SEPTEMBER 2017 GROUNDWATER SAMPLING DATA SUMMARY REPORT

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP)
SITE 1 OU2
BETHPAGE, NY

Prepared for:

Department of the Navy
Naval Facilities Engineering Command, Atlantic
9324 Virginia Avenue
Building Z-144
Norfolk, Virginia 23511

March 2018

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Prepared for:

Department of the Navy
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Contract Number: N62470-11-D-8013
CTO WE15

March 2018

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List of Acronyms and Abbreviations

DOT	Department of Transportation
IDW	Investigation Derived Waste
Katahdin	Katahdin Analytical Services
NG	Northrop Grumman
NWIRP	Naval Weapons Industrial Reserve Plant
ONCT	Onsite Containment System
OU	Operable Unit
POTW	Publicly Owned Treatment Works
QA	Quality Assurance
QC	Quality Control
SAP	Sampling and Analysis Plan
UFP	Uniform Federal Policy
VOC	Volatile Organic Compounds

1.0 PROJECT BACKGROUND

Resolution Consultants has prepared this Groundwater Sampling Data Summary Report for the Naval Facilities Engineering Command, Mid-Atlantic under contract task order WE15 Contract N62470-11-D-8013. The report describes quarterly sampling activities in September 2017, which is part of the Navy's ongoing Environmental Restoration Program 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).

This data summary report provides information on quarterly sampling of 49 Navy-owned monitoring wells by Resolution Consultants on behalf of the Navy, and by ARCADIS on behalf of the Navy at the direction of Northrop Grumman (NG) as part of an agreement between the Navy and NG. The purpose of this sampling is to provide information on the extent and magnitude of volatile organic compounds (VOCs) located in a narrow area immediately south of the Onsite Containment System (ONCT) in the western offsite plume, which could represent contamination that has bypassed the ONCT, to evaluate the southernmost extent of the OU2 plume, and to evaluate outpost wells intended to provide early warning of plume migration to public water supply wells. The locations of monitoring wells sampled as part of this effort are shown in Figure 2. Well construction information and sampling responsibility are listed in Table 1.

2.0 FIELD PROGRAM

Field tasks were conducted in September 2017 in accordance with the Uniform Federal Policy (UFP) Sampling and Analysis Plan (SAP) Addendum: *Groundwater Sampling Using Low Stress (Low Flow) Purging and Sampling Protocol* (Resolution Consultants, 2013). The field investigation included purging and sampling of monitoring wells in the quarterly groundwater sampling network.

The September 2017 quarterly sampling round consisted of a total of 49 wells (Table 1). Of these, 37 groundwater wells were sampled by Resolution Consultants and 13 were sampled by ARCADIS, the NG consultant.

2.1 Sampling

Resolution Consultants purged monitoring wells using a bladder pump with the intake placed at the approximate midpoint of the screened interval. The following field water quality parameters were continuously measured during purging: water temperature, pH, conductivity, oxidation-reduction potential, dissolved oxygen and turbidity. Groundwater analytical samples were collected when field water quality parameters stabilized. Samples were analyzed for VOCs via Method 8260C and 1,4-dioxane via Method 8270D SIM by Katahdin Analytical Services (Katahdin). Bromide was also analyzed at the following wells: RE120D1, RE120D2, RE120D3, RE117D1, RE117D2, and BPOW5-4. All purge water was managed as investigation derived waste (IDW). Quality assurance (QA) and quality control (QC) samples were collected during the sampling effort.

Analytical results and stabilized field parameters for wells sampled by Resolution Consultants are summarized in Table 2 and Table 3, respectively. Groundwater sample forms and data validation packages for wells sampled by Resolution Consultants are included in Appendix A and B, respectively.

Results for ARCADIS-sampled wells are provided in Table 4 and Table 5; data validation packages are included in Appendix C. Samples collected from outpost wells were analyzed for VOCs via method 524.2 and 1,4-dioxane via Method 522 by Accutest Laboratories. Samples collected from remaining wells were analyzed for VOCs via Method 8260C and 1,4-dioxane via Method 8270D SIM by Accutest Laboratories.

Additional Navy-owned wells are sampled by ARCADIS as part of separate and ongoing OU2 monitoring programs, as summarized in the sampling schedule in Appendix D. ARCADIS will

document these activities and results in their 2017 Annual Groundwater Monitoring Report, scheduled for submission to New York State Department of Environmental Conservation in the summer of 2018.

Synoptic water levels were measured on September 7, 2017 as part of a separate task. Tabulated data is presented in Appendix E along with three contoured water level maps for wells screened at shallow (<300 feet bgs), intermediate (300-500 feet bgs) and deep (>500 feet bgs) intervals.

2.2 Investigation Derived Waste

Resolution Consultants utilized dedicated and disposable sampling equipment when possible to avoid the potential for cross-contamination of samples. The sampling equipment included dedicated disposable polyethylene tubing, disposable gloves, and laboratory supplied sample bottles. Hand held equipment was decontaminated using a luminox or micro 90 water wash, a potable water rinse, followed by a distilled water rinse. Purge water was collected in 5-gallon pails or 55-gallon drums.

Resolution Consultants transported purge water from point of generation to the designated staging area at NWIRP in Department of Transportation (DOT) approved 5-gallon pails. Purge water was then containerized in a frac tank and stored at NWIRP Bethpage for characterization and ultimate disposal to the Nassau County Publicly Owned Treatment Works (POTW) in accordance with the facility's existing discharge permit. All analytical criteria were met for disposal of water. No solid waste was generated during sampling.

3.0 SUMMARY

Well construction information for all wells sampled by Resolution Consultants and ARCADIS is summarized in Table 1.

Analytical results and stabilized field water quality parameters for wells sampled by Resolution Consultants are summarized in Tables 2 and 3, respectively. Groundwater sample forms and data validation packages for wells sampled by Resolution Consultants are included in Appendix A and B, respectively.

Analytical results for wells sampled by ARCADIS are summarized in Table 4 and Table 5. Data validation packages for wells sampled by ARCADIS are included in Appendix C.

The sampling schedule of additional Navy-owned wells by ARCADIS, as part of separate and ongoing OU2 monitoring programs, is summarized in Appendix D. Synoptic water levels measured on September 7, 2017 are summarized in Appendix E.

4.0 REFERENCES

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

Tables

TABLE 1
MONITORING WELL CONSTRUCTION SUMMARY
2017 OU2 GROUNDWATER INVESTIGATION
NWIRP BETHPAGE, NY

Well	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Mid-screen (ft bgs)	Sump Length (ft)	VPB Affiliation	Sampled By
RE103D1	645	625	640	632.5	5	VPB137	Resolution
RE103D2	673	653	673	663	0	VPB137	Resolution
RE103D3	735	715	730	722.5	5	VPB137	Resolution
RE104D1	375	350	370	360	5	VPB138	Resolution
RE104D2	735	710	730	720	5	VPB138	Resolution
RE104D3	785	760	780	770	5	VPB138	Resolution
RE105D1	555	530	550	540	5	VPB139	Resolution
RE105D2	755	730	750	740	5	VPB139	Resolution
RE108D1	555	530	550	540	5	VPB142	Resolution
RE108D2	655	630	650	640	5	VPB142	Resolution
RE109D1	540	660	680	670	5	VPB143	Resolution
RE109D2	575	550	570	560	5	VPB143	Resolution
RE109D3	605	580	600	590	5	VPB143	Resolution
RE117D1	760	730	755	742.5	5	VPB151	Resolution
RE117D2	810	780	805	792.5	5	VPB151	Resolution
RE120D1	655	630	650	640	5	VPB154	Resolution
RE120D2	713	690	710	700	3	VPB154	Resolution
RE120D3	765	740	760	750	5	VPB154	Resolution
RE122D1	545	520	540	530	5	VPB156	Resolution
RE122D2	615	590	610	600	5	VPB156	Resolution
RE122D3	740	715	735	725	5	VPB156	Resolution
RE123D1	505	480	500	490	5	VPB157	Resolution
RE123D2	660	635	655	645	5	VPB157	Resolution
RE123D3	840	815	835	825	5	VPB157	Resolution
RE125D1	345	320	340	330	5	VPB159	Resolution
RE125D2	605	580	600	590	5	VPB159	Resolution
RE125D3	695	670	690	680	5	VPB159	Resolution
RE126D1	525	500	520	510	5	VPB160	Resolution
RE126D2	580	555	575	565	5	VPB160	Resolution
RE126D3	665	640	660	650	5	VPB160	Resolution
RE131D1	455	430	450	440	5	VPB165	Resolution
RE131D2	595	565	590	577.5	5	VPB165	Resolution
RE131D3	685	660	680	670	5	VPB165	Resolution
TT101D	350	325	345	335	5	VPB129	Resolution
TT101D1	595	570	590	580	5	VPB129	Resolution
TT101D2	765	740	760	750	5	VPB129	Resolution
BPOW5-1	515	480	510	495	5	VPB132	ARCADIS

TABLE 1
MONITORING WELL CONSTRUCTION SUMMARY
2017 OU2 GROUNDWATER INVESTIGATION
NWIRP BETHPAGE, NY

Well	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Mid-screen (ft bgs)	Sump Length (ft)	VPB Affiliation	Sampled By
BPOW5-2	585	540	580	560	5	VPB132	ARCADIS
BPOW5-3	665	620	660	640	5	VPB132	ARCADIS
BPOW5-4	575	545	570	557.5	5	VPB151	Resolution/ARCADIS
BPOW5-5	545	515	540	527.5	5	VPB152	ARCADIS
BPOW5-6	615	585	610	597.5	5	VPB152	ARCADIS
BPOW5-7	555	525	550	537.5	5	VPB152	ARCADIS
BPOW6-1	580	550	575	562.5	5	VPB145	ARCADIS
BPOW6-2	785	755	780	767.5	5	VPB145	ARCADIS
BPOW6-3	780	750	775	762.5	5	VPB146	ARCADIS
BPOW6-4	575	545	570	557.5	5	VPB146	ARCADIS
BPOW6-5	555	525	550	537.5	5	VPB147	ARCADIS
BPOW6-6	800	770	795	782.5	5	VPB147	ARCADIS

ft bgs - feet below ground surface

TABLE 2
ANALYTICAL DATA SUMMARY FOR
WELLS SAMPLED BY RESOLUTION CONSULTANTS
2017 OU2 GROUNDWATER INVESTIGATION

Location		NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE105D1	RE105D2	RE108D1	RE108D2
Sample Date			9/18/2017	9/18/2017	9/18/2017	9/18/2017
Sample ID			RE105D1-GW-091817	RE105D2-GW-091817	RE108D1-GW-091817	RE108D2-GW-091817
Sample type code			N	N	N	N
Units ug/L (except Bromide mg/L)	**Method**					
BROMIDE	300	2	NA	NA	NA	NA
1,1,1-TRICHLOROETHANE	8260 C	5	**0.27 J**	<2.0 U	<0.50 U	<2.0 U
1,1,2,2-TETRACHLOROETHANE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<2.0 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8260 C	5	**6.7**	**16**	**0.68 J**	**5.8**
1,1,2-TRICHLOROETHANE	8260 C	1	<0.50 U	**1.8 J**	<0.50 U	**1.6 J**
1,1-DICHLOROETHANE	8260 C	5	<0.50 U	**1.9 J**	<0.50 U	**3.8 J**
1,1-DICHLOROETHENE	8260 C	5	**1.1 J**	**8.1**	<0.50 UJ	**4.7 J**
1,2,4-TRICHLOROBENZENE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<2.0 U
1,2-DIBROMO-3-CHLOROPROPANE	8260 C	0.04	***<0.75 U***	***<3.0 UJ***	***<0.75 U***	***<3.0 U***
1,2-DIBROMOETHANE	8260 C	NL	<0.50 U	<2.0 U	<0.50 U	<2.0 U
1,2-DICHLOROBENZENE	8260 C	3	<0.50 U	<2.0 U	<0.50 U	<2.0 U
1,2-DICHLOROETHANE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<2.0 U
1,2-DICHLOROETHENE, TOTAL	8260 C	5	**1.5 J**	**4.3 J**	<1.0 U	**7.3 J**
1,2-DICHLOROPROPANE	8260 C	1	<0.50 U	***<2.0 U***	<0.50 U	***<2.0 U***
1,3-DICHLOROBENZENE	8260 C	3	<0.50 U	<2.0 U	<0.50 U	<2.0 U
1,4-DICHLOROBENZENE	8260 C	3	<0.50 U	<2.0 U	<0.50 U	<2.0 U
1,4-DIOXANE	8270D_SIM	NL	**14**	**18 J**	**7.7**	**9.8**
2-BUTANONE	8260 C	50	<2.5 U	<10 U	<2.5 U	<10 U
2-HEXANONE	8260 C	50	<2.5 U	<10 U	<2.5 U	<10 U
4-METHYL-2-PENTANONE	8260 C	NL	<2.5 U	<10 U	<2.5 U	<10 U
ACETONE	8260 C	50	<2.5 U	<10 U	<2.5 U	<10 U
BENZENE	8260 C	1	<0.50 U	***<2.0 U***	<0.50 U	***<2.0 U***
BROMODICHLOROMETHANE	8260 C	50	<0.50 U	<2.0 U	<0.50 U	<2.0 U
BROMOFORM	8260 C	50	<0.50 U	<2.0 U	<0.50 U	<2.0 U
BROMOMETHANE	8260 C	5	<1.0 U	<4.0 U	<1.0 U	<4.0 U
CARBON DISULFIDE	8260 C	60	<0.50 U	<2.0 U	<0.50 U	<2.0 U
CARBON TETRACHLORIDE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<2.0 U
CHLOROBENZENE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<2.0 U
CHLOROETHANE	8260 C	5	<1.0 U	<4.0 U	<1.0 U	<4.0 U
CHLOROFORM	8260 C	7	<0.50 U	**1.7 J**	<0.50 U	**3.0 J**
CHLOROMETHANE	8260 C	5	<1.0 U	<4.0 U	<1.0 U	<4.0 U
CIS-1,2-DICHLOROETHENE	8260 C	5	**1.5**	**4.3**	<0.50 U	**7.3**
CIS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<2.0 U***	***<0.50 U***	***<2.0 U***
CYCLOHEXANE	8260 C	NL	<0.50 U	<2.0 U	<0.50 U	<2.0 U
DIBROMOCHLOROMETHANE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<2.0 U
DICHLORODIFLUOROMETHANE	8260 C	5	**0.68 J**	<4.0 UJ	<1.0 UJ	<4.0 UJ
ETHYLBENZENE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<2.0 U
ISOPROPYLBENZENE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<2.0 U
M- AND P-XYLENE	8260 C	NL	<1.0 U	<4.0 U	<1.0 U	<4.0 U
METHYL ACETATE	8260 C	NL	<0.75 U	<3.0 U	<0.75 U	<3.0 U
METHYL CYCLOHEXANE	8260 C	NL	<0.50 U	<2.0 U	<0.50 U	<2.0 U
METHYL TERT-BUTYL ETHER	8260 C	10	<0.50 U	<2.0 U	<0.50 U	<2.0 U
METHYLENE CHLORIDE	8260 C	5	<2.5 U	***<10 U***	<2.5 U	***<10 U***
O-XYLENE	8260 C	NL	<0.50 U	<2.0 U	<0.50 U	<2.0 U
STYRENE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<2.0 U
TETRACHLOROETHENE	8260 C	5	<0.50 U	**3.2 J**	**1.6**	**3.0 J**
TOLUENE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<2.0 U
TRANS-1,2-DICHLOROETHENE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<2.0 U
TRANS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<2.0 U***	***<0.50 U***	***<2.0 U***
TRICHLOROETHENE	8260 C	5	**92**	**1900**	**39**	**2900**
TRICHLOROFLUOROMETHANE	8260 C	5	<1.0 U	<4.0 U	<1.0 U	<4.0 U
VINYL CHLORIDE	8260 C	2	<1.0 U	***<4.0 U***	<1.0 U	***<4.0 U***
XYLENES, TOTAL	8260 C	5	<1.5 U	***<6.0 U***	<1.5 U	***<6.0 U***

TABLE 2
ANALYTICAL DATA SUMMARY FOR
WELLS SAMPLED BY RESOLUTION CONSULTANTS
2017 OU2 GROUNDWATER INVESTIGATION

Location		NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE108D2	TT101D	TT101D1	TT101D2
Sample Date			9/18/2017	9/19/2017	9/19/2017	9/19/2017
Sample ID			DUP01-GW-091817	TT101D-GW-091917	TT101D1-GW-091917	TT101D2-GW-091917
Sample type code			FD	N	N	N
Units ug/L (except Bromide mg/L)	**Method**					
BROMIDE	300	2	NA	NA	NA	NA
1,1,1-TRICHLOROETHANE	8260 C	5	**0.68 J**	<0.50 U	**0.49 J**	**0.39 J**
1,1,2,2-TETRACHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8260 C	5	**6.8**	**15**	**18**	**26**
1,1,2-TRICHLOROETHANE	8260 C	1	**1.5**	<0.50 U	**0.68 J**	**0.63 J**
1,1-DICHLOROETHANE	8260 C	5	**4.7**	**0.91 J**	**1.1**	**1.2**
1,1-DICHLOROETHENE	8260 C	5	**6.0 J**	**2.6 J**	**5.8 J**	**5.8 J**
1,2,4-TRICHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	8260 C	0.04	***<0.75 U***	***<0.75 UJ***	***<0.75 U***	***<0.75 U***
1,2-DIBROMOETHANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHENE, TOTAL	8260 C	5	**8.0**	**3.0**	**2.3**	**2.1**
1,2-DICHLOROPROPANE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,3-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DIOXANE	8270D_SIM	NL	**8.7**	**12**	**10**	**4.1**
2-BUTANONE	8260 C	50	<2.5 U	<2.5 U	<2.5 U	<2.5 U
2-HEXANONE	8260 C	50	<2.5 U	<2.5 U	<2.5 U	<2.5 U
4-METHYL-2-PENTANONE	8260 C	NL	<2.5 U	<2.5 U	<2.5 U	<2.5 U
ACETONE	8260 C	50	<2.5 U	<2.5 U	<2.5 U	<2.5 U
BENZENE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMODICHLOROMETHANE	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOFORM	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOMETHANE	8260 C	5	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U
CARBON DISULFIDE	8260 C	60	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CARBON TETRACHLORIDE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CHLOROETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CHLOROFORM	8260 C	7	**3.1**	**0.35 J**	**0.92 J**	**0.84 J**
CHLOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CIS-1,2-DICHLOROETHENE	8260 C	5	**8.0**	**3.0**	**2.3**	**2.1**
CIS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
CYCLOHEXANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
DIBROMOCHLOROMETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
DICHLORODIFLUOROMETHANE	8260 C	5	<1.0 UJ	**3.2 J**	**2.3 J**	<1.0 UJ
ETHYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
ISOPROPYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
M- AND P-XYLENE	8260 C	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U
METHYL ACETATE	8260 C	NL	<0.75 U	<0.75 U	<0.75 U	<0.75 U
METHYL CYCLOHEXANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
METHYL TERT-BUTYL ETHER	8260 C	10	<0.50 U	<0.50 U	<0.50 U	<0.50 U
METHYLENE CHLORIDE	8260 C	5	<2.5 U	<2.5 U	<2.5 U	<2.5 U
O-XYLENE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
STYRENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TETRACHLOROETHENE	8260 C	5	**2.2 J**	<0.50 U	<0.50 U	**1.4**
TOLUENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,2-DICHLOROETHENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
TRICHLOROETHENE	8260 C	5	**2800**	**62**	**170**	**630**
TRICHLOROFLUOROMETHANE	8260 C	5	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U
VINYL CHLORIDE	8260 C	2	<1.0 U	<1.0 U	<1.0 U	<1.0 U
XYLENES, TOTAL	8260 C	5	<1.5 U	<1.5 U	<1.5 U	<1.5 U

TABLE 2
ANALYTICAL DATA SUMMARY FOR
WELLS SAMPLED BY RESOLUTION CONSULTANTS
2017 OU2 GROUNDWATER INVESTIGATION

Location		NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE104D1	RE104D2	RE104D3	RE120D1
Sample Date			9/19/2017	9/19/2017	9/19/2017	9/20/2017
Sample ID			RE104D1-GW-091917	RE104D2-GW-091917	RE104D3-GW-091917	RE120D1-GW-092017
Sample type code			N	N	N	N
Units ug/L (except Bromide mg/L)	**Method**				**to here**	
BROMIDE	300	2	NA	NA	NA	<0.40 U
1,1,1-TRICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	**0.98 J**
1,1,2,2-TETRACHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8260 C	5	**2.8**	<0.50 U	<0.50 U	**20 J**
1,1,2-TRICHLOROETHANE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	**1.3 J**
1,1-DICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	**2.3 J**
1,1-DICHLOROETHENE	8260 C	5	**0.50 J**	<0.50 U	<0.50 UJ	**14 J**
1,2,4-TRICHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	8260 C	0.04	***<0.75 U***	***<0.75 UJ***	***<0.75 U***	***<0.75 U***
1,2-DIBROMOETHANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHENE, TOTAL	8260 C	5	**0.87 J**	**4.2**	<1.0 U	**3.4 J**
1,2-DICHLOROPROPANE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,3-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DIOXANE	8270D_SIM	NL	**10**	**0.44**	<0.17 U	**17**
2-BUTANONE	8260 C	50	<2.5 U	<2.5 U	<2.5 U	<2.5 UJ
2-HEXANONE	8260 C	50	<2.5 U	<2.5 U	<2.5 U	<2.5 UJ
4-METHYL-2-PENTANONE	8260 C	NL	<2.5 U	<2.5 U	<2.5 U	<2.5 U
ACETONE	8260 C	50	<2.5 U	<2.5 U	<2.5 U	<2.5 UJ
BENZENE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMODICHLOROMETHANE	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOFORM	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CARBON DISULFIDE	8260 C	60	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CARBON TETRACHLORIDE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	**0.33 J**
CHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CHLOROETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CHLOROFORM	8260 C	7	<0.50 U	**0.60 J**	<0.50 U	**0.75 J**
CHLOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CIS-1,2-DICHLOROETHENE	8260 C	5	**0.87 J**	**4.2**	<0.50 U	**3.4 J**
CIS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
CYCLOHEXANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 UJ
DIBROMOCHLOROMETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
DICHLORODIFLUOROMETHANE	8260 C	5	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U
ETHYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
ISOPROPYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
M- AND P-XYLENE	8260 C	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U
METHYL ACETATE	8260 C	NL	<0.75 U	<0.75 U	<0.75 U	<0.75 U
METHYL CYCLOHEXANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
METHYL TERT-BUTYL ETHER	8260 C	10	<0.50 U	<0.50 U	<0.50 U	<0.50 U
METHYLENE CHLORIDE	8260 C	5	<2.5 U	<2.5 U	<2.5 U	<2.5 U
O-XYLENE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
STYRENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TETRACHLOROETHENE	8260 C	5	**2.4**	<0.50 U	<0.50 U	**2.5 J**
TOLUENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,2-DICHLOROETHENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
TRICHLOROETHENE	8260 C	5	**65**	**13**	<0.50 U	**970 J**
TRICHLOROFLUOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	**0.43 J**
VINYL CHLORIDE	8260 C	2	<1.0 U	<1.0 U	<1.0 U	<1.0 U
XYLENES, TOTAL	8260 C	5	<1.5 U	<1.5 U	<1.5 U	<1.5 U

TABLE 2
ANALYTICAL DATA SUMMARY FOR
WELLS SAMPLED BY RESOLUTION CONSULTANTS
2017 OU2 GROUNDWATER INVESTIGATION

Location		NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE120D2	RE120D3	RE131D1	RE131D2
Sample Date			9/20/2017	9/20/2017	9/20/2017	9/20/2017
Sample ID			RE120D2-GW-092017	RE120D3-GW-092017	RE131D1-GW-092017	RE131D2-GW-092017
Sample type code			N	N	N	N
Units ug/L (except Bromide mg/L)	**Method**					
BROMIDE	300	2	<0.40 U	<0.40 U	NA	NA
1,1,1-TRICHLOROETHANE	8260 C	5	**0.24 J**	<0.50 U	<0.50 U	**0.32 J**
1,1,2,2-TETRACHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8260 C	5	**15 J**	**1.1**	**4.4**	**200 J**
1,1,2-TRICHLOROETHANE	8260 C	1	**0.53 J**	<0.50 U	<0.50 U	<0.50 U
1,1-DICHLOROETHANE	8260 C	5	**0.94 J**	<0.50 U	**0.56 J**	**0.31 J**
1,1-DICHLOROETHENE	8260 C	5	**4.4 J**	**0.38 J**	**1.1**	**1.9 J**
1,2,4-TRICHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	8260 C	0.04	***<0.75 U***	***<0.75 U***	***<0.75 U***	***<0.75 U***
1,2-DIBROMOETHANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHENE, TOTAL	8260 C	5	**3.1 J**	<1.0 U	**4.7**	**4.5 J**
1,2-DICHLOROPROPANE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,3-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DIOXANE	8270D_SIM	NL	**13 J**	**0.41**	**15**	**12 J**
2-BUTANONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
2-HEXANONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
4-METHYL-2-PENTANONE	8260 C	NL	<2.5 U	<2.5 U	<2.5 U	<2.5 U
ACETONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
BENZENE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMODICHLOROMETHANE	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOFORM	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CARBON DISULFIDE	8260 C	60	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CARBON TETRACHLORIDE	8260 C	5	**0.38 J**	<0.50 UJ	<0.50 UJ	<0.50 UJ
CHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CHLOROETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CHLOROFORM	8260 C	7	**0.82 J**	<0.50 U	**2.6**	**0.45 J**
CHLOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CIS-1,2-DICHLOROETHENE	8260 C	5	**3.1 J**	<0.50 U	**4.7**	**4.5 J**
CIS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
CYCLOHEXANE	8260 C	NL	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ
DIBROMOCHLOROMETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
DICHLORODIFLUOROMETHANE	8260 C	5	<1.0 U	<1.0 U	**0.25 J**	**0.42 J**
ETHYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
ISOPROPYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
M- AND P-XYLENE	8260 C	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U
METHYL ACETATE	8260 C	NL	<0.75 U	<0.75 U	<0.75 U	<0.75 U
METHYL CYCLOHEXANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
METHYL TERT-BUTYL ETHER	8260 C	10	<0.50 U	<0.50 U	**0.47 J**	<0.50 U
METHYLENE CHLORIDE	8260 C	5	<2.5 U	<2.5 U	<2.5 U	<2.5 U
O-XYLENE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
STYRENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TETRACHLOROETHENE	8260 C	5	**4.4 J**	<0.50 UJ	**10 J**	**7.4 J**
TOLUENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,2-DICHLOROETHENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
TRICHLOROETHENE	8260 C	5	**690 J**	**44**	**140**	**67 J**
TRICHLOROFLUOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
VINYL CHLORIDE	8260 C	2	<1.0 U	<1.0 U	<1.0 U	<1.0 U
XYLENES, TOTAL	8260 C	5	<1.5 U	<1.5 U	<1.5 U	<1.5 U

TABLE 2
ANALYTICAL DATA SUMMARY FOR
WELLS SAMPLED BY RESOLUTION CONSULTANTS
2017 OU2 GROUNDWATER INVESTIGATION

Location		NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE131D23	RE109D1	RE109D2	RE109D3
Sample Date			9/20/2017	9/21/2017	9/21/2017	9/21/2017
Sample ID			RE131D3-GW-092017	RE109D1-GW-092117	RE109D2-GW-092117	RE109D3-GW-092117
Sample type code			N	N	N	N
Units ug/L (except Bromide mg/L)	**Method**					
BROMIDE	300	2	NA	NA	NA	NA
1,1,1-TRICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	**0.62 J**
1,1,2,2-TETRACHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8260 C	5	**140**	**0.74 J**	**1.3**	**3.8**
1,1,2-TRICHLOROETHANE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,1-DICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	**0.29 J**
1,1-DICHLOROETHENE	8260 C	5	**1.2**	<0.50 U	<0.50 U	<0.50 U
1,2,4-TRICHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	8260 C	0.04	***<0.75 U***	***<0.75 U***	***<0.75 U***	***<0.75 U***
1,2-DIBROMOETHANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHENE, TOTAL	8260 C	5	**0.52 J**	<1.0 U	<1.0 U	**1.1 J**
1,2-DICHLOROPROPANE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,3-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DIOXANE	8270D_SIM	NL	**2.4**	**6.6**	**8.3**	**6.6**
2-BUTANONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
2-HEXANONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
4-METHYL-2-PENTANONE	8260 C	NL	<2.5 U	<2.5 U	<2.5 U	<2.5 U
ACETONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
BENZENE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMODICHLOROMETHANE	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOFORM	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CARBON DISULFIDE	8260 C	60	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CARBON TETRACHLORIDE	8260 C	5	<0.50 UJ	<0.50 UJ	<0.50 UJ	**0.72 J**
CHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CHLOROETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CHLOROFORM	8260 C	7	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CHLOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CIS-1,2-DICHLOROETHENE	8260 C	5	**0.52 J**	<0.50 U	<0.50 U	**1.1**
CIS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
CYCLOHEXANE	8260 C	NL	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ
DIBROMOCHLOROMETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
DICHLORODIFLUOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	**0.45 J**
ETHYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
ISOPROPYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
M- AND P-XYLENE	8260 C	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U
METHYL ACETATE	8260 C	NL	<0.75 U	<0.75 U	<0.75 U	<0.75 U
METHYL CYCLOHEXANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
METHYL TERT-BUTYL ETHER	8260 C	10	<0.50 U	<0.50 U	<0.50 U	<0.50 U
METHYLENE CHLORIDE	8260 C	5	<2.5 U	<2.5 U	<2.5 U	<2.5 U
O-XYLENE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
STYRENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TETRACHLOROETHENE	8260 C	5	**2.3 J**	**0.73 J**	<0.50 UJ	**0.43 J**
TOLUENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,2-DICHLOROETHENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
TRICHLOROETHENE	8260 C	5	**9.1**	**24**	**32**	**65**
TRICHLOROFLUOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
VINYL CHLORIDE	8260 C	2	<1.0 U	<1.0 U	<1.0 U	<1.0 U
XYLENES, TOTAL	8260 C	5	<1.5 U	<1.5 U	<1.5 U	<1.5 U

TABLE 2
ANALYTICAL DATA SUMMARY FOR
WELLS SAMPLED BY RESOLUTION CONSULTANTS
2017 OU2 GROUNDWATER INVESTIGATION

Location		NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE122D1	RE122D2	RE122D3	RE126D1
Sample Date			9/21/2017	9/21/2017	9/21/2017	9/22/2017
Sample ID			RE122D1-GW-092117	RE122D2-GW-092117	RE122D3-GW-092117	RE126D1-GW-092217
Sample type code			N	N	N	N
Units ug/L (except Bromide mg/L)	**Method**					
BROMIDE	300	2	NA	NA	NA	NA
1,1,1-TRICHLOROETHANE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<0.50 U
1,1,2,2-TETRACHLOROETHANE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8260 C	5	**4.8**	**10 J**	<0.50 U	<0.50 U
1,1,2-TRICHLOROETHANE	8260 C	1	**0.44 J**	**1.9 J**	<0.50 U	<0.50 U
1,1-DICHLOROETHANE	8260 C	5	**0.27 J**	**1.4 J**	<0.50 U	<0.50 U
1,1-DICHLOROETHENE	8260 C	5	**1.1**	**6.4 J**	<0.50 U	<0.50 U
1,2,4-TRICHLOROBENZENE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	8260 C	0.04	***<0.75 U***	***<3.0 U***	***<0.75 U***	***<0.75 U***
1,2-DIBROMOETHANE	8260 C	NL	<0.50 U	<2.0 U	<0.50 U	<0.50 U
1,2-DICHLOROBENZENE	8260 C	3	<0.50 U	<2.0 U	<0.50 U	<0.50 U
1,2-DICHLOROETHANE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<0.50 U
1,2-DICHLOROETHENE, TOTAL	8260 C	5	**2.1 J**	**4.2 J**	<1.0 U	**0.36 J**
1,2-DICHLOROPROPANE	8260 C	1	<0.50 U	***<2.0 U***	<0.50 U	<0.50 U
1,3-DICHLOROBENZENE	8260 C	3	<0.50 U	<2.0 U	<0.50 U	<0.50 U
1,4-DICHLOROBENZENE	8260 C	3	<0.50 U	<2.0 U	<0.50 U	<0.50 U
1,4-DIOXANE	8270D_SIM	NL	**8.2**	**14**	<0.17 U	**6.5**
2-BUTANONE	8260 C	50	<2.5 UJ	<10 UJ	<2.5 UJ	<2.5 UJ
2-HEXANONE	8260 C	50	<2.5 UJ	<10 UJ	<2.5 UJ	<2.5 UJ
4-METHYL-2-PENTANONE	8260 C	NL	<2.5 U	<10 U	<2.5 U	<2.5 U
ACETONE	8260 C	50	<2.5 UJ	<10 UJ	<2.5 UJ	<2.5 UJ
BENZENE	8260 C	1	<0.50 U	***<2.0 U***	<0.50 U	<0.50 U
BROMODICHLOROMETHANE	8260 C	50	<0.50 U	<2.0 U	<0.50 U	<0.50 U
BROMOFORM	8260 C	50	<0.50 U	<2.0 U	<0.50 U	<0.50 U
BROMOMETHANE	8260 C	5	<1.0 U	<4.0 U	<1.0 U	<1.0 U
CARBON DISULFIDE	8260 C	60	<0.50 U	<2.0 U	<0.50 U	<0.50 U
CARBON TETRACHLORIDE	8260 C	5	**0.53 J**	<2.0 UJ	<0.50 UJ	<0.50 UJ
CHLOROBENZENE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<0.50 U
CHLOROETHANE	8260 C	5	<1.0 U	<4.0 U	<1.0 U	<1.0 U
CHLOROFORM	8260 C	7	**0.56 J**	**1.8 J**	<0.50 U	<0.50 U
CHLOROMETHANE	8260 C	5	<1.0 U	<4.0 U	<1.0 U	<1.0 U
CIS-1,2-DICHLOROETHENE	8260 C	5	**1.8**	**4.2 J**	<0.50 U	**0.36 J**
CIS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<2.0 U***	***<0.50 U***	***<0.50 U***
CYCLOHEXANE	8260 C	NL	<0.50 UJ	<2.0 UJ	<0.50 UJ	<0.50 UJ
DIBROMOCHLOROMETHANE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<0.50 U
DICHLORODIFLUOROMETHANE	8260 C	5	<1.0 U	<4.0 U	<1.0 U	<1.0 U
ETHYLBENZENE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<0.50 U
ISOPROPYLBENZENE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<0.50 U
M- AND P-XYLENE	8260 C	NL	<1.0 U	<4.0 U	<1.0 U	<1.0 U
METHYL ACETATE	8260 C	NL	<0.75 U	<3.0 U	<0.75 U	<0.75 U
METHYL CYCLOHEXANE	8260 C	NL	<0.50 U	<2.0 U	<0.50 U	<0.50 U
METHYL TERT-BUTYL ETHER	8260 C	10	<0.50 U	<2.0 U	<0.50 U	<0.50 U
METHYLENE CHLORIDE	8260 C	5	<2.5 U	***<10 U***	<2.5 U	<2.5 U
O-XYLENE	8260 C	NL	<0.50 U	<2.0 U	<0.50 U	<0.50 U
STYRENE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<0.50 U
TETRACHLOROETHENE	8260 C	5	**1.9 J**	**3.1 J**	<0.50 UJ	**1.0 J**
TOLUENE	8260 C	5	<0.50 U	<2.0 U	<0.50 U	<0.50 U
TRANS-1,2-DICHLOROETHENE	8260 C	5	**0.32 J**	<2.0 U	<0.50 U	<0.50 U
TRANS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<2.0 U***	***<0.50 U***	***<0.50 U***
TRICHLOROETHENE	8260 C	5	**510 J**	**2200 J**	**7.2**	**65**
TRICHLOROFLUOROMETHANE	8260 C	5	<1.0 U	<4.0 U	<1.0 U	<1.0 U
VINYL CHLORIDE	8260 C	2	<1.0 U	***<4.0 U***	<1.0 U	<1.0 U
XYLENES, TOTAL	8260 C	5	<1.5 U	***<6.0 U***	<1.5 U	<1.5 U

TABLE 2
ANALYTICAL DATA SUMMARY FOR
WELLS SAMPLED BY RESOLUTION CONSULTANTS
2017 OU2 GROUNDWATER INVESTIGATION

Location		NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE126D2	RE126D3	RE123D1	RE123D2
Sample Date			9/22/2017	9/22/2017	9/22/2017	9/22/2017
Sample ID			RE126D2-GW-092217	RE126D3-GW-092217	RE123D1-GW-092217	RE123D2-GW-092217
Sample type code			N	N	N	N
Units ug/L (except Bromide mg/L)	**Method**					
BROMIDE	300	2	NA	NA	NA	NA
1,1,1-TRICHLOROETHANE	8260 C	5	**0.57 J**	<0.50 U	<0.50 U	<0.50 U
1,1,2,2-TETRACHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8260 C	5	**0.52 J**	**0.49 J**	<0.50 U	<0.50 U
1,1,2-TRICHLOROETHANE	8260 C	1	**0.49 J**	<0.50 U	<0.50 U	<0.50 U
1,1-DICHLOROETHANE	8260 C	5	**1.9**	<0.50 U	<0.50 U	<0.50 U
1,1-DICHLOROETHENE	8260 C	5	**1.3**	<0.50 U	<0.50 U	<0.50 U
1,2,4-TRICHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	8260 C	0.04	***<0.75 U***	***<0.75 U***	***<0.75 U***	***<0.75 U***
1,2-DIBROMOETHANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHENE, TOTAL	8260 C	5	**1.7 J**	<1.0 UJ	<1.0 UJ	<1.0 UJ
1,2-DICHLOROPROPANE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,3-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DIOXANE	8270D_SIM	NL	**7.2**	**1.6**	**3.6**	**0.71**
2-BUTANONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
2-HEXANONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
4-METHYL-2-PENTANONE	8260 C	NL	<2.5 U	<2.5 U	<2.5 U	<2.5 U
ACETONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
BENZENE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMODICHLOROMETHANE	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOFORM	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CARBON DISULFIDE	8260 C	60	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CARBON TETRACHLORIDE	8260 C	5	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ
CHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CHLOROETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CHLOROFORM	8260 C	7	**0.59 J**	<0.50 U	<0.50 U	<0.50 U
CHLOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CIS-1,2-DICHLOROETHENE	8260 C	5	**1.7**	<0.50 U	<0.50 U	<0.50 U
CIS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
CYCLOHEXANE	8260 C	NL	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ
DIBROMOCHLOROMETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
DICHLORODIFLUOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
ETHYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
ISOPROPYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
M- AND P-XYLENE	8260 C	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U
METHYL ACETATE	8260 C	NL	<0.75 U	<0.75 U	<0.75 U	<0.75 U
METHYL CYCLOHEXANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
METHYL TERT-BUTYL ETHER	8260 C	10	<0.50 U	<0.50 U	<0.50 U	<0.50 U
METHYLENE CHLORIDE	8260 C	5	<2.5 U	<2.5 U	<2.5 U	<2.5 U
O-XYLENE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
STYRENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TETRACHLOROETHENE	8260 C	5	**0.60 J**	**2.6 J**	<0.50 UJ	**1.3 J**
TOLUENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,2-DICHLOROETHENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
TRICHLOROETHENE	8260 C	5	**460**	**3.7**	**8.0**	**2.1**
TRICHLOROFLUOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
VINYL CHLORIDE	8260 C	2	<1.0 U	<1.0 U	<1.0 U	<1.0 U
XYLENES, TOTAL	8260 C	5	<1.5 U	<1.5 U	<1.5 U	<1.5 U

TABLE 2
ANALYTICAL DATA SUMMARY FOR
WELLS SAMPLED BY RESOLUTION CONSULTANTS
2017 OU2 GROUNDWATER INVESTIGATION

Location		NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE123D3	RE117D1	RE117D2	BPOW5-4
Sample Date			9/22/2017	9/25/2017	9/25/2017	9/25/2017
Sample ID			RE123D3-GW-092217	RE117D1-GW-092517	RE117D2-GW-092517	BPOW5-4-GW-092517
Sample type code			N	N	N	N
Units ug/L (except Bromide mg/L)	**Method**					
BROMIDE	300	2	NA	<0.40 U	<0.40 U	<0.40 U
1,1,1-TRICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,1,2,2-TETRACHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,1,2-TRICHLOROETHANE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,1-DICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,1-DICHLOROETHENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2,4-TRICHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	8260 C	0.04	***<0.75 U***	***<0.75 U***	***<0.75 U***	***<0.75 U***
1,2-DIBROMOETHANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHENE, TOTAL	8260 C	5	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ
1,2-DICHLOROPROPANE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,3-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DIOXANE	8270D_SIM	NL	<0.17 U	<0.17 U	<0.17 U	**0.84**
2-BUTANONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
2-HEXANONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
4-METHYL-2-PENTANONE	8260 C	NL	<2.5 U	<2.5 U	<2.5 U	<2.5 U
ACETONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
BENZENE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMODICHLOROMETHANE	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOFORM	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CARBON DISULFIDE	8260 C	60	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CARBON TETRACHLORIDE	8260 C	5	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ
CHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CHLOROETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CHLOROFORM	8260 C	7	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CHLOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CIS-1,2-DICHLOROETHENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CIS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
CYCLOHEXANE	8260 C	NL	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ
DIBROMOCHLOROMETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
DICHLORODIFLUOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
ETHYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
ISOPROPYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
M- AND P-XYLENE	8260 C	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U
METHYL ACETATE	8260 C	NL	<0.75 U	<0.75 U	<0.75 U	<0.75 U
METHYL CYCLOHEXANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
METHYL TERT-BUTYL ETHER	8260 C	10	<0.50 U	<0.50 U	<0.50 U	<0.50 U
METHYLENE CHLORIDE	8260 C	5	<2.5 U	<2.5 U	<2.5 U	<2.5 U
O-XYLENE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
STYRENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TETRACHLOROETHENE	8260 C	5	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ
TOLUENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,2-DICHLOROETHENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
TRICHLOROETHENE	8260 C	5	<0.50 U	**14**	**0.51 J**	<0.50 U
TRICHLOROFLUOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
VINYL CHLORIDE	8260 C	2	<1.0 U	<1.0 U	<1.0 U	<1.0 U
XYLENES, TOTAL	8260 C	5	<1.5 U	<1.5 U	<1.5 U	<1.5 U

