COMMONWEALTH OF VIRGINIA
DEPARTMENT OF GENERAL SERVICES
DIVISION OF CONSOLIDATED LABORATORY SERVICES

Certifies that

VA Laboratory ID#: 460187
MICROBAC LABORATORIES, INC.

158 STARLITE DRIVE
MARIETTA, OH 45750

Owner: J. TREVOR BOYCE
Operator: DAVID E. VANDENBERG
Responsible Official: DAVID E. VANDENBERG

Having met the requirements of 1 VAC 30-46
and the National Environmental Laboratory Accreditation Conference 2003 Standard

is hereby approved as an

Accredited Laboratory

As more fully described in the attached Scope of Accreditation

Effective Date: **February 01, 2014**
Expiration Date: **September 14, 2014**
Certificate # 2723

Thomas L. York, Ph.D., HCLD
DGS Deputy Director for Laboratories

Continued accreditation status depends on successful ongoing participation in the program.
Certificate to be conspicuously displayed at the laboratory.
Not valid unless accompanied by a valid Virginia Environmental Laboratory Accreditation Program (VELAP) Scope of Accreditation.
Customers are urged to verify the laboratory's current accreditation status.

Certificate Not Transferable

Surrender Upon Revocation

Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services

Scope of Accreditation

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY	METHOD	ANALYTE	PRIMARY
EPA 1010	FLASHPOINT	FL	EPA 120.1	CONDUCTIVITY	FL
EPA 160.4	RESIDUE-VOLATILE	FL	EPA 1664 A	OIL & GREASE	FL
EPA 1664 A	TOTAL PETROLEUM HYDROCARBONS (TPH)	FL	EPA 180.1 REV 2	TURBIDITY	FL
EPA 200.7 REV 4.4	ALUMINUM	FL	EPA 200.7 REV 4.4	ANTIMONY	FL
EPA 200.7 REV 4.4	ARSENIC	FL	EPA 200.7 REV 4.4	BARIUM	FL
EPA 200.7 REV 4.4	BERYLLIUM	FL	EPA 200.7 REV 4.4	BORON	FL
EPA 200.7 REV 4.4	CADMIUM	FL	EPA 200.7 REV 4.4	CALCIUM	FL
EPA 200.7 REV 4.4	CHROMIUM	FL	EPA 200.7 REV 4.4	COBALT	FL
EPA 200.7 REV 4.4	COPPER	FL	EPA 200.7 REV 4.4	IRON	FL
EPA 200.7 REV 4.4	LEAD	FL	EPA 200.7 REV 4.4	MAGNESIUM	FL
EPA 200.7 REV 4.4	MANGANESE	FL	EPA 200.7 REV 4.4	MOLYBDENUM	FL
EPA 200.7 REV 4.4	NICKEL	FL	EPA 200.7 REV 4.4	PHOSPHORUS, TOTAL	FL
EPA 200.7 REV 4.4	POTASSIUM	FL	EPA 200.7 REV 4.4	SELENIUM	FL
EPA 200.7 REV 4.4	SILICA AS SIO2	FL	EPA 200.7 REV 4.4	SILVER	FL
EPA 200.7 REV 4.4	SODIUM	FL	EPA 200.7 REV 4.4	THALLIUM	FL
EPA 200.7 REV 4.4	TIN	FL	EPA 200.7 REV 4.4	TITANIUM	FL
EPA 200.7 REV 4.4	TOTAL HARDNESS AS CACO3	FL	EPA 200.7 REV 4.4	VANADIUM	FL
EPA 200.7 REV 4.4	ZINC	FL	EPA 200.8 REV 5.4	ANTIMONY	FL
EPA 200.8 REV 5.4	ARSENIC	FL	EPA 200.8 REV 5.4	BARIUM	FL
EPA 200.8 REV 5.4	CADMIUM	FL	EPA 200.8 REV 5.4	CHROMIUM	FL
EPA 200.8 REV 5.4	COBALT	FL	EPA 200.8 REV 5.4	COPPER	FL
EPA 200.8 REV 5.4	LEAD	FL	EPA 200.8 REV 5.4	MANGANESE	FL
EPA 200.8 REV 5.4	NICKEL	FL	EPA 200.8 REV 5.4	SELENIUM	FL
EPA 200.8 REV 5.4	SILVER	FL	EPA 200.8 REV 5.4	THALLIUM	FL
EPA 200.8 REV 5.4	VANADIUM	FL	EPA 200.8 REV 5.4	ZINC	FL
EPA 245.1 REV 3	MERCURY	FL	EPA 300.0 REV 2.1	BROMIDE	FL
EPA 300.0 REV 2.1	CHLORIDE	FL	EPA 300.0 REV 2.1	FLUORIDE	FL
EPA 300.0 REV 2.1	NITRATE AS N	FL	EPA 300.0 REV 2.1	NITRITE AS N	FL
EPA 300.0 REV 2.1	SULFATE	FL	EPA 310.2	ALKALINITY AS CACO3	FL
EPA 350.1 REV 2	AMMONIA AS N	FL	EPA 351.2 REV 2	KJELDAHL NITROGEN - TOTAL	FL
EPA 353.2 REV 2	NITRATE AS N	FL	EPA 353.2 REV 2	NITRATE/NITRITE	FL
EPA 365.4	PHOSPHORUS, TOTAL	FL	EPA 410.4 REV 2	CHEMICAL OXYGEN DEMAND	FL
EPA 6010 B	ALUMINUM	FL	EPA 6010 B	ANTIMONY	FL
EPA 6010 B	ARSENIC	FL	EPA 6010 B	BARIUM	FL
EPA 6010 B	BERYLLIUM	FL	EPA 6010 B	BORON	FL
EPA 6010 B	CADMIUM	FL	EPA 6010 B	CALCIUM	FL
EPA 6010 B	CHROMIUM	FL	EPA 6010 B	COBALT	FL
EPA 6010 B	COPPER	FL	EPA 6010 B	IRON	FL

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY	METHOD	ANALYTE	PRIMARY
EPA 6010 B	LEAD	FL	EPA 6010 B	LITHIUM	FL
EPA 6010 B	MAGNESIUM	FL	EPA 6010 B	MANGANESE	FL
EPA 6010 B	MOLYBDENUM	FL	EPA 6010 B	NICKEL	FL
EPA 6010 B	PHOSPHORUS, TOTAL	FL	EPA 6010 B	POTASSIUM	FL
EPA 6010 B	SELENIUM	FL	EPA 6010 B	SILICA AS SIO2	FL
EPA 6010 B	SILVER	FL	EPA 6010 B	SODIUM	FL
EPA 6010 B	STRONTIUM	FL	EPA 6010 B	THALLIUM	FL
EPA 6010 B	TIN	FL	EPA 6010 B	TITANIUM	FL
EPA 6010 B	VANADIUM	FL	EPA 6010 B	ZINC	FL
EPA 6010 C	ALUMINUM	FL	EPA 6010 C	ANTIMONY	FL
EPA 6010 C	ARSENIC	FL	EPA 6010 C	BARIUM	FL
EPA 6010 C	BERYLLIUM	FL	EPA 6010 C	BORON	FL
EPA 6010 C	CADMIUM	FL	EPA 6010 C	CALCIUM	FL
EPA 6010 C	CHROMIUM	FL	EPA 6010 C	COBALT	FL
EPA 6010 C	COPPER	FL	EPA 6010 C	IRON	FL
EPA 6010 C	LEAD	FL	EPA 6010 C	LITHIUM	FL
EPA 6010 C	MAGNESIUM	FL	EPA 6010 C	MANGANESE	FL
EPA 6010 C	MOLYBDENUM	FL	EPA 6010 C	NICKEL	FL
EPA 6010 C	PHOSPHORUS, TOTAL	FL	EPA 6010 C	POTASSIUM	FL
EPA 6010 C	SELENIUM	FL	EPA 6010 C	SILICA AS SIO2	FL
EPA 6010 C	SILVER	FL	EPA 6010 C	SODIUM	FL
EPA 6010 C	STRONTIUM	FL	EPA 6010 C	THALLIUM	FL
EPA 6010 C	TIN	FL	EPA 6010 C	TITANIUM	FL
EPA 6010 C	VANADIUM	FL	EPA 6010 C	ZINC	FL
EPA 6010 C - EXTENDED	SILICON	FL	EPA 6020	ANTIMONY	FL
EPA 6020	ARSENIC	FL	EPA 6020	BARIUM	FL
EPA 6020	CADMIUM	FL	EPA 6020	CHROMIUM	FL
EPA 6020	COBALT	FL	EPA 6020	COPPER	FL
EPA 6020	LEAD	FL	EPA 6020	MANGANESE	FL
EPA 6020	NICKEL	FL	EPA 6020	SILVER	FL
EPA 6020	THALLIUM	FL	EPA 6020	ZINC	FL
EPA 6020 A	ANTIMONY	FL	EPA 6020 A	ARSENIC	FL
EPA 6020 A	BARIUM	FL	EPA 6020 A	CADMIUM	FL
EPA 6020 A	CHROMIUM	FL	EPA 6020 A	COBALT	FL
EPA 6020 A	COPPER	FL	EPA 6020 A	LEAD	FL
EPA 6020 A	MANGANESE	FL	EPA 6020 A	NICKEL	FL
EPA 6020 A	SELENIUM	FL	EPA 6020 A	SILVER	FL
EPA 6020 A	THALLIUM	FL	EPA 6020 A	VANADIUM	FL

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EPA 6020 A	ZINC	FL
EPA 608	4,4'-DDD	FL
EPA 608	4,4'-DDT	FL
EPA 608	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	FL
EPA 608	AROCLOR-1221 (PCB-1221)	FL
EPA 608	AROCLOR-1242 (PCB-1242)	FL
EPA 608	AROCLOR-1254 (PCB-1254)	FL
EPA 608	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	FL
EPA 608	DELTA-BHC	FL
EPA 608	ENDOSULFAN I	FL
EPA 608	ENDOSULFAN SULFATE	FL
EPA 608	ENDRIN ALDEHYDE	FL
EPA 608	HEPTACHLOR	FL
EPA 608	TOXAPHENE (CHLORINATED CAMPHENE)	FL
EPA 624	1,1,2,2-TETRACHLOROETHANE	FL
EPA 624	1,1-DICHLOROETHANE	FL
EPA 624	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	FL
EPA 624	1,3-DICHLOROBENZENE	FL
EPA 624	2-CHLOROETHYL VINYL ETHER	FL
EPA 624	ACRYLONITRILE	FL
EPA 624	BROMODICHLOROMETHANE	FL
EPA 624	CARBON TETRACHLORIDE	FL
EPA 624	CHLORODIBROMOMETHANE	FL
EPA 624	CHLOROFORM	FL
EPA 624	ETHYLBENZENE	FL
EPA 624	METHYL CHLORIDE (CHLOROMETHANE)	FL
EPA 624	TETRACHLOROETHENE (PERCHLOROETHENE)	FL
EPA 624	TRANS-1,2-DICHLOROETHENE	FL
EPA 624	TRICHLOROETHENE (TRICHLOROETHYLENE)	FL
EPA 624	VINYL CHLORIDE	FL

METHOD	ANALYTE	PRIMARY
EPA 6020 A - EXTENDED	URANIUM	FL
EPA 608	4,4'-DDE	FL
EPA 608	ALDRIN	FL
EPA 608	AROCLOR-1016 (PCB-1016)	FL
EPA 608	AROCLOR-1232 (PCB-1232)	FL
EPA 608	AROCLOR-1248 (PCB-1248)	FL
EPA 608	AROCLOR-1260 (PCB-1260)	FL
EPA 608	CHLORDANE (TECH.)	FL
EPA 608	DIELDRIN	FL
EPA 608	ENDOSULFAN II	FL
EPA 608	ENDRIN	FL
EPA 608	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	FL
EPA 608	HEPTACHLOR EPOXIDE	FL
EPA 624	1,1,1-TRICHLOROETHANE	FL
EPA 624	1,1,2-TRICHLOROETHANE	FL
EPA 624	1,2-DICHLOROBENZENE	FL
EPA 624	1,2-DICHLOROPROPANE	FL
EPA 624	1,4-DICHLOROBENZENE	FL
EPA 624	ACROLEIN (PROPENAL)	FL
EPA 624	BENZENE	FL
EPA 624	BROMOFORM	FL
EPA 624	CHLOROBENZENE	FL
EPA 624	CHLOROETHANE (ETHYL CHLORIDE)	FL
EPA 624	CIS-1,3-DICHLOROPROPENE	FL
EPA 624	METHYL BROMIDE (BROMOMETHANE)	FL
EPA 624	METHYLENE CHLORIDE (DICHLOROMETHANE)	FL
EPA 624	TOLUENE	FL
EPA 624	TRANS-1,3-DICHLOROPROPENE	FL
EPA 624	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	FL
EPA 624 - EXTENDED	1,1-DICHLOROETHYLENE	FL

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METHOD	ANALYTE	PRIMARY
EPA 624 - EXTENDED	XYLENE (TOTAL)	FL
EPA 625	2,4,6-TRICHLOROPHENOL	FL
EPA 625	2,4-DIMETHYLPHENOL	FL
EPA 625	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 625	2-CHLORONAPHTHALENE	FL
EPA 625	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	FL
EPA 625	3,3'-DICHLOROBENZIDINE	FL
EPA 625	4-CHLORO-3-METHYLPHENOL	FL
EPA 625	4-NITROPHENOL	FL
EPA 625	ACENAPHTHYLENE	FL
EPA 625	BENZIDINE	FL
EPA 625	BENZO(A)PYRENE	FL
EPA 625	BENZO(K)FLUORANTHENE	FL
EPA 625	BIS(2-CHLOROETHOXY)METHANE	FL
EPA 625	BIS(2-CHLOROISOPROPYL) ETHER	FL
EPA 625	BUTYL BENZYL PHTHALATE	FL
EPA 625	DI-N-BUTYL PHTHALATE	FL
EPA 625	DIBENZO(A,H) ANTHRACENE	FL
EPA 625	DIMETHYL PHTHALATE	FL
EPA 625	FLUORENE	FL
EPA 625	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 625	HEXACHLOROETHANE	FL
EPA 625	ISOPHORONE	FL
EPA 625	N-NITROSODIMETHYLAMINE	FL
EPA 625	NAPHTHALENE	FL
EPA 625	PENTACHLOROPHENOL	FL
EPA 625	PHENOL	FL
EPA 6850	PERCHLORATE	FL
EPA 7470 A	MERCURY	FL
EPA 8011	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	FL
EPA 8015 B	ETHANOL	FL
EPA 8015 C	ETHANOL	FL
EPA 8015 C	ISOPROPYL ALCOHOL (2-PROPANOL, ISOPROPANOL)	FL

METHOD	ANALYTE	PRIMARY
EPA 625	1,2,4-TRICHLOROBENZENE	FL
EPA 625	2,4-DICHLOROPHENOL	FL
EPA 625	2,4-DINITROPHENOL	FL
EPA 625	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 625	2-CHLOROPHENOL	FL
EPA 625	2-NITROPHENOL	FL
EPA 625	4-BROMOPHENYL PHENYL ETHER	FL
EPA 625	4-CHLOROPHENYL PHENYLETHER	FL
EPA 625	ACENAPHTHENE	FL
EPA 625	ANTHRACENE	FL
EPA 625	BENZO(A)ANTHRACENE	FL
EPA 625	BENZO(G,H,I)PERYLENE	FL
EPA 625	BENZO[B]FLUORANTHENE	FL
EPA 625	BIS(2-CHLOROETHYL) ETHER	FL
EPA 625	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	FL
EPA 625	CHRYSENE	FL
EPA 625	DI-N-OCTYL PHTHALATE	FL
EPA 625	DIETHYL PHTHALATE	FL
EPA 625	FLUORANTHENE	FL
EPA 625	HEXACHLOROBENZENE	FL
EPA 625	HEXACHLOROCYCLOPENTADIENE	FL
EPA 625	INDENO(1,2,3-CD) PYRENE	FL
EPA 625	N-NITROSODI-N-PROPYLAMINE	FL
EPA 625	N-NITROSODIPHENYLAMINE	FL
EPA 625	NITROBENZENE	FL
EPA 625	PHENANTHRENE	FL
EPA 625	PYRENE	FL
EPA 7196 A	CHROMIUM VI	FL
EPA 8011	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	FL
EPA 8015 B	DIESEL RANGE ORGANICS (DRO)	FL
EPA 8015 C	DIESEL RANGE ORGANICS (DRO)	FL
EPA 8015 C	GASOLINE RANGE ORGANICS (GRO)	FL
EPA 8015 C	METHANOL	FL

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EPA 8015 D	DIESEL RANGE ORGANICS (DRO)	FL
EPA 8015 D	GASOLINE RANGE ORGANICS (GRO)	FL
EPA 8015 D	METHANOL	FL
EPA 8081 A	4,4'-DDE	FL
EPA 8081 A	ALDRIN	FL
EPA 8081 A	ALPHA-CHLORDANE [CIS-CHLORDANE]	FL
EPA 8081 A	CHLORDANE (TECH.)	FL
EPA 8081 A	DIELDRIN	FL
EPA 8081 A	ENDOSULFAN II	FL
EPA 8081 A	ENDRIN	FL
EPA 8081 A	ENDRIN KETONE	FL
EPA 8081 A	GAMMA-CHLORDANE [BETA-CHLORDANE, TRANS-CHLORDANE]	FL
EPA 8081 A	HEPTACHLOR EPOXIDE	FL
EPA 8081 A	TOXAPHENE (CHLORINATED CAMPHENE)	FL
EPA 8081 B	4,4'-DDE	FL
EPA 8081 B	ALDRIN	FL
EPA 8081 B	ALPHA-CHLORDANE [CIS-CHLORDANE]	FL
EPA 8081 B	CHLORDANE (TECH.)	FL
EPA 8081 B	DIELDRIN	FL
EPA 8081 B	ENDOSULFAN II	FL
EPA 8081 B	ENDRIN	FL
EPA 8081 B	ENDRIN KETONE	FL
EPA 8081 B	GAMMA-CHLORDANE [BETA-CHLORDANE, TRANS-CHLORDANE]	FL
EPA 8081 B	HEPTACHLOR EPOXIDE	FL
EPA 8081 B	TOXAPHENE (CHLORINATED CAMPHENE)	FL
EPA 8082	AROCLOR-1221 (PCB-1221)	FL
EPA 8082	AROCLOR-1242 (PCB-1242)	FL

METHOD	ANALYTE	PRIMARY
EPA 8015 D	ETHANOL	FL
EPA 8015 D	ISOPROPYL ALCOHOL (2-PROPANOL, ISOPROPANOL)	FL
EPA 8081 A	4,4'-DDD	FL
EPA 8081 A	4,4'-DDT	FL
EPA 8081 A	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 A	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 A	DELTA-BHC	FL
EPA 8081 A	ENDOSULFAN I	FL
EPA 8081 A	ENDOSULFAN SULFATE	FL
EPA 8081 A	ENDRIN ALDEHYDE	FL
EPA 8081 A	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 A	HEPTACHLOR	FL
EPA 8081 A	METHOXYCHLOR	FL
EPA 8081 B	4,4'-DDD	FL
EPA 8081 B	4,4'-DDT	FL
EPA 8081 B	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B	DELTA-BHC	FL
EPA 8081 B	ENDOSULFAN I	FL
EPA 8081 B	ENDOSULFAN SULFATE	FL
EPA 8081 B	ENDRIN ALDEHYDE	FL
EPA 8081 B	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B	HEPTACHLOR	FL
EPA 8081 B	METHOXYCHLOR	FL
EPA 8082	AROCLOR-1016 (PCB-1016)	FL
EPA 8082	AROCLOR-1232 (PCB-1232)	FL
EPA 8082	AROCLOR-1248 (PCB-1248)	FL

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METHOD	ANALYTE	PRIMARY	METHOD	ANALYTE	PRIMARY
EPA 8082	AROCLOR-1254 (PCB-1254)	FL	EPA 8082	AROCLOR-1260 (PCB-1260)	FL
EPA 8082 A	AROCLOR-1016 (PCB-1016)	FL	EPA 8082 A	AROCLOR-1221 (PCB-1221)	FL
EPA 8082 A	AROCLOR-1232 (PCB-1232)	FL	EPA 8082 A	AROCLOR-1242 (PCB-1242)	FL
EPA 8082 A	AROCLOR-1248 (PCB-1248)	FL	EPA 8082 A	AROCLOR-1254 (PCB-1254)	FL
EPA 8082 A	AROCLOR-1260 (PCB-1260)	FL	EPA 8151 A	2,4,5-T	FL
EPA 8151 A	2,4-D	FL	EPA 8151 A	2,4-DB	FL
EPA 8151 A	DALAPON	FL	EPA 8151 A	DICAMBA	FL
EPA 8151 A	DICHLOROPROP (DICHLORPROP)	FL	EPA 8151 A	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	FL
EPA 8151 A	MCPA	FL	EPA 8151 A	MCPP	FL
EPA 8151 A	PENTACHLOROPHENOL	FL	EPA 8151 A	SILVEX (2,4,5-TP)	FL
EPA 8260 B	1,1,1,2-TETRACHLOROETHANE	FL	EPA 8260 B	1,1,1-TRICHLOROETHANE	FL
EPA 8260 B	1,1,2,2-TETRACHLOROETHANE	FL	EPA 8260 B	1,1,2-TRICHLOROETHANE	FL
EPA 8260 B	1,1-DICHLOROETHANE	FL	EPA 8260 B	1,1-DICHLOROETHYLENE	FL
EPA 8260 B	1,1-DICHLOROPROPENE	FL	EPA 8260 B	1,2,3-TRICHLOROBENZENE	FL
EPA 8260 B	1,2,3-TRICHLOROPROPANE	FL	EPA 8260 B	1,2,4-TRICHLOROBENZENE	FL
EPA 8260 B	1,2,4-TRIMETHYLBENZENE	FL	EPA 8260 B	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	FL
EPA 8260 B	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	FL	EPA 8260 B	1,2-DICHLOROBENZENE	FL
EPA 8260 B	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	FL	EPA 8260 B	1,2-DICHLOROPROPANE	FL
EPA 8260 B	1,3,5-TRIMETHYLBENZENE	FL	EPA 8260 B	1,3-DICHLOROBENZENE	FL
EPA 8260 B	1,3-DICHLOROPROPANE	FL	EPA 8260 B	1,4-DICHLOROBENZENE	FL
EPA 8260 B	1,4-DIOXANE (1,4-DIETHYLENEOXIDE)	FL	EPA 8260 B	1-BUTANOL (N-BUTANOL)	FL
EPA 8260 B	1-CHLOROHEXANE	FL	EPA 8260 B	2,2-DICHLOROPROPANE	FL
EPA 8260 B	2-BUTANONE (METHYL ETHYL KETONE, MEK)	FL	EPA 8260 B	2-CHLOROETHYL VINYL ETHER	FL
EPA 8260 B	2-CHLOROTOLUENE	FL	EPA 8260 B	2-HEXANONE	FL
EPA 8260 B	2-NITROPROPANE	FL	EPA 8260 B	4-CHLOROTOLUENE	FL
EPA 8260 B	4-ISOPROPYLTOLUENE (P-CYMENE)	FL	EPA 8260 B	4-METHYL-2-PENTANONE (MIBK)	FL
EPA 8260 B	ACETONE	FL	EPA 8260 B	ACETONITRILE	FL
EPA 8260 B	ACROLEIN (PROPENAL)	FL	EPA 8260 B	ACRYLONITRILE	FL
EPA 8260 B	ALLYL CHLORIDE (3-CHLOROPROPENE)	FL	EPA 8260 B	BENZENE	FL
EPA 8260 B	BROMOBENZENE	FL	EPA 8260 B	BROMOCHLOROMETHANE	FL
EPA 8260 B	BROMODICHLOROMETHANE	FL	EPA 8260 B	BROMOFORM	FL
EPA 8260 B	CARBON DISULFIDE	FL	EPA 8260 B	CARBON TETRACHLORIDE	FL
EPA 8260 B	CHLOROBENZENE	FL	EPA 8260 B	CHLORODIBROMOMETHANE	FL

Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services

Scope of Accreditation

VELAP Certificate No.: 2723

MICROBAC LABORATORIES, INC.
158 STARLITE DRIVE
MARIETTA, OH 45750

Virginia Laboratory ID: 460187
Effective Date: February 01, 2014
Expiration Date: September 14, 2014

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8260 B	CHLOROETHANE (ETHYL CHLORIDE)	FL
EPA 8260 B	CHLOROPRENE (2-CHLORO-1,3-BUTADIENE)	FL
EPA 8260 B	CIS-1,3-DICHLOROPROPENE	FL
EPA 8260 B	DIBROMOMETHANE (METHYLENE BROMIDE)	FL
EPA 8260 B	DIETHYL ETHER	FL
EPA 8260 B	ETHYL METHACRYLATE	FL
EPA 8260 B	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 8260 B	ISOBUTYL ALCOHOL (2-METHYL-1-PROPANOL)	FL
EPA 8260 B	M+P-XYLENE	FL
EPA 8260 B	METHYL BROMIDE (BROMOMETHANE)	FL
EPA 8260 B	METHYL METHACRYLATE	FL
EPA 8260 B	METHYLENE CHLORIDE (DICHLOROMETHANE)	FL
EPA 8260 B	N-PROPYLBENZENE	FL
EPA 8260 B	O-XYLENE	FL
EPA 8260 B	SEC-BUTYLBENZENE	FL
EPA 8260 B	TERT-BUTYL ALCOHOL	FL
EPA 8260 B	TETRACHLOROETHENE (PERCHLOROETHENE)	FL
EPA 8260 B	TRANS-1,2-DICHLOROETHENE	FL
EPA 8260 B	TRANS-1,4-DICHLORO-2-BUTENE	FL
EPA 8260 B	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	FL
EPA 8260 B	VINYL CHLORIDE	FL
EPA 8270 C	1,2,4,5-TETRACHLOROBENZENE	FL
EPA 8270 C	1,2-DICHLOROBENZENE	FL
EPA 8270 C	1,3,5-TRINITROBENZENE (1,3,5-TNB)	FL
EPA 8270 C	1,3-DINITROBENZENE (1,3-DNB)	FL
EPA 8270 C	1,4-NAPHTHOQUINONE	FL
EPA 8270 C	1-NAPHTHYLAMINE	FL
EPA 8270 C	2,4,5-TRICHLOROPHENOL	FL
EPA 8270 C	2,4-DICHLOROPHENOL	FL
EPA 8270 C	2,4-DINITROPHENOL	FL
EPA 8270 C	2,6-DICHLOROPHENOL	FL

METHOD	ANALYTE	PRIMARY
EPA 8260 B	CHLOROFORM	FL
EPA 8260 B	CIS-1,2-DICHLOROETHYLENE	FL
EPA 8260 B	DIBROMOFLUOROMETHANE	FL
EPA 8260 B	DICHLORODIFLUOROMETHANE (FREON-12)	FL
EPA 8260 B	ETHYL ACETATE	FL
EPA 8260 B	ETHYLBENZENE	FL
EPA 8260 B	IODOMETHANE (METHYL IODIDE)	FL
EPA 8260 B	ISOPROPYLBENZENE	FL
EPA 8260 B	METHACRYLONITRILE	FL
EPA 8260 B	METHYL CHLORIDE (CHLOROMETHANE)	FL
EPA 8260 B	METHYL TERT-BUTYL ETHER (MTBE)	FL
EPA 8260 B	N-BUTYLBENZENE	FL
EPA 8260 B	NAPHTHALENE	FL
EPA 8260 B	PROPIONITRILE (ETHYL CYANIDE)	FL
EPA 8260 B	STYRENE	FL
EPA 8260 B	TERT-BUTYLBENZENE	FL
EPA 8260 B	TOLUENE	FL
EPA 8260 B	TRANS-1,3-DICHLOROPROPENE	FL
EPA 8260 B	TRICHLOROETHENE (TRICHLOROETHYLENE)	FL
EPA 8260 B	VINYL ACETATE	FL
EPA 8260 B	XYLENE (TOTAL)	FL
EPA 8270 C	1,2,4-TRICHLOROBENZENE	FL
EPA 8270 C	1,2-DIPHENYLHYDRAZINE	FL
EPA 8270 C	1,3-DICHLOROBENZENE	FL
EPA 8270 C	1,4-DICHLOROBENZENE	FL
EPA 8270 C	1,4-PHENYLENEDIAMINE	FL
EPA 8270 C	2,3,4,6-TETRACHLOROPHENOL	FL
EPA 8270 C	2,4,6-TRICHLOROPHENOL	FL
EPA 8270 C	2,4-DIMETHYLPHENOL	FL
EPA 8270 C	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 8270 C	2,6-DINITROTOLUENE (2,6-DNT)	FL

Commonwealth of Virginia

Department of General Services
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Scope of Accreditation

VELAP Certificate No.: 2723

MICROBAC LABORATORIES, INC.
158 STARLITE DRIVE
MARIETTA, OH 45750

Virginia Laboratory ID: 460187
Effective Date: February 01, 2014
Expiration Date: September 14, 2014

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8270 C	2-ACETYLAMINOFLUORENE	FL
EPA 8270 C	2-CHLOROPHENOL	FL
EPA 8270 C	2-METHYLNAPHTHALENE	FL
EPA 8270 C	2-NAPHTHYLAMINE	FL
EPA 8270 C	2-NITROPHENOL	FL
EPA 8270 C	3,3'-DICHLOROBENZIDINE	FL
EPA 8270 C	3-METHYLCHOLANTHRENE	FL
EPA 8270 C	3-NITROANILINE	FL
EPA 8270 C	4-BROMOPHENYL PHENYL ETHER	FL
EPA 8270 C	4-CHLOROANILINE	FL
EPA 8270 C	4-DIMETHYL AMINOAZOBENZENE	FL
EPA 8270 C	4-NITROANILINE	FL
EPA 8270 C	5-NITRO-O-TOLUIDINE	FL
EPA 8270 C	A-A-DIMETHYLPHENETHYLAMINE	FL
EPA 8270 C	ACENAPHTHYLENE	FL
EPA 8270 C	ANILINE	FL
EPA 8270 C	ARAMITE	FL
EPA 8270 C	BENZO(A)ANTHRACENE	FL
EPA 8270 C	BENZO(G,H,I)PERYLENE	FL
EPA 8270 C	BENZOIC ACID	FL
EPA 8270 C	BENZYL ALCOHOL	FL
EPA 8270 C	BIS(2-CHLOROETHYL) ETHER	FL
EPA 8270 C	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	FL
EPA 8270 C	CHLOROBENZILATE	FL
EPA 8270 C	DI-N-BUTYL PHTHALATE	FL
EPA 8270 C	DIALLATE	FL
EPA 8270 C	DIBENZOFURAN	FL
EPA 8270 C	DIMETHOATE	FL
EPA 8270 C	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	FL
EPA 8270 C	DISULFOTON	FL
EPA 8270 C	FAMPHUR	FL
EPA 8270 C	FLUORENE	FL
EPA 8270 C	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL

METHOD	ANALYTE	PRIMARY
EPA 8270 C	2-CHLORONAPHTHALENE	FL
EPA 8270 C	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	FL
EPA 8270 C	2-METHYLPHENOL (O-CRESOL)	FL
EPA 8270 C	2-NITROANILINE	FL
EPA 8270 C	2-PICOLINE (2-METHYLPYRIDINE)	FL
EPA 8270 C	3,3'-DIMETHYLBENZIDINE	FL
EPA 8270 C	3-METHYLPHENOL (M-CRESOL)	FL
EPA 8270 C	4-AMINOBIPHENYL	FL
EPA 8270 C	4-CHLORO-3-METHYLPHENOL	FL
EPA 8270 C	4-CHLOROPHENYL PHENYLETHER	FL
EPA 8270 C	4-METHYLPHENOL (P-CRESOL)	FL
EPA 8270 C	4-NITROPHENOL	FL
EPA 8270 C	7,12-DIMETHYLBENZ(A) ANTHRACENE	FL
EPA 8270 C	ACENAPHTHENE	FL
EPA 8270 C	ACETOPHENONE	FL
EPA 8270 C	ANTHRACENE	FL
EPA 8270 C	BENZIDINE	FL
EPA 8270 C	BENZO(A)PYRENE	FL
EPA 8270 C	BENZO(K)FLUORANTHENE	FL
EPA 8270 C	BENZO[B]FLUORANTHENE	FL
EPA 8270 C	BIS(2-CHLOROETHOXY)METHANE	FL
EPA 8270 C	BIS(2-CHLOROISOPROPYL) ETHER	FL
EPA 8270 C	BUTYL BENZYL PHTHALATE	FL
EPA 8270 C	CHRYSENE	FL
EPA 8270 C	DI-N-OCTYL PHTHALATE	FL
EPA 8270 C	DIBENZO(A,H) ANTHRACENE	FL
EPA 8270 C	DIETHYL PHTHALATE	FL
EPA 8270 C	DIMETHYL PHTHALATE	FL
EPA 8270 C	DIPHENYLAMINE	FL
EPA 8270 C	ETHYL METHANESULFONATE	FL
EPA 8270 C	FLUORANTHENE	FL
EPA 8270 C	HEXACHLOROBENZENE	FL
EPA 8270 C	HEXACHLOROCYCLOPENTADIENE	FL

Commonwealth of Virginia

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Scope of Accreditation

VELAP Certificate No.: 2723

MICROBAC LABORATORIES, INC.
158 STARLITE DRIVE
MARIETTA, OH 45750

Virginia Laboratory ID: 460187
Effective Date: February 01, 2014
Expiration Date: September 14, 2014

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8270 C	HEXACHLOROETHANE	FL
EPA 8270 C	HEXACHLOROPROPENE	FL
EPA 8270 C	ISODRIN	FL
EPA 8270 C	ISOSAFROLE	FL
EPA 8270 C	MALATHION	FL
EPA 8270 C	METHYL METHANESULFONATE	FL
EPA 8270 C	N-NITROSO-DI-N-BUTYLAMINE	FL
EPA 8270 C	N-NITROSODIETHYLAMINE	FL
EPA 8270 C	N-NITROSODIPHENYLAMINE	FL
EPA 8270 C	N-NITROSOMORPHOLINE	FL
EPA 8270 C	N-NITROSOPYRROLIDINE	FL
EPA 8270 C	NITROBENZENE	FL
EPA 8270 C	O,O,O-TRIETHYL PHOSPHOROTHIOATE	FL
EPA 8270 C	PARATHION (PARATHION - ETHYL)	FL
EPA 8270 C	PENTACHLOROPHENOL	FL
EPA 8270 C	PHENANTHRENE	FL
EPA 8270 C	PHORATE	FL
EPA 8270 C	PYRENE	FL
EPA 8270 C	SAFROLE	FL
EPA 8270 C	TETRACHLORVINPHOS (STIROPHOS, GARDONA) Z-ISOMER	FL
EPA 8270 C	THIONAZIN (ZINOPHOS)	FL
EPA 8270 D	1,2,4-TRICHLOROBENZENE	FL
EPA 8270 D	1,2-DIPHENYLHYDRAZINE	FL
EPA 8270 D	1,3-DICHLOROBENZENE	FL
EPA 8270 D	1,4-DICHLOROBENZENE	FL
EPA 8270 D	1,4-PHENYLENEDIAMINE	FL
EPA 8270 D	2,3,4,6-TETRACHLOROPHENOL	FL
EPA 8270 D	2,4,6-TRICHLOROPHENOL	FL
EPA 8270 D	2,4-DIMETHYLPHENOL	FL
EPA 8270 D	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 8270 D	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 8270 D	2-CHLORONAPHTHALENE	FL
EPA 8270 D	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	FL
EPA 8270 D	2-METHYLPHENOL (O-CRESOL)	FL
EPA 8270 D	2-NITROANILINE	FL

METHOD	ANALYTE	PRIMARY
EPA 8270 C	HEXACHLOROPHENE	FL
EPA 8270 C	INDENO(1,2,3-CD) PYRENE	FL
EPA 8270 C	ISOPHORONE	FL
EPA 8270 C	KEPONE	FL
EPA 8270 C	METHAPYRILENE	FL
EPA 8270 C	METHYL PARATHION (PARATHION, METHYL)	FL
EPA 8270 C	N-NITROSODI-N-PROPYLAMINE	FL
EPA 8270 C	N-NITROSODIMETHYLAMINE	FL
EPA 8270 C	N-NITROSOMETHYLETHYLAMINE	FL
EPA 8270 C	N-NITROSOPIPERIDINE	FL
EPA 8270 C	NAPHTHALENE	FL
EPA 8270 C	NITROQUINOLINE-1-OXIDE	FL
EPA 8270 C	O-TOLUIDINE (2-METHYLANILINE)	FL
EPA 8270 C	PENTACHLORONITROBENZENE	FL
EPA 8270 C	PHENACETIN	FL
EPA 8270 C	PHENOL	FL
EPA 8270 C	PRONAMIDE (KERB)	FL
EPA 8270 C	PYRIDINE	FL
EPA 8270 C	SULFOTEPP (TETRAETHYL DITHIOPYROPHOSPHATE)	FL
EPA 8270 C	TETRAETHYL PYROPHOSPHATE (TEPP)	FL
EPA 8270 D	1,2,4,5-TETRACHLOROBENZENE	FL
EPA 8270 D	1,2-DICHLOROBENZENE	FL
EPA 8270 D	1,3,5-TRINITROBENZENE (1,3,5-TNB)	FL
EPA 8270 D	1,3-DINITROBENZENE (1,3-DNB)	FL
EPA 8270 D	1,4-NAPHTHOQUINONE	FL
EPA 8270 D	1-NAPHTHYLAMINE	FL
EPA 8270 D	2,4,5-TRICHLOROPHENOL	FL
EPA 8270 D	2,4-DICHLOROPHENOL	FL
EPA 8270 D	2,4-DINITROPHENOL	FL
EPA 8270 D	2,6-DICHLOROPHENOL	FL
EPA 8270 D	2-ACETYLAMINOFLUORENE	FL
EPA 8270 D	2-CHLOROPHENOL	FL
EPA 8270 D	2-METHYLNAPHTHALENE	FL
EPA 8270 D	2-NAPHTHYLAMINE	FL

