mg/L	1.0	0.10	.5	SM5310B	WG141949	28-APR-14 17:57:08	N/A	N/A	

5/26/14

Katahdin Analytical Services 0000115

AECOM
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Inc.	
Service Request:	SH2688	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)	
Validation Level:	Limited	
RESCON Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/RESCON	Completed on: 07/16/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH2688_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants (RESCON) from the Regional Groundwater Investigation - NWIRP Bethpage site on April 28, 2014.

Sample ID	Matrix/Sample Type
VPB145-GW-042814-593-595	Ground water
VPB145-GW-042814-613-615	Ground water
VPB145-GW-042814-633-635	Ground water
VPB145-042814-TRIP BLANK	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or RESCON professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

- ✓ Data completeness (chain-of-custody (COC))/sample integrity
- ✓ Holding times and sample preservation
- ✓ GC/MS performance checks
- ✗ Initial calibration/continuing calibration verification
- ✓ Laboratory blanks/trip blanks/equipment blanks
- ✓ Surrogate spike recoveries
- ✓ Matrix spike (MS) and/or matrix spike duplicate (MSD) results
- ✓ Laboratory control sample (LCS) results
- NA Field duplicate results
- ✓ Internal standard results

✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. No data were rejected. Selected data points were estimated and/or negated due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Due to limitations in the reporting system, the laboratory omitted the "VPB" prefix and the GW from the sample ID, and truncated IDs for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and

- the retention time method acceptance criteria were met.

Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

ICV Recovery Nonconformances:

Nonconformance	Actions	
	Detected Compounds	Nondetected Compounds
%R > 120%	J	No qualification
20% < %R < 80%	J	UJ
%R <20% (see note)	J	R*

Notes: Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift >20%	J*	UJ*
* No guidance in NFG, thus professional judgment was used		

Qualified sample results are shown in Table 1. Nonconformances are summarized in Attachment A in Table A-1 and A-2.

Laboratory Blanks/Trip Blanks/Equipment Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Surrogate Spike Recoveries

The surrogate percent recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

MS/MSD Results

The MS/MSD %Rs and relative percent differences (RPDs) were reviewed for conformance with the QC acceptance criteria.

Nonconformances are summarized in Attachment A in Table A-3. The results for the compounds listed in the table were nondetect and no validation action was taken for the high bias.

LCS Results

The LCS %Rs were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

Field Duplicate Results

There were no field duplicate samples submitted with this data set. No validation actions were taken on this basis.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as undetected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-042814-TRIP BLANK	WQ	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-042814-TRIP BLANK	WQ	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-042814-TRIP BLANK	WQ	2-HEXANONE		2.5	UG/L	UJ	c
VPB145-042814-TRIP BLANK	WQ	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB145-042814-TRIP BLANK	WQ	METHYL ACETATE		0.75	UG/L	UJ	c
VPB145-GW-042814-593-595	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-GW-042814-593-595	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-GW-042814-593-595	WG	2-HEXANONE		2.5	UG/L	UJ	c
VPB145-GW-042814-593-595	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB145-GW-042814-593-595	WG	METHYL ACETATE		0.75	UG/L	UJ	c
VPB145-GW-042814-613-615	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-GW-042814-613-615	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-GW-042814-613-615	WG	2-HEXANONE		2.5	UG/L	UJ	c
VPB145-GW-042814-613-615	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB145-GW-042814-613-615	WG	METHYL ACETATE		0.75	UG/L	UJ	c
VPB145-GW-042814-633-635	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	c
VPB145-GW-042814-633-635	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB145-GW-042814-633-635	WG	2-HEXANONE		2.5	UG/L	UJ	c
VPB145-GW-042814-633-635	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB145-GW-042814-633-635	WG	METHYL ACETATE		0.75	UG/L	UJ	c

Attachment A

Nonconformance Summary Tables

Table A-1 - Initial Calibration Verification Standard

ICV	Compound	% R	Limit
WG141910	4-METHY-2-PENTANONE	65.5	80-120%
	2-HEXANONE	59.2	80-120%
	METHYL ACETATE	74.2	80-120%
	1,2,4-TRICHLOROBENZENE	61.0	80-120%
	1,2-DIBROMO-3-CHLOROPROPANE	72.8	80-120%
	O-XYLENE	121.9	80-120%
	ISOPROPYLBENZENE	124.2	80-120%
Associated samples: All samples in the SDG			

Table A-2 -Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG142035	1,2,4-TRICHLOROBENZENE -	22.1	<20 %D

Table A-3- Matrix Spikes

Sample ID	Compound	MS % Recovery	MSD % Recovery	Lower Limit	Upper Limit	RPD	RPD Limit
VPB145-GW-042814-613-615	O-XYLENE	124	125	80	120	1	30
VPB145-GW-042814-613-615	XYLENES, TOTAL	121	121	89	116	0	30
VPB145-GW-042814-613-615	CHLOROETHANE	141	133	60	135	6	30
VPB145-GW-042814-613-615	BROMODICHLOROMETHANE	122	123	75	120	1	30

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
co	Analyte carryover
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
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Fax: (207) 775-4029

CHAIN of CUSTODY

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Page ____ of ____

Client	Contact	Phone #	Fax #
RESCON	Eleanor Vivenzio	(845) 425-4980	( )

Address	City	State	Zip Code
100 Red Schoolhouse Rd	Chestnut Ridge	NY	10977

Purchase Order #	Proj. Name / No.	Katahdin Quote #
	60266526	

Bill (if different than above)	Address

Sampler (Print / Sign)	Copies To:
Paul Karcich / Paul Karcich	

LAB USE ONLY WORK ORDER #: SH2688

KATAHDIN PROJECT NUMBER ____

REMARKS: ____

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: ____

TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: VOCs (Filt. ☐Y ☐N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	VPB145-GW-042814-593-595	4-28-14/1100	GW	3	✓									
	VPB145GW-042814-613-615	4/28/14/1330	GW	3	✓									
	VPB145 GW-MS-042814-613-615	4-28-14/1330	GW	3	✓									
	VPB145 GW-MSD-042814 613-615	4-28-14/1330	GW	3	✓									
	VPB145-GW-042814-633-635	4/28/14/1600	GW	3	✓									
	VPB-145-042814-Trip Blank	11/25/13/1300	DI	3	✓									
		/												
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PS

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Paul Karcich	4/28/14 1630	Fedex			4-29-14 09:45
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2688-1
Client ID: 145-042814-593-595
Project: Navy Clean WE15-03-06 NW
SDG: SH2688
Lab File ID: C6785.D

Sample Date: 28-APR-14
Received Date: 29-APR-14
Extract Date: 30-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142035

Analysis Date: 30-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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8/26/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2688-1
Client ID: 145-042814-593-595
Project: Navy Clean WE15-03-06 NW
SDG: SH2688
Lab File ID: C6785.D

Sample Date: 28-APR-14
Received Date: 29-APR-14
Extract Date: 30-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142035

Analysis Date: 30-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		89.8	%					
Toluene-d8		93.6	%					
1,2-Dichloroethane-d4		108.	%					
Dibromofluoromethane		92.9	%					

R 8/20/14

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http://www.katahdinlab.com

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ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2688-2
Client ID: 145-042814-613-615
Project: Navy Clean WE15-03-06 NW
SDG: SH2688
Lab File ID: C6786.D

Sample Date: 28-APR-14
Received Date: 29-APR-14
Extract Date: 30-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142035

Analysis Date: 30-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	UM	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	2.8	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	UMM	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2688-2
Client ID: 145-042814-613-615
Project: Navy Clean WE15-03-06 NW
SDG: SH2688
Lab File ID: C6786.D

Sample Date: 28-APR-14
Received Date: 29-APR-14
Extract Date: 30-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142035

Analysis Date: 30-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	UMM	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	UMM	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	UMM	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		90.2	%					
Toluene-d8		92.1	%					
1,2-Dichloroethane-d4		111.	%					
Dibromofluoromethane		98.3	%					

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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2688-3
Client ID: 145-042814-633-635
Project: Navy Clean WE15-03-06 NW
SDG: SH2688
Lab File ID: C6787.D

Sample Date: 28-APR-14
Received Date: 29-APR-14
Extract Date: 30-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142035

Analysis Date: 30-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	J	0.56	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone		24	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2688-3
Client ID: 145-042814-633-635
Project: Navy Clean WE15-03-06 NW
SDG: SH2688
Lab File ID: C6787.D

Sample Date: 28-APR-14
Received Date: 29-APR-14
Extract Date: 30-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142035

Analysis Date: 30-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.3	%					
Toluene-d8		97.7	%					
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		96.4	%					

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2688-4
Client ID: VPB145-TB-042814
Project: Navy Clean WE15-03-06 NW
SDG: SH2688
Lab File ID: C6783.D

Sample Date: 28-APR-14
Received Date: 29-APR-14
Extract Date: 30-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142035

Analysis Date: 30-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2688-4
Client ID: VPB145-TB-042814
Project: Navy Clean WE15-03-06 NW
SDG: SH2688
Lab File ID: C6783.D

Sample Date: 28-APR-14
Received Date: 29-APR-14
Extract Date: 30-APR-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142035

Analysis Date: 30-APR-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		91.6	%					
Toluene-d8		93.1	%					
1,2-Dichloroethane-d4		110.	%					
Dibromofluoromethane		98.6	%					

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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Inc.	
Service Request:	SH2718	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)	
Validation Level:	Limited	
RESCON Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/RESCON	Completed on: 06/21/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH2718_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants (RESCON) from the Regional Investigation - NWIRP Bethpage site on April 25, 2014.

Sample ID	Matrix/Sample Type
VPB145-GW-042514-573-575	Ground water
VPB145-TRIP BLANKS-042514	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or RESCON professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

✗	Data completeness (chain-of-custody (COC))/sample integrity
✓	Holding times and sample preservation
✓	GC/MS performance checks
✗	Initial calibration/continuing calibration verification
✓	Laboratory blanks/trip blanks/equipment blanks
✓	Surrogate spike recoveries
NA	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓	Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) results
NA	Field duplicate results
✓	Internal standard results
✓	Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Due to limitations in the reporting system, the laboratory omitted the "VPB" prefix and the GW from the sample ID, and truncated IDs for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Sample VPB145-GW-042514-573-575 contained soil and was decanted prior to analysis. Positive and non-detect results for this sample were qualified as estimated (J and UJ) respectively, due to possible loss of sample integrity during the decanting procedure.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;

- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

ICV Recovery Nonconformances:

Nonconformance	Actions	
	Detected	Nondetected Compounds
%R > 120%	J	No qualification
20% < %R < 80%	J	UJ
%R <20% (see note)	J	R*

Notes: Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift > 20%	J*	UJ*
* No guidance in NFG, thus professional judgment was used		

Qualified sample results are shown in Table 1. Nonconformances are summarized in Attachment A in Tables A-1, A2.

Laboratory Blanks/Trip Blanks/ Equipment Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Surrogate Spike Recoveries

The surrogate percent recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

MS/MSD Results

MS/MSD analyses were not performed on samples reported in this SDG. There were no validation actions taken on this basis.

LCS/LCSD Results

The LCS/LCSD %Rs and/or relative percent recoveries (RPDs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Field Duplicate Results

There were no field duplicate samples submitted with this data set. No validation actions were taken on this basis.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as undetected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the DL were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-042514-573-575	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	2-BUTANONE		2.5	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	ACETONE	16	2.5	UG/L	J	mc
VPB145-GW-042514-573-575	WG	BENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	BROMODICHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	BROMOMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	CARBON DISULFIDE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	CHLOROETHANE		1.0	UG/L	UJ	c,mc
VPB145-GW-042514-573-575	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-042514-573-575	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	METHYL ACETATE		0.75	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	O-XYLENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	STYRENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	TOLUENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	VINYL CHLORIDE		1.0	UG/L	UJ	mc
VPB145-GW-042514-573-575	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc
VPB145-TRIP BLANKS-042514	WQ	CHLOROETHANE		1.0	UG/L	UJ	c

Attachment A

Non Conformance Summary Tables

Table A-1 - Initial Calibration Verification Standard

ICV	Compound	% D	Limit
WG141910	4-METHY-2-PENTANONE	65.5	80-120%
	2-HEXANONE	59.2	80-120%
	METHYL ACETATE	74.2	80-120%
	1,2,4-TRICHLOROBENZENE	61.0	80-120%
	1,2-DIBROMO-3-CHLOROPROPANE	72.8	80-120%
	O-XYLENE	121.9	80-120%
	ISOPROPYLBENZENE	124.2	80-120%
Associated samples: All samples in the SDG			

Table A-2 -Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG1422095	CHLOROETHANE	21.8	<20 %D
Associated samples: All samples in the SDG			

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
co	Analyte carryover
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results
mc	Method compliance nonconformance

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Fax: (207) 775-4029

CHAIN of CUSTODY

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Page ____ of ____

Client: RC
Contact: Eleanor Vivandoke
Phone #:)
Fax #: ( )

Address: 100 Red schoolhouse Rd
City: Chestnut Ridge
State: NY
Zip Code:

Purchase Order #:
Proj. Name / No.: 60266526 Bethpage
Katahdin Quote #:

Bill (if different than above):
Address:

Sampler (Print / Sign): Valerie Thayer Valerie Thayer
Copies To: Valerie Thayer

LAB USE ONLY
WORK ORDER #: SH2718
KATAHDIN PROJECT NUMBER ____

REMARKS: ____

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT
AIRBILL NO: ____
TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs HCL	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	VPB145-GW-042514-573-575	4/25/14 / 16:00	GW	5	X										
		/													
	VPB145-Tripblanks-042514	4/25/14 / 12:00	W	3	X										
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COMMENTS

4-30-14/0915

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	04/25/14 18:00	[signature]	[signature]	4-29 1410	[signature]
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2718-1
Client ID: 145-042514-573-575
Project: Navy Clean WE15-03-06 NW
SDG: SH2718
Lab File ID: C6811.D

Sample Date: 25-APR-14
Received Date: 30-APR-14
Extract Date: 01-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142095

Analysis Date: 01-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 02-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	16	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U UJ	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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5/26/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2718-1
Client ID: 145-042514-573-575
Project: Navy Clean WE15-03-06 NW
SDG: SH2718
Lab File ID: C6811.D

Sample Date: 25-APR-14
Received Date: 30-APR-14
Extract Date: 01-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142095

Analysis Date: 01-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 02-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UJ	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		93.6	%					
Toluene-d8		93.6	%					
1,2-Dichloroethane-d4		108.	%					
Dibromofluoromethane		95.3	%					

8/26/14

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2718-2
Client ID: VPB145-TB-042514
Project: Navy Clean WE15-03-06 NW
SDG: SH2718
Lab File ID: C6810.D

Sample Date: 25-APR-14
Received Date: 30-APR-14
Extract Date: 01-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142095

Analysis Date: 01-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 02-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Tel:(207) 874-2400 Fax:(207) 775-4029

5/26/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2718-2
Client ID: VPB145-TB-042514
Project: Navy Clean WE15-03-06 NW
SDG: SH2718
Lab File ID: C6810.D

Sample Date: 25-APR-14
Received Date: 30-APR-14
Extract Date: 01-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142095

Analysis Date: 01-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 02-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.2	%					
Toluene-d8		96.0	%					
1,2-Dichloroethane-d4		111.	%					
Dibromofluoromethane		99.1	%					

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978.905.2101 fax

Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Inc.	
Service Request:	SH2795	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)	
Validation Level:	Limited	
RESCON Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/RESCON	Completed on: 06/21/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH2795_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants (RESCON) from the Regional Groundwater Investigation - NWIRP Bethpage site on April 28, 2014.