TABLE 2
ANALYTICAL DATA SUMMARY FOR
WELLS SAMPLED BY RESOLUTION CONSULTANTS
2017 OU2 GROUNDWATER INVESTIGATION

Location		NYSDEC Groundwater Guidance or Standard Value (Note 1)	BPOW5-4	RE125D1	RE125D2	RE125D3
Sample Date			9/25/2017	9/25/2017	9/25/2017	9/25/2017
Sample ID			DUP02-GW-092517	RE125D1-GW-092517	RE125D2-GW-092517	RE125D3-GW-092517
Sample type code			FD	N	N	N
Units ug/L (except Bromide mg/L)	**Method**					
BROMIDE	300	2	<0.40 U	NA	NA	NA
1,1,1-TRICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	**0.62 J**	<0.50 U
1,1,2,2-TETRACHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8260 C	5	<0.50 U	**13**	**22 J**	**42**
1,1,2-TRICHLOROETHANE	8260 C	1	<0.50 U	<0.50 U	**0.46 J**	<0.50 U
1,1-DICHLOROETHANE	8260 C	5	<0.50 U	**2.4**	**0.83 J**	<0.50 U
1,1-DICHLOROETHENE	8260 C	5	<0.50 U	**2.8**	**7.7 J**	**0.90 J**
1,2,4-TRICHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	8260 C	0.04	***<0.75 UJ***	***<0.75 UJ***	***<0.75 UJ***	***<0.75 U***
1,2-DIBROMOETHANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHENE, TOTAL	8260 C	5	<1.0 UJ	**4.2 J**	**3.9 J**	**1.6 J**
1,2-DICHLOROPROPANE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,3-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U	<0.50 U
1,4-DIOXANE	8270D_SIM	NL	**0.83**	**14 J**	**0.21 J**	**2.9**
2-BUTANONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
2-HEXANONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
4-METHYL-2-PENTANONE	8260 C	NL	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 U
ACETONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ	<2.5 UJ
BENZENE	8260 C	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMODICHLOROMETHANE	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOFORM	8260 C	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U
BROMOMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CARBON DISULFIDE	8260 C	60	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CARBON TETRACHLORIDE	8260 C	5	<0.50 UJ	<0.50 UJ	**0.61 J**	**0.30 J**
CHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
CHLOROETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CHLOROFORM	8260 C	7	<0.50 U	**0.86 J**	**0.57 J**	**0.37 J**
CHLOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U
CIS-1,2-DICHLOROETHENE	8260 C	5	<0.50 U	**4.2**	**3.9 J**	**1.6**
CIS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
CYCLOHEXANE	8260 C	NL	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ
DIBROMOCHLOROMETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
DICHLORODIFLUOROMETHANE	8260 C	5	<1.0 U	**0.36 J**	**0.67 J**	**0.28 J**
ETHYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
ISOPROPYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
M- AND P-XYLENE	8260 C	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U
METHYL ACETATE	8260 C	NL	<0.75 U	<0.75 U	<0.75 U	<0.75 U
METHYL CYCLOHEXANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
METHYL TERT-BUTYL ETHER	8260 C	10	<0.50 U	<0.50 U	<0.50 U	<0.50 U
METHYLENE CHLORIDE	8260 C	5	<2.5 U	<2.5 U	<2.5 U	<2.5 U
O-XYLENE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U	<0.50 U
STYRENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TETRACHLOROETHENE	8260 C	5	<0.50 UJ	**7.0 J**	**1.9 J**	**2.0 J**
TOLUENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,2-DICHLOROETHENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U	<0.50 U
TRANS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***	***<0.50 U***
TRICHLOROETHENE	8260 C	5	<0.50 U	**170**	**210 J**	**140**
TRICHLOROFLUOROMETHANE	8260 C	5	<1.0 U	<1.0 U	**0.34 J**	<1.0 U
VINYL CHLORIDE	8260 C	2	<1.0 U	<1.0 U	<1.0 U	<1.0 U
XYLENES, TOTAL	8260 C	5	<1.5 U	<1.5 U	<1.5 U	<1.5 U

TABLE 2
ANALYTICAL DATA SUMMARY FOR
WELLS SAMPLED BY RESOLUTION CONSULTANTS
2017 OU2 GROUNDWATER INVESTIGATION

Location		NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE103D1	RE103D2	RE103D3
Sample Date			9/26/2017	9/26/2017	9/26/2017
Sample ID			RE103D1-GW-092617	RE103D2-GW-092617	RE103D3-GW-092617
Sample type code			N	N	N
Units ug/L (except Bromide mg/L)	**Method**				
BROMIDE	300	2	NA	NA	NA
1,1,1-TRICHLOROETHANE	8260 C	5	**0.33 J**	<0.50 U	<0.50 U
1,1,2,2-TETRACHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8260 C	5	**9.8**	**3.0**	**0.83 J**
1,1,2-TRICHLOROETHANE	8260 C	1	**0.63 J**	**0.44 J**	**0.35 J**
1,1-DICHLOROETHANE	8260 C	5	**0.70 J**	**0.57 J**	<0.50 U
1,1-DICHLOROETHENE	8260 C	5	**6.6**	**0.74 J**	<0.50 U
1,2,4-TRICHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	8260 C	0.04	***<0.75 U***	***<0.75 UJ***	***<0.75 UJ***
1,2-DIBROMOETHANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U
1,2-DICHLOROETHENE, TOTAL	8260 C	5	**2.7 J**	**0.67 J**	<1.0 UJ
1,2-DICHLOROPROPANE	8260 C	1	<0.50 U	<0.50 U	<0.50 U
1,3-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U
1,4-DICHLOROBENZENE	8260 C	3	<0.50 U	<0.50 U	<0.50 U
1,4-DIOXANE	8270D_SIM	NL	**8.7**	**0.91**	**0.44**
2-BUTANONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ
2-HEXANONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ
4-METHYL-2-PENTANONE	8260 C	NL	<2.5 U	<2.5 UJ	<2.5 UJ
ACETONE	8260 C	50	<2.5 UJ	<2.5 UJ	<2.5 UJ
BENZENE	8260 C	1	<0.50 U	<0.50 U	<0.50 U
BROMODICHLOROMETHANE	8260 C	50	<0.50 U	<0.50 U	<0.50 U
BROMOFORM	8260 C	50	<0.50 U	<0.50 U	**6.0 J**
BROMOMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U
CARBON DISULFIDE	8260 C	60	<0.50 U	<0.50 U	<0.50 U
CARBON TETRACHLORIDE	8260 C	5	<0.50 UJ	<0.50 UJ	<0.50 UJ
CHLOROBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U
CHLOROETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U
CHLOROFORM	8260 C	7	**0.58 J**	**0.79 J**	**0.66 J**
CHLOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U
CIS-1,2-DICHLOROETHENE	8260 C	5	**2.7**	**0.67 J**	<0.50 U
CIS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***
CYCLOHEXANE	8260 C	NL	<0.50 UJ	<0.50 UJ	<0.50 UJ
DIBROMOCHLOROMETHANE	8260 C	5	<0.50 U	<0.50 U	<0.50 U
DICHLORODIFLUOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U
ETHYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U
ISOPROPYLBENZENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U
M- AND P-XYLENE	8260 C	NL	<1.0 U	<1.0 U	<1.0 U
METHYL ACETATE	8260 C	NL	<0.75 U	<0.75 U	<0.75 U
METHYL CYCLOHEXANE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U
METHYL TERT-BUTYL ETHER	8260 C	10	<0.50 U	<0.50 U	<0.50 U
METHYLENE CHLORIDE	8260 C	5	<2.5 U	<2.5 U	<2.5 U
O-XYLENE	8260 C	NL	<0.50 U	<0.50 U	<0.50 U
STYRENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U
TETRACHLOROETHENE	8260 C	5	**4.6 J**	**0.77 J**	<0.50 UJ
TOLUENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U
TRANS-1,2-DICHLOROETHENE	8260 C	5	<0.50 U	<0.50 U	<0.50 U
TRANS-1,3-DICHLOROPROPENE	8260 C	0.4	***<0.50 U***	***<0.50 U***	***<0.50 U***
TRICHLOROETHENE	8260 C	5	**720**	**480**	**240 J**
TRICHLOROFLUOROMETHANE	8260 C	5	<1.0 U	<1.0 U	<1.0 U
VINYL CHLORIDE	8260 C	2	<1.0 U	<1.0 U	<1.0 U
XYLENES, TOTAL	8260 C	5	<1.5 U	<1.5 U	<1.5 U

TABLE 2
ANALYTICAL DATA SUMMARY FOR
WELLS SAMPLED BY RESOLUTION CONSULTANTS
2017 OU2 GROUNDWATER INVESTIGATION

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

Units ug/L except Bromide (mg/L)

NA = not analyzed

Bold = Detected; ***Bold and Italics*** =Not detected 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.
M = the matrix spike or matrix spike duplicate did not meet recovery or precision requirements.

TABLE 3
STABILIZED FIELD PARAMETERS FOR WELLS
SAMPLED BY RESOLUTION CONSULTANTS
2017 OU2 GROUNDWATER INVESTIGATION
NWIRP BETHPAGE, NY

Well	Date	Temperature (°C)	pH	Specific Conductance (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to water (ft bgs)	Purge Flow rate (ml/min)
TT101D	9/19/2017	15.97	4.29	0.080	0.44	268.0	1.33	35.36	800
TT101D1	9/19/2017	16.15	4.57	0.081	0.52	203.1	1.97	37.16	800
TT101D2	9/19/2017	15.88	6.43	0.037	6.75	51.2	0.76	37.92	800
RE103D1	9/26/2017	16.33	5.71	0.077	3.92	-56.2	0.32	44.39	650
RE103D2	9/26/2017	15.76	*	0.025	7.00	669.2	0.59	44.13	600
RE103D3	9/26/2017	17.23	5.60	0.030	2.63	222.2	1.36	44.67	500
RE104D1	9/19/2017	15.19	4.55	0.063	4.95	208.6	1.11	38.17	600
RE104D2	9/19/2017	15.02	5.12	0.019	5.60	313.6	1.80	41.29	650
RE104D3	9/19/2017	15.67	5.95	0.017	6.26	68.8	5.15	42.38	600
RE105D1	9/18/2017	15.53	3.20	0.084	2.67	218.1	1.81	40.68	600
RE105D2	9/18/2017	15.76	5.90	0.059	5.15	80.1	0.65	40.97	600
RE108D1	9/18/2017	15.90	2.98	0.076	7.53	239.5	0.85	41.21	600
RE108D2	9/18/2017	15.94	5.03	0.065	4.26	309.3	1.59	43.30	700
RE109D1	9/21/2017	16.52	4.20	0.069	3.74	280.1	23.4	47.53	600
RE109D2	9/21/2017	16.09	4.05	0.073	1.59	210.1	23.9	47.65	650
RE109D3	9/21/2017	15.18	5.08	0.061	3.15	-52.3	17.6	47.72	650
RE117D1	9/25/2017	17.05	4.84	0.017	3.52	-17.6	11.9	26.71	650
RE117D2	9/25/2017	18.30	5.07	0.023	0.29	215.4	4.88	25.70	600
RE120D1	9/20/2017	17.47	4.61	0.092	2.81	168.4	0.88	38.01	600
RE120D2	9/20/2017	17.11	4.85	0.064	4.27	271.3	0.93	38.72	700
RE120D3	9/20/2017	16.82	4.99	0.028	5.50	30.8	3.59	39.35	650
RE122D1	9/21/2017	16.01	3.30	0.069	4.61	296.6	0.97	44.75	650
RE122D2	9/21/2017	18.40	4.82	0.082	3.99	276.0	0.68	44.92	400
RE122D3	9/21/2017	16.96	3.60	0.017	2.77	-168.7	3.04	46.03	550
RE123D1	9/22/2017	16.01	4.92	0.093	7.28	210.5	7.56	50.05	600
RE123D2	9/22/2017	17.62	6.03	0.024	7.28	-61.7	9.86	51.35	600
RE123D3	9/22/2017	17.99	*	0.027	0.16	349.2	26.8	51.49	600
RE125D1	9/25/2017	16.27	4.80	0.105	1.59	-77.3	4.24	37.01	600
RE125D2	9/25/2017	16.20	5.49	0.061	2.88	214.8	7.90	39.61	700
RE125D3	9/25/2017	17.89	*	0.036	6.37	620.1	11.01	39.82	650
RE126D1	9/22/2017	15.15	5.36	0.071	5.98	261.5	1.12	48.05	600
RE126D2	9/22/2017	16.01	4.72	0.079	2.73	242.1	0.90	46.61	600
RE126D3	9/22/2017	15.01	6.09	0.029	6.80	-6.5	1.02	48.37	650
RE131D1	9/20/2017	16.62	4.34	0.093	3.16	310.1	1.06	38.50	700
RE131D2	9/20/2017	15.64	5.68	0.080	5.02	20.1	11.01	39.29	650
RE131D3	9/20/2017	16.73	3.49	0.033	6.35	195.8	0.78	39.55	600
BPOW5-4	9/25/2017	15.99	0.23	0.147	0.10	258.6	0.90	26.80	800

°C - degrees Celsius
µS/cm - Microsiemens per Centimeter
mg/L - milligrams per liter
mV - Millivolts
NTU - Nephelometric Turbidity Unit
ft bgs - feet below ground surface
ml/min - mililiters per minute
NM - not measured
* sensor not functioning

Table 4.
Concentrations of Volatile Organic Compounds and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7, Third Quarter 2017
Operable Unit 2 (Groundwater),
Bethpage, New York

ARCADIS Design & Consultancy for natural and built assets

CONSTITUENT Units (ug/L)	Well: Sample ID: Date:	BPOW 5-1 BPOW 5-1 9/13/2017	BPOW 5-2 BPOW 5-2 9/7/2017	BPOW 5-3 BPOW 5-3 9/7/2017	BPOW 5-4 BPOW 5-4 9/1/2017
Volatile Organic Compounds (VOCs) [1]					
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0	< 5.0
2-Hexanone		< 2.0	< 2.0	< 2.0	< 2.0
4-methyl-2-pentanone (MIK)		< 2.0	< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50	< 0.50
Carbon tetrachloride		< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Dibromochloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50	< 0.50
Methylene Chloride		< 0.50	< 0.50	< 0.50	< 0.50
Styrene		< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethylene		< 0.50	< 0.50	< 0.50	< 0.50
Vinyl Chloride		< 0.50	< 0.50	< 0.50	< 0.50
Xylene-o		< 0.50	< 0.50	< 0.50	< 0.50
Xylenes - m,p		< 0.50	< 0.50	< 0.50	< 0.50
Total VOCs [2]		0	0	0	0
1,4-Dioxane [3]		< 0.200	**0.102 J**	**1.02**	**1.13**

See last page for Notes and Abbreviations

Table 4.
Concentrations of Volatile Organic Compounds and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7, Third Quarter 2017
Operable Unit 2 (Groundwater),
Bethpage, New York

CONSTITUENT Units (ug/L)	Well: Sample ID: Date:	BPOW 5-5 BPOW 5-5 9/5/2017	BPOW 5-6 BPOW 5-6 9/5/2017	BPOW 5-7 BPOW 5-7 9/6/2017
Volatile Organic Compounds (VOCs) [1]				
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluroethane		< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0
2-Hexanone		< 2.0	< 2.0	< 2.0
4-methyl-2-pentanone (MIK)		< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50
Carbon tetrachloride		< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50
cis-1,2-dichloroethene		< 0.50	< 0.50	< 0.50
cis-1,3-dichloropropene		< 0.50	< 0.50	< 0.50
Dibromochloromethane		< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50
Methylene Chloride		< 0.50	< 0.50	< 0.50
Styrene		< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50
trans-1,2-dichloroethene		< 0.50	< 0.50	< 0.50
trans-1,3-dichloropropene		< 0.50	< 0.50	< 0.50
Trichloroethylene		< 0.50	< 0.50	< 0.50
Vinyl Chloride		< 0.50	< 0.50	< 0.50
Xylene-o		< 0.50	< 0.50	< 0.50
Xylenes - m,p		< 0.50	< 0.50	< 0.50
Total VOCs [2]		0	0	0
1,4-Dioxane [3]		**1.50 J** [4]	**0.162 J** [4]	< 0.200

See last page for Notes and Abbreviations

Table 4.
Concentrations of Volatile Organic Compounds
and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,
Third Quarter 2017
Operable Unit 2 (Groundwater),
Bethpage, New York

Notes and Abbreviations:

(1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.

(2) Total VOCs are rounded to two significant figures.

(3) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.

(4) Samples were collected and re-analyzed on 10/17/2017 due to non-usability of the previous data.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

Bold	Constituent detected
TCL	Target Compound List
REP	Blind duplicate sample
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
J	Constituent value is estimated
<0.50	Constituent not detected above its laboratory detection limit

Table 5.
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6, Third Quarter 2017
Operable Unit 2 (Groundwater),
Bethpage, New York

Well: / Sample ID: / CONSTITUENT / Date: / Units (ug/L)	BPOW 6-1 BPOW 6-1 9/11/2017	BPOW 6-2 BPOW 6-2 9/11/2017	BPOW 6-3 BPOW 6-3 9/11/2017	BPOW 6-4 BPOW 6-4 9/11/2017	BPOW 6-4 REP091117AD1 9/11/2017	BPOW 6-5 BPOW 6-5 9/8/2017	BPOW 6-6 BPOW 6-6 9/8/2017
Volatile Organic Compounds (VOCs) [1]							
1,1,1-Trichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Hexanone	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
4-methyl-2-pentanone (MIK)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Acetone	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromoform	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbon tetrachloride	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloroform	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-dichloropropene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibromochloromethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Methylene Chloride	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Styrene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Toluene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-dichloropropene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethylene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Vinyl Chloride	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Xylene-o	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Xylenes - m,p	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total VOCs [2]	0	0	0	0	0	0	0
1,4-Dioxane [3]	< 0.200	< 0.200	< 0.200	**0.119 J**	**0.175 J**	< 0.200	< 0.200

See last page for Notes and Abbreviations.

Table 5.
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6, Third Quarter 2017
Operable Unit 2 (Groundwater),
Bethpage, New York

Notes and Abbreviations:

(1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.

(2) Total VOCs are rounded to two significant figures.

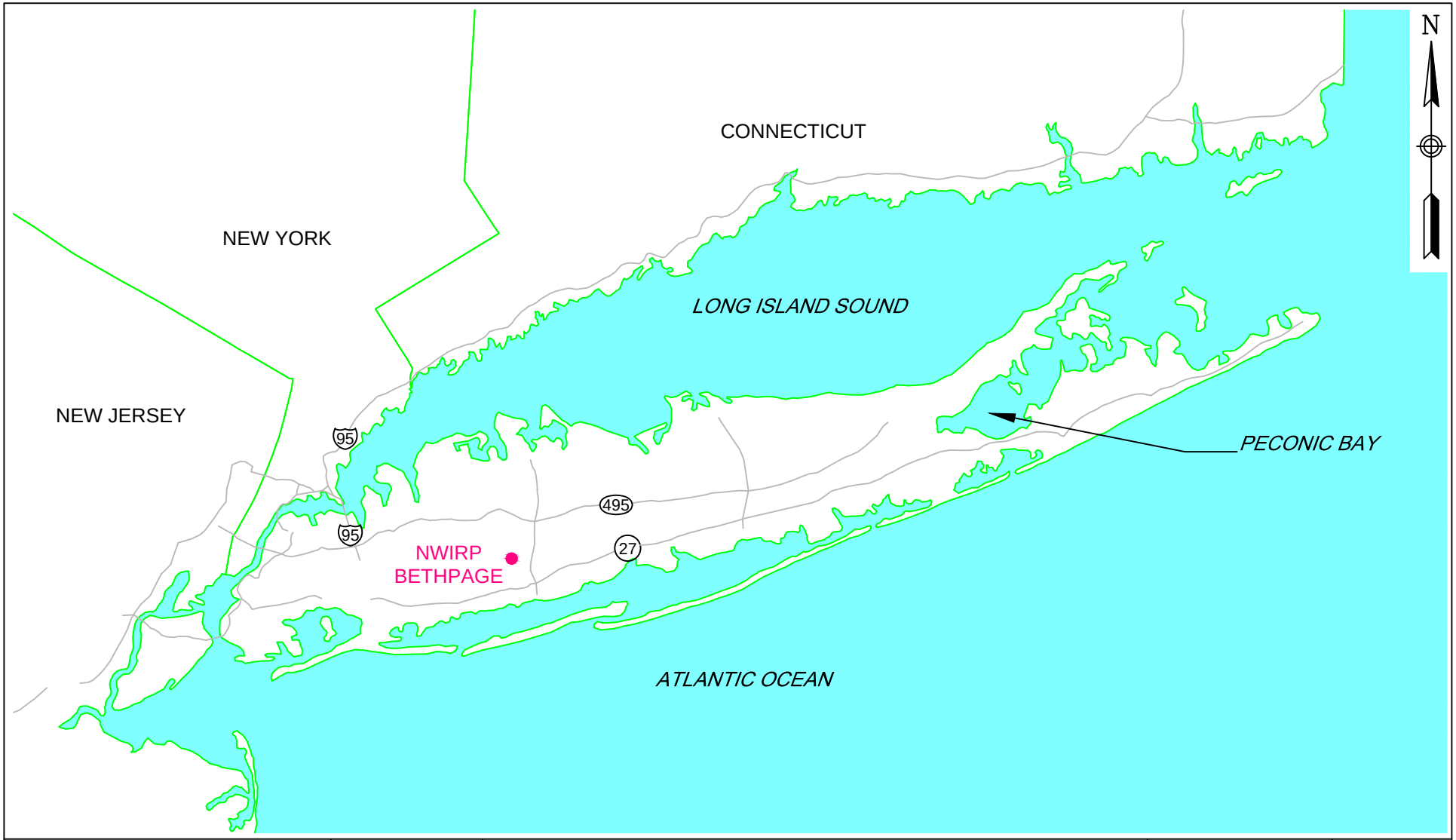
(3) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

Bold	Constituent detected
REP	Blind Duplicate Sample
TCL	Target Compound List
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
J	Constituent value is estimated
µg/L	Micrograms per liter
<0.50	Constituent not detected above its laboratory detection limit

Figures

112G00622\0510\112G00622CM01.DWG 08/02/10 MKB



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

F:\Projects\Navy\Bethpage WXE08I7.0 Deliverables\7.2 CADD\GIS_files\Bethpage\MAP DOCS\MXD\MISC\2014 03 Wells Sampled\F2 GW Samples 2018 01 02.mxd

Former Northrop Grumman Site

Former Northrop Grumman Site

RE123D1 RE123D2 RE123D3

RE122D1 RE122D2 RE122D3

RE126D1 RE126D2 RE126D3

RE109D1 RE109D2 RE109D3

RE108D1 RE108D2

RE104D1 RE104D2 RE104D3

RE103D1 RE103D2 RE103D3

RE105D1 RE105D2

RE125D1 RE125D2 RE125D3

RE120D1 RE120D2 RE120D3

RE131D1 RE131D2 RE131D3

TT101D TT101D1 TT101D2

BPOW5-1 BPOW5-2 BPOW5-3

BPOW5-4 RE117D1 RE117D2

BPOW5-5 BPOW5-6

BPOW5-7

BPOW6-3 BPOW6-4

BPOW6-5 BPOW6-6

BPOW6-1 BPOW6-2

Old Bethpage

Bethpage

Plainedge

North Wantagh

Levittown

Powell Ave

Plainview Rd

State Hwy 135

Access Rd

Central Ave

Hempstead Tpke

Wantagh Ave

Stewart Ave

Hicksville Rd

Seamans Neck Rd

Boundary Ave

Southern State Pkwy

0 750 1,500 3,000 Feet

Note:
Wells outlined on this figure reflect wells installed by Resolution Consultants (RC) and sampled by RC or ARCADIS in September 2017, as documented in this report. Additional Navy-owned wells sampled by ARCADIS as part of separate and ongoing OU2 programs will be documented in the ARCADIS 2017 Annual Groundwater Monitoring Report.

Legend

- Monitoring Well - Sampled
- Monitoring Well - Unsampled
- Vertical Profile Boring
- Water Supply Well
- Extraction Well

NAVFAC

LOCATION MAP
SEPTEMBER 2017 GROUNDWATER SAMPLING
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

CONTRACT NUMBER	CTO NUMBER
N62470-11-D8013	WE15
APPROVED BY: EV	DATE: 1/2/2018
APPROVED BY: —	DATE: —
FIGURE NO.: 2	REV: 0

Appendices

Appendix A

Groundwater Sampling Forms – Resolution Consultants

RESOLUTION CONSULTANTS

Well ID: RE105D1

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/18/17 Time: Start 850 am/pm
Project No: 60266526 Finish 1140 am/pm
Site Location: Lincoln Blvd
Weather Conds: 70° cloudy Collector(s): Farrell Bell

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 555 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 40.53 ft d. Calculated System Volume (see back) 13.1 gal. 70 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	14J101213
QED	MP10	U8480.1 X
LaMotte	2020	8456

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1010	-	15.77	0.086	8.59	2.70	276.5	1.09	700	40.61	Clear
1015	-	15.70	0.085	5.40	2.58	210.1	-	700	40.62	Clear
1020	-	15.69	0.085	5.32	3.02	205.5	1.17	700	40.63	Clear
1025		15.68	0.085	4.77	2.64	201				
1030	5gal	15.67	0.085	4.38	1.19	260.2				

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

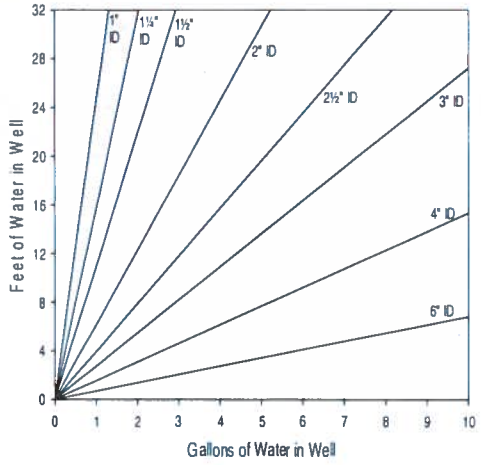
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE105D1-GW-09/18/17	40-mL vials	3	HCl	VOCs	1130
	1-L amber	2	none	1,4-Dioxane	

Comments

Signature Paul Hewett Date 9/18/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE10501

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1035		15.67	0.085	3.92	3.24	194.7			40.63	
1040		15.65	0.084	3.21	2.94	209.7	2.45			
1045		15.62	0.084	3.21	2.91	210.5		600		
1050		15.69	0.085	3.42	3.01	207.1			40.64	
1055		15.62	0.084	3.31	3.09	205.5				
1100	4gal	15.65	0.084	3.12	2.50	225.4	1.73			
1105		15.64	0.084	3.06	2.81	257.9			40.66	
1110		15.58	0.084	2.89	3.34	202.8	1.81			
1115		15.55	0.084	2.74	3.29	209.6				
1120	13.5	15.53	0.084	2.67	3.20	218.1			40.68	
1130								250		Sample

RESOLUTION CONSULTANTS

Well ID: RE10502

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage
Project No: 60266526
Site Location: Lincoln Blvd
Weather Conds: 70° cloudy
Date: 9/18/17
Time: Start 850 am/pm
Finish 1050 am/pm
Collector(s): S. WRIGHT

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 755 ft
b. Water Table Depth 40.91 ft
c. Length of Water Column 714 ft (a-b)
d. Calculated System Volume (see back) 13.1 gal.
Casing Diameter/Material 4-inch PVC
20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)
- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)
Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11C100917
			84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0910	–	21.96	0.075	9.57	10.67	12.1	–	600	40.97	CLEAR/NONE
0915		16.71	0.065	10.58	7.96	64.8	0.98	600	40.95	CLEAR/NONE
0920		15.79	0.059	9.48	6.80	58.0		600	40.96	CLEAR/NONE
0925		15.70	0.059	9.35	6.63	51.7		1000	40.97	CLEAR/NONE
0930		15.72	0.059	8.87	6.52	50.5	0.91	600	40.97	CLEAR/NONE
0935		15.64	0.055	8.51	6.32	51.5		600	40.97	CLEAR/NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

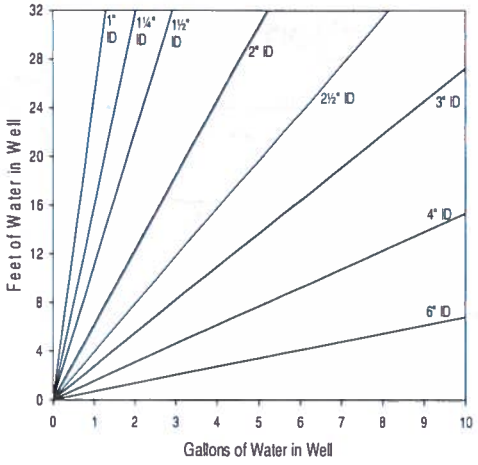
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE10502-GW-091817	40-mL vials	9	HCl	VOCs	1040
RE10502-GW-091817	1-L amber	6	none	1,4-Dioxane	1040

Comments: MS/MSD

Signature

Date 9-18-17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE 105D2

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0940	5	15.69	0.059	8.18	6.15	68.5	—	600	40.97	CLEAR/NONE
0945	5.75	15.69	0.060	7.81	6.08	70.1	0.63	600	40.97	CLEAR/NONE
0950	6.5	15.67	0.060	7.04	6.07	75.7	—	600	40.97	CLEAR/NONE
0955	7.25	15.70	0.059	6.60	6.06	78.3	—	600	40.97	CLEAR/NONE
1000	8.0	15.69	0.059	6.26	6.05	79.6	0.63	600	40.97	CLEAR/NONE
1005	8.75	15.72	0.059	5.93	6.02	80.8	—	600	40.97	CLEAR/NONE
1010	9.5	15.74	0.059	5.73	6.01	80.0	—	600	40.97	CLEAR/NONE
1015	10.25	15.71	0.059	5.45	5.98	81.1	0.65	600	40.97	CLEAR/NONE
1020	~~10.00~~	15.76	0.059	5.27	5.95	81.6	—	600	40.97	CLEAR/NONE
1025	11.75	15.73	0.059	5.22	5.96	80.4	—	600	40.97	CLEAR/NONE
1030	12.5	15.78	0.059	5.17	5.93	79.6	0.65	600	40.97	CLEAR/NONE
1035	13.25	15.76	0.059	5.15	5.90	80.1	—	600	40.97	CLEAR/NONE
1040								~~600~~	~~40.97~~	~~CLEAR/NONE~~
1040								200		Sample

RESOLUTION CONSULTANTS

Well ID: RE108D1

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage
Project No: 60266526
Site Location: Corona
Weather Conds: 70° Cloudy
Date: 9/15/17
Time: Start 1255 am/pm
Finish 1450 am/pm
Collector(s): S. WRIGHT

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 535 ft
b. Water Table Depth 42.92 ft
c. Length of Water Column 512 ft (a-b)
d. Calculated System Volume (see back) 13.1 gal.
Casing Diameter/Material 4-inch PVC
20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11C100917
	LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1305	—	20.62	0.090	11.59	5.48	168.8	—	400	42.41	CLEAR/NONE
1310		16.66	0.079	10.47	2.81	229.3	—	600	42.27	CLEAR/NONE
1315		16.33	0.078	7.14	2.72	228.4	0.94	600	41.55	CLEAR/NONE
1320		16.27	0.078	7.29	2.46	235.6	—	600	41.01	CLEAR/NONE
1325		16.14	0.077	7.40	2.20	248.7	—	600	41.05	CLEAR/NONE
1330		16.13	0.077	7.52	2.14	250.2	0.86	600	41.09	CLEAR/NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE108D1-GW-091817	40-mL vials	3	HCl	VOCs	1440
RE108D1-GW-091817	1-L amber	2	none	1,4-Dioxane	1440

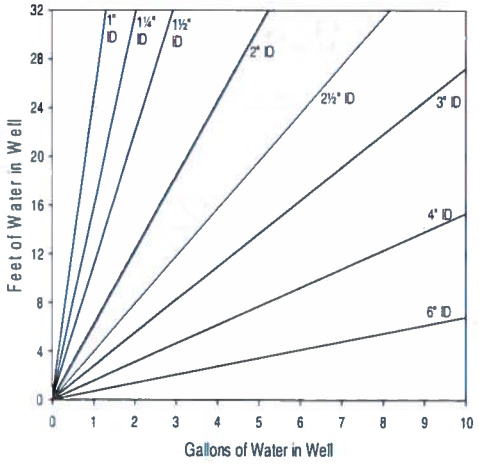
Comments

Signature

Date 9-18-17

RE108D1

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE108D1

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1335	5	16.07	0.077	7.49	2.09	255.1	—	600	41.15	CLEAR/NONE
1340	5.75	16.10	0.077	7.43	2.48	244.5	—	600	41.17	CLEAR/NONE
1345	6.5	16.08	0.077	7.39	2.62	240.2	0.91	600	41.19	CLEAR/NONE
1350	7.25	16.06	0.077	7.36	2.87	237.1	—	600	41.20	CLEAR/NONE
1355	8.	16.03	0.076	7.37	2.93	236.2	—	600	41.21	CLEAR/NONE
1400	8.75	15.98	0.076	7.38	2.48	251.5	0.86	600	41.21	CLEAR/NONE
1405	9.5	15.96	0.076	7.45	2.77	244.1	—	600	41.21	CLEAR/NONE
1410	10.25	15.95	0.076	7.49	2.94	231.4	—	600	41.21	CLEAR/NONE
1415	11	15.99	0.076	7.65	3.03	239.2	0.86	600	41.21	CLEAR/NONE
1420	11.75	15.91	0.076	7.58	2.98	240.6	—	600	41.21	CLEAR/NONE
1425	12.5	15.90	0.076	7.55	2.99	239.9	—	600	41.21	CLEAR/NONE
1430	13.25	15.90	0.076	7.53	2.98	239.5	0.85	600	41.21	CLEAR/NONE
~~1435~~										
~~1440~~										
1440								250		sample

RESOLUTION CONSULTANTS

Well ID: RE108D2

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/18/17 Time: Start 1245 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Corona
Weather Conds: 78° Cloudy Collector(s): Paul/Kenneth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 653 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 43.36 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11F100176
	LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1305	ON									
1310		16.92	0.073	8.74	5.34	229.1		650	43.37	
1315		16.25	0.067	3.47	5.03	253.8				
1320		16.18	0.067	2.91	4.90	273.9	3.10		43.38	
1325		16.08	0.065	3.54	4.76	290.8				
1330	5gal	16.07	0.065	3.96	4.75	298.7				

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

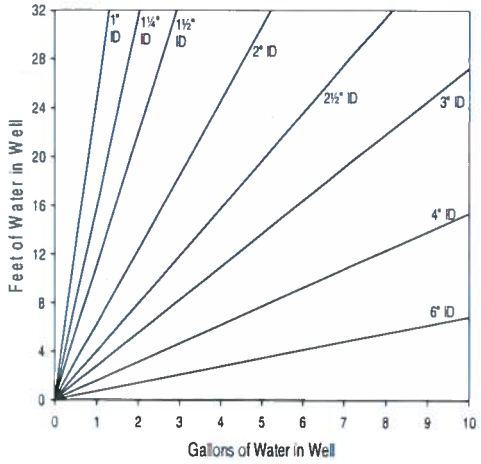
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE108D2-GW-091817	40-mL vials	3	HCl	VOCs	1430
	1-L amber	2	none	1,4-Dioxane	

Comments: DUP01-GW-091817 @ 15:30

Signature: Paul Kenneth Date: 9/18/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE108D2 13:10

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1335		16.05	0.065	3.98	4.86	299.2	1.53	700	43.34	
1340		16.07	0.065	4.03	4.85	301.1				
1345		16.06	0.065	4.09	4.85	309.7			43.55	
1350		16.02	0.065	4.13	4.79	313.1	1.07	700		
1355	10 gal	15.94	0.064	4.16	4.87	312.4				
1400		15.95	0.065	4.16	4.96	308.3	1.83		43.29	
1405		15.93	0.064	4.20	5.01	311.9				
1410		15.89	0.065	4.22	4.96	312.1	1.59	700	43.30	
1415	13.5	15.94	0.065	4.26	5.05	309.3				
1430								200		Sample

RESOLUTION CONSULTANTS

Well ID: TT101D

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9 / 19 / 17 Time: Start 845 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: _____
Weather Conds: cloudy 70s drizzle Collector(s): _____

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 350 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 35.23 ft d. Calculated System Volume (see back) 131 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11F 100176
	La Motte	2020	841525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
830	6L							900		
835		16.09	0.079	0.71	4.64	230.2			35.32	
840		15.99	0.081	0.59	4.20	268.6				
845		15.98	0.080	0.59	4.19	265.4			35.32	
850	5 gal	15.93	0.080	0.51	4.18	267.2	4.08	800		
855		15.99	0.081	0.50	4.08	274.1				

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

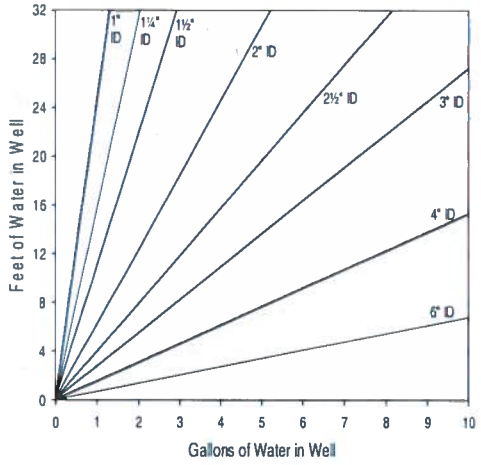
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TT101D-GW-091917	40-mL vials	3	HCl	VOCs	940
	1-L amber	2	none	1,4-Dioxane	

Comments _____

Signature Paul Kaeth Date 9/19/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: TT101D

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
900		15.98	0.081	0.49	3.98	287.1				
905		15.97	0.081	0.48	3.75	298.3	1.33	200	35.34	
910	10 gal	15.97	0.081	0.48	3.88	290.1				
915		15.94	0.081	0.47	4.13	~~280.1~~ ~~280.1~~				
920		15.95	0.080	0.46	4.14	278.3			35.36	
925	~~15~~ gal	15.95	0.080	0.45	4.20	272.5			35.36	
930		15.97	0.080	0.44	4.29	268.0				
940								200		sample time

Well ID: TT10101

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage	Date: 9/ 19 / 17	Time: Start 0820 am/pm	
Project No: 60266526		Finish ___ am/pm	
Site Location: Wadsworth			
Weather Conds: Cloudy 70°, drizzle	Collector(s): F. Bue, P. Karcth		

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 595 ft c. Length of Water Column ___ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 37.10 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	14J101213

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0825	Start pumping									
0840	—	16.22	0.082	0.36	4.06	242.1	1.92	800	37.17	Clear
0845	—	16.20	0.081	0.21	3.13	282.1	-	800	—	clear
0850	.5 Gal	16.19	0.081	0.34	4.21	256.1	2.20	806	37.17	clear
0855	—	16.17	0.081	0.46	4.17	272.3	-	800	37.16	Clear
0900	—	16.16	0.081	0.51	4.40	241.1	2.10	800	—	Clear

d. Acceptance criteria pass/fail (continued on back)

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

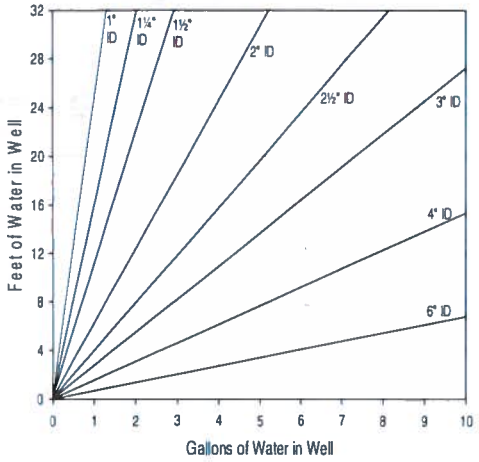
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TT-101-DI-GW-091917	40-mL vials	3	HCl	VOCs	0950
TT10101-GW-091917	1-L amber	2	none	1,4-Dioxane	0950

Comments

Signature [signature] Date 091917

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: TT 101 D1

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0905	–	16.15	0.081	0.53	4.45	215.1	2.17	806	37.17	clear
0910	–	16.17	0.081	0.52	4.42	207.1	–	800	37.17	clear
0915	10 Gal	16.18	0.081	0.54	4.14	223.4	–	800	37.16	clear
0920	–	16.18	0.081	0.54	4.04	232.1	2.08	800	37.17	clear
0925	–	16.16	0.081	0.54	4.56	204.6	1.98	800	37.17	clear
0930	13.2 Gal	16.15	0.081	0.52	4.57	203.1	1.87	800	37.16	clear
0935										
0940										
0945										
0950	Sample Time.							200		

Well ID: TT101D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/19/17 Time: Start 0820 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: _____
Weather Conds: cloudy 70° light rain Collector(s): S. WRIGHT

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 765 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 37.80 ft d. Calculated System Volume (see back) 131 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11E100917
	LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0825		16.84	0.061	7.08	10.11	-21.2	—	1,000	37.85	CLEAR/NONE
0830		16.26	0.038	1.45	7.77	-39.7	—	600	37.88	CLEAR/NONE
0835		16.25	0.037	0.47	7.28	-52.8	1.11	800	37.91	CLEAR/NONE
0840		16.13	0.036	0.58	6.95	-38.9	—	800	37.92	CLEAR/NONE
0845		16.12	0.036	1.39	6.76	-20.0	—	800	37.92	CLEAR/NONE
0850	5	15.94	0.035	1.86	6.67	2.7	1.12	800	37.92	CLEAR/NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

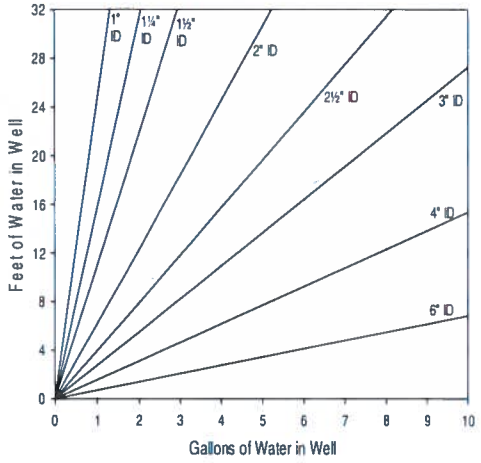
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TT101D2-GW-091917	40-mL vials	3	HCl	VOCs	0930
TT101D2-GW-091917	1-L amber	2	none	1,4-Dioxane	0930

Comments _____

Signature _____ Date 9-19-17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: TT101D2

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0855	5	15.87	0.035	3.00	6.59	14.9	0.73	800	37.92	CLEAR/NONE
0900		15.90	0.036	4.56	6.53	36.0	—	800	37.92	CLEAR/NONE
0905		15.88	0.037	6.28	6.46	50.1	—	800	37.92	CLEAR/NONE
0910		15.89	0.037	6.43	6.45	52.9	0.75	800	37.92	CLEAR/NONE
0915	10	15.88	0.037	6.55	6.46	51.5	—	800	37.92	CLEAR/NONE
0920		15.88	0.037	6.71	6.46	51.0	—	800	37.92	CLEAR/NONE
0925		15.88	0.037	6.74	6.44	51.3	0.76	800	37.92	CLEAR/NONE
0930	13.5	15.88	0.037	6.75	6.43	51.2	—	800	37.92	CLEAR/NONE
0935										
0930								250		Sample

RESOLUTION CONSULTANTS

Well ID: RE104D1

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage | Date: 9/19/17 | Time: Start 1145 am/pm
Project No: 60266526 | Finish _____ am/pm
Site Location: Hilltop
Weather Conds: cloudy, 74, | Collector(s): T. Bell, P. Kaneth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 375 ft | c. Length of Water Column _____ ft (a-b) | Casing Diameter/Material 4-inch PVC

b. Water Table Depth 38.66 ft | d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3% | - Turbidity ± 10% | - D.O. ± 10% (values >0.5 mg/L)
- pH ± 0.1 unit | - ORP ± 10mV | Remove a minimum 1 screen volume
- Conductivity ± 3% | - Drawdown < 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	14J101213
	LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1145	Start time									
1155	-	15.50	0.065	10.84	-	547.6	-	600	-	clear
1200	-	15.36	0.065	7.64	-	464.1	-	600	38.63	clear
1205	-	15.29	0.065	5.99	2.24	347.2	-	600	38.52	clear
1210	-	15.23	0.065	5.62	3.34	290.8	1.00	600	38.44	clear
1215	-	15.27	0.064	5.37	3.65	320.6	0.98	600	38.43	clear

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

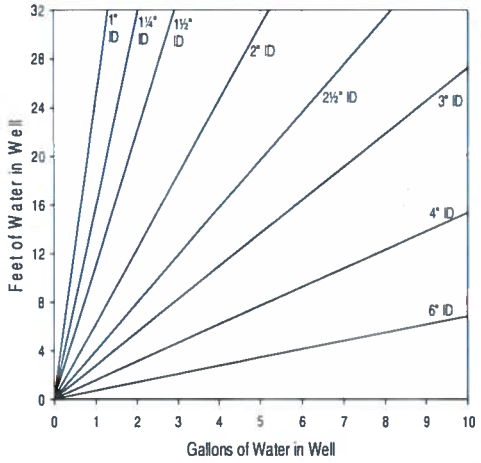
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE104D1-GW-091917	40-mL vials	3	HCl	VOCs	1330
RE104D1-GW-091917	1-L amber	2	none	1,4-Dioxane	1330