Commonwealth of Virginia

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MICROBAC LABORATORIES, INC.
158 STARLITE DRIVE
MARIETTA, OH 45750

Virginia Laboratory ID: 460187
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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8270 D	2-NITROPHENOL	FL
EPA 8270 D	3,3'-DICHLOROBENZIDINE	FL
EPA 8270 D	3-METHYLCHOLANTHRENE	FL
EPA 8270 D	4-AMINOBIPHENYL	FL
EPA 8270 D	4-CHLORO-3-METHYLPHENOL	FL
EPA 8270 D	4-CHLOROPHENYL PHENYLETHER	FL
EPA 8270 D	4-METHYLPHENOL (P-CRESOL)	FL
EPA 8270 D	4-NITROPHENOL	FL
EPA 8270 D	7,12-DIMETHYLBENZ(A) ANTHRACENE	FL
EPA 8270 D	ACENAPHTHENE	FL
EPA 8270 D	ACETOPHENONE	FL
EPA 8270 D	ANTHRACENE	FL
EPA 8270 D	BENZIDINE	FL
EPA 8270 D	BENZO(A)PYRENE	FL
EPA 8270 D	BENZO(K)FLUORANTHENE	FL
EPA 8270 D	BENZO[B]FLUORANTHENE	FL
EPA 8270 D	BIS(2-CHLOROETHOXY)METHANE	FL
EPA 8270 D	BIS(2-CHLOROISOPROPYL) ETHER	FL
EPA 8270 D	BUTYL BENZYL PHTHALATE	FL
EPA 8270 D	CHRYSENE	FL
EPA 8270 D	DI-N-OCTYL PHTHALATE	FL
EPA 8270 D	DIBENZO(A,H) ANTHRACENE	FL
EPA 8270 D	DIETHYL PHTHALATE	FL
EPA 8270 D	DIMETHYL PHTHALATE	FL
EPA 8270 D	DIPHENYLAMINE	FL
EPA 8270 D	ETHYL METHANESULFONATE	FL
EPA 8270 D	FLUORANTHENE	FL
EPA 8270 D	HEXACHLOROBENZENE	FL
EPA 8270 D	HEXACHLOROCYCLOPENTADIEN E	FL
EPA 8270 D	HEXACHLOROPHENE	FL
EPA 8270 D	INDENO(1,2,3-CD) PYRENE	FL
EPA 8270 D	ISOPHORONE	FL
EPA 8270 D	KEPONE	FL
EPA 8270 D	METHAPYRILENE	FL

METHOD	ANALYTE	PRIMARY
EPA 8270 D	2-PICOLINE (2-METHYLPYRIDINE)	FL
EPA 8270 D	3,3'-DIMETHYLBENZIDINE	FL
EPA 8270 D	3-NITROANILINE	FL
EPA 8270 D	4-BROMOPHENYL PHENYL ETHER	FL
EPA 8270 D	4-CHLOROANILINE	FL
EPA 8270 D	4-DIMETHYL AMINOAZOBENZENE	FL
EPA 8270 D	4-NITROANILINE	FL
EPA 8270 D	5-NITRO-O-TOLUIDINE	FL
EPA 8270 D	A-A-DIMETHYLPHENETHYLAMINE	FL
EPA 8270 D	ACENAPHTHYLENE	FL
EPA 8270 D	ANILINE	FL
EPA 8270 D	ARAMITE	FL
EPA 8270 D	BENZO(A)ANTHRACENE	FL
EPA 8270 D	BENZO(G,H,I)PERYLENE	FL
EPA 8270 D	BENZOIC ACID	FL
EPA 8270 D	BENZYL ALCOHOL	FL
EPA 8270 D	BIS(2-CHLOROETHYL) ETHER	FL
EPA 8270 D	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	FL
EPA 8270 D	CHLOROBENZILATE	FL
EPA 8270 D	DI-N-BUTYL PHTHALATE	FL
EPA 8270 D	DIALLATE	FL
EPA 8270 D	DIBENZOFURAN	FL
EPA 8270 D	DIMETHOATE	FL
EPA 8270 D	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENO L, DNBP)	FL
EPA 8270 D	DISULFOTON	FL
EPA 8270 D	FAMPHUR	FL
EPA 8270 D	FLUORENE	FL
EPA 8270 D	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 8270 D	HEXACHLOROETHANE	FL
EPA 8270 D	HEXACHLOROPROPENE	FL
EPA 8270 D	ISODRIN	FL
EPA 8270 D	ISOSAFROLE	FL
EPA 8270 D	MALATHION	FL
EPA 8270 D	METHYL METHANESULFONATE	FL

Commonwealth of Virginia

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Scope of Accreditation

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MICROBAC LABORATORIES, INC.
158 STARLITE DRIVE
MARIETTA, OH 45750

Virginia Laboratory ID: 460187
Effective Date: February 01, 2014
Expiration Date: September 14, 2014

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8270 D	METHYL PARATHION (PARATHION, METHYL)	FL
EPA 8270 D	N-NITROSODI-N-PROPYLAMINE	FL
EPA 8270 D	N-NITROSODIMETHYLAMINE	FL
EPA 8270 D	N-NITROSOMETHYLETHYLAMINE	FL
EPA 8270 D	N-NITROSOPIPERIDINE	FL
EPA 8270 D	NAPHTHALENE	FL
EPA 8270 D	NITROQUINOLINE-1-OXIDE	FL
EPA 8270 D	O-TOLUIDINE (2-METHYLANILINE)	FL
EPA 8270 D	PENTACHLORONITROBENZENE	FL
EPA 8270 D	PHENACETIN	FL
EPA 8270 D	PHENOL	FL
EPA 8270 D	PRONAMIDE (KERB)	FL
EPA 8270 D	SAFROLE	FL
EPA 8270 D	TETRACHLORVINPHOS (STIROPHOS, GARDONA) Z-ISOMER	FL
EPA 8270 D	THIONAZIN (ZINOPHOS)	FL
EPA 8270 D - EXTENDED	CARBAZOLE	FL
EPA 8330 A	1,3,5-TRINITROBENZENE (1,3,5-TNB)	FL
EPA 8330 A	2,4,6-TRINITROTOLUENE (2,4,6-TNT)	FL
EPA 8330 A	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 8330 A	2-NITROTOLUENE	FL
EPA 8330 A	4-AMINO-2,6-DINITROTOLUENE (4-AM-DNT)	FL
EPA 8330 A	METHYL-2,4,6-TRINITROPHENYLNITRAMINE (TETRYL)	FL
EPA 8330 A	NITROGLYCERIN	FL
EPA 8330 A	RDX (HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE)	FL
EPA 8330 B	1,3-DINITROBENZENE (1,3-DNB)	FL
EPA 8330 B	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 8330 B	2-AMINO-4,6-DINITROTOLUENE (2-AM-DNT)	FL
EPA 8330 B	3-NITROTOLUENE	FL

METHOD	ANALYTE	PRIMARY
EPA 8270 D	N-NITROSO-DI-N-BUTYLAMINE	FL
EPA 8270 D	N-NITROSODIETHYLAMINE	FL
EPA 8270 D	N-NITROSODIPHENYLAMINE	FL
EPA 8270 D	N-NITROSOMORPHOLINE	FL
EPA 8270 D	N-NITROSOPYRROLIDINE	FL
EPA 8270 D	NITROBENZENE	FL
EPA 8270 D	O,O,O-TRIETHYL PHOSPHOROTHIOATE	FL
EPA 8270 D	PARATHION (PARATHION - ETHYL)	FL
EPA 8270 D	PENTACHLOROPHENOL	FL
EPA 8270 D	PHENANTHRENE	FL
EPA 8270 D	PHORATE	FL
EPA 8270 D	PYRENE	FL
EPA 8270 D	SULFOTEPP (TETRAETHYL DITHIOPYROPHOSPHATE)	FL
EPA 8270 D	TETRAETHYL PYROPHOSPHATE (TEPP)	FL
EPA 8270 D - EXTENDED	3+4-METHYL PHENOL (M+P CRESOL)	FL
EPA 8315 A	FORMALDEHYDE	FL
EPA 8330 A	1,3-DINITROBENZENE (1,3-DNB)	FL
EPA 8330 A	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 8330 A	2-AMINO-4,6-DINITROTOLUENE (2-AM-DNT)	FL
EPA 8330 A	3-NITROTOLUENE	FL
EPA 8330 A	4-NITROTOLUENE	FL
EPA 8330 A	NITROBENZENE	FL
EPA 8330 A	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7-TETRAZOCINE (HMX)	FL
EPA 8330 B	1,3,5-TRINITROBENZENE (1,3,5-TNB)	FL
EPA 8330 B	2,4,6-TRINITROTOLUENE (2,4,6-TNT)	FL
EPA 8330 B	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 8330 B	2-NITROTOLUENE	FL
EPA 8330 B	4-AMINO-2,6-DINITROTOLUENE (4-AM-DNT)	FL

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158 STARLITE DRIVE
MARIETTA, OH 45750

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8330 B	4-NITROTOLUENE	FL
EPA 8330 B	NITROBENZENE	FL
EPA 8330 B	OCTAHYDRO-1,3,5,7-TETRANITRO -1,3,5,7-TETRAZOCINE (HMX)	FL
EPA 8330 B	RDX (HEXAHYDRO-1,3,5-TRINITRO-1,3, 5-TRIAZINE)	FL
EPA 9056	BROMIDE	FL
EPA 9056	FLUORIDE	FL
EPA 9056	SULFATE	FL
EPA 9060 A	TOTAL ORGANIC CARBON	FL
OVL HPLC07/HPLC-MS-MS	HEXAMETHYLPHOSPHORAMIDE (HMPA)	FL
OVL HPLC07/HPLC-MS-MS	TETRAMETHYLPHOSPHORAMIDE (TMPA)	FL
RSK-175	ETHANE	FL
RSK-175	METHANE	FL
SM 2310 B-2011	ACIDITY, AS CACO3	FL
SM 2340 C-2011	TOTAL HARDNESS AS CACO3	FL
SM 2540 D-2011	RESIDUE-NONFILTERABLE (TSS)	FL
SM 3500-CR B-2011	CHROMIUM VI	FL
SM 4500-CN$^-$ E-2011	CYANIDE	FL
SM 4500-F$^-$ C-2011	FLUORIDE	FL
SM 4500-NO3$^-$ E-2011	NITRATE AS N	FL
SM 4500-S2$^-$ F-2011	SULFIDE	FL
SM 5210 B-2011	CARBONACEOUS BOD, CBOD	FL
SM 5540 C-2011	SURFACTANTS - MBAS	FL

METHOD	ANALYTE	PRIMARY
EPA 8330 B	METHYL-2,4,6-TRINITROPHENYLN ITRAMINE (TETRYL)	FL
EPA 8330 B	NITROGLYCERIN	FL
EPA 8330 B	PENTAERYTHRITOLTETRANITRAT E	FL
EPA 9014	AMENABLE CYANIDE	FL
EPA 9056	CHLORIDE	FL
EPA 9056	NITRITE	FL
EPA 9056 A	NITRATE AS N	FL
HACH 8000	CHEMICAL OXYGEN DEMAND	FL
OVL HPLC07/HPLC-MS-MS	PENTAMETHYLPHOSPHORAMIDE (PMPA)	FL
OVL HPLC07/HPLC-MS-MS	TRIMETHYLPHOSPHORAMIDE (TRIMPA)	FL
RSK-175	ETHENE	FL
SM 2120 B-2011	COLOR	FL
SM 2320 B-2011	ALKALINITY AS CACO3	FL
SM 2540 B-2011	RESIDUE-TOTAL	FL
SM 2540 F-2011	RESIDUE-SETTLEABLE	FL
SM 4500-CL$^-$ E-2011	CHLORIDE	FL
SM 4500-CN$^-$ G-2011	AMENABLE CYANIDE	FL
SM 4500-NO2$^-$ B-2011	NITRITE AS N	FL
SM 4500-P E-2011	ORTHOPHOSPHATE AS P	FL
SM 5210 B-2011	BIOCHEMICAL OXYGEN DEMAND	FL
SM 5310 C-2011	TOTAL ORGANIC CARBON	FL

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METHOD	ANALYTE	PRIMARY
EPA 1010 A	FLASHPOINT	FL
EPA 1312	PREP: SYNTHETIC PRECIPITATION LEACHING PROCEDURE	FL
EPA 6010 B	ANTIMONY	FL
EPA 6010 B	BARIUM	FL
EPA 6010 B	BORON	FL
EPA 6010 B	CALCIUM	FL
EPA 6010 B	COBALT	FL
EPA 6010 B	IRON	FL

METHOD	ANALYTE	PRIMARY
EPA 1311	PREP: TOXICITY CHARACTERISTIC LEACHING PROCEDURE	FL
EPA 6010 B	ALUMINUM	FL
EPA 6010 B	ARSENIC	FL
EPA 6010 B	BERYLLIUM	FL
EPA 6010 B	CADMIUM	FL
EPA 6010 B	CHROMIUM	FL
EPA 6010 B	COPPER	FL
EPA 6010 B	LEAD	FL

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METHOD	ANALYTE	PRIMARY
EPA 6010 B	LITHIUM	FL
EPA 6010 B	MANGANESE	FL
EPA 6010 B	NICKEL	FL
EPA 6010 B	POTASSIUM	FL
EPA 6010 B	SILVER	FL
EPA 6010 B	STRONTIUM	FL
EPA 6010 B	TIN	FL
EPA 6010 B	VANADIUM	FL
EPA 6010 C	ALUMINUM	FL
EPA 6010 C	ARSENIC	FL
EPA 6010 C	BERYLLIUM	FL
EPA 6010 C	CADMIUM	FL
EPA 6010 C	CHROMIUM	FL
EPA 6010 C	COPPER	FL
EPA 6010 C	LEAD	FL
EPA 6010 C	MAGNESIUM	FL
EPA 6010 C	MOLYBDENUM	FL
EPA 6010 C	PHOSPHORUS, TOTAL	FL
EPA 6010 C	SELENIUM	FL
EPA 6010 C	SODIUM	FL
EPA 6010 C	THALLIUM	FL
EPA 6010 C	TITANIUM	FL
EPA 6010 C	ZINC	FL
EPA 6020	ARSENIC	FL
EPA 6020	CADMIUM	FL
EPA 6020	COBALT	FL
EPA 6020	LEAD	FL
EPA 6020	NICKEL	FL
EPA 6020	THALLIUM	FL
EPA 6020 - EXTENDED	URANIUM	FL
EPA 6020 A	ARSENIC	FL
EPA 6020 A	CADMIUM	FL
EPA 6020 A	COBALT	FL
EPA 6020 A	LEAD	FL
EPA 6020 A	NICKEL	FL
EPA 6020 A	SILVER	FL
EPA 6020 A	VANADIUM	FL
EPA 6020 A - EXTENDED	URANIUM	FL

METHOD	ANALYTE	PRIMARY
EPA 6010 B	MAGNESIUM	FL
EPA 6010 B	MOLYBDENUM	FL
EPA 6010 B	PHOSPHORUS, TOTAL	FL
EPA 6010 B	SELENIUM	FL
EPA 6010 B	SODIUM	FL
EPA 6010 B	THALLIUM	FL
EPA 6010 B	TITANIUM	FL
EPA 6010 B	ZINC	FL
EPA 6010 C	ANTIMONY	FL
EPA 6010 C	BARIUM	FL
EPA 6010 C	BORON	FL
EPA 6010 C	CALCIUM	FL
EPA 6010 C	COBALT	FL
EPA 6010 C	IRON	FL
EPA 6010 C	LITHIUM	FL
EPA 6010 C	MANGANESE	FL
EPA 6010 C	NICKEL	FL
EPA 6010 C	POTASSIUM	FL
EPA 6010 C	SILVER	FL
EPA 6010 C	STRONTIUM	FL
EPA 6010 C	TIN	FL
EPA 6010 C	VANADIUM	FL
EPA 6020	ANTIMONY	FL
EPA 6020	BARIUM	FL
EPA 6020	CHROMIUM	FL
EPA 6020	COPPER	FL
EPA 6020	MANGANESE	FL
EPA 6020	SILVER	FL
EPA 6020	ZINC	FL
EPA 6020 A	ANTIMONY	FL
EPA 6020 A	BARIUM	FL
EPA 6020 A	CHROMIUM	FL
EPA 6020 A	COPPER	FL
EPA 6020 A	MANGANESE	FL
EPA 6020 A	SELENIUM	FL
EPA 6020 A	THALLIUM	FL
EPA 6020 A	ZINC	FL
EPA 6850	PERCHLORATE	FL

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METHOD	ANALYTE	PRIMARY
EPA 7.3.3.2 [SW 846 CH 7]	REACTIVE CYANIDE	FL
EPA 7196 A	CHROMIUM VI	FL
EPA 7471 B	MERCURY	FL
EPA 8015 B	ETHANOL	FL
EPA 8015 B	GASOLINE RANGE ORGANICS (GRO)	FL
EPA 8015 C	ETHANOL	FL
EPA 8015 C	GASOLINE RANGE ORGANICS (GRO)	FL
EPA 8015 D	METHANOL	FL
EPA 8081 A	4,4'-DDE	FL
EPA 8081 A	ALDRIN	FL
EPA 8081 A	ALPHA-CHLORDANE [CIS-CHLORDANE]	FL
EPA 8081 A	CHLORDANE (TECH.)	FL
EPA 8081 A	DIELDRIN	FL
EPA 8081 A	ENDOSULFAN II	FL
EPA 8081 A	ENDRIN	FL
EPA 8081 A	ENDRIN KETONE	FL
EPA 8081 A	GAMMA-CHLORDANE [BETA-CHLORDANE, TRANS-CHLORDANE]	FL
EPA 8081 A	HEPTACHLOR EPOXIDE	FL
EPA 8081 A	TOXAPHENE (CHLORINATED CAMPHENE)	FL
EPA 8081 B	4,4'-DDE	FL
EPA 8081 B	ALDRIN	FL
EPA 8081 B	ALPHA-CHLORDANE [CIS-CHLORDANE]	FL
EPA 8081 B	CHLORDANE (TECH.)	FL
EPA 8081 B	DIELDRIN	FL
EPA 8081 B	ENDOSULFAN II	FL
EPA 8081 B	ENDRIN	FL
EPA 8081 B	ENDRIN KETONE	FL

METHOD	ANALYTE	PRIMARY
EPA 7.3.4.2 [SW 846 CH 7]	REACTIVE SULFIDE	FL
EPA 7471 A	MERCURY	FL
EPA 8015 B	DIESEL RANGE ORGANICS (DRO)	FL
EPA 8015 B	ETHYLENE GLYCOL	FL
EPA 8015 B	ISOPROPYL ALCOHOL (2-PROPANOL, ISOPROPANOL)	FL
EPA 8015 C	ETHYLENE GLYCOL	FL
EPA 8015 D	ETHANOL	FL
EPA 8081 A	4,4'-DDD	FL
EPA 8081 A	4,4'-DDT	FL
EPA 8081 A	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 A	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 A	DELTA-BHC	FL
EPA 8081 A	ENDOSULFAN I	FL
EPA 8081 A	ENDOSULFAN SULFATE	FL
EPA 8081 A	ENDRIN ALDEHYDE	FL
EPA 8081 A	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 A	HEPTACHLOR	FL
EPA 8081 A	METHOXYCHLOR	FL
EPA 8081 B	4,4'-DDD	FL
EPA 8081 B	4,4'-DDT	FL
EPA 8081 B	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B	DELTA-BHC	FL
EPA 8081 B	ENDOSULFAN I	FL
EPA 8081 B	ENDOSULFAN SULFATE	FL
EPA 8081 B	ENDRIN ALDEHYDE	FL
EPA 8081 B	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	FL

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EPA 8081 B	GAMMA-CHLORDANE [BETA-CHLORDANE, TRANS-CHLORDANE]	FL	EPA 8081 B	HEPTACHLOR	FL
EPA 8081 B	HEPTACHLOR EPOXIDE	FL	EPA 8081 B	METHOXYCHLOR	FL
EPA 8081 B	TOXAPHENE (CHLORINATED CAMPHENE)	FL	EPA 8082	AROCLOR-1016 (PCB-1016)	FL
EPA 8082	AROCLOR-1221 (PCB-1221)	FL	EPA 8082	AROCLOR-1232 (PCB-1232)	FL
EPA 8082	AROCLOR-1242 (PCB-1242)	FL	EPA 8082	AROCLOR-1248 (PCB-1248)	FL
EPA 8082	AROCLOR-1254 (PCB-1254)	FL	EPA 8082	AROCLOR-1260 (PCB-1260)	FL
EPA 8082 A	AROCLOR-1016 (PCB-1016)	FL	EPA 8082 A	AROCLOR-1221 (PCB-1221)	FL
EPA 8082 A	AROCLOR-1232 (PCB-1232)	FL	EPA 8082 A	AROCLOR-1242 (PCB-1242)	FL
EPA 8082 A	AROCLOR-1248 (PCB-1248)	FL	EPA 8082 A	AROCLOR-1254 (PCB-1254)	FL
EPA 8082 A	AROCLOR-1260 (PCB-1260)	FL	EPA 8151 A	2,4,5-T	FL
EPA 8151 A	2,4-D	FL	EPA 8151 A	2,4-DB	FL
EPA 8151 A	DALAPON	FL	EPA 8151 A	DICAMBA	FL
EPA 8151 A	DICHLOROPROP (DICHLORPROP)	FL	EPA 8151 A	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	FL
EPA 8151 A	MCPA	FL	EPA 8151 A	MCPP	FL
EPA 8151 A	PENTACHLOROPHENOL	FL	EPA 8151 A	SILVEX (2,4,5-TP)	FL
EPA 8260 B	1,1,1,2-TETRACHLOROETHANE	FL	EPA 8260 B	1,1,1-TRICHLOROETHANE	FL
EPA 8260 B	1,1,2,2-TETRACHLOROETHANE	FL	EPA 8260 B	1,1,2-TRICHLOROETHANE	FL
EPA 8260 B	1,1-DICHLOROETHANE	FL	EPA 8260 B	1,1-DICHLOROETHYLENE	FL
EPA 8260 B	1,1-DICHLOROPROPENE	FL	EPA 8260 B	1,2,3-TRICHLOROBENZENE	FL
EPA 8260 B	1,2,3-TRICHLOROPROPANE	FL	EPA 8260 B	1,2,4-TRICHLOROBENZENE	FL
EPA 8260 B	1,2,4-TRIMETHYLBENZENE	FL	EPA 8260 B	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	FL
EPA 8260 B	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	FL	EPA 8260 B	1,2-DICHLOROBENZENE	FL
EPA 8260 B	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	FL	EPA 8260 B	1,2-DICHLOROPROPANE	FL
EPA 8260 B	1,3,5-TRIMETHYLBENZENE	FL	EPA 8260 B	1,3-DICHLOROBENZENE	FL
EPA 8260 B	1,3-DICHLOROPROPANE	FL	EPA 8260 B	1,4-DICHLOROBENZENE	FL
EPA 8260 B	1,4-DIOXANE (1,4-DIETHYLENEOXIDE)	FL	EPA 8260 B	1-BUTANOL (N-BUTANOL)	FL
EPA 8260 B	1-CHLOROHEXANE	FL	EPA 8260 B	2,2-DICHLOROPROPANE	FL
EPA 8260 B	2-BUTANONE (METHYL ETHYL KETONE, MEK)	FL	EPA 8260 B	2-CHLOROETHYL VINYL ETHER	FL
EPA 8260 B	2-CHLOROTOLUENE	FL	EPA 8260 B	2-HEXANONE	FL
EPA 8260 B	2-NITROPROPANE	FL	EPA 8260 B	4-CHLOROTOLUENE	FL
EPA 8260 B	4-ISOPROPYLTOLUENE (P-CYMENE)	FL	EPA 8260 B	4-METHYL-2-PENTANONE (MIBK)	FL
EPA 8260 B	ACETONE	FL	EPA 8260 B	ACETONITRILE	FL
EPA 8260 B	ACROLEIN (PROPENAL)	FL	EPA 8260 B	ACRYLONITRILE	FL

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METHOD	ANALYTE	PRIMARY
EPA 8260 B	ALLYL CHLORIDE (3-CHLOROPROPENE)	FL
EPA 8260 B	BROMOBENZENE	FL
EPA 8260 B	BROMODICHLOROMETHANE	FL
EPA 8260 B	CARBON DISULFIDE	FL
EPA 8260 B	CHLOROBENZENE	FL
EPA 8260 B	CHLOROETHANE (ETHYL CHLORIDE)	FL
EPA 8260 B	CHLOROPRENE (2-CHLORO-1,3-BUTADIENE)	FL
EPA 8260 B	CIS-1,3-DICHLOROPROPENE	FL
EPA 8260 B	DIBROMOMETHANE (METHYLENE BROMIDE)	FL
EPA 8260 B	DIETHYL ETHER	FL
EPA 8260 B	ETHYL METHACRYLATE	FL
EPA 8260 B	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 8260 B	ISOBUTYL ALCOHOL (2-METHYL-1-PROPANOL)	FL
EPA 8260 B	METHACRYLONITRILE	FL
EPA 8260 B	METHYL CHLORIDE (CHLOROMETHANE)	FL
EPA 8260 B	METHYL TERT-BUTYL ETHER (MTBE)	FL
EPA 8260 B	N-BUTYLBENZENE	FL
EPA 8260 B	NAPHTHALENE	FL
EPA 8260 B	SEC-BUTYLBENZENE	FL
EPA 8260 B	TERT-BUTYL ALCOHOL	FL
EPA 8260 B	TETRACHLOROETHENE (PERCHLOROETHENE)	FL
EPA 8260 B	TRANS-1,2-DICHLOROETHENE	FL
EPA 8260 B	TRANS-1,4-DICHLORO-2-BUTENE	FL
EPA 8260 B	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	FL
EPA 8260 B	VINYL CHLORIDE	FL
EPA 8270 C	1,2,4,5-TETRACHLOROBENZENE	FL
EPA 8270 C	1,2-DICHLOROBENZENE	FL
EPA 8270 C	1,3,5-TRINITROBENZENE (1,3,5-TNB)	FL
EPA 8270 C	1,3-DINITROBENZENE (1,3-DNB)	FL
EPA 8270 C	1,4-NAPHTHOQUINONE	FL
EPA 8270 C	1-NAPHTHYLAMINE	FL

METHOD	ANALYTE	PRIMARY
EPA 8260 B	BENZENE	FL
EPA 8260 B	BROMOCHLOROMETHANE	FL
EPA 8260 B	BROMOFORM	FL
EPA 8260 B	CARBON TETRACHLORIDE	FL
EPA 8260 B	CHLORODIBROMOMETHANE	FL
EPA 8260 B	CHLOROFORM	FL
EPA 8260 B	CIS-1,2-DICHLOROETHYLENE	FL
EPA 8260 B	DIBROMOFLUOROMETHANE	FL
EPA 8260 B	DICHLORODIFLUOROMETHANE (FREON-12)	FL
EPA 8260 B	ETHYL ACETATE	FL
EPA 8260 B	ETHYLBENZENE	FL
EPA 8260 B	IODOMETHANE (METHYL IODIDE)	FL
EPA 8260 B	ISOPROPYLBENZENE	FL
EPA 8260 B	METHYL BROMIDE (BROMOMETHANE)	FL
EPA 8260 B	METHYL METHACRYLATE	FL
EPA 8260 B	METHYLENE CHLORIDE (DICHLOROMETHANE)	FL
EPA 8260 B	N-PROPYLBENZENE	FL
EPA 8260 B	PROPIONITRILE (ETHYL CYANIDE)	FL
EPA 8260 B	STYRENE	FL
EPA 8260 B	TERT-BUTYLBENZENE	FL
EPA 8260 B	TOLUENE	FL
EPA 8260 B	TRANS-1,3-DICHLOROPROPENE	FL
EPA 8260 B	TRICHLOROETHENE (TRICHLOROETHYLENE)	FL
EPA 8260 B	VINYL ACETATE	FL
EPA 8260 B	XYLENE (TOTAL)	FL
EPA 8270 C	1,2,4-TRICHLOROBENZENE	FL
EPA 8270 C	1,2-DIPHENYLHYDRAZINE	FL
EPA 8270 C	1,3-DICHLOROBENZENE	FL
EPA 8270 C	1,4-DICHLOROBENZENE	FL
EPA 8270 C	1,4-PHENYLENEDIAMINE	FL
EPA 8270 C	2,3,4,6-TETRACHLOROPHENOL	FL

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EPA 8270 C	2,4,5-TRICHLOROPHENOL	FL	EPA 8270 C	2,4,6-TRICHLOROPHENOL	FL
EPA 8270 C	2,4-DICHLOROPHENOL	FL	EPA 8270 C	2,4-DIMETHYLPHENOL	FL
EPA 8270 C	2,4-DINITROPHENOL	FL	EPA 8270 C	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 8270 C	2,6-DICHLOROPHENOL	FL	EPA 8270 C	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 8270 C	2-ACETYLAMINOFLUORENE	FL	EPA 8270 C	2-CHLORONAPHTHALENE	FL
EPA 8270 C	2-CHLOROPHENOL	FL	EPA 8270 C	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	FL
EPA 8270 C	2-METHYLNAPHTHALENE	FL	EPA 8270 C	2-METHYLPHENOL (O-CRESOL)	FL
EPA 8270 C	2-NAPHTHYLAMINE	FL	EPA 8270 C	2-NITROANILINE	FL
EPA 8270 C	2-NITROPHENOL	FL	EPA 8270 C	2-PICOLINE (2-METHYLPYRIDINE)	FL
EPA 8270 C	3,3'-DICHLOROBENZIDINE	FL	EPA 8270 C	3,3'-DIMETHYLBENZIDINE	FL
EPA 8270 C	3-METHYLCHOLANTHRENE	FL	EPA 8270 C	3-METHYLPHENOL (M-CRESOL)	FL
EPA 8270 C	3-NITROANILINE	FL	EPA 8270 C	4-AMINOBIPHENYL	FL
EPA 8270 C	4-BROMOPHENYL PHENYL ETHER	FL	EPA 8270 C	4-CHLORO-3-METHYLPHENOL	FL
EPA 8270 C	4-CHLOROANILINE	FL	EPA 8270 C	4-CHLOROPHENYL PHENYLETHER	FL
EPA 8270 C	4-DIMETHYL AMINOAZOBENZENE	FL	EPA 8270 C	4-METHYLPHENOL (P-CRESOL)	FL
EPA 8270 C	4-NITROANILINE	FL	EPA 8270 C	4-NITROPHENOL	FL
EPA 8270 C	5-NITRO-O-TOLUIDINE	FL	EPA 8270 C	7,12-DIMETHYLBENZ(A) ANTHRACENE	FL
EPA 8270 C	A-A-DIMETHYLPHENETHYLAMINE	FL	EPA 8270 C	ACENAPHTHENE	FL
EPA 8270 C	ACENAPHTHYLENE	FL	EPA 8270 C	ACETOPHENONE	FL
EPA 8270 C	ANILINE	FL	EPA 8270 C	ANTHRACENE	FL
EPA 8270 C	ARAMITE	FL	EPA 8270 C	BENZIDINE	FL
EPA 8270 C	BENZO(A)ANTHRACENE	FL	EPA 8270 C	BENZO(A)PYRENE	FL
EPA 8270 C	BENZO(G,H,I)PERYLENE	FL	EPA 8270 C	BENZO(K)FLUORANTHENE	FL
EPA 8270 C	BENZOIC ACID	FL	EPA 8270 C	BENZO[B]FLUORANTHENE	FL
EPA 8270 C	BENZYL ALCOHOL	FL	EPA 8270 C	BIS(2-CHLOROETHOXY)METHANE	FL
EPA 8270 C	BIS(2-CHLOROETHYL) ETHER	FL	EPA 8270 C	BIS(2-CHLOROISOPROPYL) ETHER	FL
EPA 8270 C	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	FL	EPA 8270 C	BUTYL BENZYL PHTHALATE	FL
EPA 8270 C	CHLOROBENZILATE	FL	EPA 8270 C	CHRYSENE	FL
EPA 8270 C	DI-N-BUTYL PHTHALATE	FL	EPA 8270 C	DI-N-OCTYL PHTHALATE	FL
EPA 8270 C	DIALLATE	FL	EPA 8270 C	DIBENZO(A,H) ANTHRACENE	FL
EPA 8270 C	DIBENZOFURAN	FL	EPA 8270 C	DIETHYL PHTHALATE	FL
EPA 8270 C	DIMETHOATE	FL	EPA 8270 C	DIMETHYL PHTHALATE	FL
EPA 8270 C	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	FL	EPA 8270 C	DIPHENYLAMINE	FL
EPA 8270 C	DISULFOTON	FL	EPA 8270 C	ETHYL METHANESULFONATE	FL

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EPA 8270 C	FAMPHUR	FL
EPA 8270 C	FLUORENE	FL
EPA 8270 C	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 8270 C	HEXACHLOROETHANE	FL
EPA 8270 C	HEXACHLOROPROPENE	FL
EPA 8270 C	INDENO(1,2,3-CD) PYRENE	FL
EPA 8270 C	ISOPHORONE	FL
EPA 8270 C	KEPONE	FL
EPA 8270 C	METHAPYRILENE	FL
EPA 8270 C	METHYL PARATHION (PARATHION, METHYL)	FL
EPA 8270 C	N-NITROSODI-N-PROPYLAMINE	FL
EPA 8270 C	N-NITROSODIMETHYLAMINE	FL
EPA 8270 C	N-NITROSOMETHYLETHYLAMINE	FL
EPA 8270 C	N-NITROSOPIPERIDINE	FL
EPA 8270 C	NAPHTHALENE	FL
EPA 8270 C	NITROQUINOLINE-1-OXIDE	FL
EPA 8270 C	O-TOLUIDINE (2-METHYLANILINE)	FL
EPA 8270 C	PENTACHLOROBENZENE	FL
EPA 8270 C	PENTACHLOROPHENOL	FL
EPA 8270 C	PHENANTHRENE	FL
EPA 8270 C	PHORATE	FL
EPA 8270 C	PYRENE	FL
EPA 8270 C	SAFROLE	FL
EPA 8270 C	TETRACHLORVINPHOS (STIROPHOS, GARDONA) Z-ISOMER	FL
EPA 8270 C	THIONAZIN (ZINOPHOS)	FL
EPA 8270 D	1,2,4,5-TETRACHLOROBENZENE	FL
EPA 8270 D	1,2-DICHLOROBENZENE	FL
EPA 8270 D	1,3,5-TRINITROBENZENE (1,3,5-TNB)	FL
EPA 8270 D	1,3-DINITROBENZENE (1,3-DNB)	FL
EPA 8270 D	1,4-NAPHTHOQUINONE	FL
EPA 8270 D	1-NAPHTHYLAMINE	FL
EPA 8270 D	2,4,5-TRICHLOROPHENOL	FL
EPA 8270 D	2,4-DICHLOROPHENOL	FL

METHOD	ANALYTE	PRIMARY
EPA 8270 C	FLUORANTHENE	FL
EPA 8270 C	HEXACHLOROBENZENE	FL
EPA 8270 C	HEXACHLOROCYCLOPENTADIENE	FL
EPA 8270 C	HEXACHLOROPHENE	FL
EPA 8270 C	HEXAMETHYLPHOSPHORAMIDE (HMPA)	FL
EPA 8270 C	ISODRIN	FL
EPA 8270 C	ISOSAFROLE	FL
EPA 8270 C	MALATHION	FL
EPA 8270 C	METHYL METHANESULFONATE	FL
EPA 8270 C	N-NITROSO-DI-N-BUTYLAMINE	FL
EPA 8270 C	N-NITROSODIETHYLAMINE	FL
EPA 8270 C	N-NITROSODIPHENYLAMINE	FL
EPA 8270 C	N-NITROSOMORPHOLINE	FL
EPA 8270 C	N-NITROSOPYRROLIDINE	FL
EPA 8270 C	NITROBENZENE	FL
EPA 8270 C	O,O,O-TRIETHYL PHOSPHOROTHIOATE	FL
EPA 8270 C	PARATHION (PARATHION - ETHYL)	FL
EPA 8270 C	PENTACHLORONITROBENZENE	FL
EPA 8270 C	PHENACETIN	FL
EPA 8270 C	PHENOL	FL
EPA 8270 C	PRONAMIDE (KERB)	FL
EPA 8270 C	PYRIDINE	FL
EPA 8270 C	SULFOTEPP (TETRAETHYL DITHIOPYROPHOSPHATE)	FL
EPA 8270 C	TETRAETHYL PYROPHOSPHATE (TEPP)	FL
EPA 8270 C - EXTENDED	CARBAZOLE	FL
EPA 8270 D	1,2,4-TRICHLOROBENZENE	FL
EPA 8270 D	1,2-DIPHENYLHYDRAZINE	FL
EPA 8270 D	1,3-DICHLOROBENZENE	FL
EPA 8270 D	1,4-DICHLOROBENZENE	FL
EPA 8270 D	1,4-PHENYLENEDIAMINE	FL
EPA 8270 D	2,3,4,6-TETRACHLOROPHENOL	FL
EPA 8270 D	2,4,6-TRICHLOROPHENOL	FL
EPA 8270 D	2,4-DIMETHYLPHENOL	FL