Sample ID	Matrix/Sample Type
VPB145-GW-043014-663-665	Ground water
VPB145-GW-043014-678-680	Ground water
VPB145-GW-050114-698-700	Ground water
VPB145-TRIPBLANKS-043014	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or RESCON professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

✗	Data completeness (chain-of-custody (COC))/sample integrity
✓	Holding times and sample preservation
✓	GC/MS performance checks
✗	Initial calibration/continuing calibration verification
✓	Laboratory blanks/trip blanks/equipment blanks
✓	Surrogate spike recoveries
NA	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✗	Laboratory control sample (LCS) results
NA	Field duplicate results
✓	Internal standard results

✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Due to limitations in the reporting system, the laboratory omitted the "VPB" prefix and the GW from the sample ID, and truncated IDs for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Sample VPB145-GW-050114-698-700 was mostly soil and had very little standing water. The laboratory decanted the water from the individual vials into one vial prior to analysis. Positive and non-detect results for this sample were qualified as estimated (J and UJ) respectively, due to possible loss of sample integrity during the decanting procedure.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

ICV Recovery Nonconformances:

Nonconformance	Actions	
	Detected Compounds	Nondetected Compounds
%R > 120%	J	No qualification
20% < %R < 80%	J	UJ
%R <20% (see note)	J	R*

Notes: Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.

Qualified sample results are shown in Table 1. Nonconformances are summarized in Attachment A in Table A-1.

Laboratory Blanks/Trip Blanks/ Equipment Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Surrogate Spike Recoveries

The surrogate percent recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

Nonconformances are summarized in Attachment A in Table A-2. The %Rs for the surrogates exceeded the upper QC limit; the sample results were all nondetect and no validation action was required. Qualified sample results are shown in Table 1.

MS/MSD Results

MS/MSD analyses were not performed on samples reported in this SDG. There were no validation actions taken on this basis.

LCS Results

The LCS %Rs were reviewed for conformance with the QC acceptance criteria.

Data qualification to the analytes associated with the specific LCS %Rs or RPDs was as follows:

Nonconformances[1]	Action	
	Detected Compounds	Nondetected Compounds
%R or RPD > UL	J	No qualification
%R < LL	J	UJ
%R < 20% (see note 1)	J	R
(LL = lower limit, UL = upper limit)		

Notes:
1. Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject sample results previously negated (U) on the basis of blank contamination.

Nonconformances are summarized in Attachment A in Table A-3. Qualified sample results are shown in Table 1.

Field Duplicate Results

There were no field duplicate samples submitted with this data set. No validation actions were taken on this basis.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as undetected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the DL were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-043014-663-665	WG	ACETONE	5.4	2.5	UG/L	J	c
VPB145-GW-043014-663-665	WG	METHYL ACETATE		0.75	UG/L	UJ	c,l
VPB145-GW-043014-678-680	WG	ACETONE	12	2.5	UG/L	J	c
VPB145-GW-043014-678-680	WG	METHYL ACETATE		0.75	UG/L	UJ	c,l
VPB145-GW-050114-698-700	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	2-BUTANONE		2.5	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	ACETONE	24	2.5	UG/L	J	c,mc
VPB145-GW-050114-698-700	WG	BENZENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	BROMODICHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	BROMOMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	CARBON DISULFIDE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	CHLOROETHANE		1.0	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-050114-698-700	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	METHYL ACETATE		0.75	UG/L	UJ	c,mc,l
VPB145-GW-050114-698-700	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	O-XYLENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	STYRENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	TOLUENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	VINYL CHLORIDE		1.0	UG/L	UJ	mc
VPB145-GW-050114-698-700	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc
VPB145-TRIPBLANKS-043014	WQ	METHYL ACETATE		0.75	UG/L	UJ	c,l

Attachment A

Non Conformance Summary Tables

Table A-1 - Initial Calibration Verification Standard

ICV	Compound	% D	Limit
WG141997	ACETONE	121.4	80-120%
	METHYL ACETATE	78.8	80-120%
Associated samples: All samples in the SDG			

Table A-2 - Surrogates

Sample ID	Surrogate	% Recovery	Lower Limit	Upper Limit
VPB145-GW-043014-663-665	1,2-DICHLOROETHANE-D4	127	70	120
VPB145-GW-043014-663-665	DIBROMOFLUOROMETHANE	120	85	115
VPB145-GW-043014-663-665	1,2-DICHLOROETHANE-D4	126	70	120
VPB145-GW-043014-663-665	DIBROMOFLUOROMETHANE	118	85	115
VPB145-GW-043014-678-680	1,2-DICHLOROETHANE-D4	129	70	120
VPB145-GW-043014-678-680	DIBROMOFLUOROMETHANE	122	85	115
VPB145-GW-043014-678-680	1,2-DICHLOROETHANE-D4	128	70	120
VPB145-GW-043014-678-680	DIBROMOFLUOROMETHANE	120	85	115
VPB145-GW-050114-698-700	1,2-DICHLOROETHANE-D4	170	70	120
VPB145-GW-050114-698-700	DIBROMOFLUOROMETHANE	163	85	115
VPB145-GW-050114-698-700	TOLUENE-D8	127	85	120
VPB145-GW-050114-698-700	4-BROMOFLUOROBENZENE	136	75	120
VPB145-TRIPBLANKS-043014	1,2-DICHLOROETHANE-D4	125	70	120
VPB145-TRIPBLANKS-043014	DIBROMOFLUOROMETHANE	118	85	115

Table A-3 - Lab Control Samples

LCS ID	Compound	LCS % Recovery	Lower Limit	Upper Limit	Associated Samples
WG142170-1	METHYL ACETATE	57	70	132	VPB145-GW-043014-663-665, VPB145-GW-043014-678-680, VPB145-GW-050114-698-700, VPB145-TRIPBLANKS-043014

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
co	Analyte carryover
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results
mc	Method compliance nonconformance

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CHAIN of CUSTODY

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Page ____ of ____

Client	Contact	Phone #	Fax #
Resolution Consultants	Eleanor Vivaudou	( )	( )

Address	City	State	Zip Code
100 Red Schoolhouse Rd Ste B1	Chestnut Ridge	NY	10977

Purchase Order #	Proj. Name / No.	Katahdin Quote #
	Bethpage No. 60266526	

Bill (if different than above) Address

Sampler (Print / Sign) Valerie Thayer, Valerie Thayer

Copies To: Valerie Thayer

LAB USE ONLY WORK ORDER #: 15H2795

KATAHDIN PROJECT NUMBER ____

REMARKS: ____

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: ____

TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: VOCs HCL (Filt. ☐Y ☐N)	Total Metals HNO_3 (Filt. ☐Y ☐N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	VPB145-GW-043014-663-665	4/30/14 / 11:30	GW	5	X								
✓	VPB145-GW-043014-678-680	4/30/14 / 14:00	GW	3	X								
✓	Temperature Blank	4/30/14 / 11:30	W	1									
	VPB145-Trip blanks 043014	12/13/13 / 11:30	W	3	X								
✓	VPB145-GW-050114-698-700	5/1/14 / 10:45	GW	3	X								
VT	~~IDW5 FRAC TANK 1 (Green)~~	~~5/1 / 16:00~~	~~W~~	~~1~~		X VT							
6	IDWGW-050114-FRAC Tank (Green)	5/1/ 16:00	W	1		X							

COMMENTS • IDWGW is water stored in Frac Tank 1 - Green TANK.

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	May 1,14 7:00				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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ORIGINAL 0000013

KAS-COC1

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2795-1
Client ID: 145-043014-663-665
Project: Navy Clean WE15-03-06 NW
SDG: SH2795
Lab File ID: T0772.D

Sample Date: 30-APR-14
Received Date: 02-MAY-14
Extract Date: 02-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142170

Analysis Date: 02-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	5.4	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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8/26/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2795-1
Client ID: 145-043014-663-665
Project: Navy Clean WE15-03-06 NW
SDG: SH2795
Lab File ID: T0772.D

Sample Date: 30-APR-14
Received Date: 02-MAY-14
Extract Date: 02-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142170

Analysis Date: 02-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	~~UL~~ UJ	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		102.	%					
Toluene-d8		101.	%					
1,2-Dichloroethane-d4	*	127.	%					
Dibromofluoromethane	*	120.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2795-2
Client ID: 145-043014-678-680
Project: Navy Clean WE15-03-06 NW
SDG: SH2795
Lab File ID: T0773.D

Sample Date: 30-APR-14
Received Date: 02-MAY-14
Extract Date: 02-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142170

Analysis Date: 02-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	12	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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RE 5/6/14

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2795-2
Client ID: 145-043014-678-680
Project: Navy Clean WE15-03-06 NW
SDG: SH2795
Lab File ID: T0773.D

Sample Date: 30-APR-14
Received Date: 02-MAY-14
Extract Date: 02-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142170

Analysis Date: 02-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		108.	%					
Toluene-d8		104.	%					
1,2-Dichloroethane-d4	*	129.	%					
Dibromofluoromethane	*	122.	%					

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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2795-3
Client ID: VPB145-TB-043014
Project: Navy Clean WE15-03-06 NW
SDG: SH2795
Lab File ID: T0765.D

Sample Date: 01-MAY-14
Received Date: 02-MAY-14
Extract Date: 02-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142170

Analysis Date: 02-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	J	3.0	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2795-3
Client ID: VPB145-TB-043014
Project: Navy Clean WE15-03-06 NW
SDG: SH2795
Lab File ID: T0765.D

Sample Date: 01-MAY-14
Received Date: 02-MAY-14
Extract Date: 02-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142170

Analysis Date: 02-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		102.	%					
Toluene-d8		107.	%					
1,2-Dichloroethane-d4	*	125.	%					
Dibromofluoromethane	*	118.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2795-4
Client ID: 145-050114-698-700
Project: Navy Clean WE15-03-06 NW
SDG: SH2795
Lab File ID: T0774.D

Sample Date: 01-MAY-14
Received Date: 02-MAY-14
Extract Date: 02-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142170

Analysis Date: 02-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	24	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U UJ	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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8/26/14

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2795-4
Client ID: 145-050114-698-700
Project: Navy Clean WE15-03-06 NW
SDG: SH2795
Lab File ID: T0774.D

Sample Date: 01-MAY-14
Received Date: 02-MAY-14
Extract Date: 02-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142170

Analysis Date: 02-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 05-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UJ	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	UL	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene	*	136.	%					
Toluene-d8	*	127.	%					
1,2-Dichloroethane-d4	*	170.	%					
Dibromofluoromethane	*	163.	%					

F 8/26/14

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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Inc.	
Service Request:	SH2951	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS) and EPA SW-846 Method 9060 for TOC (Carbonaceous analyzer, IR or FID)	
Validation Level:	Limited	
RESCON Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/RESCON	Completed on:06/16/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH2951_8260B and 9060

SUMMARY

The samples listed below were collected by Resolution Consultants (RESCON) from the Regional Groundwater Investigation - NWIRP Bethpage site on April 18 and May 7, 2014.

Sample ID	Matrix/Sample Type
VPB145-EB-050714	Equipment blank
VPB145-SOIL-041814-363-365	Soil
VPB145-SOIL-D-041814	Soil
VPB145-TRIP BLANK-050714	Trip Blank

The samples were analyzed in accordance with *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846* (USEPA, 1996), specifically:

- Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry*
- Method 9060A, *Total Organic Carbon*

Data validation activities were conducted with reference to these methods, *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (January 2010), and Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (DoD, October 2010) where applicable. In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

✓ Data completeness (chain-of-custody (COC))/sample integrity
✓ Holding times and sample preservation
✓ GC/MS performance checks
✗ Initial calibration/continuing calibration verification

✗ Laboratory blanks/trip blanks/equipment blanks
✓ Surrogate spike recoveries
✓ Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓ Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) results
✗ Field duplicates
✓ Internal standards
✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only. 1

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix from the sample ID, and truncated IDs for GW and Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met. The QC acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and

Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

ICV Recovery Nonconformances:

Nonconformance	Actions	
	Detected Compounds	Nondetected Compounds
%R > 120%	J	No qualification
20% < %R < 80%	J	UJ
%R <20% (see note)	J	R*

Notes: Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.