Comments: Reduced Flow Rate to 200 mL/min when sample taken

Signature _____ Date 09/19/2017

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE104D1

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1200	-	15.15	0.064	5.19	3.88	232.4	-	600	38.40	Clear
1205	5 Gal	15.17	0.064	5.18	3.98	240.3	0.92	600	38.38	clear
1230	-	15.21	0.064	5.15	4.05	233.9	-	600	38.34	Clear
1235	-	15.23	0.064	5.13	4.23	224.6	1.11	600	38.32	Clear
1240	-	15.21	0.064	5.09	4.36	217.9	-	600	38.31	Clear
1245	-	15.20	0.063	5.08	4.47	205.1	1.04	600	38.29	Clear
1250	-	15.16	0.063	5.05	4.53	200.1	1.02	600	38.25	clear
1255	10 Gal	15.15	0.063	5.03	4.56	198.2	0.98	600	38.21	Clear
1300	-	15.16	0.063	5.04	4.55	200.1	-	600	38.20	Clear
1305	-	15.19	0.063	5.04	4.57	202.8	1.10	600	38.19	Clear
1310	-	15.19	0.063	4.97	4.55	204.3	1.07	600	38.19	Clear
1315		15.19	0.063	4.96	4.56	206.7	1.10	600	38.18	Clear
1320	135	15.19	0.063	4.95	4.55	208.6	1.11	600	38.17	Clear
1325										
1330	Sample Time							200		

Well ID: RE104D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/19/17 Time: Start 1130 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Hilltop
Weather Conds: Cloudy 74° Collector(s): _____

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 735 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 41.90 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11E100176
	LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1145	ON							600		
1150		15.71	0.023	6.87	6.01	293.1				
1155		15.06	0.021	6.55	5.05	275			42.78	
1200		15.03	0.020	5.37	4.87	285.3	0.86			
1205		15.02	0.019	4.63	4.67	297.8			41.62	
1210		15.04	0.020	4.59	4.63	300.6		650		

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

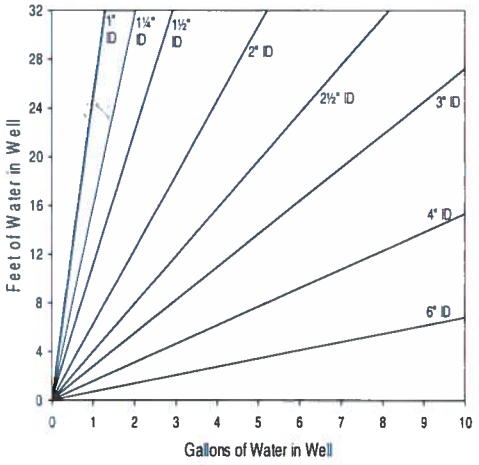
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE104D2GW-091917	40-mL vials	3	HCl	VOCs	1310
	1-L amber	2	none	1,4-Dioxane	

Comments _____

Signature Paul Hewitt Date 9/19/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE 104 02

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1215		15.01	0.020	4.72	4.61	307.4	2.14			
1220		15.03	0.020	5.03	4.62	326.8		650	41.50	
1225		15.02	0.020	5.20	4.67	331.2				
1230		15.00	0.020	5.28	4.73	330.3	2.63			
1235		15.02	0.020	5.39	4.54	340.8			41.41	
1240	1 gal	14.99	0.020	5.46	4.67	330.9				
1245		15.03	0.019	5.42	4.89	321.0	1.80	650	42.3	41.32
1250		14.99	0.019	5.53	5.03	315.4				
1255	3 gal	15.02	0.019	5.58	5.10	314.0				
1300		15.02	0.019	5.60	5.12	313.6			41.29	
1310								200		Sample

RESOLUTION CONSULTANTS

Well ID: RE104D3

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage | Date: 9 / 19 / 17 | Time: Start 1130 am/pm | Finish 1330 am/pm
Project No: 60266526
Site Location: Hilltop
Weather Conds: Cloudy 74° | Collector(s): S. WRIGHT

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 785 ft | c. Length of Water Column _____ ft (a-b) | Casing Diameter/Material 4-inch PVC

b. Water Table Depth 42.44 ft | d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	11C100917
LaMotte	2026	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1145	—	21.49	0.007	8.87	5.32	199.8	—	600	42.48	CLEAR/NONE
1150		15.84	0.023	8.47	6.64	52.4	—	600	42.48	CLEAR/NONE
1155		15.79	0.017	7.84	6.19	57.7	3.92	600	42.48	CLEAR/NONE
1200		15.73	0.017	7.12	6.08	54.8	—	600	42.45	CLEAR/NONE
1205		15.66	0.017	6.75	6.04	55.4	—	600	42.42	CLEAR/NONE
1210		15.76	0.017	6.62	6.02	61.0	6.26	600	42.40	CLEAR/NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

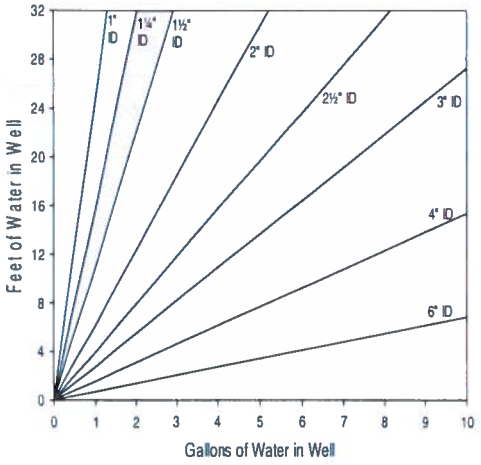
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE104D3-GW-091917	40-mL vials	3	HCl	VOCs	1315
RE104D3-GW-091917	1-L amber	2	none	1,4-Dioxane	1315

Comments

Signature _____ Date 9-19-17

RE104D3

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE104D3

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1215	5	15.67	0.017	6.48	6.00	65.9	—	600	42.38	CLEAR/NONE
1220	6	15.73	0.017	6.45	5.99	72.7	—	600	42.38	CLEAR/NONE
1225	7	15.72	0.017	6.43	5.98	72.1	4.27	600	42.38	CLEAR/NONE
1230	8	15.72	0.017	6.38	5.99	71.2	—	600	42.38	CLEAR/NONE
1235	9	15.73	0.017	6.35	6.01	69.5	—	600	42.38	CLEAR/NONE
1240	10	15.69	0.017	6.38	6.04	68.3	4.87	600	42.38	CLEAR/NONE
1245	10.75	15.73	0.017	6.30	6.00	68.5	—	600	42.38	CLEAR/NONE
1250	12.5	15.70	0.017	6.31	6.01	68.8	—	600	42.38	CLEAR/NONE
1255	13.25	15.68	0.017	6.30	5.99	68.9	5.15	600	42.38	CLEAR/NONE
1300	13.5	15.68	0.017	6.28	5.97	68.9	—	600	42.38	CLEAR/NONE
1305	13.75	15.67	0.017	6.26	5.95	68.8	—	600	42.38	CLEAR/NONE
1315								2000		sample

RESOLUTION CONSULTANTS

Well ID: RE13101

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage
Project No: 60266526
Site Location:
Weather Conds: Cloudy 70° windy

Date: 9 / 20 / 17
Time: Start 0815 am/pm
Finish _____ am/pm
Collector(s): F. Bell, P. Karuth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 435 ft
b. Water Table Depth 38.41 ft
c. Length of Water Column _____ ft (a-b)
d. Calculated System Volume (see back) 131 gal.
Casing Diameter/Material 4-inch PVC
20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11F100176
	YSI	556 FieldCable	11A68896
	LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0815	Start purge							700	38.46	clear
0825	~~Gal~~	16.63	0.092	3.70	4.89	228.1	0.83	700	38.46	clear
0830	-	16.65	0.093	3.46	4.48	252.5	-	700	38.47	clear
0835	-	16.54	0.094	3.55	4.31	276.5	1.63	700	38.46	clear
0840	~~5 Gal~~	16.61	0.093	3.49	4.25	290.0	-	700	38.46	clear
0845	5 Gal	16.50	0.093	3.40	4.12	306.3	1.47	700	38.46	clear

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION:

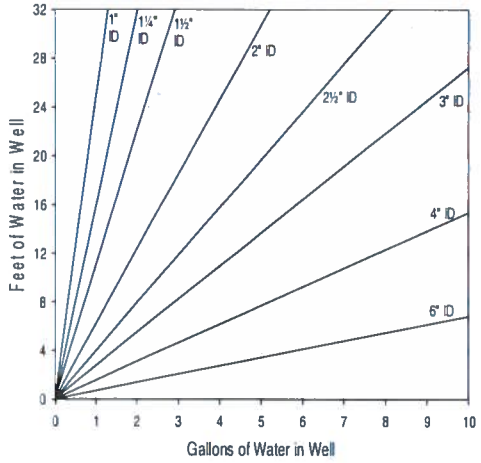
Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE13101-GW-092017	40-mL vials	3	HCl	VOCs	940
RE13101-GW-092017	1-L amber	2	none	1,4-Dioxane	940

Comments

Signature Paul Karuth Date 9/20/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE13101

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0850	–	16.43	0.093	3.42	4.10	308.9	–	700	38.46	clear
0855	–	16.60	0.093	3.38	4.14	311.1	1.04	700	38.48	clear
0900	–	16.62	0.093	3.35	4.17	309.6	–	700	38.48	clear
0905	–	16.54	0.093	3.31	4.18	308.9	–	–	–	clear
0910	10 Gal	16.57	0.093	3.29	4.19	313.3	1.02	700	38.50	clear
0915	–	16.57	0.093	3.21	4.27	309.1	–	700	38.49	clear
0920	–	16.71	0.093	3.18	4.30	309.0	1.01	700	38.49	clear
0925	–	16.66	0.093	3.17	4.33	309.1	1.03	700	38.50	clear
0930	13 l	16.62	0.093	3.16	4.34	309.1	1.06	700	38.50	clear
0935										
0940	Sample Time							250		

RESOLUTION CONSULTANTS

Well ID: RE13102

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/ 20 /17 Time: Start 800 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Bank parking lot
Weather Conds: Cloudy, 70° windy Collector(s): _____

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 39.5 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 39.12 ft d. Calculated System Volume (see back) 163 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11C100917
	LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
820							~~650~~	600		
825		15.75	0.082	5.55	7.17	-20.3			39.22	
830		15.71	0.079	5.40	6.73	-21.8				
835		15.66	0.079	5.56	6.53	-2.5	9.92			
840		15.68	0.079	5.61	6.15	10.0		600	39.23	
845	5 gal	15.64	0.079	5.45	6.03	18.6				

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

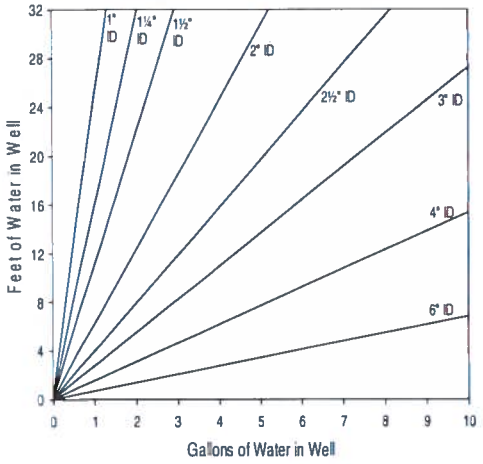
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE13102-GW-092017	40-mL vials	3	HCl	VOCs	1000
	1-L amber	2	none	1,4-Dioxane	

Comments _____

Signature Paul Kurath Date 9/20/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE131D2

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
850		15.61	0.078	5.81	5.77	40.0	11.38	600	39.24	
855		15.69	0.079	7.03	5.64	37.3				
900		15.61	0.079	6.64	5.71	32.6	11.71			
905		15.61	0.079	6.40	5.69	38.0			39.26	
910		15.62	0.079	6.30	5.67	38.1				
915	10gal	15.56	0.080	6.05	5.66	34.9	11.40	650		
920		15.57	0.079	5.60	5.67	27.6				
925		15.58	0.080	5.53	5.65	32.1	10.38		39.28	
930		15.65	0.080	5.32	5.64	34.1				
935		15.76	0.080	5.27	5.69	32.0				
940		15.95	0.081	5.12	5.66	33.6	12.82			
945	15gal	15.87	0.081	5.27	5.66	34.1			39.29	
950		15.70	0.080	5.11	5.68	25.6	11.01			
955	17gal	15.64	0.080	5.02	5.68	29.1				
1000								200		Sample

RESOLUTION CONSULTANTS

Well ID: RE13103

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage | Date: 9 / 20 / 17 | Time: Start 0800 am/pm
Project No: 60266526 | Finish 1000 am/pm
Site Location:
Weather Conds: Cloudy 70° windy | Collector(s): S. WRIGHT

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 685 ft | c. Length of Water Column _____ ft (a-b) | Casing Diameter/Material 4-inch PVC

b. Water Table Depth 39.51 ft | d. Calculated System Volume (see back) 13.1 gal. | 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	14J101213
	LaMotte	2020	87525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0820	–	22.75	0.043	9.61	4.81	241.6	–	500	39.51	CLEAR/NONE
0825		17.44	0.037	8.42	3.83	638.7	6.21	600	39.51	CLEAR/NONE
0830		16.77	0.035	5.91	4.48	643.3	–	600	39.51	CLEAR/NONE
0835		16.67	0.034	5.87	4.05	614.0	–	600	39.51	CLEAR/NONE
0840		16.74	0.033	6.00	3.54	524.7	1.16	600	39.52	CLEAR/NONE
0845		16.65	0.033	6.25	3.44	561.1	–	600	39.53	CLEAR/NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

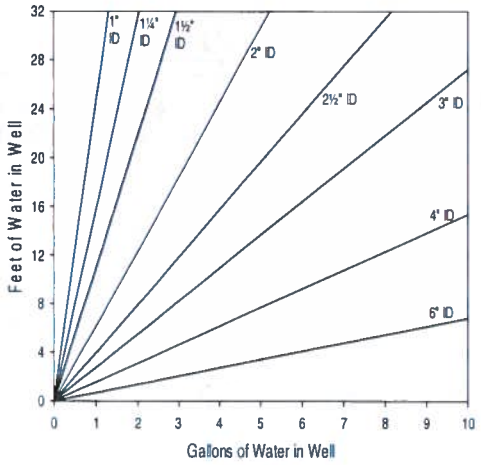
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE13103-GW-092017	40-mL vials	3	HCl	VOCs	0945
RE13103-GW-092017	1-L amber	2	none	1,4-Dioxane	0945

Comments

Signature _____ Date 9-20-17

RE131 D3

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE13103

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0850	5	16.50	0.033	6.54	3.43	586.3	—	600	39.54	CLEAR / NONE
0855		16.61	0.033	6.73	3.41	528.5	6.73	600	39.55	CLEAR / NONE
0900		16.63	0.033	6.69	3.42	315.2	—	600	39.55	CLEAR / NONE
0905		16.73	0.033	6.51	3.42	285.7	—	600	39.55	CLEAR / NONE
0910		16.65	0.033	6.45	3.42	210.2	3.18	600	39.55	CLEAR / NONE
0915		16.59	0.033	6.40	3.43	207.1	—	600	39.55	CLEAR / NONE
0920	10	16.62	0.033	6.40	3.44	204.4	—	600	39.55	CLEAR / NONE
0925	10.75	16.68	0.033	6.39	3.45	201.8	0.61	600	39.55	CLEAR / NONE
0930	11.5	16.70	0.033	6.37	3.47	199.9	—	600	39.55	CLEAR / NONE
0935	12.25	16.71	0.033	6.36	3.48	197.5	—	600	39.55	CLEAR / NONE
0940	13	16.72	0.033	6.35	3.48	196.2	0.78	600	39.55	CLEAR / NONE
0945	13.5	16.73	0.033	6.35	3.49	195.8	—	600	39.55	CLEAR / NONE
									[redacted]	
945								250		Sample

RESOLUTION CONSULTANTS

Well ID: RE120D1

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9 / 20 / 17 Time: Start 1145 am/pm
Project No: 60266526 Finish 1345 am/pm
Site Location: Shelley
Weather Conds: 75° partly sunny windy Collector(s): S. WRIGHT

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 655 ft c. Length of Water Column 616 ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 38.95 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	14J10213
CaMette	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1200	—	25.90	0.068	10.34	5.77	157.2	—	400	38.05	CLEAR/NONE
1205		21.79	0.108	9.31	5.93	161.2	—	400	37.90	CLEAR/NONE
1210		17.86	0.097	5.25	4.98	450.1	0.57	600	37.68	CLEAR/NONE
1215		17.59	0.085	3.12	4.88	438.3	—	600	37.92	CLEAR/NONE
1220		17.55	0.093	2.48	4.88	397.4	—	600	38.02	CLEAR/NONE
1225		17.50	0.093	2.91	4.78	397.3	0.91	600	38.00	CLEAR/NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

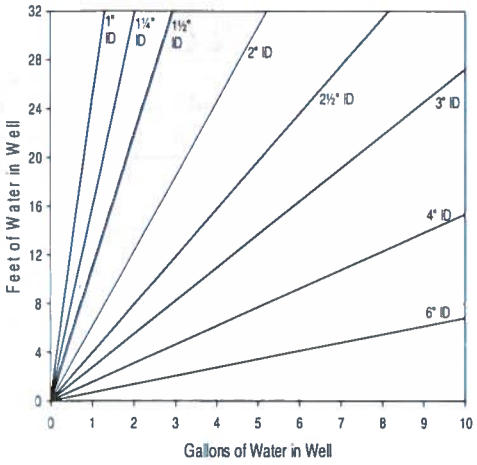
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE120D1-GW-092017	40-mL vials	3	HCl	VOCs	1330
RE120D1-GW-092017	1-L amber	2	none	1,4-Dioxane	1330
	250ml plastic	1	none	Bromide	1330

Comments

Signature Date 9.20.17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE12001

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1230	9.5	17.49	0.092	3.18	4.85	288.1	—	600	38.01	CLEAR/NONE
1235		17.55	0.093	3.17	4.80	268.4	—	600	38.01	CLEAR/NONE
1240		17.58	0.092	3.27	4.75	233.7	0.93	600	38.01	CLEAR/NONE
1245		17.60	0.093	3.13	4.72	212.4	—	600	38.01	CLEAR/NONE
1250		17.52	0.093	2.98	4.68	195.8	—	600	38.01	CLEAR/NONE
1255		17.51	0.093	2.88	4.65	189.4	0.83	600	38.01	CLEAR/NONE
1300	10	17.51	0.093	2.82	4.63	184.4	—	600	38.01	CLEAR/NONE
1305	10.75	17.53	0.093	2.85	4.62	179.5	—	600	38.01	CLEAR/NONE
1310	11.5	17.49	0.092	2.84	4.61	174.3	0.85	600	38.01	CLEAR/NONE
1315	12.25	17.48	0.092	2.83	4.61	172.7	—	600	38.01	CLEAR/NONE
1320	13	17.48	0.092	2.82	4.61	170.1	—	600	38.01	CLEAR/NONE
1325	13.5	17.47	0.092	2.81	4.61	168.4	0.88	600	38.01	CLEAR/NONE
1330								600		Sample

Well ID: RE120D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/20/17 Time: Start 1150 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Shelley
Weather Conds: 78° partly sunny windy Collector(s): _____

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 713 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 38.72 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11F100176
	YSI	556 Field Cable	U86889X
	LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1150	Start	purge						200		
1210	—	17.29	0.063	3.75	4.80	311.1	—	700	38.79	Clear
1215		17.14	0.063	0.81	4.68	305.8				
1220		17.13	0.062	0.59	4.48	305.6	0.99		38.82	
1225		17.10	0.063	3.51	4.38	303.4				
1230	5gal	17.05	0.063	3.99	4.43	300.4		700	38.80	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

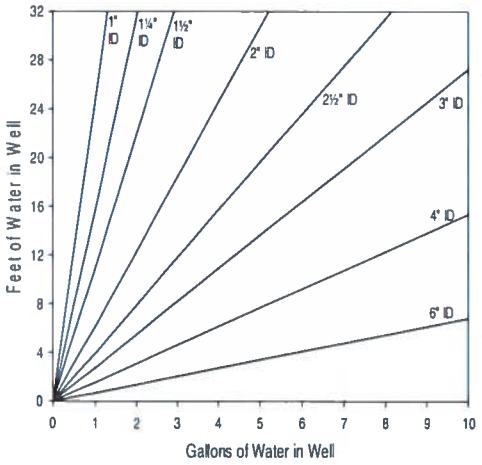
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE120D2-GW-092016	40-mL vials	3	HCl	VOCs	1310
RE120D2-GW-092016	1-L amber	2	none	1,4-Dioxane	1310
	250mL plastic	1	none	Bromide	1310

Comments: Sample collected @ 200 mL/min flow rate.

Signature _____ Date 9-20-2017

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE1702

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1235	–	17.08	0.064	4.02	4.47	303.2	–	700	–	Clear
1240	–	17.12	0.064	4.17	4.54	291.6	–	700	–	Clear
1245	–	17.16	0.064	4.32	4.54	287.9	–	700	–	Clear
1250	10 Gal	17.15	0.064	4.23	4.60	283.3	0.93	700	38.75	Clear
1255	–	17.14	0.064	4.25	4.73	279.6	–	700	38.74	Clear
1300	–	17.12	0.064	4.26	4.79	276.3	0.94	700	38.73	Clear
1305	–	17.11	0.064	4.27	4.85	271.3	0.93	700	38.72	Clear
1310	Sample Time.							200		

RESOLUTION CONSULTANTS

Well ID: RE120D3

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/20/17 Time: Start 1140 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Shelley
Weather Conds: 75°, partly sunny, windy Collector(s): Paul Kaveth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 765 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 39.26 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	11C100917
LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1155	ON							600		
1200		18.10	0.028	10.26	4.76	51.9				
1205		17.21	0.027	9.29	4.82	41.0			39.34	
1210		17.06	0.027	8.33	4.85	22.8		650		
1215		16.95	0.026	7.58	5.06	16.8	3.51			
1220		16.90	0.028	7.04	5.01	22.4			39.54	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

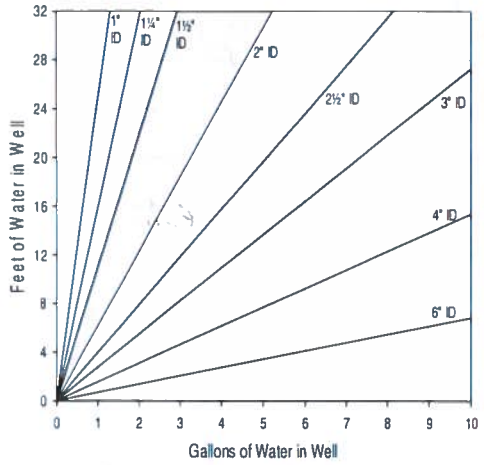
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE120D3-GW-092817	40-mL vials	3	HCl	VOCs	1315
	1-L amber	2	none	1,4-Dioxane	1315
	250 ml plastic	1	none	Bromide	1315

Comments

Signature Paul Kaveth Date 9/20/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE120 03

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1225	5gal	16.90	0.029	6.89	4.92	30.1				
1230		16.88	0.029	6.52	4.94	33.2	3.96	650	39.34	
1235		16.94	0.029	6.40	4.92	33.7				
1240		16.91	0.029	6.34	4.95	33.1				
1245		16.94	0.029	6.09	4.97	31.9	3.32		39.36	
1250	10gal	16.87	0.028	5.88	4.97	30.4				
1255		16.86	0.028	5.67	4.99	32.0				
1300		16.86	0.028	5.63	5.00	31.9	2.48	650	39.34	
~~1305~~	13gal	16.88	0.028	5.54	5.00	25.2				
1310		16.82	0.028	5.50	4.99	30.8	3.59		39.35	
1315								250		Sample

Well ID: RE109021

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage | Date: 9 / 21 / 17 | Time: Start 1000 am/pm
Project No: 60266526 | Finish _____ am/pm
Site Location: _____
Weather Conds: 80, SUN | Collector(s): S. WRIGHT

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 575 ft | c. Length of Water Column 528 ft (a-b) | Casing Diameter/Material 4-inch PVC
b. Water Table Depth 47.29 ft | d. Calculated System Volume (see back) 13.1 gal. | 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)
- Temperature ± 3% | - Turbidity ± 10% | - D.O. ± 10% (values >0.5 mg/L)
- pH ± 0.1 unit | - ORP ± 10mV | Remove a minimum 1 screen volume
- Conductivity ± 3% | - Drawdown < 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	11F100176
LaMotte	2020	8[illegible]73

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1030	—	23.04	0.168	11.85	6.87	158.4	—	600	47.45	CLOUDY/NONE
1035		16.75	0.073	6.82	4.33	276.3	—	600	47.45	CLOUDY/NONE
1040		16.59	0.071	5.23	4.10	279.2	24.1	600	47.48	CLOUDY/NONE
1045		16.62	0.069	4.59	4.02	283.9	—	600	47.51	CLOUDY/NONE
1050		16.74	0.068	4.33	3.90	285.8	—	600	47.53	CLOUDY/NONE
1055		16.67	0.069	4.23	3.91	288.1	29.4	600	47.53	CLOUDY/NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

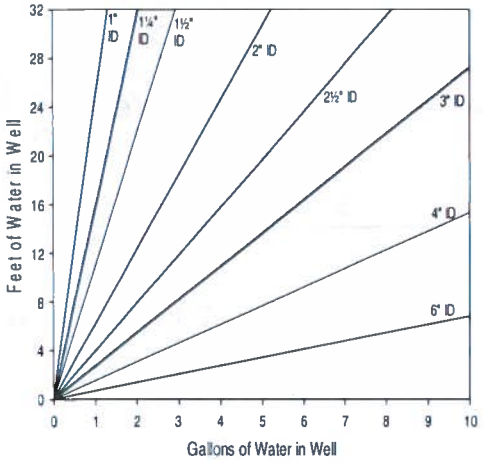
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE109021-GW-092117	40-mL vials	3	HCl	VOCs	1200
RE109021-GW-092117	1-L amber	2	none	1,4-Dioxane	1200

Comments: BUMPED BOTTOM OF WELL DURING INSTALLATION OF NEW TUBING

Signature _____ Date 9-21-17

RE109D1

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE109D1

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1100	5	16.68	0.068	4.11	3.92	288.8	—	600	47.53	CLOUDY / NONE
1105		16.61	0.068	3.97	3.97	286.8	26.4	600	47.53	CLOUDY / NONE
1110		16.54	0.069	3.92	3.99	286.4	—	600	47.53	CLOUDY / NONE
1115		16.55	0.068	3.85	4.01	285.6	—	600	47.53	CLOUDY / NONE
1120		16.53	0.069	3.84	4.03	284.9	23.4	600	47.53	CLOUDY / NONE
1125		16.47	0.068	3.84	4.05	284.5	—	600	47.53	CLOUDY / NONE
1130	10	16.70	0.069	3.69	4.07	282.7	—	600	47.53	CLOUDY / NONE
1135	10.75	16.65	0.069	3.75	4.12	281.6	23.0	600	47.53	CLOUDY / NONE
1140	11.5	16.62	0.068	3.74	4.14	281.4	—	600	47.53	CLOUDY / NONE
1145	12.25	16.58	0.069	3.75	4.16	280.9	—	600	47.53	CLOUDY / NONE
1150	13	16.55	0.068	3.74	4.19	280.5	23.6	600	47.53	CLOUDY / NONE
1155	13.5	16.52	0.069	3.74	4.20	280.1	23.4	600	47.53	CLOUDY / NONE
1200								200		Purple

Well ID: RE109D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/21/17 Time: Start 11 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: St. Martin St
Weather Conds: _____ Collector(s): E. Bell, P. Bareth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 57.5 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 47.82 ft d. Calculated System Volume (see back) _____ gal. _____ screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556 MPS	14J101213
	YSI	556 Field Cable	U86888X
	QED	MP10	055440X

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
11:00	Start purge									
1110	-	16.63	0.069	4.52	-	555.0	-	650	47.90	Silty
1115	-	16.67	0.072	3.60	-1.54	556.7	680	650	47.89	Silty/Cloudy
1120	-	16.76	0.074	2.90	-1.41	517.2	-	650	47.86	Cloudy
1125	-	16.76	0.076	2.24	-1.37	504.1	75.8	650	47.85	Cloudy
1130	5Gal	16.78	0.075	2.20	-1.19	492.7	-	650	47.82	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

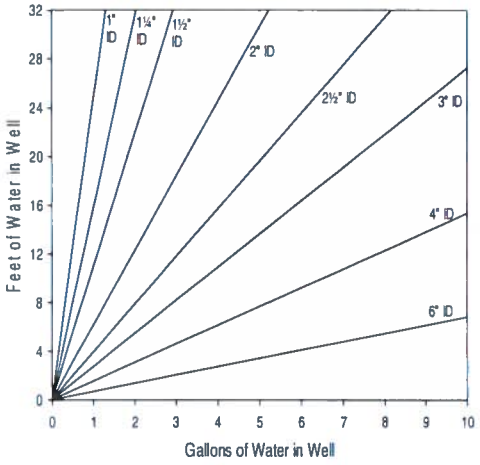
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE109D2-GW-092117	40-mL vials	3	HCl	VOCs	1230
RE109D2-GW-092117	1-L amber	2	none	1,4-Dioxane	1230

Comments: Screen zone 550 - 570 fbgs, measured DTB 574.00 fbgs
Collected samples @ 200ml/min

Signature _____ Date 9/21/2017

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE1902

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1135	–	16.52	0.075	2.08	-0.92	475.6	44.1	650	47.80	Cloudy
1140	–	16.50	0.075	1.97	0.41	403.8	–	650	47.78	cloudy
1145	–	16.23	0.075	1.86	0.92	398.6	–	650	47.6	cloudy
1150	–	16.20	0.074	1.79	1.10	372.1	–	650	47.74	cloudy
1155	–	16.16	0.074	1.75	1.14	361.9	33.2	650	47.72	cloudy
1200	10 Gal	16.16	0.074	1.75	1.18	359.6	28.6	650	47.71	cloudy
1205	–	16.15	0.073	1.72	1.59	336.1	–	650	47.70	cloudy
1210	–	16.18	0.073	1.68	3.44	240.0	23.5	650	47.70	cloudy
1215	–	16.05	0.073	1.62	3.94	216.9	23.6	650	47.68	cloudy
1220	12.5 Gal	16.11	0.073	1.60	4.00	202.8	24.1	650	47.66	cloudy
1225	13.7 Gal	16.09	0.073	1.59	4.05	210.1	23.9	650	47.65	cloudy
1230	Sample Time.							200		

RESOLUTION CONSULTANTS

Well ID: RE10903

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9 / 21 / 17 Time: Start 830 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: St Martin
Weather Conds: 70° mostly sunny Collector(s): _____

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 685 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 47.59 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11C100417
	LaMotte	2020	

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1040	ON	20.86	0.099	7.84	6.01	-51.4	—	400	47.59	CLOUDY/NONE
1045		17.10	0.065	6.45	5.35	-32.6	—	400	47.85	CLEAR/NONE
1050		16.43	0.061	5.10	5.13	-40.7	14.6	400	47.85	CLEAR/NONE
1055		15.81	0.060	4.39	4.95	-41.6	—	500	47.85	CLEAR/NONE
1100		15.76	0.059	4.20	4.86	-34.7				
1105		15.47	0.059	6.66	4.99	-26.1		650		adjust pressure

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

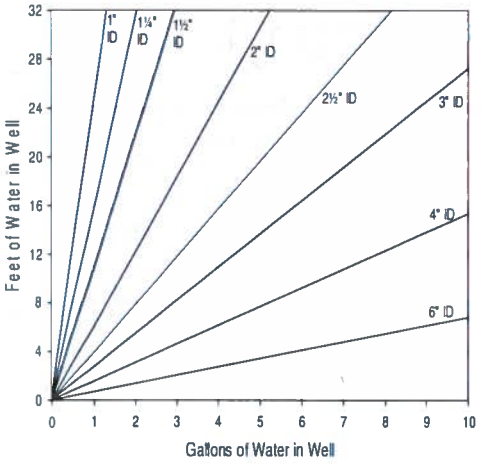
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE10903-GW-092117	40-mL vials	3	HCl	VOCs	1210
	1-L amber	2	none	1,4-Dioxane	

Comments _____

Signature Paul Kanetz Date 9/21/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE109 03

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1110		15.43	0.063	5.71	5.29	-51.0				
1115	5gal	15.41	0.062	5.25	5.30	-58.5	21.4			
1120		15.39	0.061	4.70	5.24	-61.8	16.4		47.81	
1125		15.40	0.062	4.66	5.22	-54.3				
1130		15.41	0.061	4.27	5.12	-40.1	15.4	650		
1135		15.35	0.062	3.79	5.15	-52.1	14.0			
1140	10gal	15.31	0.061	3.90	5.16	-61.7	12.7		47.76	
1145		15.29	0.061	3.57	5.07	-52.9	17.1			
1150		15.25	0.061	3.44	5.06	-44.2	17.6			
1155		15.18	0.061	3.30	5.09	-44.1	18.0	650	47.72	
1200	15gal	15.18	0.061	3.15	5.08	-52.3	17.6			
1210								200		Sample

Well ID: RE122D1

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/21/17 Time: Start 1410 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Curtis
Weather Conds: cloudy 75° Collector(s): T. Bell, D. Kovesh

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 545 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 44.77 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	14J 101213
	YSI	556 Field Cable	0286888X
	QED	MP10	11554402

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1420	ON									
1430		16.52	0.071	6.21	-1.56	543.2		650	44.79	
1435		16.41	0.070	5.39	-2.24	577.5				
~~1440~~		~~17.42~~	~~0.019~~							
1440		16.38	0.069	5.03	-2.28	577.0			44.77	
1445	5gal	16.32	0.069	4.83	-2.09	567.0	1.45			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

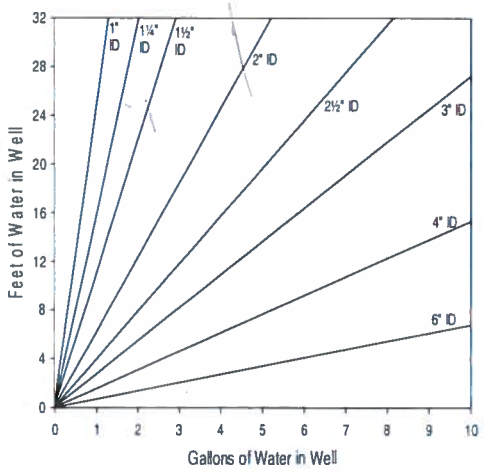
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE122D1-GW-092117	40-mL vials	3	HCl	VOCs	1540
RE122D1-GW-092117	1-L amber	2	none	1,4-Dioxane	1540

Comments pH meter is malfunctioning
Collected Samples at a flowrate of 200ml/min

Signature [signature] Date 9/21/2017

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE122D1

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1450		16.30	0.069	4.82	-1.91	558.4	—	650	44.75	
1455		16.24	0.069	4.79	-1.59	543.0	—			
1500	—	16.23	0.069	4.71	7.3		1.10		~~46.44~~	
1505		16.23	0.069	4.69			—			
1510		16.21	0.069	4.69			—			
1515	10 Gal	16.10	0.069	4.68			—			
1520	—	16.09	0.069	4.68	1.79	371.0	—	650	44.74	Clear
1525	—	16.06	0.069	4.69	2.78	322.4	0.96	650	44.75	Clear
1530	-	16.02	0.069	4.64	3.18	303.5	0.92	650	44.75	Clear
1535	15 Gal	16.01	0.069	4.61	3.30	296.6	0.97	650	44.75	Clear.
Dup Time		1540						200		

Well ID: RE122D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage | Date: 9/21/17 | Time: Start 1410 am/pm | Finish 1615 am/pm
Project No: 60266526
Site Location: Curtis
Weather Conds: cloudy 75° | Collector(s): S. WRIGHT

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 615 ft | c. Length of Water Column 570 ft (a-b) | Casing Diameter/Material 4-inch PVC
b. Water Table Depth 44.98 ft | d. Calculated System Volume (see back) 13.1 gal. | 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)
- Temperature ± 3% | - Turbidity ± 10% | - D.O. ± 10% (values >0.5 mg/L)
- pH ± 0.1 unit | - ORP ± 10mV | Remove a minimum 1 screen volume
- Conductivity ± 3% | - Drawdown < 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	11F100176
LaMotte	2020	64525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1420	–	17.23	0.019	6.72	6.05	208.5	–	600	44.85	CLEAR/NONE
1425		18.09	0.083	5.51	5.06	254.4	–	600	44.80	CLEAR/NONE
1430		17.74	0.083	4.49	4.87	257.3	3.50	600	44.85	CLEAR/NONE
1435		17.91	0.083	3.61	4.87	261.5	–	600	44.90	CLEAR/NONE
1440		17.84	0.082	3.36	4.85	262.3	–	600	44.90	CLEAR/NONE
1445		17.94	0.080	3.32	4.82	263.9	0.98	600	44.90	CLEAR/NONE

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION:

Method: Geotech bladder pump with drop tube assembly

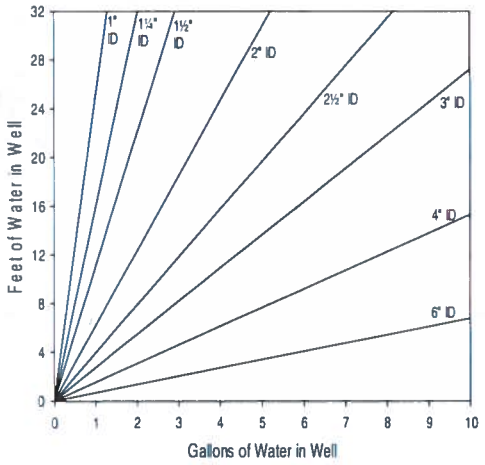
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE122D2-GW-092117	40-mL vials	3	HCl	VOCs	1615
RE122D2-GW-092117	1-L amber	2	none	1,4-Dioxane	1615

Comments

Signature | Date 9-21-17

RE122D2

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE122D2

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1450	5	18.13	0.080	3.58	4.80	265.2	—	600	44.90	CLEAR/NONE
1455		18.74	0.082	3.69	4.80	266.0	—	600	44.90	CLEAR/NONE
1500		18.70	0.082	3.81	4.81	266.5	2.02	600	44.91	CLEAR/NONE
1505		18.59	0.082	3.89	4.81	267.4	—	600	44.91	CLEAR/NONE
1510		18.65	0.081	3.92	4.80	268.1	—	600	44.91	CLEAR/NONE
1515		18.79	0.081	3.95	4.80	269.0	1.97	600	44.92	CLEAR/NONE
1520		18.77	0.082	3.96	4.80	270.2	—	~~600~~ 500	44.92	CLEAR/NONE
1525	10	18.66	0.082	3.97	4.80	270.8	—	~~600~~ 500	44.92	CLEAR/NONE
1530	10.5	18.57	0.082	3.94	4.81	270.8	0.52	~~600~~ 500	44.92	CLEAR/NONE
1535	11	18.51	0.082	3.96	4.80	272.1	—	~~600~~ 500	44.92	CLEAR/NONE
1540	11.5	18.56	0.082	3.95	4.80	272.9	—	~~600~~ 500	44.92	CLEAR/NONE
1545	12	18.48	0.082	3.96	4.81	273.6	0.66	500	44.92	CLEAR/NONE
1550	12.5	18.45	0.082	3.97	4.82	274.5	—	500	44.92	CLEAR/NONE
1555	13	18.42	0.082	3.98	4.83	275.1	—	500	44.92	CLEAR/NONE
1600	13.5	18.40	0.082	3.99	4.82	276.0	0.68	400	44.92	CLEAR/NONE
1615								200		sample

RESOLUTION CONSULTANTS

Well ID: RE122D3

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/21/17 Time: Start 1410 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Curtis
Weather Conds: Cloudy 75° Collector(s): Paul Kaneth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 740 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 46.10 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	11C100917
LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1430	ON							500	46.15	
1435		18.33	0.020	6.47	3.60	-191.0				
1440		17.91	0.019	4.93	3.58	-176.9				
1445		17.78	0.018	4.28	3.50	-192.1	2.36	500	46.14	
1450		17.64	0.018	3.84	3.55	-178.3				
1455		17.63	0.018	3.50	3.57	-181.4				

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

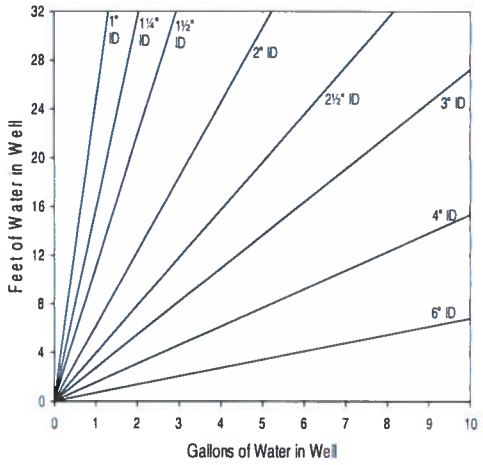
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE122D3-GW-092117	40-mL vials	3	HCl	VOCs	1610
	1-L amber	2	none	1,4-Dioxane	

Comments

Signature Paul Kaneth Date 9/21/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE122D3

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
~~1450~~		17.52	0.018	3.39	3.68	-176.2	1.75		46.11	
1505	5gal	17.44	0.018	3.15	3.64	-175.9		550		
1510		17.44	0.018	3.13	3.55	-164.9				
		17.44	0.018	3.11	3.54	-160.2				
1520		17.44	0.018	3.10	3.51	-158.6	2.34	~~2.34~~		
1525		17.35	0.018	3.05	3.49	-157.0		550	46.09	
1530		17.24	0.018	3.01	3.53	-157.1	2.66			
1535	10gal	17.27	0.018	2.94	3.55	-163.9				
1540		17.20	0.018	2.91	3.55	-164.6				
1545		17.13	0.017	2.83	3.54	-165.3	3.04		46.03	
1550		17.04	0.017	2.79	3.56	-167.5				
1555	13gal	17.02	0.018	2.79	3.57	-167.8		550		
1600		16.96	0.017	2.77	3.60	-168.7				
1610								200		Sample

RESOLUTION CONSULTANTS

Well ID: RE126D1

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage | Date: 9/22/17 | Time: Start 0815 am/pm
Project No: 60266526 | Finish 1010 am/pm
Site Location: S. Nassau
Weather Conds: sunny 68° | Collector(s): S. WRIGHT

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 52.8 ft | c. Length of Water Column _____ ft (a-b) | Casing Diameter/Material 4-inch PVC

b. Water Table Depth 48.10 ft | d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11F100176
	LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0835	—	20.40	0.081	8.19	9.22	141.4	—	600	48.05	CLEAR/NONE
0840		15.58	0.074	6.61	6.87	185.2	—	600	48.05	CLEAR/NONE
0845		15.36	0.072	5.74	6.35	204.3	4.46	600	48.05	CLEAR/NONE
0850		15.32	0.071	5.84	5.99	217.2	—	600	48.05	CLEAR/NONE
0855		15.50	0.072	5.88	5.83	224.3	—	600	48.05	CLEAR/NONE
0900		15.55	0.071	5.87	5.71	231.4	5.58	600	48.05	CLEAR/NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION:

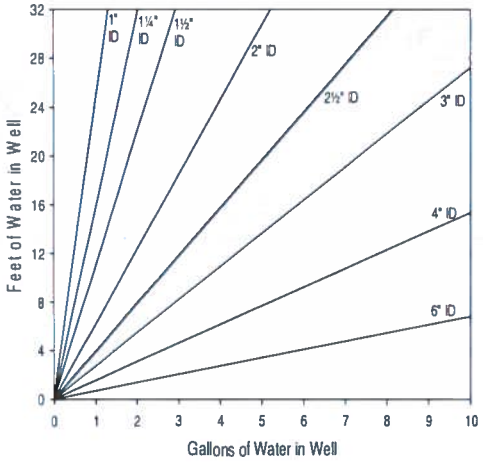
Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE126D1-GW-092217	40-mL vials	3	HCl	VOCs	1010
RE126D1-GW-092217	1-L amber	2	none	1,4-Dioxane	1010

Comments

Signature _____ Date 9-22-17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE12601

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0905	5	15.26	0.071	5.95	5.65	236.2	—	600	48.05	CLEAR/NONE
0910		15.21	0.070	5.86	5.57	240.6	—	600	48.05	CLEAR/NONE
0915		15.32	0.071	5.85	5.52	243.7	1.49	600	48.05	CLEAR/NONE
0920		15.35	0.071	5.88	5.47	245.6	—	600	48.05	CLEAR/NONE
0925		15.37	0.071	5.91	5.45	250.1	—	600	48.05	CLEAR/NONE
0930		15.19	0.071	5.95	5.44	251.7	1.76	600	48.05	CLEAR/NONE
0935	10	15.16	0.071	6.00	5.42	254.3	—	600	48.05	CLEAR/NONE
0940	10.75	15.15	0.071	5.99	5.41	257.4	—	600	48.05	CLEAR/NONE
0945	11.5	15.14	0.071	5.98	5.40	257.6	1.06	600	48.05	CLEAR/NONE
0950	12.25	15.10	0.071	5.99	5.38	259.3	—	600	48.05	CLEAR/NONE
0955	13	15.14	0.071	5.98	5.37	260.5	—	600	48.05	CLEAR/NONE
1000	13.5	15.15	0.071	5.98	5.36	261.5	1.12	600	48.05	CLEAR/NONE
1010								200		Sample

Well ID: RE126D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage | Date: 9/ 22 /17 | Time: Start 0825 am/pm
Project No: 60266526 | Finish ______ am/pm
Site Location: S. Nassau
Weather Conds: 68°, sunny | Collector(s): Farrell Bull, P. Karett

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 580 ft c. Length of Water Column ______ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 48.69 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)
- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)
- Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556 MPS	14J101213
YSI	556 Field Cable	U86888X
QED	MP10	U645097C

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0830 Start GW purge.										
0840	–	15.83	0.081	7.70	7.65	549.6	–	600	48.78	Clear
0845	–	15.74	0.081	2.52	7.86	551.1	2.53	600	48.76	clear
0850	–	15.74	0.080	2.65	7.56	539.2	–	600	48.75	clear
0855	–	15.96	0.080	2.87	0.64	432.9	1.96	600	48.73	clear
0900	–	15.72	0.080	2.87	0.93	420.5	–	600	48.71	clear

d. Acceptance criteria pass/fail

(continued on back)

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION:

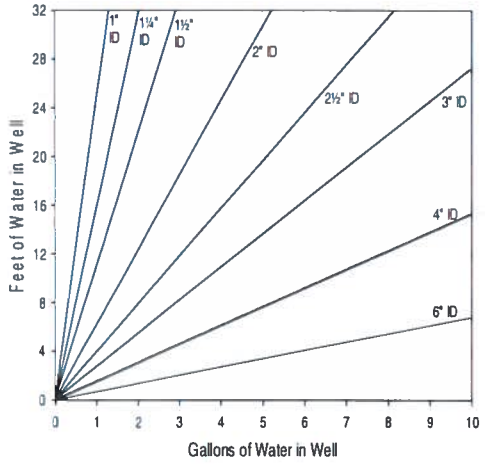
Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE126D2-GW-092217	40-mL vials	3	HCl	VOCs	10:00
RE126D2-GW-092217	1-L amber	2	none	1,4-Dioxane	10:00

Comments: PH meter was calibrated, not working properly in field.