Commonwealth of Virginia

Department of General Services
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Scope of Accreditation

VELAP Certificate No.: 2723

MICROBAC LABORATORIES, INC.
158 STARLITE DRIVE
MARIETTA, OH 45750

Virginia Laboratory ID: 460187
Effective Date: February 01, 2014
Expiration Date: September 14, 2014

SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY	METHOD	ANALYTE	PRIMARY
EPA 8270 D	2,4-DINITROPHENOL	FL	EPA 8270 D	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 8270 D	2,6-DICHLOROPHENOL	FL	EPA 8270 D	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 8270 D	2-ACETYLAMINOFLUORENE	FL	EPA 8270 D	2-CHLORONAPHTHALENE	FL
EPA 8270 D	2-CHLOROPHENOL	FL	EPA 8270 D	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	FL
EPA 8270 D	2-METHYLNAPHTHALENE	FL	EPA 8270 D	2-METHYLPHENOL (O-CRESOL)	FL
EPA 8270 D	2-NAPHTHYLAMINE	FL	EPA 8270 D	2-NITROANILINE	FL
EPA 8270 D	2-NITROPHENOL	FL	EPA 8270 D	2-PICOLINE (2-METHYLPYRIDINE)	FL
EPA 8270 D	3,3'-DICHLOROBENZIDINE	FL	EPA 8270 D	3,3'-DIMETHYLBENZIDINE	FL
EPA 8270 D	3-METHYLCHOLANTHRENE	FL	EPA 8270 D	3-METHYLPHENOL (M-CRESOL)	FL
EPA 8270 D	3-NITROANILINE	FL	EPA 8270 D	4-AMINOBIPHENYL	FL
EPA 8270 D	4-BROMOPHENYL PHENYL ETHER	FL	EPA 8270 D	4-CHLORO-3-METHYLPHENOL	FL
EPA 8270 D	4-CHLOROANILINE	FL	EPA 8270 D	4-CHLOROPHENYL PHENYLETHER	FL
EPA 8270 D	4-DIMETHYL AMINOAZOBENZENE	FL	EPA 8270 D	4-METHYLPHENOL (P-CRESOL)	FL
EPA 8270 D	4-NITROANILINE	FL	EPA 8270 D	4-NITROPHENOL	FL
EPA 8270 D	5-NITRO-O-TOLUIDINE	FL	EPA 8270 D	7,12-DIMETHYLBENZ(A) ANTHRACENE	FL
EPA 8270 D	A-A-DIMETHYLPHENETHYLAMINE	FL	EPA 8270 D	ACENAPHTHENE	FL
EPA 8270 D	ACENAPHTHYLENE	FL	EPA 8270 D	ACETOPHENONE	FL
EPA 8270 D	ANILINE	FL	EPA 8270 D	ANTHRACENE	FL
EPA 8270 D	ARAMITE	FL	EPA 8270 D	BENZIDINE	FL
EPA 8270 D	BENZO(A)ANTHRACENE	FL	EPA 8270 D	BENZO(A)PYRENE	FL
EPA 8270 D	BENZO(G,H,I)PERYLENE	FL	EPA 8270 D	BENZO(K)FLUORANTHENE	FL
EPA 8270 D	BENZOIC ACID	FL	EPA 8270 D	BENZO[B]FLUORANTHENE	FL
EPA 8270 D	BENZYL ALCOHOL	FL	EPA 8270 D	BIS(2-CHLOROETHOXY)METHANE	FL
EPA 8270 D	BIS(2-CHLOROETHYL) ETHER	FL	EPA 8270 D	BIS(2-CHLOROISOPROPYL) ETHER	FL
EPA 8270 D	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	FL	EPA 8270 D	BUTYL BENZYL PHTHALATE	FL
EPA 8270 D	CHLOROBENZILATE	FL	EPA 8270 D	CHRYSENE	FL
EPA 8270 D	DI-N-BUTYL PHTHALATE	FL	EPA 8270 D	DI-N-OCTYL PHTHALATE	FL
EPA 8270 D	DIALLATE	FL	EPA 8270 D	DIBENZO(A,H) ANTHRACENE	FL
EPA 8270 D	DIBENZOFURAN	FL	EPA 8270 D	DIETHYL PHTHALATE	FL
EPA 8270 D	DIMETHOATE	FL	EPA 8270 D	DIMETHYL PHTHALATE	FL
EPA 8270 D	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	FL	EPA 8270 D	DIPHENYLAMINE	FL
EPA 8270 D	DISULFOTON	FL	EPA 8270 D	ETHYL METHANESULFONATE	FL
EPA 8270 D	FAMPHUR	FL	EPA 8270 D	FLUORANTHENE	FL
EPA 8270 D	FLUORENE	FL	EPA 8270 D	HEXACHLOROBENZENE	FL

Commonwealth of Virginia

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Scope of Accreditation

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MICROBAC LABORATORIES, INC.
158 STARLITE DRIVE
MARIETTA, OH 45750

Virginia Laboratory ID: 460187
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Expiration Date: September 14, 2014

SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8270 D	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 8270 D	HEXACHLOROETHANE	FL
EPA 8270 D	HEXACHLOROPROPENE	FL
EPA 8270 D	INDENO(1,2,3-CD) PYRENE	FL
EPA 8270 D	ISOPHORONE	FL
EPA 8270 D	KEPONE	FL
EPA 8270 D	METHAPYRILENE	FL
EPA 8270 D	METHYL PARATHION (PARATHION, METHYL)	FL
EPA 8270 D	N-NITROSODI-N-PROPYLAMINE	FL
EPA 8270 D	N-NITROSODIMETHYLAMINE	FL
EPA 8270 D	N-NITROSOMETHYLETHYLAMINE	FL
EPA 8270 D	N-NITROSOPIPERIDINE	FL
EPA 8270 D	NAPHTHALENE	FL
EPA 8270 D	NITROQUINOLINE-1-OXIDE	FL
EPA 8270 D	O-TOLUIDINE (2-METHYLANILINE)	FL
EPA 8270 D	PENTACHLOROBENZENE	FL
EPA 8270 D	PENTACHLOROPHENOL	FL
EPA 8270 D	PHENANTHRENE	FL
EPA 8270 D	PHORATE	FL
EPA 8270 D	PYRENE	FL
EPA 8270 D	SULFOTEPP (TETRAETHYL DITHIOPYROPHOSPHATE)	FL
EPA 8270 D	TETRAETHYL PYROPHOSPHATE (TEPP)	FL
EPA 8270 D - EXTENDED	CARBAZOLE	FL
EPA 8270 D SIM	DIMETHOATE	FL
EPA 8270 D SIM	FAMPHUR	FL
EPA 8270 D SIM	METHYL PARATHION (PARATHION, METHYL)	FL
EPA 8315 A	FORMALDEHYDE	FL
EPA 8330 A	1,3-DINITROBENZENE (1,3-DNB)	FL
EPA 8330 A	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 8330 A	2-AMINO-4,6-DINITROTOLUENE (2-AM-DNT)	FL
EPA 8330 A	3-NITROTOLUENE	FL

METHOD	ANALYTE	PRIMARY
EPA 8270 D	HEXACHLOROCYCLOPENTADIENE	FL
EPA 8270 D	HEXACHLOROPHENE	FL
EPA 8270 D	HEXAMETHYLPHOSPHORAMIDE (HMPA)	FL
EPA 8270 D	ISODRIN	FL
EPA 8270 D	ISOSAFROLE	FL
EPA 8270 D	MALATHION	FL
EPA 8270 D	METHYL METHANESULFONATE	FL
EPA 8270 D	N-NITROSO-DI-N-BUTYLAMINE	FL
EPA 8270 D	N-NITROSODIETHYLAMINE	FL
EPA 8270 D	N-NITROSODIPHENYLAMINE	FL
EPA 8270 D	N-NITROSOMORPHOLINE	FL
EPA 8270 D	N-NITROSOPYRROLIDINE	FL
EPA 8270 D	NITROBENZENE	FL
EPA 8270 D	O,O,O-TRIETHYL PHOSPHOROTHIOATE	FL
EPA 8270 D	PARATHION (PARATHION - ETHYL)	FL
EPA 8270 D	PENTACHLORONITROBENZENE	FL
EPA 8270 D	PHENACETIN	FL
EPA 8270 D	PHENOL	FL
EPA 8270 D	PRONAMIDE (KERB)	FL
EPA 8270 D	SAFROLE	FL
EPA 8270 D	TETRACHLORVINPHOS (STIROPHOS, GARDONA) Z-ISOMER	FL
EPA 8270 D	THIONAZIN (ZINOPHOS)	FL
EPA 8270 D SIM	DIALLATE	FL
EPA 8270 D SIM	DISULFOTON	FL
EPA 8270 D SIM	KEPONE	FL
EPA 8270 D SIM	PHORATE	FL
EPA 8330 A	1,3,5-TRINITROBENZENE (1,3,5-TNB)	FL
EPA 8330 A	2,4,6-TRINITROTOLUENE (2,4,6-TNT)	FL
EPA 8330 A	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 8330 A	2-NITROTOLUENE	FL
EPA 8330 A	4-AMINO-2,6-DINITROTOLUENE (4-AM-DNT)	FL

Commonwealth of Virginia

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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8330 A	4-NITROTOLUENE	FL
EPA 8330 A	NITROBENZENE	FL
EPA 8330 A	OCTAHYDRO-1,3,5,7-TETRANITRO -1,3,5,7-TETRAZOCINE (HMX)	FL
EPA 8330 B	1,3,5-TRINITROBENZENE (1,3,5-TNB)	FL
EPA 8330 B	2,4,6-TRINITROTOLUENE (2,4,6-TNT)	FL
EPA 8330 B	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 8330 B	2-NITROTOLUENE	FL
EPA 8330 B	4-AMINO-2,6-DINITROTOLUENE (4-AM-DNT)	FL
EPA 8330 B	METHYL-2,4,6-TRINITROPHENYLN ITRAMINE (TETRYL)	FL
EPA 8330 B	NITROGLYCERIN	FL
EPA 8330 B	PENTAERYTHRITOLTETRANITRAT E	FL
EPA 9010 B	CYANIDE	FL
EPA 9030 B	PREP: SULFIDE	FL
EPA 9040 C	PH	FL
EPA 9056	BROMIDE	FL
EPA 9056	FLUORIDE	FL
EPA 9056	SULFATE	FL
EPA 9056 A	CHLORIDE	FL
EPA 9056 A	NITRATE AS N	FL
EPA 9056 A	SULFATE	FL

METHOD	ANALYTE	PRIMARY
EPA 8330 A	METHYL-2,4,6-TRINITROPHENYLN ITRAMINE (TETRYL)	FL
EPA 8330 A	NITROGLYCERIN	FL
EPA 8330 A	RDX (HEXAHYDRO-1,3,5-TRINITRO-1,3, 5-TRIAZINE)	FL
EPA 8330 B	1,3-DINITROBENZENE (1,3-DNB)	FL
EPA 8330 B	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 8330 B	2-AMINO-4,6-DINITROTOLUENE (2-AM-DNT)	FL
EPA 8330 B	3-NITROTOLUENE	FL
EPA 8330 B	4-NITROTOLUENE	FL
EPA 8330 B	NITROBENZENE	FL
EPA 8330 B	OCTAHYDRO-1,3,5,7-TETRANITRO -1,3,5,7-TETRAZOCINE (HMX)	FL
EPA 8330 B	RDX (HEXAHYDRO-1,3,5-TRINITRO-1,3, 5-TRIAZINE)	FL
EPA 9014	CYANIDE	FL
EPA 9034	TOTAL SULFIDES	FL
EPA 9045 D	PH	FL
EPA 9056	CHLORIDE	FL
EPA 9056	NITRITE	FL
EPA 9056 A	BROMIDE	FL
EPA 9056 A	FLUORIDE	FL
EPA 9056 A	NITRITE	FL
EPA 9095 B	FREE LIQUID	FL

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF GENERAL SERVICES
DIVISION OF CONSOLIDATED LABORATORY SERVICES

Certifies that

VA Laboratory ID#: 460165
PACE ANALYTICAL SERVICES, INC (FLORIDA)

8 E. TOWER CIRCLE
ORMOND BEACH, FL 32174

Owner: STEVE VANDERBOOM
Operator: BOB DEMPSEY
Responsible Official: BOB DEMPSEY

Having met the requirements of 1 VAC 30-46
and the National Environmental Laboratory Accreditation Conference 2003 Standard

is hereby approved as an

Accredited Laboratory

As more fully described in the attached Scope of Accreditation

Effective Date: **June 15, 2013**
Expiration Date: **June 14, 2014**
Certificate # 2331

Thomas L. York, Ph.D., HCLD
DGS Deputy Director for Laboratories

Continued accreditation status depends on successful ongoing participation in the program.
Certificate to be conspicuously displayed at the laboratory.
Not valid unless accompanied by a valid Virginia Environmental Laboratory Accreditation Program (VELAP) Scope of Accreditation.
Customers are urged to verify the laboratory's current accreditation status.

Certificate Not Transferable

Surrender Upon Revocation

Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services

Scope of Accreditation

VELAP Certificate No.: 2331

PACE ANALYTICAL SERVICES, INC (FLORIDA)
8 E. TOWER CIRCLE
ORMOND BEACH, FL 32174

Virginia Laboratory ID: 460165
Effective Date: June 15, 2013
Expiration Date: June 14, 2014

DRINKING WATER

METHOD	ANALYTE	PRIMARY
EPA 180.1 1993 2	TURBIDITY	FL
EPA 200.7 1994 4.4	BARIUM	FL
EPA 200.7 1994 4.4	CADMIUM	FL
EPA 200.7 1994 4.4	CHROMIUM	FL
EPA 200.7 1994 4.4	IRON	FL
EPA 200.7 1994 4.4	MANGANESE	FL
EPA 200.7 1994 4.4	SILICA AS SIO2	FL
EPA 200.7 1994 4.4	SODIUM	FL
EPA 200.8 1994 5.4	ALUMINUM	FL
EPA 200.8 1994 5.4	ARSENIC	FL
EPA 200.8 1994 5.4	BERYLLIUM	FL
EPA 200.8 1994 5.4	CHROMIUM	FL
EPA 200.8 1994 5.4	LEAD	FL
EPA 200.8 1994 5.4	MERCURY	FL
EPA 200.8 1994 5.4	SELENIUM	FL
EPA 200.8 1994 5.4	THALLIUM	FL
EPA 200.8 1994 5.4	ZINC	FL
EPA 300.0 1993 2.1	BROMIDE	FL
EPA 300.0 1993 2.1	FLUORIDE	FL
EPA 300.0 1993 2.1	NITRATE/NITRITE	FL
EPA 300.0 1993 2.1	ORTHOPHOSPHATE AS P	FL
EPA 300.1 1997	BROMATE	FL
EPA 300.1 1997	CHLORIDE	FL
EPA 335.4 1993	CYANIDE	FL
EPA 353.2 1993 2	NITRATE/NITRITE	FL
EPA 365.1 1993 2	ORTHOPHOSPHATE AS P	FL
EPA 504.1 1995 1.1	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	FL
EPA 508.1 1995 2	AROCLOR-1016 (PCB-1016)	FL
EPA 508.1 1995 2	AROCLOR-1232 (PCB-1232)	FL
EPA 508.1 1995 2	AROCLOR-1248 (PCB-1248)	FL
EPA 508.1 1995 2	AROCLOR-1260 (PCB-1260)	FL
EPA 508.1 1995 2	CHLORDANE (TECH.)	FL
EPA 508.1 1995 2	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	FL
EPA 508.1 1995 2	HEPTACHLOR EPOXIDE	FL
EPA 508.1 1995 2	HEXACHLOROCYCLOPENTADIENE	FL

METHOD	ANALYTE	PRIMARY
EPA 200.7 1994 4.4	ALUMINUM	FL
EPA 200.7 1994 4.4	BERYLLIUM	FL
EPA 200.7 1994 4.4	CALCIUM	FL
EPA 200.7 1994 4.4	COPPER	FL
EPA 200.7 1994 4.4	MAGNESIUM	FL
EPA 200.7 1994 4.4	NICKEL	FL
EPA 200.7 1994 4.4	SILVER	FL
EPA 200.7 1994 4.4	ZINC	FL
EPA 200.8 1994 5.4	ANTIMONY	FL
EPA 200.8 1994 5.4	BARIUM	FL
EPA 200.8 1994 5.4	CADMIUM	FL
EPA 200.8 1994 5.4	COPPER	FL
EPA 200.8 1994 5.4	MANGANESE	FL
EPA 200.8 1994 5.4	NICKEL	FL
EPA 200.8 1994 5.4	SILVER	FL
EPA 200.8 1994 5.4	URANIUM	FL
EPA 245.1 1994 3	MERCURY	FL
EPA 300.0 1993 2.1	CHLORIDE	FL
EPA 300.0 1993 2.1	NITRATE AS N	FL
EPA 300.0 1993 2.1	NITRITE AS N	FL
EPA 300.0 1993 2.1	SULFATE	FL
EPA 300.1 1997	BROMIDE	FL
EPA 300.1 1997	CHLORITE	FL
EPA 353.2 1993 2	NITRATE AS N	FL
EPA 353.2 1993 2	NITRITE AS N	FL
EPA 504.1 1995 1.1	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	FL
EPA 508.1 1995 2	ALACHLOR	FL
EPA 508.1 1995 2	AROCLOR-1221 (PCB-1221)	FL
EPA 508.1 1995 2	AROCLOR-1242 (PCB-1242)	FL
EPA 508.1 1995 2	AROCLOR-1254 (PCB-1254)	FL
EPA 508.1 1995 2	ATRAZINE	FL
EPA 508.1 1995 2	ENDRIN	FL
EPA 508.1 1995 2	HEPTACHLOR	FL
EPA 508.1 1995 2	HEXACHLOROBENZENE	FL
EPA 508.1 1995 2	METHOXYCHLOR	FL

This Scope of Accreditation must accompany the Certificate issued by Virginia DCLS with the same Certificate Number indicated above.

Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services

Scope of Accreditation

VELAP Certificate No.: 2331

PACE ANALYTICAL SERVICES, INC (FLORIDA)
8 E. TOWER CIRCLE
ORMOND BEACH, FL 32174

Virginia Laboratory ID: 460165
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Expiration Date: June 14, 2014

DRINKING WATER

METHOD	ANALYTE	PRIMARY
EPA 508.1 1995 2	SIMAZINE	FL
EPA 515.3 1996 1	2,4-D	FL
EPA 515.3 1996 1	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	FL
EPA 515.3 1996 1	PICLORAM	FL
EPA 524.2 1995 4.1	1,1,1-TRICHLOROETHANE	FL
EPA 524.2 1995 4.1	1,1-DICHLOROETHYLENE	FL
EPA 524.2 1995 4.1	1,2-DICHLOROBENZENE	FL
EPA 524.2 1995 4.1	1,2-DICHLOROPROPANE	FL
EPA 524.2 1995 4.1	BENZENE	FL
EPA 524.2 1995 4.1	BROMOFORM	FL
EPA 524.2 1995 4.1	CHLOROBENZENE	FL
EPA 524.2 1995 4.1	CHLOROFORM	FL
EPA 524.2 1995 4.1	ETHYLBENZENE	FL
EPA 524.2 1995 4.1	STYRENE	FL
EPA 524.2 1995 4.1	TOLUENE	FL
EPA 524.2 1995 4.1	TRANS-1,2-DICHLOROETHENE	FL
EPA 524.2 1995 4.1	VINYL CHLORIDE	FL
EPA 525.2 1995 2	BENZO(A)PYRENE	FL
EPA 525.2 1995 2	BIS(2-ETHYLHEXYL)ADIPATE (DI(2-ETHYLHEXYL)ADIPATE)	FL
EPA 531.1 1995 3.1	OXAMYL	FL
EPA 548.1 1992 1	ENDOTHALL	FL
EPA 552.2 1995 1	BROMOACETIC ACID	FL
EPA 552.2 1995 1	DALAPON	FL
EPA 552.2 1995 1	DICHLOROACETIC ACID	FL
EPA 552.2 1995 1	TRICHLOROACETIC ACID	FL
SM 2130 B 1998 20th ED	TURBIDITY	FL
SM 2320 B-1997 1997	ALKALINITY AS CACO3	FL
SM 2540 C 1998 20th ED	RESIDUE-FILTERABLE (TDS)	FL
SM 5310 B 1998 20th ED	TOTAL ORGANIC CARBON	FL
SM 5910 B-00 online	UV 254	FL
SM 9223 COLILERT P/A	TOTAL COLIFORMS	FL
EPA 508.1 1995 2	TOXAPHENE (CHLORINATED CAMPHENE)	FL
EPA 515.3 1996 1	DALAPON	FL
EPA 515.3 1996 1	PENTACHLOROPHENOL	FL
EPA 515.3 1996 1	SILVEX (2,4,5-TP)	FL
EPA 524.2 1995 4.1	1,1,2-TRICHLOROETHANE	FL
EPA 524.2 1995 4.1	1,2,4-TRICHLOROBENZENE	FL
EPA 524.2 1995 4.1	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	FL
EPA 524.2 1995 4.1	1,4-DICHLOROBENZENE	FL
EPA 524.2 1995 4.1	BROMODICHLOROMETHANE	FL
EPA 524.2 1995 4.1	CARBON TETRACHLORIDE	FL
EPA 524.2 1995 4.1	CHLORODIBROMOMETHANE	FL
EPA 524.2 1995 4.1	CIS-1,2-DICHLOROETHYLENE	FL
EPA 524.2 1995 4.1	METHYLENE CHLORIDE (DICHLOROMETHANE)	FL
EPA 524.2 1995 4.1	TETRACHLOROETHENE (PERCHLOROETHENE)	FL
EPA 524.2 1995 4.1	TOTAL TRIHALOMETHANES	FL
EPA 524.2 1995 4.1	TRICHLOROETHENE (TRICHLOROETHYLENE)	FL
EPA 524.2 1995 4.1	XYLENE (TOTAL)	FL
EPA 525.2 1995 2	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	FL
EPA 531.1 1995 3.1	CARBOFURAN (FURADEN)	FL
EPA 547 1990	GLYPHOSATE	FL
EPA 549.2 1997 1	DIQUAT	FL
EPA 552.2 1995 1	CHLOROACETIC ACID	FL
EPA 552.2 1995 1	DIBROMOACETIC ACID	FL
EPA 552.2 1995 1	TOTAL HALOACETIC ACIDS	FL
SM 2120 B-2001 2001	COLOR	FL
SM 2150 B-97 online	ODOR	FL
SM 2510 B 1998 20th ED	CONDUCTIVITY	FL
SM 5310 B 1998 20th ED	DISSOLVED ORGANIC CARBON (DOC)	FL
SM 5540 C 1998 20th ED	SURFACTANTS - MBAS	FL
SM 9223 COLILERT P/A	ESCHERICHIA COLI	FL
SM 9223 COLISURE®	ESCHERICHIA COLI	FL

Commonwealth of Virginia

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DRINKING WATER

METHOD	ANALYTE	PRIMARY	METHOD	ANALYTE	PRIMARY
SM 9223 COLISURE®	TOTAL COLIFORMS	FL			

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY	METHOD	ANALYTE	PRIMARY
EPA 1010 (9/86)	FLASHPOINT	FL	EPA 120.1 1982	CONDUCTIVITY	FL
EPA 160.4 1971	RESIDUE-VOLATILE	FL	EPA 1664 A 1999	OIL & GREASE	FL
EPA 1664 A 1999	TOTAL PETROLEUM HYDROCARBONS (TPH)	FL	EPA 180.1 1993 2	TURBIDITY	FL
EPA 200.7 1994 4.4	ALUMINUM	FL	EPA 200.7 1994 4.4	ANTIMONY	FL
EPA 200.7 1994 4.4	ARSENIC	FL	EPA 200.7 1994 4.4	BARIUM	FL
EPA 200.7 1994 4.4	BERYLLIUM	FL	EPA 200.7 1994 4.4	BORON	FL
EPA 200.7 1994 4.4	CADMIUM	FL	EPA 200.7 1994 4.4	CALCIUM	FL
EPA 200.7 1994 4.4	CHROMIUM	FL	EPA 200.7 1994 4.4	COBALT	FL
EPA 200.7 1994 4.4	COPPER	FL	EPA 200.7 1994 4.4	IRON	FL
EPA 200.7 1994 4.4	LEAD	FL	EPA 200.7 1994 4.4	MAGNESIUM	FL
EPA 200.7 1994 4.4	MANGANESE	FL	EPA 200.7 1994 4.4	MOLYBDENUM	FL
EPA 200.7 1994 4.4	NICKEL	FL	EPA 200.7 1994 4.4	POTASSIUM	FL
EPA 200.7 1994 4.4	SELENIUM	FL	EPA 200.7 1994 4.4	SILICA AS SIO2	FL
EPA 200.7 1994 4.4	SILVER	FL	EPA 200.7 1994 4.4	SODIUM	FL
EPA 200.7 1994 4.4	THALLIUM	FL	EPA 200.7 1994 4.4	TIN	FL
EPA 200.7 1994 4.4	TITANIUM	FL	EPA 200.7 1994 4.4	VANADIUM	FL
EPA 200.7 1994 4.4	ZINC	FL	EPA 200.8 1994 5.4	ALUMINUM	FL
EPA 200.8 1994 5.4	ANTIMONY	FL	EPA 200.8 1994 5.4	ARSENIC	FL
EPA 200.8 1994 5.4	BARIUM	FL	EPA 200.8 1994 5.4	BERYLLIUM	FL
EPA 200.8 1994 5.4	CADMIUM	FL	EPA 200.8 1994 5.4	CHROMIUM	FL
EPA 200.8 1994 5.4	COBALT	FL	EPA 200.8 1994 5.4	COPPER	FL
EPA 200.8 1994 5.4	LEAD	FL	EPA 200.8 1994 5.4	MANGANESE	FL
EPA 200.8 1994 5.4	MOLYBDENUM	FL	EPA 200.8 1994 5.4	NICKEL	FL
EPA 200.8 1994 5.4	SELENIUM	FL	EPA 200.8 1994 5.4	SILVER	FL
EPA 200.8 1994 5.4	THALLIUM	FL	EPA 200.8 1994 5.4	VANADIUM	FL
EPA 200.8 1994 5.4	ZINC	FL	EPA 245.1 1994 3	MERCURY	FL
EPA 300.0 1993 2.1	BROMIDE	FL	EPA 300.0 1993 2.1	CHLORIDE	FL
EPA 300.0 1993 2.1	FLUORIDE	FL	EPA 300.0 1993 2.1	NITRATE AS N	FL
EPA 300.0 1993 2.1	NITRATE/NITRITE	FL	EPA 300.0 1993 2.1	NITRITE AS N	FL
EPA 300.0 1993 2.1	ORTHOPHOSPHATE AS P	FL	EPA 300.0 1993 2.1	SULFATE	FL
EPA 300.1 (LIMITED USE) 1997	CHLORATE	FL	EPA 300.1 (LIMITED USE) 1997	CHLORITE	FL
EPA 335.4 1993	CYANIDE	FL	EPA 350.1 1993 2	AMMONIA AS N	FL
EPA 351.2 1993 2	KJELDAHL NITROGEN - TOTAL	FL	EPA 353.2 1993 2	NITRATE AS N	FL
EPA 353.2 1993 2	NITRATE/NITRITE	FL	EPA 353.2 1993 2	NITRITE AS N	FL

This Scope of Accreditation must accompany the Certificate issued by Virginia DCLS with the same Certificate Number indicated above.

Commonwealth of Virginia

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 365.1 1993 2	ORTHOPHOSPHATE AS P	FL
EPA 365.4 1974	PHOSPHORUS, TOTAL	FL
EPA 420.4 1993 1	TOTAL PHENOLICS	FL
EPA 6010 C (2/07)	ANTIMONY	FL
EPA 6010 C (2/07)	BARIUM	FL
EPA 6010 C (2/07)	BORON	FL
EPA 6010 C (2/07)	CALCIUM	FL
EPA 6010 C (2/07)	COBALT	FL
EPA 6010 C (2/07)	IRON	FL
EPA 6010 C (2/07)	MAGNESIUM	FL
EPA 6010 C (2/07)	MOLYBDENUM	FL
EPA 6010 C (2/07)	POTASSIUM	FL
EPA 6010 C (2/07)	SILICA AS SIO2	FL
EPA 6010 C (2/07)	SODIUM	FL
EPA 6010 C (2/07)	THALLIUM	FL
EPA 6010 C (2/07)	TITANIUM	FL
EPA 6010 C (2/07)	ZINC	FL
EPA 6020 (9/94)	ALUMINUM	FL
EPA 6020 (9/94)	ARSENIC	FL
EPA 6020 (9/94)	BERYLLIUM	FL
EPA 6020 (9/94)	CHROMIUM	FL
EPA 6020 (9/94)	COPPER	FL
EPA 6020 (9/94)	MANGANESE	FL
EPA 6020 (9/94)	SILVER	FL
EPA 6020 (9/94)	ZINC	FL
EPA 6020 - EXTENDED (9/94)	MERCURY	FL
EPA 6020 - EXTENDED (9/94)	SELENIUM	FL
EPA 608	4,4'-DDD	FL
EPA 608	4,4'-DDT	FL
EPA 608	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	FL
EPA 608	AROCLOR-1221 (PCB-1221)	FL
EPA 608	AROCLOR-1242 (PCB-1242)	FL
EPA 608	AROCLOR-1254 (PCB-1254)	FL
EPA 608	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	FL

METHOD	ANALYTE	PRIMARY
EPA 365.3 1978	PHOSPHORUS, TOTAL	FL
EPA 410.4 1993 2	CHEMICAL OXYGEN DEMAND	FL
EPA 6010 C (2/07)	ALUMINUM	FL
EPA 6010 C (2/07)	ARSENIC	FL
EPA 6010 C (2/07)	BERYLLIUM	FL
EPA 6010 C (2/07)	CADMIUM	FL
EPA 6010 C (2/07)	CHROMIUM	FL
EPA 6010 C (2/07)	COPPER	FL
EPA 6010 C (2/07)	LEAD	FL
EPA 6010 C (2/07)	MANGANESE	FL
EPA 6010 C (2/07)	NICKEL	FL
EPA 6010 C (2/07)	SELENIUM	FL
EPA 6010 C (2/07)	SILVER	FL
EPA 6010 C (2/07)	STRONTIUM	FL
EPA 6010 C (2/07)	TIN	FL
EPA 6010 C (2/07)	VANADIUM	FL
EPA 6010 C - EXTENDED (2/07)	SILICON	FL
EPA 6020 (9/94)	ANTIMONY	FL
EPA 6020 (9/94)	BARIUM	FL
EPA 6020 (9/94)	CADMIUM	FL
EPA 6020 (9/94)	COBALT	FL
EPA 6020 (9/94)	LEAD	FL
EPA 6020 (9/94)	NICKEL	FL
EPA 6020 (9/94)	THALLIUM	FL
EPA 6020 - EXTENDED (9/94)	IRON	FL
EPA 6020 - EXTENDED (9/94)	MOLYBDENUM	FL
EPA 6020 - EXTENDED (9/94)	VANADIUM	FL
EPA 608	4,4'-DDE	FL
EPA 608	ALDRIN	FL
EPA 608	AROCLOR-1016 (PCB-1016)	FL
EPA 608	AROCLOR-1232 (PCB-1232)	FL
EPA 608	AROCLOR-1248 (PCB-1248)	FL
EPA 608	AROCLOR-1260 (PCB-1260)	FL
EPA 608	CHLORDANE (TECH.)	FL

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 608	DELTA-BHC	FL
EPA 608	ENDOSULFAN I	FL
EPA 608	ENDOSULFAN SULFATE	FL
EPA 608	ENDRIN ALDEHYDE	FL
EPA 608	HEPTACHLOR	FL
EPA 608	TOXAPHENE (CHLORINATED CAMPHENE)	FL
EPA 624	1,1,2,2-TETRACHLOROETHANE	FL
EPA 624	1,1-DICHLOROETHANE	FL
EPA 624	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	FL
EPA 624	1,3-DICHLOROBENZENE	FL
EPA 624	2-CHLOROETHYL VINYL ETHER	FL
EPA 624	ACRYLONITRILE	FL
EPA 624	BROMODICHLOROMETHANE	FL
EPA 624	CARBON TETRACHLORIDE	FL
EPA 624	CHLORODIBROMOMETHANE	FL
EPA 624	CHLOROFORM	FL
EPA 624	ETHYLBENZENE	FL
EPA 624	METHYL CHLORIDE (CHLOROMETHANE)	FL
EPA 624	TOLUENE	FL
EPA 624	TRANS-1,3-DICHLOROPROPENE	FL
EPA 624	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	FL
EPA 624 - EXTENDED	1,1-DICHLOROETHYLENE	FL
EPA 624 - EXTENDED	XYLENE (TOTAL)	FL
EPA 625 1982	2,4,6-TRICHLOROPHENOL	FL
EPA 625 1982	2,4-DIMETHYLPHENOL	FL
EPA 625 1982	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 625 1982	2-CHLORONAPHTHALENE	FL
EPA 625 1982	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	FL
EPA 625 1982	2-NITROPHENOL	FL
EPA 625 1982	4-BROMOPHENYL PHENYL ETHER	FL
EPA 625 1982	4-CHLOROPHENYL PHENYLETHER	FL

METHOD	ANALYTE	PRIMARY
EPA 608	DIELDRIN	FL
EPA 608	ENDOSULFAN II	FL
EPA 608	ENDRIN	FL
EPA 608	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	FL
EPA 608	HEPTACHLOR EPOXIDE	FL
EPA 624	1,1,1-TRICHLOROETHANE	FL
EPA 624	1,1,2-TRICHLOROETHANE	FL
EPA 624	1,2-DICHLOROBENZENE	FL
EPA 624	1,2-DICHLOROPROPANE	FL
EPA 624	1,4-DICHLOROBENZENE	FL
EPA 624	ACROLEIN (PROPENAL)	FL
EPA 624	BENZENE	FL
EPA 624	BROMOFORM	FL
EPA 624	CHLOROBENZENE	FL
EPA 624	CHLOROETHANE (ETHYL CHLORIDE)	FL
EPA 624	CIS-1,3-DICHLOROPROPENE	FL
EPA 624	METHYL BROMIDE (BROMOMETHANE)	FL
EPA 624	TETRACHLOROETHENE (PERCHLOROETHENE)	FL
EPA 624	TRANS-1,2-DICHLOROETHENE	FL
EPA 624	TRICHLOROETHENE (TRICHLOROETHYLENE)	FL
EPA 624	VINYL CHLORIDE	FL
EPA 624 - EXTENDED	METHYL TERT-BUTYL ETHER (MTBE)	FL
EPA 625 1982	1,2,4-TRICHLOROBENZENE	FL
EPA 625 1982	2,4-DICHLOROPHENOL	FL
EPA 625 1982	2,4-DINITROPHENOL	FL
EPA 625 1982	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 625 1982	2-CHLOROPHENOL	FL
EPA 625 1982	2-METHYLPHENOL (O-CRESOL)	FL
EPA 625 1982	3,3'-DICHLOROBENZIDINE	FL
EPA 625 1982	4-CHLORO-3-METHYLPHENOL	FL
EPA 625 1982	4-NITROPHENOL	FL

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 625 1982	ACENAPHTHENE	FL
EPA 625 1982	ANTHRACENE	FL
EPA 625 1982	BENZO(A)ANTHRACENE	FL
EPA 625 1982	BENZO(G,H,I)PERYLENE	FL
EPA 625 1982	BENZO[B]FLUORANTHENE	FL
EPA 625 1982	BIS(2-CHLOROETHYL) ETHER	FL
EPA 625 1982	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	FL
EPA 625 1982	CHRYSENE	FL
EPA 625 1982	DI-N-OCTYL PHTHALATE	FL
EPA 625 1982	DIETHYL PHTHALATE	FL
EPA 625 1982	FLUORANTHENE	FL
EPA 625 1982	HEXACHLOROBENZENE	FL
EPA 625 1982	HEXACHLOROCYCLOPENTADIENE	FL
EPA 625 1982	INDENO(1,2,3-CD) PYRENE	FL
EPA 625 1982	N-NITROSODI-N-PROPYLAMINE	FL
EPA 625 1982	N-NITROSODIPHENYLAMINE	FL
EPA 625 1982	NITROBENZENE	FL
EPA 625 1982	PHENANTHRENE	FL
EPA 625 1982	PYRENE	FL
EPA 625 - EXTENDED 1982	CARBAZOLE	FL
EPA 625 - EXTENDED 1982	N-OCTADECANE	FL
EPA 8011 (7/92)	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	FL
EPA 8011 - EXTENDED (7/92)	1,2,3-TRICHLOROPROPANE	FL
EPA 8081 B (2/07)	4,4'-DDE	FL
EPA 8081 B (2/07)	ALDRIN	FL
EPA 8081 B (2/07)	ALPHA-CHLORDANE [CIS-CHLORDANE]	FL
EPA 8081 B (2/07)	CHLORDANE (TECH.)	FL
EPA 8081 B (2/07)	DELTA-BHC	FL
EPA 8081 B (2/07)	ENDOSULFAN I	FL
EPA 8081 B (2/07)	ENDOSULFAN SULFATE	FL
EPA 8081 B (2/07)	ENDRIN ALDEHYDE	FL