Qualified sample results are shown in Table 1. Nonconformances are summarized in Attachment A in Table A-1.

Laboratory Blanks/Trip Blanks/ Equipment Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Surrogate Spike Recoveries

The surrogate percent recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

MS/MSD Results

The MS/MSD %Rs and relative percent differences (RPDs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

LCS/LCSD Results

The LCS/LCSD %Rs and/or relative percent recoveries (RPDs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Field Duplicate Results

Field duplicate RPDs were reviewed for conformance with the QC criterion of ≤50% for solid matrices. This criterion applies if both results were greater than five times the Limit of Quantitation (LOQ).

Data qualification to the analytes associated with the specific field duplicate RPDs was as follows:

Criteria	RPD	Action	
		Detected	Nondetected
Sample and duplicate are nondetect results	Not calculable (NC)	No qualification	No qualification
Sample and duplicate results ≥5x LOQ	>50 (solid)	J	Not Applicable
Sample and duplicate results <5x LOQ	>100 (solids)	J	Not Applicable
If sample or duplicate result is >5x LOQ and the other is not detected	NC	J	UJ
If sample or duplicate result is <5x LOQ and the other is not detected	NC	No qualification	No qualification

Actions: professional judgment was used

Nonconformances are summarized in Attachment A in Table A-3. Qualified sample results are shown in Table 1.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as undetected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-EB-050714	WQ	ACETONE	5.1	2.5	UG/L	J	c
VPB145-SOIL-041814-363-365	SO	TOTAL ORGANIC CARBON	8700	490*	UG/G	J	fd
VPB145-SOIL-D-041814	SO	TOTAL ORGANIC CARBON	1900	480*	UG/G	J	fd
*LOQ							

Attachment A

Nonconformance Summary Tables

Table A-1 Initial Calibration Verification Standard

ICV ID	Compound	%R	Limits
WG142360	ACETONE	135.4	80-120%
Associated Samples: VPB145-EB-050714, VPB145-TRIP BLANK-050714			

Table A-2 - Field Blanks

Blank ID	Compound	Result	QL	Units	Associated Samples
VPB145-EB-050714	ACETONE	5.1	2.5	UG/L	None in this data set

Table A-3- Field Duplicates

Compound	VPB145-SOIL-041814-363-365	Qual	VPB145-SOIL-D-041814	Qual	QL	Units	RPD
TOC	8700		1900		490	UG/G	128%

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
co	Analyte carryover
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results

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Page ____ of ____

Client: RC
Contact: Eleanor Vivandow
Phone #: ( )
Fax #: ( )

Address: 100 Red Schoolhouse Rd.
City: Chestnut Ridge
State: NY
Zip Code:

Purchase Order #:
Proj. Name / No.: Bethpage 60266526
Katahdin Quote #:

Bill (if different than above):
Address:

Sampler (Print / Sign): Valerie Thayer Valerie Thayer
Copies To: Valerie Thayer

LAB USE ONLY
WORK ORDER #: SH2951
KATAHDIN PROJECT NUMBER: ____

REMARKS: ____

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT
AIRBILL NO: ____
TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs HCl (Filt. ☐Y ☐N)	TOC (Filt. ☐Y ☐N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	VPB145-EB-050714	5/07/14 / 9:30	W	3	X									
	VPB145-Tripblanks-050714	05/02/14 / 11:00	W	3	X									
	VPB145-soil-041814-363-365	4/18/14 / 9:00	Soil	1		X								
√	~~VPB145-soil-041814-ms/msD 363-365~~	~~04/18/14 / 9:00~~	~~Soil~~	~~1~~		~~X~~								
	VPB145-soil-ms/msD-041814-363-365	04/18/14 / 9:00	Soil	1		X								
	VPB145-soil-D-041814	4/18/14 / 9:00	soil	1		X								
	Temp blank	/		X										
		/												
		/												
		/												
		/												
		/												

COMMENTS: EB = Equipment rinsate blank

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	05/07/14 7:00	[signature] 5-8-14 09:00			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2951-1
Client ID: VPB145-EB-050714
Project: Navy Clean WE15-03-06 NW
SDG: SH2951
Lab File ID: C7026.D

Sample Date: 07-MAY-14
Received Date: 08-MAY-14
Extract Date: 10-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142546

Analysis Date: 10-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 12-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	5.1	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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5/20/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH2951-1
Client ID: VPB145-EB-050714
Project: Navy Clean WE15-03-06 NW
SDG: SH2951
Lab File ID: C7026.D

Sample Date: 07-MAY-14
Received Date: 08-MAY-14
Extract Date: 10-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142546

Analysis Date: 10-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 12-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		97.7	%					
Toluene-d8		102.	%					
1,2-Dichloroethane-d4		111.	%					
Dibromofluoromethane		104.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2951-2
Client ID: VPB145-TB-050714
Project: Navy Clean WE15-03-06 NW
SDG: SH2951
Lab File ID: C7025.D

Sample Date: 07-MAY-14
Received Date: 08-MAY-14
Extract Date: 10-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142546

Analysis Date: 10-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 12-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH2951-2
Client ID: VPB145-TB-050714
Project: Navy Clean WE15-03-06 NW
SDG: SH2951
Lab File ID: C7025.D

Sample Date: 07-MAY-14
Received Date: 08-MAY-14
Extract Date: 10-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142546

Analysis Date: 10-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 12-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		96.3	%					
Toluene-d8		102.	%					
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		104.	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Rick Purdy
AECOM
701 Edgewater Drive
Wakefield,MA 01880

Lab Sample ID: SH2951-3
Report Date: 22-MAY-14
Client PO: 16518
Project: Navy Clean WE15-03-0
SDG: SH2951

Sample Description	Matrix	Date Sampled	Date Received
145SL041814-363-365	SL	18-APR-14	08-MAY-14

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
TOC In Soil	8700 J ug/gdrywt	490	100	N/A	SW846 9060A Mod.	WG142874	12-MAY-14 15:08:35	N/A	N/A	
Total Solids	82. %	1		N/A	SM2540G	WG142864	16-MAY-14 11:52:21	SM2540G	15-MAY-14	

5/26/14

Katahdin Analytical Services 0000103

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Rick Purdy
AECOM
701 Edgewater Drive
Wakefield,MA 01880

Lab Sample ID: SH2951-4
Report Date: 22-MAY-14
Client PO: 16518
Project: Navy Clean WE15-03-0
SDG: SH2951

Sample Description	Matrix	Date Sampled	Date Received
145-SOIL-D-041814	SL	18-APR-14	08-MAY-14

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
TOC In Soil	1900 J ug/gdrywt	480	100	N/A	SW846 9060A Mod.	WG142874	12-MAY-14 15:43:01	N/A	N/A	
Total Solids	84. %	1		N/A	SM2540G	WG142864	16-MAY-14 11:52:31	SM2540G	15-MAY-14	

5/26/14

Katahdin Analytical Services 0000004

AECOM
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Inc.	
Service Request:	SH3092	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)	
Validation Level:	Limited	
RESCON Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/RESCON	Completed on: 07/16/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH3092_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants (RESCON) from the Regional Groundwater Investigation - NWIRP Bethpage site on May 9 and 12, 2014.

Sample ID	Matrix/Sample Type
VPB145-GW-050914-848-850	Ground water
VPB145-GW-051214-868-870	Ground water
VPB145-GW-051214-888-890	Ground water
VPB145-TRIP BLANKS-051214	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

✗	Data completeness (chain-of-custody (COC))/sample integrity
✓	Holding times and sample preservation
✓	GC/MS performance checks
✗	Initial calibration/continuing calibration verification
✓	Laboratory blanks/trip blanks/equipment blanks
✓	Surrogate spike recoveries
NA	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓	Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) results
NA	Field duplicate results
✓	Internal standard results

✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix from the sample ID, and truncated IDs for GW and Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Selected samples were mostly soil and had very little standing water.

- For sample VPB145-GW-051214-888-890 the laboratory decanted the liquid from one vial prior to analysis.
- For samples VPB145-GW-050914-848-850 the laboratory decanted the water from two individual vials into one vial as a composite. The composite was analyzed at an 80-fold dilution.
- For sample VPB145-GW-051214-868-870 the laboratory decanted and combined the liquid from six individual vials. The composite was analyzed at an 80-fold dilution.

Positive and non-detect results for all of these samples were qualified as estimated (J and UJ) respectively, due to possible loss of sample integrity during the decanting procedure.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

ICV Recovery Nonconformances:

Nonconformance	Actions	
	Detected Compounds	Nondetected Compounds
%R > 120%	J	No qualification
20% < %R < 80%	J	UJ
%R <20% (see note)	J	R*

Notes: Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.

Qualified sample results are shown in Table 1. Nonconformances are summarized in Attachment A in Table A-1.

Laboratory Blanks/Trip Blanks/ Equipment Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Surrogate Spike Recoveries

The surrogate percent recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

MS/MSD Results

MS/MSD analyses were not performed on samples reported in this SDG. There were no validation actions taken on this basis.

LCS/LCSD Results

The LCS %Rs were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Field Duplicate Results

There were no field duplicate samples submitted with this data set. No validation actions were taken on this basis.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as undetected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-050914-848-850	WG	1,1,1-TRICHLOROETHANE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,1,2,2-TETRACHLOROETHANE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,1,2-TRICHLOROETHANE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,1-DICHLOROETHANE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,1-DICHLOROETHENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,2,4-TRICHLOROBENZENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,2-DIBROMO-3-CHLOROPROPANE		60	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,2-DIBROMOETHANE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,2-DICHLOROBENZENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,2-DICHLOROETHANE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,2-DICHLOROETHENE, TOTAL		80	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,2-DICHLOROPROPANE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,3-DICHLOROBENZENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	1,4-DICHLOROBENZENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	2-BUTANONE		200	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	2-HEXANONE		200	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	4-METHYL-2-PENTANONE		200	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	ACETONE		200	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	BENZENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	BROMODICHLOROMETHANE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	BROMOFORM		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	BROMOMETHANE		80	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	CARBON DISULFIDE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	CARBON TETRACHLORIDE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	CHLOROBENZENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	CHLOROETHANE		80	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	CHLOROFORM		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	CHLOROMETHANE		80	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	CIS-1,2-DICHLOROETHENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	CIS-1,3-DICHLOROPROPENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	CYCLOHEXANE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	DIBROMOCHLOROMETHANE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	DICHLORODIFLUOROMETHANE		80	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	ETHYLBENZENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	ISOPROPYLBENZENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	M- AND P-XYLENE		80	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	METHYL ACETATE		60	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-050914-848-850	WG	METHYL CYCLOHEXANE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	METHYL TERT-BUTYL ETHER		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	METHYLENE CHLORIDE		200	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	O-XYLENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	STYRENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	TETRACHLOROETHENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	TOLUENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	TRANS-1,2-DICHLOROETHENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	TRANS-1,3-DICHLOROPROPENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	TRICHLOROETHENE		40	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	TRICHLOROFLUOROMETHANE		80	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	VINYL CHLORIDE		80	UG/L	UJ	mc
VPB145-GW-050914-848-850	WG	XYLENES, TOTAL		120	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,1,1-TRICHLOROETHANE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,1,2,2-TETRACHLOROETHANE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,1,2-TRICHLOROETHANE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,1-DICHLOROETHANE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,1-DICHLOROETHENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,2,4-TRICHLOROBENZENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,2-DIBROMO-3-CHLOROPROPANE		60	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,2-DIBROMOETHANE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,2-DICHLOROBENZENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,2-DICHLOROETHANE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,2-DICHLOROETHENE, TOTAL		80	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,2-DICHLOROPROPANE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,3-DICHLOROBENZENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	1,4-DICHLOROBENZENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	2-BUTANONE		200	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	2-HEXANONE		200	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	4-METHYL-2-PENTANONE		200	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	ACETONE		200	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	BENZENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	BROMODICHLOROMETHANE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	BROMOFORM		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	BROMOMETHANE		80	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	CARBON DISULFIDE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	CARBON TETRACHLORIDE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	CHLOROBENZENE		40	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-051214-868-870	WG	CHLOROETHANE		80	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	CHLOROFORM		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	CHLOROMETHANE		80	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	CIS-1,2-DICHLOROETHENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	CIS-1,3-DICHLOROPROPENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	CYCLOHEXANE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	DIBROMOCHLOROMETHANE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	DICHLORODIFLUOROMETHANE		80	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	ETHYLBENZENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	ISOPROPYLBENZENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	M- AND P-XYLENE		80	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	METHYL ACETATE		60	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	METHYL CYCLOHEXANE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	METHYL TERT-BUTYL ETHER		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	METHYLENE CHLORIDE		200	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	O-XYLENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	STYRENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	TETRACHLOROETHENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	TOLUENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	TRANS-1,2-DICHLOROETHENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	TRANS-1,3-DICHLOROPROPENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	TRICHLOROETHENE		40	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	TRICHLOROFLUOROMETHANE		80	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	VINYL CHLORIDE		80	UG/L	UJ	mc
VPB145-GW-051214-868-870	WG	XYLENES, TOTAL		120	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-051214-888-890	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	2-BUTANONE	12	2.5	UG/L	J	mc
VPB145-GW-051214-888-890	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	ACETONE	120	2.5	UG/L	J	c,mc
VPB145-GW-051214-888-890	WG	BENZENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	BROMODICHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	BROMOMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	CARBON DISULFIDE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	CHLOROETHANE		1.0	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	METHYL ACETATE		0.75	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	O-XYLENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	STYRENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	TOLUENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	VINYL CHLORIDE		1.0	UG/L	UJ	mc
VPB145-GW-051214-888-890	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc

Attachment A

Nonconformance Summary Tables

Table A-1 Initial Calibration Verification Standard

ICV ID	Compound	%R	Limits
WG142360	ACETONE	135.4	80-120%
Associated Samples: All samples in this SDG			

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
co	Analyte carryover
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results
mc	Method compliance nonconformance

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Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Page ____ of ____

Client: Resolution Consultants
Contact: Eleanor Vivaudou
Phone #: ( )
Fax #: ( )
Address: 100 Red Schoolhouse
City: Chestnut Ridge
State: NY
Zip Code:
Purchase Order #:
Proj. Name / No.: Rd Bethpage 60266526
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Valerie Thayer Valerie Thayer
Copies To: Valerie Thayer

LAB USE ONLY
WORK ORDER #: SH3092
KATAHDIN PROJECT NUMBER ____
REMARKS: ____
SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT
AIRBILL NO: ____
TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs HCL ~~[illegible]~~ VT (Filt. ☐Y ☐N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
✓	VPB145-GW-051214-888-890	5/12/14 / 15:15	GW	1	X									
✓	VPB145-Trip Blank-051214	5/02/14 / 10:00	W	3	X									
✓	VPB145-GW-050914-848-850	05/09/14 / 13:00	GW	2	X									
✓	VPB145-GW-051214-868-870	05/12/14 / 11:00	GW	6	X									
	Temp Blank	/	W	1										

COMMENTS: ~~[illegible]~~ vt Very muddy
5-13-14/0925

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	05/12/14 7:00	[signature]			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

ORIGINAL 0000009

KAS-COC1

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH
nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3092-1
Client ID: 145-051214-888-890
Project: Navy Clean WE15-03-06 NW
SDG: SH3092
Lab File ID: C7082.D

Sample Date: 12-MAY-14
Received Date: 13-MAY-14
Extract Date: 13-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142689

Analysis Date: 13-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	UJ	120	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U UJ	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	UJ	12	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U UJ	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

600 Technology Way
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5/26/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3092-1
Client ID: 145-051214-888-890
Project: Navy Clean WE15-03-06 NW
SDG: SH3092
Lab File ID: C7082.D

Sample Date: 12-MAY-14
Received Date: 13-MAY-14
Extract Date: 13-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142689

Analysis Date: 13-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UJ	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.2	%					
Toluene-d8		99.6	%					
1,2-Dichloroethane-d4		104.	%					
Dibromofluoromethane		101.	%					

8/26/14

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ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3092-2
Client ID: VPB145-TB-051214
Project: Navy Clean WE15-03-06 NW
SDG: SH3092
Lab File ID: C7071.D

Sample Date: 12-MAY-14
Received Date: 13-MAY-14
Extract Date: 13-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142689

Analysis Date: 13-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH3092-2
Client ID: VPB145-TB-051214
Project: Navy Clean WE15-03-06 NW
SDG: SH3092
Lab File ID: C7071.D

Sample Date: 12-MAY-14
Received Date: 13-MAY-14
Extract Date: 13-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142689

Analysis Date: 13-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.2	%					
Toluene-d8		98.3	%					
1,2-Dichloroethane-d4		101.	%					
Dibromofluoromethane		97.0	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH3092-3DL
Client ID: 145-050914-848-850
Project: Navy Clean WE15-03-06 NW
SDG: SH3092
Lab File ID: C7083.D

Sample Date: 09-MAY-14
Received Date: 13-MAY-14
Extract Date: 13-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142689

Analysis Date: 13-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	80	ug/L	80	2	160	19.	80.
Chloromethane	U	80	ug/L	80	2	160	29.	80.
Vinyl Chloride	U	80	ug/L	80	2	160	20.	80.
Bromomethane	U	80	ug/L	80	2	160	39.	80.
Chloroethane	U	80	ug/L	80	2	160	44.	80.
Trichlorofluoromethane	U	80	ug/L	80	2	160	19.	80.
1,1-Dichloroethene	U	40	ug/L	80	1	80.	28.	40.
Carbon Disulfide	U	40	ug/L	80	1	80.	20.	40.
Freon-113	U	40	ug/L	80	1	80.	25.	40.
Methylene Chloride	U	200	ug/L	80	5	400	90.	200
Acetone	U	200	ug/L	80	5	400	180	200
trans-1,2-Dichloroethene	U	40	ug/L	80	1	80.	20.	40.
Methyl tert-butyl Ether	U	40	ug/L	80	1	80.	29.	40.
1,1-Dichloroethane	U	40	ug/L	80	1	80.	17.	40.
cis-1,2-Dichloroethene	U	40	ug/L	80	1	80.	17.	40.
Chloroform	U	40	ug/L	80	1	80.	26.	40.
1,1,1-Trichloroethane	U	40	ug/L	80	1	80.	16.	40.
2-Butanone	U	200	ug/L	80	5	400	100	200
Cyclohexane	U	40	ug/L	80	1	80.	25.	40.
Carbon Tetrachloride	U	40	ug/L	80	1	80.	18.	40.
Benzene	U	40	ug/L	80	1	80.	21.	40.
1,2-Dichloroethane	U	40	ug/L	80	1	80.	16.	40.
Trichloroethene	U	40	ug/L	80	1	80.	22.	40.
1,2-Dichloropropane	U	40	ug/L	80	1	80.	20.	40.
Bromodichloromethane	U	40	ug/L	80	1	80.	26.	40.
cis-1,3-Dichloropropene	U	40	ug/L	80	1	80.	15.	40.
Toluene	U	40	ug/L	80	1	80.	22.	40.
4-Methyl-2-Pentanone	U	200	ug/L	80	5	400	100	200
trans-1,3-Dichloropropene	U	40	ug/L	80	1	80.	16.	40.
1,1,2-Trichloroethane	U	40	ug/L	80	1	80.	26.	40.
Tetrachloroethene	U	40	ug/L	80	1	80.	32.	40.
Dibromochloromethane	U	40	ug/L	80	1	80.	24.	40.
2-Hexanone	U	200	ug/L	80	5	400	140	200
Chlorobenzene	U	40	ug/L	80	1	80.	18.	40.
Ethylbenzene	U	40	ug/L	80	1	80.	17.	40.

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH3092-3DL
Client ID: 145-050914-848-850
Project: Navy Clean WE15-03-06 NW
SDG: SH3092
Lab File ID: C7083.D

Sample Date: 09-MAY-14
Received Date: 13-MAY-14
Extract Date: 13-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142689

Analysis Date: 13-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UJ	120	ug/L	80	3	240	20.	120
Styrene	U	40	ug/L	80	1	80.	18.	40.
Bromoform	U	40	ug/L	80	1	80.	18.	40.
Isopropylbenzene	U	40	ug/L	80	1	80.	18.	40.
1,1,2,2-Tetrachloroethane	U	40	ug/L	80	1	80.	30.	40.
1,3-Dichlorobenzene	U	40	ug/L	80	1	80.	21.	40.
1,4-Dichlorobenzene	U	40	ug/L	80	1	80.	19.	40.
1,2-Dichlorobenzene	U	40	ug/L	80	1	80.	12.	40.
1,2,4-Trichlorobenzene	U	40	ug/L	80	1	80.	30.	40.
Methyl Acetate	U	60	ug/L	80	1	80.	42.	60.
Methylcyclohexane	U	40	ug/L	80	1	80.	24.	40.
o-Xylene	U	40	ug/L	80	1	80.	20.	40.
M+P-Xylenes	U	80	ug/L	80	2	160	47.	80.
1,2-Dichloroethylene (Total)	U	80	ug/L	80	2	160	17.	80.
1,2-Dibromoethane	U	40	ug/L	80	1	80.	18.	40.
1,2-Dibromo-3-Chloropropane	U	60	ug/L	80	1	80.	40.	60.
P-Bromofluorobenzene		94.0	%					
Toluene-d8		96.5	%					
1,2-Dichloroethane-d4		109.	%					
Dibromofluoromethane		101.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH3092-4DL
Client ID: 145-051214-868-870
Project: Navy Clean WE15-03-06 NW
SDG: SH3092
Lab File ID: C7084.D

Sample Date: 12-MAY-14
Received Date: 13-MAY-14
Extract Date: 13-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142689

Analysis Date: 13-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	80	ug/L	80	2	160	19.	80.
Chloromethane	U	80	ug/L	80	2	160	29.	80.
Vinyl Chloride	U	80	ug/L	80	2	160	20.	80.
Bromomethane	U	80	ug/L	80	2	160	39.	80.
Chloroethane	U	80	ug/L	80	2	160	44.	80.
Trichlorofluoromethane	U	80	ug/L	80	2	160	19.	80.
1,1-Dichloroethene	U	40	ug/L	80	1	80.	28.	40.
Carbon Disulfide	U	40	ug/L	80	1	80.	20.	40.
Freon-113	U	40	ug/L	80	1	80.	25.	40.
Methylene Chloride	U	200	ug/L	80	5	400	90.	200
Acetone	U	200	ug/L	80	5	400	180	200
trans-1,2-Dichloroethene	U	40	ug/L	80	1	80.	20.	40.
Methyl tert-butyl Ether	U	40	ug/L	80	1	80.	29.	40.
1,1-Dichloroethane	U	40	ug/L	80	1	80.	17.	40.
cis-1,2-Dichloroethene	U	40	ug/L	80	1	80.	17.	40.
Chloroform	U	40	ug/L	80	1	80.	26.	40.
1,1,1-Trichloroethane	U	40	ug/L	80	1	80.	16.	40.
2-Butanone	U	200	ug/L	80	5	400	100	200
Cyclohexane	U	40	ug/L	80	1	80.	25.	40.
Carbon Tetrachloride	U	40	ug/L	80	1	80.	18.	40.
Benzene	U	40	ug/L	80	1	80.	21.	40.
1,2-Dichloroethane	U	40	ug/L	80	1	80.	16.	40.
Trichloroethene	U	40	ug/L	80	1	80.	22.	40.
1,2-Dichloropropane	U	40	ug/L	80	1	80.	20.	40.
Bromodichloromethane	U	40	ug/L	80	1	80.	26.	40.
cis-1,3-Dichloropropene	U	40	ug/L	80	1	80.	15.	40.
Toluene	U	40	ug/L	80	1	80.	22.	40.
4-Methyl-2-Pentanone	U	200	ug/L	80	5	400	100	200
trans-1,3-Dichloropropene	U	40	ug/L	80	1	80.	16.	40.
1,1,2-Trichloroethane	U	40	ug/L	80	1	80.	26.	40.
Tetrachloroethene	U	40	ug/L	80	1	80.	32.	40.
Dibromochloromethane	U	40	ug/L	80	1	80.	24.	40.
2-Hexanone	U	200	ug/L	80	5	400	140	200
Chlorobenzene	U	40	ug/L	80	1	80.	18.	40.
Ethylbenzene	U	40	ug/L	80	1	80.	17.	40.

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH3092-4DL
Client ID: 145-051214-868-870
Project: Navy Clean WE15-03-06 NW
SDG: SH3092
Lab File ID: C7084.D

Sample Date: 12-MAY-14
Received Date: 13-MAY-14
Extract Date: 13-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG142689

Analysis Date: 13-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U WJ	120	ug/L	80	3	240	20.	120
Styrene	U	40	ug/L	80	1	80.	18.	40.
Bromoform	U	40	ug/L	80	1	80.	18.	40.
Isopropylbenzene	U	40	ug/L	80	1	80.	18.	40.
1,1,2,2-Tetrachloroethane	U	40	ug/L	80	1	80.	30.	40.
1,3-Dichlorobenzene	U	40	ug/L	80	1	80.	21.	40.
1,4-Dichlorobenzene	U	40	ug/L	80	1	80.	19.	40.
1,2-Dichlorobenzene	U	40	ug/L	80	1	80.	12.	40.
1,2,4-Trichlorobenzene	U	40	ug/L	80	1	80.	30.	40.
Methyl Acetate	U	60	ug/L	80	1	80.	42.	60.
Methylcyclohexane	U	40	ug/L	80	1	80.	24.	40.
o-Xylene	U	40	ug/L	80	1	80.	20.	40.
M+P-Xylenes	U	80	ug/L	80	2	160	47.	80.
1,2-Dichloroethylene (Total)	U	80	ug/L	80	2	160	17.	80.
1,2-Dibromoethane	U	40	ug/L	80	1	80.	18.	40.
1,2-Dibromo-3-Chloropropane	U	60	ug/L	80	1	80.	40.	60.
P-Bromofluorobenzene		91.4	%					
Toluene-d8		97.9	%					
1,2-Dichloroethane-d4		108.	%					
Dibromofluoromethane		101.	%					

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RESOLUTION CONSULTANTS

Resolution Consultants
250 Apollo Drive
Chelmsford, MA 01824

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978.905.2101 fax

Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Test America, South Burlington, Vermont	
Service Request:	200-22260	
Analyses/Method:	EPA Method TO-15, VOCs Collected in Canisters - GC/MS	
Validation Level:	3	
AECOM Project Number:	60266526.SA.DV	
Prepared by:	Dawn Brule/RESCON	Completed on: 11/19/2014
Reviewed by:	Lori Herberich/RESCON	File Name: 200-22260_TO-15

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on May 7, 2014.