Signature: [signature] Date 9/22/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: REMW2

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0905	5 Gal	15.62	0.079	2.86	2.33	351.0	1.27	600	48.66	clear
0910	-	15.63	0.078	2.77	3.05	320.0	-	600	48.67	clear
0915	-	15.67	0.078	2.78	3.56	304.2	1.21	600	48.660	clear
0920	-	15.65	0.078	2.71	4.01	286.7	-	600	48.66	clear
0925	-	15.71	0.078	2.76	4.33	261.3	1.10	600	48.65	clear
0930	10 Gal	15.84	0.078	2.77	4.39	259.6	1.03	600	-	clear
0935	-	15.77	0.078	2.81	4.46	254.1	-	600	-	clear
0940	-	1580	0.079	2.75	4.66	249.8	0.91	600	46.61	clear
0945	-	16.04	0.079	2.68	4.74	240.4	0.96	600	46.60	clear
0950	13.1 Gal	16.01	0.079	2.73	4.72	242.1	0.90	600	46.61	clear
0955										
1000	Sample Time (Collected)							200		

0 0

RESOLUTION CONSULTANTS

Well ID: RE1603

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/22/17 Time: Start 800 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: S. Nassau
Weather Conds: 68° sunny Collector(s): Paul Kaveth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 66.5 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 48.54 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11C100917
	LaMotte	2020	34525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0830	ON							600		
0840		15.23	0.025	7.43	6.67	8.0			48.50	
0845		15.06	0.024	7.04	6.49	8.0	1.78	650		
0850		15.05	0.024	6.75	6.35	5.3			48.49	
0855		15.12	0.027	6.64	6.23	2.1				
0900	5 gal	14.97	0.028	6.72	6.21	-0.7	1.93			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

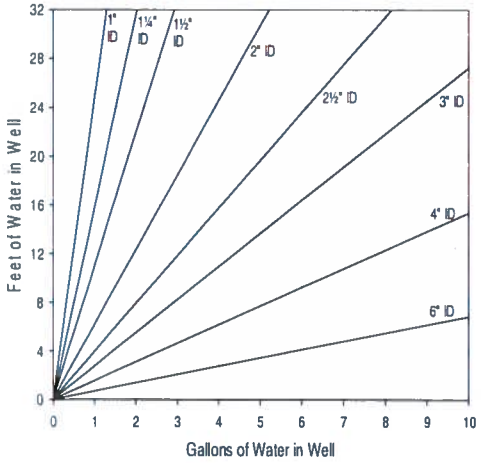
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE1603-GW-092217	40-mL vials	3	HCl	VOCs	950
	1-L amber	2	none	1,4-Dioxane	

Comments

Signature Paul Kaveth Date 9/22/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE12603

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
905		15.04	0.028	6.66	6.18	-4.2		650	48.41	
910		15.07	0.029	6.68	6.10	0.3	1.63			
915		15.05	0.029	6.72	6.10	-0.1				
920		15.03	0.028	6.81	6.09	-2.7				
925	10gal	15.02	0.029	6.85	6.09	-4.3	1.27	650	48.38	
930		14.96	0.029	6.85	6.12	-13.3				
935		14.91	0.029	6.75	6.08	-6.8				
940		15.07	0.029	6.79	6.10	-7.3				
945	13gal	15.01	0029	6.80	6.09	-6.5	1.02		48.37	
950										sample

Well ID: RE123D1

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage
Project No: 60266526
Site Location: MTA Yard
Weather Conds: Sunny, 70°
Date: 9 / 22 / 17
Time: Start 1145 am/pm
Finish 1330 am/pm
Collector(s): S. WRIGHT

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 505 ft
b. Water Table Depth 50.09 ft
c. Length of Water Column 455 ft (a-b)
d. Calculated System Volume (see back) 13.1 gal.
Casing Diameter/Material 4-inch PVC
20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)
- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)
Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	11F100176
LaMotte	2026	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1205	–	26.25	0.115	7.73	6.98	193.0	–	600	50.05	CLEAR/NONE
1210		17.60	0.089	6.01	6.85	192.5	–	600	50.05	CLEAR/NONE
1215		17.02	0.089	5.41	6.27	185.4	2.34	600	50.05	CLEAR/NONE
1220		16.93	0.092	5.88	5.85	190.0	–	600	50.05	CLEAR/NONE
1225		16.82	0.095	6.96	5.09	193.2	–	600	50.05	CLEAR/NONE
1230		16.81	0.095	7.07	5.03	195.1	8.56	600	50.05	CLEAR/NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION:

Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE123D1-GW-092217	40-mL vials	3	HCl	VOCs	1330
RE123D1-GW-092217	1-L amber	2	none	1,4-Dioxane	1330

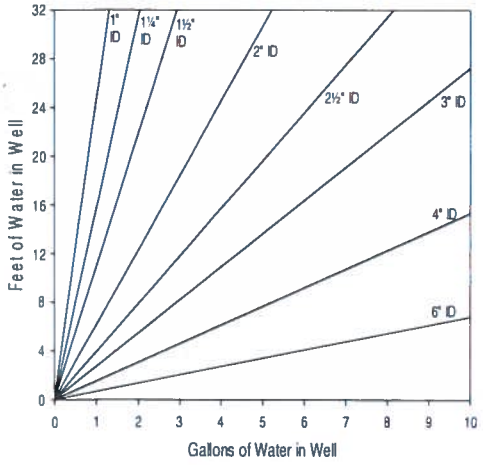
Comments

Signature

Date 9-22-17

PE123D1

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE123D1

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1235	5	16.67	0.094	7.14	5.02	195.0	—	600	50.05	CLEAR/NONE
1240		16.56	0.094	7.15	5.02	195.2	—	600	50.05	CLEAR/NONE
1245		16.51	0.093	7.15	5.02	195.4	7.32	600	50.05	CLEAR/NONE
1250		16.48	0.093	7.21	5.04	194.9	—	600	50.05	CLEAR/NONE
1255		16.44	0.093	7.23	5.01	196.2	—	600	50.05	CLEAR/NONE
1300		16.36	0.093	7.25	4.96	199.8	7.12	600	50.05	CLEAR/NONE
1305	10	16.30	0.093	7.17	4.94	201.6	—	600	50.05	CLEAR/NONE
1310		16.22	0.093	7.28	4.92	207.5	—	600	50.05	CLEAR/NONE
1315		16.11	0.092	7.29	4.92	208.5	7.42	600	50.05	CLEAR/NONE
1320		16.04	0.093	7.28	4.92	209.4	—	600	50.05	CLEAR/NONE
1325		16.02	0.093	7.28	4.92	209.8	—	600	50.05	CLEAR/NONE
1330		16.01	0.093	7.28	4.92	210.5	7.56	600	50.05	CLEAR/NONE
1330								200		Sample

RESOLUTION CONSULTANTS

Well ID: RE123D2

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage | Date: 9/22/17 | Time: Start 1130 am/pm | Finish ____ am/pm
Project No: 60266526
Site Location: MTA Yard
Weather Conds: Sunny 70°
Collector(s): FarrellBell, P. Karath

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 660 ft
b. Water Table Depth 51.34 ft
c. Length of Water Column 608.66 ft (a-b)
d. Calculated System Volume (see back) 131 gal.
Casing Diameter/Material: 4-inch PVC
20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)
- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556 MPS	11C100917
YSI	556 Field Cable	U85630X
QED	MP10	U64529X

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1200	Start Ground water purge									
1210	—	20.79	0.025	7.06	5.67	-33.0	—	600	51.37	clear
1215	—	18.60	0.023	5.30	5.63	6.0	—	600	51.37	clear
1220	—	18.52	0.023	5.39	5.71	-26.4	—	600	51.38	clear
1225	—	18.43	0.025	5.64	5.83	-32.6	—	600	51.38	clear
1230	—	18.40	0.025	5.76	5.98	-47.4	11.76	600	51.39	clear

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

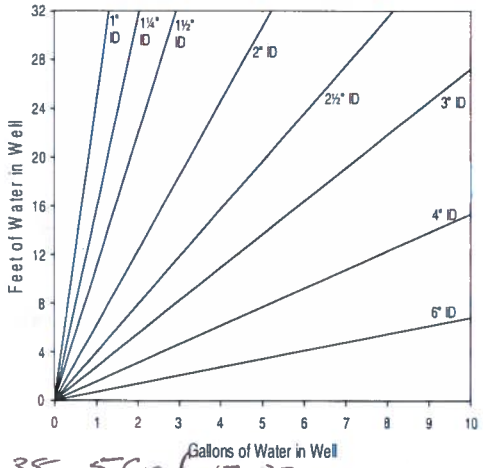
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE123D2-GW-092217	40-mL vials	3	HCl	VOCs	
RE123D2-GW-092217	1-L amber	2	none	1,4-Dioxane	

Comments: Reduced flow rate to 200 ml/min during sample collection.

Signature: [signature] Date: 9/22/17

b
D

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

1235 5Gal 18.33 0.024 6.60 5.83 -49.1 — 600 51.39

Well ID: AE123-D2

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1240	~~5~~		0.024	6.70	5.81	-51.6	—	550	51.39	clear
1245	—		0.024	6.79	5.79	-52.7	—	550	51.39	clear
1250	—		0.024	6.96	5.80	-57.1	—	550	51.39	clear
1255	—	18.00	0.024	7.09	5.80	-59.1	—	550	51.39	clear
~~1300~~	10 gal	17.87	0.024	7.23	5.86	-62.1	10.1	~~600~~	51.39	clear
1305	—	17.74	0.024	7.19	5.90	-60.2	—	600	51.37	clear
1310	—	17.73	0.024	7.20	5.94	-58.6	9.80	600	51.37	clear
1315	—	17.67	0.024	7.18	6.07	-52.2	9.69	600	51.36	clear
1320	—	17.63	0.024	7.22	6.04	-57.6	9.72	600	51.36	clear
1325	13+1	17.62	0.024	7.28	6.03	-61.7	9.86	600	51.35	clear.
1330										
~~1335~~	Sample Time.							200		

RESOLUTION CONSULTANTS

Well ID: RE123p3

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/22/17 Time: Start 1130 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: MTA Yard
Weather Conds: Sunny 70° Collector(s): Paul Krumholz

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 840 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 5/31 ft d. Calculated System Volume (see back) _____ gal. _____ screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	14J101213
	LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1200	ON								5158	
1205	OFF							250		pull & reset
1215	ON									
1220	OFF							250		pull & reset
1230	ON									
1245		18.14	0.027	7.00	-2.94	361.2		600		

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

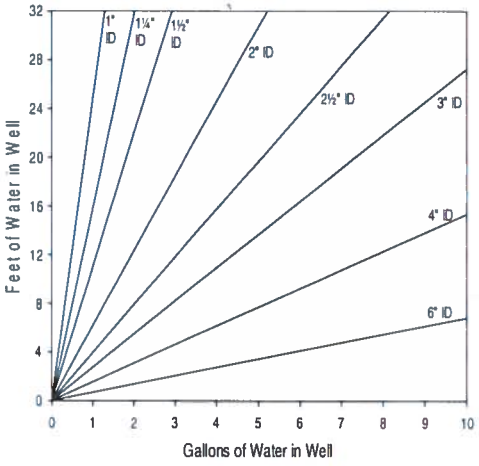
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE123D3-GW-092217	40-mL vials	3	HCl	VOCs	1350
	1-L amber	2	none	1,4-Dioxane	

Comments: pump flow rate was very low, pulled the pump twice to check the bladder and ball valves
pH meter is reading negative

Signature: Paul Krumholz Date: 9/22/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE 12303

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1250		18.18	0.030	0.51	-3.41	374.1	21.7	600	51.48	
1255	5gal	18.12	0.033	0.37	-3.56	384.7	28.1			
1300		18.12	0.033	0.39	-3.43	381.2	28.9		51.49	
1305		17.89	0.032	0.25	-3.49	384.0	28.5			
1310		17.99	0.031	0.21	-3.56	384.4	30.7			
1315		18.00	0.030	0.20	-3.49	379.5	31.0	600	51.49	
1320	10gal	17.82	0.030	0.18	-3.53	380.5	30.2			
1325		17.78	0.029	0.20	-3.51	371.7	28.6			
1330		17.73	0.029	0.18	-3.46	366.4	28.5		51.49	
1335		17.84	0.028	0.17	-3.38	356.8	29.5			
1340	13gal	17.72	0.028	0.18	-3.29	354.1	27.0			
1345		17.99	0.027	0.16	-3.24	349.2	26.8			
										Sample
1350								250		Sample

RESOLUTION CONSULTANTS

Well ID: RE11701

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9 / 25 / 17 Time: Start 830 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Susan Ct
Weather Conds: Sunny 70F Collector(s): Paul Kaveth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 575 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 26.89 ft d. Calculated System Volume (see back) 16.3 gal. 25 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11C100917
	LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
850	pH							650		
855		17.19	0.020	4.34	5.40	7.9			26.85	
900		17.21	0.019	3.04	5.19	0.2				
905		17.14	0.017	3.38	4.93	-2.1		650	26.82	
910		16.98	0.017	3.58	4.90	-1.9				
915	3gal	16.90	0.017	3.72	4.89	-1.6			26.81	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

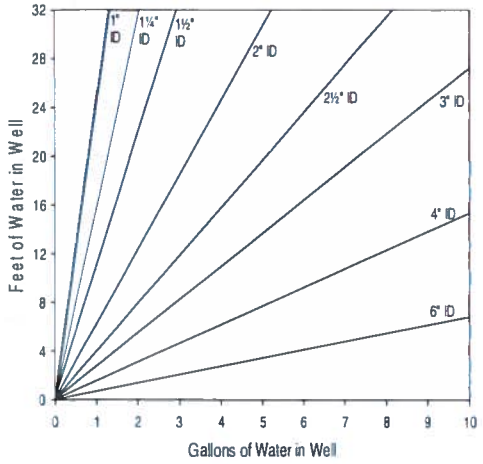
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE11701-GW-092517	40-mL vials	3	HCl	VOCs	1035
	1-L amber	2	none	1,4-Dioxane	
	250 ml plastic	1	none	Bromide	

Comments

Signature Paul Kaveth Date 9/25/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE11701

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
920		16.92	0.017	3.71	4.87	-6.7	17.0		26.80	
925		16.79	0.017	3.67	4.88	-10.9	18.9			
930		16.81	0.017	3.64	4.92	-10.4	15.4			
935		16.84	0.017	3.62	4.88	-13.9				
940	10 gal	16.88	0.017	3.60	4.88	-14.5	16.5		26.75	
945		16.83	0.017	3.58	4.88	-15.7	~~11.8~~			
950		16.92	0.017	3.55	~~4.88~~	-16.5	11.8	650		
955		16.92	0.017	3.53	4.88	-17.5	14.3		26.73	
1000		16.99	0.017	3.54	4.87	-17.7	14.0			
1005		17.04	0.017	3.45	4.83	-17.6	11.9		26.72	
1010		17.02	0.017	3.54	4.82	-16.7	11.1			
1015	15 gal	16.99	0.017	3.53	4.84	-17.3	11.8			
1020		17.07	0.017	3.50	4.86	-18.3	11.7	650	26.71	
1025	18.0	17.05	0.017	3.52	4.84	-17.6	11.9			
1035								260		sample

Well ID: RE17D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage
Date: 9/25/17
Time: Start 0815 am/pm
Finish 1030 am/pm
Project No: 60266526
Site Location: Susan Ct
Weather Conds: Sunny 70°
Collector(s): S. WRIGHT

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 76.0 ft
b. Water Table Depth 25.54 ft
c. Length of Water Column _____ ft (a-b)
d. Calculated System Volume (see back) 16.3 gal.
Casing Diameter/Material 4-inch PVC
25 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)
- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	11F100176
LaMotte	2020	845525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0845	–	21.85	0.030	7.12	7.13	130.7	–	600	25.70	CLEAR/NONE
0850		18.08	0.022	1.60	5.15	267.5	6.69	600	25.70	CLEAR/NONE
0855		17.82	0.022	1.03	5.00	275.1	–	600	25.70	CLEAR/NONE
0900		17.92	0.023	0.90	4.76	298.3	–	600	27.70	CLEAR/NONE
0905		17.87	0.023	0.82	4.60	314.9	5.86	600	27.70	CLEAR/NONE
0910		17.86	0.023	0.75	4.53	316.1	–	600	27.70	CLEAR/NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION:

Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE17D2-GW-092517	40-mL vials	3	HCl	VOCs	1030
RE17D2-GW-092517	1-L amber	2	none	1,4-Dioxane	1030
	250 ml plastic	1	none	Bromide	1030

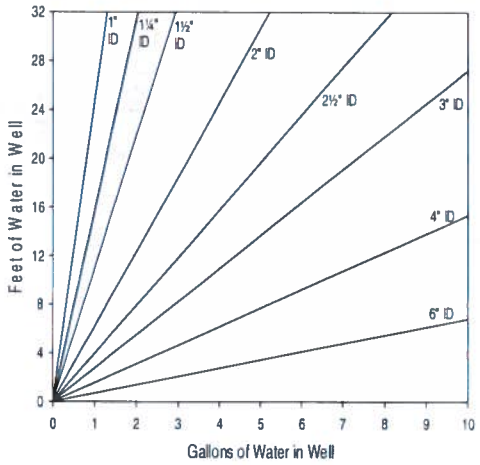
Comments

Signature

Date 9-25-17

RE17D2

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE17D2

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0915	5	17.74	0.022	0.68	4.50	284.9	—	600	25.70	CLEAR/NONE
0920		17.77	0.023	0.59	4.47	271.5	8.28	600	25.70	CLEAR/NONE
0925		17.78	0.023	0.55	4.46	264.8	—	600	25.70	CLEAR/NONE
0930		17.73	0.023	0.52	4.44	264.1	—	600	25.70	CLEAR/NONE
0935		17.87	0.023	0.49	4.46	262.8	4.09	600	25.70	CLEAR/NONE
0940		17.94	0.023	0.45	4.54	255.2	—	600	25.70	CLEAR/NONE
0945	10	18.02	0.023	0.43	4.62	246.6	—	600	25.70	CLEAR/NONE
0950		18.00	0.023	0.40	4.73	236.7	3.89	600	25.70	CLEAR/NONE
0955		17.91	0.023	0.38	4.81	231.4	—	600	25.70	CLEAR/NONE
1000		18.13	0.023	0.37	4.84	228.4	—	600	25.70	CLEAR/NONE
1005		18.13	0.023	0.35	4.89	224.5	5.04	600	25.70	CLEAR/NONE
1010		18.07	0.023	0.33	4.94	222.5	—	600	25.70	CLEAR/NONE
1015	15	18.22	0.023	0.32	4.97	219.8	—	600	25.70	CLEAR/NONE
1020		18.25	0.023	0.30	5.03	217.8	4.88	600	25.70	CLEAR/NONE
1025		18.30	0.023	0.29	5.07	215.4	—	600	25.70	CLEAR/NONE
1030								250		sample

Well ID: BPOW5/4

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/25/17 Time: Start 0830 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Hudson Ct
Weather Conds: Sunny 70° Collector(s): _____

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 810 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 26.97 ft d. Calculated System Volume (see back) 16.3 gal. 25 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556 MPS	14J101213
	YSI	556 FieldCable	U86888X
	QED	MP10	U84801X

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0830	Start GW Purge									
0850	-	15.02	0.148	0.31	-1.18	350.0	-	800	26.96	clear
0855	5 Gal	15.00	0.147	0.24	-1.17	348.5	0.91	800	26.94	clear
0900	-	15.00	0.148	0.19	-1.01	341.6	-	800	26.92	clear
0905	-	15.01	0.148	0.14	-0.98	336.0	0.98	800	26.90	clear
0910	-	14.99	0.148	0.13	-0.95	333.8	-	800	26.89	clear

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

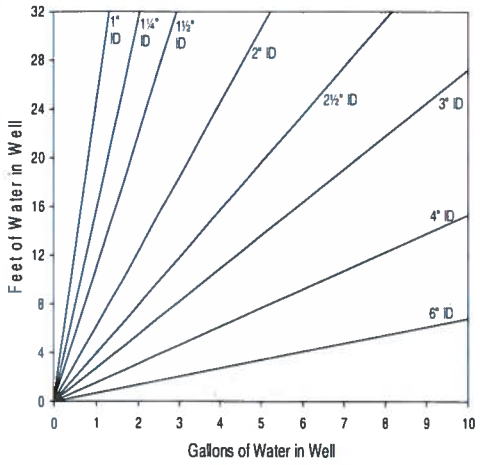
*Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
*Dup BPOW54-GW-092517	40-mL vials	3	HCl	VOCs	0945
BPOW5-4-GW-092517	1-L amber	2	none	1,4-Dioxane	0945
BPOW5-4-GW-092517	125mL Plastic	1	none	Bromide	0945

Comments When collecting samples, flow rate was reduced to 200 ml/min

* Dup Was collected here, Bromide, 1,4 Dioxane, VOC

Signature _____ Date 9/25/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: BPOW 5/4

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0915	10 Gal	15.00	0.148	0.13	0.77	318.9	–	800	26.84	clear
0920	–	14.99	0.148	0.14	0.75	318.8	–	800	26.85	clear
0925	–	15.02	0.147	0.10	0.58	306.5	0.98	800	26.84	clear
0930	15 Gal	15.10	0.147	0.13	0.09	268.5	0.92	800	26.82	clear
0935		15.00	0.147	0.11	0.18	262.5	0.89	800	26.81	clear
0940	16.5	15.99	0.147	0.10	0.23	258.6	0.90	800	26.80	clear
0945	Gal	Sample Time						200		
0950										
0955										
1000										

Well ID: RE12501

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage
Project No: 60266526
Site Location: Diana
Weather Conds: Sunny 85°
Date: 9 / 25 / 17
Time: Start 1240 am/pm
Finish 1445 am/pm
Collector(s): S. WRIGHT

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 345 ft
b. Water Table Depth 36.90 ft
c. Length of Water Column _____ ft (a-b)
d. Calculated System Volume (see back) 13.1 gal.
Casing Diameter/Material: 4-inch PVC
20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	11010091 7
LaMotte	2020	84523

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1320	—	22.64	0.090	6.67	4.33	-94.1	—	500	36.99	CLEAR/NONE
1325		20.41	0.100	5.61	4.72	-128.3	—	500	36.99	CLEAR/NONE
1330		16.90	0.107	3.47	4.96	-157.7	3.66	500	36.99	CLEAR/NONE
1335		16.87	0.107	3.21	4.97	-176.1	—	600	36.99	CLEAR/NONE
1340		16.85	0.108	2.26	5.00	-95.3	—	600	36.99	CLEAR/NONE
1345		16.75	0.107	2.25	5.01	-99.5	2.61	600	37.00	CLEAR/NONE

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION:

Method: Geotech bladder pump with drop tube assembly

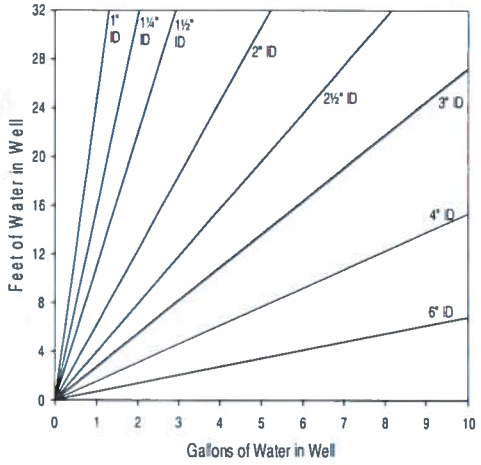
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE12501-GW-092517	40-mL vials	3	HCl	VOCs	1445
RE12501-GW-092517	1-L amber	2	none	1,4-Dioxane	1445

Comments: MS/MSD COLLECTED

Signature _____ Date 9-25-17

RE12501

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE12501

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1350	5	16.68	0.106	2.09	5.00	-97.8	—	600	37.00	CLEAR/NONE
1355		16.61	0.106	2.08	4.88	-88.6	—	600	37.00	CLEAR/NONE
1400		16.50	0.106	1.99	5.00	-86.5	2.85	600	37.00	CLEAR/NONE
1405		16.50	0.106	2.00	4.86	-44.3	—	600	37.00	CLEAR/NONE
1410		16.44	0.105	1.80	4.83	-67.7	—	600	37.00	CLEAR/NONE
1415		16.39	0.105	1.77	4.82	-70.1	4.15	600	37.01	CLEAR/NONE
1420	10	16.37	0.105	1.70	4.84	-71.9	—	600	37.01	CLEAR/NONE
1425		16.30	0.105	1.74	4.87	-75.0	—	600	37.01	CLEAR/NONE
1430		16.34	0.105	1.68	4.85	-77.8	4.35	600	37.01	CLEAR/NONE
1435		16.31	0.105	1.64	4.82	-80.3	—	600	37.01	CLEAR/NONE
1440		16.29	0.105	1.61	4.79	-78.3	—	600	37.01	CLEAR/NONE
1445	13.5	16.27	0.105	1.59	4.80	-77.3	4.24	600	37.01	CLEAR/NONE
1445								2000		Sample

Well ID: RE125D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9 / 25 / 17 Time: Start 1210 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Dime Ck
Weather Conds: Sunny 85° Collector(s): _____

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 605 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 39.75 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	11E100176
	LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1335	OH									
1340		17.10	0.074	11.31	6.33	185.2	~~795~~	720	39.68	
1345		16.92	0.072	5.20	6.31	176.2				
1350										
1355		16.64	0.062	2.92	5.11	249.1	2.80	700	39.69	
1400	5 gal	16.68	0.063	2.93	5.09	250.6	—	700	39.69	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

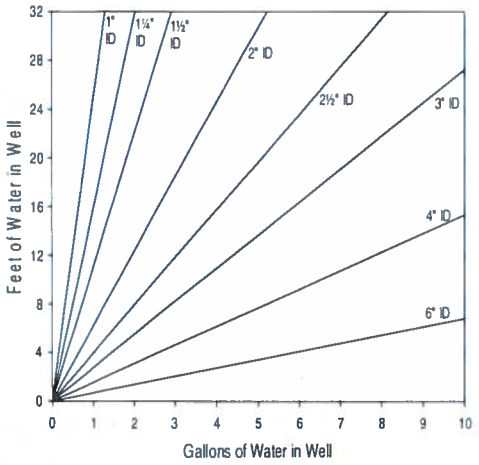
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE125D2-GW-092517	40-mL vials	3	HCl	VOCs	1500
	1-L amber	2	none	1,4-Dioxane	

Comments _____

Signature Paul Kaetzke Date 9/25/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE 12502

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
14.05		16.52	0.063	2.87	5.05	254.0	4.22	700	39.69	
1410		16.42	0.063	2.86	5.07	253.1	7.16			
1415		16.33	0.063	2.82	5.13	246.4			39.61	
1420		16.32	0.062	2.79	5.19	240.7	9.08			
1425	11.5	16.31	0.063	2.77	5.27	233.0	8.60			
1430		16.25	0.062	2.71	5.36	224.0	8.61		39.61	
1435		16.28	0.062	2.75	5.40	220.9				
1440		16.24	0.061	2.76	5.43	218.8	8.48			
1445	13.5	16.17	0.062	2.86	5.48	215.6	8.08	700	39.61	
1450	15.5	16.20	0.061	2.88	5.49	214.8	7.90			
1500								250		Sample

Well ID: RE12503

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/25/17 Time: Start 1330 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Diane Ct
Weather Conds: Sunny 85° Collector(s): F. Bell, P. Harrah

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 695 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 39.97 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556 MPS	14J101213
YSI	556 Field Cable	U868888X
QED	MP10	U554406X

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1330	Start purge									
1345	-	19.09	0.042	6.38	1.62	368.9	-	650	39.91	clear
1350	-	19.10	0.040	6.40	0.96	498.6	-	650	39.91	clear
1355	-	19.14	0.039	6.45	-1.32	567.2	-	650	39.90	Clear
1400	5 Gal	19.16	0.037	6.47	-3.88	621.8	8.22	650	39.89	Clear
1405	-	19.11	0.037	6.82	-3.88	621.5	-	650	39.89	Clear

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION:

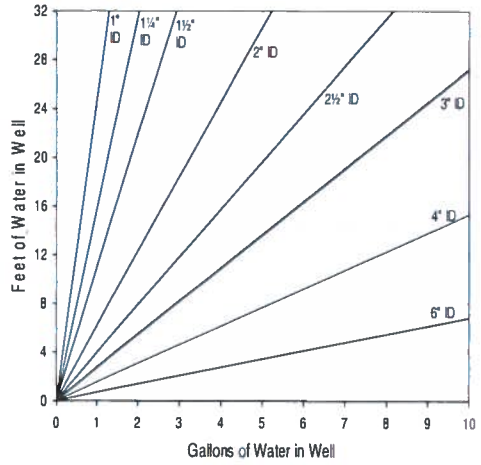
Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE12503-GW-092517	40-mL vials	3	HCl	VOCs	1505
RE12503-GW-092517	1-L amber	2	none	1,4-Dioxane	1505

Comments _____

Signature _____ Date 9/25/2017

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE12503

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1410	—	18.98	0.036	6.71	3.91	622.1	—	650	39.91	Clear
1415	—	18.63	0.036	6.69	3.99	630.9	—	650	39.89	Clear
1420	—	18.24	0.036	6.62	4.02	638.0	—	650	39.83	Clear
1425	—	18.14	0.036	6.59	3.99	638.7	—	650	39.85	Clear
1430	10 Gal	18.03	0.036	6.56	3.96	639.2	10.21	650	39.83	Clear
1435	—	18.06	0.036	6.44	3.93	641.4	11.02	650	39.82	Clear
1440	—	18.14	0.037	6.44	3.67	633.7	12.01	650	39.83	Clear
1445	-	17.99	0.036	6.39	3.54	628.7	11.99	650	39.82	Clear
1450	13.5 Gal	17.89	0.036	6.37	3.44	628.1	11.01	650	39.82	Clear
1505	Sample Time							200		

Well ID: ~~AHW~~ RE103D1

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/26/17 Time: Start 845 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Avoca
Weather Conds: fog, 70° Collector(s): Paul Kaucth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 645 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 44.41 ft d. Calculated System Volume (see back) 9.8 gal. 15 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	11C100917
LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
910	ON							650		
920		16.47	0.075	5.62	7.01	-159.1				
925		16.26	0.075	3.15	6.35	8.3		650	44.42	
930		16.13	0.075	2.93	6.12	-19.2				
935		16.14	0.075	3.62	5.82	-12.4	0.74		44.42	
940	5gal	16.12	0.076	3.63	5.74	-28.8				

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

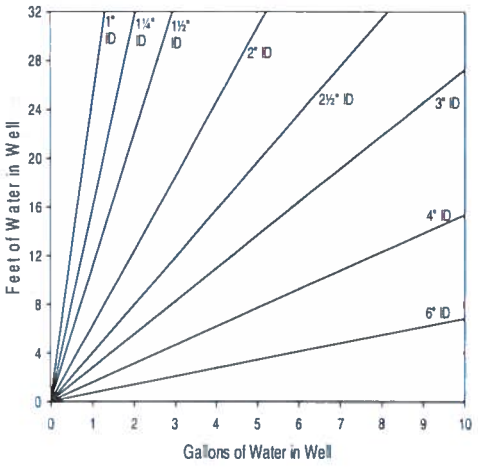
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE103D1-GW-092617	40-mL vials	3	HCl	VOCs	1020
	1-L amber	2	none	1,4-Dioxane	

Comments

Signature Paul Kaucth Date 9/26/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE103D1

(continued from front) Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
945		16.12	0.076	3.63	5.74	-35.4	0.64	650	44.41	
950		16.13	0.076	3.64	5.73	-33.5				
955		16.10	0.076	3.69	5.72	-37.2	0.47			
1000	8gal	16.33	0.076	3.68	5.74	-44.2			44.39	
1005		16.27	0.077	3.80	5.75	-63.5	0.32			
1010	10gal	16.27	0.077	3.91	5.72	-55.1				
1015	11gal	16.33	0.077	3.92	5.71	-56.2			44.39	
1020							~~200~~	200		Sample

Well ID: RE103D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/26/17 Time: Start 0950 am/pm
Project No: 60266526 Finish ___ am/pm
Site Location: Avoca
Weather Conds: Cloudy, 70°, fog Collector(s): T. Bell, P. Karesh

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 67.3 ft c. Length of Water Column ___ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 44.23 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556 MPS	14J101213
YSI	556 Field Cable	U86888X
QED	MP10	U645509

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0910	Start purge							000		
0920	—	15.93	0.028	10.22	-0.94	528.6	0.90	600	44.27	clear
0925	—	15.91	0.028	7.64	-1.26	623.9	—	600	44.25	clear
0930	—	15.85	0.027	6.92	-2.41	694.7	—	600	44.23	clear
0935	—	15.83	0.027	6.40	-3.57	709.3	—	600	44.22	clear
0940	5 Gal	15.86	0.026	6.62	-3.40	695.5	0.89	600	—	clear

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

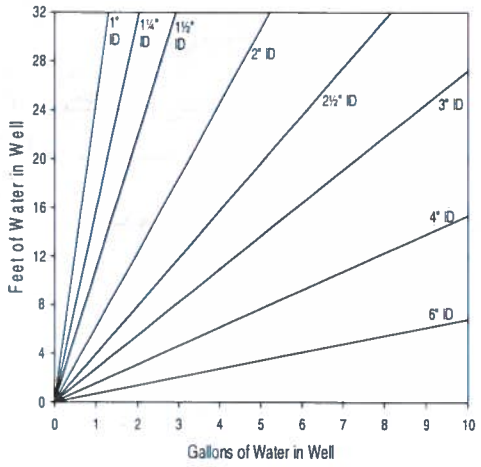
3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE103D2-(GW)-092617	40-mL vials	3	HCl	VOCs	10:30
RE103D2-(GW)-092617	1-L amber	2	none	1,4-Dioxane	10:30

Comments: During sample collection flowrate was 200 mL/min

Signature: T. Bell Date: 9/26/17

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RC103DL

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0945	–	15.84	0.026	6.60	-3.42	696.2	–	600	–	clear
0950	–	15.84	0.026	6.55	-3.45	697.1	–	600	44.20	clear
0955	–	15.80	0.026	6.54	-3.37	699.3	–	600	44.18	clear
1000	–	15.79	0.025	6.56	-3.72	686.7	–	600	44.16	clear
1005	10 Gal	15.74	0.025	6.57	-3.36	694.2	0.52	600	44.16	clear
1010	–	15.75	0.025	6.59	-3.47	700.9	–	600	44.15	clear
1015	–	15.77	0.025	6.99	-2.96	674.1	0.62	600	44.14	clear
1020	–	15.76	0.025	6.92	-2.95	674.5	0.54	600	44.14	clear
1025	13.5	15.76	0.025	6.00	-2.90	669.2	0.59	600	44.13	clear
1030	Duplicate Time							200		

RESOLUTION CONSULTANTS

Well ID: RE103D3

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 9/26/17 Time: Start 0845 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Avoca
Weather Conds: fog 70° Collector(s): S. WRIGHT

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 735 ft c. Length of Water Column _____ ft (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 44.55 ft d. Calculated System Volume (see back) 9.8 gal. 15 screen length (ft)

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	11F100176
LaMotte	2020	84525

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0910	–	18.92	0.028	12.59	8.80	76.5	–	300	44.59	CLEAR/NONE
0915		17.46	0.026	8.81	6.08	159.4	–	400	44.62	CLEAR/NONE
0920		17.23	0.031	7.39	5.90	184.4	1.41	400	44.62	CLEAR/NONE
0925		17.13	0.030	5.98	5.82	200.1	–	400	44.62	CLEAR/NONE
0930		17.14	0.030	5.38	5.79	204.7	–	400	44.62	CLEAR/NONE
0935		16.91	0.030	4.18	5.75	211.6	1.43	500	44.63	CLEAR/NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

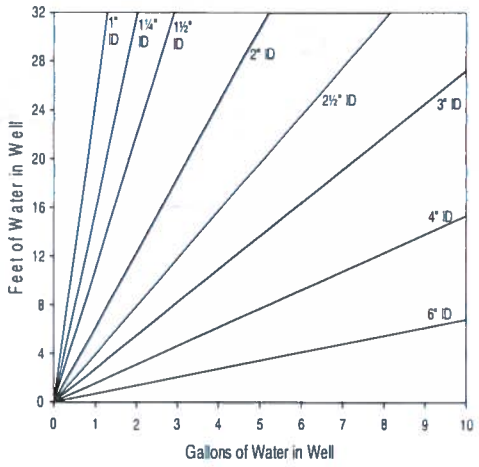
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE103D3-GW-092617	40-mL vials	3	HCl	VOCs	1040
RE103D3-GW-092617	1-L amber	2	none	1,4-Dioxane	1040

Comments

Signature _____ Date 9-26-17

RE10303

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G
20 ft = 49.4 L / 13.1 G
25 ft = 61.8 L / 16.3 G
30 ft = 74.3 L / 19.6 G
40 ft = 99.2 L / 26.1 G
50 ft = 123.6 L / 32.6 G

Well ID: RE10303

(continued from front)

Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0940		16.90	0.030	4.02	5.72	214.1	—	500	44.64	CLEAR/NONE
0945		16.95	0.030	3.07	5.70	218.7	—	500	44.65	CLEAR/NONE
0950	5	16.94	0.030	3.19	5.69	219.7	1.44	500	44.65	CLEAR/NONE
0955		16.97	0.030	2.91	5.68	221.7	—	500	44.66	CLEAR/NONE
1000		17.03	0.030	2.84	5.64	223.2	—	500	44.66	CLEAR/NONE
1005		17.10	0.030	2.74	5.64	223.1	1.38	500	44.66	CLEAR/NONE
1010		17.18	0.030	2.70	5.62	223.3	—	500	44.66	CLEAR/NONE
1015		17.26	0.030	2.67	5.62	222.6	—	500	44.66	CLEAR/NONE
1020		17.30	0.030	2.63	5.61	222.1	1.36	500	44.67	CLEAR/NONE
1025		17.25	0.030	2.62	5.60	221.5	—	500	44.67	CLEAR/NONE
1030	10	17.23	0.030	2.63	5.60	222.2	—	500	44.67	CLEAR/NONE
1040								200		Sample

Appendix B

Analytical Data Validation – Resolution Consultants

DATA VALIDATION REPORT

Project:	Regional Groundwater Investigation — Naval Weapons Industrial Reserve Plant Bethpage	
Laboratory:	Katahdin Analytical	
Sample Delivery Groups:	SK8493, SK8591, and SK8743	
Analyses/Method:	Bromide by United States Environmental Protection Agency Method 300.0, Volatile Organic Compounds by United States Environmental Protection Agency SW-846 Method 8260C, and 1,4-Dioxane by United States Environmental Protection Agency SW-846 Method 8270D via Selective Ion Monitoring	
Validation Level:	Stage 3 Validation Electronic and Manual	
Project Number:	0888812477.SA.DV	
Prepared by:	Dana Miller/Resolution Consultants	Completed on: 01/04/2018
Reviewed by:	Tina Cantwell/Resolution Consultants	File Name: SK8493_SK8591_SK8743_300.0_8260C_8270D

SUMMARY

This report summarizes data review findings for samples listed below, collected by Resolution Consultants from the Regional Groundwater Investigation — Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage Site on 18 to 26 September 2017 in accordance with the following Sampling and Analysis Plans:

- *Sampling and Analysis Plan, Bethpage, New York.* (Resolution Consultants April 2013).
- *UFP SAP Addendum, Installation of Vertical Profile Borings and Monitoring Wells, Operable Unit 2, NWIRP Bethpage, New York.* (Resolution Consultants November 2013).
- *UFP SAP Addendum, Inclusion of Additional Target Analytes for Volatile Organics Analyses, NWIRP Bethpage OU2, Bethpage, New York*. (Resolution Consultants August 2014).