METHOD	ANALYTE	PRIMARY
EPA 625 1982	ACENAPHTHYLENE	FL
EPA 625 1982	BENZIDINE	FL
EPA 625 1982	BENZO(A)PYRENE	FL
EPA 625 1982	BENZO(K)FLUORANTHENE	FL
EPA 625 1982	BIS(2-CHLOROETHOXY)METHANE	FL
EPA 625 1982	BIS(2-CHLOROISOPROPYL) ETHER	FL
EPA 625 1982	BUTYL BENZYL PHTHALATE	FL
EPA 625 1982	DI-N-BUTYL PHTHALATE	FL
EPA 625 1982	DIBENZO(A,H) ANTHRACENE	FL
EPA 625 1982	DIMETHYL PHTHALATE	FL
EPA 625 1982	FLUORENE	FL
EPA 625 1982	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 625 1982	HEXACHLOROETHANE	FL
EPA 625 1982	ISOPHORONE	FL
EPA 625 1982	N-NITROSODIMETHYLAMINE	FL
EPA 625 1982	NAPHTHALENE	FL
EPA 625 1982	PENTACHLOROPHENOL	FL
EPA 625 1982	PHENOL	FL
EPA 625 - EXTENDED 1982	ACETOPHENONE	FL
EPA 625 - EXTENDED 1982	N-DECANE	FL
EPA 7470 A 1994	MERCURY	FL
EPA 8011 (7/92)	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	FL
EPA 8081 B (2/07)	4,4'-DDD	FL
EPA 8081 B (2/07)	4,4'-DDT	FL
EPA 8081 B (2/07)	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B (2/07)	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B (2/07)	CHLOROBENZILATE	FL
EPA 8081 B (2/07)	DIELDRIN	FL
EPA 8081 B (2/07)	ENDOSULFAN II	FL
EPA 8081 B (2/07)	ENDRIN	FL
EPA 8081 B (2/07)	ENDRIN KETONE	FL

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NON-POTABLE WATER

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EPA 8081 B (2/07)	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B (2/07)	HEPTACHLOR	FL
EPA 8081 B (2/07)	ISODRIN	FL
EPA 8081 B (2/07)	TOXAPHENE (CHLORINATED CAMPHENE)	FL
EPA 8081 B - EXTENDED (2/07)	KEPONE	FL
EPA 8082 A (2/07)	AROCLOR-1016 (PCB-1016)	FL
EPA 8082 A (2/07)	AROCLOR-1232 (PCB-1232)	FL
EPA 8082 A (2/07)	AROCLOR-1248 (PCB-1248)	FL
EPA 8082 A (2/07)	AROCLOR-1260 (PCB-1260)	FL
EPA 8141 B 2007	ATRAZINE	FL
EPA 8141 B 2007	AZINPHOS-METHYL (GUTHION)	FL
EPA 8141 B 2007	CARBOPHENOTHION	FL
EPA 8141 B 2007	CHLORPYRIFOS	FL
EPA 8141 B 2007	COUMAPHOS	FL
EPA 8141 B 2007	DEMETON-O	FL
EPA 8141 B 2007	DIAZINON	FL
EPA 8141 B 2007	DICHLOROVOS (DDVP, DICHLORVOS)	FL
EPA 8141 B 2007	DIMETHOATE	FL
EPA 8141 B 2007	DISULFOTON	FL
EPA 8141 B 2007	ETHION	FL
EPA 8141 B 2007	FAMPHUR	FL
EPA 8141 B 2007	FENSULFOTHION	FL
EPA 8141 B 2007	FONOPHOS (FONOFOS)	FL
EPA 8141 B 2007	MALATHION	FL
EPA 8141 B 2007	METHYL PARATHION (PARATHION, METHYL)	FL
EPA 8141 B 2007	MONOCROTOPHOS	FL
EPA 8141 B 2007	PARATHION (PARATHION - ETHYL)	FL
EPA 8141 B 2007	PHOSMET (IMIDAN)	FL
EPA 8141 B 2007	RONNEL	FL
EPA 8141 B 2007	SULFOTEPP (TETRAETHYL DITHIOPYROPHOSPHATE)	FL
EPA 8141 B 2007	TETRAETHYL PYROPHOSPHATE (TEPP)	FL
EPA 8141 B 2007	TOKUTHION (PROTHIOPHOS)	FL

METHOD	ANALYTE	PRIMARY
EPA 8081 B (2/07)	GAMMA-CHLORDANE [BETA-CHLORDANE, TRANS-CHLORDANE]	FL
EPA 8081 B (2/07)	HEPTACHLOR EPOXIDE	FL
EPA 8081 B (2/07)	METHOXYCHLOR	FL
EPA 8081 B - EXTENDED (2/07)	ALACHLOR	FL
EPA 8081 B - EXTENDED (2/07)	MIREX	FL
EPA 8082 A (2/07)	AROCLOR-1221 (PCB-1221)	FL
EPA 8082 A (2/07)	AROCLOR-1242 (PCB-1242)	FL
EPA 8082 A (2/07)	AROCLOR-1254 (PCB-1254)	FL
EPA 8141 B 2007	ASPON	FL
EPA 8141 B 2007	AZINPHOS-ETHYL (ETHYL GUTHION)	FL
EPA 8141 B 2007	BOLSTAR (SULPROFOS)	FL
EPA 8141 B 2007	CHLORFENVINPHOS	FL
EPA 8141 B 2007	CHLORPYRIFOS-METHYL	FL
EPA 8141 B 2007	CROTOXYPHOS	FL
EPA 8141 B 2007	DEMETON-S	FL
EPA 8141 B 2007	DICHLOROFENTHION	FL
EPA 8141 B 2007	DICROTOPHOS	FL
EPA 8141 B 2007	DIOXATHION	FL
EPA 8141 B 2007	EPN (PHOSPHONOTHIOIC ACID, PHENYL-, O-ETHYL O-(P-NITROPHENYL) ESTER)	FL
EPA 8141 B 2007	ETHOPROP	FL
EPA 8141 B 2007	FENITROTHION	FL
EPA 8141 B 2007	FENTHION	FL
EPA 8141 B 2007	LEPTOPHOS	FL
EPA 8141 B 2007	MERPHOS	FL
EPA 8141 B 2007	MEVINPHOS	FL
EPA 8141 B 2007	NALED	FL
EPA 8141 B 2007	PHORATE	FL
EPA 8141 B 2007	PHOSPHAMIDON	FL
EPA 8141 B 2007	SIMAZINE	FL
EPA 8141 B 2007	TERBUFOS	FL
EPA 8141 B 2007	THIONAZIN (ZINOPHOS)	FL
EPA 8141 B 2007	TRICHLORFON	FL

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NON-POTABLE WATER

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EPA 8141 B 2007	TRICHLORONATE	FL
EPA 8151 A (12/96)	2,4,5-T	FL
EPA 8151 A (12/96)	2,4-DB	FL
EPA 8151 A (12/96)	DALAPON	FL
EPA 8151 A (12/96)	DICHLOROPROP (DICHLORPROP)	FL
EPA 8151 A (12/96)	MCPA	FL
EPA 8151 A (12/96)	PENTACHLOROPHENOL	FL
EPA 8151 A (12/96)	SILVEX (2,4,5-TP)	FL
EPA 8260 B 1996	1,1,1-TRICHLOROETHANE	FL
EPA 8260 B 1996	1,1,2-TRICHLOROETHANE	FL
EPA 8260 B 1996	1,1-DICHLOROETHYLENE	FL
EPA 8260 B 1996	1,2,3-TRICHLOROBENZENE	FL
EPA 8260 B 1996	1,2,4-TRICHLOROBENZENE	FL
EPA 8260 B 1996	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	FL
EPA 8260 B 1996	1,2-DICHLOROBENZENE	FL
EPA 8260 B 1996	1,2-DICHLOROPROPANE	FL
EPA 8260 B 1996	1,3-DICHLOROBENZENE	FL
EPA 8260 B 1996	1,4-DIOXANE (1,4-DIETHYLENEOXIDE)	FL
EPA 8260 B 1996	1-CHLOROHEXANE	FL
EPA 8260 B 1996	2-BUTANONE (METHYL ETHYL KETONE, MEK)	FL
EPA 8260 B 1996	2-CHLOROTOLUENE	FL
EPA 8260 B 1996	4-CHLOROTOLUENE	FL
EPA 8260 B 1996	4-METHYL-2-PENTANONE (MIBK)	FL
EPA 8260 B 1996	ACETONITRILE	FL
EPA 8260 B 1996	ACRYLONITRILE	FL
EPA 8260 B 1996	BENZENE	FL
EPA 8260 B 1996	BROMOCHLOROMETHANE	FL
EPA 8260 B 1996	BROMOFORM	FL
EPA 8260 B 1996	CARBON TETRACHLORIDE	FL
EPA 8260 B 1996	CHLORODIBROMOMETHANE	FL
EPA 8260 B 1996	CHLOROFORM	FL
EPA 8260 B 1996	CIS-1,2-DICHLOROETHYLENE	FL
EPA 8260 B 1996	CIS-1,4-DICHLORO-2-BUTENE	FL

METHOD	ANALYTE	PRIMARY
EPA 8141 B - EXTENDED 2007	STIROFOS	FL
EPA 8151 A (12/96)	2,4-D	FL
EPA 8151 A (12/96)	BENTAZON	FL
EPA 8151 A (12/96)	DICAMBA	FL
EPA 8151 A (12/96)	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	FL
EPA 8151 A (12/96)	MCPP	FL
EPA 8151 A (12/96)	PICLORAM	FL
EPA 8260 B 1996	1,1,1,2-TETRACHLOROETHANE	FL
EPA 8260 B 1996	1,1,2,2-TETRACHLOROETHANE	FL
EPA 8260 B 1996	1,1-DICHLOROETHANE	FL
EPA 8260 B 1996	1,1-DICHLOROPROPENE	FL
EPA 8260 B 1996	1,2,3-TRICHLOROPROPANE	FL
EPA 8260 B 1996	1,2,4-TRIMETHYLBENZENE	FL
EPA 8260 B 1996	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	FL
EPA 8260 B 1996	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	FL
EPA 8260 B 1996	1,3,5-TRIMETHYLBENZENE	FL
EPA 8260 B 1996	1,4-DICHLOROBENZENE	FL
EPA 8260 B 1996	1-BUTANOL (N-BUTANOL)	FL
EPA 8260 B 1996	2,2-DICHLOROPROPANE	FL
EPA 8260 B 1996	2-CHLOROETHYL VINYL ETHER	FL
EPA 8260 B 1996	2-HEXANONE	FL
EPA 8260 B 1996	4-ISOPROPYLTOLUENE (P-CYMENE)	FL
EPA 8260 B 1996	ACETONE	FL
EPA 8260 B 1996	ACROLEIN (PROPENAL)	FL
EPA 8260 B 1996	ALLYL CHLORIDE (3-CHLOROPROPENE)	FL
EPA 8260 B 1996	BROMOBENZENE	FL
EPA 8260 B 1996	BROMODICHLOROMETHANE	FL
EPA 8260 B 1996	CARBON DISULFIDE	FL
EPA 8260 B 1996	CHLOROBENZENE	FL
EPA 8260 B 1996	CHLOROETHANE (ETHYL CHLORIDE)	FL
EPA 8260 B 1996	CHLOROPRENE (2-CHLORO-1,3-BUTADIENE)	FL
EPA 8260 B 1996	CIS-1,3-DICHLOROPROPENE	FL

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8260 B 1996	DIBROMOMETHANE (METHYLENE BROMIDE)	FL
EPA 8260 B 1996	DIETHYL ETHER	FL
EPA 8260 B 1996	ETHYL ACETATE	FL
EPA 8260 B 1996	ETHYL-T-BUTYLETHER (2-ETHOXY-2-METHYLPROPANE, ETBE)	FL
EPA 8260 B 1996	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 8260 B 1996	ISOBUTYL ALCOHOL (2-METHYL-1-PROPANOL)	FL
EPA 8260 B 1996	M+P-XYLENE	FL
EPA 8260 B 1996	METHYL BROMIDE (BROMOMETHANE)	FL
EPA 8260 B 1996	METHYL METHACRYLATE	FL
EPA 8260 B 1996	METHYLENE CHLORIDE (DICHLOROMETHANE)	FL
EPA 8260 B 1996	N-PROPYLBENZENE	FL
EPA 8260 B 1996	O-XYLENE	FL
EPA 8260 B 1996	PROPIONITRILE (ETHYL CYANIDE)	FL
EPA 8260 B 1996	STYRENE	FL
EPA 8260 B 1996	TERT-BUTYLBENZENE	FL
EPA 8260 B 1996	TOLUENE	FL
EPA 8260 B 1996	TRANS-1,3-DICHLOROPROPENE	FL
EPA 8260 B 1996	TRICHLOROETHENE (TRICHLOROETHYLENE)	FL
EPA 8260 B 1996	VINYL ACETATE	FL
EPA 8260 B 1996	XYLENE (TOTAL)	FL
EPA 8260 B - EXTENDED 1996	3,3-DIMETHYL-1-BUTANOL	FL
EPA 8260 B - EXTENDED 1996	DI-ISOPROPYLETHER (DIPE, ISOPROPYL ETHER)	FL
EPA 8260 B - EXTENDED 1996	METHYLCYCLOHEXANE	FL
EPA 8260 B - EXTENDED 1996	T-AMYL ALCOHOL (TAA)	FL
EPA 8260 B - EXTENDED 1996	TERT-BUTYL FORMATE	FL
EPA 8270 D (2/07)	1,2,4,5-TETRACHLOROBENZENE	FL
EPA 8270 D (2/07)	1,2-DICHLOROBENZENE	FL
EPA 8270 D (2/07)	1,2-DIPHENYLHYDRAZINE	FL

METHOD	ANALYTE	PRIMARY
EPA 8260 B 1996	DICHLORODIFLUOROMETHANE (FREON-12)	FL
EPA 8260 B 1996	ETHANOL	FL
EPA 8260 B 1996	ETHYL METHACRYLATE	FL
EPA 8260 B 1996	ETHYLBENZENE	FL
EPA 8260 B 1996	IODOMETHANE (METHYL IODIDE)	FL
EPA 8260 B 1996	ISOPROPYLBENZENE	FL
EPA 8260 B 1996	METHACRYLONITRILE	FL
EPA 8260 B 1996	METHYL CHLORIDE (CHLOROMETHANE)	FL
EPA 8260 B 1996	METHYL TERT-BUTYL ETHER (MTBE)	FL
EPA 8260 B 1996	N-BUTYLBENZENE	FL
EPA 8260 B 1996	NAPHTHALENE	FL
EPA 8260 B 1996	PENTACHLOROETHANE	FL
EPA 8260 B 1996	SEC-BUTYLBENZENE	FL
EPA 8260 B 1996	TERT-BUTYL ALCOHOL	FL
EPA 8260 B 1996	TETRACHLOROETHENE (PERCHLOROETHENE)	FL
EPA 8260 B 1996	TRANS-1,2-DICHLOROETHENE	FL
EPA 8260 B 1996	TRANS-1,4-DICHLORO-2-BUTENE	FL
EPA 8260 B 1996	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	FL
EPA 8260 B 1996	VINYL CHLORIDE	FL
EPA 8260 B - EXTENDED 1996	1,1,2-TRICHLORO-1,2,2-TRIFLUOR OETHANE (FREON 113)	FL
EPA 8260 B - EXTENDED 1996	CYCLOHEXANE	FL
EPA 8260 B - EXTENDED 1996	METHYL ACETATE	FL
EPA 8260 B - EXTENDED 1996	N-HEXANE	FL
EPA 8260 B - EXTENDED 1996	T-AMYLMETHYLETHER (TAME)	FL
EPA 8260 B - EXTENDED 1996	TETRAHYDROFURAN (THF)	FL
EPA 8270 D (2/07)	1,2,4-TRICHLOROBENZENE	FL
EPA 8270 D (2/07)	1,2-DINITROBENZENE	FL
EPA 8270 D (2/07)	1,3,5-TRINITROBENZENE (1,3,5-TNB)	FL

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EPA 8270 D (2/07)	1,3-DICHLOROBENZENE	FL
EPA 8270 D (2/07)	1,4-DICHLOROBENZENE	FL
EPA 8270 D (2/07)	1,4-PHENYLENEDIAMINE	FL
EPA 8270 D (2/07)	2,3,4,6-TETRACHLOROPHENOL	FL
EPA 8270 D (2/07)	2,4,6-TRICHLOROPHENOL	FL
EPA 8270 D (2/07)	2,4-DIMETHYLPHENOL	FL
EPA 8270 D (2/07)	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 8270 D (2/07)	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 8270 D (2/07)	2-CHLORONAPHTHALENE	FL
EPA 8270 D (2/07)	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	FL
EPA 8270 D (2/07)	2-METHYLPHENOL (O-CRESOL)	FL
EPA 8270 D (2/07)	2-NITROANILINE	FL
EPA 8270 D (2/07)	2-PICOLINE (2-METHYLPYRIDINE)	FL
EPA 8270 D (2/07)	3,3'-DIMETHYLBENZIDINE	FL
EPA 8270 D (2/07)	3-METHYLPHENOL (M-CRESOL)	FL
EPA 8270 D (2/07)	4-AMINOBIPHENYL	FL
EPA 8270 D (2/07)	4-CHLORO-3-METHYLPHENOL	FL
EPA 8270 D (2/07)	4-CHLOROPHENYL PHENYLETHER	FL
EPA 8270 D (2/07)	4-METHYLPHENOL (P-CRESOL)	FL
EPA 8270 D (2/07)	4-NITROPHENOL	FL
EPA 8270 D (2/07)	7,12-DIMETHYLBENZ(A) ANTHRACENE	FL
EPA 8270 D (2/07)	ACENAPHTHENE	FL
EPA 8270 D (2/07)	ACETOPHENONE	FL
EPA 8270 D (2/07)	ANTHRACENE	FL
EPA 8270 D (2/07)	BENZIDINE	FL
EPA 8270 D (2/07)	BENZO(A)PYRENE	FL
EPA 8270 D (2/07)	BENZO(K)FLUORANTHENE	FL
EPA 8270 D (2/07)	BENZO[B]FLUORANTHENE	FL
EPA 8270 D (2/07)	BIS(2-CHLOROETHOXY)METHANE	FL
EPA 8270 D (2/07)	BIS(2-CHLOROISOPROPYL) ETHER	FL
EPA 8270 D (2/07)	BUTYL BENZYL PHTHALATE	FL
EPA 8270 D (2/07)	DI-N-BUTYL PHTHALATE	FL
EPA 8270 D (2/07)	DIALLATE	FL
EPA 8270 D (2/07)	DIBENZOFURAN	FL
EPA 8270 D (2/07)	DIMETHYL PHTHALATE	FL

METHOD	ANALYTE	PRIMARY
EPA 8270 D (2/07)	1,3-DINITROBENZENE (1,3-DNB)	FL
EPA 8270 D (2/07)	1,4-NAPHTHOQUINONE	FL
EPA 8270 D (2/07)	1-NAPHTHYLAMINE	FL
EPA 8270 D (2/07)	2,4,5-TRICHLOROPHENOL	FL
EPA 8270 D (2/07)	2,4-DICHLOROPHENOL	FL
EPA 8270 D (2/07)	2,4-DINITROPHENOL	FL
EPA 8270 D (2/07)	2,6-DICHLOROPHENOL	FL
EPA 8270 D (2/07)	2-ACETYLAMINOFLUORENE	FL
EPA 8270 D (2/07)	2-CHLOROPHENOL	FL
EPA 8270 D (2/07)	2-METHYLNAPHTHALENE	FL
EPA 8270 D (2/07)	2-NAPHTHYLAMINE	FL
EPA 8270 D (2/07)	2-NITROPHENOL	FL
EPA 8270 D (2/07)	3,3'-DICHLOROBENZIDINE	FL
EPA 8270 D (2/07)	3-METHYLCHOLANTHRENE	FL
EPA 8270 D (2/07)	3-NITROANILINE	FL
EPA 8270 D (2/07)	4-BROMOPHENYL PHENYL ETHER	FL
EPA 8270 D (2/07)	4-CHLOROANILINE	FL
EPA 8270 D (2/07)	4-DIMETHYL AMINOAZOBENZENE	FL
EPA 8270 D (2/07)	4-NITROANILINE	FL
EPA 8270 D (2/07)	5-NITRO-O-TOLUIDINE	FL
EPA 8270 D (2/07)	A-A-DIMETHYLPHENETHYLAMINE	FL
EPA 8270 D (2/07)	ACENAPHTHYLENE	FL
EPA 8270 D (2/07)	ANILINE	FL
EPA 8270 D (2/07)	ARAMITE	FL
EPA 8270 D (2/07)	BENZO(A)ANTHRACENE	FL
EPA 8270 D (2/07)	BENZO(G,H,I)PERYLENE	FL
EPA 8270 D (2/07)	BENZOIC ACID	FL
EPA 8270 D (2/07)	BENZYL ALCOHOL	FL
EPA 8270 D (2/07)	BIS(2-CHLOROETHYL) ETHER	FL
EPA 8270 D (2/07)	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	FL
EPA 8270 D (2/07)	CHRYSENE	FL
EPA 8270 D (2/07)	DI-N-OCTYL PHTHALATE	FL
EPA 8270 D (2/07)	DIBENZO(A,H) ANTHRACENE	FL
EPA 8270 D (2/07)	DIETHYL PHTHALATE	FL

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8270 D (2/07)	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	FL
EPA 8270 D (2/07)	FLUORANTHENE	FL
EPA 8270 D (2/07)	HEXACHLOROBENZENE	FL
EPA 8270 D (2/07)	HEXACHLOROCYCLOPENTADIENE	FL
EPA 8270 D (2/07)	HEXACHLOROPROPENE	FL
EPA 8270 D (2/07)	ISODRIN	FL
EPA 8270 D (2/07)	ISOSAFROLE	FL
EPA 8270 D (2/07)	METHAPYRILENE	FL
EPA 8270 D (2/07)	N-NITROSO-DI-N-BUTYLAMINE	FL
EPA 8270 D (2/07)	N-NITROSODIETHYLAMINE	FL
EPA 8270 D (2/07)	N-NITROSODIPHENYLAMINE	FL
EPA 8270 D (2/07)	N-NITROSOMORPHOLINE	FL
EPA 8270 D (2/07)	N-NITROSOPYRROLIDINE	FL
EPA 8270 D (2/07)	NITROBENZENE	FL
EPA 8270 D (2/07)	O,O,O-TRIETHYL PHOSPHOROTHIOATE	FL
EPA 8270 D (2/07)	PENTACHLOROBENZENE	FL
EPA 8270 D (2/07)	PENTACHLOROPHENOL	FL
EPA 8270 D (2/07)	PHENANTHRENE	FL
EPA 8270 D (2/07)	PRONAMIDE (KERB)	FL
EPA 8270 D (2/07)	SAFROLE	FL
EPA 8270 D - EXTENDED (2/07)	1-METHYLNAPHTHALENE	FL
EPA 8270 D - EXTENDED (2/07)	3+4-METHYL PHENOL (M+P CRESOL)	FL
EPA 8270 D - EXTENDED (2/07)	PYRIDINE	FL
EPA 9034 1996	TOTAL SULFIDES	FL
EPA 9050 A 1996	CONDUCTIVITY	FL
EPA 9056 A 2/07	CHLORIDE	FL
EPA 9056 A 2/07	NITRATE AS N	FL
EPA 9056 A 2/07	ORTHOPHOSPHATE AS P	FL
EPA 9066 1986	TOTAL PHENOLICS	FL
SM 2320 B 1998 20th ED	ALKALINITY AS CACO3	FL
SM 2510 B-1997 1997	CONDUCTIVITY	FL
SM 2540 C 1998 20th ED	RESIDUE-FILTERABLE (TDS)	FL

METHOD	ANALYTE	PRIMARY
EPA 8270 D (2/07)	ETHYL METHANESULFONATE	FL
EPA 8270 D (2/07)	FLUORENE	FL
EPA 8270 D (2/07)	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 8270 D (2/07)	HEXACHLOROETHANE	FL
EPA 8270 D (2/07)	INDENO(1,2,3-CD) PYRENE	FL
EPA 8270 D (2/07)	ISOPHORONE	FL
EPA 8270 D (2/07)	KEPONE	FL
EPA 8270 D (2/07)	METHYL METHANESULFONATE	FL
EPA 8270 D (2/07)	N-NITROSODI-N-PROPYLAMINE	FL
EPA 8270 D (2/07)	N-NITROSODIMETHYLAMINE	FL
EPA 8270 D (2/07)	N-NITROSOMETHYLETHYLAMINE	FL
EPA 8270 D (2/07)	N-NITROSOPIPERIDINE	FL
EPA 8270 D (2/07)	NAPHTHALENE	FL
EPA 8270 D (2/07)	NITROQUINOLINE-1-OXIDE	FL
EPA 8270 D (2/07)	O-TOLUIDINE (2-METHYLANILINE)	FL
EPA 8270 D (2/07)	PENTACHLORONITROBENZENE	FL
EPA 8270 D (2/07)	PHENACETIN	FL
EPA 8270 D (2/07)	PHENOL	FL
EPA 8270 D (2/07)	PYRENE	FL
EPA 8270 D (2/07)	THIONAZIN (ZINOPHOS)	FL
EPA 8270 D - EXTENDED (2/07)	2,3-DICHLOROANILINE	FL
EPA 8270 D - EXTENDED (2/07)	CARBAZOLE	FL
EPA 9012 A 1996	TOTAL CYANIDE	FL
EPA 9040 C (11/04)	PH	FL
EPA 9056 A 2/07	BROMIDE	FL
EPA 9056 A 2/07	FLUORIDE	FL
EPA 9056 A 2/07	NITRITE	FL
EPA 9056 A 2/07	SULFATE	FL
SM 2120 B 1998 20th ED	COLOR	FL
SM 2340 B-1997 1997	TOTAL HARDNESS AS CACO3	FL
SM 2540 B 1998 20th ED	RESIDUE-TOTAL	FL
SM 2540 D 1998 20th ED	RESIDUE-NONFILTERABLE (TSS)	FL

This Scope of Accreditation must accompany the Certificate issued by Virginia DCLS with the same Certificate Number indicated above.

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SM 3500-CR B 1998 20th ED	CHROMIUM VI	FL
SM 4500-CN⁻ E-1999 1999	TOTAL CYANIDE	FL
SM 4500-S2⁻ F-2000 2000	SULFIDE	FL
SM 5210 B 1998 20th ED	BIOCHEMICAL OXYGEN DEMAND	FL
SM 5310 B 1998 20th ED	TOTAL ORGANIC CARBON	FL
SM 6630 C-2000 2000	4,4'-DDD	FL
SM 6630 C-2000 2000	4,4'-DDT	FL
SM 6630 C-2000 2000	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	FL
SM 6630 C-2000 2000	DELTA-BHC	FL
SM 6630 C-2000 2000	ENDOSULFAN I	FL
SM 6630 C-2000 2000	ENDOSULFAN SULFATE	FL
SM 6630 C-2000 2000	ENDRIN ALDEHYDE	FL
SM 6630 C-2000 2000	HEPTACHLOR	FL
SM 6630 C-2000 2000	METHOXYCHLOR	FL
SM 3500-CR D 1992 18th ED	CHROMIUM VI	FL
SM 4500-S2⁻ E 1992 18th ED	SULFIDE	FL
SM 4500-SI D 1995 19th ED	SILICA AS SIO2	FL
SM 5210 B 1998 20th ED	CARBONACEOUS BOD, CBOD	FL
SM 5540 C 1998 20th ED	SURFACTANTS - MBAS	FL
SM 6630 C-2000 2000	4,4'-DDE	FL
SM 6630 C-2000 2000	ALDRIN	FL
SM 6630 C-2000 2000	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	FL
SM 6630 C-2000 2000	DIELDRIN	FL
SM 6630 C-2000 2000	ENDOSULFAN II	FL
SM 6630 C-2000 2000	ENDRIN	FL
SM 6630 C-2000 2000	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	FL
SM 6630 C-2000 2000	HEPTACHLOR EPOXIDE	FL
SM 9222 D 1998 20th ED	FECAL COLIFORMS	FL

SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 1010 A 2002	FLASHPOINT	FL
EPA 1311 1992	PREP: TOXICITY CHARACTERISTIC LEACHING PROCEDURE	FL
EPA 350.1 1993 2	AMMONIA AS N	FL
EPA 365.4 1974	PHOSPHORUS, TOTAL	FL
EPA 6010 B 1996	ANTIMONY	FL
EPA 6010 B 1996	BARIUM	FL
EPA 6010 B 1996	BORON	FL
EPA 6010 B 1996	CALCIUM	FL
EPA 6010 B 1996	COBALT	FL
EPA 6010 B 1996	IRON	FL
EPA 6010 B 1996	MAGNESIUM	FL
EPA 6010 B 1996	MOLYBDENUM	FL
EPA 6010 B 1996	POTASSIUM	FL
EPA 6010 B 1996	SILVER	FL
EPA 6010 B 1996	STRONTIUM	FL
EPA 1030 1996	IGNITABILITY	FL
EPA 1312 1994	PREP: SYNTHETIC PRECIPITATION LEACHING PROCEDURE	FL
EPA 351.2 1993 2	KJELDAHL NITROGEN - TOTAL	FL
EPA 6010 B 1996	ALUMINUM	FL
EPA 6010 B 1996	ARSENIC	FL
EPA 6010 B 1996	BERYLLIUM	FL
EPA 6010 B 1996	CADMIUM	FL
EPA 6010 B 1996	CHROMIUM	FL
EPA 6010 B 1996	COPPER	FL
EPA 6010 B 1996	LEAD	FL
EPA 6010 B 1996	MANGANESE	FL
EPA 6010 B 1996	NICKEL	FL
EPA 6010 B 1996	SELENIUM	FL
EPA 6010 B 1996	SODIUM	FL
EPA 6010 B 1996	THALLIUM	FL

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EPA 6010 B 1996	TIN	FL
EPA 6010 B 1996	VANADIUM	FL
EPA 6020 (9/94)	ARSENIC	FL
EPA 6020 (9/94)	BERYLLIUM	FL
EPA 6020 (9/94)	CHROMIUM	FL
EPA 6020 (9/94)	COPPER	FL
EPA 6020 (9/94)	MANGANESE	FL
EPA 6020 (9/94)	THALLIUM	FL
EPA 6020 - EXTENDED (9/94)	SELENIUM	FL
EPA 7471 A 1994	MERCURY	FL
EPA 8081 B (2/07)	4,4'-DDE	FL
EPA 8081 B (2/07)	ALDRIN	FL
EPA 8081 B (2/07)	ALPHA-CHLORDANE [CIS-CHLORDANE]	FL
EPA 8081 B (2/07)	CHLORDANE (TECH.)	FL
EPA 8081 B (2/07)	DIELDRIN	FL
EPA 8081 B (2/07)	ENDOSULFAN II	FL
EPA 8081 B (2/07)	ENDRIN	FL
EPA 8081 B (2/07)	ENDRIN KETONE	FL
EPA 8081 B (2/07)	GAMMA-CHLORDANE [BETA-CHLORDANE, TRANS-CHLORDANE]	FL
EPA 8081 B (2/07)	HEPTACHLOR EPOXIDE	FL
EPA 8081 B (2/07)	METHOXYCHLOR	FL
EPA 8081 B - EXTENDED (2/07)	ALACHLOR	FL
EPA 8082 - OIL A (2/07)	AROCLOR-1016 (PCB-1016)	FL
EPA 8082 - OIL A (2/07)	AROCLOR-1232 (PCB-1232)	FL
EPA 8082 - OIL A (2/07)	AROCLOR-1248 (PCB-1248)	FL
EPA 8082 - OIL A (2/07)	AROCLOR-1260 (PCB-1260)	FL
EPA 8082 A (2/07)	AROCLOR-1221 (PCB-1221)	FL
EPA 8082 A (2/07)	AROCLOR-1242 (PCB-1242)	FL
EPA 8082 A (2/07)	AROCLOR-1254 (PCB-1254)	FL
EPA 8141 B 2007	ASPON	FL
EPA 8141 B 2007	AZINPHOS-ETHYL (ETHYL GUTHION)	FL
EPA 8141 B 2007	BOLSTAR (SULPROFOS)	FL

METHOD	ANALYTE	PRIMARY
EPA 6010 B 1996	TITANIUM	FL
EPA 6010 B 1996	ZINC	FL
EPA 6020 (9/94)	BARIUM	FL
EPA 6020 (9/94)	CADMIUM	FL
EPA 6020 (9/94)	COBALT	FL
EPA 6020 (9/94)	LEAD	FL
EPA 6020 (9/94)	NICKEL	FL
EPA 6020 (9/94)	ZINC	FL
EPA 6020 - EXTENDED (9/94)	VANADIUM	FL
EPA 8081 B (2/07)	4,4'-DDD	FL
EPA 8081 B (2/07)	4,4'-DDT	FL
EPA 8081 B (2/07)	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B (2/07)	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B (2/07)	DELTA-BHC	FL
EPA 8081 B (2/07)	ENDOSULFAN I	FL
EPA 8081 B (2/07)	ENDOSULFAN SULFATE	FL
EPA 8081 B (2/07)	ENDRIN ALDEHYDE	FL
EPA 8081 B (2/07)	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B (2/07)	HEPTACHLOR	FL
EPA 8081 B (2/07)	ISODRIN	FL
EPA 8081 B (2/07)	TOXAPHENE (CHLORINATED CAMPHENE)	FL
EPA 8081 B - EXTENDED (2/07)	MIREX	FL
EPA 8082 - OIL A (2/07)	AROCLOR-1221 (PCB-1221)	FL
EPA 8082 - OIL A (2/07)	AROCLOR-1242 (PCB-1242)	FL
EPA 8082 - OIL A (2/07)	AROCLOR-1254 (PCB-1254)	FL
EPA 8082 A (2/07)	AROCLOR-1016 (PCB-1016)	FL
EPA 8082 A (2/07)	AROCLOR-1232 (PCB-1232)	FL
EPA 8082 A (2/07)	AROCLOR-1248 (PCB-1248)	FL
EPA 8082 A (2/07)	AROCLOR-1260 (PCB-1260)	FL
EPA 8141 B 2007	ATRAZINE	FL
EPA 8141 B 2007	AZINPHOS-METHYL (GUTHION)	FL
EPA 8141 B 2007	CARBOPHENOTHION	FL

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Expiration Date: June 14, 2014

SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8141 B 2007	CHLORFENVINPHOS	FL
EPA 8141 B 2007	CHLORPYRIFOS-METHYL	FL
EPA 8141 B 2007	CROTOXYPHOS	FL
EPA 8141 B 2007	DEMETON-S	FL
EPA 8141 B 2007	DICHLOROFENTHION	FL
EPA 8141 B 2007	DICROTOPHOS	FL
EPA 8141 B 2007	DISULFOTON	FL
EPA 8141 B 2007	ETHION	FL
EPA 8141 B 2007	FAMPHUR	FL
EPA 8141 B 2007	FENSULFOTHION	FL
EPA 8141 B 2007	FONOPHOS (FONOFOS)	FL
EPA 8141 B 2007	MALATHION	FL
EPA 8141 B 2007	METHYL PARATHION (PARATHION, METHYL)	FL
EPA 8141 B 2007	MONOCROTOPHOS	FL
EPA 8141 B 2007	PARATHION (PARATHION - ETHYL)	FL
EPA 8141 B 2007	PHOSMET (IMIDAN)	FL
EPA 8141 B 2007	RONNEL	FL
EPA 8141 B 2007	SULFOTEPP (TETRAETHYL DITHIOPYROPHOSPHATE)	FL
EPA 8141 B 2007	TETRAETHYL PYROPHOSPHATE (TEPP)	FL
EPA 8141 B 2007	TOKUTHION (PROTHIOPHOS)	FL
EPA 8141 B 2007	TRICHLORONATE	FL
EPA 8151 A (12/96)	2,4-D	FL
EPA 8151 A (12/96)	BENTAZON	FL
EPA 8151 A (12/96)	DICAMBA	FL
EPA 8151 A (12/96)	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	FL
EPA 8151 A (12/96)	MCPP	FL
EPA 8151 A (12/96)	PICLORAM	FL
EPA 8260 B 1996	1,1,1,2-TETRACHLOROETHANE	FL
EPA 8260 B 1996	1,1,2,2-TETRACHLOROETHANE	FL
EPA 8260 B 1996	1,1-DICHLOROETHANE	FL
EPA 8260 B 1996	1,1-DICHLOROPROPENE	FL
EPA 8260 B 1996	1,2,3-TRICHLOROPROPANE	FL
EPA 8260 B 1996	1,2,4-TRIMETHYLBENZENE	FL