Sample ID	Matrix/Sample Type
VPB145-AIR-050714	Ambient air

Data validation activities were conducted with reference to *Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS)* (USEPA, Method TO-15) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

✓	Data completeness (chain-of-custody [COC])/sample integrity
✓	Holding times and sample preservation
✓	GC/MS performance checks
✓	Initial calibration/continuing calibration verification
✓	Laboratory blanks
NA	Matrix duplicate (MD) results
✓	Laboratory control sample (LCS) results
NA	Field duplicate results
✓	Internal standard results
✓	Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this

validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. There were no data points qualified or rejected on the basis of this data review.

RESULTS

Data Completeness (COC)/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Holding Times and Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria. The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met. The QC acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and/or
- the retention time method acceptance criteria were met.

The QC acceptance criteria were met.

Laboratory Blanks

Laboratory method blanks were evaluated as to whether there were contaminants detected above the detection limit (DL). Blank results were reviewed for conformance with the QC acceptance criteria. Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks. The QC acceptance criteria were met; qualification of the sample results was not required.

MS/MSD Results

MS/MSD analyses were not performed on samples reported in this SDG. There were no validation actions taken on this basis.

LCS Results

The LCS %Rs were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

Field Duplicate Results

There were no field duplicate samples submitted with this data set. No validation actions were taken on this basis.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as not detected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

No sample results were qualified as a result of this data review.

ATTACHMENTS

Attachment A: Qualifier Codes and Explanations

Attachment A

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

SH3159

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: Eleanor Vivaudou	Samples Collected By: Valerie Thayer
Company: Resolution Consultants	Phone: 845-425-4980	of 1 COCs 1
Address: 999 South Oyster Bay Road	Email: Eleanor.Vivaudou@aecom.com	
City/State/Zip Bethpage / NY		
Phone: 207-650-1673	Site Contact: Valerie Thayer	
FAX:	TA Contact:	
Project Name: Bethpage	Analysis Turnaround Time	
Site: VPB145	Standard (Specify)	
PO #	Rush (Specify)	

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	MA-APH	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
VPB145-AIR-050714	5/7/2014	8:10	7:45pm	-30	-10	4515	3553	X								X			

Temperature (Fahrenheit)			
	Interior	Ambient	
Start			
Stop			

Pressure (inches of Hg)			
	Interior	Ambient	
Start			
Stop			

200-22260 Chain of Custody

Special Instructions/QC Requirements & Comments: Summa Canister placed outside near duct vent

Samples Shipped by: Valerie Thayer	Date/Time: 05/07/2014 7:00	Samples Received by: TABR	5/8/14 10:15
Samples Relinquished by:	Date/Time:	Received by:	
Relinquished by:	Date/Time:	Received by:	

Lab Use Only: Shipper Name: Opened by: Condition:

05/14/2014

00000003

Client: Katahdin Analytical Services

Job Number: 200-22260-1
Sdg Number: 200-22260

Client Sample ID: **VPB145-AIR-050714**

Lab Sample ID: 200-22260-1
Client Matrix: Air

Date Sampled: 05/07/2014 1445
Date Received: 05/08/2014 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-72014	Instrument ID:	CHW.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	7494_020.d
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	05/13/2014 0113			Final Weight/Volume:	200 mL
Prep Date:	05/13/2014 0113			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	DL	LOQ
1,1,1-Trichloroethane	0.080	U	0.20	0.20
1,1,2,2-Tetrachloroethane	0.030	U	0.20	0.20
1,1,2-Trichloro-1,2,2-trifluoroethane	0.030	U	0.20	0.20
1,1,2-Trichloroethane	0.030	U	0.20	0.20
1,1-Dichloroethane	0.080	U	0.20	0.20
1,1-Dichloroethene	0.080	U	0.20	0.20
1,2,4-Trichlorobenzene	0.080	U	0.50	0.50
1,2-Dibromoethane (EDB)	0.080	U	0.20	0.20
1,2-Dichlorobenzene	0.030	U	0.20	0.20
1,2-Dichloroethane	0.030	U	0.20	0.20
1,2-Dichloropropane	0.080	U	0.20	0.20
Acetone	2.5	U	5.0	5.0
1,3-Dichlorobenzene	0.030	U	0.20	0.20
1,4-Dichlorobenzene	0.030	U	0.20	0.20
2-Butanone (MEK)	0.50	U	0.50	0.50
2-Hexanone	0.20	U	0.50	0.50
4-Methyl-2-pentanone	0.080	U	0.50	0.50
Benzene	0.030	U	0.20	0.20
Bromoform	0.030	U	0.20	0.20
Bromomethane	0.080	U	0.20	0.20
Carbon disulfide	0.20	U	0.50	0.50
Carbon tetrachloride	0.080	U	0.20	0.20
Chlorobenzene	0.030	U	0.20	0.20
Dibromochloromethane	0.030	U	0.20	0.20
Chloroethane	0.080	U	0.50	0.50
Chloroform	0.080	U	0.20	0.20
Chloromethane	0.53		0.50	0.50
cis-1,2-Dichloroethene	0.080	U	0.20	0.20
cis-1,3-Dichloropropene	0.080	U	0.20	0.20
Cyclohexane	0.080	U	0.20	0.20
Bromodichloromethane	0.030	U	0.20	0.20
Dichlorodifluoromethane	0.080	U	0.50	0.50
Ethylbenzene	0.030	U M	0.20	0.20
Isopropylbenzene	0.030	U	0.20	0.20
Methyl tert-butyl ether	0.080	U	0.20	0.20
Methylene Chloride	0.20	U M	0.50	0.50
m,p-Xylene	0.080	U	0.50	0.50
Xylene, o-	0.030	U	0.20	0.20
Styrene	0.030	U	0.20	0.20
Tetrachloroethene	0.030	U	0.20	0.20
Toluene	0.26		0.20	0.20
trans-1,2-Dichloroethene	0.080	U	0.20	0.20
trans-1,3-Dichloropropene	0.080	U	0.20	0.20
Trichloroethene	0.080	U	0.20	0.20
Trichlorofluoromethane	0.36		0.20	0.20
Vinyl chloride	0.080	U	0.20	0.20

Client: Katahdin Analytical Services

Job Number: 200-22260-1
Sdg Number: 200-22260

Client Sample ID: **VPB145-AIR-050714**

Lab Sample ID: 200-22260-1
Client Matrix: Air

Date Sampled: 05/07/2014 1445
Date Received: 05/08/2014 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-72014	Instrument ID:	CHW.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	7494_020.d
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	05/13/2014 0113			Final Weight/Volume:	200 mL
Prep Date:	05/13/2014 0113			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	DL	LOQ
Xylene (total)	0.080	U	0.20	0.20

Analyte	Result (ug/m3)	Qualifier	DL	LOQ
1,1,1-Trichloroethane	0.44	U	1.1	1.1
1,1,2,2-Tetrachloroethane	0.21	U	1.4	1.4
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.5	1.5
1,1,2-Trichloroethane	0.16	U	1.1	1.1
1,1-Dichloroethane	0.32	U	0.81	0.81
1,1-Dichloroethene	0.32	U	0.79	0.79
1,2,4-Trichlorobenzene	0.59	U	3.7	3.7
1,2-Dibromoethane (EDB)	0.61	U	1.5	1.5
1,2-Dichlorobenzene	0.18	U	1.2	1.2
1,2-Dichloroethane	0.12	U	0.81	0.81
1,2-Dichloropropane	0.37	U	0.92	0.92
Acetone	5.9	U	12	12
1,3-Dichlorobenzene	0.18	U	1.2	1.2
1,4-Dichlorobenzene	0.18	U	1.2	1.2
2-Butanone (MEK)	1.5	U	1.5	1.5
2-Hexanone	0.82	U	2.0	2.0
4-Methyl-2-pentanone	0.33	U	2.0	2.0
Benzene	0.096	U	0.64	0.64
Bromoform	0.31	U	2.1	2.1
Bromomethane	0.31	U	0.78	0.78
Carbon disulfide	0.62	U	1.6	1.6
Carbon tetrachloride	0.50	U	1.3	1.3
Chlorobenzene	0.14	U	0.92	0.92
Dibromochloromethane	0.26	U	1.7	1.7
Chloroethane	0.21	U	1.3	1.3
Chloroform	0.39	U	0.98	0.98
Chloromethane	1.1		1.0	1.0
cis-1,2-Dichloroethene	0.32	U	0.79	0.79
cis-1,3-Dichloropropene	0.36	U	0.91	0.91
Cyclohexane	0.28	U	0.69	0.69
Bromodichloromethane	0.20	U	1.3	1.3
Dichlorodifluoromethane	0.40	U	2.5	2.5
Ethylbenzene	0.13	U M	0.87	0.87
Isopropylbenzene	0.15	U	0.98	0.98
Methyl tert-butyl ether	0.29	U	0.72	0.72
Methylene Chloride	0.69	U M	1.7	1.7
m,p-Xylene	0.35	U	2.2	2.2
Xylene, o-	0.13	U	0.87	0.87
Styrene	0.13	U	0.85	0.85
Tetrachloroethene	0.20	U	1.4	1.4
Toluene	1.0		0.75	0.75
trans-1,2-Dichloroethene	0.32	U	0.79	0.79
trans-1,3-Dichloropropene	0.36	U	0.91	0.91

Client: Katahdin Analytical Services

Job Number: 200-22260-1
Sdg Number: 200-22260

Client Sample ID: **VPB145-AIR-050714**

Lab Sample ID: 200-22260-1
Client Matrix: Air

Date Sampled: 05/07/2014 1445
Date Received: 05/08/2014 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-72014	Instrument ID:	CHW.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	7494_020.d
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	05/13/2014 0113			Final Weight/Volume:	200 mL
Prep Date:	05/13/2014 0113			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	DL	LOQ
Trichloroethene	0.43	U	1.1	1.1
Trichlorofluoromethane	2.0		1.1	1.1
Vinyl chloride	0.20	U	0.51	0.51
Xylene (total)	0.35	U	0.87	0.87

AECOM
250 Apollo Drive
Chelmsford, MA 01824

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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Inc.	
Service Request:	SH3224	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)	
Validation Level:	Limited	
RESCON Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/RESCON	Completed on: 06/26/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH3224_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants (RESCON) from the Regional Groundwater Investigation - NWIRP Bethpage site on May 13 and 14, 2014.

Sample ID	Matrix/Sample Type
VPB145-GW-051314-918-920	Ground water
VPB145-GW-051314-938-940	Ground water
VPB145-GW-051414-958-960	Ground water
VPB145-GW-051414-978-980	Ground water
VPB145-TRIP BLANK-051514	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or RESCON professional judgment were used as appropriate

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

✗	Data completeness (chain-of-custody (COC))/sample integrity
✓	Holding times and sample preservation
✓	GC/MS performance checks
✗	Initial calibration/continuing calibration verification
✗	Laboratory blanks/trip blanks/equipment blanks
✓	Surrogate spike recoveries
NA	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓	Laboratory control sample (LCS) results
NA	Field duplicate results

✓ Internal standard results
✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix from the sample ID, and truncated IDs for GW and Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Sample VPB145-GW-051414-978-980 was mostly soil and had very little standing water. The laboratory decanted the water from the seven individual vials received into one vial. As a result sample VPB145-GW-051414-978-980 was analyzed at a 20-fold dilution, due to limited sample volume. Positive and non-detect results for this sample were qualified as estimated (J and UJ) respectively, due to possible loss of sample integrity during the decanting procedure.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

ICV Recovery Nonconformances:

Nonconformance	Actions	
	Detected Compounds	Nondetected Compounds
%R > 120%	J	No qualification
20% < %R < 80%	J	UJ
%R <20% (see note)	J	R*

Notes: Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift > 20%	J*	UJ*
* No guidance in NFG, thus professional judgment was used		

Qualified sample results are shown in Table 1. Nonconformances are summarized in Attachment A in Tables A-1, A-2, A-3.

Laboratory Blanks/Trip Blanks/ Equipment Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Sample results were qualified as follows:

Blank type	Blank result	Sample result	Action for samples
Method, Storage, Field, Trip, or Instrument*	Detects	Not detected	No qualification
	≤ LOQ	< LOQ	Report sample LOQ value with a U
		≥ LOQ and ≤ 2x LOQ	Report the sample result with a U**
		≥ 2x the LOQ	No qualifications
	> LOQ	< LOQ	Report sample LOQ value with a U
		≥ LOQ and < blank contamination	Report the sample result with a U or reject the sample result as unusable R
		≥ LOQ and ≥ blank contamination	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
	TIC detected	Detects	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
* Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 g/L.			
**Based on RESCON professional judgment.			

LOQ - Limit of Quantitation

Nonconformances are summarized in Attachment A in Table A-4. Qualified sample results are shown in Table 1.

Surrogate Spike Recoveries

For sample VPB145-GW-051414-978-980 the surrogate toluene-d8 did not meet the QC limits of (85-120%) at 84.7%. All other surrogates for this sample were acceptable and the %R was slightly below the lower limit. No validation action was taken other than this notation.

MS/MSD Results

MS/MSD analyses were not performed on samples reported in this SDG. There were no validation actions taken on this basis.