Sample Identification	Matrix/Sample Type	Analysis
FB01-WQ-091817	Field blank	8260C/8270D_SIM
TB01-WQ-091817	Trip blank	8260C
RE104D1-GW-091917	Groundwater	8260C/8270D_SIM
RE104D2-GW-091917	Groundwater	8260C/8270D_SIM
RE104D3-GW-091917	Groundwater	8260C/8270D_SIM
RE105D1-GW-091817	Groundwater	8260C/8270D_SIM
RE105D2-GW-091817	Groundwater	8260C/8270D_SIM
RE108D1-GW-091817	Groundwater	8260C/8270D_SIM

Sample Identification	Matrix/Sample Type	Analysis
DUP01-GW-091817	Duplicate of RE108D2-GW-091817	8260C/8270D_SIM
RE108D2-GW-091817	Groundwater	8260C/8270D_SIM
TT101D-GW-091917	Groundwater	8260C/8270D_SIM
TT101D1-GW-091917	Groundwater	8260C/8270D_SIM
TT101D2-GW-091917	Groundwater	8260C/8270D_SIM
RE109D1-GW-092117	Groundwater	8260C/8270D_SIM
RE109D2-GW-092117	Groundwater	8260C/8270D_SIM
RE109D3-GW-092117	Groundwater	8260C/8270D_SIM
RE120D1-GW-092017	Groundwater	300.0/8260C/8270D_SIM
RE120D2-GW-092017	Groundwater	300.0/8260C/8270D_SIM
RE120D3-GW-092017	Groundwater	300.0/8260C/8270D_SIM
RE122D1-GW-092117	Groundwater	8260C/8270D_SIM
RE122D2-GW-092117	Groundwater	8260C/8270D_SIM
RE122D3-GW-092117	Groundwater	8260C/8270D_SIM
RE131D1-GW-092017	Groundwater	8260C/8270D_SIM
RE131D2-GW-092017	Groundwater	8260C/8270D_SIM
RE131D3-GW-092017	Groundwater	8260C/8270D_SIM
TB02-WQ-092117	Trip blank	8260C
FB02-WQ-092517	Field blank	8260C/8270D_SIM
TB03-WQ-092217	Trip blank	8260C
BPOW5-4-GW-092517	Groundwater	300.0/8260C/8270D_SIM
DUP02-GW-092517	Duplicate of BPOW5-4-GW-092517	300.0/8260C/8270D_SIM
RE103D1-GW-092617	Groundwater	8260C/8270D_SIM
RE103D2-GW-092617	Groundwater	8260C/8270D_SIM
RE103D3-GW-092617	Groundwater	8260C/8270D_SIM
RE117D1-GW-092517	Groundwater	300.0/8260C/8270D_SIM
RE117D2-GW-092517	Groundwater	300.0/8260C/8270D_SIM
RE123D1-GW-092217	Groundwater	8260C/8270D_SIM
RE123D2-GW-092217	Groundwater	8260C/8270D_SIM
RE123D3-GW-092217	Groundwater	8260C/8270D_SIM
RE125D1-GW-092517	Groundwater	8260C/8270D_SIM
RE125D2-GW-092517	Groundwater	8260C/8270D_SIM
RE125D3-GW-092517	Groundwater	8260C/8270D_SIM
RE126D1-GW-092217	Groundwater	8260C/8270D_SIM
RE126D2-GW-092217	Groundwater	8260C/8270D_SIM
RE126D3-GW-092217	Groundwater	8260C/8270D_SIM

Note:
SIM = Selective Ion Monitoring

Data validation activities were conducted using the following guidance documents: *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846, specifically Method 8260C, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (United States Environmental Protection Agency [U.S. EPA] 2006), *SW-846 Method 8270D, Semi volatile Organic Compounds by Gas Chromatograph/Mass Spectrometry* (U.S. EPA 2007), *National Functional Guidelines for Superfund Organic Methods Data Review* (U.S. EPA January 2017), *National Functional Guidelines for Inorganic Superfund Methods Data Review* (U.S. EPA January 2017), *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (U.S. EPA January 2009), and *Department of Defense Quality Systems Manual for Environmental Laboratories*, Version 4.2 (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 parameters (where applicable to the method):

✓	Data completeness (chain-of-custody)/sample integrity
✓	Holding times and sample preservation
✓	Gas chromatography/Mass spectrometer performance checks
✗	Initial calibration (ICAL)/initial calibration verification (ICV)/continuing calibration verification (CCV)
✓	Laboratory blanks/field blanks/trip blanks
✗	Surrogate spike recovery
✓	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✗	Laboratory control sample (LCS) /laboratory control sample duplicate results(LCSD)
✗	Field duplicates
✓	Internal standards
✓	Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. Acceptable data parameters for which all criteria were met, no qualification was performed, and/or non-conformance or other issues that were noted during validation, but did not result in qualification of data are not discussed further. The symbol (✗) indicates that a QC non-conformance resulted in the qualification of data. Any QC non-conformance that resulted in the qualification of data is discussed below.

RESULTS

Initial Calibration/Initial Calibration Verification/Continuing Calibration Verification

The ICAL is evaluated to ensure that the instrument was capable of producing acceptable qualitative and quantitative data prior to the analysis of samples. The ICV is evaluated to assess the accuracy of ICAL standards. The CCV is evaluated to determine whether the instrument was within acceptable calibration throughout the period in which the samples were analyzed. Failure of the CCV indicates that the ICAL is no longer valid and should trigger recalibration and reanalysis of the associated samples in the analytical sequence. Data qualification to the analytes associated with the specific ICAL was as follows:

Initial Calibration Linearity Non-Conformance:

Criteria	Actions	
	Detected Results	**Non-Detected Results**
RSD >15% and quantitation based on mean response factor	J	UJ

Notes:
RSD = Relative standard deviation
J = Estimated
UJ = Undetected and estimated

Data qualification to the analytes associated with the specific ICV was as follows:

Initial Calibration Verification Recovery Non-Conformance:

Criteria	Actions	
	Detected Results	**Non-Detected Results**
Recovery >120%	J	UJ
Recovery < 80%	J	UJ

Notes:
J = Estimated value
UJ = Undetected and estimated

Data qualification to the analytes associated with the specific CCV was as follows:

Continuing Calibration Verification Linearity Non-Conformance:

Criteria	Actions	
	Detected Results	**Non-Detected Results**
%Difference or %Drift > 20%	J	UJ

Notes:
J = Estimated value
UJ = Undetected and estimated

ICAL, ICV, and CCV non-conformances are summarized in Attachment A in Table's A-1, A-2, and A-3.

Surrogate Spike Recovery

Surrogates provide information needed to assess the accuracy of analyses. Known amounts of surrogate compounds, which are not likely to be found in the actual samples, are added to each organic sample to check for accuracy. If surrogate percent recoveries (%Rs) are close to the known concentrations, the reported target compound concentrations are assumed to be accurate. Data qualification on the basis of surrogate recovery was as follows:

Surrogate Spike Recovery Non-Conformance Chart:

Criteria	Action	
	Detected	**Non-Detected**
Lower Limit ≤ %R or RPD ≤ Upper Limit	No qualification	No qualification
% R > Upper Limit	J	No qualification
20% <%R < Lower Limit	J	UJ
% R < 20%	J	Rejected

Notes:

%R = Percent recovery
RPD = Relative percent difference
J = Estimated value
UJ = Undetected and estimated

Surrogate spike recovery non-conformance is summarized in Attachment A in Table A-4.

Laboratory Control Sample / Laboratory Control Sample Duplicate

LCS %Rs is used to monitor the overall accuracy and performance of each step during analysis, including sample preparation. The laboratory analyzed LCSs in duplicate when matrix spike/matrix spike duplicates were not reported. In these instances, the laboratory determined precision between the duplicated values. Data qualification to the analytes associated with the specific LCS/LCS duplicate was as follows:

Laboratory Control Sample / Laboratory Control Sample Duplicate Non-conformance Chart:

Criteria	Action	
	Detected	**Non-detected**
% R or RPD > UL	J	No qualification
%R < LL	J	UJ
%R < 20%	J	Rejected

Notes:

%R	=	Percent recovery	RPD	=	Relative percent difference
UL	=	Upper limit	LL	=	Lower limit
J	=	Estimated	UJ	=	Undetected and estimated

LCS/LCSD %R non-conformances are summarized in Attachment A in Table A-5.

Field Duplicate

Two field duplicate pairs were collected to assess precision: RE108D2-GW-091817/ DUP01-GW-091817 and BPOW5-4-GW-092517/ DUP02-GW-092517. Field duplicate RPDs were reviewed for conformance with the Resolution Consultants QC criteria of $\leq$30% for aqueous matrices. These criteria apply if both results were greater than two times the limit of quantitation (LOQ). Data qualification to the analytes associated with the specific field duplicate RPDs was as follows:

Field Duplicate Non-conformances Chart:

Criteria	RPD	Action	
		Detected	Non-detected
Sample and duplicate are not detected	NC	No qualification	No qualification
Sample and duplicate results $\geq$2x LOQ	>30 (aqueous)	J	Not Applicable
If sample or duplicate result is >2x LOQ and the other is not detected	NC	J	UJ
If sample or duplicate result is <2x LOQ and the other is not detected	NC	No qualification	No qualification

Notes:

NC	=	Not calculable	J	=	Estimated value
LOQ	=	Limit of quantitation	UJ	=	Undetected and estimated

The field duplicate non-conformance is summarized in Attachment A in Table A-6.

Qualification Actions

The data were reviewed independently from the laboratory to assess data quality. All compounds detected at concentrations less than the limit of quantitation but greater than the method detection limit were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation. Any sample that was analyzed at a dilution because of high concentrations of target or non-target analytes was checked to confirm that the results and/or sample-specific limit of quantitation and limit of detections were adjusted accordingly by the laboratory.

No results were rejected; therefore, analytical completeness was calculated to be 100 percent. Data not qualified during data review are considered usable by the project. The remaining results

qualified as estimated may be high or low, but the data are usable for their intended purpose, according to U.S. EPA and Department of Defense guidelines. Attachment B provides a summary of all qualified results during this data review.

ATTACHMENTS

Attachment A: Non-Conformance Summary Tables
Attachment B: Qualified Results Summary during Data Review

Attachment A
Non-Conformance Summary Table

Table A-1 Initial Calibration Non-Conformance								
SDG	**Method**	**Analyte**	**Instrument ID/ Calibration Date**	**RSD**	**RSD Limit**	**Associated Sample**	**Lab ID**	**Qualifiers**
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	TB01-WQ-091817	SK8493-1	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	RE105D1-GW-091817	SK8493-2	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	RE108D1-GW-091817	SK8493-4	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	FB01-WQ-091817	SK8493-7	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	TT101D1-GW-091917	SK8493-9	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	RE104D1-GW-091917	SK8493-11	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	RE104D3-GW-091917	SK8493-13	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	RE108D2-GW-091817	SK8493-5DL	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	DUP01-GW-091817	SK8493-6	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	TT101D2-GW-091917	SK8493-10	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	RE108D2-GW-091817	SK8493-5DL2	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	DUP01-GW-091817	SK8493-6DL	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	TT101D-GW-091917	SK8493-8RA	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	TT101D2-GW-091917	SK8493-10DL	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	RE105D2-GW-091817	SK8493-3DL2	Detects: J Non-detects: UJ
SK8493	8260C	1,1-Dichloroethene	GCMS-S 14-SEP-17	15.19261	15	TT101D1-GW-091917	SK8493-9DL	Detects: J Non-detects: UJ
SK8493	8260C	Dibromochloromethane	GCMS-S 26-SEP-17	15.43788	15	RE104D2-GW-091917	SK8493-12RA	Detects: J Non-detects: UJ
SK8493	8260C	Dibromochloromethane	GCMS-S 26-SEP-17	15.43788	15	RE105D2-GW-091817	SK8493-3DLRA	Detects: J Non-detects: UJ
SK8493	8260C	1,2-Dibromo-3-Chloropropane	GCMS-S 26-SEP-17	15.11828	15	RE104D2-GW-091917	SK8493-12RA	Detects: J Non-detects: UJ

Table A-1 Initial Calibration Non-Conformance								
SDG	**Method**	**Analyte**	**Instrument ID/ Calibration Date**	**RSD**	**RSD Limit**	**Associated Sample**	**Lab ID**	**Qualifiers**
SK8493	8260C	1,2-Dibromo-3-Chloropropane	GCMS-S 26-SEP-17	15.11828	15	RE105D2-GW-091817	SK8493-3DLRA	Detects: J Non-detects: UJ
SK8591	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE109D1-GW-092117	SK8591-8	Detects: J Non-detects: UJ
SK8591	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE109D2-GW-092117	SK8591-9	Detects: J Non-detects: UJ
SK8591	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE109D3-GW-092117	SK8591-10	Detects: J Non-detects: UJ
SK8591	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE120D1-GW-092017	SK8591-5	Detects: J Non-detects: UJ
SK8591	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE120D2-GW-092017	SK8591-6	Detects: J Non-detects: UJ
SK8591	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE120D3-GW-092017	SK8591-7	Detects: J Non-detects: UJ
SK8591	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE122D1-GW-092117	SK8591-11RA	Detects: J Non-detects: UJ
SK8591	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE122D2-GW-092117	SK8591-12DL2	Detects: J Non-detects: UJ
SK8591	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE122D3-GW-092117	SK8591-13	Detects: J Non-detects: UJ
SK8591	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE131D1-GW-092017	SK8591-2	Detects: J Non-detects: UJ
SK8591	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE131D2-GW-092017	SK8591-3	Detects: J Non-detects: UJ
SK8591	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE131D3-GW-092017	SK8591-4	Detects: J Non-detects: UJ
SK8591	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	TB02-WQ-092117	SK8591-1	Detects: J Non-detects: UJ
SK8591	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE109D1-GW-092117	SK8591-8	Detects: J Non-detects: UJ
SK8591	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE109D2-GW-092117	SK8591-9	Detects: J Non-detects: UJ
SK8591	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE109D3-GW-092117	SK8591-10	Detects: J Non-detects: UJ
SK8591	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE120D1-GW-092017	SK8591-5	Detects: J Non-detects: UJ
SK8591	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE120D2-GW-092017	SK8591-6	Detects: J Non-detects: UJ

Table A-1 Initial Calibration Non-Conformance								
SDG	**Method**	**Analyte**	**Instrument ID/ Calibration Date**	**RSD**	**RSD Limit**	**Associated Sample**	**Lab ID**	**Qualifiers**
SK8591	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE120D3-GW-092017	SK8591-7	Detects: J Non-detects: UJ
SK8591	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE122D1-GW-092117	SK8591-11RA	Detects: J Non-detects: UJ
SK8591	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE122D2-GW-092117	SK8591-12DL2	Detects: J Non-detects: UJ
SK8591	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE122D3-GW-092117	SK8591-13	Detects: J Non-detects: UJ
SK8591	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE131D1-GW-092017	SK8591-2	Detects: J Non-detects: UJ
SK8591	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE131D2-GW-092017	SK8591-3	Detects: J Non-detects: UJ
SK8591	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE131D3-GW-092017	SK8591-4	Detects: J Non-detects: UJ
SK8591	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	TB02-WQ-092117	SK8591-1	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	TB03-WQ-092617	SK8743-1	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE126D3-GW-092217	SK8743-4	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE123D1-GW-092217	SK8743-5	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE123D2-GW-092217	SK8743-6	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE123D3-GW-092217	SK8743-7	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	BPOW5/4-GW-092517	SK8743-10	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE117D1-GW-092517	SK8743-8	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE126D2-GW-092217	SK8743-3DL	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE125D3-GW-092517	SK8743-14	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	FB02-WQ-092517	SK8743-15	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE103D1-GW-092617	SK8743-16	Detects: J Non-detects: UJ

Table A-1 Initial Calibration Non-Conformance								
SDG	**Method**	**Analyte**	**Instrument ID/ Calibration Date**	**RSD**	**RSD Limit**	**Associated Sample**	**Lab ID**	**Qualifiers**
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE126D1-GW-092217	SK8743-2	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE126D2-GW-092217	SK8743-3	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE117D2-GW-092517	SK8743-9	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE125D1-GW-092517	SK8743-12	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE103D2-GW-092617	SK8743-17	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE103D1-GW-092617	SK8743-16DL	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE103D3-GW-092617	SK8743-18DL	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE125D2-GW-092517	SK8743-13	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE103D3-GW-092617	SK8743-18	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	DUP02-GW-092517	SK8743-11	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE125D1-GW-092517	SK8743-12DL	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE125D2-GW-092517	SK8743-13DL	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE125D3-GW-092517	SK8743-14DL	Detects: J Non-detects: UJ
SK8743	8260C	Carbon Tetrachloride	GCMS-W 26-SEP-17	15.09344	15	RE103D2-GW-092617	SK8743-17DL	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	TB03-WQ-092617	SK8743-1	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE126D3-GW-092217	SK8743-4	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE123D1-GW-092217	SK8743-5	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE123D2-GW-092217	SK8743-6	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE123D3-GW-092217	SK8743-7	Detects: J Non-detects: UJ

Table A-1 Initial Calibration Non-Conformance								
SDG	**Method**	**Analyte**	**Instrument ID/ Calibration Date**	**RSD**	**RSD Limit**	**Associated Sample**	**Lab ID**	**Qualifiers**
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	BPOW5/4-GW-092517	SK8743-10	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE117D1-GW-092517	SK8743-8	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE126D2-GW-092217	SK8743-3DL	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE125D3-GW-092517	SK8743-14	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	FB02-WQ-092517	SK8743-15	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE103D1-GW-092617	SK8743-16	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE126D1-GW-092217	SK8743-2	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE126D2-GW-092217	SK8743-3	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE117D2-GW-092517	SK8743-9	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE125D1-GW-092517	SK8743-12	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE103D2-GW-092617	SK8743-17	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE103D1-GW-092617	SK8743-16DL	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE103D3-GW-092617	SK8743-18DL	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE125D2-GW-092517	SK8743-13	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE103D3-GW-092617	SK8743-18	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	DUP02-GW-092517	SK8743-11	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE125D1-GW-092517	SK8743-12DL	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE125D2-GW-092517	SK8743-13DL	Detects: J Non-detects: UJ
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE125D3-GW-092517	SK8743-14DL	Detects: J Non-detects: UJ

Table A-1 Initial Calibration Non-Conformance								
SDG	**Method**	**Analyte**	**Instrument ID/ Calibration Date**	**RSD**	**RSD Limit**	**Associated Sample**	**Lab ID**	**Qualifiers**
SK8743	8260C	Cyclohexane	GCMS-W 26-SEP-17	15.19885	15	RE103D2-GW-092617	SK8743-17DL	Detects: J Non-detects: UJ

Notes:

SDG = Sample delivery group
RSD = Relative standard deviation
ID = Identification
J = Estimated value; one or more quality control parameters for calibration were outside control limits.
UJ = Undetected and estimated; one or more quality control parameters for calibration were outside control limits.

Table A-2
Initial Calibration Verification Non-Conformance

SDG	Method	Analyte	ICV ID	%R	Limit	Associated Samples	Lab ID	Qualifiers
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	TB01-WQ-091817	SK8493-1	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	RE105D1-GW-091817	SK8493-2	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	RE108D1-GW-091817	SK8493-4	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	FB01-WQ-091817	SK8493-7	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	TT101D1-GW-091917	SK8493-9	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	RE104D1-GW-091917	SK8493-11	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	RE104D3-GW-091917	SK8493-13	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	RE108D2-GW-091817	SK8493-5DL	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	DUP01-GW-091817	SK8493-6	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	TT101D2-GW-091917	SK8493-10	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	RE108D2-GW-091817	SK8493-5DL2	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	DUP01-GW-091817	SK8493-6DL	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	TT101D-GW-091917	SK8493-8RA	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	TT101D2-GW-091917	SK8493-10DL	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	RE105D2-GW-091817	SK8493-3DL2	Detects: J Non-detects: UJ
SK8493	8260C	Dichlorodifluoromethane	WG213357-7	125.31	80-120	TT101D1-GW-091917	SK8493-9DL	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	TB02-WQ-092117	SK8591-1	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE131D1-GW-092017	SK8591-2	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE131D3-GW-092017	SK8591-4	Detects: J Non-detects: UJ

Table A-2
Initial Calibration Verification Non-Conformance

SDG	Method	Analyte	ICV ID	%R	Limit	Associated Samples	Lab ID	Qualifiers
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE120D3-GW-092017	SK8591-7	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE109D1-GW-092117	SK8591-8	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE109D2-GW-092117	SK8591-9	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE109D3-GW-092117	SK8591-10	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE122D3-GW-092117	SK8591-13	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE131D2-GW-092017	SK8591-3DL	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE120D1-GW-092017	SK8591-5DL	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE120D2-GW-092017	SK8591-6DL	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE122D1-GW-092117	SK8591-11DL	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE122D2-GW-092117	SK8591-12DL	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE122D2-GW-092117	SK8591-12DL2	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE131D2-GW-092017	SK8591-3	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE120D1-GW-092017	SK8591-5	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE120D2-GW-092017	SK8591-6	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE131D3-GW-092017	SK8591-4DL	Detects: J Non-detects: UJ
SK8591	8260C	Acetone	W1219.D	179.64	80-120	RE122D1-GW-092117	SK8591-11RA	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	TB02-WQ-092117	SK8591-1	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE131D1-GW-092017	SK8591-2	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE131D3-GW-092017	SK8591-4	Detects: J Non-detects: UJ

Table A-2
Initial Calibration Verification Non-Conformance

SDG	Method	Analyte	ICV ID	%R	Limit	Associated Samples	Lab ID	Qualifiers
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE120D3-GW-092017	SK8591-7	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE109D1-GW-092117	SK8591-8	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE109D2-GW-092117	SK8591-9	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE109D3-GW-092117	SK8591-10	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE122D3-GW-092117	SK8591-13	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE131D2-GW-092017	SK8591-3DL	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE120D1-GW-092017	SK8591-5DL	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE120D2-GW-092017	SK8591-6DL	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE122D1-GW-092117	SK8591-11DL	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE122D2-GW-092117	SK8591-12DL	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE122D2-GW-092117	SK8591-12DL2	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE131D2-GW-092017	SK8591-3	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE120D1-GW-092017	SK8591-5	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE120D2-GW-092017	SK8591-6	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE131D3-GW-092017	SK8591-4DL	Detects: J Non-detects: UJ
SK8591	8260C	2-Butanone	W1219.D	125.59	80-120	RE122D1-GW-092117	SK8591-11RA	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	TB02-WQ-092117	SK8591-1	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE131D1-GW-092017	SK8591-2	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE131D3-GW-092017	SK8591-4	Detects: J Non-detects: UJ

Table A-2
Initial Calibration Verification Non-Conformance

SDG	Method	Analyte	ICV ID	%R	Limit	Associated Samples	Lab ID	Qualifiers
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE120D3-GW-092017	SK8591-7	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE109D1-GW-092117	SK8591-8	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE109D2-GW-092117	SK8591-9	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE109D3-GW-092117	SK8591-10	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE122D3-GW-092117	SK8591-13	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE131D2-GW-092017	SK8591-3DL	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE120D1-GW-092017	SK8591-5DL	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE120D2-GW-092017	SK8591-6DL	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE122D1-GW-092117	SK8591-11DL	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE122D2-GW-092117	SK8591-12DL	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE122D2-GW-092117	SK8591-12DL2	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE131D2-GW-092017	SK8591-3	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE120D1-GW-092017	SK8591-5	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE120D2-GW-092017	SK8591-6	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE131D3-GW-092017	SK8591-4DL	Detects: J Non-detects: UJ
SK8591	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE122D1-GW-092117	SK8591-11RA	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	TB02-WQ-092117	SK8591-1	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE131D1-GW-092017	SK8591-2	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE131D3-GW-092017	SK8591-4	Detects: J Non-detects: UJ

Table A-2
Initial Calibration Verification Non-Conformance

SDG	Method	Analyte	ICV ID	%R	Limit	Associated Samples	Lab ID	Qualifiers
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE120D3-GW-092017	SK8591-7	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE109D1-GW-092117	SK8591-8	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE109D2-GW-092117	SK8591-9	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE109D3-GW-092117	SK8591-10	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE122D3-GW-092117	SK8591-13	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE131D2-GW-092017	SK8591-3DL	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE120D1-GW-092017	SK8591-5DL	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE120D2-GW-092017	SK8591-6DL	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE122D1-GW-092117	SK8591-11DL	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE122D2-GW-092117	SK8591-12DL	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE122D2-GW-092117	SK8591-12DL2	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE131D2-GW-092017	SK8591-3	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE120D1-GW-092017	SK8591-5	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE120D2-GW-092017	SK8591-6	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE131D3-GW-092017	SK8591-4DL	Detects: J Non-detects: UJ
SK8591	8260C	2-Hexanone	W1219.D	124.07	80-120	RE122D1-GW-092117	SK8591-11RA	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	TB03-WQ-092617	SK8743-1	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE126D3-GW-092217	SK8743-4	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE123D1-GW-092217	SK8743-5	Detects: J Non-detects: UJ

Table A-2
Initial Calibration Verification Non-Conformance

SDG	Method	Analyte	ICV ID	%R	Limit	Associated Samples	Lab ID	Qualifiers
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE123D2-GW-092217	SK8743-6	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE123D3-GW-092217	SK8743-7	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	BPOW5/4-GW-092517	SK8743-10	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE117D1-GW-092517	SK8743-8	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE126D2-GW-092217	SK8743-3DL	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE125D3-GW-092517	SK8743-14	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	FB02-WQ-092517	SK8743-15	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE103D1-GW-092617	SK8743-16	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE126D1-GW-092217	SK8743-2	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE126D2-GW-092217	SK8743-3	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE117D2-GW-092517	SK8743-9	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE125D1-GW-092517	SK8743-12	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE103D2-GW-092617	SK8743-17	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE103D1-GW-092617	SK8743-16DL	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE103D3-GW-092617	SK8743-18DL	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE125D2-GW-092517	SK8743-13	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE103D3-GW-092617	SK8743-18	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	DUP02-GW-092517	SK8743-11	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE125D1-GW-092517	SK8743-12DL	Detects: J Non-detects: UJ

Table A-2
Initial Calibration Verification Non-Conformance

SDG	Method	Analyte	ICV ID	%R	Limit	Associated Samples	Lab ID	Qualifiers
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE125D2-GW-092517	SK8743-13DL	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE125D3-GW-092517	SK8743-14DL	Detects: J Non-detects: UJ
SK8743	8260C	Acetone	W1219.D	179.64	80-120	RE103D2-GW-092617	SK8743-17DL	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	TB03-WQ-092617	SK8743-1	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE126D3-GW-092217	SK8743-4	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE123D1-GW-092217	SK8743-5	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE123D2-GW-092217	SK8743-6	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE123D3-GW-092217	SK8743-7	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	BPOW5/4-GW-092517	SK8743-10	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE117D1-GW-092517	SK8743-8	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE126D2-GW-092217	SK8743-3DL	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE125D3-GW-092517	SK8743-14	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	FB02-WQ-092517	SK8743-15	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE103D1-GW-092617	SK8743-16	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE126D1-GW-092217	SK8743-2	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE126D2-GW-092217	SK8743-3	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE117D2-GW-092517	SK8743-9	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE125D1-GW-092517	SK8743-12	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE103D2-GW-092617	SK8743-17	Detects: J Non-detects: UJ

Table A-2
Initial Calibration Verification Non-Conformance

SDG	Method	Analyte	ICV ID	%R	Limit	Associated Samples	Lab ID	Qualifiers
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE103D1-GW-092617	SK8743-16DL	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE103D3-GW-092617	SK8743-18DL	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE125D2-GW-092517	SK8743-13	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE103D3-GW-092617	SK8743-18	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	DUP02-GW-092517	SK8743-11	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE125D1-GW-092517	SK8743-12DL	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE125D2-GW-092517	SK8743-13DL	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE125D3-GW-092517	SK8743-14DL	Detects: J Non-detects: UJ
SK8743	8260C	2-Butanone	W1219.D	125.59	80-120	RE103D2-GW-092617	SK8743-17DL	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	TB03-WQ-092617	SK8743-1	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE126D3-GW-092217	SK8743-4	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE123D1-GW-092217	SK8743-5	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE123D2-GW-092217	SK8743-6	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE123D3-GW-092217	SK8743-7	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	BPOW5/4-GW-092517	SK8743-10	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE117D1-GW-092517	SK8743-8	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE126D2-GW-092217	SK8743-3DL	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE125D3-GW-092517	SK8743-14	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	FB02-WQ-092517	SK8743-15	Detects: J Non-detects: UJ

Table A-2
Initial Calibration Verification Non-Conformance

SDG	Method	Analyte	ICV ID	%R	Limit	Associated Samples	Lab ID	Qualifiers
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE103D1-GW-092617	SK8743-16	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE126D1-GW-092217	SK8743-2	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE126D2-GW-092217	SK8743-3	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE117D2-GW-092517	SK8743-9	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE125D1-GW-092517	SK8743-12	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE103D2-GW-092617	SK8743-17	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE103D1-GW-092617	SK8743-16DL	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE103D3-GW-092617	SK8743-18DL	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE125D2-GW-092517	SK8743-13	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE103D3-GW-092617	SK8743-18	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	DUP02-GW-092517	SK8743-11	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE125D1-GW-092517	SK8743-12DL	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE125D2-GW-092517	SK8743-13DL	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE125D3-GW-092517	SK8743-14DL	Detects: J Non-detects: UJ
SK8743	8260C	Tetrachloroethene	W1219.D	132.49	80-120	RE103D2-GW-092617	SK8743-17DL	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	TB03-WQ-092617	SK8743-1	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE126D3-GW-092217	SK8743-4	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE123D1-GW-092217	SK8743-5	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE123D2-GW-092217	SK8743-6	Detects: J Non-detects: UJ

Table A-2
Initial Calibration Verification Non-Conformance

SDG	Method	Analyte	ICV ID	%R	Limit	Associated Samples	Lab ID	Qualifiers
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE123D3-GW-092217	SK8743-7	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	BPOW5/4-GW-092517	SK8743-10	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE117D1-GW-092517	SK8743-8	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE126D2-GW-092217	SK8743-3DL	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE125D3-GW-092517	SK8743-14	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	FB02-WQ-092517	SK8743-15	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE103D1-GW-092617	SK8743-16	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE126D1-GW-092217	SK8743-2	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE126D2-GW-092217	SK8743-3	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE117D2-GW-092517	SK8743-9	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE125D1-GW-092517	SK8743-12	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE103D2-GW-092617	SK8743-17	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE103D1-GW-092617	SK8743-16DL	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE103D3-GW-092617	SK8743-18DL	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE125D2-GW-092517	SK8743-13	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE103D3-GW-092617	SK8743-18	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	DUP02-GW-092517	SK8743-11	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE125D1-GW-092517	SK8743-12DL	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE125D2-GW-092517	SK8743-13DL	Detects: J Non-detects: UJ

Table A-2
Initial Calibration Verification Non-Conformance

SDG	Method	Analyte	ICV ID	%R	Limit	Associated Samples	Lab ID	Qualifiers
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE125D3-GW-092517	SK8743-14DL	Detects: J Non-detects: UJ
SK8743	8260C	2-Hexanone	W1219.D	124.07	80-120	RE103D2-GW-092617	SK8743-17DL	Detects: J Non-detects: UJ

Notes:
SDG = Sample delivery group
ICV = Initial calibration verification
ID = Identification
%R = Percent recovery
J = Estimated value; one or more quality control parameters for calibration were outside control limits.
UJ = Undetected and estimated; one or more quality control parameters for calibration were outside control limits.

Table A-3 Continuing Calibration Verification Non-Conformance							
SDG	**Lab ID/ Calibration ID**	**Analyte**	**%D**	**%D Limit**	**Associated Samples**	**Lab ID**	**Qualifiers**
SK8493	WG214064-4 S7326.D	Bromomethane	21.07508	+/- 20%	RE108D2-GW-091817	SK8493-5DL2	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	Bromomethane	21.07508	+/- 20%	DUP01-GW-091817	SK8493-6DL	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	Bromomethane	21.07508	+/- 20%	TT101D-GW-091917	SK8493-8RA	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	Bromomethane	21.07508	+/- 20%	TT101D2-GW-091917	SK8493-10DL	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	Bromomethane	21.07508	+/- 20%	RE105D2-GW-091817	SK8493-3DL2	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	Bromomethane	21.07508	+/- 20%	TT101D1-GW-091917	SK8493-9DL	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	Trichlorofluoromethane	25.52662	+/- 20%	RE108D2-GW-091817	SK8493-5DL2	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	Trichlorofluoromethane	25.52662	+/- 20%	DUP01-GW-091817	SK8493-6DL	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	Trichlorofluoromethane	25.52662	+/- 20%	TT101D-GW-091917	SK8493-8RA	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	Trichlorofluoromethane	25.52662	+/- 20%	TT101D2-GW-091917	SK8493-10DL	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	Trichlorofluoromethane	25.52662	+/- 20%	RE105D2-GW-091817	SK8493-3DL2	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	Trichlorofluoromethane	25.52662	+/- 20%	TT101D1-GW-091917	SK8493-9DL	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	1,2-Dibromo-3-Chloropropane	-25.89167	+/- 20%	RE108D2-GW-091817	SK8493-5DL2	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	1,2-Dibromo-3-Chloropropane	-25.89167	+/- 20%	DUP01-GW-091817	SK8493-6DL	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	1,2-Dibromo-3-Chloropropane	-25.89167	+/- 20%	TT101D-GW-091917	SK8493-8RA	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	1,2-Dibromo-3-Chloropropane	-25.89167	+/- 20%	TT101D2-GW-091917	SK8493-10DL	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	1,2-Dibromo-3-Chloropropane	-25.89167	+/- 20%	RE105D2-GW-091817	SK8493-3DL2	Detects: J Non-detects: UJ
SK8493	WG214064-4 S7326.D	1,2-Dibromo-3-Chloropropane	-25.89167	+/- 20%	TT101D1-GW-091917	SK8493-9DL	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	TB02-WQ-092117	SK8591-1	Detects: J Non-detects: UJ

Table A-3 Continuing Calibration Verification Non-Conformance							
SDG	**Lab ID/ Calibration ID**	**Analyte**	**%D**	**%D Limit**	**Associated Samples**	**Lab ID**	**Qualifiers**
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE131D1-GW-092017	SK8591-2	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE131D3-GW-092017	SK8591-4	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE120D3-GW-092017	SK8591-7	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE109D1-GW-092117	SK8591-8	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE109D2-GW-092117	SK8591-9	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE109D3-GW-092117	SK8591-10	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE122D3-GW-092117	SK8591-13	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE131D2-GW-092017	SK8591-3DL	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE120D1-GW-092017	SK8591-5DL	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE120D2-GW-092017	SK8591-6DL	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE122D1-GW-092117	SK8591-11DL	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE122D2-GW-092117	SK8591-12DL	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE122D2-GW-092117	SK8591-12DL2	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE131D2-GW-092017	SK8591-3	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE120D1-GW-092017	SK8591-5	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	Acetone	32.99	+/- 20%	RE120D2-GW-092017	SK8591-6	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	TB02-WQ-092117	SK8591-1	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE131D1-GW-092017	SK8591-2	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE131D3-GW-092017	SK8591-4	Detects: J Non-detects: UJ

Table A-3 Continuing Calibration Verification Non-Conformance							
SDG	**Lab ID/ Calibration ID**	**Analyte**	**%D**	**%D Limit**	**Associated Samples**	**Lab ID**	**Qualifiers**
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE120D3-GW-092017	SK8591-7	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE109D1-GW-092117	SK8591-8	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE109D2-GW-092117	SK8591-9	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE109D3-GW-092117	SK8591-10	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE122D3-GW-092117	SK8591-13	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE131D2-GW-092017	SK8591-3DL	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE120D1-GW-092017	SK8591-5DL	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE120D2-GW-092017	SK8591-6DL	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE122D1-GW-092117	SK8591-11DL	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE122D2-GW-092117	SK8591-12DL	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE122D2-GW-092117	SK8591-12DL2	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE131D2-GW-092017	SK8591-3	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE120D1-GW-092017	SK8591-5	Detects: J Non-detects: UJ
SK8591	WG214308-4 GCMS-W	2-Hexanone	20.37963	+/- 20%	RE120D2-GW-092017	SK8591-6	Detects: J Non-detects: UJ
SK8591	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	RE131D3-GW-092017	SK8591-4DL	Detects: J Non-detects: UJ
SK8591	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	RE122D1-GW-092117	SK8591-11RA	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	TB03-WQ-092617	SK8743-1	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	RE126D3-GW-092217	SK8743-4	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	RE123D1-GW-092217	SK8743-5	Detects: J Non-detects: UJ

Table A-3 Continuing Calibration Verification Non-Conformance							
SDG	**Lab ID/ Calibration ID**	**Analyte**	**%D**	**%D Limit**	**Associated Samples**	**Lab ID**	**Qualifiers**
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	RE123D2-GW-092217	SK8743-6	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	RE123D3-GW-092217	SK8743-7	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	BPOW5/4-GW-092517	SK8743-10	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	RE117D1-GW-092517	SK8743-8	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	RE126D2-GW-092217	SK8743-3DL	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	RE125D3-GW-092517	SK8743-14	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	FB02-WQ-092517	SK8743-15	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	RE103D1-GW-092617	SK8743-16	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	RE126D1-GW-092217	SK8743-2	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	RE126D2-GW-092217	SK8743-3	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1277.D	2-Hexanone	28.00653	+/- 20%	RE117D2-GW-092517	SK8743-9	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	4-methyl-2-pentanone	27.47663	+/- 20%	RE125D1-GW-092517	SK8743-12	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	4-methyl-2-pentanone	27.47663	+/- 20%	RE103D2-GW-092617	SK8743-17	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	4-methyl-2-pentanone	27.47663	+/- 20%	RE103D1-GW-092617	SK8743-16DL	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	4-methyl-2-pentanone	27.47663	+/- 20%	RE103D3-GW-092617	SK8743-18DL	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	4-methyl-2-pentanone	27.47663	+/- 20%	RE125D2-GW-092517	SK8743-13	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	4-methyl-2-pentanone	27.47663	+/- 20%	RE103D3-GW-092617	SK8743-18	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	4-methyl-2-pentanone	27.47663	+/- 20%	DUP02-GW-092517	SK8743-11	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	2-Hexanone	33.2009	+/- 20%	RE125D1-GW-092517	SK8743-12	Detects: J Non-detects: UJ

Table A-3 Continuing Calibration Verification Non-Conformance							
SDG	**Lab ID/ Calibration ID**	**Analyte**	**%D**	**%D Limit**	**Associated Samples**	**Lab ID**	**Qualifiers**
SK8743	WG214394-4 W1302.D	2-Hexanone	33.2009	+/- 20%	RE103D2-GW-092617	SK8743-17	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	2-Hexanone	33.2009	+/- 20%	RE103D1-GW-092617	SK8743-16DL	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	2-Hexanone	33.2009	+/- 20%	RE103D3-GW-092617	SK8743-18DL	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	2-Hexanone	33.2009	+/- 20%	RE125D2-GW-092517	SK8743-13	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	2-Hexanone	33.2009	+/- 20%	RE103D3-GW-092617	SK8743-18	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	2-Hexanone	33.2009	+/- 20%	DUP02-GW-092517	SK8743-11	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	1,2-Dibromo-3-Chloropropane	24.96506	+/- 20%	RE125D1-GW-092517	SK8743-12	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	1,2-Dibromo-3-Chloropropane	24.96506	+/- 20%	RE103D2-GW-092617	SK8743-17	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	1,2-Dibromo-3-Chloropropane	24.96506	+/- 20%	RE103D1-GW-092617	SK8743-16DL	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	1,2-Dibromo-3-Chloropropane	24.96506	+/- 20%	RE103D3-GW-092617	SK8743-18DL	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	1,2-Dibromo-3-Chloropropane	24.96506	+/- 20%	RE125D2-GW-092517	SK8743-13	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	1,2-Dibromo-3-Chloropropane	24.96506	+/- 20%	RE103D3-GW-092617	SK8743-18	Detects: J Non-detects: UJ
SK8743	WG214394-4 W1302.D	1,2-Dibromo-3-Chloropropane	24.96506	+/- 20%	DUP02-GW-092517	SK8743-11	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	4-methyl-2-pentanone	20.54611	+/- 20%	RE125D1-GW-092517	SK8743-12DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	4-methyl-2-pentanone	20.54611	+/- 20%	RE125D2-GW-092517	SK8743-13DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	4-methyl-2-pentanone	20.54611	+/- 20%	RE125D3-GW-092517	SK8743-14DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	4-methyl-2-pentanone	20.54611	+/- 20%	RE103D2-GW-092617	SK8743-17DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	2-Hexanone	26.96531	+/- 20%	RE125D1-GW-092517	SK8743-12DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	2-Hexanone	26.96531	+/- 20%	RE125D2-GW-092517	SK8743-13DL	Detects: J Non-detects: UJ

Table A-3 Continuing Calibration Verification Non-Conformance							
SDG	**Lab ID/ Calibration ID**	**Analyte**	**%D**	**%D Limit**	**Associated Samples**	**Lab ID**	**Qualifiers**
SK8743	WG214535-4 W1332.D	4-methyl-2-pentanone	20.54611	+/- 20%	RE125D1-GW-092517	SK8743-12DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	4-methyl-2-pentanone	20.54611	+/- 20%	RE125D2-GW-092517	SK8743-13DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	4-methyl-2-pentanone	20.54611	+/- 20%	RE125D3-GW-092517	SK8743-14DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	4-methyl-2-pentanone	20.54611	+/- 20%	RE103D2-GW-092617	SK8743-17DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	2-Hexanone	26.96531	+/- 20%	RE125D1-GW-092517	SK8743-12DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	2-Hexanone	26.96531	+/- 20%	RE125D2-GW-092517	SK8743-13DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	2-Hexanone	26.96531	+/- 20%	RE125D3-GW-092517	SK8743-14DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	2-Hexanone	26.96531	+/- 20%	RE103D2-GW-092617	SK8743-17DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	1,2-Dibromo-3-Chloropropane	22.30801	+/- 20%	RE125D1-GW-092517	SK8743-12DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	1,2-Dibromo-3-Chloropropane	22.30801	+/- 20%	RE125D2-GW-092517	SK8743-13DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	1,2-Dibromo-3-Chloropropane	22.30801	+/- 20%	RE125D3-GW-092517	SK8743-14DL	Detects: J Non-detects: UJ
SK8743	WG214535-4 W1332.D	1,2-Dibromo-3-Chloropropane	22.30801	+/- 20%	RE103D2-GW-092617	SK8743-17DL	Detects: J Non-detects: UJ

Notes:

SDG = Sample delivery group
ID = Identification
%D = Percent difference
J = Estimated value; one or more quality control parameters for calibration were outside control limits.
UJ = Undetected and estimated; one or more quality control parameters for calibration were outside control limits.

Table A-4 Surrogate Spike Recovery Non-Conformance							
SDG	**Sample ID**	**Laboratory ID**	**Batch**	**Surrogate**	**%R**	**Control Limit**	**Qualifier**
SK8591	RE120D1-GW-092017	SK8591-5DL	WG214308	1,2-Dichloroethane-d4	121	70-120	Detects: J
SK8591	RE120D1-GW-092017	SK8591-5	WG214308	1,2-Dichloroethane-d4	126	70-120	Detects: J
SK8591	RE120D2-GW-092017	SK8591-6DL	WG214308	1,2-Dichloroethane-d4	124	70-120	Detects: J
SK8591	RE120D2-GW-092017	SK8591-6	WG214308	1,2-Dichloroethane-d4	123	70-120	Detects: J
SK8591	RE122D1-GW-092117	SK8591-11DL	WG214308	1,2-Dichloroethane-d4	123	70-120	Detects: J
SK8591	RE122D2-GW-092117	SK8591-12DL	WG214308	1,2-Dichloroethane-d4	121	70-120	Detects: J
SK8591	RE122D2-GW-092117	SK8591-12DL2	WG214308	1,2-Dichloroethane-d4	125	70-120	Detects: J
SK8591	RE131D2-GW-092017	SK8591-3DL	WG214308	1,2-Dichloroethane-d4	124	70-120	Detects: J
SK8591	RE131D2-GW-092017	SK8591-3	WG214308	1,2-Dichloroethane-d4	125	70-120	Detects: J
SK8743	RE103D3-GW-092617	SK8743-18	WG214457	1,2-Dichloroethane-d4	121	70-120	Detects: J
SK8743	RE125D2-GW-092517	SK8743-13	WG214457	1,2-Dichloroethane-d4	121	70-120	Detects: J

Notes:

SDG = Sample delivery group
ID = Identification
%R = Percent recovery
J = Positive result qualified estimated and may be biased high.