METHOD	ANALYTE	PRIMARY
EPA 8141 B 2007	CHLORPYRIFOS	FL
EPA 8141 B 2007	COUMAPHOS	FL
EPA 8141 B 2007	DEMETON-O	FL
EPA 8141 B 2007	DIAZINON	FL
EPA 8141 B 2007	DICHLOROVOS (DDVP, DICHLORVOS)	FL
EPA 8141 B 2007	DIMETHOATE	FL
EPA 8141 B 2007	EPN (PHOSPHONOTHIOIC ACID, PHENYL-, O-ETHYL O-(P-NITROPHENYL) ESTER)	FL
EPA 8141 B 2007	ETHOPROP	FL
EPA 8141 B 2007	FENITROTHION	FL
EPA 8141 B 2007	FENTHION	FL
EPA 8141 B 2007	LEPTOPHOS	FL
EPA 8141 B 2007	MERPHOS	FL
EPA 8141 B 2007	MEVINPHOS	FL
EPA 8141 B 2007	NALED	FL
EPA 8141 B 2007	PHORATE	FL
EPA 8141 B 2007	PHOSPHAMIDON	FL
EPA 8141 B 2007	SIMAZINE	FL
EPA 8141 B 2007	TERBUFOS	FL
EPA 8141 B 2007	THIONAZIN (ZINOPHOS)	FL
EPA 8141 B 2007	TRICHLORFON	FL
EPA 8151 A (12/96)	2,4,5-T	FL
EPA 8151 A (12/96)	2,4-DB	FL
EPA 8151 A (12/96)	DALAPON	FL
EPA 8151 A (12/96)	DICHLOROPROP (DICHLORPROP)	FL
EPA 8151 A (12/96)	MCPA	FL
EPA 8151 A (12/96)	PENTACHLOROPHENOL	FL
EPA 8151 A (12/96)	SILVEX (2,4,5-TP)	FL
EPA 8260 B 1996	1,1,1-TRICHLOROETHANE	FL
EPA 8260 B 1996	1,1,2-TRICHLOROETHANE	FL
EPA 8260 B 1996	1,1-DICHLOROETHYLENE	FL
EPA 8260 B 1996	1,2,3-TRICHLOROBENZENE	FL
EPA 8260 B 1996	1,2,4-TRICHLOROBENZENE	FL
EPA 8260 B 1996	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	FL

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Virginia Laboratory ID: 460165
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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8260 B 1996	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	FL
EPA 8260 B 1996	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	FL
EPA 8260 B 1996	1,3,5-TRIMETHYLBENZENE	FL
EPA 8260 B 1996	1,3-DICHLOROPROPANE	FL
EPA 8260 B 1996	1-BUTANOL (N-BUTANOL)	FL
EPA 8260 B 1996	2,2-DICHLOROPROPANE	FL
EPA 8260 B 1996	2-CHLOROETHYL VINYL ETHER	FL
EPA 8260 B 1996	2-HEXANONE	FL
EPA 8260 B 1996	4-ISOPROPYLTOLUENE (P-CYMENE)	FL
EPA 8260 B 1996	ACETONE	FL
EPA 8260 B 1996	ACROLEIN (PROPENAL)	FL
EPA 8260 B 1996	ALLYL CHLORIDE (3-CHLOROPROPENE)	FL
EPA 8260 B 1996	BROMOBENZENE	FL
EPA 8260 B 1996	BROMODICHLOROMETHANE	FL
EPA 8260 B 1996	CARBON DISULFIDE	FL
EPA 8260 B 1996	CHLOROBENZENE	FL
EPA 8260 B 1996	CHLOROETHANE (ETHYL CHLORIDE)	FL
EPA 8260 B 1996	CHLOROPRENE (2-CHLORO-1,3-BUTADIENE)	FL
EPA 8260 B 1996	CIS-1,3-DICHLOROPROPENE	FL
EPA 8260 B 1996	DIBROMOMETHANE (METHYLENE BROMIDE)	FL
EPA 8260 B 1996	DIETHYL ETHER	FL
EPA 8260 B 1996	ETHYL ACETATE	FL
EPA 8260 B 1996	ETHYL-T-BUTYLETHER (2-ETHOXY-2-METHYLPROPANE, ETBE)	FL
EPA 8260 B 1996	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 8260 B 1996	ISOBUTYL ALCOHOL (2-METHYL-1-PROPANOL)	FL
EPA 8260 B 1996	M+P-XYLENE	FL
EPA 8260 B 1996	METHYL BROMIDE (BROMOMETHANE)	FL
EPA 8260 B 1996	METHYL METHACRYLATE	FL
EPA 8260 B 1996	METHYLENE CHLORIDE (DICHLOROMETHANE)	FL
EPA 8260 B 1996	N-PROPYLBENZENE	FL
EPA 8260 B 1996	O-XYLENE	FL
EPA 8260 B 1996	1,2-DICHLOROBENZENE	FL
EPA 8260 B 1996	1,2-DICHLOROPROPANE	FL
EPA 8260 B 1996	1,3-DICHLOROBENZENE	FL
EPA 8260 B 1996	1,4-DICHLOROBENZENE	FL
EPA 8260 B 1996	1-CHLOROHEXANE	FL
EPA 8260 B 1996	2-BUTANONE (METHYL ETHYL KETONE, MEK)	FL
EPA 8260 B 1996	2-CHLOROTOLUENE	FL
EPA 8260 B 1996	4-CHLOROTOLUENE	FL
EPA 8260 B 1996	4-METHYL-2-PENTANONE (MIBK)	FL
EPA 8260 B 1996	ACETONITRILE	FL
EPA 8260 B 1996	ACRYLONITRILE	FL
EPA 8260 B 1996	BENZENE	FL
EPA 8260 B 1996	BROMOCHLOROMETHANE	FL
EPA 8260 B 1996	BROMOFORM	FL
EPA 8260 B 1996	CARBON TETRACHLORIDE	FL
EPA 8260 B 1996	CHLORODIBROMOMETHANE	FL
EPA 8260 B 1996	CHLOROFORM	FL
EPA 8260 B 1996	CIS-1,2-DICHLOROETHYLENE	FL
EPA 8260 B 1996	CIS-1,4-DICHLORO-2-BUTENE	FL
EPA 8260 B 1996	DICHLORODIFLUOROMETHANE (FREON-12)	FL
EPA 8260 B 1996	ETHANOL	FL
EPA 8260 B 1996	ETHYL METHACRYLATE	FL
EPA 8260 B 1996	ETHYLBENZENE	FL
EPA 8260 B 1996	IODOMETHANE (METHYL IODIDE)	FL
EPA 8260 B 1996	ISOPROPYLBENZENE	FL
EPA 8260 B 1996	METHACRYLONITRILE	FL
EPA 8260 B 1996	METHYL CHLORIDE (CHLOROMETHANE)	FL
EPA 8260 B 1996	METHYL TERT-BUTYL ETHER (MTBE)	FL
EPA 8260 B 1996	N-BUTYLBENZENE	FL
EPA 8260 B 1996	NAPHTHALENE	FL
EPA 8260 B 1996	PENTACHLOROETHANE	FL

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Virginia Laboratory ID: 460165
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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8260 B 1996	PROPIONITRILE (ETHYL CYANIDE)	FL
EPA 8260 B 1996	STYRENE	FL
EPA 8260 B 1996	TERT-BUTYLBENZENE	FL
EPA 8260 B 1996	TOLUENE	FL
EPA 8260 B 1996	TRANS-1,3-DICHLOROPROPENE	FL
EPA 8260 B 1996	TRICHLOROETHENE (TRICHLOROETHYLENE)	FL
EPA 8260 B 1996	VINYL ACETATE	FL
EPA 8260 B 1996	XYLENE (TOTAL)	FL
EPA 8260 B - EXTENDED 1996	3,3-DIMETHYL-1-BUTANOL	FL
EPA 8260 B - EXTENDED 1996	DI-ISOPROPYLETHER (DIPE, ISOPROPYL ETHER)	FL
EPA 8260 B - EXTENDED 1996	METHYLCYCLOHEXANE	FL
EPA 8260 B - EXTENDED 1996	T-AMYL ALCOHOL (TAA)	FL
EPA 8260 B - EXTENDED 1996	TERT-BUTYL FORMATE	FL
EPA 8270 D (2/07)	1,2,4-TRICHLOROBENZENE	FL
EPA 8270 D (2/07)	1,2-DIPHENYLHYDRAZINE	FL
EPA 8270 D (2/07)	1,4-DICHLOROBENZENE	FL
EPA 8270 D (2/07)	2,4,5-TRICHLOROPHENOL	FL
EPA 8270 D (2/07)	2,4-DICHLOROPHENOL	FL
EPA 8270 D (2/07)	2,4-DINITROPHENOL	FL
EPA 8270 D (2/07)	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 8270 D (2/07)	2-CHLOROPHENOL	FL
EPA 8270 D (2/07)	2-METHYLNAPHTHALENE	FL
EPA 8270 D (2/07)	2-NAPHTHYLAMINE	FL
EPA 8270 D (2/07)	2-NITROPHENOL	FL
EPA 8270 D (2/07)	3-NITROANILINE	FL
EPA 8270 D (2/07)	4-CHLORO-3-METHYLPHENOL	FL
EPA 8270 D (2/07)	4-CHLOROPHENYL PHENYLETHER	FL
EPA 8270 D (2/07)	4-NITROPHENOL	FL
EPA 8270 D (2/07)	ACENAPHTHYLENE	FL
EPA 8270 D (2/07)	ANILINE	FL
EPA 8270 D (2/07)	BENZIDINE	FL
EPA 8270 D (2/07)	BENZO(A)PYRENE	FL

METHOD	ANALYTE	PRIMARY
EPA 8260 B 1996	SEC-BUTYLBENZENE	FL
EPA 8260 B 1996	TERT-BUTYL ALCOHOL	FL
EPA 8260 B 1996	TETRACHLOROETHENE (PERCHLOROETHENE)	FL
EPA 8260 B 1996	TRANS-1,2-DICHLOROETHENE	FL
EPA 8260 B 1996	TRANS-1,4-DICHLORO-2-BUTENE	FL
EPA 8260 B 1996	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	FL
EPA 8260 B 1996	VINYL CHLORIDE	FL
EPA 8260 B - EXTENDED 1996	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	FL
EPA 8260 B - EXTENDED 1996	CYCLOHEXANE	FL
EPA 8260 B - EXTENDED 1996	METHYL ACETATE	FL
EPA 8260 B - EXTENDED 1996	N-HEXANE	FL
EPA 8260 B - EXTENDED 1996	T-AMYLMETHYLETHER (TAME)	FL
EPA 8260 B - EXTENDED 1996	TETRAHYDROFURAN (THF)	FL
EPA 8270 D (2/07)	1,2-DICHLOROBENZENE	FL
EPA 8270 D (2/07)	1,3-DICHLOROBENZENE	FL
EPA 8270 D (2/07)	2,3,4,6-TETRACHLOROPHENOL	FL
EPA 8270 D (2/07)	2,4,6-TRICHLOROPHENOL	FL
EPA 8270 D (2/07)	2,4-DIMETHYLPHENOL	FL
EPA 8270 D (2/07)	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 8270 D (2/07)	2-CHLORONAPHTHALENE	FL
EPA 8270 D (2/07)	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	FL
EPA 8270 D (2/07)	2-METHYLPHENOL (O-CRESOL)	FL
EPA 8270 D (2/07)	2-NITROANILINE	FL
EPA 8270 D (2/07)	3,3'-DICHLOROBENZIDINE	FL
EPA 8270 D (2/07)	4-BROMOPHENYL PHENYL ETHER	FL
EPA 8270 D (2/07)	4-CHLOROANILINE	FL
EPA 8270 D (2/07)	4-NITROANILINE	FL
EPA 8270 D (2/07)	ACENAPHTHENE	FL
EPA 8270 D (2/07)	ACETOPHENONE	FL
EPA 8270 D (2/07)	ANTHRACENE	FL
EPA 8270 D (2/07)	BENZO(A)ANTHRACENE	FL
EPA 8270 D (2/07)	BENZO(G,H,I)PERYLENE	FL

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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8270 D (2/07)	BENZO(K)FLUORANTHENE	FL
EPA 8270 D (2/07)	BENZO[B]FLUORANTHENE	FL
EPA 8270 D (2/07)	BIS(2-CHLOROETHOXY)METHANE	FL
EPA 8270 D (2/07)	BIS(2-CHLOROISOPROPYL) ETHER	FL
EPA 8270 D (2/07)	BUTYL BENZYL PHTHALATE	FL
EPA 8270 D (2/07)	DI-N-BUTYL PHTHALATE	FL
EPA 8270 D (2/07)	DIBENZO(A,H) ANTHRACENE	FL
EPA 8270 D (2/07)	DIETHYL PHTHALATE	FL
EPA 8270 D (2/07)	FLUORANTHENE	FL
EPA 8270 D (2/07)	HEXACHLOROBENZENE	FL
EPA 8270 D (2/07)	HEXACHLOROCYCLOPENTADIENE	FL
EPA 8270 D (2/07)	INDENO(1,2,3-CD) PYRENE	FL
EPA 8270 D (2/07)	N-NITROSODI-N-PROPYLAMINE	FL
EPA 8270 D (2/07)	N-NITROSODIPHENYLAMINE	FL
EPA 8270 D (2/07)	NITROBENZENE	FL
EPA 8270 D (2/07)	PHENANTHRENE	FL
EPA 8270 D (2/07)	PYRENE	FL
EPA 8270 D - EXTENDED (2/07)	3+4-METHYL PHENOL (M+P CRESOL)	FL
EPA 8270 D - EXTENDED (2/07)	PYRIDINE	FL
EPA 9030 A (7/92)	TOTAL SULFIDES	FL
EPA 9040 B (1/95)	PH	FL
EPA 9056 A 2/07	BROMIDE	FL
EPA 9056 A 2/07	FLUORIDE	FL
EPA 9056 A 2/07	NITRITE	FL
EPA 9056 A 2/07	SULFATE	FL
EPA 9071 B (4/98)	OIL & GREASE	FL

METHOD	ANALYTE	PRIMARY
EPA 8270 D (2/07)	BENZOIC ACID	FL
EPA 8270 D (2/07)	BENZYL ALCOHOL	FL
EPA 8270 D (2/07)	BIS(2-CHLOROETHYL) ETHER	FL
EPA 8270 D (2/07)	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	FL
EPA 8270 D (2/07)	CHRYSENE	FL
EPA 8270 D (2/07)	DI-N-OCTYL PHTHALATE	FL
EPA 8270 D (2/07)	DIBENZOFURAN	FL
EPA 8270 D (2/07)	DIMETHYL PHTHALATE	FL
EPA 8270 D (2/07)	FLUORENE	FL
EPA 8270 D (2/07)	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 8270 D (2/07)	HEXACHLOROETHANE	FL
EPA 8270 D (2/07)	ISOPHORONE	FL
EPA 8270 D (2/07)	N-NITROSODIMETHYLAMINE	FL
EPA 8270 D (2/07)	NAPHTHALENE	FL
EPA 8270 D (2/07)	PENTACHLOROPHENOL	FL
EPA 8270 D (2/07)	PHENOL	FL
EPA 8270 D - EXTENDED (2/07)	1-METHYLNAPHTHALENE	FL
EPA 8270 D - EXTENDED (2/07)	CARBAZOLE	FL
EPA 9012 B (11/04)	TOTAL CYANIDE	FL
EPA 9034 1996	TOTAL SULFIDES	FL
EPA 9045 D 2004	PH	FL
EPA 9056 A 2/07	CHLORIDE	FL
EPA 9056 A 2/07	NITRATE AS N	FL
EPA 9056 A 2/07	ORTHOPHOSPHATE AS P	FL
EPA 9066 1986	TOTAL PHENOLICS	FL
EPA 9095 B 2004	FREE LIQUID	FL

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Type I Data Package

Abridged data package.
Full deliverable available.

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

Project: RAAP - Radford, VA - HWMU13/Open Burning Ground
Groundwater and Water Samples
Collected on 10/13/14

SDG# RAE25

GROUP	SAMPLE NUMBERS
1511080	7637883-7637894

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

Authorized by: Dana M Kauffman **Date: 10/27/2014**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Barbara Weyandt at (717) 556-7264.

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Sample Reference List for SDG Number RAE25
with a Data Package Type of I

11200 - Draper Aden Associates, Inc.

Project: RAAP - Radford, VA - HWMU13/Open Burning Ground

Lab Sample Number	Lab Sample Code	Client Sample Description
7637883	RF132	13MW2 Grab Groundwater October 2014 Annual GW Monitoring Event
7637884	RF133	13MW3 Grab Groundwater October 2014 Annual GW Monitoring Event
7637885	R13D2	13MWDUP2 Grab Groundwater October 2014 Annual GW Monitoring Event
7637886	RF134	13MW4 Grab Groundwater October 2014 Annual GW Monitoring Event
7637887	RF13D	13MWDUP Grab Groundwater October 2014 Annual GW Monitoring Event
7637888	RF135	13MW5 Grab Groundwater October 2014 Annual GW Monitoring Event
7637889	RF135	13MW5 MS Grab Groundwater October 2014 Annual GW Monitoring Event
7637890	RF135	13MW5 MSD Grab Groundwater October 2014 Annual GW Monitoring Event
7637891	RF136	13MW6 Grab Groundwater October 2014 Annual GW Monitoring Event
7637892	RF137	13MW7 Grab Groundwater October 2014 Annual GW Monitoring Event
7637893	RF138	13MW8 Grab Groundwater October 2014 Annual GW Monitoring Event
7637894	RF13T	Trip_Blank_1 Water October 2014 Annual GW Monitoring Event

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Sample pH Log

SDG: RAE25

LLI Sample Number	Bottle Code	Actual pH	Exp. pH	pH Check Code	Adj. pH	Adjusted Date	Adjusted Time	Preservative Added	Preservative Lot #	LLI Supplied Bottle?	Sulfide Present?	Corrective Substance	CS Lot #	Res. Cl. Present?	Corrective Substance	CS Lot #
7637883	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637883	057A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637884	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637884	057A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637885	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637886	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637886	057A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637887	057A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637888	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637888	057A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637889	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637889	057A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637890	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637890	057A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637891	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637891	057A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637892	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637892	057A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637893	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637893	057A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637894	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA
7637894	057A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA

Check Code Key

PK = Original container checked - pH is within the correct range. (No preservative was added)
PA = Original container checked - pH adjusted to correct range. (Preservative was added)
PV = Volatile container checked
PC = pH checked (unpreserved container)
SPK = Subsampled from an original container. Original container checked - pH is within correct range
SPA = Subsampled from an original container. Subsample container checked - pH adjusted to correct range.
SPC = Subsampled from an original container. pH checked (unpreserved container).
SUP = Subsampled from original container. Unable to be preserved due to the matrix of the sample.
UP = Unable to preserve due to matrix of the sample.
NA = Not applicable

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01163 GC/MS VOA Water Prep

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 5030C, May 2003.

11996 VOCs- 25ml Water by 8260C

The water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS), SW-846 Method 8260C, August 2006.

11010 8270D BNA Extraction

The sample aliquot is extracted with methylene chloride by either separatory funnel or liquid/liquid apparatus. Extraction is performed at both a pH of 11 and 2. The extract is concentrated prior to analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3510C, December 1996

10461 SVOAs by 8270D in Water

The sample extract is analyzed by capillary column Gas Chromatography/Mass Spectrometry.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 8270D, February 2007.

07105 Volatile Headspace Hydrocarbon

An aliquot of sample is place in a headspace vial and warmed to 35C. A portion of the headspace is analyzed on a gas chromatograph with megabore column and flame ionization detection.

Reference: Sample Preparation and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, Rev. 5, Oct. 2010, modified

Analysis Reports / Field Chain of Custody

ANALYTICAL RESULTS

Prepared by:	Prepared for:
Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601	Draper Aden Associates, Inc. 2206 South Main Street Blacksburg VA 24060

October 23, 2014

Project: RAAP - Radford, VA - HWMU13/Open Burning Ground

Submittal Date: 10/15/2014
Group Number: 1511080
SDG: RAE25
State of Sample Origin: VA

Client Sample Description	Lancaster Labs (LL) #
13MW2 Grab Groundwater	7637883
13MW3 Grab Groundwater	7637884
13MWDUP2 Grab Groundwater	7637885
13MW4 Grab Groundwater	7637886
13MWDUP Grab Groundwater	7637887
13MW5 Grab Groundwater	7637888
13MW5 MS Grab Groundwater	7637889
13MW5 MSD Grab Groundwater	7637890
13MW6 Grab Groundwater	7637891
13MW7 Grab Groundwater	7637892
13MW8 Grab Groundwater	7637893
Trip_Blank_1 Water	7637894

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Draper Aden Associates, Inc. Attn: Janet Frazier

Respectfully Submitted,

Barbara Weyandt

Barbara A. Weyandt
Specialist

(717) 556-7264

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground
LL Group #: 1511080

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

No additional comments are necessary.

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Analysis Report

Sample Description: 13MW2 Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637883
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 15:45 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF132 SDG#: RAE25-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	1.0	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	1.0	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	N.D.	3.0	5.0	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP HWMU-13 - 4 compounds	SW-846 8260C	1	H142892AA	10/17/2014 01:06	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H142892AA	10/17/2014 01:06	Kevin A Sposito	1
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	142940030A	10/21/2014 18:41	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

Sample Description: 13MW3 Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637884
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 10:00 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF133 SDG#: RAE25-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	0.1	J	0.1	0.5	1
11996	Benzyl Chloride	100-44-7	N.D.		0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.		0.1	0.5	1
11996	Carbon Tetrachloride	56-23-5	5.7		0.1	1.0	1
11996	Chlorobenzene	108-90-7	N.D.		0.1	0.5	1
11996	Chloroform	67-66-3	0.6		0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.		0.2	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.		0.1	1.0	1
11996	1,2-Dichloroethane	107-06-2	N.D.		0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.		0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.		0.2	1.0	1
11996	Naphthalene	91-20-3	N.D.		0.1	0.5	1
11996	Tetrachloroethene	127-18-4	N.D.		0.1	1.0	1
11996	Toluene	108-88-3	2.5		0.1	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.		0.1	1.0	1
11996	Trichloroethene	79-01-6	1.1		0.1	1.0	1
11996	Trichlorofluoromethane	75-69-4	0.2	J	0.1	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.		0.1	0.5	1
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**		**ug/l**	**ug/l**	
10461	Acetophenone	98-86-2	N.D.		2	5	1
10461	Benzo(a)anthracene	56-55-3	N.D.		1	5	1
10461	Benzo(a)pyrene	50-32-8	N.D.		0.5	0.5	1
10461	Benzo(b)fluoranthene	205-99-2	N.D.		1	5	1
10461	Benzo(k)fluoranthene	207-08-9	N.D.		1	5	1
10461	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
10461	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
10461	2-Chlorophenol	95-57-8	N.D.		1	5	1
10461	Dibenz(a,h)anthracene	53-70-3	N.D.		1	5	1
10461	Dibenzofuran	132-64-9	N.D.		1	5	1
10461	2,4-Dichlorophenol	120-83-2	N.D.		1	5	1
10461	Diethylphthalate	84-66-2	N.D.		2	5	1
10461	3,3'-Dimethylbenzidine	119-93-7	N.D.		26	77	1
10461	Dimethylphthalate	131-11-3	N.D.		2	5	1
10461	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
10461	Fluoranthene	206-44-0	N.D.		1	5	1
10461	Hexachloroethane	67-72-1	N.D.		1	5	1
10461	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		1	5	1
10461	4-Methylphenol	106-44-5	N.D.		2	5	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10461	Nitrobenzene	98-95-3	N.D.		1	5	1
10461	4-Nitrophenol	100-02-7	N.D.		10	31	1
10461	N-Nitrosodiphenylamine	86-30-6	N.D.		2	5	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10461	Di-n-octylphthalate	117-84-0	N.D.		2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: 13MW3 Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637884
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 10:00 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF133 SDG#: RAE25-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	Phenol	108-95-2	N.D.	1	5	1
10461	Pyrene	129-00-0	N.D.	1	5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	N.D.	3.0	5.0	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP HWMU-13 - 18 compounds	SW-846 8260C	1	H142892AA	10/17/2014 01:27	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H142892AA	10/17/2014 01:27	Kevin A Sposito	1
10461	SVOCs 8270D - 25 compounds	SW-846 8270D	1	14291WAJ026	10/21/2014 20:18	Catherine E Bachman	1
11010	8270D BNA Extraction	SW-846 3510C	1	14291WAJ026	10/20/2014 09:45	Jessica M Velez	1
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	142940030A	10/21/2014 18:57	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: 13MWDUP2 Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637885
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 10:15 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

R13D2 SDG#: RAE25-03FD

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		ug/l		ug/l	ug/l	
11996	Benzene	71-43-2	0.6		0.1	0.5	1
11996	Benzyl Chloride	100-44-7	N.D.		0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.		0.1	0.5	1
11996	Carbon Tetrachloride	56-23-5	5.7		0.1	1.0	1
11996	Chlorobenzene	108-90-7	N.D.		0.1	0.5	1
11996	Chloroform	67-66-3	0.6		0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.		0.2	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.		0.1	1.0	1
11996	1,2-Dichloroethane	107-06-2	N.D.		0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.		0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.		0.2	1.0	1
11996	Naphthalene	91-20-3	0.1	J	0.1	0.5	1
11996	Tetrachloroethene	127-18-4	N.D.		0.1	1.0	1
11996	Toluene	108-88-3	5.2		0.1	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.		0.1	1.0	1
11996	Trichloroethene	79-01-6	1.1		0.1	1.0	1
11996	Trichlorofluoromethane	75-69-4	0.2	J	0.1	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.		0.1	0.5	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP HWMU-13 - 18 compounds	SW-846 8260C	1	H142892AA	10/17/2014 01:48	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H142892AA	10/17/2014 01:48	Kevin A Sposito	1

*=This limit was used in the evaluation of the final result

Sample Description: 13MW4 Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637886
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 11:50 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF134 SDG#: RAE25-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Benzyl Chloride	100-44-7	N.D.	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	1.0	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	1.0	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	1.0	1
11996	Naphthalene	91-20-3	N.D.	0.1	0.5	1
11996	Tetrachloroethene	127-18-4	N.D.	0.1	1.0	1
11996	Toluene	108-88-3	N.D.	0.1	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	1.0	1
11996	Trichloroethene	79-01-6	1.3	0.1	1.0	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	Acetophenone	98-86-2	N.D.	2	5	1
10461	Benzo(a)anthracene	56-55-3	N.D.	1	5	1
10461	Benzo(a)pyrene	50-32-8	N.D.	0.5	0.5	1
10461	Benzo(b)fluoranthene	205-99-2	N.D.	1	5	1
10461	Benzo(k)fluoranthene	207-08-9	N.D.	1	5	1
10461	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
10461	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
10461	2-Chlorophenol	95-57-8	N.D.	1	5	1
10461	Dibenz(a,h)anthracene	53-70-3	N.D.	1	5	1
10461	Dibenzofuran	132-64-9	N.D.	1	5	1
10461	2,4-Dichlorophenol	120-83-2	N.D.	1	5	1
10461	Diethylphthalate	84-66-2	N.D.	2	5	1
10461	3,3'-Dimethylbenzidine	119-93-7	N.D.	25	76	1
10461	Dimethylphthalate	131-11-3	N.D.	2	5	1
10461	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
10461	Fluoranthene	206-44-0	N.D.	1	5	1
10461	Hexachloroethane	67-72-1	N.D.	1	5	1
10461	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	1	5	1
10461	4-Methylphenol	106-44-5	N.D.	2	5	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10461	Nitrobenzene	98-95-3	N.D.	1	5	1
10461	4-Nitrophenol	100-02-7	N.D.	10	30	1
10461	N-Nitrosodiphenylamine	86-30-6	N.D.	2	5	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10461	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: 13MW4 Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637886
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 11:50 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF134 SDG#: RAE25-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	Phenol	108-95-2	N.D.	1	5	1
10461	Pyrene	129-00-0	N.D.	1	5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	N.D.	3.0	5.0	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP HWMU-13 - 18 compounds	SW-846 8260C	1	H142892AA	10/17/2014 02:09	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H142892AA	10/17/2014 02:09	Kevin A Sposito	1
10461	SVOCs 8270D - 25 compounds	SW-846 8270D	1	14291WAJ026	10/21/2014 20:47	Catherine E Bachman	1
11010	8270D BNA Extraction	SW-846 3510C	1	14291WAJ026	10/20/2014 09:45	Jessica M Velez	1
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	142940030A	10/21/2014 19:14	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

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Analysis Report

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Sample Description: 13MWDUP Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637887
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 12:00 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF13D SDG#: RAE25-05FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	Acetophenone	98-86-2	N.D.	2	5	1
10461	Benzo(a)anthracene	56-55-3	N.D.	1	5	1
10461	Benzo(a)pyrene	50-32-8	N.D.	0.5	0.5	1
10461	Benzo(b)fluoranthene	205-99-2	N.D.	1	5	1
10461	Benzo(k)fluoranthene	207-08-9	N.D.	1	5	1
10461	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
10461	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
10461	2-Chlorophenol	95-57-8	N.D.	1	5	1
10461	Dibenz(a,h)anthracene	53-70-3	N.D.	1	5	1
10461	Dibenzofuran	132-64-9	N.D.	1	5	1
10461	2,4-Dichlorophenol	120-83-2	N.D.	1	5	1
10461	Diethylphthalate	84-66-2	N.D.	2	5	1
10461	3,3'-Dimethylbenzidine	119-93-7	N.D.	26	77	1
10461	Dimethylphthalate	131-11-3	N.D.	2	5	1
10461	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
10461	Fluoranthene	206-44-0	N.D.	1	5	1
10461	Hexachloroethane	67-72-1	N.D.	1	5	1
10461	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	1	5	1
10461	4-Methylphenol	106-44-5	N.D.	2	5	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10461	Nitrobenzene	98-95-3	N.D.	1	5	1
10461	4-Nitrophenol	100-02-7	N.D.	10	31	1
10461	N-Nitrosodiphenylamine	86-30-6	N.D.	2	5	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10461	Di-n-octylphthalate	117-84-0	N.D.	2	5	1
10461	Phenol	108-95-2	N.D.	1	5	1
10461	Pyrene	129-00-0	N.D.	1	5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	N.D.	3.0	5.0	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10461	SVOCs 8270D - 25 compounds	SW-846 8270D	1	14291WAJ026	10/21/2014 21:16	Catherine E Bachman	1
11010	8270D BNA Extraction	SW-846 3510C	1	14291WAJ026	10/20/2014 09:45	Jessica M Velez	1

*=This limit was used in the evaluation of the final result

Sample Description: **13MWDUP Grab Groundwater**
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637887
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 12:00 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF13D SDG#: RAE25-05FD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	142940030A	10/21/2014 19:31	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

Sample Description: 13MW5 Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637888
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 13:00 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF135 SDG#: RAE25-06BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Benzyl Chloride	100-44-7	N.D.	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.1 J	0.1	1.0	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	1.0	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	1.0	1
11996	Naphthalene	91-20-3	N.D.	0.1	0.5	1
11996	Tetrachloroethene	127-18-4	N.D.	0.1	1.0	1
11996	Toluene	108-88-3	N.D.	0.1	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	1.0	1
11996	Trichloroethene	79-01-6	N.D.	0.1	1.0	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	Acetophenone	98-86-2	N.D.	2	5	1
10461	Benzo(a)anthracene	56-55-3	N.D.	1	5	1
10461	Benzo(a)pyrene	50-32-8	N.D.	0.5	0.5	1
10461	Benzo(b)fluoranthene	205-99-2	N.D.	1	5	1
10461	Benzo(k)fluoranthene	207-08-9	N.D.	1	5	1
10461	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
10461	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
10461	2-Chlorophenol	95-57-8	N.D.	1	5	1
10461	Dibenz(a,h)anthracene	53-70-3	N.D.	1	5	1
10461	Dibenzofuran	132-64-9	N.D.	1	5	1
10461	2,4-Dichlorophenol	120-83-2	N.D.	1	5	1
10461	Diethylphthalate	84-66-2	N.D.	2	5	1
10461	3,3'-Dimethylbenzidine	119-93-7	N.D.	25	75	1
10461	Dimethylphthalate	131-11-3	N.D.	2	5	1
10461	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
10461	Fluoranthene	206-44-0	N.D.	1	5	1
10461	Hexachloroethane	67-72-1	N.D.	1	5	1
10461	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	1	5	1
10461	4-Methylphenol	106-44-5	N.D.	2	5	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10461	Nitrobenzene	98-95-3	N.D.	1	5	1
10461	4-Nitrophenol	100-02-7	N.D.	10	30	1
10461	N-Nitrosodiphenylamine	86-30-6	N.D.	2	5	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10461	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: 13MW5 Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637888
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 13:00 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF135 SDG#: RAE25-06BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	Phenol	108-95-2	N.D.	1	5	1
10461	Pyrene	129-00-0	N.D.	1	5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	N.D.	3.0	5.0	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP HWMU-13 - 18 compounds	SW-846 8260C	1	H142892AA	10/16/2014 23:42	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H142892AA	10/16/2014 23:42	Kevin A Sposito	1
10461	SVOCs 8270D - 25 compounds	SW-846 8270D	1	14291WAJ026	10/21/2014 18:51	Catherine E Bachman	1
11010	8270D BNA Extraction	SW-846 3510C	1	14291WAJ026	10/20/2014 09:45	Jessica M Velez	1
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	142940030A	10/21/2014 20:05	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: 13MW5 MS Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637889
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 13:00 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF135 SDG#: RAE25-06MS

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		ug/l		ug/l	ug/l	
11996	Benzene	71-43-2	5.2		0.1	0.5	1
11996	Benzyl Chloride	100-44-7	4.4		0.1	0.5	1
11996	Bromomethane	74-83-9	4.5		0.1	0.5	1
11996	Carbon Tetrachloride	56-23-5	5.3		0.1	1.0	1
11996	Chlorobenzene	108-90-7	5.2		0.1	0.5	1
11996	Chloroform	67-66-3	4.8		0.1	0.5	1
11996	Chloromethane	74-87-3	4.9		0.2	0.5	1
11996	1,1-Dichloroethane	75-34-3	5.2		0.1	1.0	1
11996	1,2-Dichloroethane	107-06-2	4.6		0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	5.2		0.1	0.5	1
11996	Methylene Chloride	75-09-2	5.0		0.2	1.0	1
11996	Naphthalene	91-20-3	3.8		0.1	0.5	1
11996	Tetrachloroethene	127-18-4	5.4		0.1	1.0	1
11996	Toluene	108-88-3	5.2		0.1	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	4.9		0.1	1.0	1
11996	Trichloroethene	79-01-6	5.2		0.1	1.0	1
11996	Trichlorofluoromethane	75-69-4	5.0		0.1	1.0	1
11996	Vinyl Chloride	75-01-4	5.2		0.1	0.5	1
GC/MS Semivolatiles	**SW-846 8270D**		ug/l		ug/l	ug/l	
10461	Acetophenone	98-86-2	49		2	5	1
10461	Benzo(a)anthracene	56-55-3	53		1	5	1
10461	Benzo(a)pyrene	50-32-8	52		0.5	0.5	1
10461	Benzo(b)fluoranthene	205-99-2	53		1	5	1
10461	Benzo(k)fluoranthene	207-08-9	51		1	5	1
10461	Butylbenzylphthalate	85-68-7	52		2	5	1
10461	Di-n-butylphthalate	84-74-2	50		2	5	1
10461	2-Chlorophenol	95-57-8	47		1	5	1
10461	Dibenz(a,h)anthracene	53-70-3	51		1	5	1
10461	Dibenzofuran	132-64-9	50		1	5	1
10461	2,4-Dichlorophenol	120-83-2	48		1	5	1
10461	Diethylphthalate	84-66-2	51		2	5	1
10461	3,3'-Dimethylbenzidine	119-93-7	38	J	25	76	1
10461	Dimethylphthalate	131-11-3	48		2	5	1
10461	bis(2-Ethylhexyl)phthalate	117-81-7	53		2	5	1
10461	Fluoranthene	206-44-0	50		1	5	1
10461	Hexachloroethane	67-72-1	32		1	5	1
10461	Indeno(1,2,3-cd)pyrene	193-39-5	50		1	5	1
10461	4-Methylphenol	106-44-5	49		2	5	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10461	Nitrobenzene	98-95-3	50		1	5	1
10461	4-Nitrophenol	100-02-7	30	J	10	30	1
10461	N-Nitrosodiphenylamine	86-30-6	47		2	5	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10461	Di-n-octylphthalate	117-84-0	54		2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: 13MW5 MS Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637889
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 13:00 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF135 SDG#: RAE25-06MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	Phenol	108-95-2	32	1	5	1
10461	Pyrene	129-00-0	49	1	5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	49	3.0	5.0	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP HWMU-13 - 18 compounds	SW-846 8260C	1	H142892AA	10/17/2014 00:03	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H142892AA	10/17/2014 00:03	Kevin A Sposito	1
10461	SVOCs 8270D - 25 compounds	SW-846 8270D	1	14291WAJ026	10/21/2014 19:20	Catherine E Bachman	1
11010	8270D BNA Extraction	SW-846 3510C	1	14291WAJ026	10/20/2014 09:45	Jessica M Velez	1
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	142940030A	10/21/2014 20:21	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: 13MW5 MSD Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637890
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 13:00 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF135 SDG#: RAE25-06MSD