LCS Results

The LCS %Rs were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Field Duplicate Results

There were no field duplicate samples submitted with this data set. No validation actions were taken on this basis.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as undetected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the DL were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-051314-918-920	WG	2-BUTANONE		50	UG/L	UJ	c
VPB145-GW-051314-918-920	WG	ACETONE	79	50	UG/L	J	c
VPB145-GW-051314-918-920	WG	ISOPROPYLBENZENE		10	UG/L	UJ	c
VPB145-GW-051314-938-940	WG	2-BUTANONE		2.5	UG/L	UJ	c
VPB145-GW-051314-938-940	WG	ACETONE	9.2	2.5	UG/L	J	c
VPB145-GW-051314-938-940	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	c
VPB145-GW-051414-958-960	WG	2-BUTANONE		2.5	UG/L	UJ	c
VPB145-GW-051414-958-960	WG	ACETONE	7.3	2.5	UG/L	J	c
VPB145-GW-051414-958-960	WG	CARBON DISULFIDE		1.0*	UG/L	U	bl
VPB145-GW-051414-958-960	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	c
VPB145-GW-051414-978-980	WG	1,1,1-TRICHLOROETHANE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,1,2,2-TETRACHLOROETHANE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,1,2-TRICHLOROETHANE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,1-DICHLOROETHANE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,1-DICHLOROETHENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,2,4-TRICHLOROBENZENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,2-DIBROMO-3-CHLOROPROPANE		15	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,2-DIBROMOETHANE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,2-DICHLOROBENZENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,2-DICHLOROETHANE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,2-DICHLOROETHENE, TOTAL		20	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,2-DICHLOROPROPANE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,3-DICHLOROBENZENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	1,4-DICHLOROBENZENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	2-BUTANONE		50	UG/L	UJ	c,mc
VPB145-GW-051414-978-980	WG	2-HEXANONE		50	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	4-METHYL-2-PENTANONE		50	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	ACETONE	45	50	UG/L	J	c,mc
VPB145-GW-051414-978-980	WG	BENZENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	BROMODICHLOROMETHANE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	BROMOFORM		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	BROMOMETHANE		20	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	CARBON DISULFIDE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	CARBON TETRACHLORIDE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	CHLOROBENZENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	CHLOROETHANE		20	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB145-GW-051414-978-980	WG	CHLOROFORM		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	CHLOROMETHANE		20	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	CIS-1,2-DICHLOROETHENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	CIS-1,3-DICHLOROPROPENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	CYCLOHEXANE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	DIBROMOCHLOROMETHANE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	DICHLORODIFLUOROMETHANE		20	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	ETHYLBENZENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	ISOPROPYLBENZENE		10	UG/L	UJ	c,mc
VPB145-GW-051414-978-980	WG	M- AND P-XYLENE		20	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	METHYL ACETATE		15	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	METHYL CYCLOHEXANE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	METHYL TERT-BUTYL ETHER		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	METHYLENE CHLORIDE		50	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	O-XYLENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	STYRENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	TETRACHLOROETHENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	TOLUENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	TRANS-1,2-DICHLOROETHENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	TRANS-1,3-DICHLOROPROPENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	TRICHLOROETHENE		10	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	TRICHLOROFLUOROMETHANE		20	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	VINYL CHLORIDE		20	UG/L	UJ	mc
VPB145-GW-051414-978-980	WG	XYLENES, TOTAL		30	UG/L	UJ	mc
VPB145-TRIP BLANK-051514	WQ	2-BUTANONE		2.5	UG/L	UJ	c
VPB145-TRIP BLANK-051514	WQ	ISOPROPYLBENZENE		0.50	UG/L	UJ	c
*Carbon disulfide - LOQ							

Attachment A

Nonconformance Summary Tables

Table A-1 Initial Calibration Verification Standard

ICV ID	Compound	%R	Limits
WG143096 5/19/2014	ACETONE	133.1	80-120%
	1,2,4-Trichlorobenzene	126.1	80-120%
Associated Samples: VPB145-GW-051314-918-920, VPB145-TB-051515, VPB145-GW-051414-958-960, VPB145-GW-051414-978-980			

Table A-2 Initial Calibration Verification Standard

ICV ID	Compound	%R	Limits
WG143261 5/21/2014	ACETONE	131.5	80-120%
	2-BUTANONE	129.2	80-120%
	ISOPROPLYBENZENE	123.4	80-120%
Associated Samples: VPB145-051314-938-940			

Table A-3 Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG143158 5/20/2014	ACETONE	41.0	<20 %D
	2-BUTANONE	22.5	<20 %D
	4-METHY-2-PENTANONE	23.0	<20 %D
	2-HEXANONE	22.8	<20 %D
Associated samples: VPB145-GW-051314-918-920, VPB145-TB-051515, VPB145-GW-051414-958-960, VPB145-GW-051414-978-980			

Table A-4 - Lab Blanks

Blank ID	Compound	Result	LOD	Units	Associated Samples
WG143158-2	CARBON DISULFIDE	0.32	0.50	UG/L	VPB145-GW-051414-958-960

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
co	Analyte carryover
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results
mc	Method compliance nonconformance

Katahdin ANALYTICAL SERVICES

600 Technology Way
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CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Page 1 of 1

Client	Contact	Phone #	Fax #
Resolution Consultants	Eleanor Vivaudou	845-425-4980	( )

Address 100 Red Schoolhouse Road Suite B4 City Chestnut Ridge State NY Zip Code

Purchase Order # Proj. Name / No. 60266526 Katahdin Quote #

Bill (if different than above) ~~999~~ Address

Sampler (Print / Sign) Valerie Thayer, Valerie Thayer Copies To: Valerie Thayer

LAB USE ONLY WORK ORDER #: 15H3224 0

KATAHDIN PROJECT NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP'C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: VOCs HCL (Filt. ☐Y ☐N)
(*)	VPB145-GW-051314-918-920	05/13/14 12:45	GW	7	X
	VPB145-GW-051314-938-940	05/13/14 3:15	GW	6	X
VT	VPB145-GW-051414-958-960	05/14/14 11:15	GW	4	X
(*)	VPB145-GW-051414-978-980	05/14/14 15:45	GW	1	X
	VPB145-TripBlanks-051514	5/2/14 11:00	W	3	X
	Temperature Blank				

COMMENTS (*) very muddy

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	05/15/14 7	5:16Y	0900		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

ORIGINAL

KAS-COC1

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3224-1DL
Client ID: 145-051314-918-920
Project: Navy Clean WE15-03-06 NW
SDG: SH3224
Lab File ID: C7187.D

Sample Date: 13-MAY-14
Received Date: 16-MAY-14
Extract Date: 20-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG143158

Analysis Date: 20-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 27-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	20	ug/L	20	2	40.	4.8	20.
Chloromethane	U	20	ug/L	20	2	40.	7.2	20.
Vinyl Chloride	U	20	ug/L	20	2	40.	5.0	20.
Bromomethane	U	20	ug/L	20	2	40.	9.8	20.
Chloroethane	U	20	ug/L	20	2	40.	11.	20.
Trichlorofluoromethane	U	20	ug/L	20	2	40.	4.8	20.
1,1-Dichloroethene	U	10	ug/L	20	1	20.	7.0	10.
Carbon Disulfide	U	10	ug/L	20	1	20.	5.0	10.
Freon-113	U	10	ug/L	20	1	20.	6.2	10.
Methylene Chloride	U	50	ug/L	20	5	100	23.	50.
Acetone	~~J~~ J	79	ug/L	20	5	100	44.	50.
trans-1,2-Dichloroethene	U	10	ug/L	20	1	20.	5.0	10.
Methyl tert-butyl Ether	U	10	ug/L	20	1	20.	7.2	10.
1,1-Dichloroethane	U	10	ug/L	20	1	20.	4.2	10.
cis-1,2-Dichloroethene	U	10	ug/L	20	1	20.	4.2	10.
Chloroform	U	10	ug/L	20	1	20.	6.4	10.
1,1,1-Trichloroethane	U	10	ug/L	20	1	20.	4.0	10.
2-Butanone	~~U~~ UJ	50	ug/L	20	5	100	26.	50.
Cyclohexane	U	10	ug/L	20	1	20.	6.2	10.
Carbon Tetrachloride	U	10	ug/L	20	1	20.	4.4	10.
Benzene	U	10	ug/L	20	1	20.	5.2	10.
1,2-Dichloroethane	U	10	ug/L	20	1	20.	4.0	10.
Trichloroethene	U	10	ug/L	20	1	20.	5.6	10.
1,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
Bromodichloromethane	U	10	ug/L	20	1	20.	6.6	10.
cis-1,3-Dichloropropene	U	10	ug/L	20	1	20.	3.8	10.
Toluene	U	10	ug/L	20	1	20.	5.4	10.
4-Methyl-2-Pentanone	U	50	ug/L	20	5	100	26.	50.
trans-1,3-Dichloropropene	U	10	ug/L	20	1	20.	4.0	10.
1,1,2-Trichloroethane	U	10	ug/L	20	1	20.	6.6	10.
Tetrachloroethene	U	10	ug/L	20	1	20.	8.0	10.
Dibromochloromethane	U	10	ug/L	20	1	20.	6.0	10.
2-Hexanone	U	50	ug/L	20	5	100	34.	50.
Chlorobenzene	U	10	ug/L	20	1	20.	4.4	10.
Ethylbenzene	U	10	ug/L	20	1	20.	4.2	10.

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8/26/14

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3224-1DL
Client ID: 145-051314-918-920
Project: Navy Clean WE15-03-06 NW
SDG: SH3224
Lab File ID: C7187.D

Sample Date: 13-MAY-14
Received Date: 16-MAY-14
Extract Date: 20-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG143158

Analysis Date: 20-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 27-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	30	ug/L	20	3	60.	5.0	30.
Styrene	U	10	ug/L	20	1	20.	4.6	10.
Bromoform	U	10	ug/L	20	1	20.	4.6	10.
Isopropylbenzene	~~U~~ UJ	10	ug/L	20	1	20.	4.6	10.
1,1,2,2-Tetrachloroethane	U	10	ug/L	20	1	20.	7.6	10.
1,3-Dichlorobenzene	U	10	ug/L	20	1	20.	5.2	10.
1,4-Dichlorobenzene	U	10	ug/L	20	1	20.	4.8	10.
1,2-Dichlorobenzene	U	10	ug/L	20	1	20.	3.0	10.
1,2,4-Trichlorobenzene	U	10	ug/L	20	1	20.	7.4	10.
Methyl Acetate	U	15	ug/L	20	1	20.	11.	15.
Methylcyclohexane	U	10	ug/L	20	1	20.	6.0	10.
o-Xylene	U	10	ug/L	20	1	20.	5.0	10.
M+P-Xylenes	U	20	ug/L	20	2	40.	12.	20.
1,2-Dichloroethylene (Total)	U	20	ug/L	20	2	40.	4.2	20.
1,2-Dibromoethane	U	10	ug/L	20	1	20.	4.4	10.
1,2-Dibromo-3-Chloropropane	U	15	ug/L	20	1	20.	10.	15.
P-Bromofluorobenzene		77.3	%					
Toluene-d8		92.4	%					
1,2-Dichloroethane-d4		102.	%					
Dibromofluoromethane		94.4	%					

8/20/14

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3224-2RA
Client ID: 145-051314-938-940
Project: Navy Clean WE15-03-06 NW
SDG: SH3224
Lab File ID: C7215.D

Sample Date: 13-MAY-14
Received Date: 16-MAY-14
Extract Date: 21-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG143261

Analysis Date: 21-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 27-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	9.2	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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RE 5/26/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3224-2RA
Client ID: 145-051314-938-940
Project: Navy Clean WE15-03-06 NW
SDG: SH3224
Lab File ID: C7215.D

Sample Date: 13-MAY-14
Received Date: 16-MAY-14
Extract Date: 21-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG143261

Analysis Date: 21-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 27-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		104.	%					
Toluene-d8		108.	%					
1,2-Dichloroethane-d4		111.	%					
Dibromofluoromethane		105.	%					

8/26/14

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3224-3
Client ID: 145-051414-958-960
Project: Navy Clean WE15-03-06 NW
SDG: SH3224
Lab File ID: C7189.D

Sample Date: 14-MAY-14
Received Date: 16-MAY-14
Extract Date: 20-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG143158

Analysis Date: 20-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 29-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~J~~ U	~~0.40~~ 1.0	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	7.3	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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5/26/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3224-3
Client ID: 145-051414-958-960
Project: Navy Clean WE15-03-06 NW
SDG: SH3224
Lab File ID: C7189.D

Sample Date: 14-MAY-14
Received Date: 16-MAY-14
Extract Date: 20-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG143158

Analysis Date: 20-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 29-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		87.1	%					
Toluene-d8		94.1	%					
1,2-Dichloroethane-d4		110.	%					
Dibromofluoromethane		103.	%					

5/26/14

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3224-4DL
Client ID: 145-051414-978-980
Project: Navy Clean WE15-03-06 NW
SDG: SH3224
Lab File ID: C7190.D

Sample Date: 14-MAY-14
Received Date: 16-MAY-14
Extract Date: 20-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG143158

Analysis Date: 20-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 27-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	20	ug/L	20	2	40.	4.8	20.
Chloromethane	U	20	ug/L	20	2	40.	7.2	20.
Vinyl Chloride	U	20	ug/L	20	2	40.	5.0	20.
Bromomethane	U	20	ug/L	20	2	40.	9.8	20.
Chloroethane	U	20	ug/L	20	2	40.	11.	20.
Trichlorofluoromethane	U	20	ug/L	20	2	40.	4.8	20.
1,1-Dichloroethene	U	10	ug/L	20	1	20.	7.0	10.
Carbon Disulfide	U	10	ug/L	20	1	20.	5.0	10.
Freon-113	U	10	ug/L	20	1	20.	6.2	10.
Methylene Chloride	U	50	ug/L	20	5	100	23.	50.
Acetone	J J	45	ug/L	20	5	100	44.	50.
trans-1,2-Dichloroethene	U UJ	10	ug/L	20	1	20.	5.0	10.
Methyl tert-butyl Ether	U	10	ug/L	20	1	20.	7.2	10.
1,1-Dichloroethane	U	10	ug/L	20	1	20.	4.2	10.
cis-1,2-Dichloroethene	U	10	ug/L	20	1	20.	4.2	10.
Chloroform	U	10	ug/L	20	1	20.	6.4	10.
1,1,1-Trichloroethane	U	10	ug/L	20	1	20.	4.0	10.
2-Butanone	U	50	ug/L	20	5	100	26.	50.
Cyclohexane	U	10	ug/L	20	1	20.	6.2	10.
Carbon Tetrachloride	U	10	ug/L	20	1	20.	4.4	10.
Benzene	U	10	ug/L	20	1	20.	5.2	10.
1,2-Dichloroethane	U	10	ug/L	20	1	20.	4.0	10.
Trichloroethene	U	10	ug/L	20	1	20.	5.6	10.
1,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
Bromodichloromethane	U	10	ug/L	20	1	20.	6.6	10.
cis-1,3-Dichloropropene	U	10	ug/L	20	1	20.	3.8	10.
Toluene	U	10	ug/L	20	1	20.	5.4	10.
4-Methyl-2-Pentanone	U	50	ug/L	20	5	100	26.	50.
trans-1,3-Dichloropropene	U	10	ug/L	20	1	20.	4.0	10.
1,1,2-Trichloroethane	U	10	ug/L	20	1	20.	6.6	10.
Tetrachloroethene	U	10	ug/L	20	1	20.	8.0	10.
Dibromochloromethane	U	10	ug/L	20	1	20.	6.0	10.
2-Hexanone	U	50	ug/L	20	5	100	34.	50.
Chlorobenzene	U	10	ug/L	20	1	20.	4.4	10.
Ethylbenzene	U	10	ug/L	20	1	20.	4.2	10.