Table A-5 Laboratory Control Sample/Laboratory Control Sample Duplicate Percent Recovery Non-Conformance								
SDG	**Method**	**LCS**	**Batch**	**Analyte**	**%R**	**Limits**	**Associated Samples**	**Detected Associated Samples Qualified J**
SK8591	8260C	WG214394-1-SK8591	WG214394	1,2-Dichloroethene, total	82.8	84-121	RE122D1-GW-092117 RE131D3-GW-092017	RE122D1-GW-092117 RE131D3-GW-092017
SK8473	8260C	WG214394-1-SK8743	WG214394	1,2-Dichloroethene, total	82.8	84-121	BPOW5-4-GW-092517 FB02-WQ-092517 RE103D1-GW-092617 RE117D1-GW-092517 RE117D2-GW-092517 RE123D1-GW-092217 RE123D2-GW-092217 RE123D3-GW-092217 RE125D3-GW-092517 RE126D1-GW-092217 RE126D2-GW-092217 RE126D3-GW-092217 TB03-WQ-092217	BPOW5-4-GW-092517 FB02-WQ-092517 RE103D1-GW-092617 RE117D1-GW-092517 RE117D2-GW-092517 RE123D1-GW-092217 RE123D2-GW-092217 RE123D3-GW-092217 RE125D3-GW-092517 RE126D1-GW-092217 RE126D2-GW-092217 RE126D3-GW-092217 TB03-WQ-092217
SK8473	8260C	WG214457-1-SK8743	WG214457	1,2-Dichloroethene, total	82.8	84-121	DUP02-GW-092517 RE103D2-GW-092617 RE103D3-GW-092617 RE125D1-GW-092517 RE125D2-GW-092517	DUP02-GW-092517 RE103D2-GW-092617 RE103D3-GW-092617 RE125D1-GW-092517 RE125D2-GW-092517

Notes:
SDG = Sample delivery group
%R = Percent recovery
J = Analyte in associated sample qualified estimated "J" because %R is greater than the control limit and may be biased low.

Table A-6 Field Duplicate Non-Conformance										
Analyte	**Sample ID**	**Lab ID**	**Duplicate ID**	**Lab ID**	**Sample Result (UG_L)**	**LOQ**	**Duplicate Result (UG_L)**	**LOQ**	**RPD**	**Qualifier**
Tetrachloroethene	RE108D2-GW-091817	SK8493-5DL	DUP01-GW-091817	SK8493-6	3	4	2.2	1	30.8	J-both

Notes:

ID = Identification
UG_L = Micrograms per liter
LOQ = Limit of quantitation
RPD = Relative percent difference
J = Analyte in associated sample qualified estimated "J" because RPD is outside of the control limit (≤30) and the result may be biased.

Attachment B
Qualified Results Summary during Data Review

Table B-1
Qualified Results Summary during Data Review

SDG	Sample ID	Lab ID	Sample Date	DF	Analyte	Result	Units	Lab Qualifier	Validator Qualifier	Final Qualifier	RC
SK8743	BPOW5-4-GW-092517	SK8743-10	9/25/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	BPOW5-4-GW-092517	SK8743-10	9/25/2017	1	TETRACHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8743	BPOW5-4-GW-092517	SK8743-10	9/25/2017	1	1,2-DICHLOROETHENE, TOTAL	1	UG_L	UL	J	UJ	l
SK8743	BPOW5-4-GW-092517	SK8743-10	9/25/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	BPOW5-4-GW-092517	SK8743-10	9/25/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	BPOW5-4-GW-092517	SK8743-10	9/25/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	BPOW5-4-GW-092517	SK8743-10	9/25/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8493	DUP01-GW-091817	SK8493-6	9/18/2017	1	TETRACHLOROETHENE	2.2	UG_L		J	J	fd
SK8493	DUP01-GW-091817	SK8493-6	9/18/2017	1	1,1-DICHLOROETHENE	6	UG_L		J	J	c
SK8493	DUP01-GW-091817	SK8493-6	9/18/2017	1	DICHLORODIFLUOROMETHANE	1	UG_L	U	J	UJ	c
SK8743	DUP02-GW-092517	SK8743-11	9/25/2017	1	4-METHYL-2-PENTANONE	2.5	UG_L	U	J	UJ	c
SK8743	DUP02-GW-092517	SK8743-11	9/25/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	DUP02-GW-092517	SK8743-11	9/25/2017	1	TETRACHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8743	DUP02-GW-092517	SK8743-11	9/25/2017	1	1,2-DICHLOROETHENE, TOTAL	1	UG_L	UL	J	UJ	l
SK8743	DUP02-GW-092517	SK8743-11	9/25/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	DUP02-GW-092517	SK8743-11	9/25/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	DUP02-GW-092517	SK8743-11	9/25/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	DUP02-GW-092517	SK8743-11	9/25/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	DUP02-GW-092517	SK8743-11	9/25/2017	1	1,2-DIBROMO-3-CHLOROPROPANE	0.75	UG_L	U	J	UJ	c
SK8493	FB01-WQ-091817	SK8493-7	9/18/2017	1	1,1-DICHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8493	FB01-WQ-091817	SK8493-7	9/18/2017	1	DICHLORODIFLUOROMETHANE	1	UG_L	U	J	UJ	c
SK8743	FB02-WQ-092517	SK8743-15	9/25/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	FB02-WQ-092517	SK8743-15	9/25/2017	1	TETRACHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8743	FB02-WQ-092517	SK8743-15	9/25/2017	1	1,2-DICHLOROETHENE, TOTAL	1	UG_L	UL	J	UJ	l
SK8743	FB02-WQ-092517	SK8743-15	9/25/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	FB02-WQ-092517	SK8743-15	9/25/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	FB02-WQ-092517	SK8743-15	9/25/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	FB02-WQ-092517	SK8743-15	9/25/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE103D1-GW-092617	SK8743-16	9/26/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE103D1-GW-092617	SK8743-16	9/26/2017	1	TETRACHLOROETHENE	4.6	UG_L		J	J	c
SK8743	RE103D1-GW-092617	SK8743-16	9/26/2017	1	1,2-DICHLOROETHENE, TOTAL	2.7	UG_L	L	J	J	l
SK8743	RE103D1-GW-092617	SK8743-16	9/26/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	RE103D1-GW-092617	SK8743-16	9/26/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE103D1-GW-092617	SK8743-16	9/26/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE103D1-GW-092617	SK8743-16	9/26/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE103D2-GW-092617	SK8743-17	9/26/2017	1	4-METHYL-2-PENTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE103D2-GW-092617	SK8743-17	9/26/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE103D2-GW-092617	SK8743-17	9/26/2017	1	TETRACHLOROETHENE	0.77	UG_L	J	J	J	c
SK8743	RE103D2-GW-092617	SK8743-17	9/26/2017	1	1,2-DICHLOROETHENE, TOTAL	0.67	UG_L	JL	J	J	l
SK8743	RE103D2-GW-092617	SK8743-17	9/26/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	RE103D2-GW-092617	SK8743-17	9/26/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c

Table B-1
Qualified Results Summary during Data Review

SDG	Sample ID	Lab ID	Sample Date	DF	Analyte	Result	Units	Lab Qualifier	Validator Qualifier	Final Qualifier	RC
SK8743	RE103D2-GW-092617	SK8743-17	9/26/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE103D2-GW-092617	SK8743-17	9/26/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE103D2-GW-092617	SK8743-17	9/26/2017	1	1,2-DIBROMO-3-CHLOROPROPANE	0.75	UG_L	U	J	UJ	c
SK8743	RE103D3-GW-092617	SK8743-18DL	9/26/2017	10	TRICHLOROETHENE	240	UG_L		J	J	s
SK8743	RE103D3-GW-092617	SK8743-18	9/26/2017	1	4-METHYL-2-PENTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE103D3-GW-092617	SK8743-18	9/26/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE103D3-GW-092617	SK8743-18	9/26/2017	1	TETRACHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8743	RE103D3-GW-092617	SK8743-18	9/26/2017	1	1,2-DICHLOROETHENE, TOTAL	1	UG_L	UL	J	UJ	l
SK8743	RE103D3-GW-092617	SK8743-18	9/26/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	RE103D3-GW-092617	SK8743-18	9/26/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE103D3-GW-092617	SK8743-18	9/26/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE103D3-GW-092617	SK8743-18	9/26/2017	1	CHLOROFORM	0.66	UG_L	J	J	J	s
SK8743	RE103D3-GW-092617	SK8743-18	9/26/2017	1	BROMOFORM	6	UG_L		J	J	s
SK8743	RE103D3-GW-092617	SK8743-18	9/26/2017	1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.83	UG_L	J	J	J	s
SK8743	RE103D3-GW-092617	SK8743-18	9/26/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE103D3-GW-092617	SK8743-18	9/26/2017	1	1,1,2-TRICHLOROETHANE	0.35	UG_L	J	J	J	s
SK8743	RE103D3-GW-092617	SK8743-18	9/26/2017	1	1,2-DIBROMO-3-CHLOROPROPANE	0.75	UG_L	U	J	UJ	c
SK8493	RE104D1-GW-091917	SK8493-11	9/19/2017	1	1,1-DICHLOROETHENE	0.5	UG_L	J	J	J	c
SK8493	RE104D1-GW-091917	SK8493-11	9/19/2017	1	DICHLORODIFLUOROMETHANE	1	UG_L	U	J	UJ	c
SK8493	RE104D2-GW-091917	SK8493-12RA	9/19/2017	1	DICHLORODIFLUOROMETHANE	1	UG_L	U	J	UJ	c
SK8493	RE104D2-GW-091917	SK8493-12RA	9/19/2017	1	1,2-DIBROMO-3-CHLOROPROPANE	0.75	UG_L	U	J	UJ	c
SK8493	RE104D3-GW-091917	SK8493-13	9/19/2017	1	1,1-DICHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8493	RE104D3-GW-091917	SK8493-13	9/19/2017	1	DICHLORODIFLUOROMETHANE	1	UG_L	U	J	UJ	c
SK8493	RE105D1-GW-091817	SK8493-2	9/18/2017	1	1,1-DICHLOROETHENE	1.1	UG_L		J	J	c
SK8493	RE105D1-GW-091817	SK8493-2	9/18/2017	1	DICHLORODIFLUOROMETHANE	0.68	UG_L	J	J	J	c
SK8493	RE105D2-GW-091817	SK8493-3DLRA	9/18/2017	4	DICHLORODIFLUOROMETHANE	4	UG_L	UM	J	UJ	c
SK8493	RE105D2-GW-091817	SK8493-3DLRA	9/18/2017	4	1,2-DIBROMO-3-CHLOROPROPANE	3	UG_L	U	J	UJ	c
SK8493	RE108D1-GW-091817	SK8493-4	9/18/2017	1	1,1-DICHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8493	RE108D1-GW-091817	SK8493-4	9/18/2017	1	DICHLORODIFLUOROMETHANE	1	UG_L	U	J	UJ	c
SK8493	RE108D2-GW-091817	SK8493-5DL	9/18/2017	4	TETRACHLOROETHENE	3	UG_L	J	J	J	fd
SK8493	RE108D2-GW-091817	SK8493-5DL	9/18/2017	4	1,1-DICHLOROETHENE	4.7	UG_L		J	J	c
SK8493	RE108D2-GW-091817	SK8493-5DL	9/18/2017	4	DICHLORODIFLUOROMETHANE	4	UG_L	U	J	UJ	c
SK8743	RE117D1-GW-092517	SK8743-8	9/25/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE117D1-GW-092517	SK8743-8	9/25/2017	1	TETRACHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8743	RE117D1-GW-092517	SK8743-8	9/25/2017	1	1,2-DICHLOROETHENE, TOTAL	1	UG_L	UL	J	UJ	l
SK8743	RE117D1-GW-092517	SK8743-8	9/25/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	RE117D1-GW-092517	SK8743-8	9/25/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE117D1-GW-092517	SK8743-8	9/25/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE117D1-GW-092517	SK8743-8	9/25/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE117D2-GW-092517	SK8743-9	9/25/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE117D2-GW-092517	SK8743-9	9/25/2017	1	TETRACHLOROETHENE	0.5	UG_L	U	J	UJ	c

Table B-1
Qualified Results Summary during Data Review

SDG	Sample ID	Lab ID	Sample Date	DF	Analyte	Result	Units	Lab Qualifier	Validator Qualifier	Final Qualifier	RC
SK8743	RE117D2-GW-092517	SK8743-9	9/25/2017	1	1,2-DICHLOROETHENE, TOTAL	1	UG_L	UL	J	UJ	l
SK8743	RE117D2-GW-092517	SK8743-9	9/25/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	RE117D2-GW-092517	SK8743-9	9/25/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE117D2-GW-092517	SK8743-9	9/25/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE117D2-GW-092517	SK8743-9	9/25/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE123D1-GW-092217	SK8743-5	9/22/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE123D1-GW-092217	SK8743-5	9/22/2017	1	TETRACHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8743	RE123D1-GW-092217	SK8743-5	9/22/2017	1	1,2-DICHLOROETHENE, TOTAL	1	UG_L	UL	J	UJ	l
SK8743	RE123D1-GW-092217	SK8743-5	9/22/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	RE123D1-GW-092217	SK8743-5	9/22/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE123D1-GW-092217	SK8743-5	9/22/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE123D1-GW-092217	SK8743-5	9/22/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE123D2-GW-092217	SK8743-6	9/22/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE123D2-GW-092217	SK8743-6	9/22/2017	1	TETRACHLOROETHENE	1.3	UG_L		J	J	c
SK8743	RE123D2-GW-092217	SK8743-6	9/22/2017	1	1,2-DICHLOROETHENE, TOTAL	1	UG_L	UL	J	UJ	l
SK8743	RE123D2-GW-092217	SK8743-6	9/22/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	RE123D2-GW-092217	SK8743-6	9/22/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE123D2-GW-092217	SK8743-6	9/22/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE123D2-GW-092217	SK8743-6	9/22/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE123D3-GW-092217	SK8743-7	9/22/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE123D3-GW-092217	SK8743-7	9/22/2017	1	TETRACHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8743	RE123D3-GW-092217	SK8743-7	9/22/2017	1	1,2-DICHLOROETHENE, TOTAL	1	UG_L	UL	J	UJ	l
SK8743	RE123D3-GW-092217	SK8743-7	9/22/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	RE123D3-GW-092217	SK8743-7	9/22/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE123D3-GW-092217	SK8743-7	9/22/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE123D3-GW-092217	SK8743-7	9/22/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE125D1-GW-092517	SK8743-12	9/25/2017	1	4-METHYL-2-PENTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE125D1-GW-092517	SK8743-12	9/25/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE125D1-GW-092517	SK8743-12	9/25/2017	1	TETRACHLOROETHENE	7	UG_L		J	J	c
SK8743	RE125D1-GW-092517	SK8743-12	9/25/2017	1	1,2-DICHLOROETHENE, TOTAL	4.2	UG_L	L	J	J	l
SK8743	RE125D1-GW-092517	SK8743-12	9/25/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	RE125D1-GW-092517	SK8743-12	9/25/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE125D1-GW-092517	SK8743-12	9/25/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE125D1-GW-092517	SK8743-12	9/25/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE125D1-GW-092517	SK8743-12	9/25/2017	1	1,2-DIBROMO-3-CHLOROPROPANE	0.75	UG_L	U	J	UJ	c
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	4-METHYL-2-PENTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	TETRACHLOROETHENE	1.9	UG_L		J	J	s,c
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	CIS-1,2-DICHLOROETHENE	3.9	UG_L		J	J	s
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	1,2-DICHLOROETHENE, TOTAL	3.9	UG_L	L	J	J	s,l
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	CARBON TETRACHLORIDE	0.61	UG_L	J	J	J	s,c

Table B-1
Qualified Results Summary during Data Review

SDG	Sample ID	Lab ID	Sample Date	DF	Analyte	Result	Units	Lab Qualifier	Validator Qualifier	Final Qualifier	RC
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	CHLOROFORM	0.57	UG_L	J	J	J	s
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	1,1,1-TRICHLOROETHANE	0.62	UG_L	J	J	J	s
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	1,1-DICHLOROETHANE	0.83	UG_L	J	J	J	s
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	1,1-DICHLOROETHENE	7.7	UG_L		J	J	s
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	TRICHLOROFLUOROMETHANE	0.34	UG_L	J	J	J	s
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	DICHLORODIFLUOROMETHANE	0.67	UG_L	J	J	J	s
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	22	UG_L		J	J	s
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	1,1,2-TRICHLOROETHANE	0.46	UG_L	J	J	J	s
SK8743	RE125D2-GW-092517	SK8743-13	9/25/2017	1	1,2-DIBROMO-3-CHLOROPROPANE	0.75	UG_L	U	J	UJ	c
SK8743	RE125D2-GW-092517	SK8743-13DL	9/25/2017	5	TRICHLOROETHENE	210	UG_L		J	J	s
SK8743	RE125D3-GW-092517	SK8743-14	9/25/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE125D3-GW-092517	SK8743-14	9/25/2017	1	TETRACHLOROETHENE	2	UG_L		J	J	s
SK8743	RE125D3-GW-092517	SK8743-14	9/25/2017	1	1,2-DICHLOROETHENE, TOTAL	1.6	UG_L	JL	J	J	l
SK8743	RE125D3-GW-092517	SK8743-14	9/25/2017	1	CARBON TETRACHLORIDE	0.3	UG_L	J	J	J	c
SK8743	RE125D3-GW-092517	SK8743-14	9/25/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE125D3-GW-092517	SK8743-14	9/25/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE125D3-GW-092517	SK8743-14	9/25/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE126D1-GW-092217	SK8743-2	9/22/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE126D1-GW-092217	SK8743-2	9/22/2017	1	TETRACHLOROETHENE	1	UG_L		J	J	s
SK8743	RE126D1-GW-092217	SK8743-2	9/22/2017	1	1,2-DICHLOROETHENE, TOTAL	0.36	UG_L	JL	J	J	l
SK8743	RE126D1-GW-092217	SK8743-2	9/22/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	RE126D1-GW-092217	SK8743-2	9/22/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE126D1-GW-092217	SK8743-2	9/22/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE126D1-GW-092217	SK8743-2	9/22/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE126D2-GW-092217	SK8743-3	9/22/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE126D2-GW-092217	SK8743-3	9/22/2017	1	TETRACHLOROETHENE	0.6	UG_L	J	J	J	s
SK8743	RE126D2-GW-092217	SK8743-3	9/22/2017	1	1,2-DICHLOROETHENE, TOTAL	1.7	UG_L	JL	J	J	l
SK8743	RE126D2-GW-092217	SK8743-3	9/22/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	RE126D2-GW-092217	SK8743-3	9/22/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE126D2-GW-092217	SK8743-3	9/22/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE126D2-GW-092217	SK8743-3	9/22/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE126D3-GW-092217	SK8743-4	9/22/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	RE126D3-GW-092217	SK8743-4	9/22/2017	1	TETRACHLOROETHENE	2.6	UG_L		J	J	s
SK8743	RE126D3-GW-092217	SK8743-4	9/22/2017	1	1,2-DICHLOROETHENE, TOTAL	1	UG_L	UL	J	UJ	l
SK8743	RE126D3-GW-092217	SK8743-4	9/22/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	RE126D3-GW-092217	SK8743-4	9/22/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	RE126D3-GW-092217	SK8743-4	9/22/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	RE126D3-GW-092217	SK8743-4	9/22/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c

Table B-1
Qualified Results Summary during Data Review

SDG	Sample ID	Lab ID	Sample Date	DF	Analyte	Result	Units	Lab Qualifier	Validator Qualifier	Final Qualifier	RC
SK8493	TB01-WQ-091817	SK8493-1	9/18/2017	1	1,1-DICHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8493	TB01-WQ-091817	SK8493-1	9/18/2017	1	DICHLORODIFLUOROMETHANE	1	UG_L	U	J	UJ	c
SK8743	TB03-WQ-092217	SK8743-1	9/22/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8743	TB03-WQ-092217	SK8743-1	9/22/2017	1	TETRACHLOROETHENE	0.5	UG_L	U	J	UJ	s
SK8743	TB03-WQ-092217	SK8743-1	9/22/2017	1	1,2-DICHLOROETHENE, TOTAL	1	UG_L	UL	J	UJ	l
SK8743	TB03-WQ-092217	SK8743-1	9/22/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8743	TB03-WQ-092217	SK8743-1	9/22/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8743	TB03-WQ-092217	SK8743-1	9/22/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8743	TB03-WQ-092217	SK8743-1	9/22/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8493	TT101D1-GW-091917	SK8493-9	9/19/2017	1	1,1-DICHLOROETHENE	5.8	UG_L		J	J	c
SK8493	TT101D1-GW-091917	SK8493-9	9/19/2017	1	DICHLORODIFLUOROMETHANE	2.3	UG_L		J	J	c
SK8493	TT101D2-GW-091917	SK8493-10	9/19/2017	1	1,1-DICHLOROETHENE	5.8	UG_L		J	J	c
SK8493	TT101D2-GW-091917	SK8493-10	9/19/2017	1	DICHLORODIFLUOROMETHANE	1	UG_L	U	J	UJ	c
SK8493	TT101D-GW-091917	SK8493-8RA	9/19/2017	1	BROMOMETHANE	1	UG_L	U	J	UJ	c
SK8493	TT101D-GW-091917	SK8493-8RA	9/19/2017	1	1,1-DICHLOROETHENE	2.6	UG_L		J	J	c
SK8493	TT101D-GW-091917	SK8493-8RA	9/19/2017	1	TRICHLOROFLUOROMETHANE	1	UG_L	U	J	UJ	c
SK8493	TT101D-GW-091917	SK8493-8RA	9/19/2017	1	DICHLORODIFLUOROMETHANE	3.2	UG_L		J	J	c
SK8493	TT101D-GW-091917	SK8493-8RA	9/19/2017	1	1,2-DIBROMO-3-CHLOROPROPANE	0.75	UG_L	U	J	UJ	c
SK8591	RE109D1-GW-092117	SK8591-8	9/21/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8591	RE109D1-GW-092117	SK8591-8	9/21/2017	1	TETRACHLOROETHENE	0.73	UG_L	J	J	J	c
SK8591	RE109D1-GW-092117	SK8591-8	9/21/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8591	RE109D1-GW-092117	SK8591-8	9/21/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE109D1-GW-092117	SK8591-8	9/21/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8591	RE109D1-GW-092117	SK8591-8	9/21/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE109D2-GW-092117	SK8591-9	9/21/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8591	RE109D2-GW-092117	SK8591-9	9/21/2017	1	TETRACHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8591	RE109D2-GW-092117	SK8591-9	9/21/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8591	RE109D2-GW-092117	SK8591-9	9/21/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE109D2-GW-092117	SK8591-9	9/21/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8591	RE109D2-GW-092117	SK8591-9	9/21/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE109D3-GW-092117	SK8591-10	9/21/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8591	RE109D3-GW-092117	SK8591-10	9/21/2017	1	TETRACHLOROETHENE	0.43	UG_L	J	J	J	c
SK8591	RE109D3-GW-092117	SK8591-10	9/21/2017	1	CARBON TETRACHLORIDE	0.72	UG_L	J	J	J	c
SK8591	RE109D3-GW-092117	SK8591-10	9/21/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE109D3-GW-092117	SK8591-10	9/21/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8591	RE109D3-GW-092117	SK8591-10	9/21/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE120D1-GW-092017	SK8591-5DL	9/20/2017	10	TRICHLOROETHENE	970	UG_L		J	J	s
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	TETRACHLOROETHENE	2.5	UG_L		J	J	s,c
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	CIS-1,2-DICHLOROETHENE	3.4	UG_L		J	J	s
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	1,2-DICHLOROETHENE, TOTAL	3.4	UG_L		J	J	s

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SDG	Sample ID	Lab ID	Sample Date	DF	Analyte	Result	Units	Lab Qualifier	Validator Qualifier	Final Qualifier	RC
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	CARBON TETRACHLORIDE	0.33	UG_L	J	J	J	s,c
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	CHLOROFORM	0.75	UG_L	J	J	J	s
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	1,1,1-TRICHLOROETHANE	0.98	UG_L	J	J	J	s
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	1,1-DICHLOROETHANE	2.3	UG_L		J	J	s
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	1,1-DICHLOROETHENE	14	UG_L		J	J	s
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	TRICHLOROFLUOROMETHANE	0.43	UG_L	J	J	J	s
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	20	UG_L		J	J	s
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE120D1-GW-092017	SK8591-5	9/20/2017	1	1,1,2-TRICHLOROETHANE	1.3	UG_L		J	J	s
SK8591	RE120D2-GW-092017	SK8591-6DL	9/20/2017	10	TRICHLOROETHENE	690	UG_L		J	J	s
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	TETRACHLOROETHENE	4.4	UG_L		J	J	s,c
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	CIS-1,2-DICHLOROETHENE	3.1	UG_L		J	J	s
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	1,2-DICHLOROETHENE, TOTAL	3.1	UG_L		J	J	s
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	CARBON TETRACHLORIDE	0.38	UG_L	J	J	J	s,c
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	CHLOROFORM	0.82	UG_L	J	J	J	s
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	1,1,1-TRICHLOROETHANE	0.24	UG_L	J	J	J	s
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	1,1-DICHLOROETHANE	0.94	UG_L	J	J	J	s
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	1,1-DICHLOROETHENE	4.4	UG_L		J	J	s
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	15	UG_L		J	J	s
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	1,1,2-TRICHLOROETHANE	0.53	UG_L	J	J	J	s
SK8591	RE120D2-GW-092017	SK8591-6	9/20/2017	1	1,4-DIOXANE	13	UG_L		J	J	s
SK8591	RE120D3-GW-092017	SK8591-7	9/20/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8591	RE120D3-GW-092017	SK8591-7	9/20/2017	1	TETRACHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8591	RE120D3-GW-092017	SK8591-7	9/20/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8591	RE120D3-GW-092017	SK8591-7	9/20/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE120D3-GW-092017	SK8591-7	9/20/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8591	RE120D3-GW-092017	SK8591-7	9/20/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE122D1-GW-092117	SK8591-11DL	9/21/2017	10	TRICHLOROETHENE	510	UG_L		J	J	s
SK8591	RE122D1-GW-092117	SK8591-11RA	9/21/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8591	RE122D1-GW-092117	SK8591-11RA	9/21/2017	1	TETRACHLOROETHENE	1.9	UG_L		J	J	c
SK8591	RE122D1-GW-092117	SK8591-11RA	9/21/2017	1	1,2-DICHLOROETHENE, TOTAL	2.1	UG_L	L	J	J	l
SK8591	RE122D1-GW-092117	SK8591-11RA	9/21/2017	1	CARBON TETRACHLORIDE	0.53	UG_L	J	J	J	c
SK8591	RE122D1-GW-092117	SK8591-11RA	9/21/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE122D1-GW-092117	SK8591-11RA	9/21/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8591	RE122D1-GW-092117	SK8591-11RA	9/21/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c

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SDG	Sample ID	Lab ID	Sample Date	DF	Analyte	Result	Units	Lab Qualifier	Validator Qualifier	Final Qualifier	RC
SK8591	RE122D2-GW-092117	SK8591-12DL	9/21/2017	40	TRICHLOROETHENE	2200	UG_L		J	J	s
SK8591	RE122D2-GW-092117	SK8591-12DL2	9/21/2017	4	CYCLOHEXANE	2	UG_L	U	J	UJ	c
SK8591	RE122D2-GW-092117	SK8591-12DL2	9/21/2017	4	TETRACHLOROETHENE	3.1	UG_L	J	J	J	s,c
SK8591	RE122D2-GW-092117	SK8591-12DL2	9/21/2017	4	CIS-1,2-DICHLOROETHENE	4.2	UG_L		J	J	s
SK8591	RE122D2-GW-092117	SK8591-12DL2	9/21/2017	4	1,2-DICHLOROETHENE, TOTAL	4.2	UG_L	J	J	J	s
SK8591	RE122D2-GW-092117	SK8591-12DL2	9/21/2017	4	CARBON TETRACHLORIDE	2	UG_L	U	J	UJ	c
SK8591	RE122D2-GW-092117	SK8591-12DL2	9/21/2017	4	2-HEXANONE	10	UG_L	U	J	UJ	c
SK8591	RE122D2-GW-092117	SK8591-12DL2	9/21/2017	4	ACETONE	10	UG_L	U	J	UJ	c
SK8591	RE122D2-GW-092117	SK8591-12DL2	9/21/2017	4	CHLOROFORM	1.8	UG_L	J	J	J	s
SK8591	RE122D2-GW-092117	SK8591-12DL2	9/21/2017	4	1,1-DICHLOROETHANE	1.4	UG_L	J	J	J	s
SK8591	RE122D2-GW-092117	SK8591-12DL2	9/21/2017	4	1,1-DICHLOROETHENE	6.4	UG_L		J	J	s
SK8591	RE122D2-GW-092117	SK8591-12DL2	9/21/2017	4	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10	UG_L		J	J	s
SK8591	RE122D2-GW-092117	SK8591-12DL2	9/21/2017	4	2-BUTANONE	10	UG_L	U	J	UJ	c
SK8591	RE122D2-GW-092117	SK8591-12DL2	9/21/2017	4	1,1,2-TRICHLOROETHANE	1.9	UG_L	J	J	J	s
SK8591	RE122D3-GW-092117	SK8591-13	9/21/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8591	RE122D3-GW-092117	SK8591-13	9/21/2017	1	TETRACHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8591	RE122D3-GW-092117	SK8591-13	9/21/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8591	RE122D3-GW-092117	SK8591-13	9/21/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE122D3-GW-092117	SK8591-13	9/21/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8591	RE122D3-GW-092117	SK8591-13	9/21/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE131D1-GW-092017	SK8591-2	9/20/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8591	RE131D1-GW-092017	SK8591-2	9/20/2017	1	TETRACHLOROETHENE	10	UG_L		J	J	c
SK8591	RE131D1-GW-092017	SK8591-2	9/20/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8591	RE131D1-GW-092017	SK8591-2	9/20/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE131D1-GW-092017	SK8591-2	9/20/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8591	RE131D1-GW-092017	SK8591-2	9/20/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE131D2-GW-092017	SK8591-3DL	9/20/2017	2	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	200	UG_L		J	J	s
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	TETRACHLOROETHENE	7.4	UG_L		J	J	s,c
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	CIS-1,2-DICHLOROETHENE	4.5	UG_L		J	J	s
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	1,2-DICHLOROETHENE, TOTAL	4.5	UG_L		J	J	s
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	CHLOROFORM	0.45	UG_L	J	J	J	s
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	1,1,1-TRICHLOROETHANE	0.32	UG_L	J	J	J	s
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	1,1-DICHLOROETHANE	0.31	UG_L	J	J	J	s
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	1,1-DICHLOROETHENE	1.9	UG_L		J	J	s
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	DICHLORODIFLUOROMETHANE	0.42	UG_L	J	J	J	s
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	TRICHLOROETHENE	67	UG_L		J	J	s

Table B-1
Qualified Results Summary during Data Review

SDG	Sample ID	Lab ID	Sample Date	DF	Analyte	Result	Units	Lab Qualifier	Validator Qualifier	Final Qualifier	RC
SK8591	RE131D2-GW-092017	SK8591-3	9/20/2017	1	1,4-DIOXANE	12	UG_L		J	J	s
SK8591	RE131D3-GW-092017	SK8591-4	9/20/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8591	RE131D3-GW-092017	SK8591-4	9/20/2017	1	TETRACHLOROETHENE	2.3	UG_L		J	J	c
SK8591	RE131D3-GW-092017	SK8591-4	9/20/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8591	RE131D3-GW-092017	SK8591-4	9/20/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8591	RE131D3-GW-092017	SK8591-4	9/20/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8591	RE131D3-GW-092017	SK8591-4	9/20/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c
SK8591	TB02-WQ-092117	SK8591-1	9/21/2017	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
SK8591	TB02-WQ-092117	SK8591-1	9/21/2017	1	TETRACHLOROETHENE	0.5	UG_L	U	J	UJ	c
SK8591	TB02-WQ-092117	SK8591-1	9/21/2017	1	CARBON TETRACHLORIDE	0.5	UG_L	U	J	UJ	c
SK8591	TB02-WQ-092117	SK8591-1	9/21/2017	1	2-HEXANONE	2.5	UG_L	U	J	UJ	c
SK8591	TB02-WQ-092117	SK8591-1	9/21/2017	1	ACETONE	2.5	UG_L	U	J	UJ	c
SK8591	TB02-WQ-092117	SK8591-1	9/21/2017	1	2-BUTANONE	2.5	UG_L	U	J	UJ	c

Notes:
SDG = Sample delivery group
ID = Identification
DF = Dilution factor
RC = Reason code
UG_L = Micrograms per liter
U = ***Undetected*** — The analyte was analyzed but undetected or was qualified as undetected during data review due to blank artifacts.
J = ***Estimated Value*** — One or more quality control parameters were outside control limits or the analyte concentration was less than the limit of quantitation.
L = Indicates that the analyte was outside of control limits in the lab control sample/lab control sample duplicate and/or analyzed concurrently with the native sample (laboratory qualifier).
UM = Indicates that the analyte was undetected outside of the control limits in the matrix spike/matrix spike duplicate prepared and/or analyzed concurrently with the native sample (laboratory qualifier).
UL = Indicates that the analyte was analyzed but undetected and outside of control limits in the lab control sample/lab control sample duplicate (laboratory qualifier).
JL = Indicates that the analyte was analyzed and estimated because of a quality control outlier outside of control limits in the lab control sample/lab control sample duplicate (laboratory qualifier).

Qualification Reason Codes (multiple reason codes may be applied):
c = Calibration issue
fd = Field duplicate relative percent difference
l = Laboratory control sample recovery
s = Surrogate spike percent recovery

Appendix C

Analytical Data Validation – ARCADIS

ARCADIS Design & Consultancy for natural and built assets

Navy Wells-

Operable Unit 2

Data Review

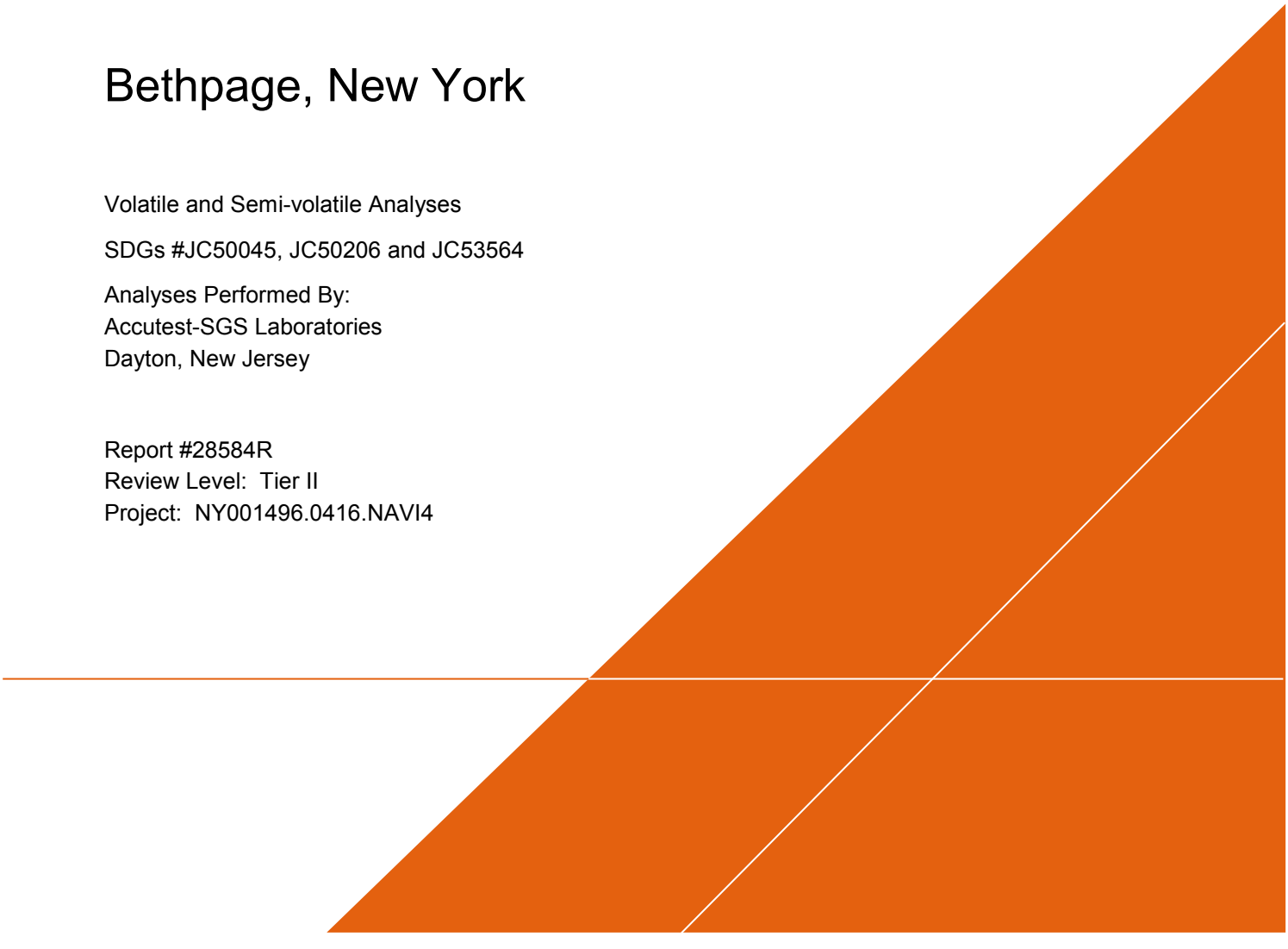
Bethpage, New York

Volatile and Semi-volatile Analyses

SDGs #JC50045, JC50206 and JC53564

Analyses Performed By:
Accutest-SGS Laboratories
Dayton, New Jersey

Report #28584R
Review Level: Tier II
Project: NY001496.0416.NAVI4



SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) #JC50045, JC50206 and JC53564 for samples collected in association with the Navy Wells located at the Bethpage Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						VOC	SVOC	PCB	MET	MISC
JC50045	BPOW5-4	JC50045-1	Water	09/01/2017		X	X			
	TB090117AR1	JC50045-2	Water	09/01/2017		X				
JC50206	BPOW5-6	JC50206-1	Water	09/05/2017		X				
	TB090517DC1	JC50206-2	Water	09/05/2017		X				
	BPOW5-5	JC50206-3	Water	09/05/2017		X				
JC53546	BPOW5-5	JC53564-1	Water	10/17/2017			X			
	BPOW5-6	JC53564-2	Water	10/17/2017			X			

Notes:

1. Samples BPOW5-5 and BPOW5-6 were originally sampled on September 9, 2017; however, due to laboratory oversight, samples were not sent out to subcontractor laboratory for Method 522-SIM analysis. The samples were resampled on October 17, 2017; data is presented in SDG JC53564.

2. EPA Method 522 Semi-volatile analysis for 1,4-Dioxane was performed by GEL Laboratories, LLC, located in Charleston, South Carolina (subcontracted via SGS-Accutest Laboratory). The associated SDGs are: JC50045X/432354 and JC53564X/435415.

3. Matrix spike/matrix spike duplicate (MS/MSD) was performed on sample location BPOW5-4 for 1,4-Dioxane analyses; sample location BPOW5-6 for VOC analysis; and, sample BPOW5-5 for 1,4-Dioxane analysis.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:
QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) methods 524.2 and 522-Selected Ion Monitoring (SIM). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and

provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUNDS (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 524.2	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2 s.u.

Note:
s.u. = Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits in all SDGs.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS was not performed on sample locations associated with SDG JC50045.

The MS exhibited acceptable recoveries in SDG JC54206.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits in SDG JC50045.

Sample locations associated with LCS analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
SDG JC50206 BPOW5-6 TB090517DC1 BPOW5-5	Chloromethane	>UL

The criteria used to evaluate the LCS recoveries are presented in the following table. In the case of an LCS deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent

sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with the SDGs validated as part of this report.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A laboratory duplicate was not performed on a sample location associated with SDG JC50045.

The laboratory duplicate performed on sample BPOW5-5 exhibited recoveries within the control limits in SDG JC50206.

8. System Performance and Overall Assessment

Tentatively identified compounds (TICs) were not identified in any sample locations.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: EPA 524.2	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks		X		X	
Laboratory Control Sample (LCS) %R		X	X		
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X

Notes:

RPD Relative percent difference

%R Percent recovery

SEMI-VOLATILE ORGANIC COMPOUNDS (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 522-SIM	Water	28 days from collection to extraction and 28 days from extraction to analysis	Cool to <6 °C; preserved with Sodium Bisulfate (NaHSO4) to a pH of less than 4 s.u.

Note:
s.u. = Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS exhibited acceptable recoveries in SDG JC50045.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
SDG JC53564: BPOW5-5	1,4-Dioxane	<LL but >10%	AC

Note:
AC =Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent

sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with the SDGs validated as part of this report.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: EPA 522-SIM	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X

Notes:

%R Percent recovery

RPD Relative percent difference

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: 

DATE: October 31, 2017

PEER REVIEW: Todd Church

DATE: November 6, 2017

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS

ACCUTEST LABORATORIES

GW
WTB

CHAIN OF CUSTODY

Accutest New Jersey/SPL Environmental
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking # #4 | Bottle Order Control #
Accutest Quote # | Accutest Job # JC50045

Client / Reporting Information

Company Name: Arcadis
Street Address: 2 Huntington Quad, Suite 1S10
City: Melville State: NY Zip: 11747
Project Contact: Soma Das, soma.das@arcadis-us.com E-mail:
Phone #: 631-249-7600 Fax #: 631-249-7610
Sampler(s) Name(s): Albina Redzepagic Phone #: 212-365-4651

Project Information

Project Name: AGMNYM72080 // OU2 Navy Outpost Wells
Navy Wells OU2 -Bethpage, New York
Street:
City: Bethpage State: NY
Project #: NY001496.0416.NAVI3
Client Purchase Order #:
Work Authorization #: NY001496_2015.10.30
Project Manager: Carlo San Giovanni

Billing Information (if different from Report to)

Company Name: Arcadis, U.S., Inc. Attn: Accts Payable
Street Address: 630 Plaza Drive, Suite 600
City: Highlands Ranch State: CO Zip: 80129
Attention: Soma Das

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	NaHSO4	V5242NG36OW+40	SB522SIM14DIOX (GEL Lab)	LAB USE ONLY
1	BROW 5-4		9/1/2017	1220	AR	GW	5	3								2	3	2	SUB
2	TB090117ARA		9/1/2017	900	—	TB	2	2									2		V700

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [x] Std. 10 Business Days (by Contract only)
- [ ] 10 Day *RUSH*
- [ ] 5 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [x] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

INITIAL ASESSMENT 3A Dow
LABEL VERIFICATION GE

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Albina Redzepagic	9/1/17 1435	1	2	9/1/17 1910	2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal # 311	Intact / Not intact	Preserved where applicable	On Ice	Cooler Temp. 3.4/1.0
5		5					

5.1.5

JC50045: Chain of Custody
Page 1 of 2

Report of Analysis

Client Sample ID:	BPOW5-4		
Lab Sample ID:	JC50045-1	**Date Sampled:**	09/01/17
Matrix:	AQ - Ground Water	**Date Received:**	09/01/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111572.D	1	09/05/17 13:51	BK	n/a	n/a	V1B5318
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW5-4		
Lab Sample ID:	JC50045-1	**Date Sampled:**	09/01/17
Matrix:	AQ - Ground Water	**Date Received:**	09/01/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	91%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB090117AR1		
Lab Sample ID:	JC50045-2	**Date Sampled:**	09/01/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/01/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111571.D	1	09/05/17 13:19	BK	n/a	n/a	V1B5318
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB090117AR1		
Lab Sample ID:	JC50045-2	**Date Sampled:**	09/01/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/01/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	91%		70-130%
460-00-4	4-Bromofluorobenzene	90%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

CHAIN OF CUSTODY

432354

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GEL

SGS ACCUTEST

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

FED-EX Tracking #	Bottle Order Control #
SGS Accutest Quote #	SGS Accutest Job # JC50045X

Client / Reporting Information	Project Information
Company Name: SGS Accutest	Project Name: Navy Wells, OU2, Bethpage, NY
Street Address: 2235 Route 130	Street:
City: Dayton State: NJ Zip: 08810	City: State:
Project Contact: diane.komar@sgs.com E-mail:	Project #:
Phone #: 732-329-0200 Fax #:	Client Purchase Order #:
Sampler(s) Name(s): AR Phone:	Project Manager:

Billing Information (if different from Report to)
Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	SB522SIM14DIOX ,1,4-Dioxane via EPA 522 (Low PQL Reuiqred)	LAB USE ONLY
1X	BPOW 5-4		9/1/17	12:20:00 PM	AR	AQ	2								2	X	

Turnaround Time (Business days)

Approved By (SGS Accutest PM): / Date:

- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [X] other 21

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [X] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions: 2 bottles per sample with NaHSO4 preservative.