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		ug/l		ug/l	ug/l	
11996	Benzene	71-43-2	5.0		0.1	0.5	1
11996	Benzyl Chloride	100-44-7	4.5		0.1	0.5	1
11996	Bromomethane	74-83-9	4.4		0.1	0.5	1
11996	Carbon Tetrachloride	56-23-5	5.1		0.1	1.0	1
11996	Chlorobenzene	108-90-7	5.1		0.1	0.5	1
11996	Chloroform	67-66-3	4.6		0.1	0.5	1
11996	Chloromethane	74-87-3	4.7		0.2	0.5	1
11996	1,1-Dichloroethane	75-34-3	5.0		0.1	1.0	1
11996	1,2-Dichloroethane	107-06-2	4.4		0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	5.0		0.1	0.5	1
11996	Methylene Chloride	75-09-2	4.8		0.2	1.0	1
11996	Naphthalene	91-20-3	4.0		0.1	0.5	1
11996	Tetrachloroethene	127-18-4	5.4		0.1	1.0	1
11996	Toluene	108-88-3	5.2		0.1	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	4.7		0.1	1.0	1
11996	Trichloroethene	79-01-6	5.1		0.1	1.0	1
11996	Trichlorofluoromethane	75-69-4	4.7		0.1	1.0	1
11996	Vinyl Chloride	75-01-4	5.0		0.1	0.5	1
GC/MS Semivolatiles	**SW-846 8270D**		ug/l		ug/l	ug/l	
10461	Acetophenone	98-86-2	49		2	5	1
10461	Benzo(a)anthracene	56-55-3	53		1	5	1
10461	Benzo(a)pyrene	50-32-8	52		0.5	0.5	1
10461	Benzo(b)fluoranthene	205-99-2	53		1	5	1
10461	Benzo(k)fluoranthene	207-08-9	51		1	5	1
10461	Butylbenzylphthalate	85-68-7	52		2	5	1
10461	Di-n-butylphthalate	84-74-2	49		2	5	1
10461	2-Chlorophenol	95-57-8	43		1	5	1
10461	Dibenz(a,h)anthracene	53-70-3	52		1	5	1
10461	Dibenzofuran	132-64-9	49		1	5	1
10461	2,4-Dichlorophenol	120-83-2	44		1	5	1
10461	Diethylphthalate	84-66-2	51		2	5	1
10461	3,3'-Dimethylbenzidine	119-93-7	43	J	25	76	1
10461	Dimethylphthalate	131-11-3	47		2	5	1
10461	bis(2-Ethylhexyl)phthalate	117-81-7	53		2	5	1
10461	Fluoranthene	206-44-0	46		1	5	1
10461	Hexachloroethane	67-72-1	31		1	5	1
10461	Indeno(1,2,3-cd)pyrene	193-39-5	50		1	5	1
10461	4-Methylphenol	106-44-5	47		2	5	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
10461	Nitrobenzene	98-95-3	50		1	5	1
10461	4-Nitrophenol	100-02-7	27	J	10	30	1
10461	N-Nitrosodiphenylamine	86-30-6	47		2	5	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
10461	Di-n-octylphthalate	117-84-0	54		2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: 13MW5 MSD Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637890
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 13:00 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF135 SDG#: RAE25-06MSD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	Phenol	108-95-2	29	1	5	1
10461	Pyrene	129-00-0	48	1	5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	54	3.0	5.0	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP HWMU-13 - 18 compounds	SW-846 8260C	1	H142892AA	10/17/2014 00:24	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H142892AA	10/17/2014 00:24	Kevin A Sposito	1
10461	SVOCs 8270D - 25 compounds	SW-846 8270D	1	14291WAJ026	10/21/2014 19:49	Catherine E Bachman	1
11010	8270D BNA Extraction	SW-846 3510C	1	14291WAJ026	10/20/2014 09:45	Jessica M Velez	1
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	142940030A	10/21/2014 20:38	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

Sample Description: 13MW6 Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637891
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 14:05 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF136 SDG#: RAE25-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Benzyl Chloride	100-44-7	N.D.	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	1.0	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	1.0	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	1.0	1
11996	Naphthalene	91-20-3	N.D.	0.1	0.5	1
11996	Tetrachloroethene	127-18-4	N.D.	0.1	1.0	1
11996	Toluene	108-88-3	N.D.	0.1	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	1.0	1
11996	Trichloroethene	79-01-6	N.D.	0.1	1.0	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	Acetophenone	98-86-2	N.D.	2	5	1
10461	Benzo(a)anthracene	56-55-3	N.D.	1	5	1
10461	Benzo(a)pyrene	50-32-8	N.D.	0.5	0.5	1
10461	Benzo(b)fluoranthene	205-99-2	N.D.	1	5	1
10461	Benzo(k)fluoranthene	207-08-9	N.D.	1	5	1
10461	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
10461	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
10461	2-Chlorophenol	95-57-8	N.D.	1	5	1
10461	Dibenz(a,h)anthracene	53-70-3	N.D.	1	5	1
10461	Dibenzofuran	132-64-9	N.D.	1	5	1
10461	2,4-Dichlorophenol	120-83-2	N.D.	1	5	1
10461	Diethylphthalate	84-66-2	N.D.	2	5	1
10461	3,3'-Dimethylbenzidine	119-93-7	N.D.	26	77	1
10461	Dimethylphthalate	131-11-3	N.D.	2	5	1
10461	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
10461	Fluoranthene	206-44-0	N.D.	1	5	1
10461	Hexachloroethane	67-72-1	N.D.	1	5	1
10461	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	1	5	1
10461	4-Methylphenol	106-44-5	N.D.	2	5	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10461	Nitrobenzene	98-95-3	N.D.	1	5	1
10461	4-Nitrophenol	100-02-7	N.D.	10	31	1
10461	N-Nitrosodiphenylamine	86-30-6	N.D.	2	5	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10461	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: 13MW6 Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637891
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 14:05 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF136 SDG#: RAE25-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	Phenol	108-95-2	N.D.	1	5	1
10461	Pyrene	129-00-0	N.D.	1	5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	N.D.	3.0	5.0	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP HWMU-13 - 18 compounds	SW-846 8260C	1	H142892AA	10/17/2014 02:30	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H142892AA	10/17/2014 02:30	Kevin A Sposito	1
10461	SVOCs 8270D - 25 compounds	SW-846 8270D	1	14291WAJ026	10/21/2014 21:44	Catherine E Bachman	1
11010	8270D BNA Extraction	SW-846 3510C	1	14291WAJ026	10/20/2014 09:45	Jessica M Velez	1
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	142940030A	10/21/2014 20:55	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

Sample Description: 13MW7 Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637892
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 14:55 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF137 SDG#: RAE25-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Benzyl Chloride	100-44-7	N.D.	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	1.0	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	1.0	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	1.0	1
11996	Naphthalene	91-20-3	N.D.	0.1	0.5	1
11996	Tetrachloroethene	127-18-4	N.D.	0.1	1.0	1
11996	Toluene	108-88-3	N.D.	0.1	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	1.0	1
11996	Trichloroethene	79-01-6	0.5 J	0.1	1.0	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	Acetophenone	98-86-2	N.D.	2	5	1
10461	Benzo(a)anthracene	56-55-3	N.D.	1	5	1
10461	Benzo(a)pyrene	50-32-8	N.D.	0.5	0.5	1
10461	Benzo(b)fluoranthene	205-99-2	N.D.	1	5	1
10461	Benzo(k)fluoranthene	207-08-9	N.D.	1	5	1
10461	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
10461	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
10461	2-Chlorophenol	95-57-8	N.D.	1	5	1
10461	Dibenz(a,h)anthracene	53-70-3	N.D.	1	5	1
10461	Dibenzofuran	132-64-9	N.D.	1	5	1
10461	2,4-Dichlorophenol	120-83-2	N.D.	1	5	1
10461	Diethylphthalate	84-66-2	N.D.	2	5	1
10461	3,3'-Dimethylbenzidine	119-93-7	N.D.	25	76	1
10461	Dimethylphthalate	131-11-3	N.D.	2	5	1
10461	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
10461	Fluoranthene	206-44-0	N.D.	1	5	1
10461	Hexachloroethane	67-72-1	N.D.	1	5	1
10461	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	1	5	1
10461	4-Methylphenol	106-44-5	N.D.	2	5	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10461	Nitrobenzene	98-95-3	N.D.	1	5	1
10461	4-Nitrophenol	100-02-7	N.D.	10	30	1
10461	N-Nitrosodiphenylamine	86-30-6	N.D.	2	5	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10461	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: 13MW7 Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637892
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 14:55 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF137 SDG#: RAE25-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	**ug/l**	
10461	Phenol	108-95-2	2 J	1	5	1
10461	Pyrene	129-00-0	N.D.	1	5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	N.D.	3.0	5.0	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP HWMU-13 - 18 compounds	SW-846 8260C	1	H142892AA	10/17/2014 02:52	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H142892AA	10/17/2014 02:52	Kevin A Sposito	1
10461	SVOCs 8270D - 25 compounds	SW-846 8270D	1	14291WAJ026	10/21/2014 22:13	Catherine E Bachman	1
11010	8270D BNA Extraction	SW-846 3510C	1	14291WAJ026	10/20/2014 09:45	Jessica M Velez	1
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	142940030A	10/21/2014 21:12	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: 13MW8 Grab Groundwater
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637893
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014 11:00 by KC

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF138 SDG#: RAE25-09

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		ug/l		ug/l	ug/l	
11996	Carbon Tetrachloride	56-23-5	0.3	J	0.1	1.0	1
11996	Chloroform	67-66-3	N.D.		0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.		0.2	0.5	1
11996	Methylene Chloride	75-09-2	N.D.		0.2	1.0	1
GC Miscellaneous	**RSKSOP-175 modified**		ug/l		ug/l	ug/l	
07105	Methane	74-82-8	N.D.		3.0	5.0	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP HWMU-13 - 4 compounds	SW-846 8260C	1	H142892AA	10/17/2014 03:13	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H142892AA	10/17/2014 03:13	Kevin A Sposito	1
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	142940030A	10/21/2014 21:29	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: Trip_Blank_1 Water
October 2014 Annual GW Monitoring Event
RAAP - Radford, VA - HWMU13/Open Burning Ground

LL Sample # WW 7637894
LL Group # 1511080
Account # 11200

Project Name: RAAP - Radford, VA - HWMU13/Open Burning Ground

Collected: 10/13/2014

Submitted: 10/15/2014 08:00
Reported: 10/23/2014 13:42

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RF13T SDG#: RAE25-10TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		ug/l	ug/l	ug/l	
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Benzyl Chloride	100-44-7	N.D.	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	1.0	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	1.0	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	1.0	1
11996	Naphthalene	91-20-3	N.D.	0.1	0.5	1
11996	Tetrachloroethene	127-18-4	N.D.	0.1	1.0	1
11996	Toluene	108-88-3	N.D.	0.1	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	1.0	1
11996	Trichloroethene	79-01-6	N.D.	0.1	1.0	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		ug/l	ug/l	ug/l	
07105	Methane	74-82-8	N.D.	3.0	5.0	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP HWMU-13 - 18 compounds	SW-846 8260C	1	H142892AA	10/16/2014 23:21	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H142892AA	10/16/2014 23:21	Kevin A Sposito	1
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	142940030A	10/21/2014 21:46	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 1511080
Reported: 10/23/14 at 01:42 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: H142892AA	Sample number(s): 7637883-7637886,7637888-7637894								
Benzene	N.D.	0.1	0.5	ug/l	103		80-120		
Benzyl Chloride	N.D.	0.1	0.5	ug/l	94		63-123		
Bromomethane	N.D.	0.1	0.5	ug/l	93		62-126		
Carbon Tetrachloride	N.D.	0.1	1.0	ug/l	100		80-135		
Chlorobenzene	N.D.	0.1	0.5	ug/l	107		80-120		
Chloroform	N.D.	0.1	0.5	ug/l	97		80-120		
Chloromethane	N.D.	0.2	0.5	ug/l	100		55-120		
1,1-Dichloroethane	N.D.	0.1	1.0	ug/l	103		80-120		
1,2-Dichloroethane	N.D.	0.1	0.5	ug/l	97		76-132		
1,1-Dichloroethene	N.D.	0.1	0.5	ug/l	100		80-123		
Methylene Chloride	N.D.	0.2	1.0	ug/l	102		80-120		
Naphthalene	N.D.	0.1	0.5	ug/l	79		72-120		
Tetrachloroethene	N.D.	0.1	1.0	ug/l	108		80-120		
Toluene	N.D.	0.1	1.0	ug/l	105		80-120		
1,1,1-Trichloroethane	N.D.	0.1	1.0	ug/l	96		80-120		
Trichloroethene	N.D.	0.1	1.0	ug/l	102		80-120		
Trichlorofluoromethane	N.D.	0.1	1.0	ug/l	98		64-141		
Vinyl Chloride	N.D.	0.1	0.5	ug/l	104		59-124		
Batch number: 14291WAJ026	Sample number(s): 7637884,7637886-7637892								
Acetophenone	N.D.	0.5	1	ug/l	95		78-112		
Benzo(a)anthracene	N.D.	0.1	0.5	ug/l	104		81-126		
Benzo(a)pyrene	N.D.	0.1	0.5	ug/l	102		82-116		
Benzo(b)fluoranthene	N.D.	0.1	0.5	ug/l	102		82-121		
Benzo(k)fluoranthene	N.D.	0.1	0.5	ug/l	101		81-122		
Butylbenzylphthalate	N.D.	2.	5	ug/l	98		73-122		
Di-n-butylphthalate	N.D.	2.	5	ug/l	97		80-119		
2-Chlorophenol	N.D.	0.5	1	ug/l	93		76-111		
Dibenz(a,h)anthracene	N.D.	0.1	0.5	ug/l	102		80-130		
Dibenzofuran	N.D.	0.5	1	ug/l	94		81-110		
2,4-Dichlorophenol	N.D.	0.5	1	ug/l	96		84-119		
Diethylphthalate	N.D.	2.	5	ug/l	92		70-118		
3,3'-Dimethylbenzidine	N.D.	25.	75	ug/l	41		10-76		
Dimethylphthalate	N.D.	2.	5	ug/l	72		43-128		
bis(2-Ethylhexyl)phthalate	N.D.	2.	5	ug/l	107		78-124		
Fluoranthene	N.D.	0.1	0.5	ug/l	98		82-121		
Hexachloroethane	N.D.	1.	5	ug/l	55		55-109		
Indeno(1,2,3-cd)pyrene	N.D.	0.1	0.5	ug/l	100		80-126		
4-Methylphenol	N.D.	0.5	1	ug/l	97		56-109		
Nitrobenzene	N.D.	0.5	1	ug/l	96		77-119		
4-Nitrophenol	N.D.	10.	30	ug/l	67		20-89		
N-Nitrosodiphenylamine	N.D.	0.5	1	ug/l	92		80-115		
Di-n-octylphthalate	N.D.	2.	5	ug/l	106		78-129		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 1511080
Reported: 10/23/14 at 01:42 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Phenol	N.D.	0.5	1	ug/l	65		25-80		
Pyrene	N.D.	0.1	0.5	ug/l	96		81-112		
Batch number: 142940030A	Sample number(s): 7637883-7637884,7637886-7637894								
Methane	N.D.	3.0	5.0	ug/l	97		85-115		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: H142892AA	Sample number(s): 7637883-7637886,7637888-7637894 UNSPK: 7637888								
Benzene	103	100	87-126	3	30				
Benzyl Chloride	89	89	62-125	0	30				
Bromomethane	90	87	66-130	3	30				
Carbon Tetrachloride	103	99	81-148	4	30				
Chlorobenzene	105	103	78-133	2	30				
Chloroform	95	92	86-136	3	30				
Chloromethane	97	94	49-135	3	30				
1,1-Dichloroethane	104	100	81-126	4	30				
1,2-Dichloroethane	91	87	82-135	4	30				
1,1-Dichloroethene	103	100	86-132	3	30				
Methylene Chloride	101	97	77-135	4	30				
Naphthalene	75	80	56-132	6	30				
Tetrachloroethene	109	107	75-129	1	30				
Toluene	105	103	83-127	1	30				
1,1,1-Trichloroethane	99	95	85-140	4	30				
Trichloroethene	104	101	85-131	3	30				
Trichlorofluoromethane	99	94	73-139	6	30				
Vinyl Chloride	104	100	62-135	4	30				
Batch number: 14291WAJ026	Sample number(s): 7637884,7637886-7637892 UNSPK: 7637888								
Acetophenone	97	98	77-114	1	30				
Benzo(a)anthracene	104	105	77-122	1	30				
Benzo(a)pyrene	103	103	73-125	1	30				
Benzo(b)fluoranthene	105	106	73-126	1	30				
Benzo(k)fluoranthene	100	102	72-122	1	30				
Butylbenzylphthalate	103	102	76-124	0	30				
Di-n-butylphthalate	100	98	79-118	2	30				
2-Chlorophenol	93	85	27-146	10	30				
Dibenz(a,h)anthracene	101	103	72-132	2	30				
Dibenzofuran	99	97	71-116	2	30				
2,4-Dichlorophenol	95	87	31-147	9	30				
Diethylphthalate	102	101	69-118	1	30				
3,3'-Dimethylbenzidine	37	43	25-83	14	30				
Dimethylphthalate	94	94	54-125	1	30				
bis(2-Ethylhexyl)phthalate	106	104	73-129	1	30				
Fluoranthene	100	90	78-122	10	30				
Hexachloroethane	63	61	50-119	3	30				
Indeno(1,2,3-cd)pyrene	99	100	69-129	1	30				
4-Methylphenol	97	94	13-128	4	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 1511080
Reported: 10/23/14 at 01:42 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Nitrobenzene	100	100	69-127	0	30				
4-Nitrophenol	59	54	10-116	9	30				
N-Nitrosodiphenylamine	94	94	75-124	0	30				
Di-n-octylphthalate	107	107	71-137	0	30				
Phenol	64	57	10-107	11	30				
Pyrene	97	96	79-111	2	30				
Batch number: 142940030A	Sample number(s): 7637883-7637884,7637886-7637894 UNSPK: 7637888								
Methane	80	89	46-129	10	20				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: RAAP HWMU-13 - 18 compounds
Batch number: H142892AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7637883	99	103	101	91
7637884	99	103	100	91
7637885	99	102	101	93
7637886	100	103	101	92
7637888	99	107	101	91
7637889	98	103	102	94
7637890	97	104	102	94
7637891	99	106	101	92
7637892	98	105	101	91
7637893	99	106	101	91
7637894	99	104	101	91
Blank	98	102	101	91
LCS	98	103	103	94
MS	98	103	102	94
MSD	97	104	102	94
Limits:	77-114	74-113	77-110	78-110

Analysis Name: SVOCs 8270D - 25 compounds
Batch number: 14291WAJ026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
7637884	53	75	110	104	86	105
7637886	49	75	102	93	87	112
7637887	53	75	91	96	87	99
7637888	50	69	93	94	87	109
7637889	57	73	99	96	91	103
7637890	55	66	98	98	90	103
7637891	48	62	105	92	87	104
7637892	51	67	93	91	83	106
Blank	51	73	105	102	95	117
LCS	58	77	97	95	86	103
MS	57	73	99	96	91	103

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 1511080
Reported: 10/23/14 at 01:42 PM

Surrogate Quality Control

MSD	55	66	98	98	90	103
Limits:	10-83	10-107	22-150	60-123	67-116	40-147

Analysis Name: Volatile Headspace Hydrocarbon
Batch number: 142940030A

	Propene
7637883	78
7637884	81
7637886	73
7637887	80
7637888	86
7637889	71
7637890	83
7637891	89
7637892	81
7637893	83
7637894	84
Blank	100
LCS	102
MS	71
MSD	83
Limits:	47-116

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

11200 / 1511080 / 7637883-94

CHAIN OF CUSTODY RECORD

Laboratory: Eurofin Lancaster Laboratories Environmental LLC, 2425 New Holland Pike, Lancaster, PA, 17605-2425/ Barb Weyandt, Manager/ (717) 656-2300

Client:	Draper Aden Associates	**Consultant:**	Draper Aden Associates	**Sample Site:**	RAAP, Radford, Virginia
Attn:	0	**Attn:**	Janet C. Frazier	**Location:**	Open Burning Ground (OBG)/HWMU13
Address:	0	**Address:**	2206 South Main Street		
	0		Blacksburg, Virginia 24060	**Event:**	October 2014 AnnualGW Monitoring Event
Phone:	0	**Phone:**	(540) 552-0444	**DAA JN:**	B03204-12
Fax:	0	**Fax:**	(540) 552-0291	**Lab JN:**	
Fax:	0				

Project Specific (PS) or Batch (B) QC:
Sample Collection for Project Complete? YES
UPS: 1Z-754-02X-40-4260-8374
Carrier: 1Z-754-02X-40-4279-9785
Tracking Number:

Box 1: Matrix
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

Box 2: Preservative
A HCl; B HNO_3; C H_2SO_4; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

Box 3: Filtered/Unfiltered
F Filtered; U Unfiltered

Box 4: Sample Type
G Grab; C Composite

Box 5: Sample Container Type
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

Invoice
Copy to Consultant: YES
Bill: CLIENT OTHER
Preserved and shipped on ice: YES

GENERAL NOTES:
1. Level 1 deliverable with EDD and pdf.
2. REPORT DL/QL and estimated results.
3. See attached target analyte list.

Sample ID	Date: 2014	Time	Box 1: Matrix	Number of Bottles	8260C - 25 ml Purge (See attached analyte sheet)	8260C - 25 ml Purge (See attached analyte sheet)	RSK 175/8015M - Methane	8270D- Semivolatiles					
Box 4 - Sample Type					G	G	G	G					
Box 3 - Filtered/Unfiltered					U	U	U	U					
Required pH of Sample					<2	<2	<2	NA					
Box 2 - Preservative					A	A	A	H					
Box 5 - Sample Container Type					3-40 ml V	3-40 ml V	2-40mLV	2-250ml AG					
13MW2	10/13	1545	GW	5		X	X						
13MW3		1000	GW	7	X		X	X					
13MWDUP2		1015	GW	3	X								
13MW4		1150	GW	7	X		X	X					
13MWDUP		1200	GW	4			X	X					
13MW5		1300	GW	21	X		X	X					USE FOR QC
13MW6		1405	GW	7	X		X	X					
13MW7		1455	GW	7	X		X	X					
13MW8		1100	GW	5		X	X						
Trip Blank 1	10/13	—	TB	4	X		X						
~~Trip Blank 2~~	~~10/13~~		~~TB~~	~~4~~	~~X~~		~~X~~						NOT REQD. JLC 10/13/14

Clients Special Instructions: Level 1 with edd. See attached target analyte list.

Received by lab in Good Condition X Yes ____ No Custody Seal Intact X Yes ____ No Temperature upon arrival 0.4 0.6 Received on Ice X Yes ____ No
Describe problems, if any:

Sampler Name (Print): KEN CODDINGTON	Date: 10/13/14	#1 Relinquished by (Signature):	Date: 10/14/14	#2 Relinquished by (Signature):	Date:	Sample Storage Time Requested:
Sampler Signature:	Time: 0700	Company Name: DAA	Time: 1700	Company Name:	Time:	30 DYS ORG/6 MTHS INORG
Sampler Name (Print): Will Mason-Deese	Date: 10/13/14	#1 Received by (Signature):	Date: 10/14/14	#2 Received by (Signature):	Date:	
Sampler Signature:	Time: 0700	Company Name: ELLE	Time: 800	Company Name:	Time:	

JCR 9/29/24

1/4

1511080

VOLAP 2013

QTAValidation

10 2013 Annual Event
10/22/2013

2014

MethodRef	Analyte	LOQ	LOD	Units
8260B	1,1,1-Trichloroethane	1	0.1 ug/l	
8260B	1,1-Dichloroethane	1	0.1 ug/l	
8260B	1,1-Dichloroethene	0.5	0.1 ug/l	
8260B	1,2-Dichloroethane	0.5	0.1 ug/l	
8260B	Benzene	0.5	0.1 ug/l	
8260B	Benzyl Chloride	0.5	0.1 ug/l	
8260B	Bromomethane	0.5	0.1 ug/l	
8260B	Carbon Tetrachloride	1	0.1 ug/l	
8260B	Chlorobenzene	0.5	0.1 ug/l	
8260B	Chloroform	0.5	0.1 ug/l	
8260B	Chloromethane	0.5	0.2 ug/l	
8260B	Methylene Chloride	1	0.2 ug/l	
8260B	Naphthalene	0.5	0.1 ug/l	
8260B	Tetrachloroethene	1	0.1 ug/l	
8260B	Toluene	1	0.1 ug/l	
8260B	Trichloroethene	1	0.1 ug/l	
8260B	Trichlorofluoromethane	1	0.1 ug/l	
8260B	Vinyl Chloride	0.5	0.1 ug/l	

JK
10/21/13

Analyte list for:

13MW3
13MW DUP2
13MW4
13MW5 + QC
13MW6
13MW7
Trip Blank 1
Trip Blank 2

JK
10-21-2013
9/29/20

RAE25 Page 35 of 704
Page 29 of 33

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1511080

OBG - GW Monitoring
10 2013 Annual Event

MethodRef	Analyte	LOQ	LOD	Units
8260B	Carbon Tetrachloride	1	0.1 ug/l	
8260B	Chloroform	0.5	0.1 ug/l	
8260B	Chloromethane	0.5	0.2 ug/l	
8260B	Methylene Chloride	1	0.2 ug/l	

JCR
10.22.13

~~FOR 13MW-2 dilut~~

* Analyte list for:

13MW2
13MW8 } only

JCR
10/~~2013~~
9/29/2014

2/4

1511080

QTAValidation

10-2013 10/22/2013

MethodRef	Analyte	LOQ	LOD	Units
8270C	2,4-Dichlorophenol	1	0.5 ug/l	
8270C	2-Chlorophenol	1	0.5 ug/l	
8270C	3 & 4-Methylphenol	1	0.5 ug/l	
8270C	3,3'-Dimethylbenzidine	74	24 ug/l	
8270C	Acetophenone	1	0.5 ug/l	
8270C	Benzo[a]anthracene	0.5	0.1 ug/l	
8270C	Benzo[a]pyrene	0.5	0.1 ug/l	
8270C	Benzo[b]fluoranthene	0.5	0.1 ug/l	
8270C	Benzo[k]fluoranthene	0.5	0.1 ug/l	
8270C	bis(2-Ethylhexyl)phthalate	5	2 ug/l	
8270C	Butyl benzyl phthalate	5	2 ug/l	
8270C	Dibenz(a,h)anthracene	0.5	0.1 ug/l	
8270C	Dibenzofuran	1	0.5 ug/l	
8270C	Diethyl phthalate	5	2 ug/l	
8270C	Dimethyl phthalate	5	2 ug/l	
8270C	Di-n-butyl phthalate	5	2 ug/l	
8270C	Di-n-octyl phthalate	5	2 ug/l	
8270C	diphenylamine	5	2 ug/l	
8270C	Fluoranthene	0.5	0.1 ug/l	
8270C	Hexachloroethane	5	1 ug/l	
8270C	Indeno[1,2,3-cd]pyrene	0.5	0.1 ug/l	
8270C	Nitrobenzene	1	0.5 ug/l	
8270C	Phenol	1	0.5 ug/l	
8270C	p-Nitrophenol	29	10 ug/l	
8270C	Pyrene	0.5	0.1 ug/l	

Analyte list for AS NOTED ON C-O-C.

DWR 10-21-2

DWR 10-21-2013

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Sample Administration Receipt Documentation Log

Doc Log ID: 34468

Group Number(s): 1511080

Client: Draper Aden

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	10/15/2014 8:00
Number of Packages:	2	Number of Projects:	1
State/Province of Origin:	VA		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	4
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Brandy Barclay (2299) at 11:13 on 10/15/2014

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?	Samples Collected Same Day as Receipt?
1	DT146	0.4	DT	Wet	Y	Bagged	N	N
2	DT146	0.6	DT	Wet	Y	Bagged	N	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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CompuChem

A Division Of

Liberty Analytical Corp.

10/19/2014

Abridged data package.
Full deliverable
available.

JANET FRAZIER

DRAPER

2206 SOUTH MAIN STREET

BLACKSBURG, VA 24060

Subject:

Report of Data - Project: RAAP 2014 OBG/HWMU13/B03204-12

WorkOrder: 1410112

Attn.: JANET FRAZIER

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Compuchem

a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER

OF PAGES _____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem, a division of Liberty Analytical

Client: DRAPER **Work:** 1410112

Project: RAAP 2014 OBG/HWMU13/B03204-12 **Sdg:** 1410112

Lab ID	Client ID	Matrix	Date Sampled	Date Received
1410112-01	13MW5	Water	10/13/2014 13:00	10/15/2014 09:57
1410112-02	13MW3	Water	10/13/2014 10:00	10/15/2014 09:57
1410112-03	13MW4	Water	10/13/2014 11:50	10/15/2014 09:57
1410112-04	13MWDUP	Water	10/13/2014 12:00	10/15/2014 09:57
1410112-05	13MW6	Water	10/13/2014 14:05	10/15/2014 09:57
1410112-06	13MW7	Water	10/13/2014 14:55	10/15/2014 09:57
1410112-07	13MW8	Water	10/13/2014 11:00	10/15/2014 09:57

ANALYSES DATA PACKAGE COVER PAGE

Client: DRAPER

Project: RAAP 2014 OBG/HWMU13/B03204-12

Laboratory: COMPUCHEM

SDG: 1410112

Client Sample Id:	Analysis:	Lab Sample Id:
13MW5	EPA 6010C	1410112-01
13MW3	EPA 6010C	1410112-02
13MW4	EPA 6010C	1410112-03
13MWDUP	EPA 6010C	1410112-04
13MW6	EPA 6010C	1410112-05
13MW7	EPA 6010C	1410112-06
13MW8	EPA 6010C	1410112-07

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions addressed in the narrative. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Susan W Bass

Name: Susan Bass

Date: 10/18/2014

Title: Chemist III

CompuChem
A Division Of
Liberty Analytical Corp.

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 1410112
Client: DRAPER
Project: RAAP 2014 OBG/HWMU13/B03204-12

The indicated Sample Delivery Group (SDG) consisting of seven (7) dissolved water samples was received into the laboratory information management system (LIMS) on October 15, 2014 intact and in good condition with the Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The cooler temperature indicator bottle was found with the samples and the samples temperature was 2.7 degrees Celsius. Temperature was recorded by IR temperature gun.

The samples were prepared and analyzed in accordance with SW846 6010C methodology for the requested dissolved metals iron and manganese.

EQUATIONS FOR LIQUID SAMPLE CALCULATIONS:

Equation for obtaining metals sample results in µg/L as presented on Analysis Data Sheet data sheets from ICP instrument acquired results in µg/L (ppb).

$$\frac{C \times F}{I}$$

Where

C = concentration (µg/L)

F = final volume in liters after sample preparation

I = initial volume in liters

Example: Iron for sample 13MW5

$$\frac{3.50142\ \mu g/L\ (C) \times 0.05\ L\ (F)}{0.05\ L\ (I)} = 3.50\ \mu g/L \text{ reported as } 200\ U\ \mu g/L$$

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (LLICV, LLCCV, ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within SW-846 methodology.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW & PBW) were found to be within acceptable ranges and the field samples were prepared and analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:

The ICP sample matrix spike, CCN = 4101510-MS1 (13MW5S) was found to be inside control limits.

The ICP sample matrix duplicate spike, CCN = 4101510-MSD1 (13MW5SD) was found to be inside control limits.

The ICP sample duplicate, CCN = 4101510-DUP1 (13MW5D) was found to be inside control limits.

A five-fold serial dilution of sample, CCN = SDI1410112-01 (13MW5L) was performed in accordance with SW-846 requirements for ICP analysis.

The adjusted sample concentration was inside control limits.

The ICP sample post digestion spike, CCN =4101510-PS1 (13MW5A) was performed and passed criteria.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on CD has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Susan W Bass

Susan W. Bass
Senior Chemist
October 18, 2014

CHAIN OF CUSTODY RECORD

JVR 9/23/2014

Laboratory: CompuChem Environmental, 501 Madison Avenue, Cary, NC 27513/Cathy Dover, Manager/1-800-833-5097

Client: Draper Aden Associates **Attn:** 0 **Address:** 0 0 **Phone:** 0 **Fax:** 0 **Fax:** 0	**Consultant:** Draper Aden Associates **Attn:** Janet C. Frazier **Address:** 2206 South Main Street Blacksburg, Virginia 24060 **Phone:** (540) 552-0444 **Fax:** (540) 552-0291	**Sample Site:** RAAP, Radford, Virginia **Location:** Open Burning Ground (OBG)/HWMU13 **Event:** October 2014 AnnualGW Monitoring Event **DAA JN:** BC3204-12 **Lab JN:**	**Project Specific (PS) or Batch (B) QC:** **Sample Collection for Project Complete?** YES UPS: **Carrier:** 12-237-301-01-9342-5034 **Tracking Number:**		

Box 1: Matrix SW Surface Water GW Groundwater L Leachate S Soil T Trip Blank E Equipment Blank P Product O Other	**Box 2: Preservative** A HCl B HNO_3 C H_2SO_4 D $Na_2S_2O_3$ E NaOH F ZnAc G Other (Specify) H None	**Box 3: Filtered/Unfiltered** F Filtered U Unfiltered **Box 5: Sample Container Type** P Plastic AG Amber Glass V VOA CG Clear Glass	**Box 4: Sample Type** G Grab C Composite **Invoice** **Copy to Consultant:** YES **Bill:** CLIENT OTHER **Preserved and shipped on ice:** YES

GENERAL NOTES:

1. Level 4 deliverable with EDD and pdf.
2. REPORT DL/QL and estimated results.

Sample ID	Date: 2014	Time	Box 1: Matrix	Number of Bottles			ICP 6010C/(Metals-Dissolved) For Iron & Manganese ONLY	ICP 6020A/7470A/(Metals-total - see attached list	metals pH	diss. pH						6020A TOTAL MTL/Hg	DISS Fe & Mn 6010C
				Box 4 - Sample Type			G	G									
				Box 3 - Filtered/Unfiltered			F	U									
				Required pH of Sample			<2	<2									
				Box 2 - Preservative			B	B									
				Box 5 - Sample Container Type			1-500ml P	1-500ml P									
13MW2	10/13	1545	GW	0						nothing rec'd for 13MW2 (DA) 10/15/14						~~1410111 - (DA) 10/15/14~~	~~1410112 - (DA) 10/15/14~~
13MW3		1000	GW	2			X	X	<2	<2						1410111 -02	1410112 -02
13MW4		1150	GW	2			X	X	<2	<2						-03	-03
13MWDUP		1200	GW	2			X	X	<2	<2						-04	-04
13MW5		1300	GW	6			X	X	<2	<2						-01 USE FOR QC	-01
13MW6		1405	GW	2			X	X	<2	<2						-05	-05
13MW7		1455	GW	2			X	X	<2	<2						-06	-06
13MW8		1100	GW	1			X		~~<2~~	<2							-07
									~~(DA)~~ 10/15/14								

Clients Special Instructions: Level 4 with edd and PDF.