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3224-4DL
Client ID: 145-051414-978-980
Project: Navy Clean WE15-03-06 NW
SDG: SH3224
Lab File ID: C7190.D

Sample Date: 14-MAY-14
Received Date: 16-MAY-14
Extract Date: 20-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG143158

Analysis Date: 20-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 27-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UJ	30	ug/L	20	3	60.	5.0	30.
Styrene	U	10	ug/L	20	1	20.	4.6	10.
Bromoform	U	10	ug/L	20	1	20.	4.6	10.
Isopropylbenzene	U	10	ug/L	20	1	20.	4.6	10.
1,1,2,2-Tetrachloroethane	U	10	ug/L	20	1	20.	7.6	10.
1,3-Dichlorobenzene	U	10	ug/L	20	1	20.	5.2	10.
1,4-Dichlorobenzene	U	10	ug/L	20	1	20.	4.8	10.
1,2-Dichlorobenzene	U	10	ug/L	20	1	20.	3.0	10.
1,2,4-Trichlorobenzene	U	10	ug/L	20	1	20.	7.4	10.
Methyl Acetate	U	15	ug/L	20	1	20.	11.	15.
Methylcyclohexane	U	10	ug/L	20	1	20.	6.0	10.
o-Xylene	U	10	ug/L	20	1	20.	5.0	10.
M+P-Xylenes	U	20	ug/L	20	2	40.	12.	20.
1,2-Dichloroethylene (Total)	U	20	ug/L	20	2	40.	4.2	20.
1,2-Dibromoethane	U	10	ug/L	20	1	20.	4.4	10.
1,2-Dibromo-3-Chloropropane	U	15	ug/L	20	1	20.	10.	15.
P-Bromofluorobenzene		86.0	%					
Toluene-d8	*	84.7	%					
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		100.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH3224-5
Client ID: VPB145-TB-051514
Project: Navy Clean WE15-03-06 NW
SDG: SH3224
Lab File ID: C7185.D

Sample Date: 14-MAY-14
Received Date: 16-MAY-14
Extract Date: 20-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG143158

Analysis Date: 20-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 27-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3224-5
Client ID: VPB145-TB-051514
Project: Navy Clean WE15-03-06 NW
SDG: SH3224
Lab File ID: C7185.D

Sample Date: 14-MAY-14
Received Date: 16-MAY-14
Extract Date: 20-MAY-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG143158

Analysis Date: 20-MAY-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 27-MAY-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		80.8	%					
Toluene-d8		96.1	%					
1,2-Dichloroethane-d4		107.	%					
Dibromofluoromethane		98.4	%					

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Section 5

VPB 145 Analytical Data Table

Vertical Profile Boring 145, Analytical Data Table
Naval Weapons Industrial Reserve Plant
Bethpage - Bethpage, New York

Resolution Consultants

Location		VPB145	VPB145	VPB145	VPB145
Sample Date	NYSDEC Groundwater Guidance or Standard Value (Note 1)	4/10/2014	4/10/2014	4/11/2014	4/11/2014
Sample ID		VPB145-GW-041014-58-60	VPB145-GW-041014-98-100	VPB145-GW-041114-148-150	VPB145-GW-041114-198-200
Sample Interval		58 - 60 ft	98 - 100 ft	148 - 150 ft	198 - 200 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	**2.5**	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	**0.40 J**	< 0.50 U	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 UJ***	***< 0.75 UJ***	***< 0.75 UJ***	***< 0.75 UJ***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	**0.35 J**	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 U
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	50	**9.9 J**	**6.7 J**	**6.4 J**	**5.7 J**
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	**0.35 J**	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	**0.52 J**	< 0.50 U	**0.88 J**
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Location		VPB145	VPB145	VPB145	VPB145
Sample Date	NYSDEC Groundwater Guidance or Standard Value (Note 1)	4/11/2014	4/14/2014	4/14/2014	4/16/2014
Sample ID		VPB145-GWD-041114	VPB145-GW-041414-218-220	VPB145-GW-041414-238-240	VPB145-GW-041614-258-260
Sample Interval		198 - 200 ft	218 - 220 ft	238 - 240 ft	258 - 260 ft
Sample type code		FD	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,2,4-TRICHLOROBENZENE	5	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 UJ***	***< 0.75 UJ***	***< 0.75 UJ***	***< 0.75 UJ***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 UJ
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 UJ
ACETONE	50	**5.1 J**	**8.9 J**	**6.9 J**	**15 J**
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
BROMOFORM	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
BROMOMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 UJ***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
DICHLORODIFLUOROMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 UJ
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
METHYL TERT-BUTYL ETHER	10	**0.89 J**	< 0.50 U	< 0.50 U	< 0.50 UJ
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 UJ
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 UJ***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
VINYL CHLORIDE	2	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 UJ

Location		VPB145	VPB145	VPB145	VPB145
Sample Date	NYSDEC Groundwater Guidance or Standard Value (Note 1)	4/16/2014	4/16/2014	4/16/2014	4/17/2014
Sample ID		VPB145-GW-041614-278-280	VPB145-GW-041614-298-300	VPB145-GWD-041614	VPB145-GW-041714-318-320
Sample Interval		278 - 280 ft	298 - 300 ft	298 - 300 ft	318 - 320 ft
Sample type code		N	N	FD	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,2,4-TRICHLOROBENZENE	5	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 U***	***< 0.75 UJ***	***< 0.75 UJ***	***< 0.75 UJ***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
2-BUTANONE	50	< 2.5 U	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
2-HEXANONE	50	< 2.5 U	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	**7.1 J**	**6.2 J**	**4.2 J**	**27 J**
BENZENE	1	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
BROMOFORM	50	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
BROMOMETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CARBON DISULFIDE	60	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
CHLOROBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
CHLOROMETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 UJ***	***< 0.50 UJ***	***< 0.50 UJ***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
METHYL ACETATE	NL	< 0.75 U	< 0.75 UJ	< 0.75 UJ	< 0.75 UJ
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
O-XYLENE	NL	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
STYRENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
TETRACHLOROETHENE	5	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
TOLUENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
TRANS-1,2-DICHLOROETHENE	5	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 UJ***	***< 0.50 UJ***	***< 0.50 UJ***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
VINYL CHLORIDE	2	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
XYLENES, TOTAL	5	< 1.5 U	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ

Location		VPB145	VPB145	VPB145	VPB145
Sample Date	NYSDEC Groundwater Guidance or Standard Value (Note 1)	4/17/2014	4/17/2014	4/18/2014	4/18/2014
Sample ID		VPB145-GW-041714-338-340	VPB145-GW-041714-358-360	VPB145-GW-041814-378-380	VPB145-GW-041814-398-400
Sample Interval		338 - 340 ft	358 - 360 ft	378 - 380 ft	398 - 400 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 UJ	< 0.50 UJ	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 U***	***< 0.75 UJ***	***< 0.75 U***	***< 0.75 U***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
2-BUTANONE	50	< 2.5 U	< 2.5 UJ	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 UJ	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 UJ	< 2.5 U	< 2.5 U
ACETONE	50	**9.8 J**	**30 J**	**4.7 J**	**4.2 J**
BENZENE	1	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 UJ***	***< 0.50 U***	***< 0.50 U***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U
ETHYLBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 UJ	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 UJ	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 UJ	< 0.50 UJ	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 UJ	< 0.50 UJ	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 UJ***	***< 0.50 U***	***< 0.50 U***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 UJ	< 0.50 U	< 0.50 U
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
XYLENES, TOTAL	5	< 1.5 U	< 1.5 UJ	< 1.5 U	< 1.5 U

Location		VPB145	VPB145	VPB145	VPB145
Sample Date	NYSDEC Groundwater Guidance or Standard Value (Note 1)	4/21/2014	4/21/2014	4/22/2014	4/22/2014
Sample ID		VPB145-GW-042114-418-420	VPB145-GW-042114-433-435	VPB145-GW-042214-468-470	VPB145-GW-042214-478-480
Sample Interval		418 - 420 ft	433 - 435 ft	468 - 470 ft	478 - 480 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 UJ	< 0.50 UJ	***< 4.0 UJ***
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 U***	***< 0.75 UJ***	***< 0.75 UJ***	***< 6.0 UJ***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 UJ	< 0.50 UJ	***< 4.0 UJ***
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	< 1.0 UJ	< 1.0 UJ	***< 8.0 UJ***
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 UJ	< 0.50 UJ	***< 4.0 UJ***
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 UJ	< 0.50 UJ	***< 4.0 UJ***
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 UJ	< 0.50 UJ	***< 4.0 UJ***
2-BUTANONE	50	< 2.5 U	< 2.5 UJ	< 2.5 UJ	< 20 UJ
2-HEXANONE	50	< 2.5 U	< 2.5 UJ	< 2.5 UJ	< 20 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 UJ	< 2.5 UJ	< 20 UJ
ACETONE	50	< 2.5 U	**6.6 J**	**25 J**	**23 J**
BENZENE	1	< 0.50 U	< 0.50 UJ	< 0.50 UJ	***< 4.0 UJ***
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
BROMOFORM	50	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
BROMOMETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 UJ	***< 8.0 UJ***
CARBON DISULFIDE	60	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
CHLOROBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	***< 8.0 UJ***
CHLOROFORM	7	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
CHLOROMETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 UJ	***< 8.0 UJ***
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 UJ***	***< 0.50 UJ***	***< 4.0 UJ***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 UJ	***< 8.0 UJ***
ETHYLBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 8.0 UJ
METHYL ACETATE	NL	< 0.75 U	< 0.75 UJ	< 0.75 UJ	< 6.0 UJ
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 UJ	< 2.5 UJ	***< 20 UJ***
O-XYLENE	NL	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
STYRENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
TOLUENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 UJ***	***< 0.50 UJ***	***< 4.0 UJ***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 4.0 UJ
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 UJ	***< 8.0 UJ***
VINYL CHLORIDE	2	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	***< 8.0 UJ***
XYLENES, TOTAL	5	< 1.5 U	< 1.5 UJ	< 1.5 UJ	***< 12 UJ***

Location		VPB145	VPB145	VPB145	VPB145
Sample Date	NYSDEC Groundwater Guidance or Standard Value (Note 1)	4/23/2014	4/24/2014	4/24/2014	4/24/2014
Sample ID		VPB145-GW-042314-493-495	VPB145-GW-042414-513-515	VPB145-GW-042414-533-535	VPB145-GW-042414-553-555
Sample Interval		493 - 495 ft	513 - 515 ft	533 - 535 ft	553 - 555 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 U***	***< 0.75 UJ***	***< 0.75 UJ***	***< 0.75 UJ***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	**14 J**	< 2.5 U	**3.8 J**	< 2.5 U
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CHLOROFORM	7	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 UJ	< 0.75 UJ	< 0.75 UJ	< 0.75 UJ
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Location		VPB145	VPB145	VPB145	VPB145
Sample Date	NYSDEC Groundwater Guidance or Standard Value (Note 1)	4/25/2014	4/28/2014	4/28/2014	4/28/2014
Sample ID		VPB145-GW-042514-573-575	VPB145-GW-042814-593-595	VPB145-GW-042814-613-615	VPB145-GW-042814-633-635
Sample Interval		573 - 575 ft	593 - 595 ft	613 - 615 ft	633 - 635 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	1	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 UJ***	***< 0.75 UJ***	***< 0.75 UJ***	***< 0.75 UJ***
1,2-DIBROMOETHANE	NL	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
2-BUTANONE	50	< 2.5 UJ	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	**16 J**	< 2.5 U	**2.8 J**	**24**
BENZENE	1	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 UJ	< 0.50 U	< 0.50 U	**0.56 J**
CARBON TETRACHLORIDE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROBENZENE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U
CHLOROFORM	7	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 UJ***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
CYCLOHEXANE	NL	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U
ETHYLBENZENE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 UJ	< 0.75 UJ	< 0.75 UJ	< 0.75 UJ
METHYL CYCLOHEXANE	NL	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 UJ	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 UJ***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
TRICHLOROETHENE	5	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROFLUOROMETHANE	5	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 UJ	< 1.5 U	< 1.5 U	< 1.5 U