Sample Custody must be documented below each time samples change possession, including courier delivery.

1 Relinquished by Sampler:	Date Time: 9/6/17 17:xx	Received By: 1	2 Relinquished By:	Date Time:	Received By: 2 9/7/17 9:05
3 Relinquished by Sampler:	Date Time:	Received By: 3	4 Relinquished By:	Date Time:	Received By: 4
5 Relinquished by:	Date Time:	Received By: 5	Custody Seal # 525, 527, 528 [ ] Intact [ ] Not intact	Preserved where applicable [ ]	On Ice [ ] Cooler Temp.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ACTL003 SGS Accutest

Client SDG: JC50045X GEL Work Order: 432354

The Qualifiers in this report are defined as follows:

* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
** Indicates the analyte is a surrogate compound.
U Indicates the target analyte was analyzed for but not detected above the detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Barbara Bailey **Name: Barbara Bailey**

Date: 21 SEP 2017 **Title: Data Validator**

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC50045X**	**Date Collected:**	**09/01/2017 12:20**	**Matrix:**	**WATER**
Lab Sample ID:	**432354001**	**Date Received:**	**09/07/2017 10:15**		
		Client:	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**BPOW 5-4**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1701325**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**09/19/2017 15:41**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**09/19/2017 08:15**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s091917.B\s6i1907.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		1.13	ug/L	0.100	0.100	0.200

ACCUTEST LABORATORIES

GW WTB

CHAIN OF CUSTODY

Accutest New Jersey/SPL Environmental
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

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FED-EX Tracking #: #4 | Bottle Order Control #:
Accutest Quote #: | Accutest Job #: JC50206

Client / Reporting Information

Company Name: Arcadis
Street Address: 2 Huntington Quad, Suite 1S10
City: Melville State: NY Zip: 11747
Project Contact: Soma Das, soma.das@arcadis-us.com E-mail:
Phone #: 631-249-7600 Fax #: 631-249-7610
Sampler(s) Name(s): Pat Prezorski / Corbett Phone #: 516-247-6247

Project Information

Project Name: AGMNYM72080 // OU2 Navy Outpost Wells Navy Wells OU2 -Bethpage, New York
Street:
City: Bethpage State: NY
Project #: NY001496.0416.NAVI3
Client Purchase Order #:
Work Authorization #: NY001496_2015.10.30
Project Manager: Carlo San Giovanni

Billing Information (if different from Report to)
Company Name: Arcadis, U.S., Inc. Attn: Accts Payable
Street Address: 630 Plaza Drive, Suite 600
City: Highlands Ranch, State: CO Zip: 80129
Attention: Soma Das

Requested Analysis (see TEST CODE sheet): V5242NG36OW+40; SB522SIM14DIOX (GEL Lab)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	NaHSO4	V5242NG36OW+40	SB522SIM14DIOX (GEL Lab)	LAB USE ONLY
1	BPOW 5-6		9/5/17	1505	DC	GW	5	3								2	3	2	SUB
2	TB090517DC1		9/5/17	1400	—	TB	2	2									2		V720
3	BPOW 5-5		9/5/17	1525	PP	GW	5	3								2	3	2	

INITIAL ASSESSMENT [initials]
LABEL VERIFICATION [initials]

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Turnaround Time (Business days)
- [ ] Std. 15 Business Days
- [x] Std. 10 Business Days (by Contract only)
- [ ] 10 Day *RUSH*
- [ ] 5 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information
- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [x] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions
OU2 Hydro

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1 [signature]	Date Time: 9/5/17 1930	Received By: 1 Chris Law	Date Time: 9/6/17 10:45	Relinquished By: 2 Chris Law	Date Time: 9/6/17 1705	Received By: 2 [signature]
Relinquished by Sampler: 3	Date Time:	Received By: 3		Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5		Custody Seal #	[x] Intact [ ] Not intact	Preserved where applicable [ ]	On Ice [x]	Cooler Temp. 1.6° C IP

5.1

5

JC50206: Chain of Custody
Page 1 of 2

Report of Analysis

Client Sample ID:	BPOW5-6		
Lab Sample ID:	JC50206-1	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/06/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Northrup Grumman, Navy Wells 0U2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111601.D	1	09/07/17 12:07	BK	n/a	n/a	V1B5320
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW5-6		
Lab Sample ID:	JC50206-1	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/06/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Northrup Grumman, Navy Wells 0U2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	88%		70-130%
460-00-4	4-Bromofluorobenzene	85%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB090517DC1		
Lab Sample ID:	JC50206-2	**Date Sampled:**	09/05/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/06/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Northrup Grumman, Navy Wells 0U2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111600.D	1	09/07/17 11:35	BK	n/a	n/a	V1B5320
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB090517DC1		
Lab Sample ID:	JC50206-2	**Date Sampled:**	09/05/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/06/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Northrup Grumman, Navy Wells 0U2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	87%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW5-5		
Lab Sample ID:	JC50206-3	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/06/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Northrup Grumman, Navy Wells 0U2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111602.D	1	09/07/17 12:38	BK	n/a	n/a	V1B5320
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW5-5		
Lab Sample ID:	JC50206-3	**Date Sampled:**	09/05/17
Matrix:	AQ - Ground Water	**Date Received:**	09/06/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Northrup Grumman, Navy Wells 0U2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	89%		70-130%
460-00-4	4-Bromofluorobenzene	86%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

435415

PAGE 1 OF 1

Accutest New Jersey/SPL Environmental
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking # #4 | Bottle Order Control #
Accutest Quote # | Accutest Job #

Client / Reporting Information

Company Name: Arcadis
Street Address: 2 Huntington Quad, Suite 1S10
City: Melville State: NY Zip: 11747
Project Contact: Soma Das, soma.das@arcadis-us.com E-mail:
Phone #: 631-249-7600 Fax #: 631-249-7610
Sampler(s) Name(s): Pat Prowse Phone #: 516-287-6247

Project Information

Project Name: AGMNYM72080 // OU2 Navy Outpost Wells
Navy Wells OU2 -Bethpage, New York
Street:
City: Bethpage State: NY
Project #: NY001496.0416.NAVI3
Client Purchase Order #:
Work Authorization #: NY001496_2015.10.30
Project Manager: Carlo San Giovanni

Billing Information (If different from Report to)

Company Name: Arcadis, U.S., Inc. Attn: Accts Payable
Street Address: 630 Plaza Drive, Suite 600
City: Highlands Ranch, State: CO Zip: 80129
Attention: Soma Das

Requested Analysis (see TEST CODE sheet)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	NaHSO4	V5242NG36OW+40	SB522SIM14DIOX (GEL Lab)
	BPOW 5-5		10/17/17	1630	PP	GW	2									X		X
	BPOW 5-6		10/17/17	1555	PP	GW	2									X		X

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

LAB USE ONLY

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [x] Std. 10 Business Days (by Contract only)
- [ ] 10 Day *RUSH*
- [ ] 5 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*

* Expedite per SGS Lab

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [x] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

OU2 Hydro

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1 Pat Prowse	Date Time: 10-17-17 1745	Received By: 1	Relinquished By: 2	Date Time:	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Intact / Not intact	Preserved where applicable / On Ice / Cooler Temp.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ACTL003 SGS Accutest

Client SDG: JC53564X GEL Work Order: 435415

The Qualifiers in this report are defined as follows:

* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
** Indicates the analyte is a surrogate compound.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit or indicates that the analyte recovery in the MS or MSD is outside of specified acceptance criteria.
U Indicates the target analyte was analyzed for but not detected above the detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Barbara Bailey **Name: Barbara Bailey**

Date: 24 OCT 2017 **Title: Data Validator**

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC53564X**	**Date Collected:**	**10/17/2017 16:30**	**Matrix:**	**WATER**
Lab Sample ID:	**435415001**	**Date Received:**	**10/18/2017 09:00**		
		Client:	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**BPOW5-5**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1711186**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**10/24/2017 11:48**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**10/24/2017 07:45**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s102417.B\s6i2405.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	J	1.50	ug/L	0.100	0.100	0.200

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC53564X**	**Date Collected:**	**10/17/2017 15:55**	**Matrix:**	**WATER**
Lab Sample ID:	**435415002**	**Date Received:**	**10/18/2017 09:00**		
		Client:	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**BPOW5-6**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1711186**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**10/24/2017 12:13**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**10/24/2017 07:45**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s102417.B\s6i2406.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	J	0.162	ug/L	0.100	0.100	0.200

ARCADIS Design & Consultancy for natural and built assets

Navy Wells-

Operable Unit 2

Data Review

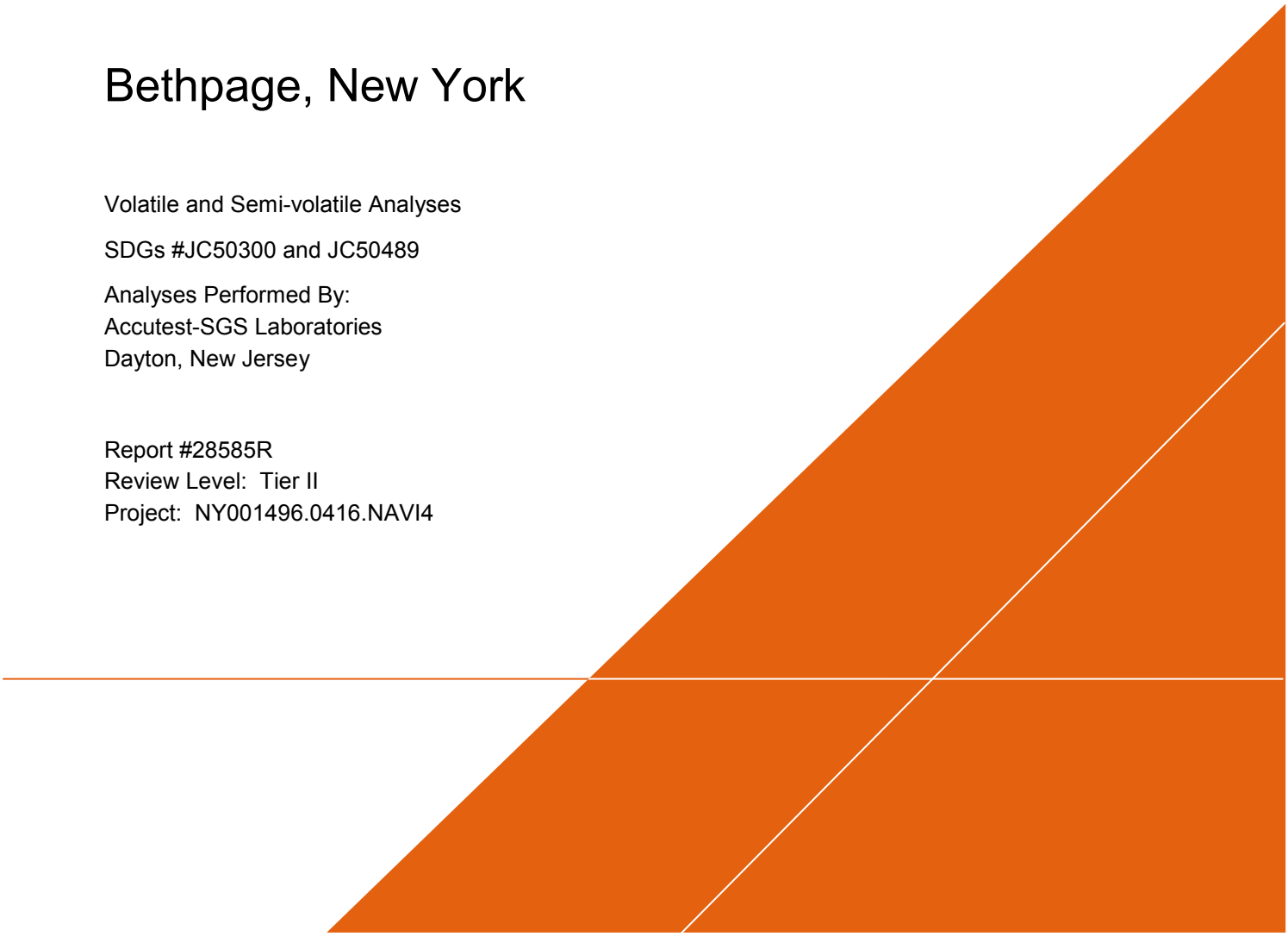
Bethpage, New York

Volatile and Semi-volatile Analyses

SDGs #JC50300 and JC50489

Analyses Performed By:
Accutest-SGS Laboratories
Dayton, New Jersey

Report #28585R
Review Level: Tier II
Project: NY001496.0416.NAVI4



SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) #JC50300 and JC50489 for samples collected in association with the Navy Wells located at the Bethpage Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						VOC	SVOC	PCB	MET	MISC
JC50300	BPOW5-7	JC50300-1	Water	09/06/2017		X	X			
	TB090617PP1	JC50300-2	Water	09/06/2017		X				
JC50489	BPOW5-3	JC50489-1	Water	09/07/2017		X	X			
	BPOW5-2	JC50489-2	Water	09/07/2017		X	X			
	TB090717DC1	JC50489-3	Water	09/07/2017		X				

Notes:

1. EPA Method 522 Semi-volatile analysis for 1,4-Dioxane was performed by GEL Laboratories, LLC, located in Charleston, South Carolina (subcontracted via SGS-Accutest Laboratory). The associated SDGs are: JC50300X/432579 and JC50489X/432583.

2. Matrix spike/matrix spike duplicate (MS/MSD) was performed on sample location BPOW5-3 for VOC analyses.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:
QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) methods 524.2 and 522-Selected Ion Monitoring (SIM). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and

provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUNDS (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 524.2	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2 s.u.

Note:
s.u. = Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits in all SDGs.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS was not performed on sample locations associated with SDG JC50300.

The MS exhibited acceptable recoveries in SDG JC50489.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with the SDGs validated as part of this report.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A laboratory duplicate was not performed on a sample location associated with SDGs JC50300 or JC50489.

8. System Performance and Overall Assessment

Tentatively identified compounds (TICs) were not identified in any of the sample locations.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: EPA 524.2	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X

Notes:

RPD Relative percent difference

%R Percent recovery

SEMI-VOLATILE ORGANIC COMPOUNDS (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 522-SIM	Water	28 days from collection to extraction and 28 days from extraction to analysis	Cool to <6 °C; preserved with Sodium Bisulfate (NaHSO4) to a pH of less than 4 s.u.

Note:
s.u. = Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits in all SDGs.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated with SDGs JC50300 or JC50489.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with the SDGs validated as part of this report.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: EPA 522-SIM	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X

Notes:

%R Percent recovery

RPD Relative percent difference

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: 

DATE: October 30, 2017

PEER REVIEW: Todd Church

DATE: November 6, 2017

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS

ACCUTEST LABORATORIES

GW WTB

CHAIN OF CUSTODY

Accutest New Jersey/SPL Environmental
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking #: #4 | Bottle Order Control #:
Accutest Quote #: | Accutest Job #: JC50300

Client / Reporting Information

Company Name: Arcadis
Street Address: 2 Huntington Quad, Suite 1S10
City: Melville State: NY Zip: 11747
Project Contact: Soma Das, E-mail: soma.das@arcadis-us.com
Phone #: 631-249-7600 Fax #: 631-249-7610
Sampler(s) Name(s): Pat Przurski Phone #: 516-287-6247

Project Information

Project Name: AGMNYM72080 // OU2 Navy Outpost Wells Navy Wells OU2 -Bethpage, New York
Street:
City: Bethpage State: NY
Project #: NY001496.0416.NAVI3
Client Purchase Order #:
Work Authorization #: NY001496_2015.10.30
Project Manager: Carlo San Giovanni

Billing Information (if different from Report to)
Company Name: Arcadis, U.S., Inc. Attn: Accts Payable
Street Address: 630 Plaza Drive, Suite 600
City: Highlands Ranch, State: CO Zip: 80129
Attention: Soma Das

Requested Analysis (see TEST CODE sheet)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	NaHSO4	V5242NG36OW+40	SB522SIM14DIOX (GEL Lab)	LAB USE ONLY
1	BPOW 5-7		9/6/17	1420	PP	GW	5	3								2	3	2	SUB
2	TB090617PP1		9/6/17	1300	—	TB	2	2									2		U737

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [x] Std. 10 Business Days (by Contract only)
- [ ] 10 Day *RUSH*
- [ ] 5 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

INITIAL ASSESSMENT ab dom
LABEL VERIFICATION GE

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [x] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

OU2 Hydro

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Pat Przurski	9/6/17 1700	1 Chris Lord	2 Chris Lord (Date 9/7/17 Time 10:15)	9/7/17/1750	2 [signature]
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #		

Intact / Not intact; Preserved where applicable; On Ice [x]; Cooler Temp. 2.6°C

5.1 | 5

JC50300: Chain of Custody
Page 1 of 2

Report of Analysis

Client Sample ID:	BPOW5-7		
Lab Sample ID:	JC50300-1	**Date Sampled:**	09/06/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111628.D	1	09/12/17 17:15	BK	n/a	n/a	V1B5322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW5-7		
Lab Sample ID:	JC50300-1	**Date Sampled:**	09/06/17
Matrix:	AQ - Ground Water	**Date Received:**	09/07/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	89%		70-130%
460-00-4	4-Bromofluorobenzene	85%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB090617PP1		
Lab Sample ID:	JC50300-2	**Date Sampled:**	09/06/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/07/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111627.D	1	09/12/17 16:44	BK	n/a	n/a	V1B5322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB090617PP1		
Lab Sample ID:	JC50300-2	**Date Sampled:**	09/06/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/07/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	88%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS ACCUTEST

CHAIN OF CUSTODY

432579

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

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FED-EX Tracking #

Bottle Order Control #

SGS Accutest Quote #

SGS Accutest Job: JC50300X

Client / Reporting Information

Company Name: SGS Accutest

Street Address: 2235 Route 130

City: Dayton State: NJ Zip: 08810

Project Contact: diane.komar@sgs.com E-mail:

Phone #: 732-329-0200 Fax #:

Sampler(s) Name(s): PP Phone:

Project Information

Project Name: Navy Wells, OU2, Bethpage, NY

Street:

City State:

Project #:

Client Purchase Order #:

Project Manager:

Billing Information (if different from Report to)

Company Name:

Street Address:

City State Zip:

Attention:

Requested Analysis (see TEST CODE sheet)

SB522SIM14DIOX ,1,4-Dioxane via EPA 522 (Low PQL Required)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	SB522SIM14DIOX ,1,4-Dioxane via EPA 522 (Low PQL Required)	LAB USE ONLY
1X	BPOW5-7		9/6/17	2:20:00 PM	PP	AQ	2								2	X	

Turnaround Time (Business days)

Approved By (SGS Accutest PM): / Date:

- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [X] other 21

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [X] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

2 bottles with NaHSo4 preservative

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 9-12-17 1700	Received By: 1 FEDEX	Relinquished By: 2	Date Time:	Received By: 2 Alexandra Ahern 9/13/17 9:20
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # 533 [ ] Intact [ ] Not intact	Preserved where applicable [ ]	On Ice [ ] Cooler Temp.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ACTL003 SGS Accutest

Client SDG: JC50300X GEL Work Order: 432579

The Qualifiers in this report are defined as follows:

* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
** Indicates the analyte is a surrogate compound.
U Indicates the target analyte was analyzed for but not detected above the detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Barbara Bailey **Name: Barbara Bailey**

Date: 27 SEP 2017 **Title: Data Validator**

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC50300X**	**Date Collected:**	**09/06/2017 14:20**	**Matrix:**	**WATER**
Lab Sample ID:	**432579001**	**Date Received:**	**09/13/2017 09:00**		
		Client:	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**BPOW 5-7**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1701325**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**09/19/2017 22:39**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**09/19/2017 08:15**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s091917.B\s6i1924.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

ACCUTEST LABORATORIES

GW WTB

CHAIN OF CUSTODY

Accutest New Jersey/SPL Environmental
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking # #4 | Bottle Order Control #
Accutest Quote # | Accutest Job # JC50489

Client / Reporting Information

Company Name: Arcadis
Street Address: 2 Huntington Quad, Suite 1S10
City: Melville State: NY Zip: 11747
Project Contact: Soma Das, soma.das@arcadis-us.com E-mail:
Phone #: 631-249-7600 Fax #: 631-249-7610
Sampler(s) Name(s): Pat Brezosky/Corbett Phone #: 516-624-7

Project Information

Project Name: AGMNYM72080 // OU2 Navy Outpost Wells
Navy Wells OU2 -Bethpage, New York
Street:
City: Bethpage State: NY
Project #: NY001496.0416.NAVI3
Client Purchase Order #:
Work Authorization #: NY001496_2015.10.30
Project Manager: Carlo San Giovanni

Billing Information (if different from Report to)

Company Name: Arcadis, U.S., Inc. Attn: Accts Payable
Street Address: 630 Plaza Drive, Suite 600
City: Highlands Ranch, CO State: Zip: 80129
Attention: Soma Das

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	NaHSO4	V5242NG36OW+40	SB522SIM14DIOX (GEL Lab)	LAB USE ONLY
1	BPOW 5-3		9/7/17	1310	DC	GW	5	3								2	3	2	E92 V767
2	BPOW 5-2		9/7/17	1345	DC	GW	5	3								2	3	2	
3	TB090717DC2		9/7/17	1200	—	TB	2	2									2		

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [x] Std. 10 Business Days (by Contract only)
- [ ] 10 Day *RUSH*
- [ ] 5 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:
INITIAL ASESSMENT 30 Dom
LABEL VERIFICATION MH

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [x] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

OU2 Hyp

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		9/7/17 1530	1	2	9/8/17 1030	2
3	Relinquished By Sampler:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal # 818	[x] Intact [ ] Not intact	Preserved where applicable [ ]	On Ice [ ]	Cooler Temp. 3.3°C IP

5.1 5

JC50489: Chain of Custody
Page 1 of 2

Report of Analysis

Client Sample ID:	BPOW5-3		
Lab Sample ID:	JC50489-1	**Date Sampled:**	09/07/17
Matrix:	AQ - Ground Water	**Date Received:**	09/08/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111626.D	1	09/12/17 16:12	BK	n/a	n/a	V1B5322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW5-3		
Lab Sample ID:	JC50489-1	**Date Sampled:**	09/07/17
Matrix:	AQ - Ground Water	**Date Received:**	09/08/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	87%		70-130%
460-00-4	4-Bromofluorobenzene	87%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW5-2		
Lab Sample ID:	JC50489-2	**Date Sampled:**	09/07/17
Matrix:	AQ - Ground Water	**Date Received:**	09/08/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111629.D	1	09/12/17 17:47	BK	n/a	n/a	V1B5322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW5-2		
Lab Sample ID:	JC50489-2	**Date Sampled:**	09/07/17
Matrix:	AQ - Ground Water	**Date Received:**	09/08/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	88%		70-130%
460-00-4	4-Bromofluorobenzene	85%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB090717DC1		
Lab Sample ID:	JC50489-3	**Date Sampled:**	09/07/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/08/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111630.D	1	09/12/17 18:18	BK	n/a	n/a	V1B5322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB090717DC1		
Lab Sample ID:	JC50489-3	**Date Sampled:**	09/07/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/08/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	88%		70-130%
460-00-4	4-Bromofluorobenzene	86%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS ACCUTEST

CHAIN OF CUSTODY

432583

Page 1 of 1

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

FED-EX Tracking #	Bottle Order Control #
SGS Accutest Quote #	SGS Accutest Job # JC50489X

Client / Reporting Information	Project Information	Billing Information (if different from Report to)
Company Name: SGS Accutest	Project Name: Navy Wells, OU2, Bethpage, NY	
Street Address: 2235 Route 130	Street	
City: Dayton State: NJ Zip: 08810	City State	Company Name
Project Contact: diane.komar@sgs.com E-mail	Project #	Street Address
Phone #: 732-329-0200 Fax #	Client Purchase Order #	City State Zip
Sampler(s) Name(s): DC Phone	Project Manager	Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE		SB522SIM14DIOX (1,4-Dioxane via EPA 522) Low PQL required	LAB USE ONLY
1X	BPOW5-3		9/7/17	1:10:00 PM	DC	AQ	2									2	X	
2X	BPOW5-2		9/7/17	1:45:00 PM	DC	AQ	2									2	X	

Turnaround Time (Business days)

Approved By (SGS Accutest PM): / Date:

- ☐ Std. 10 Business Days
- ☐ 5 Day RUSH
- ☐ 3 Day EMERGENCY
- ☐ 2 Day EMERGENCY
- ☐ 1 Day EMERGENCY
- ☒ other 14

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ FULLT1 (Level 3+4)
- ☐ NJ Reduced
- ☐ Commercial "C"
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format
- ☒ Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions: 2 bottles per sample with NaHSO$ preservative

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 9/8/17 1700	Received By: 1 FED EX	Relinquished By: 2	Date Time:	Received By: 2 Alexandra Mann 9/11/17 9:20
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # 533 ☐ Intact ☐ Not intact	Preserved where applicable ☐	On Ice ☐ Cooler Temp.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ACTL003 SGS Accutest

Client SDG: JC50489X GEL Work Order: 432583

The Qualifiers in this report are defined as follows:

* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
** Indicates the analyte is a surrogate compound.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit or indicates that the analyte recovery in the MS or MSD is outside of specified acceptance criteria.
U Indicates the target analyte was analyzed for but not detected above the detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Barbara Bailey **Name: Barbara Bailey**

Date: 02 OCT 2017 **Title: Data Validator**

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC50489X**	**Date Collected:**	**09/07/2017 13:10**	**Matrix:**	**WATER**
Lab Sample ID:	**432583001**	**Date Received:**	**09/13/2017 10:00**		
		Client:	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**BPOW 5-3**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1701327**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**09/20/2017 16:24**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**09/20/2017 07:45**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s092017.B\s6i2017.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane		1.02	ug/L	0.100	0.100	0.200

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC50489X**	**Date Collected:**	**09/07/2017 13:45**	**Matrix:**	**WATER**
Lab Sample ID:	**432583002**	**Date Received:**	**09/13/2017 10:00**		
		Client:	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**BPOW 5-2**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1701327**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**09/20/2017 17:15**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**09/20/2017 07:45**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s092017.B\s6i2019.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	J	0.102	ug/L	0.100	0.100	0.200

ARCADIS Design & Consultancy for natural and built assets

Navy Wells-

Operable Unit 2

Data Review

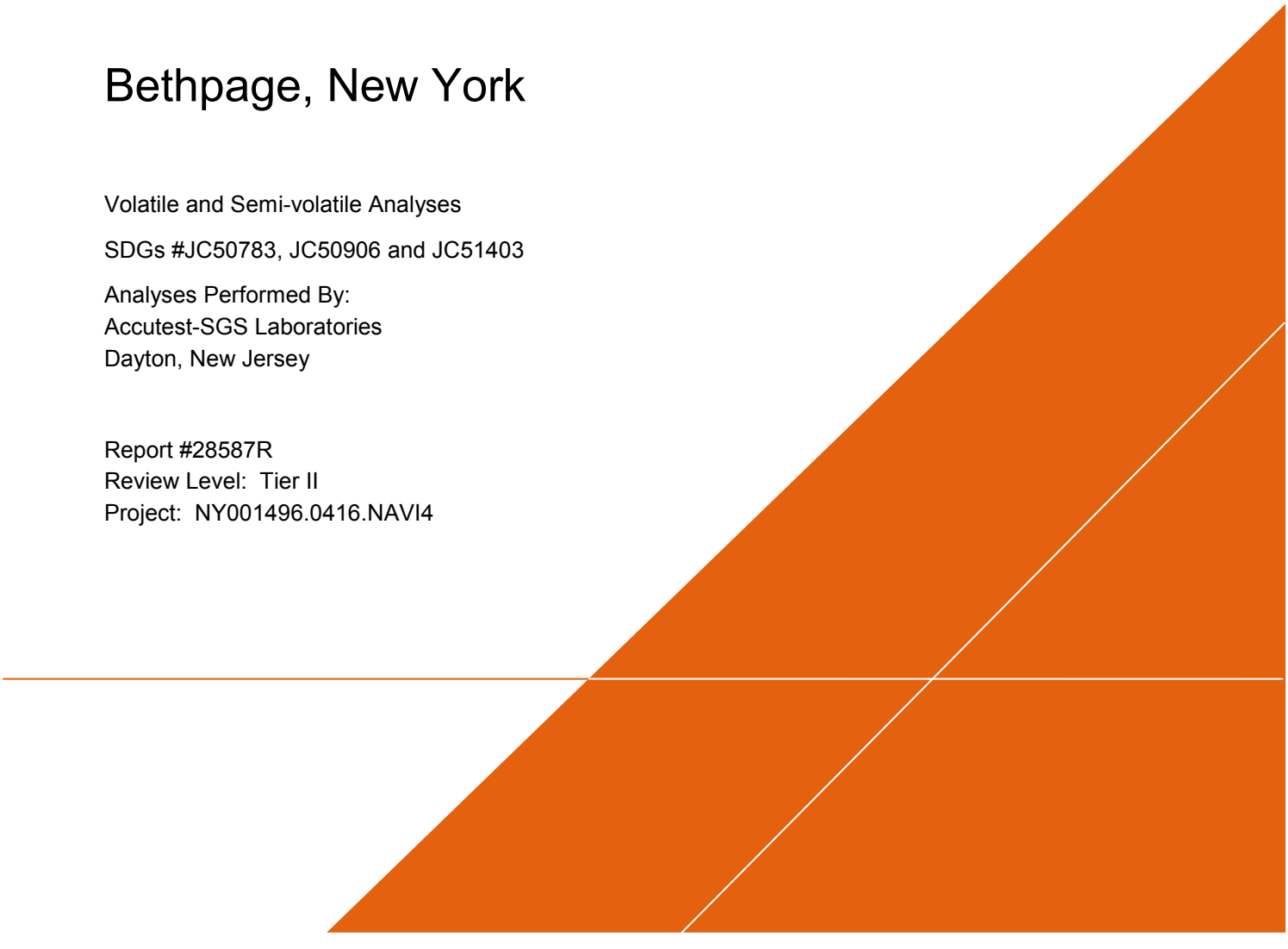
Bethpage, New York

Volatile and Semi-volatile Analyses

SDGs #JC50783, JC50906 and JC51403

Analyses Performed By:
Accutest-SGS Laboratories
Dayton, New Jersey

Report #28587R
Review Level: Tier II
Project: NY001496.0416.NAVI4



SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) #JC50783, JC50906 and JC51403 for samples collected in association with the Navy Wells located at the Bethpage Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						VOC	SVOC	PCB	MET	MISC
JC50783	BPOW2-1	JC50783-1	Water	09/12/2017		X	X			
	BPOW2-2	JC50783-2	Water	09/12/2017		X	X			
	TB091217AD1	JC50783-3	Water	09/12/2017		X				
	DISCHARGE_091217	JC50783-4	Water	09/12/2017		X	X			
JC50906	BPOW5-1	JC50906-1	Water	09/13/2017		X	X			
	TB091317AD1	JC50906-2	Water	09/13/2017		X				
JC51403	BPOW2-3	JC51403-1	Water	09/20/2017		X	X			
	TB092017PP1	JC51403-2	Water	09/20/2017		X				

Notes:

1. Sample TB091217AD1 was inadvertently logged in upon receipt at the laboratory as TB091217A**P**1.
2. Sample DISCHARGE_091217 was analyzed by EPA Method 624.
3. EPA Method 522 Semi-volatile analysis for 1,4-Dioxane was performed by GEL Laboratories, LLC, located in Charleston, South Carolina (subcontracted via SGS-Accutest Laboratory). The associated SDGs are: JC50783X/432888, JC50906X/433005 and JC51403X/433560.
4. Matrix spike/matrix spike duplicate (MS/MSD) was performed on sample location BPOW2-3 for VOC and 1,4-Dioxane analyses.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:
QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) methods 624, 524.2 and 522-Selected Ion Monitoring (SIM). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and

provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUNDS (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 524.2	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2 s.u.
EPA 624			

Note:
s.u. = Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS was not performed on sample locations associated with SDGs JC50783 and JC50906.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
SDG JC51403: BPOW2-3	Carbon disulfide	AC	>UL
	Methylene chloride	AC	>UL

Note:
AC = Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
SDG JC51403: BPOW2-3	Benzene
	Bromodichloromethane
	Chlorobenzene
	Chloroform

Sample Locations	Compound
	1,1-Dichloroethane
	1,2-Dichloropropane
	trans-1,2-Dichloroethylene
	cis-1,2-Dichloroethylene
	cis-1,3-Dichloropropene
	trans-1,3-Dichloropropene
	Ethylbenzene
	Methylene chloride
	1,1,1-Trichloroethane
	1,1,2,2-Tetrachloroethane
	1,1,2-Trichloroethane
	Toluene
	Trichloroethylene

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with the SDGs validated as part of this report.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A laboratory duplicate was not performed on a sample location associated with SDGs JC50783, JC50906 or JC51403.

8. System Performance and Overall Assessment

Tentatively identified compounds (TICs) were not identified in any of the sample locations.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: EPA 624 and 524.2	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X	X		
MS/MSD Precision (RPD)		X	X		
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X

Notes:

RPD Relative percent difference

%R Percent recovery

SEMI-VOLATILE ORGANIC COMPOUNDS (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 522-SIM	Water	28 days from collection to extraction and 28 days from extraction to analysis	Cool to <6 °C; preserved with Sodium Bisulfate (NaHSO4) to a pH of less than 4 s.u.

Note:
s.u. = Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits in all SDGs.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated with SDG JC50783 or JC50906.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries in SDG JC51403.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with the SDGs validated as part of this report.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: EPA 522-SIM	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X

Notes:

%R Percent recovery

RPD Relative percent difference

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: 

DATE: October 31, 2017

PEER REVIEW: Todd Church

DATE: November 6, 2017

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ACTL003 SGS Accutest

Client SDG: JC50783X GEL Work Order: 432888

The Qualifiers in this report are defined as follows:

* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
** Indicates the analyte is a surrogate compound.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit or indicates that the analyte recovery in the MS or MSD is outside of specified acceptance criteria.
U Indicates the target analyte was analyzed for but not detected above the detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Barbara Bailey **Name: Barbara Bailey**

Date: 03 OCT 2017 **Title: Data Validator**

ACCUTEST LABORATORIES

GW w/B

CHAIN OF CUSTODY

Accutest New Jersey/SPL Environmental
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking #	#4	Bottle Order Control #	
Accutest Quote #		Accutest Job #	JC50906

Client / Reporting Information

- Company Name: Arcadis
- Street Address: 2 Huntington Quad, Suite 1S10
- City: Melville State: NY Zip: 11747
- Project Contact: Soma Das E-mail: soma.das@arcadis-us.com
- Phone #: 631-249-7600 Fax #: 631-249-7610
- Sampler(s) Name(s): Anna Drewiger Phone #: 724-420-6243

Project Information

- Project Name: AGMNYM72080 // OU2 Navy Outpost Wells Navy Wells OU2 -Bethpage, New York
- Street:
- City: Bethpage State: NY
- Project #: NY001496.0416.NAVI3
- Client Purchase Order #:
- Work Authorization #: NY001496_2015.10.30
- Project Manager: Carlo San Giovanni

Billing Information (if different from Report to)

- Company Name: Arcadis, U.S., Inc. Attn: Accts Payable
- Street Address: 630 Plaza Drive, Suite 600
- City: Highlands Ranch, State: CO Zip: 80129
- Attention: Soma Das

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	NaHSO4	V5242NG36OW+40	SB522SIM14DIOX (GEL Lab)	LAB USE ONLY
1	BPOW 5-1		9/13/17	1130	AD	GW	7	3								4	3	4	SUB
2	TB091317AD1		9/13/17	0800	—	TB	2	2									2		V846

INITIAL ASESSMENT 2B DS

LABEL VERIFICATION SD

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [x] Std. 10 Business Days (by Contract only)
- [ ] 10 Day *RUSH*
- [ ] 5 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*

Approved By (Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [x] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

OU2 Hydro

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	9/13/17 1305	1 [signature] 9/14/17 1050	2 [signature]	9/14/17 / 1800	2 [signature]
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	[x] Intact [ ] Not intact	Preserved where applicable [ ]

On Ice [x] Cooler Temp. 2.9 °C IR

5.1

5

JC50906: Chain of Custody
Page 1 of 2

Report of Analysis

Client Sample ID:	BPOW5-1		
Lab Sample ID:	JC50906-1	**Date Sampled:**	09/13/17
Matrix:	AQ - Ground Water	**Date Received:**	09/14/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111757.D	1	09/20/17 18:37	BK	n/a	n/a	V1B5327
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW5-1		
Lab Sample ID:	JC50906-1	**Date Sampled:**	09/13/17
Matrix:	AQ - Ground Water	**Date Received:**	09/14/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	87%		70-130%
460-00-4	4-Bromofluorobenzene	84%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB091317AD1		
Lab Sample ID:	JC50906-2	**Date Sampled:**	09/13/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/14/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111758.D	1	09/20/17 19:09	BK	n/a	n/a	V1B5327
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB091317AD1		
Lab Sample ID:	JC50906-2	**Date Sampled:**	09/13/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/14/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	89%		70-130%
460-00-4	4-Bromofluorobenzene	82%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS ACCUTEST

CHAIN OF CUSTODY

433005

Page 1 of 1

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

FED-EX Tracking #	Bottle Order Control #
SGS Accutest Quote #	SGS Accutest Job # JC50906X

Client / Reporting Information	Project Information
Company Name: SGS Accutest	Project Name: Navy Wells, OU2, Bethpage, NY
Street Address: 2235 Route 130	Street
City: Dayton State: NJ Zip: 08810	City State
Project Contact: diane.komar@sgs.com E-mail	Project #
Phone #: 732-329-0200 Fax #	Client Purchase Order #
Sampler(s) Name(s): AD Phone	Project Manager

Billing Information (if different from Report to)
Company Name
Street Address
City State Zip
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	SB522SIM14DIOX ,(1,4-Dioxane via EPA 522) Low PQL required	LAB USE ONLY
1X	BPOW5-1		9/13/17	11:30:00 AM	AD	AQ	2								2	X	

Turnaround Time (Business days)

Approved By (SGS Accutest PM): / Date:

- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [X] other 21

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [X] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions: 2 bottles per sample with NaHSO4 preservative.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 9-15-17 1100	Received By: 1 FEDEX	Relinquished By: 2	Date Time: 9/16/17 850	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # 594 [ ] Intact [ ] Not intact	Preserved where applicable [ ]	On Ice [ ] Cooler Temp.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ACTL003 SGS Accutest

Client SDG: JC50906X GEL Work Order: 433005

The Qualifiers in this report are defined as follows:

* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
** Indicates the analyte is a surrogate compound.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit or indicates that the analyte recovery in the MS or MSD is outside of specified acceptance criteria.
U Indicates the target analyte was analyzed for but not detected above the detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Barbara Bailey **Name: Barbara Bailey**

Date: 03 OCT 2017 **Title: Data Validator**

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC50906X**	**Date Collected:**	**09/13/2017 11:30**	**Matrix:**	**WATER**
Lab Sample ID:	**433005001**	**Date Received:**	**09/16/2017 08:50**		
Client Sample:	**1X**	**Client:**	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**BPOW5-1**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1701327**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**09/21/2017 15:03**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**09/20/2017 07:45**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s092117.B\s6i2117.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

ARCADIS Design & Consultancy for natural and built assets

Navy Wells-

Operable Unit 2

Data Review

Bethpage, New York

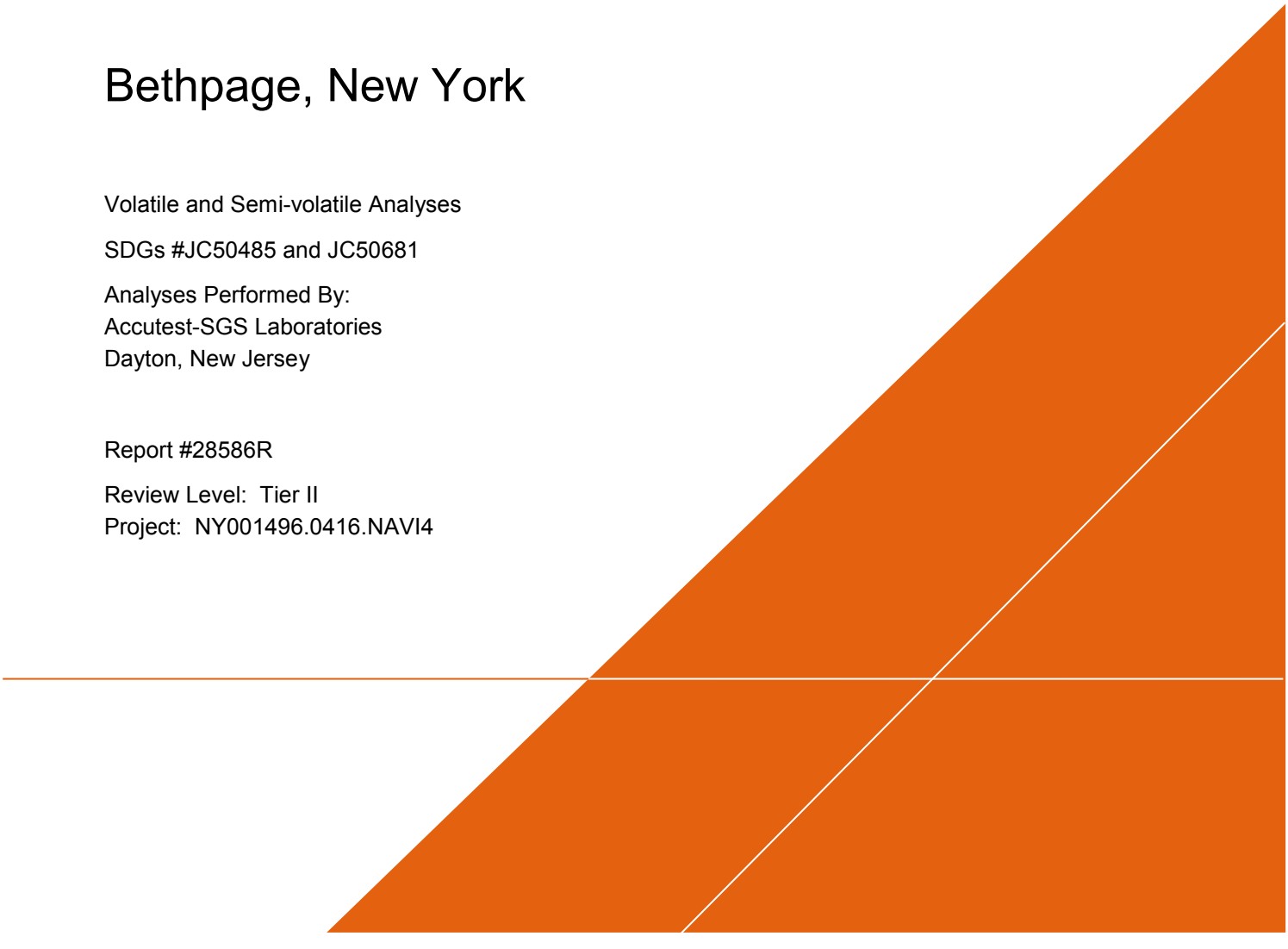
Volatile and Semi-volatile Analyses

SDGs #JC50485 and JC50681

Analyses Performed By:
Accutest-SGS Laboratories
Dayton, New Jersey

Report #28586R

Review Level: Tier II
Project: NY001496.0416.NAVI4



SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) #JC50485 and JC50681 for samples collected in association with the Navv Wells located at the Bethpage Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						VOC	SVOC	PCB	MET	MISC
JC50485	BPOW6-5	JC50485-1	Water	09/08/2017		X	X			
	BPOW6-6	JC50485-2	Water	09/08/2017		X	X			
	TB090817PP1	JC50485-3	Water	09/08/2017		X				
JC50681	REP091117AD1	JC50681-1	Water	09/11/2017	BPOW6-4	X	X			
	TB091117AD1	JC50681-2	Water	09/11/2017		X				
	BPOW6-3	JC50681-3	Water	09/11/2017		X	X			
	BPOW6-4	JC50681-4	Water	09/11/2017		X	X			
	BPOW6-1	JC50681-5	Water	09/11/2017		X	X			
	BPOW6-2	JC50681-6	Water	09/11/2017		X	X			

Notes:

1. EPA Method 522 Semi-volatile analysis for 1,4-Dioxane was performed by GEL Laboratories, LLC, located in Charleston, South Carolina (subcontracted via SGS-Accutest Laboratory). The associated SDGs are: JC50485X/432580 and JC50681X/432738.