Received by lab in Good Condition ✓ Yes ____ No Custody Seal Intact ✓ Yes ____ No Temperature upon arrival 2.7°C Received on Ice ✓ Yes ____ No

Describe problems, if any:

Sampler Name (Print): KEN CODDINGTON	Date: 10/13/14	#1 Relinquished by (Signature): [signature]	Date: 10/14/14	#2 Relinquished by (Signature):	Date:	Sample Storage Time Requested:
Sampler Signature: [signature]	Time: 0700	Company Name: DAA	Time: 1700	Company Name:	Time:	
Sampler Name (Print): Will Mason-Deese	Date: 10/13/14	#1 Received by (Signature): [signature]	Date: 10/15/14	#2 Received by (Signature):	Date:	30 DYS ORG/6 MTHS INORG
Sampler Signature: [signature]	Time: 0700	Company Name: CompuChem	Time: 0957	Company Name:	Time:	

JVR 9/24 1/2

MethodRef	Analyte	LOQ	LOD	Units	
6010C	Iron, Dissolved	200	69.4	ug/l	
6010C	Manganese, Dissolved	10	3.36	ug/l	
6020A	ANTIMONY	5	0.13	ug/l	new MDL
6020A	ARSENIC	5	0.1	ug/l	0.14
6020A	BARIUM	10	0.13	ug/l	
6020A	CADMIUM	1	0.14	ug/l	
6020A	CHROMIUM	5	0.13	ug/l	
6020A	LEAD	5	0.06	ug/l	
6020A	NICKEL	5	0.1	ug/l	
6020A	SELENIUM	5	0.37	ug/l	
6020A	SILVER	2	0.04	ug/l	
6020A	ZINC	5	0.29	ug/l	new MDL
7470A	MERCURY	0.5	0.0355	ug/l	0.0711

JUC 10.22.2013

9/29/2014

JUR

2/2

JUR 9/29/2

2/2

HOLDING TIME SUMMARY

EPA 6010C

Client: DRAPER

Project: RAAP 2014 OBG/HWMU13/B03204-12

SDG: 1410112

Sample Name	Date Collected	Date Received	Date Prepared	Date Analyzed	Days to Analysis	Max Days to Analysis*	Q
13MW5	10/13/14	10/15/14	10/16/14	10/17/14	4.1	180	
13MW3	10/13/14	10/15/14	10/16/14	10/17/14	4.2	180	
13MW4	10/13/14	10/15/14	10/16/14	10/17/14	4.1	180	
13MWDUP	10/13/14	10/15/14	10/16/14	10/17/14	4.1	180	
13MW6	10/13/14	10/15/14	10/16/14	10/17/14	4.0	180	
13MW7	10/13/14	10/15/14	10/16/14	10/17/14	4.0	180	
13MW8	10/13/14	10/15/14	10/16/14	10/17/14	4.2	180	

METHOD DETECTION AND REPORTING LIMITS

Laboratory: COMPUCHEM **SDG:** 1410112

Client: DRAPER **Project:** RAAP 2014 OBG/HWMU13/B03204-12

Matrix: Water **Instrument:** P5

Analyte	MDL	RL	Units	Method
Iron (dissolved)	58	200	ug/L	EPA 6010C
Manganese (dissolved)	0.093	10.0	ug/L	EPA 6010C

LCS / LCS DUPLICATE SUMMARY

EPA 6010C

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4101510-BS1 Matrix: Water Client ID: MLCSJV Batch: 4101510

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	Q	QC LIMITS REC.
Iron (dissolved)	5100	4840	94.9		80 - 120
Manganese (dissolved)	550.0	514	93.5		80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6010C

13MW5S

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4101510-MS1 % Solid: NA Matrix: Water Lab Source ID: 1410112-01 Source Sample: 13MW5

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Iron (dissolved)	5100	200 U	5210	102		75 - 125
Manganese (dissolved)	550.0	0.120 J	541	98.4		75 - 125

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6010C

13MW5SD

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4101510-MSD1 % Solid: NA Matrix: Water Lab Source ID: 1410112-01 Source Sample: 13MW5

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Iron (dissolved)	5100	5240	103	0.491		20	75 - 125
Manganese (dissolved)	550.0	539	98.0	0.406		20	75 - 125

SERIAL DILUTION

EPA 6010C

13MW5L

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4J17014-SRD5 Matrix: Water Lab Source ID: 1410112-01 Source Sample: 13MW5

Sequence: 4J17014 Dilution: 5 Report to MDL: YES

Analyte	Initial Sample Result (I)	Serial Dilution Result (S)	RL	% Difference	Q	Method	QC Limits % Difference
Iron (dissolved)	200.00 U	1000.00 U	200			EPA 6010C	10
Manganese (dissolved)	0.12 J	50.00 U	10.0			EPA 6010C	10

POST DIGEST SPIKE SAMPLE RECOVERY

EPA 6010C

13MW5A

Laboratory: COMPUCHEM

Client: DRAPER

Matrix: Water

SDG: 1410112

Project: RAAP 2014 OBG/HWMU13/B03204-12

Laboratory ID: 4101510-PS1

Lab Source ID: 1410112-01

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Iron (dissolved)	3500	U	4000	87.5	75 - 125
Manganese (dissolved)	173	0.120 J	200.0	86.5	75 - 125

DUPLICATES

EPA 6010C

13MW5D

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4101510-DUP1 % Solid: NA Matrix: Water Lab Source ID: 1410112-01 Source Sample: 13MW5

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/L)	DUPLICATE CONCENTRATION (ug/L)	RPD %	Q	METHOD
Iron (dissolved)	20	*200 U*	200 U			EPA 6010C
Manganese (dissolved)	20	*0.120 J*	0.112 J	7.56		EPA 6010C

PREPARATION BATCH SUMMARY

EPA 6010C

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Batch: 4101510 Matrix: Water Preparation: EPA 3010A

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (mL)	FINAL VOL/WT (mL)
13MW5	1410112-01	10/16/14 10:00	50.0	50.0
13MW3	1410112-02	10/16/14 10:00	50.0	50.0
13MW4	1410112-03	10/16/14 10:00	50.0	50.0
13MWDUP	1410112-04	10/16/14 10:00	50.0	50.0
13MW6	1410112-05	10/16/14 10:00	50.0	50.0
13MW7	1410112-06	10/16/14 10:00	50.0	50.0
13MW8	1410112-07	10/16/14 10:00	50.0	50.0
PBWJV	4101510-BLK1	10/16/14 10:00	50.0	50.0
MLCSJV	4101510-BS1	10/16/14 10:00	50.0	50.0
13MW5D	4101510-DUP1	10/16/14 10:00	50.0	50.0
13MW5S	4101510-MS1	10/16/14 10:00	50.0	50.0
13MW5SD	4101510-MSD1	10/16/14 10:00	50.0	50.0
13MW5A	4101510-PS1	10/16/14 10:00	50.0	50.0

ANALYSIS SEQUENCE SUMMARY

EPA 6010C

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J17014 Calibration: UNASSIGI Instrument: P5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
S0	4J17014-CAL1	4J17014_P-001	10/17/14 10:41:07
S RSTD-2	4J17014-CAL3	4J17014_P-003	10/17/14 10:46:55
LLICV	4J17014-CRL1	4J17014_P-006	10/17/14 10:55:16
ICV	4J17014-ICV1	4J17014_P-007	10/17/14 10:58:02
ICB	4J17014-ICB1	4J17014_P-008	10/17/14 11:00:48
ICSA	4J17014-IFA1	4J17014_P-009	10/17/14 11:07:15
ICSAB	4J17014-IFB1	4J17014_P-010	10/17/14 11:10:01
LLCCV	4J17014-CRL2	4J17014_P-011	10/17/14 11:12:48
CCV1	4J17014-CCV1	4J17014_P-012	10/17/14 11:15:36
CCB1	4J17014-CCB1	4J17014_P-013	10/17/14 11:18:23
LRS DOD	4J17014-LCV1	4J17014_P-014	10/17/14 11:38:25
CCV1	4J17014-CCV2	4J17014_P-023	10/17/14 12:05:13
CCB1	4J17014-CCB2	4J17014_P-024	10/17/14 12:08:00
LLCCV	4J17014-CRL3	4J17014_P-034	10/17/14 12:38:20
CCV1	4J17014-CCV3	4J17014_P-035	10/17/14 12:41:07
CCB1	4J17014-CCB3	4J17014_P-036	10/17/14 12:43:54
CCV1	4J17014-CCV4	4J17014_P-047	10/17/14 13:17:51
CCB1	4J17014-CCB4	4J17014_P-048	10/17/14 13:20:39
PBWJV	4101510-BLK1	4J17014_P-049	10/17/14 13:25:38
MLCSJV	4101510-BS1	4J17014_P-050	10/17/14 13:28:23
13MW5	1410112-01	4J17014_P-055	10/17/14 14:13:24
13MW5D	4101510-DUP1	4J17014_P-056	10/17/14 14:16:10
13MW5S	4101510-MS1	4J17014_P-057	10/17/14 14:18:56
LLCCV	4J17014-CRL4	4J17014_P-058	10/17/14 14:21:43
CCV1	4J17014-CCV5	4J17014_P-059	10/17/14 14:24:30
CCB1	4J17014-CCB5	4J17014_P-060	10/17/14 14:27:17
13MW5SD	4101510-MSD1	4J17014_P-061	10/17/14 14:32:30
13MW5L	4J17014-SRD5	4J17014_P-062	10/17/14 14:35:16
13MW5A	4101510-PS1	4J17014_P-063	10/17/14 14:38:01

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ANALYSIS SEQUENCE SUMMARY

EPA 6010C

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J17014 Calibration: UNASSIGN Instrument: P5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
13MW3	1410112-02	4J17014_P-064	10/17/14 14:40:47
13MW4	1410112-03	4J17014_P-065	10/17/14 14:43:33
13MWDUP	1410112-04	4J17014_P-066	10/17/14 14:52:59
13MW6	1410112-05	4J17014_P-067	10/17/14 14:55:44
13MW7	1410112-06	4J17014_P-068	10/17/14 14:58:30
13MW8	1410112-07	4J17014_P-069	10/17/14 15:01:16
LLCCV	4J17014-CRL5	4J17014_P-070	10/17/14 15:04:01
CCV1	4J17014-CCV6	4J17014_P-071	10/17/14 15:06:49
CCB1	4J17014-CCB6	4J17014_P-072	10/17/14 15:09:36

L. Target Element Results

(ANALYSIS DATA SHEETS)

ANALYSIS DATA SHEET

13MW5

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 1410112-01 % Solid: Matrix: Water Sampled: 10/13/14 Received: 10/15/14

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7439-89-6	Iron (dissolved)		58.0	200	1	U	EPA 6010C	4J17014	10/17/14 14:13
7439-96-5	Manganese (dissolved)	0.120	0.0930	10.0	1	J	EPA 6010C	4J17014	10/17/14 14:13

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ANALYSIS DATA SHEET

13MW3

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 1410112-02 % Solid: Matrix: Water Sampled: 10/13/14 Received: 10/15/14

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7439-89-6	Iron (dissolved)		58.0	200	1	U	EPA 6010C	4J17014	10/17/14 14:40
7439-96-5	Manganese (dissolved)	0.184	0.0930	10.0	1	J	EPA 6010C	4J17014	10/17/14 14:40

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ANALYSIS DATA SHEET

13MW4

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 1410112-03 % Solid: Matrix: Water Sampled: 10/13/14 Received: 10/15/14

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7439-89-6	Iron (dissolved)		58.0	200	1	U	EPA 6010C	4J17014	10/17/14 14:43
7439-96-5	Manganese (dissolved)	0.173	0.0930	10.0	1	J	EPA 6010C	4J17014	10/17/14 14:43

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ANALYSIS DATA SHEET

13MWDUP

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 1410112-04 % Solid: Matrix: Water Sampled: 10/13/14 Received: 10/15/14

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7439-89-6	Iron (dissolved)		58.0	200	1	U	EPA 6010C	4J17014	10/17/14 14:52
7439-96-5	Manganese (dissolved)	0.726	0.0930	10.0	1	J	EPA 6010C	4J17014	10/17/14 14:52

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ANALYSIS DATA SHEET

13MW6

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 1410112-05 % Solid: Matrix: Water Sampled: 10/13/14 Received: 10/15/14

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7439-89-6	Iron (dissolved)		58.0	200	1	U	EPA 6010C	4J17014	10/17/14 14:55
7439-96-5	Manganese (dissolved)	0.0987	0.0930	10.0	1	J	EPA 6010C	4J17014	10/17/14 14:55

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ANALYSIS DATA SHEET

13MW7

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 1410112-06 % Solid: Matrix: Water Sampled: 10/13/14 Received: 10/15/14

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7439-89-6	Iron (dissolved)		58.0	200	1	U	EPA 6010C	4J17014	10/17/14 14:58
7439-96-5	Manganese (dissolved)	0.170	0.0930	10.0	1	J	EPA 6010C	4J17014	10/17/14 14:58

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ANALYSIS DATA SHEET

13MW8

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 1410112-07 % Solid: Matrix: Water Sampled: 10/13/14 Received: 10/15/14

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7439-89-6	Iron (dissolved)		58.0	200	1	U	EPA 6010C	4J17014	10/17/14 15:01
7439-96-5	Manganese (dissolved)	6.93	0.0930	10.0	1	J	EPA 6010C	4J17014	10/17/14 15:01

Environmental Testing Laboratories CompuChem A Division Of Liberty Analytical Corp.

ACCREDITED IN ACCORDANCE WITH nelac

LOW LEVEL INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6010C

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J17014 Instrument ID: P5

Client ID	Lab Sample ID	Analyte	True	Found	%R	Units	Q	QC Limts
LLICV	4J17014-CRL1	Iron	200.0	214	107	ug/L		70 - 130
LLICV	4J17014-CRL1	Manganese	10.00	11.2	112	ug/L		70 - 130
LLCCV	4J17014-CRL2	Iron	200.0	202	101	ug/L		70 - 130
LLCCV	4J17014-CRL2	Manganese	10.00	10.7	107	ug/L		70 - 130
LLCCV	4J17014-CRL3	Iron	200.0	206	103	ug/L		70 - 130
LLCCV	4J17014-CRL3	Manganese	10.00	11.0	110	ug/L		70 - 130
LLCCV	4J17014-CRL4	Iron	200.0	214	107	ug/L		70 - 130
LLCCV	4J17014-CRL4	Manganese	10.00	11.4	114	ug/L		70 - 130
LLCCV	4J17014-CRL5	Iron	200.0	195	97	ug/L	J	70 - 130
LLCCV	4J17014-CRL5	Manganese	10.00	10.4	104	ug/L		70 - 130

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6010C

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J17014 Instrument ID: P5

Client ID	Lab Sample ID	Analyte	True	Found	%R	Units	Q	Control Limit
ICV	4J17014-ICV1	Iron	5100	5080	100	ug/L		+/-10
ICV	4J17014-ICV1	Manganese	550.0	527	96	ug/L		+/-10
CCV1	4J17014-CCV1	Iron	25000	24100	96	ug/L		+/-10
CCV1	4J17014-CCV1	Manganese	1000	958	96	ug/L		+/-10
CCV1	4J17014-CCV2	Iron	25000	24400	98	ug/L		+/-10
CCV1	4J17014-CCV2	Manganese	1000	970	97	ug/L		+/-10
CCV1	4J17014-CCV3	Iron	25000	24400	98	ug/L		+/-10
CCV1	4J17014-CCV3	Manganese	1000	976	98	ug/L		+/-10
CCV1	4J17014-CCV4	Iron	25000	23500	94	ug/L		+/-10
CCV1	4J17014-CCV4	Manganese	1000	934	93	ug/L		+/-10
CCV1	4J17014-CCV5	Iron	25000	24700	99	ug/L		+/-10
CCV1	4J17014-CCV5	Manganese	1000	935	94	ug/L		+/-10
CCV1	4J17014-CCV6	Iron	25000	23200	93	ug/L		+/-10
CCV1	4J17014-CCV6	Manganese	1000	937	94	ug/L		+/-10

Environmental Testing Laboratories CompuChem A Division Of Liberty Analytical Corp.

ACCREDITED IN ACCORDANCE WITH nelac

LOW RANGE STANDARD

EPA 6010C

Client: DRAPER **SDG:** 1410112 **Project:** RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4J17014-LCV1 **Sequence:** 4J17014 **Standard ID:** 4I29006

ANALYTE	TRUE (ug/L)	FOUND (ug/L)	% Rec	Q	QC LIMIT
Iron (dissolved)	200.0	200	100		80-120
Manganese (dissolved)	10.00	10.6	106		80-120

* Values outside of QC limits

ICP INTERFERENCE CHECK SAMPLE

EPA 6010C

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J17014 Instrument ID: P5

Client ID	Lab Sample ID	Analyte	True	Found	%R	Units
ICSA	4J17014-IFA1	Iron	100000	89981.30	90	ug/L
ICSA	4J17014-IFA1	Manganese		0.45	20	ug/L
ICSAB	4J17014-IFB1	Iron	100000	93458.30	94	ug/L
ICSAB	4J17014-IFB1	Manganese	500.0	495.06	99	ug/L

* The absence of an entry in the "True" column denotes the lack of a true value for that analyte. The entry in the "%R" column represents a Control Limit, established as +/- 2 times analyte Limit Reporting Limit.

ICP-AES LINEAR RANGES

Client: DRAPER

Project: RAAP 2014 OBG/HWMU13/B03204-12

SDG: 1410112 Instrument: P5

Analyte	Concentration ug/L	LR Date
Iron	400000	09/28/2014
Manganese	10000	09/28/2014

CompuChem
A Division Of
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ICP-AES INTERELEMENT CORRECTION FACTORS

Client: DRAPER

Project: RAAP 2014 OBG/HWMU13/B03204-12

SDG No.: 1410112 Instrument: P5 Date: 9/28/14

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Ag
Iron	238.20				-0.00109	
Manganese	257.61			-0.00005	0.00003	

Comments:

ICP-AES INTERELEMENT CORRECTION FACTORS

Client: DRAPER

Project: RAAP 2014 OBG/HWMU13/B03204-12

SDG No.: 1410112 Instrument: P5 Date: 9/28/14

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		As	B	Ba	Be	Cd
Iron	238.20					
Manganese	257.61					

Comments:

ICP-AES INTERELEMENT CORRECTION FACTORS

Client: DRAPER

Project: RAAP 2014 OBG/HWMU13/B03204-12

SDG No.: 1410112 Instrument: P5 Date: 9/28/14

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Co	Cr	Cu	K	Mn
Iron	238.20	0.08239				
Manganese	257.61					

Comments:

ICP-AES INTERELEMENT CORRECTION FACTORS

Client: DRAPER

Project: RAAP 2014 OBG/HWMU13/B03204-12

SDG No.: 1410112 Instrument: P5 Date: 9/28/14

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Mo	Na	Ni	Pb	Sb
Iron	238.20			0.01627		
Manganese	257.61					

Comments:

ICP-AES INTERELEMENT CORRECTION FACTORS

Client: DRAPER

Project: RAAP 2014 OBG/HWMU13/B03204-12

SDG No.: 1410112 Instrument: P5 Date: 9/28/14

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Se	Sn	Ti	Tl	V
Iron	238.20					0.014433
Manganese	257.61					-0.000184

Comments:

ICP-AES INTERELEMENT CORRECTION FACTORS

Client: DRAPER

Project: RAAP 2014 OBG/HWMU13/B03204-12

SDG No.: 1410112 Instrument: P5 Date: 9/28/14

Analyte	Wave-length (nm)	Interelement Correction Factors for: Zn				
Iron	238.20					
Manganese	257.61					

Comments:

BLANKS

EPA 6010C

Client: DRAPER SDG: 1410112 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J17014 Instrument ID: P5

Client ID	Lab Sample ID	Analyte	Found	MDL	RL	Units	Q	Method
ICB	4J17014-ICB1	Iron	2.20	58.0	200	ug/L	*U*	EPA 6010C
ICB	4J17014-ICB1	Manganese	-0.0414	0.0930	10.0	ug/L	*U*	EPA 6010C
CCB1	4J17014-CCB1	Iron	2.38	58.0	200	ug/L	*U*	EPA 6010C
CCB1	4J17014-CCB1	Manganese	0.0181	0.0930	10.0	ug/L	*U*	EPA 6010C
CCB1	4J17014-CCB2	Iron	0.997	58.0	200	ug/L	*U*	EPA 6010C
CCB1	4J17014-CCB2	Manganese	0.00871	0.0930	10.0	ug/L	*U*	EPA 6010C
CCB1	4J17014-CCB3	Iron	1.24	58.0	200	ug/L	*U*	EPA 6010C
CCB1	4J17014-CCB3	Manganese	-0.0382	0.0930	10.0	ug/L	*U*	EPA 6010C
CCB1	4J17014-CCB4	Iron	1.53	58.0	200	ug/L	*U*	EPA 6010C
CCB1	4J17014-CCB4	Manganese	0.0584	0.0930	10.0	ug/L	*U*	EPA 6010C
PBWJV	4101510-BLK1	Iron		58.0	200	ug/L	*U*	EPA 6010C
PBWJV	4101510-BLK1	Manganese		0.0930	10.0	ug/L	*U*	EPA 6010C
CCB1	4J17014-CCB5	Iron	1.60	58.0	200	ug/L	*U*	EPA 6010C
CCB1	4J17014-CCB5	Manganese	-0.00685	0.0930	10.0	ug/L	*U*	EPA 6010C
CCB1	4J17014-CCB6	Iron	1.88	58.0	200	ug/L	*U*	EPA 6010C
CCB1	4J17014-CCB6	Manganese	0.0660	0.0930	10.0	ug/L	*U*	EPA 6010C

METALS/MERCURY PREPARATION LOG

Metals Method: 3010A / 6010C
Mercury Method: 7470A
Prepared By: SAB

Environmental Testing Laboratories — CompuChem — A Division Of Liberty Analytical Corp.

Preparation Date: 10-16-14
Preparation Time: 10:00
Batch Number: 4101510
Blue Water

COMPUCHEM SAMPLE ID	CLIENT SAMPLE ID	SAMPLE TYPE	ICP Initial (mL)	ICP Final (mL)	HG Initial (mL)	HG Final (mL)	*Description Before	*Description After ICP	pH
4101510-BLK1	PBWJV	MB	50	50			CS / CL	CS / CL	N/A
4101510-BS1	MLCSJV	LCS	50	50			CS / CL	CS / CL	N/A
4101510-DUP1	13MW5D	DUP	50	50			CS / CL	CS / CL	<2
4101510-MS1	13MW5S	MS	50	50			CS / CL	CS / CL	<2
4101510-MSD1	13MW5SD	MSD	50	50			CS / CL	CS / CL	<2
1410094-01	SLURRY TO QUARRY	SAMPLE	50	50			BR / CY	Y / CY	>2
1410112-01	13MW5	SAMPLE	50	50			CS / CL	CS / CL	<2
1410112-02	13MW3	SAMPLE	50	50			CS / CL	CS / CL	<2
1410112-03	13MW4	SAMPLE	50	50			CS / CL	CS / CL	<2
1410112-04	13MWDUP	SAMPLE	50	50			CS / CL	CS / CL	<2
1410112-05	13MW6	SAMPLE	50	50			CS / CL	CS / CL	<2
1410112-06	13MW7	SAMPLE	50	50			CS / CL	CS / CL	<2
1410112-07	13MW8	SAMPLE	50	50			CS / CL	CS / CL	<2

Mercury Standards and QC S0 S0.2 S0.5S1 S5 S10 ICV ICB CRI CCV CCB

NOTE: All standards and QC for mercury were prepared at the same day as the associated samples. Refer to the attached. Standard/QC Preparation Log, with date matching the above preparation date, for preparation method and instruction.

Record of Tempature/Time	
Hot Block Temp In:	95 C
Hot Block Temp Out:	95 C
Hot Block Identifier	HOTBLOCK#1
Time Hg in water bath:	
Time Hg out water bath:	
Water Bath Temp In:	C
Water Bath Temp Out:	C
Water Bath Identifier	

MS Reference
ICAP: 0.5 mL ICCV-6
Ref #: 4G01019
ICAP: 0.5 mL ICCV-4
Ref#: 4D01014
HG: 1.0mL 100ppb Hg
Ref#

LCS Reference
ICAP: 0.5mL ICCV-6
REF: 4G01019
ICAP: 0.5mL ICCV-4
REF: 4D01014
HG: 0.4 mL of HGMS-1PPM
Ref#

* R=red, BL=blue, Y=yellow, G=green, O=orange, V=violet, W=white, CS=colorless, BR=brown, BK=black
GY= grey, F=fine, M=medium, C=coarse, CL=clear, CY=cloudy, OP=opaque

Shading has been applied to unused portions of this worksheet as a substitute for 'Z-out'.

"The presence of the Chemist's/analyst's employee ID number, or signature, on this log attests that strict compliance with the method's SOP has occurred. Any SOP deviations requires documentation by the chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation."

Sample Verification Signature: S. Bolten
This signature corroborates that the sample idenification numbers appearing on the digestion cups are the same as those appearing on the field sample containers.

Reviewed By: Lucretia Janeto
Date: 10-16-14

JCF 111711

CompuChem

A Division Of

Liberty Analytical Corp.

10/19/2014

Abridged data package.
Full deliverable available.

JANET FRAZIER

DRAPER

2206 SOUTH MAIN STREET

BLACKSBURG, VA 24060

Subject:

Report of Data - Project: RAAP 2014 OBG/HWMU13/B03204-12

WorkOrder: 1410111

Attn.: JANET FRAZIER

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Compuchem

a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER

OF PAGES _____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem, a division of Liberty Analytical

Client: DRAPER **Work:** 1410111

Project: RAAP 2014 OBG/HWMU13/B03204-12 **Sdg:** 1410111

Lab ID	Client ID	Matrix	Date Sampled	Date Received
1410111-01	13MW5	Water	10/13/2014 13:00	10/15/2014 09:57
1410111-02	13MW3	Water	10/13/2014 10:00	10/15/2014 09:57
1410111-03	13MW4	Water	10/13/2014 11:50	10/15/2014 09:57
1410111-04	13MWDUP	Water	10/13/2014 12:00	10/15/2014 09:57
1410111-05	13MW6	Water	10/13/2014 14:05	10/15/2014 09:57
1410111-06	13MW7	Water	10/13/2014 14:55	10/15/2014 09:57

ANALYSES DATA PACKAGE COVER PAGE

Client: DRAPER

Project: RAAP 2014 OBG/HWMU13/B03204-12

Laboratory: COMPUCHEM

SDG: 1410111

Client Sample Id:	Analysis:	Lab Sample Id:
13MW5	EPA 7470A	1410111-01
13MW5	EPA 6020A	1410111-01
13MW3	EPA 7470A	1410111-02
13MW3	EPA 6020A	1410111-02
13MW4	EPA 7470A	1410111-03
13MW4	EPA 6020A	1410111-03
13MWDUP	EPA 7470A	1410111-04
13MWDUP	EPA 6020A	1410111-04
13MW6	EPA 7470A	1410111-05
13MW6	EPA 6020A	1410111-05
13MW7	EPA 7470A	1410111-06
13MW7	EPA 6020A	1410111-06

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions addressed in the narrative. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Susan W Bass

Name: Susan Bass

Date: 10/17/2014

Title: Chemist III

CompuChem
A Division Of
Liberty Analytical Corp.

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 1410111
Client: DRAPER
Project: RAAP 2014 OBG/HWMU13/B03204-12

The indicated Sample Delivery Group (SDG) consisting of six (6) water samples was received into the laboratory information management system (LIMS) on October 15, 2014 intact and in good condition with the Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The cooler temperature indicator bottle was found with the samples and the samples temperature was 2.7 degrees Celsius. Temperature was recorded by IR temperature gun.

The samples were prepared and analyzed in accordance with SW846 6020A/7470A methodology for the requested metals and mercury.

EQUATIONS FOR LIQUID SAMPLE CALCULATIONS:

Equation for obtaining metals sample results in µg/L as presented on Analysis Data Sheet data sheets from ICP/MS instrument acquired results in µg/L (ppb).

$$\frac{C \times F}{I}$$

Where

C = concentration (µg/L)

F = final volume in liters after sample preparation

I = initial volume in liters

Example: Arsenic for sample 13MW5

$$\frac{0.2907\ \mu g/L\ (C) \times 0.10\ L\ (F)}{0.10\ L\ (I)} = 0.2907\ \mu g/L \text{ reported as } 0.291\ J\ \mu g/L$$

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (LLICV, LLCCV, ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within SW-846 methodology.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW & PBW) were found to be within acceptable ranges and the field samples were prepared and analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:

The ICP/MS sample matrix spike, CCN = 4101508-MS1 (13MW5S) was found to be inside control limits.

The mercury sample matrix spike, CCN = 4101509-MS1 (13MW5S) was found to be inside control limits.

The ICP/MS sample matrix duplicate spike, CCN = 4101508-MS1 (13MW5S) was found to be inside control limits.

The mercury sample matrix duplicate spike, CCN = 4101509-MSD1 (13MW5SD) was found to be inside control limits.

The ICP/MS sample duplicate, CCN = 4101508-DUP1 (13MW5D) was found to be inside control limits.

The mercury sample duplicate, CCN = 4101509-DUP1 (13MW5D) was found to be inside control limits.

A five-fold serial dilution of sample, CCN = SDI1410111-01 (13MW5L) was performed in accordance with SW-846 requirements for ICP/MS analysis.

The adjusted sample concentration was inside control limits.

The ICP/MS sample post digestion spike, CCN =4101508-PS1 (13MW5A) was performed and passed criteria.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on CD has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Susan W Bass

Susan W. Bass
Senior Chemist
October 17, 2014

CHAIN OF CUSTODY RECORD

JVR 9/23/2014

Laboratory: CompuChem Environmental, 501 Madison Avenue, Cary, NC 27513/Cathy Dover, Manager/1-800-833-5097

Client: Draper Aden Associates **Attn:** 0 **Address:** 0 0 **Phone:** 0 **Fax:** 0 **Fax:** 0	**Consultant:** Draper Aden Associates **Attn:** Janet C. Frazier **Address:** 2206 South Main Street Blacksburg, Virginia 24060 **Phone:** (540) 552-0444 **Fax:** (540) 552-0291	**Sample Site:** RAAP, Radford, Virginia **Location:** Open Burning Ground (OBG)/HWMU13 **Event:** October 2014 AnnualGW Monitoring Event **DAA JN:** BC3204-12 **Lab JN:**	**Project Specific (PS) or Batch (B) QC:** **Sample Collection for Project Complete?** YES UPS: **Carrier:** 12-237-301-01-9342-5034 **Tracking Number:**		

Box 1: Matrix SW Surface Water GW Groundwater L Leachate S Soil T Trip Blank E Equipment Blank P Product O Other	**Box 2: Preservative** A HCl B HNO_3 C H_2SO_4 D $Na_2S_2O_3$ E NaOH F ZnAc G Other (Specify) H None	**Box 3: Filtered/Unfiltered** F Filtered U Unfiltered **Box 5: Sample Container Type** P Plastic AG Amber Glass V VOA CG Clear Glass	**Box 4: Sample Type** G Grab C Composite	**Invoice** Copy to Consultant: YES Bill: CLIENT OTHER Preserved and shipped on ice: YES

GENERAL NOTES:

1. Level 4 deliverable with EDD and pdf.
2. REPORT DL/QL and estimated results.

Sample ID	Date: 2014	Time	Box 1: Matrix	Number of Bottles	ICP 6010C/(Metals-Dissolved) For Iron & Manganese ONLY	ICP 6020A/7470A/(Metals-total - see attached list	metals pH	diss. pH	6020A TOTAL MTL/Hg	DISS Fe & Mn 6010C
Box 4 - Sample Type					G	G				
Box 3 - Filtered/Unfiltered					F	U				
Required pH of Sample					<2	<2				
Box 2 - Preservative					B	B				
Box 5 - Sample Container Type					1-500ml P	1-500ml P				
13MW2	10/13	1545	GW	0				nothing rec'd for 13MW2 (OK) 10/15/14	~~1410111 - (OK)~~ 10/15/14	~~1410112 (OK)~~ 10/15/14
13MW3		1000	GW	2	X	X	<2	<2	1410111 -02	1410112 -02
13MW4		1150	GW	2	X	X	<2	<2	-03	-03
13MWDUP		1200	GW	2	X	X	<2	<2	-04	-04
13MW5		1300	GW	6	X	X	<2	<2	-01 USE FOR QC	-01
13MW6		1405	GW	2	X	X	<2	<2	-05	-05
13MW7		1455	GW	2	X	X	<2	<2	-06	-06
13MW8		1100	GW	1	X		~~<2~~	<2		-07
							~~<2~~ 10/15/14			

Clients Special Instructions: Level 4 with edd and PDF.

Received by lab in Good Condition ✓ Yes ____ No Custody Seal Intact ✓ Yes ____ No Temperature upon arrival 2.7°C Received on Ice ✓ Yes ____ No

Describe problems, if any:

Sampler Name (Print): KEN CODDINGTON	Date: 10/13/14	#1 Relinquished by (Signature): [signature]	Date: 10/14/14	#2 Relinquished by (Signature):	Date:	Sample Storage Time Requested:
Sampler Signature: [signature]	Time: 0700	Company Name: DAA	Time: 1700	Company Name:	Time:	
Sampler Name (Print): Will Mason-Deese	Date: 10/13/14	#1 Received by (Signature): [signature]	Date: 10/15/14	#2 Received by (Signature):	Date:	30 DYS ORG/6 MTHS INORG
Sampler Signature: [signature]	Time: 0700	Company Name: CompuChem	Time: 0957	Company Name:	Time:	

JVR 9/23/2014 1/2

MethodRef	Analyte	LOQ	LOD	Units
6010C	Iron, Dissolved	200	69.4 ug/l	
6010C	Manganese, Dissolved	10	3.36 ug/l	
6020A	ANTIMONY	5	0.13 ug/l	new MDL
6020A	ARSENIC	5	0.1 ug/l	0.14
6020A	BARIUM	10	0.13 ug/l	
6020A	CADMIUM	1	0.14 ug/l	
6020A	CHROMIUM	5	0.13 ug/l	
6020A	LEAD	5	0.06 ug/l	
6020A	NICKEL	5	0.1 ug/l	
6020A	SELENIUM	5	0.37 ug/l	
6020A	SILVER	2	0.04 ug/l	
6020A	ZINC	5	0.29 ug/l	new MDL
7470A	MERCURY	0.5	0.0355 ug/l	0.0711

JUC 10.22.2013

9/29/2014

JUR

2/2

JUR 9/29/2

2/2

HOLDING TIME SUMMARY

EPA 6020A

Client: DRAPER

Project: RAAP 2014 OBG/HWMU13/B03204-12

SDG: 1410111

Sample Name	Date Collected	Date Received	Date Prepared	Date Analyzed	Days to Analysis	Max Days to Analysis*	Q
13MW5	10/13/14	10/15/14	10/16/14	10/16/14	3.2	180	
13MW3	10/13/14	10/15/14	10/16/14	10/16/14	3.3	180	
13MW4	10/13/14	10/15/14	10/16/14	10/16/14	3.3	180	
13MWDUP	10/13/14	10/15/14	10/16/14	10/16/14	3.3	180	
13MW6	10/13/14	10/15/14	10/16/14	10/16/14	3.2	180	
13MW7	10/13/14	10/15/14	10/16/14	10/16/14	3.2	180	

HOLDING TIME SUMMARY

EPA 7470A

Client: DRAPER

Project: RAAP 2014 OBG/HWMU13/B03204-12

SDG: 1410111

Sample Name	Date Collected	Date Received	Date Prepared	Date Analyzed	Days to Analysis	Max Days to Analysis*	Q
13MW5	10/13/14	10/15/14	10/16/14	10/17/14	3.8	28	
13MW3	10/13/14	10/15/14	10/16/14	10/17/14	4.0	28	
13MW4	10/13/14	10/15/14	10/16/14	10/17/14	3.9	28	
13MWDUP	10/13/14	10/15/14	10/16/14	10/17/14	3.9	28	
13MW6	10/13/14	10/15/14	10/16/14	10/17/14	3.8	28	
13MW7	10/13/14	10/15/14	10/16/14	10/17/14	3.8	28	

METHOD DETECTION AND REPORTING LIMITS

Laboratory: COMPUCHEM **SDG:** 1410111

Client: DRAPER **Project:** RAAP 2014 OBG/HWMU13/B03204-12

Matrix: Water **Instrument:** PEMS

Analyte	MDL	RL	Units	Method
Antimony	0.13	5.00	ug/L	EPA 6020A
Arsenic	0.14	5.00	ug/L	EPA 6020A
Barium	0.13	10.0	ug/L	EPA 6020A
Cadmium	0.14	1.00	ug/L	EPA 6020A
Chromium	0.13	5.00	ug/L	EPA 6020A
Lead	0.06	5.00	ug/L	EPA 6020A
Nickel	0.1	5.00	ug/L	EPA 6020A
Selenium	0.37	5.00	ug/L	EPA 6020A
Silver	0.04	2.00	ug/L	EPA 6020A
Zinc	0.29	5.00	ug/L	EPA 6020A

METHOD DETECTION AND REPORTING LIMITS

Laboratory: COMPUCHEM **SDG:** 1410111

Client: DRAPER **Project:** RAAP 2014 OBG/HWMU13/B03204-12

Matrix: Water **Instrument:** V4

Analyte	MDL	RL	Units	Method
Mercury	0.0711	0.500	ug/L	EPA 7470A

LCS / LCS DUPLICATE SUMMARY

EPA 6020A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4101508-BS1 Matrix: Water Client ID: MLCSJT Batch: 4101508

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	Q	QC LIMITS REC.
Antimony	220.0	228	104		80 - 120
Arsenic	220.0	229	104		80 - 120
Barium	110.0	116	106		80 - 120
Cadmium	110.0	114	103		80 - 120
Chromium	110.0	113	103		80 - 120
Lead	220.0	217	98.7		80 - 120
Nickel	110.0	117	106		80 - 120
Selenium	220.0	228	104		80 - 120
Silver	110.0	112	102		80 - 120
Zinc	220.0	229	104		80 - 120

LCS / LCS DUPLICATE SUMMARY

EPA 7470A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4101509-BS1 Matrix: Water Client ID: MLCSJU Batch: 4101509

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	Q	QC LIMITS REC.
Mercury	4.000	3.77	94		80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6020A

13MW5S

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4101508-MS1 % Solid: NA Matrix: Water Lab Source ID: 1410111-01 Source Sample: 13MW5