Location		VPB145	VPB145	VPB145	VPB145
Sample Date	NYSDEC Groundwater Guidance or Standard Value (Note 1)	4/30/2014	4/30/2014	5/1/2014	5/8/2014
Sample ID		VPB145-GW-043014-663-665	VPB145-GW-043014-678-680	VPB145-GW-050114-698-700	VPB145-GW-050814-823-825
Sample Interval		663 - 665 ft	678 - 680 ft	698 - 700 ft	823 - 825 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 U***	***< 0.75 U***	***< 0.75 UJ***	***< 0.75 UJ***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 UJ
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 UJ
ACETONE	50	**5.4 J**	**12 J**	**24 J**	**3.7 J**
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
BROMOFORM	50	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
BROMOMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
CHLOROETHANE	5	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 UJ***	***< 0.50 UJ***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ
METHYL ACETATE	NL	< 0.75 UJ	< 0.75 UJ	< 0.75 UJ	< 0.75 UJ
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 UJ
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 UJ***	***< 0.50 UJ***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 UJ	< 0.50 UJ
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 UJ	< 1.5 UJ

Location		VPB145	VPB145	VPB145	VPB145
Sample Date	NYSDEC Groundwater Guidance or Standard Value (Note 1)	5/9/2014	5/12/2014	5/12/2014	5/13/2014
Sample ID		VPB145-GW-050914-848-850	VPB145-GW-051214-868-870	VPB145-GW-051214-888-890	VPB145-GW-051314-918-920
Sample Interval		848 - 850 ft	868 - 870 ft	888 - 890 ft	918 - 920 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
1,1,2,2-TETRACHLOROETHANE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
1,1,2-TRICHLOROETHANE	1	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
1,1-DICHLOROETHANE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
1,1-DICHLOROETHENE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
1,2,4-TRICHLOROBENZENE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 60 UJ***	***< 60 UJ***	***< 0.75 UJ***	***< 15 U***
1,2-DIBROMOETHANE	NL	< 40 UJ	< 40 UJ	< 0.50 UJ	< 10 U
1,2-DICHLOROBENZENE	3	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
1,2-DICHLOROETHANE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
1,2-DICHLOROETHENE, TOTAL	5	***< 80 UJ***	***< 80 UJ***	< 1.0 UJ	***< 20 U***
1,2-DICHLOROPROPANE	1	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
1,3-DICHLOROBENZENE	3	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
1,4-DICHLOROBENZENE	3	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
2-BUTANONE	50	***< 200 UJ***	***< 200 UJ***	**12 J**	< 50 UJ
2-HEXANONE	50	***< 200 UJ***	***< 200 UJ***	< 2.5 UJ	< 50 U
4-METHYL-2-PENTANONE	NL	< 200 UJ	< 200 UJ	< 2.5 UJ	< 50 U
ACETONE	50	***< 200 UJ***	***< 200 UJ***	**120 J**	**79 J**
BENZENE	1	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
BROMODICHLOROMETHANE	50	< 40 UJ	< 40 UJ	< 0.50 UJ	< 10 U
BROMOFORM	50	< 40 UJ	< 40 UJ	< 0.50 UJ	< 10 U
BROMOMETHANE	5	***< 80 UJ***	***< 80 UJ***	< 1.0 UJ	***< 20 U***
CARBON DISULFIDE	60	< 40 UJ	< 40 UJ	< 0.50 UJ	< 10 U
CARBON TETRACHLORIDE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
CHLOROBENZENE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
CHLOROETHANE	5	***< 80 UJ***	***< 80 UJ***	< 1.0 UJ	***< 20 U***
CHLOROFORM	7	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
CHLOROMETHANE	5	***< 80 UJ***	***< 80 UJ***	< 1.0 UJ	***< 20 U***
CIS-1,2-DICHLOROETHENE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
CIS-1,3-DICHLOROPROPENE	0.4	***< 40 UJ***	***< 40 UJ***	***< 0.50 UJ***	***< 10 U***
CYCLOHEXANE	NL	< 40 UJ	< 40 UJ	< 0.50 UJ	< 10 U
DIBROMOCHLOROMETHANE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
DICHLORODIFLUOROMETHANE	5	***< 80 UJ***	***< 80 UJ***	< 1.0 UJ	***< 20 U***
ETHYLBENZENE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
ISOPROPYLBENZENE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 UJ***
M- AND P-XYLENE	NL	< 80 UJ	< 80 UJ	< 1.0 UJ	< 20 U
METHYL ACETATE	NL	< 60 UJ	< 60 UJ	< 0.75 UJ	< 15 U
METHYL CYCLOHEXANE	NL	< 40 UJ	< 40 UJ	< 0.50 UJ	< 10 U
METHYL TERT-BUTYL ETHER	10	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	< 10 U
METHYLENE CHLORIDE	5	***< 200 UJ***	***< 200 UJ***	< 2.5 UJ	***< 50 U***
O-XYLENE	NL	< 40 UJ	< 40 UJ	< 0.50 UJ	< 10 U
STYRENE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
TETRACHLOROETHENE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
TOLUENE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
TRANS-1,2-DICHLOROETHENE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
TRANS-1,3-DICHLOROPROPENE	0.4	***< 40 UJ***	***< 40 UJ***	***< 0.50 UJ***	***< 10 U***
TRICHLOROETHENE	5	***< 40 UJ***	***< 40 UJ***	< 0.50 UJ	***< 10 U***
TRICHLOROFLUOROMETHANE	5	***< 80 UJ***	***< 80 UJ***	< 1.0 UJ	***< 20 U***
VINYL CHLORIDE	2	***< 80 UJ***	***< 80 UJ***	< 1.0 UJ	***< 20 U***
XYLENES, TOTAL	5	***< 120 UJ***	***< 120 UJ***	< 1.5 UJ	***< 30 U***

Location		VPB145	VPB145	VPB145
Sample Date	NYSDEC Groundwater Guidance or Standard Value (Note 1)	5/13/2014	5/14/2014	5/14/2014
Sample ID		VPB145-GW-051314-938-940	VPB145-GW-051414-958-960	VPB145-GW-051414-978-980
Sample Interval		938 - 940 ft	958 - 960 ft	978 - 980 ft
Sample type code		N	N	N
VOC 8260B (ug/L)				
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	***< 10 UJ***
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 U***	***< 0.75 U***	***< 15 UJ***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 10 UJ
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	***< 10 UJ***
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	< 1.0 U	***< 20 UJ***
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	***< 10 UJ***
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	***< 10 UJ***
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	***< 10 UJ***
2-BUTANONE	50	< 2.5 UJ	< 2.5 UJ	< 50 UJ
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 50 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 50 UJ
ACETONE	50	**9.2 J**	**7.3 J**	**45 J**
BENZENE	1	< 0.50 U	< 0.50 U	***< 10 UJ***
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 10 UJ
BROMOFORM	50	< 0.50 U	< 0.50 U	< 10 UJ
BROMOMETHANE	5	< 1.0 U	< 1.0 U	***< 20 UJ***
CARBON DISULFIDE	60	< 0.50 U	< 1.0 U	< 10 UJ
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
CHLOROETHANE	5	< 1.0 U	< 1.0 U	***< 20 UJ***
CHLOROFORM	7	< 0.50 U	< 0.50 U	***< 10 UJ***
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	***< 20 UJ***
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 10 UJ***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 10 UJ
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 U	***< 20 UJ***
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
ISOPROPYLBENZENE	5	< 0.50 UJ	< 0.50 UJ	***< 10 UJ***
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 20 UJ
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 15 UJ
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 10 UJ
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 10 UJ
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	***< 50 UJ***
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 10 UJ
STYRENE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
TOLUENE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 10 UJ***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 U	***< 10 UJ***
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	***< 20 UJ***
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	***< 20 UJ***
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	***< 30 UJ***

Notes:

1 New York State Department of Environmental Conservation Division of Water Technical and Operation Guidance series (6 NYCRR 700-706, Part 703.5 summarized in TOGS 1.1.1)
Ambient water quality standards and groundwater effluent limitations, class GA; NL = Not Listed

Bold = Detected; ***Bold and Italics*** =Detection limit exceeds NYS Groundwater Standards or guidance value

Yellow highlighted values exceed Groundwater Standards or guidance value

Sample type codes: N - normal environmental sample, FD - field duplicate

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

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte.

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

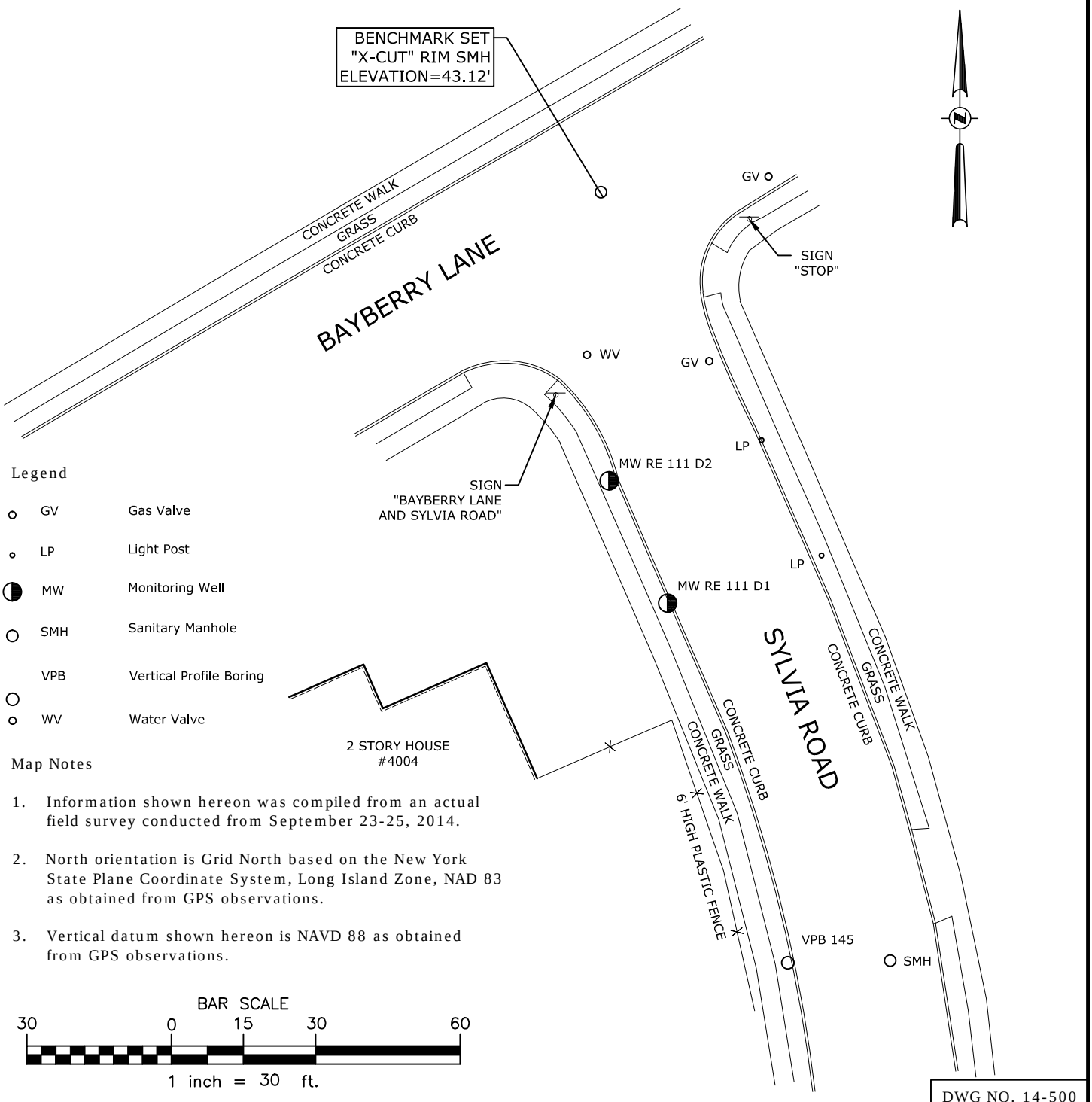
Section 6

Survey

NONE :XREFS

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

Description	Northing	Easting	Latitude	Longitude	Ground	Rim	PVC
VPB 145	193153.53	1126821.88	N40-41-44.48	W73-29-09.07	44.20	NA	NA
MWRE111D1	193228.16	1126796.92	N40-41-45.22	W73-29-09.38	43.61	43.61	42.93
MWRE111D2	193253.75	1126785.34	N40-41-45.48	W73-29-09.53	43.58	43.58	43.08



Legend

GV	Gas Valve
LP	Light Post
MW	Monitoring Well
SMH	Sanitary Manhole
VPB	Vertical Profile Boring
WV	Water Valve

Map Notes

1. Information shown hereon was compiled from an actual field survey conducted from September 23-25, 2014.
2. North orientation is Grid North based on the New York State Plane Coordinate System, Long Island Zone, NAD 83 as obtained from GPS observations.
3. Vertical datum shown hereon is NAVD 88 as obtained from GPS observations.

BAR SCALE
30 0 15 30 60
1 inch = 30 ft.

DWG NO. 14-500

Date	RECORD OF WORK	Appr.

VERTICAL PROFILE BORING 145 SURVEY LOCATION
4004 BAYBERRY LANE

TOWN OF SEAFORD | NASSAU COUNTY, NEW YORK

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Drafter: LMK	Checker: JFC
Appr. by: JFC	Proj. No. 14.4121
SCALE: 1"=30'	DATE: SEPT. 24, 2014

CAD DWG. FILE NAME: K:\Projects\14412\1\Survey\Drawings and Maps\VPB 145.dwg