2. Matrix spike (MS) was performed on sample location REP091117AD1 for VOC analyses.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:
QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) methods 524.2 and 522-Selected Ion Monitoring (SIM). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and

provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUNDS (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 524.2	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2 s.u.

Note:
s.u. = Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits in all SDGs.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS was not performed on sample locations associated with SDG JC50485.

The MS exhibited acceptable recoveries in SDG JC50485.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits in SDG JC50485.

Sample locations associated with LCS analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
SDG JC50681: REP091117AD1 TB091117AD1 BPOW6-3 BPOW6-4 BPOW6-1 BPOW6-2	Chloromethane	>UL

The criteria used to evaluate the LCS recoveries are presented in the following table. In the case of an LCS deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not performed on a sample location associated with SDG JC50485.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG JC50681: BPOW6-4/ REP091117AD1	All compounds	U	U	AC

Notes:
AC = Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

The laboratory duplicates exhibited recoveries within the control limits in SDGs JC50485 and JC50681.

8. System Performance and Overall Assessment

Tentatively identified compounds (TICs) were not identified in any of the sample locations.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: EPA 524.2	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks		X		X	
Laboratory Control Sample (LCS) %R		X	X		
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X

Notes:

RPD Relative percent difference

%R Percent recovery

SEMI-VOLATILE ORGANIC COMPOUNDS (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA 522-SIM	Water	28 days from collection to extraction and 28 days from extraction to analysis	Cool to <6 °C; preserved with Sodium Bisulfate (NaHSO4) to a pH of less than 4 s.u.

Note:
s.u. = Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits in all SDGs.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated with SDGs JC50485 or JC50681.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not performed on a sample location associated with SDG JC50485.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG JC50681: BPOW6-4/ REP091117AD1	1,4-Dioxane	0.119 J	0.175 J	AC

Note:

AC = Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: EPA 522-SIM	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X

Notes:

%R Percent recovery

RPD Relative percent difference

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: 

DATE: October 30, 2017

PEER REVIEW: Todd Church

DATE: November 6, 2017

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS

ACCUTEST LABORATORIES

GW WTB

CHAIN OF CUSTODY

Accutest New Jersey/SPL Environmental
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking #: #4 | Bottle Order Control #:
Accutest Quote #: | Accutest Job #: JC50485

Client / Reporting Information

Company Name: Arcadis
Street Address: 2 Huntington Quad, Suite 1S10
City: Melville State: NY Zip: 11747
Project Contact: Soma Das, soma.das@arcadis-us.com
Phone #: 631-249-7600 Fax #: 631-249-7610
Sampler(s) Name(s): Pat Prezorski / Corbett Phone #: 516-297-6247

Project Information

Project Name: AGMNYM72080 // OU2 Navy Outpost Wells
Navy Wells OU2 -Bethpage, New York
Street:
City: Bethpage State: NY
Project #: NY001496.0416.NAVI3
Client Purchase Order #:
Work Authorization #: NY001496_2015.10.30
Project Manager: Carlo San Giovanni

Billing Information (If different from Report to)
Company Name: Arcadis, U.S., Inc. Attn: Accts Payable
Street Address: 630 Plaza Drive, Suite 600
City: Highlands Ranch, State: CO Zip: 80129
Attention: Soma Das

Requested Analysis (see TEST CODE sheet)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	NaHSO4	V5242NG36OW+40	SB522SIM14DIOX (GEL Lab)	LAB USE ONLY
1	BPOW 6-5		9/8/17	1210	PP	GW	5	3								2	3	2	E73
2	BPOW 6-6		9/8/17	1215	DC	GW	5	3								2	3	2	V771
3	TB090817DC1		9/8/17	1100	—	TB	2	2									2		

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [x] Std. 10 Business Days (by Contract only)
- [ ] 10 Day *RUSH*
- [ ] 5 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

INITIAL ASESSMENT 3B DOM
LABEL VERIFICATION MH

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [x] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

OU 2 Hydro

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	9/8/17 1430	1 [signature] Date + time 9/8/17 1645	2 [signature]	9/8/17 1941	2 [signature]
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # 869		

- [x] Intact
- [ ] Not intact

Preserved where applicable ☐ On Ice ☑ Cooler Temp. 2.2°C 2.2 IR

JC50485: Chain of Custody
Page 1 of 2

5.1
5

Report of Analysis

Client Sample ID:	BPOW6-5		
Lab Sample ID:	JC50485-1	**Date Sampled:**	09/08/17
Matrix:	AQ - Ground Water	**Date Received:**	09/08/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111620.D	1	09/12/17 13:02	BK	n/a	n/a	V1B5322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW6-5		
Lab Sample ID:	JC50485-1	**Date Sampled:**	09/08/17
Matrix:	AQ - Ground Water	**Date Received:**	09/08/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	87%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW6-6		
Lab Sample ID:	JC50485-2	**Date Sampled:**	09/08/17
Matrix:	AQ - Ground Water	**Date Received:**	09/08/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111621.D	1	09/12/17 13:34	BK	n/a	n/a	V1B5322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW6-6		
Lab Sample ID:	JC50485-2	**Date Sampled:**	09/08/17
Matrix:	AQ - Ground Water	**Date Received:**	09/08/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	88%		70-130%
460-00-4	4-Bromofluorobenzene	87%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB090817DC1		
Lab Sample ID:	JC50485-3	**Date Sampled:**	09/08/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/08/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111622.D	1	09/12/17 14:05	BK	n/a	n/a	V1B5322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB090817DC1		
Lab Sample ID:	JC50485-3	**Date Sampled:**	09/08/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/08/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	86%		70-130%
460-00-4	4-Bromofluorobenzene	85%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS ACCUTEST

CHAIN OF CUSTODY

432580

Page 1 of 1

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

FED-EX Tracking #: | Bottle Order Control #:
SGS Accutest Quote #: | SGS Accutest Job #: JC50485X

Client / Reporting Information

Company Name: SGS Accutest
Street Address: 2235 Route 130
City: Dayton State: NJ Zip: 08810
Project Contact: diane.komar@sgs.com E-mail:
Phone #: 732-329-0200 Fax #:
Sampler(s) Name(s): PP Phone:

Project Information

Project Name: Navy Wells, OU2, Bethpage, NY
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

SB522SIM14DIOX ,1,4-Dixane via EPA 522 - low PQL required

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE		SB522SIM14DIOX required	LAB USE ONLY
1X	BPOW6-5		9/8/17	12:10:00 PM	PP	AQ	2									2	X	
2X	BPOW6-6		9/8/17	12:15:00 PM	PP	AQ	2									2	X	

Turnaround Time (Business days)

- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [X] other 14

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [X] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

2 bottles per sample with NaHSO4 preservative.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 9-12-17 1100	Received By: 1 FED EX	Relinquished By: 2	Date Time:	Received By: 2 [signature] 9/13/17 9:20
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # 533 [ ] Intact [ ] Not intact	Preserved where applicable [ ]	On Ice [ ] Cooler Temp.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ACTL003 SGS Accutest

Client SDG: JC50485X GEL Work Order: 432580

The Qualifiers in this report are defined as follows:

* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
** Indicates the analyte is a surrogate compound.
U Indicates the target analyte was analyzed for but not detected above the detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Barbara Bailey **Name: Barbara Bailey**

Date: 02 OCT 2017 **Title: Data Validator**

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC50485X**	**Date Collected:**	**09/08/2017 12:10**	**Matrix:**	**WATER**
Lab Sample ID:	**432580001**	**Date Received:**	**09/13/2017 09:00**		
		Client:	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**BPOW 6-5**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1701325**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**09/19/2017 23:28**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**09/19/2017 08:15**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s091917.B\s6i1926.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC50485X**	**Date Collected:**	**09/08/2017 12:15**	**Matrix:**	**WATER**
Lab Sample ID:	**432580002**	**Date Received:**	**09/13/2017 09:00**		
		Client:	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**BPOW 6-6**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1701325**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**09/20/2017 00:17**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**09/19/2017 08:15**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s091917.B\s6i1928.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

ACCUTEST LABORATORIES

GW
WTB

CHAIN OF CUSTODY

Accutest New Jersey/SPL Environmental
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking # #4 | Bottle Order Control #
Accutest Quote # | Accutest Job # JC50681

Client / Reporting Information

Company Name: Arcadis
Street Address: 2 Huntington Quad, Suite 1S10
City: Melville State: NY Zip: 11747
Project Contact / E-mail: Soma Das, soma.das@arcadis-us.com
Phone #: 631-249-7600 Fax #: 631-249-7610
Sampler(s) Name(s): Anna Drewisa, Bob Borozski Phone #: 516-287-6247

Project Information

Project Name: AGMNYM72080 // OU2 Navy Outpost Wells
Navy Wells OU2 -Bethpage, New York
Street:
City: Bethpage State: NY
Project #: NY001496.0416.NAVI3
Client Purchase Order #:
Work Authorization #: NY001496_2015.10.30
Project Manager: Carlo San Giovanni

Billing Information (if different from Report to)
Company Name: Arcadis, U.S., Inc. Attn: Accts Payable
Street Address: 630 Plaza Drive, Suite 600
City: Highlands Ranch, State: CO Zip: 80129
Attention: Soma Das

Requested Analysis (see TEST CODE sheet): V5242NG36OW+40; SB522SIM14DIOX (GEL Lab)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	NaHSO4	V5242NG36OW+40	SB522SIM14DIOX (GEL Lab)	LAB USE ONLY
1	RP091117AD1		9/11/17	—	—	GW	5	3								2	3	2	SUB
2	TB091117AD1		9/11/17	1100	—	TB	2	2									2		V808
3	BPOW 6-3		9/11/17	1255	AD	GW	5	3								2	3	2	
4	BPOW 6-4		9/11/17	1310	AD	GW	5	3								2	3	2	
5	BPOW 6-1		9/11/17	1712	AD	GW	5	3								2	3	2	
6	BPOW 6-2		9/11/17	1700	AD	GW	5	3								2	3	2	

INITIAL ASSESSMENT 2A/DS
LABEL VERIFICATION JP

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [x] Std. 10 Business Days (by Contract only)
- [ ] 10 Day *RUSH*
- [ ] 5 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [x] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions: OU2 Hydro

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1 [signature]	Date Time: 9/11/17 1900	Received By: 1 Chris Law	Date Time: 9/12/17 10:15	Relinquished By: 2 Chris Law	Date Time: 9/12/17 1805	Received By: 2 [signature]
Relinquished by Sampler: 3	Date Time:	Received By: 3		Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5		Custody Seal #	[x] Intact [ ] Not intact	Preserved where applicable [ ] On Ice [x] Cooler Temp. 1.8, 2.0; 1.8°C IR

JC50681: Chain of Custody
Page 1 of 2

Report of Analysis

Client Sample ID:	REP091117AD1		
Lab Sample ID:	JC50681-1	**Date Sampled:**	09/11/17
Matrix:	AQ - Ground Water	**Date Received:**	09/12/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111645.D	1	09/13/17 12:00	BK	n/a	n/a	V1B5323
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane [b]	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	REP091117AD1		
Lab Sample ID:	JC50681-1	**Date Sampled:**	09/11/17
Matrix:	AQ - Ground Water	**Date Received:**	09/12/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	87%		70-130%
460-00-4	4-Bromofluorobenzene	85%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.
(b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC limits, biased high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB091117AD1		
Lab Sample ID:	JC50681-2	**Date Sampled:**	09/11/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/12/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111652.D	1	09/13/17 15:42	BK	n/a	n/a	V1B5323
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane [b]	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB091117AD1		
Lab Sample ID:	JC50681-2	**Date Sampled:**	09/11/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/12/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	87%		70-130%
460-00-4	4-Bromofluorobenzene	87%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.
(b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC limits, biased high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW6-3		
Lab Sample ID:	JC50681-3	**Date Sampled:**	09/11/17
Matrix:	AQ - Ground Water	**Date Received:**	09/12/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111646.D	1	09/13/17 12:31	BK	n/a	n/a	V1B5323
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane [b]	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW6-3		
Lab Sample ID:	JC50681-3	**Date Sampled:**	09/11/17
Matrix:	AQ - Ground Water	**Date Received:**	09/12/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	87%		70-130%
460-00-4	4-Bromofluorobenzene	86%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.
(b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC limits, biased high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW6-4		
Lab Sample ID:	JC50681-4	**Date Sampled:**	09/11/17
Matrix:	AQ - Ground Water	**Date Received:**	09/12/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111647.D	1	09/13/17 13:03	BK	n/a	n/a	V1B5323
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane [b]	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW6-4		
Lab Sample ID:	JC50681-4	**Date Sampled:**	09/11/17
Matrix:	AQ - Ground Water	**Date Received:**	09/12/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	86%		70-130%
460-00-4	4-Bromofluorobenzene	85%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.
(b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC limits, biased high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW6-1		
Lab Sample ID:	JC50681-5	**Date Sampled:**	09/11/17
Matrix:	AQ - Ground Water	**Date Received:**	09/12/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111648.D	1	09/13/17 13:35	BK	n/a	n/a	V1B5323
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane [b]	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW6-1		
Lab Sample ID:	JC50681-5	**Date Sampled:**	09/11/17
Matrix:	AQ - Ground Water	**Date Received:**	09/12/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	89%		70-130%
460-00-4	4-Bromofluorobenzene	84%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.
(b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC limits, biased high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW6-2		
Lab Sample ID:	JC50681-6	**Date Sampled:**	09/11/17
Matrix:	AQ - Ground Water	**Date Received:**	09/12/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B111649.D	1	09/13/17 14:06	BK	n/a	n/a	V1B5323
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane [b]	ND	0.50	0.39	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
76-13-1	Freon 113	ND	1.0	0.27	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BPOW6-2		
Lab Sample ID:	JC50681-6	**Date Sampled:**	09/11/17
Matrix:	AQ - Ground Water	**Date Received:**	09/12/17
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Navy Wells, OU2, Bethpage, NY		

VOA OU2 Outpost List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	89%		70-130%
460-00-4	4-Bromofluorobenzene	86%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) EPA 524.2 is not a certified method for non-potable water samples.
(b) Associated CCV outside of control limits high, sample was ND. This compound in BS is outside in house QC limits, biased high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS ACCUTEST

CHAIN OF CUSTODY

432738

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

Page 1 of 1

FED-EX Tracking #	Bottle Order Control #
SGS Accutest Quote #	SGS Accutest Job # JC50681X

Client / Reporting Information

Company Name: SGS Accutest
Street Address: 2235 Route 130
City: Dayton State: NJ Zip: 08810
Project Contact: Donald.McDowell@sgs.com E-mail:
Phone #: 732-329-0200 Fax #:
Sampler(s) Name(s): AD Phone:

Project Information

Project Name: Navy Wells, OU2, Bethpage, NY
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	SB522SIM14DIOX (1,4-Dioxane via EPA 522) Low PQL required	LAB USE ONLY
1X	REP091117AD1		9/11/17	12:00:00 AM	AD	AQ	2								2	X	
3X	BPW6-3		9/11/17	12:55:00 PM	AD	AQ	2								2	X	
4X	BPW6-4		9-11-17	1310	"	"	2								2	X	
5X	BPW6-1		9-11-17	1712			3								3	X	
6X	BPW6-2		9-11-17	1710			4								4	X	

Turnaround Time (Business days)

- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [X] other 21

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [X] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions: 2 bottles per sample with NaHSO4 preservative

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	9-13-17 1730	1 FEDEX	2		2 9/14/17 8:50
3		3	4		4
5		5	Custody Seal # 582	Intact / Not intact	Preserved where applicable / On Ice / Cooler Temp.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ACTL003 SGS Accutest

Client SDG: JC50681X GEL Work Order: 432738

The Qualifiers in this report are defined as follows:

* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
** Indicates the analyte is a surrogate compound.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit or indicates that the analyte recovery in the MS or MSD is outside of specified acceptance criteria.
U Indicates the target analyte was analyzed for but not detected above the detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Barbara Bailey **Name: Barbara Bailey**

Date: 03 OCT 2017 **Title: Data Validator**

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC50681X**	**Date Collected:**	**09/11/2017 12:00**	**Matrix:**	**WATER**
Lab Sample ID:	**432738001**	**Date Received:**	**09/14/2017 08:50**		
		Client:	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**REP091117AD1**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1701327**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**09/20/2017 18:03**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**09/20/2017 07:45**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s092017.B\s6i2021.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	J	0.175	ug/L	0.100	0.100	0.200

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC50681X**	**Date Collected:**	**09/11/2017 12:55**	**Matrix:**	**WATER**
Lab Sample ID:	**432738002**	**Date Received:**	**09/14/2017 08:50**		
		Client:	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**BPW 6-3**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1701327**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**09/20/2017 18:54**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**09/20/2017 07:45**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s092017.B\s6i2023.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC50681X**	**Date Collected:**	**09/11/2017 13:10**	**Matrix:**	**WATER**
Lab Sample ID:	**432738003**	**Date Received:**	**09/14/2017 08:50**		
		Client:	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**BPW 6-4**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1701327**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**09/21/2017 11:31**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**09/20/2017 07:45**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s092117.B\s6i2109.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	J	0.119	ug/L	0.100	0.100	0.200

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC50681X**	**Date Collected:**	**09/11/2017 17:12**	**Matrix:**	**WATER**
Lab Sample ID:	**432738004**	**Date Received:**	**09/14/2017 08:50**		
		Client:	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**BPW 6-1**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1701327**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**09/21/2017 11:55**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**09/20/2017 07:45**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s092117.B\s6i2110.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

2

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**JC50681X**	**Date Collected:**	**09/11/2017 17:10**	**Matrix:**	**WATER**
Lab Sample ID:	**432738005**	**Date Received:**	**09/14/2017 08:50**		
		Client:	**ACTL003**	**Project:**	**ACTL00316**
Client ID:	**BPW 6-2**	**Method:**	**EPA 522**	**SOP Ref:**	**GL-OA-E-073**
Batch ID:	**1701327**	**Inst:**	**MSD6.I**	**Dilution:**	**1**
Run Date:	**09/21/2017 12:21**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**09/20/2017 07:45**	**Aliquot:**	**100 mL**	**Final Volume:**	**2 mL**
Data File:	**s092117.B\s6i2111.D**		**Rtx-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL	LOD	LOQ
123-91-1	1,4-Dioxane	U	0.100	ug/L	0.100	0.100	0.200

Appendix D

ARCADIS Separate and Ongoing OU2 Monitoring of Navy Wells

Appendix D. Schedule of ARCADIS Separate and Ongoing OU2 Monitoring of Navy wells

Well	Well owner	1st Q	2nd Q	3rd Q	4th Q	VOC Analysis Method
Outpost wells						
BPOW1-1	Navy		X		X	524.2
BPOW1-2	Navy		X		X	524.2
BPOW1-3	Navy		X		X	524.2
BPOW1-4	Navy		X		X	524.2
BPOW1-5	Navy		X		X	524.2
BPOW1-6	Navy		X		X	524.2
BPOW2-1	Navy		X		X	524.2
BPOW2-2	Navy		X		X	524.2
BPOW2-3	Navy		X		X	524.2
BPOW3-1	Navy		X		X	524.2
BPOW3-2	Navy		X		X	524.2
BPOW3-3	Navy		X		X	524.2
BPOW3-4	Navy		X		X	524.2
BPOW4-1R	Navy		X		X	524.2
BPOW4-2R	Navy		X		X	524.2
Semi-annual and annual						
TT102D	Navy		X		X	8260C
TT102D2	Navy		X		X	8260C
FW-03	Navy		X			8260C
GM-15D	Navy		X		X	8260C
GM-15D2	Navy		X		X	8260C
GM-17D	Navy		X		X	8260C
GM-17I	Navy		X		X	8260C
GM-18D	Navy		X		X	8260C
GM-21D	Navy		X			8260C
GM-39DA	Navy		X		X	8260C
GM-39DB	Navy		X		X	8260C
GM-73D	Navy		X		X	8260C
GM-73D2	Navy		X		X	8260C
GM-74D	Navy		X		X	8260C
GM-74D2	Navy		X		X	8260C
GM-74I	Navy		X		X	8260C
GM-75D2	Navy		X		X	8260C
GM-78I	Navy		X			8260C
GM-78S	Navy		X			8260C
GM-79D	Navy		X		X	8260C
GM-79I	Navy		X		X	8260C
HN-24I	Navy		X			8260C
HN-40I	Navy		X			8260C
HN-40S	Navy		X			8260C
HN-42I	Navy		X			8260C
HN-42S	Navy		X			8260C

Above Navy owned wells sampled by ARCADIS and reported by ARCADIS under separate cover.
Q: Quarter
VOC: volatile organic compound

Appendix E

Synoptic Water Levels Measured September 7, 2017

SYNOPTIC WATER LEVELS 9/7/17
2017 OU2 GROUNDWATER INVESTIGATION
NWIRP BETHPAGE, NY

Well	Interval (S = <300'; I = 300-500'; D = >500')	Measuring Point (ft amsl)*	Depth to water 9/7/2017 (ft bmp)	Water elevation 9/7/2017 (ft amsl)
BPOW 1-1	S	72	31.50	40.50
BPOW 1-2	I	71.82	32.28	39.54
BPOW 1-3	I	71.92	32.51	39.41
BPOW 1-4	I	56.68	14.64	42.04
BPOW 1-5	D	56.75	15.20	41.55
BPOW 1-6	D	57.06	15.73	41.33
BPOW 2-1	I	58.64	23.61	35.03
BPOW 2-2	I	58.5	26.45	32.05
BPOW 2-3	D	57.98	26.23	31.75
BPOW 3-1	I	61.43	28.90	32.53
BPOW 3-2	D	61.82	30.66	31.16
BPOW 3-3	D	60.64	26.55	34.09
BPOW 3-4	D	62.44	28.31	34.13
BPOW 4-1R	D	63.67	29.79	33.88
BPOW 4-2R	D	66.13	29.63	36.50
BPOW 5-1	D	56.12	24.58	31.54
BPOW 5-2	D	56.32	25.07	31.25
BPOW 5-3	D	56.04	25.32	30.72
BPOW5-4	D	53.88	25.52	28.36
BPOW5-5	D	57.58	27.31	30.27
BPOW5-6	D	57.72	28.01	29.71
BPOW5-7	D	55.92	25.06	30.86
BPOW6-1	D	42.93	19.72	23.21
BPOW6-2	D	43.08	20.39	22.69
BPOW6-3	D	39.96	15.96	24.00
BPOW6-4	D	40.02	15.34	24.68
BPOW6-5	D	42.58	18.14	24.44
BPOW6-6	D	42.34	18.56	23.78
FW-01	S	126.1	60.34	65.76
FW-02	S	126.85	60.93	65.92
FW-03	S	125.46	59.42	66.04
GM-15D	I	109.84	50.52	59.32
GM-15D2	D	109.59	52.45	57.14
GM-15S	S	109.44	48.57	60.87
GM-17D	S	115.68	51.51	64.17
GM-17I	S	115.83	45.79	70.04
GM-18D	I	108.88	47.90	60.98
GM-21D	S	105.66	46.69	58.97
GM-21D2	D	104.62	51.28	53.34
GM-21I	S	105.72	43.39	62.33
GM-39D (A)	S	102.23	41.86	60.37
GM-39D2 (B)	I	102.08	43.49	58.59
GM-73D	I	104.87	46.44	58.43
GM-73D2	D	104.62	47.60	57.02
GM-74D	I	107.43	48.62	58.81
GM-74D2	D	107.36	53.27	54.09
GM-74I	S	107.42	44.60	62.82
GM-75D2	D	93.63	37.84	55.79

SYNOPTIC WATER LEVELS 9/7/17
2017 OU2 GROUNDWATER INVESTIGATION
NWIRP BETHPAGE, NY

Well	Interval (S = <300'; I = 300-500'; D = >500')	Measuring Point (ft amsl)*	Depth to water 9/7/2017 (ft bmp)	Water elevation 9/7/2017 (ft amsl)
GM-78I	S	105.06	44.85	60.21
GM-78S	S	104.94	44.13	60.81
GM-79D	S	101.25	44.79	56.46
GM-79I	S	101.09	43.54	57.55
HN-24I	S	125.8	55.71	70.09
HN-24S	S	122.73	NM	
HN-27I	S	126.51	NM	
HN-27S	S	*125.50*	NM	
HN-29D	S	115.50	50.41	65.09
HN-29I	S	116.42	50.17	66.25
HN-40I	S	115.91	52.46	63.45
HN-40S	S	116.35	52.66	63.69
HN-42I	S	119.61	54.48	65.13
HN-42S	S	120.32	55.13	65.19
MW-01	S	*121*	NM	
MW-02	S	*121*	NM	
MW-03	S	*121*	56.15	64.85
MW-04	S	*121*	56.69	64.31
MW-05	S	*121*	NM	
MW-06	S	*121*	52.34	68.66
MW-07	S	*121*	52.04	68.96
MW-08	S	*121*	52.60	68.40
MW-09	S	*121*	53.44	67.56
MW-10	S	*121*	50.76	70.24
MW-11	S	*121*	NM	
MW-118-5	D	84.17	37.92	46.25
MW-75D2	S	120.55	51.72	68.83
RE103D1	D	93.00	42.01	50.99
RE103D2	D	92.73	41.79	50.94
RE103D3	D	92.76	42.28	50.48
RE104D1	I	89.80	38.25	51.55
RE104D2	D	90.12	41.52	48.60
RE104D3	D	90.20	41.98	48.22
RE105D1	D	87.23	39.89	47.34
RE105D2	D	87.18	40.88	46.30
RE106D1	I	101.19	43.81	57.38
RE106D2	I	101.37	44.30	57.07
RE106D3	D	101.34	44.36	56.98
RE107D1	D	98.92	43.70	55.22
RE107D2	D	98.99	44.02	54.97
RE107D3	D	99.96	45.21	54.75
RE108D1	D	95.38	42.50	52.88
RE108D2	D	95.43	43.02	52.41
RE109D1	D	99.64	46.64	53.00
RE109D2	D	99.80	46.92	52.88
RE109D3	D	99.73	46.87	52.86
RE114D1	D	74.04	33.85	40.19
RE114D2	D	73.96	33.93	40.03

SYNOPTIC WATER LEVELS 9/7/17
2017 OU2 GROUNDWATER INVESTIGATION
NWIRP BETHPAGE, NY

Well	Interval (S = <300'; I = 300-500'; D = >500')	Measuring Point (ft amsl)*	Depth to water 9/7/2017 (ft bmp)	Water elevation 9/7/2017 (ft amsl)
RE114D3	D	74.17	34.41	39.76
RE115D1	D	69.01	31.01	38.00
RE115D2	D	69.01	31.20	37.81
RE117D1	D	53.81	25.52	28.29
RE117D2	D	53.59	24.55	29.04
RE118D1	D	57.61	27.91	29.70
RE119D1	D	55.61	25.44	30.17
RE120D1	D	85.58	39.30	46.28
RE120D2	D	85.54	39.12	46.42
RE120D3	D	85.70	39.48	46.22
RE121D1	D	79.03	36.23	42.80
RE121D2	D	79.24	36.96	42.28
RE122D1	D	97.42	44.12	53.30
RE122D2	D	97.35	44.41	52.94
RE122D3	D	97.27	45.39	51.88
RE123D1	D	105.49	49.06	56.43
RE123D2	D	106.11	50.24	55.87
RE123D3	D	105.92	50.85	55.07
RE124D1	D	78.26	35.69	42.57
RE124D2	D	77.79	35.75	42.04
RE125D1	I	85.66	36.42	49.24
RE125D2	D	85.76	39.19	46.57
RE125D3	D	85.98	39.44	46.54
RE126D1	D	101.03	47.23	53.80
RE126D2	D	101.39	47.78	53.61
RE126D3	D	101.1	47.52	53.58
RE129D1	D	53.63	25.28	28.35
RE129D2	D	53.52	24.95	28.57
RE131D1	I	85.94	38.50	47.44
RE131D2	D	85.72	39.25	46.47
RE131D3	D	85.9	39.67	46.23
RE137	D	85.15	39.22	45.93
RW1-MW1	I	85.87	40.24	45.63
RW1-MW2	I	87.35	NM	
RW1-MW3	I	80.34	33.40	46.94
RW2-MW1	D	90.75	43.06	47.69
RW3-MW1	I	92.22	41.07	51.15
RW3-MW2	I	91.98	42.74	49.24
RW3-MW3	I	92.98	42.62	50.36
RW3-MW4	I	92.92	44.15	48.77
TT-101D	I	80.89	35.00	45.89
TT-101D1	D	80.92	36.87	44.05
TT-101D2	D	80.89	37.40	43.49
TT-102D	D	49.96	23.35	26.61
TT-102D2	D	44.12	18.10	26.02
TT-301D	S	128.90	NM	
TT-301I	S	128.48	59.13	69.35
TT-301S	S	128.88	59.19	69.69

SYNOPTIC WATER LEVELS 9/7/17
2017 OU2 GROUNDWATER INVESTIGATION
NWIRP BETHPAGE, NY

Well	Interval (S = <300'; I = 300-500'; D = >500')	Measuring Point (ft amsl)*	Depth to water 9/7/2017 (ft bmp)	Water elevation 9/7/2017 (ft amsl)
TT-302D	S	116.08	50.94	65.14
TT-302I1	S	115.91	50.36	65.55
TT-302I2	S	115.91	50.61	65.30
TT-302S	S	116.01	50.29	65.72
TT-303D	S	115.94	51.00	64.94
TT-303I1	S	115.83	50.45	65.38
TT-303I2	S	115.89	50.85	65.04
TT-303S	S	115.65	50.06	65.59
TT-304D	S	116.21	52.11	64.10
TT-304I1	S	116.18	51.61	64.57
TT-304I2	S	116.07	52.79	63.28
TT-304S	S	116	53.86	62.14
TT-305D	I	115.94	51.60	64.34
TT-305I	S	116.16	52.22	63.94
TT-305S	S	116.04	DRY	
TT-306D	S	118.06	53.91	64.15
TT-306I	S	117.76	53.16	64.60
TT-306S	S	117.82	52.24	65.58
TT-307D	S	114.42	50.59	63.83
TT-307I	S	114.16	50.15	64.01
TT-307S	S	114.39	49.61	64.78
TT-308D	S	130.98	64.67	66.31
TT-308I	S	130.73	63.56	67.17
TT-308S	S	131.05	63.78	67.27
TT-309D	S	131.52	64.81	66.71
TT-309I	S	131.83	64.74	67.09
TT-309S	S	131.77	63.59	68.18
TT-310S	S	129.50	62.08	67.42
TT-311I	S	130.34	63.29	67.05
TT-311S	S	130.23	62.98	67.25
TT-312I	S	129.95	62.80	67.15
TT-312S	S	129.81	61.75	68.06
TT-313S	S	129.76	61.50	68.26
TT-314I	S	128.69	62.87	65.82
TT-314S	S	128.60	62.46	66.14

NOTES
ft: feet
bgs: below ground surface
amsl: above mean sea level
bmp: below measuring point
NM: not measured
* italics for measuring point estimated from nearby wells or ground surface elevation

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N

S Oyster Bay Rd

Hicksville

Cherry Ave

Stewart Ave

TT311S 67.25
TT311I 67.05
TT310S 67.42
TT312S 68.06
TT312I 67.15
TT309S 68.18
TT309I 67.09
TT309D 66.71
TT313S 68.26
TT308S 67.27
TT308I 67.17
TT308D 66.31
TT314S 66.14
TT314I 65.82
TT301S 69.69
TT301I 69.35

65

MW-03 64.85
MW-04 64.31
MW-09 67.56
MW-75D2 68.83
HN-24I 70.09
MW-08 68.4
MW-07 68.96
MW-06 68.66
MW-10 70.24

TT302S 65.72
TT302I1 65.55
TT302I2 65.3
TT302D 65.14
HN-29I 66.25
HN-29D 65.09
FW-02 65.92
FW-03 66.04
FW-01 65.76
HN-42I 65.13
HN-42S 65.19
TT304S 62.14
TT304I1 64.57
TT304I2 63.28
TT304D 64.1
TT303S 65.59
TT303I1 65.38
TT303I2 65.04
TT303D 64.94
TT305I 66.94
TT307S 64.78
TT307I 64.01
TT307D 63.83
TT306S 65.58
TT306I 64.6
TT306D 64.15

Property Retained by Navy (9-

Former Naval Weapons
Industrial Reserve Plant

HN-40S 63.69
HN-40I 63.45

Bethpage

S Broadway

GM-17I 70.04
GM-17D 64.17

mer Northrop
mman Site

60

GM-15S 60.87
GM-15D2

GM-18D

GM-39D2 (B)
GM-73D
RE123D3
RE123D2
RE123D1
GM-73D2
GM-39D (A) 60.37
GM-74I 62.82
GM-74D2
GM-74D

Hicksville Rd

GM-21D2
GM-21I 62.33
GM-21D 58.97
GM-78S 60.81
GM-78I 60.21

RE106D1
RE106D3
RE106D2

Central Ave

GM-79I 57.55
GM-79D 56.46

Broadway

GM-75D2

Levittown

RE107D2
RE107D1
RE107D3

RE126D3
RE126D2
RE126D1
RE109D2
RE109D1
RE109D3

RE122D1
RE122D2
RE122D3
RE108D1
RE108D2

RE103D1
RE103D3
RE103D2

Hicksville Rd

0 500 1,000 2,000 Feet

Note:
Water level elevations (ft amsl) are posted in blue to the right of well name. Water levels measured September 7, 2017. Potentiometric contours (ft amsl) are dashed to indicate that they are approximate.

Legend
- Monitoring Well
- Deep
- Intermediate
- Shallow

Synoptic Water Levels September 7, 2017 in Shallow Wells (screened <300 ft bgs)

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

CONTRACT NUMBER	CTO NUMBER
N62470-11-D8013	WE15
APPROVED BY: PS	DATE: 2/2/2018
APPROVED BY: —	DATE: —
FIGURE NO.: 2	REV: 0

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Former Naval Weapons Industrial Reserve Plant

N

Old Bethpage

Bethpage

Levittown

Plainedge

North Massapequa

HN-40I HN-40S

GM-17D GM-17I

GM-18D 60.98

GM-39D (A)

GM-39D2 (B) 58.59

GM-73D 58.43

RE123D1 RE123D2 RE123D3 GM-73D2

GM-74D2 GM-74D 58.81

GM-78I GM-78S RE106D3

RE106D1 57.38 RE106D2 57.07

GM-21D GM-21I GM-21D2

GM-15D 59.32 GM-15S GM-15D2

60

55

50

45

40

GM-79I GM-79D

RE107D1 RE107D3 RE107D2 GM-75D2

RE126D2 RE126D1 RE126D3

RE109D1 RE109D3 RE109D2

RE122D1 RE122D2 RE122D3 RE108D1 RE108D2

RE103D1 RE103D3 RE103D2

RE104D1 51.55 RE104D3 RE104D2

RW3-MW3 50.36

RW3-MW4 48.17

RW3-MW1 51.15

RW3-MW2 49.24

RW2-MW1

RW1-MW3 46.94

RW1-MW1 45.63

MW-118-5

RE105D1 RE105D2

RE125D2 RE125D1 49.24 RE125D3

RE120D1 RE120D3 RE120D2

RE131D1 47.44 RE131D2 RE131D3

RE137

TT101D 45.89 TT101D1 TT101D2

RE121D1 RE121D2

BPOW1-5 BPOW1-6 BPOW1-4 42.04

RE124D1 RE124D2

BPOW1-1 BPOW1-2 39.54 BPOW1-3 39.41

RE114D3 RE114D1 RE114D2

RE115D1 RE115D2

BPOW4-2R

BPOW4-1R

BPOW2-3 BPOW2-1 35.03 BPOW2-2 32.05

BPOW3-3 BPOW3-4

BPOW3-2 BPOW3-1 32.53

BPOW5-1 BPOW5-2 BPOW5-3

Hicksville Rd

N Wantagh Ave

Wantagh Ave

Seamans Neck Rd

Stewart Ave

Powell Ave

Plainview Rd

Broadway

Central Ave

Access Rd

State Hwy 135

Bethpage State Pkwy

Hempstead Tpke

Beach St

Union Ave

Miller Pl

Boundary Ave

E Service Rd

Old Post Rd

Brewster Gate

0 500 1,000 2,000 Feet

Note:

Water level elevations (ft amsl) are posted in red to the right of well name. Water levels measured September 7, 2017. Potentiometric contours (ft amsl) are dashed to indicate that they are approximate.

Legend

- Monitoring Well
- Deep
- Intermediate
- Shallow

Synoptic Water Levels September 7, 2017 in Intermediate Wells (screened 300-500 ft bgs)

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

CONTRACT NUMBER	CTO NUMBER
N62470-11-D8013	WE15
APPROVED BY: PS	DATE: 1/23/2018
APPROVED BY: —	DATE: —
FIGURE NO.: 2	REV: 0

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mer Northrop
mman Site

GM-18D
GM-39D1 (A)
GM-39D2 (B)
GM-73D
RE123D1 56.43
RE123D2 55.87
RE123D3 55.07
GM-15D
GM-15S
GM-15D2 57.14
55
GM-74I
GM-74D
GM-74D2 54.09
GM-73D2 57.02
GM-21D
GM-21I
GM-21D2 53.34
RE106D1
RE106D2
GM-78S
GM-78I
RE106D3 56.98
GM-79I
GM-79D
GM-79D
RE126D1 53.8
RE126D2 53.61
RE126D3 53.58
RE107D1 55.22
RE107D2 54.97
RE107D3 54.75
GM-75D2 55.79
RE109D1 53
RE109D2 52.88
RE109D3 52.86
50
RE122D1 53.3
RE122D2 52.94
RE122D3 51.88
RE108D1 52.88
RE108D2 52.41
RE104D1
RE104D2 48.6
RE104D3 48.22
RE103D1 50.09
RE103D2 50.94
RE103D3 50.48
RW3-MW3
RW3-MW4
RW3-MW1
RW3-MW2
RW1-MW3
RW2-MW1 47.69
RW1-MW1
MW-118-5 46.25
RE105D1 47.34
RE105D2 46.3
45
RE125D3 46.54
RE125D2 46.57
RE125D1
RE120D1 46.28
RE120D2 46.42
RE120D3 46.22
RE131D2 46.47
RE131D3 46.23
RE131D1
RE137 45.93
TT101D1 44.05
TT101D2 43.49
TT101D
RE121D1 42.8
RE121D2 42.28
BPOW1-5 41.55
BPOW1-6 41.33
BPOW1-4
40
RE124D1 42.57
RE124D2 42.04
BPOW1-1
BPOW1-2
BPOW1-3
RE114D1 40.19
RE114D2 40.03
RE114D3 39.76
RE115D1 38
RE115D2 37.81
BPOW4-2R 36.5
BPOW4-1R 33.88
35
BPOW2-1
BPOW2-2
BPOW2-3 31.75
BPOW3-3 34.09
BPOW3-4 34.13
BPOW3-2 31.16
BPOW3-1
BPOW5-1 31.54
BPOW5-2 31.25
BPOW5-3 30.72
30
RE118D1 29.7
BPOW5-5 30.27
BPOW5-6 29.71
BPOW5-7 30.86
RE119D1 30.17
RE117D1 28.29
RE117D2 29.04
BPOW5-4 28.36
RE129D1 28.35
RE129D2 28.57
TT102D 26.61
TT102D2 26.02
25
BPOW6-3 24
BPOW6-4 24.68
BPOW6-5 24.44
BPOW6-6 23.78
BPOW6-1 23.21
BPOW6-2 22.69

Old Bethpage
Levittown
Plainedge
North Massapequa
North Wantagh

Powell Ave
Plainview Rd
Broadway
Central Ave
Access Rd
Hempstead Tpke
Union Ave
Miller Pl
Stewart Ave
Boundary Ave
E Service Rd
State Hwy 135
Southern State Pkwy
Hicksville Rd
N Wantagh Ave
Seamans Neck Rd
Beacon St
Bethpage State Pkwy
N Jerusalem Rd

N

0 500 1,000 2,000 Feet

Note:
Water level elevations (ft amsl) are posted in green to the right of well name. Water levels measured September 7, 2017. Potentiometric contours (ft amsl) are dashed to indicate that they are approximate.

Legend
- Monitoring Well
- Deep
- Intermediate
- Shallow

Synoptic Water Levels September 7, 2017 in Deep Wells (screened >500 ft bgs)

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

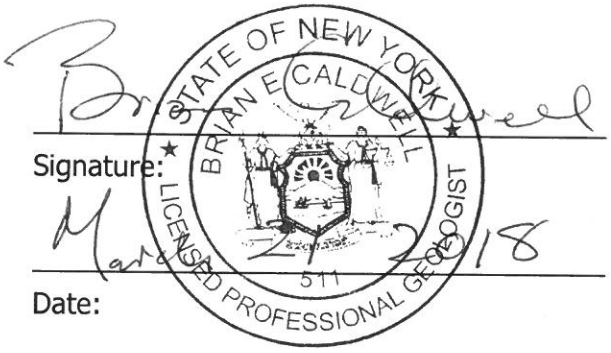
CONTRACT NUMBER	CTO NUMBER
N62470-11-D8013	WE15
APPROVED BY: PS	DATE: 1/23/2018
APPROVED BY: —	DATE: —
FIGURE NO.: 2	REV: 0

NEW YORK PROFESSIONAL GEOLOGIST SEAL

As a New York-licensed Professional Geologist, I have reviewed and approve this Quarterly Groundwater Sampling Report at Naval Industrial Reserve Plant Bethpage Operable Unit 2, Site 1, and seal it in accordance with Article 145 Section 7209 of the New York State Education Laws. In sealing this document, I certify it was prepared under my direction, the geological information contained in it is true to the best of my knowledge and the geological methods and procedures included herein are consistent with currently accepted geological practices.

It is a violation of this law for any person to alter the contained drawings or the report in any way, unless he or she is acting under the direction of a NY-licensed Professional Geologist.

Name:	Brian E. Caldwell
NY PG License Number:	000511
State:	New York



Signature:

Date: 12/21/18