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Antimony	220.0	5.00 U	218	99.1		75 - 125
Arsenic	220.0	0.291 J	235	107		75 - 125
Barium	110.0	107	215	98.5		75 - 125
Cadmium	110.0	1.00 U	106	96.8		75 - 125
Chromium	110.0	1.95 J	111	99.0		75 - 125
Lead	220.0	0.0767 J	216	98.1		75 - 125
Nickel	110.0	1.78 J	111	99.0		75 - 125
Selenium	220.0	1.12 J	240	109		75 - 125
Silver	110.0	2.00 U	105	95.1		75 - 125
Zinc	220.0	1.30 J	217	97.9		75 - 125

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6020A

13MW5SD

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4101508-MSD1 % Solid: NA Matrix: Water Lab Source ID: 1410111-01 Source Sample: 13MW5

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Antimony	220.0	226	103	3.71		20	75 - 125
Arsenic	220.0	242	110	3.01		20	75 - 125
Barium	110.0	222	104	5.80		20	75 - 125
Cadmium	110.0	111	101	4.45		20	75 - 125
Chromium	110.0	113	101	2.01		20	75 - 125
Lead	220.0	223	101	3.26		20	75 - 125
Nickel	110.0	113	101	2.16		20	75 - 125
Selenium	220.0	249	113	3.60		20	75 - 125
Silver	110.0	110	100	5.20		20	75 - 125
Zinc	220.0	225	102	3.63		20	75 - 125

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 7470A

13MW5S

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4101509-MS1 % Solid: NA Matrix: Water Lab Source ID: 1410111-01 Source Sample: 13MW5

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Mercury	1.000	0.500 U	0.923	92		75 - 125

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 7470A

13MW5SD

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4101509-MSD1 % Solid: NA Matrix: Water Lab Source ID: 1410111-01 Source Sample: 13MW5

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Mercury	1.000	0.936	94	1		20	75 - 125

SERIAL DILUTION

EPA 6020A

13MW5L

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4J16016-SRD1 Matrix: Water Lab Source ID: 1410111-01 Source Sample: 13MW5

Sequence: 4J16016 Dilution: 5 Report to MDL: YES

Analyte	Initial Sample Result (I)	Serial Dilution Result (S)	RL	% Difference	Q	Method	QC Limits % Difference
Antimony	5.00 U	25.00 U	5.00			EPA 6020A	10
Arsenic	0.29 J	25.00 U	5.00			EPA 6020A	10
Barium	106.96	107.39	10.0	0.400		EPA 6020A	10
Cadmium	1.00 U	5.00 U	1.00			EPA 6020A	10
Chromium	1.95 J	25.00 U	5.00			EPA 6020A	10
Lead	0.08 J	25.00 U	5.00			EPA 6020A	10
Nickel	1.78 J	25.00 U	5.00			EPA 6020A	10
Selenium	1.12 J	25.00 U	5.00			EPA 6020A	10
Silver	2.00 U	10.00 U	2.00			EPA 6020A	10
Zinc	1.30 J	25.00 U	5.00			EPA 6020A	10

POST DIGEST SPIKE SAMPLE RECOVERY

EPA 6020A

13MW5A

Laboratory: COMPUCHEM

Client: DRAPER

Matrix: Water

SDG: 1410111

Project: RAAP 2014 OBG/HWMU13/B03204-12

Laboratory ID: 4101508-PS1

Lab Source ID: 1410111-01

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Antimony	19.5	U	20.00	97.0	75 - 125
Arsenic	11.0	0.291 J	10.00	107	75 - 125
Barium	208	107	100.0	101	75 - 125
Cadmium	9.72	U	10.00	96.9	75 - 125
Chromium	21.9	1.95 J	20.00	99.8	75 - 125
Lead	10.2	0.0767 J	10.00	101	75 - 125
Nickel	10.6	1.78 J	10.00	88.3	75 - 125
Selenium	53.7	1.12 J	50.00	105	75 - 125
Silver	9.49	U	10.00	94.8	75 - 125
Zinc	20.6	1.30 J	20.00	96.4	75 - 125

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DUPLICATES

EPA 6020A

13MW5D

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4101508-DUP1 % Solid: NA Matrix: Water Lab Source ID: 1410111-01 Source Sample: 13MW5

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/L)	DUPLICATE CONCENTRATION (ug/L)	RPD %	Q	METHOD
Antimony	20	*5.00 U*	5.00 U			EPA 6020A
Arsenic	20	*0.291 J*	0.242 J	18.2		EPA 6020A
Barium	20	*107*	115	7.54		EPA 6020A
Cadmium	20	*1.00 U*	1.00 U			EPA 6020A
Chromium	20	*1.95 J*	1.95 J	0.139		EPA 6020A
Lead	20	*0.0767 J*	0.0746 J	2.87		EPA 6020A
Nickel	20	*1.78 J*	1.59 J	11.1		EPA 6020A
Selenium	20	*1.12 J*	0.948 J	16.3		EPA 6020A
Silver	20	*2.00 U*	2.00 U			EPA 6020A
Zinc	20	*1.30 J*	1.32 J	1.01		EPA 6020A

DUPLICATES

EPA 7470A

13MW5D

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 4101509-DUP1 % Solid: NA Matrix: Water Lab Source ID: 1410111-01 Source Sample: 13MW5

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/L)	DUPLICATE CONCENTRATION (ug/L)	RPD %	Q	METHOD
Mercury	20	*0.500 U*	0.500 U			EPA 7470A

PREPARATION BATCH SUMMARY

EPA 6020A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Batch: 4101508 Matrix: Water Preparation: EPA 3005A

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (mL)	FINAL VOL/WT (mL)
13MW5	1410111-01	10/16/14 09:30	100	100
13MW3	1410111-02	10/16/14 09:30	100	100
13MW4	1410111-03	10/16/14 09:30	100	100
13MWDUP	1410111-04	10/16/14 09:30	100	100
13MW6	1410111-05	10/16/14 09:30	100	100
13MW7	1410111-06	10/16/14 09:30	100	100
PBWJT	4101508-BLK1	10/16/14 09:30	100	100
MLCSJT	4101508-BS1	10/16/14 09:30	100	100
13MW5D	4101508-DUP1	10/16/14 09:30	100	100
13MW5S	4101508-MS1	10/16/14 09:30	100	100
13MW5SD	4101508-MSD1	10/16/14 09:30	100	100
13MW5A	4101508-PS1	10/16/14 09:30	100	100

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PREPARATION BATCH SUMMARY

EPA 7470A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Batch: 4101509 Matrix: Water Preparation: EPA 7470A

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (mL)	FINAL VOL/WT (mL)
13MW5	1410111-01	10/16/14 09:30	100	100
13MW3	1410111-02	10/16/14 09:30	100	100
13MW4	1410111-03	10/16/14 09:30	100	100
13MWDUP	1410111-04	10/16/14 09:30	100	100
13MW6	1410111-05	10/16/14 09:30	100	100
13MW7	1410111-06	10/16/14 09:30	100	100
PBWJU	4101509-BLK1	10/16/14 09:30	100	100
MLCSJU	4101509-BS1	10/16/14 09:30	100	100
13MW5D	4101509-DUP1	10/16/14 09:30	100	100
13MW5S	4101509-MS1	10/16/14 09:30	100	100
13MW5SD	4101509-MSD1	10/16/14 09:30	100	100

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ANALYSIS SEQUENCE SUMMARY

EPA 6020A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J16016 Calibration: 4101608 Instrument: PEMS

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
TUNE	4J16016-TUN1	4J16016_P-001	10/16/14 13:03:26
S0	4J16016-CAL1	4J16016_P-002	10/16/14 17:29:56
S 6020-MS1	4J16016-CAL2	4J16016_P-003	10/16/14 17:32:04
S 6020-MS2	4J16016-CAL3	4J16016_P-004	10/16/14 17:34:10
S 6020-MS3	4J16016-CAL4	4J16016_P-005	10/16/14 17:36:17
S 6020-MS4	4J16016-CAL5	4J16016_P-006	10/16/14 17:38:23
S 6020-MS5	4J16016-CAL6	4J16016_P-007	10/16/14 17:40:30
LLICV	4J16016-CRL1	4J16016_P-008	10/16/14 17:44:18
ICV	4J16016-ICV1	4J16016_P-009	10/16/14 17:46:27
ICB	4J16016-ICB1	4J16016_P-010	10/16/14 17:48:34
ICSA	4J16016-IFA1	4J16016_P-011	10/16/14 17:50:42
ICSAB	4J16016-IFB1	4J16016_P-012	10/16/14 17:52:48
LLCCV	4J16016-CRL2	4J16016_P-013	10/16/14 17:54:56
CCV	4J16016-CCV1	4J16016_P-014	10/16/14 17:57:04
CCB	4J16016-CCB1	4J16016_P-015	10/16/14 17:59:11
PBWJT	4101508-BLK1	4J16016_P-016	10/16/14 18:05:55
MLCSJT	4101508-BS1	4J16016_P-017	10/16/14 18:08:02
13MW5	1410111-01	4J16016_P-018	10/16/14 18:10:09
13MW5D	4101508-DUP1	4J16016_P-019	10/16/14 18:12:16
13MW5S	4101508-MS1	4J16016_P-020	10/16/14 18:14:23
13MW5SD	4101508-MSD1	4J16016_P-021	10/16/14 18:16:30
13MW5L	4J16016-SRD1	4J16016_P-022	10/16/14 18:18:36
13MW5A	4101508-PS1	4J16016_P-023	10/16/14 18:20:43
13MW3	1410111-02	4J16016_P-024	10/16/14 18:22:50
13MW4	1410111-03	4J16016_P-025	10/16/14 18:24:57
CCV	4J16016-CCV2	4J16016_P-026	10/16/14 18:27:06
CCB	4J16016-CCB2	4J16016_P-027	10/16/14 18:29:12
13MWDUP	1410111-04	4J16016_P-028	10/16/14 18:31:21
13MW6	1410111-05	4J16016_P-029	10/16/14 18:33:28

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ANALYSIS SEQUENCE SUMMARY

EPA 6020A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J16016 Calibration: 4101608 Instrument: PEMS

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
13MW7	1410111-06	4J16016_P-030	10/16/14 18:35:35
LLCCV	4J16016-CRL3	4J16016_P-037	10/16/14 18:50:24
CCV	4J16016-CCV3	4J16016_P-038	10/16/14 18:52:32
CCB	4J16016-CCB3	4J16016_P-039	10/16/14 18:54:39

ANALYSIS SEQUENCE SUMMARY

EPA 7470A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J17004 Calibration: 4101702 Instrument: V4

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
S0	4J17004-CAL1	4J17004_P-001	10/17/14 08:46:22
0.2	4J17004-CAL2	4J17004_P-002	10/17/14 08:49:11
S0.5	4J17004-CAL3	4J17004_P-003	10/17/14 08:51:50
S1.0	4J17004-CAL4	4J17004_P-004	10/17/14 08:54:22
S5.0	4J17004-CAL5	4J17004_P-005	10/17/14 08:56:53
S10.0	4J17004-CAL6	4J17004_P-006	10/17/14 08:59:25
ICV	4J17004-ICV1	4J17004_P-007	10/17/14 09:01:54
ICB	4J17004-ICB1	4J17004_P-008	10/17/14 09:04:23
CCV	4J17004-CCV1	4J17004_P-010	10/17/14 09:09:43
CCB	4J17004-CCB1	4J17004_P-011	10/17/14 09:12:16
PBWJU	4101509-BLK1	4J17004_P-012	10/17/14 09:14:50
MLCSJU	4101509-BS1	4J17004_P-013	10/17/14 09:18:03
13MW5	1410111-01	4J17004_P-014	10/17/14 09:20:40
13MW5D	4101509-DUP1	4J17004_P-015	10/17/14 09:23:20
13MW5S	4101509-MS1	4J17004_P-016	10/17/14 09:25:48
13MW5SD	4101509-MSD1	4J17004_P-017	10/17/14 09:28:17
13MW3	1410111-02	4J17004_P-018	10/17/14 09:30:49
13MW4	1410111-03	4J17004_P-019	10/17/14 09:33:18
13MWDUP	1410111-04	4J17004_P-020	10/17/14 09:35:46
13MW6	1410111-05	4J17004_P-021	10/17/14 09:38:17
CCV	4J17004-CCV2	4J17004_P-022	10/17/14 09:41:08
CCB	4J17004-CCB2	4J17004_P-023	10/17/14 09:43:40
13MW7	1410111-06	4J17004_P-024	10/17/14 09:46:22
CCV	4J17004-CCV3	4J17004_P-034	10/17/14 10:14:56
CCB	4J17004-CCB3	4J17004_P-035	10/17/14 10:18:10

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L. Target Element Results

(ANALYSIS DATA SHEETS)

ANALYSIS DATA SHEET

13MW5

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 1410111-01 % Solid: Matrix: Water Sampled: 10/13/14 Received: 10/15/14

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7440-36-0	Antimony		0.130	5.00	1	U	EPA 6020A	4J16016	10/16/14 18:10
7440-38-2	Arsenic	0.291	0.140	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:10
7440-39-3	Barium	107	0.130	10.0	1		EPA 6020A	4J16016	10/16/14 18:10
7440-43-9	Cadmium		0.140	1.00	1	U	EPA 6020A	4J16016	10/16/14 18:10
7440-47-3	Chromium	1.95	0.130	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:10
7439-92-1	Lead	0.0767	0.0600	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:10
7439-97-6	Mercury		0.0711	0.500	1	U	EPA 7470A	4J17004	10/17/14 9:20
7440-02-0	Nickel	1.78	0.100	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:10
7782-49-2	Selenium	1.12	0.370	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:10
7440-22-4	Silver		0.0400	2.00	1	U	EPA 6020A	4J16016	10/16/14 18:10
7440-66-6	Zinc	1.30	0.290	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:10

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ANALYSIS DATA SHEET

13MW3

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 1410111-02 % Solid: Matrix: Water Sampled: 10/13/14 Received: 10/15/14

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7440-36-0	Antimony		0.130	5.00	1	U	EPA 6020A	4J16016	10/16/14 18:22
7440-38-2	Arsenic	0.209	0.140	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:22
7440-39-3	Barium	102	0.130	10.0	1		EPA 6020A	4J16016	10/16/14 18:22
7440-43-9	Cadmium		0.140	1.00	1	U	EPA 6020A	4J16016	10/16/14 18:22
7440-47-3	Chromium	1.94	0.130	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:22
7439-92-1	Lead		0.0600	5.00	1	U	EPA 6020A	4J16016	10/16/14 18:22
7439-97-6	Mercury		0.0711	0.500	1	U	EPA 7470A	4J17004	10/17/14 9:30
7440-02-0	Nickel	0.786	0.100	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:22
7782-49-2	Selenium	0.605	0.370	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:22
7440-22-4	Silver		0.0400	2.00	1	U	EPA 6020A	4J16016	10/16/14 18:22
7440-66-6	Zinc	2.33	0.290	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:22

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ANALYSIS DATA SHEET

13MW4

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 1410111-03 % Solid: Matrix: Water Sampled: 10/13/14 Received: 10/15/14

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7440-36-0	Antimony	0.186	0.130	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:24
7440-38-2	Arsenic	0.284	0.140	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:24
7440-39-3	Barium	57.6	0.130	10.0	1		EPA 6020A	4J16016	10/16/14 18:24
7440-43-9	Cadmium		0.140	1.00	1	U	EPA 6020A	4J16016	10/16/14 18:24
7440-47-3	Chromium	2.59	0.130	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:24
7439-92-1	Lead	0.131	0.0600	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:24
7439-97-6	Mercury		0.0711	0.500	1	U	EPA 7470A	4J17004	10/17/14 9:33
7440-02-0	Nickel	2.77	0.100	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:24
7782-49-2	Selenium	0.400	0.370	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:24
7440-22-4	Silver		0.0400	2.00	1	U	EPA 6020A	4J16016	10/16/14 18:24
7440-66-6	Zinc	2.21	0.290	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:24

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13MWDUP

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 1410111-04 % Solid: Matrix: Water Sampled: 10/13/14 Received: 10/15/14

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7440-36-0	Antimony	0.199	0.130	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:31
7440-38-2	Arsenic	0.321	0.140	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:31
7440-39-3	Barium	58.4	0.130	10.0	1		EPA 6020A	4J16016	10/16/14 18:31
7440-43-9	Cadmium		0.140	1.00	1	U	EPA 6020A	4J16016	10/16/14 18:31
7440-47-3	Chromium	2.48	0.130	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:31
7439-92-1	Lead	0.159	0.0600	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:31
7439-97-6	Mercury		0.0711	0.500	1	U	EPA 7470A	4J17004	10/17/14 9:35
7440-02-0	Nickel	2.56	0.100	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:31
7782-49-2	Selenium	0.627	0.370	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:31
7440-22-4	Silver		0.0400	2.00	1	U	EPA 6020A	4J16016	10/16/14 18:31
7440-66-6	Zinc	2.51	0.290	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:31

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ANALYSIS DATA SHEET

13MW6

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 1410111-05 % Solid: Matrix: Water Sampled: 10/13/14 Received: 10/15/14

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7440-36-0	Antimony		0.130	5.00	1	U	EPA 6020A	4J16016	10/16/14 18:33
7440-38-2	Arsenic	0.270	0.140	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:33
7440-39-3	Barium	82.4	0.130	10.0	1		EPA 6020A	4J16016	10/16/14 18:33
7440-43-9	Cadmium		0.140	1.00	1	U	EPA 6020A	4J16016	10/16/14 18:33
7440-47-3	Chromium	1.18	0.130	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:33
7439-92-1	Lead		0.0600	5.00	1	U	EPA 6020A	4J16016	10/16/14 18:33
7439-97-6	Mercury		0.0711	0.500	1	U	EPA 7470A	4J17004	10/17/14 9:38
7440-02-0	Nickel	1.06	0.100	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:33
7782-49-2	Selenium	1.94	0.370	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:33
7440-22-4	Silver		0.0400	2.00	1	U	EPA 6020A	4J16016	10/16/14 18:33
7440-66-6	Zinc	1.21	0.290	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:33

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ANALYSIS DATA SHEET

13MW7

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Lab ID: 1410111-06 % Solid: Matrix: Water Sampled: 10/13/14 Received: 10/15/14

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7440-36-0	Antimony		0.130	5.00	1	U	EPA 6020A	4J16016	10/16/14 18:35
7440-38-2	Arsenic	0.247	0.140	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:35
7440-39-3	Barium	138	0.130	10.0	1		EPA 6020A	4J16016	10/16/14 18:35
7440-43-9	Cadmium		0.140	1.00	1	U	EPA 6020A	4J16016	10/16/14 18:35
7440-47-3	Chromium	0.788	0.130	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:35
7439-92-1	Lead		0.0600	5.00	1	U	EPA 6020A	4J16016	10/16/14 18:35
7439-97-6	Mercury		0.0711	0.500	1	U	EPA 7470A	4J17004	10/17/14 9:46
7440-02-0	Nickel	12.7	0.100	5.00	1		EPA 6020A	4J16016	10/16/14 18:35
7782-49-2	Selenium	1.48	0.370	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:35
7440-22-4	Silver		0.0400	2.00	1	U	EPA 6020A	4J16016	10/16/14 18:35
7440-66-6	Zinc	4.56	0.290	5.00	1	J	EPA 6020A	4J16016	10/16/14 18:35

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LOW LEVEL INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J16016 Instrument ID: PEMS

Client ID	Lab Sample ID	Analyte	True	Found	%R	Units	Q	QC Limts
LLICV	4J16016-CRL1	Antimony	2.000	2.13	107	ug/L		70 - 130
LLICV	4J16016-CRL1	Arsenic	1.000	1.06	106	ug/L		70 - 130
LLICV	4J16016-CRL1	Barium	10.00	9.81	98	ug/L	J	70 - 130
LLICV	4J16016-CRL1	Cadmium	1.000	1.01	101	ug/L		70 - 130
LLICV	4J16016-CRL1	Chromium	2.000	1.92	96	ug/L	J	70 - 130
LLICV	4J16016-CRL1	Lead	1.000	0.986	99	ug/L	J	70 - 130
LLICV	4J16016-CRL1	Nickel	1.000	0.952	95	ug/L	J	70 - 130
LLICV	4J16016-CRL1	Selenium	5.000	4.83	97	ug/L	J	70 - 130
LLICV	4J16016-CRL1	Silver	1.000	1.26	126	ug/L		70 - 130
LLICV	4J16016-CRL1	Zinc	2.000	2.14	107	ug/L		70 - 130
LLCCV	4J16016-CRL2	Antimony	2.000	1.92	96	ug/L	J	70 - 130
LLCCV	4J16016-CRL2	Arsenic	1.000	1.02	102	ug/L		70 - 130
LLCCV	4J16016-CRL2	Barium	10.00	9.78	98	ug/L	J	70 - 130
LLCCV	4J16016-CRL2	Cadmium	1.000	0.985	99	ug/L	J	70 - 130
LLCCV	4J16016-CRL2	Chromium	2.000	1.91	95	ug/L	J	70 - 130
LLCCV	4J16016-CRL2	Lead	1.000	0.977	98	ug/L	J	70 - 130
LLCCV	4J16016-CRL2	Nickel	1.000	1.03	103	ug/L		70 - 130
LLCCV	4J16016-CRL2	Selenium	5.000	4.87	98	ug/L	J	70 - 130
LLCCV	4J16016-CRL2	Silver	1.000	0.979	98	ug/L	J	70 - 130
LLCCV	4J16016-CRL2	Zinc	2.000	2.02	101	ug/L		70 - 130
LLCCV	4J16016-CRL3	Antimony	2.000	1.85	92	ug/L	J	70 - 130
LLCCV	4J16016-CRL3	Arsenic	1.000	1.03	103	ug/L		70 - 130
LLCCV	4J16016-CRL3	Barium	10.00	9.28	93	ug/L	J	70 - 130
LLCCV	4J16016-CRL3	Cadmium	1.000	0.955	96	ug/L	J	70 - 130
LLCCV	4J16016-CRL3	Chromium	2.000	1.74	87	ug/L	J	70 - 130
LLCCV	4J16016-CRL3	Lead	1.000	0.956	96	ug/L	J	70 - 130
LLCCV	4J16016-CRL3	Nickel	1.000	0.973	97	ug/L	J	70 - 130
LLCCV	4J16016-CRL3	Selenium	5.000	4.47	89	ug/L	J	70 - 130
LLCCV	4J16016-CRL3	Silver	1.000	0.980	98	ug/L	J	70 - 130
LLCCV	4J16016-CRL3	Zinc	2.000	2.04	102	ug/L		70 - 130

INITIAL CALIBRATION DATA

EPA 6020A

Client: DRAPER SDG: 1410111

Project: RAAP 2014 OBG/HWMU13/B03204-12

Calibration: 4101608 Instrument: PEMS

Calibration Date: 10/16/2014 13:03:56

Compound	QC Sample	Lab ID	Area	Conc (ug/L)
Antimony	CAL1	S0	133.334	0
Antimony	CAL2	S 6020-MS1	9101.363	2
Antimony	CAL3	S 6020-MS2	19016.69	4
Antimony	CAL4	S 6020-MS3	597951.8	125
Antimony	CAL5	S 6020-MS4	1187566	250
Antimony	CAL6	S 6020-MS5	2337733	500
Arsenic	CAL1	S0	142.455	0
Arsenic	CAL2	S 6020-MS1	1417.181	1
Arsenic	CAL3	S 6020-MS2	2789.819	2
Arsenic	CAL4	S 6020-MS3	163304	125
Arsenic	CAL5	S 6020-MS4	331304.4	250
Arsenic	CAL6	S 6020-MS5	625601.2	500
Barium	CAL1	S0	24.444	0
Barium	CAL2	S 6020-MS1	18459.25	10
Barium	CAL3	S 6020-MS2	38160.45	20
Barium	CAL4	S 6020-MS3	237852.3	125
Barium	CAL5	S 6020-MS4	496299.5	250
Barium	CAL6	S 6020-MS5	943174.5	500
Cadmium	CAL1	S0	9.269	0
Cadmium	CAL2	S 6020-MS1	1215.317	1
Cadmium	CAL3	S 6020-MS2	2611.014	2
Cadmium	CAL4	S 6020-MS3	165888.8	125
Cadmium	CAL5	S 6020-MS4	340794.6	250
Cadmium	CAL6	S 6020-MS5	652989.6	500
Chromium	CAL1	S0	5883.954	0
Chromium	CAL2	S 6020-MS1	20832.81	2
Chromium	CAL3	S 6020-MS2	36909.7	4

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Chromium	CAL4	S 6020-MS3	934092.9	125
Chromium	CAL5	S 6020-MS4	1889387	250
Chromium	CAL6	S 6020-MS5	3754902	500
Lead	CAL1	S0	62.5	0
Lead	CAL2	S 6020-MS1	10576.97	1
Lead	CAL3	S 6020-MS2	21214.8	2
Lead	CAL4	S 6020-MS3	1314329	125
Lead	CAL5	S 6020-MS4	2704976	250
Lead	CAL6	S 6020-MS5	5282723	500
Nickel	CAL1	S0	28.704	0
Nickel	CAL2	S 6020-MS1	1925.186	1
Nickel	CAL3	S 6020-MS2	3799.797	2
Nickel	CAL4	S 6020-MS3	243529.1	125
Nickel	CAL5	S 6020-MS4	482877.4	250
Nickel	CAL6	S 6020-MS5	896298.8	500
Selenium	CAL1	S0	132.964	0
Selenium	CAL2	S 6020-MS1	652.614	5
Selenium	CAL3	S 6020-MS2	1194.331	10
Selenium	CAL4	S 6020-MS3	13606.29	125
Selenium	CAL5	S 6020-MS4	27471.58	250
Selenium	CAL6	S 6020-MS5	53245.1	500
Silver	CAL1	S0	30.556	0
Silver	CAL2	S 6020-MS1	5996.242	1
Silver	CAL3	S 6020-MS2	12717.34	2
Silver	CAL4	S 6020-MS3	763433	125
Silver	CAL5	S 6020-MS4	1531503	250
Silver	CAL6	S 6020-MS5	2958852	500
Zinc	CAL1	S0	101.852	0
Zinc	CAL2	S 6020-MS1	2287.299	2
Zinc	CAL3	S 6020-MS2	4272.209	4
Zinc	CAL4	S 6020-MS3	131028.9	125
Zinc	CAL5	S 6020-MS4	270806.9	250
Zinc	CAL6	S 6020-MS5	511986.5	500

INITIAL CALIBRATION DATA (Continued)

EPA 6020A

Client: DRAPER SDG: 1410111

Project: RAAP 2014 OBG/HWMU13/B03204-12

Calibration: 4101608 Instrument: PEMS

Calibration Date: 10/16/2014 13:03:56

Compound	Slope	Intercept	Linear r	Linear Limit	Q
Antimony	0.002395	0	0.9999	0.998	
Arsenic	0.001216	0	0.9999	0.998	
Barium	0.0009727	0	0.9997	0.998	
Cadmium	0.0008067	0	0.9999	0.998	
Chromium	0.007202	0	0.9998	0.998	
Lead	0.008711	0	0.9999	0.998	
Nickel	0.001752	0	0.9998	0.998	
Selenium	0.0001026	0	0.9999	0.998	
Silver	0.003652	0	0.9999	0.998	
Zinc	0.0009945	0	0.9999	0.998	

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INITIAL CALIBRATION DATA

EPA 7470A

Client: DRAPER SDG: 1410111

Project: RAAP 2014 OBG/HWMU13/B03204-12

Calibration: 4101702 Instrument: V4

Calibration Date: 10/17/2014 8:46:53

Compound	QC Sample	Lab ID	Area	Conc (ug/L)
Mercury	CAL1	S0	473	0
Mercury	CAL2	0.2	2040	0.2
Mercury	CAL3	S0.5	4251	0.5
Mercury	CAL4	S1.0	8272	1
Mercury	CAL5	S5.0	39397	5
Mercury	CAL6	S10.0	76521	10

INITIAL CALIBRATION DATA (Continued)

EPA 7470A

Client: DRAPER SDG: 1410111

Project: RAAP 2014 OBG/HWMU13/B03204-12

Calibration: 4101702 Instrument: V4

Calibration Date: 10/17/2014 8:46:53

Compound	Slope	Intercept	Linear r	Linear Limit	Q
Mercury	0.0001311	-0.07879	0.9999	0.995	

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J16016 Instrument ID: PEMS

Client ID	Lab Sample ID	Analyte	True	Found	%R	Units	Q	Control Limit
ICV	4J16016-ICV1	Antimony	220.0	218	99	ug/L		+/-10
ICV	4J16016-ICV1	Arsenic	220.0	233	106	ug/L		+/-10
ICV	4J16016-ICV1	Barium	110.0	115	104	ug/L		+/-10
ICV	4J16016-ICV1	Cadmium	110.0	115	104	ug/L		+/-10
ICV	4J16016-ICV1	Chromium	110.0	116	105	ug/L		+/-10
ICV	4J16016-ICV1	Lead	220.0	219	99	ug/L		+/-10
ICV	4J16016-ICV1	Nickel	110.0	121	110	ug/L		+/-10
ICV	4J16016-ICV1	Selenium	220.0	231	105	ug/L		+/-10
ICV	4J16016-ICV1	Silver	110.0	119	108	ug/L		+/-10
ICV	4J16016-ICV1	Zinc	220.0	235	107	ug/L		+/-10
CCV	4J16016-CCV1	Antimony	300.0	316	105	ug/L		+/-10
CCV	4J16016-CCV1	Arsenic	300.0	311	104	ug/L		+/-10
CCV	4J16016-CCV1	Barium	300.0	325	108	ug/L		+/-10
CCV	4J16016-CCV1	Cadmium	300.0	291	97	ug/L		+/-10
CCV	4J16016-CCV1	Chromium	300.0	308	103	ug/L		+/-10
CCV	4J16016-CCV1	Lead	300.0	289	96	ug/L		+/-10
CCV	4J16016-CCV1	Nickel	300.0	320	107	ug/L		+/-10
CCV	4J16016-CCV1	Selenium	300.0	312	104	ug/L		+/-10
CCV	4J16016-CCV1	Silver	300.0	293	98	ug/L		+/-10
CCV	4J16016-CCV1	Zinc	300.0	308	103	ug/L		+/-10
CCV	4J16016-CCV2	Antimony	300.0	299	100	ug/L		+/-10
CCV	4J16016-CCV2	Arsenic	300.0	309	103	ug/L		+/-10
CCV	4J16016-CCV2	Barium	300.0	300	100	ug/L		+/-10
CCV	4J16016-CCV2	Cadmium	300.0	296	99	ug/L		+/-10
CCV	4J16016-CCV2	Chromium	300.0	298	99	ug/L		+/-10
CCV	4J16016-CCV2	Lead	300.0	294	98	ug/L		+/-10
CCV	4J16016-CCV2	Nickel	300.0	303	101	ug/L		+/-10
CCV	4J16016-CCV2	Selenium	300.0	310	103	ug/L		+/-10
CCV	4J16016-CCV2	Silver	300.0	287	96	ug/L		+/-10
CCV	4J16016-CCV2	Zinc	300.0	310	103	ug/L		+/-10
CCV	4J16016-CCV3	Antimony	300.0	295	98	ug/L		+/-10
CCV	4J16016-CCV3	Arsenic	300.0	294	98	ug/L		+/-10
CCV	4J16016-CCV3	Barium	300.0	293	98	ug/L		+/-10
CCV	4J16016-CCV3	Cadmium	300.0	309	103	ug/L		+/-10
CCV	4J16016-CCV3	Chromium	300.0	299	100	ug/L		+/-10
CCV	4J16016-CCV3	Lead	300.0	299	100	ug/L		+/-10
CCV	4J16016-CCV3	Nickel	300.0	286	95	ug/L		+/-10
CCV	4J16016-CCV3	Selenium	300.0	296	99	ug/L		+/-10
CCV	4J16016-CCV3	Silver	300.0	295	98	ug/L		+/-10
CCV	4J16016-CCV3	Zinc	300.0	297	99	ug/L		+/-10

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INITIAL AND CONTINUING CALIBRATION CHECK

EPA 7470A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J17004 Instrument ID: V4

Client ID	Lab Sample ID	Analyte	True	Found	%R	Units	Q	Control Limit
ICV	4J17004-ICV1	Mercury	4.000	3.91	98	ug/L		+/-20
CCV	4J17004-CCV1	Mercury	5.000	5.18	104	ug/L		+/-20
CCV	4J17004-CCV2	Mercury	5.000	5.37	107	ug/L		+/-20
CCV	4J17004-CCV3	Mercury	5.000	5.44	109	ug/L		+/-20

ICP INTERFERENCE CHECK SAMPLE

EPA 6020A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J16016 Instrument ID: PEMS

Client ID	Lab Sample ID	Analyte	True	Found	%R	Units
ICSA	4J16016-IFA1	Antimony		0.04	10	ug/L
ICSA	4J16016-IFA1	Arsenic		0.00	10	ug/L
ICSA	4J16016-IFA1	Barium		0.03	20	ug/L
ICSA	4J16016-IFA1	Cadmium		0.01	2	ug/L
ICSA	4J16016-IFA1	Chromium		0.03	10	ug/L
ICSA	4J16016-IFA1	Lead		0.01	10	ug/L
ICSA	4J16016-IFA1	Nickel		0.08	10	ug/L
ICSA	4J16016-IFA1	Selenium		-0.11	10	ug/L
ICSA	4J16016-IFA1	Silver		0.01	4	ug/L
ICSA	4J16016-IFA1	Zinc		0.18	10	ug/L
ICSAB	4J16016-IFB1	Antimony		0.03	10	ug/L
ICSAB	4J16016-IFB1	Arsenic	25.00	25.93	104	ug/L
ICSAB	4J16016-IFB1	Barium		0.01	20	ug/L
ICSAB	4J16016-IFB1	Cadmium	25.00	25.65	103	ug/L
ICSAB	4J16016-IFB1	Chromium	50.00	51.41	103	ug/L
ICSAB	4J16016-IFB1	Lead		0.01	10	ug/L
ICSAB	4J16016-IFB1	Nickel	50.00	52.87	106	ug/L
ICSAB	4J16016-IFB1	Selenium	25.00	25.38	102	ug/L
ICSAB	4J16016-IFB1	Silver	12.50	12.98	104	ug/L
ICSAB	4J16016-IFB1	Zinc	25.00	24.83	99	ug/L

* The absence of an entry in the "True" column denotes the lack of a true value for that analyte. The entry in the "%R" column represents a Control Limit, established as +/- 2 times analyte Limit Reporting Limit.

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ICP-MS Tune

EPA 6020A

Client: DRAPER SDG: 1410111

Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J16016 Date: 10/16/14 ICP-MS Instrument ID: PEMS

Element - Mass	Avg. Measured Mass (amu)	Average Peak Width (amu)	%Height	%RSD
Be - 9	9.075	0.674	10	1.577
Mg - 24	23.975	0.700	10	1.255
Mg - 25	25.025	0.685	10	1.105
Mg - 26	26.075	0.696	10	1.231
Co - 59	58.925	0.702	10	2.972
In - 113	112.925	0.688	10	2.465
In - 115	114.875	0.700	10	2.617
Pb - 206	205.975	0.691	10	1.164
Pb - 207	206.975	0.688	10	1.564
Pb - 208	207.925	0.702	10	1.391

Comments:

ICPMS Internal Standards Relative Intensity Summary

EPA 6020A

Client: DRAPER

Work Order: 1410111

Sequence: 4J16016

Project: RAAP 2014 OBG/HWMU13/B03204-12

Instrument: PEMS

		Internal Standards %RI For:				
Sample No.	**Time**	**Lithium6**	**Scandium45**	**Indium115**	**Terbium159**	**Bismuth209**
S0	10/16/14 17:29	100	100	100	100	100
S 6020-MS1	10/16/14 17:32	102	101	102	99	98
S 6020-MS2	10/16/14 17:34	103	101	103	100	98
S 6020-MS3	10/16/14 17:36	102	101	101	99	98
S 6020-MS4	10/16/14 17:38	102	103	102	100	99
S 6020-MS5	10/16/14 17:40	101	98	99	100	95
LLICV	10/16/14 17:44	101	97	98	97	96
ICV	10/16/14 17:46	105	99	100	103	101
ICB	10/16/14 17:48	103	100	98	96	92
ICSA	10/16/14 17:50	104	102	99	100	96
ICSAB	10/16/14 17:52	104	100	101	103	98
LLCCV	10/16/14 17:54	101	100	100	98	97
CCV	10/16/14 17:57	103	96	103	94	97
CCB	10/16/14 17:59	106	103	101	98	99
PBWJT	10/16/14 18:05	99	94	95	95	93
MLCSJT	10/16/14 18:08	96	92	93	91	93
13MW5	10/16/14 18:10	90	86	88	89	86
13MW5D	10/16/14 18:12	92	79	87	85	83
13MW5S	10/16/14 18:14	92	78	83	86	88
13MW5SD	10/16/14 18:16	92	79	83	85	87
13MW5L	10/16/14 18:18	109	86	92	91	93
13MW5A	10/16/14 18:20	97	80	85	87	87
13MW3	10/16/14 18:22	103	87	89	92	89
13MW4	10/16/14 18:24	108	90	90	91	90
CCV	10/16/14 18:27	115	94	100	102	103
CCB	10/16/14 18:29	120	99	103	107	107
13MWDUP	10/16/14 18:31	104	85	88	90	88
13MW6	10/16/14 18:33	107	88	92	94	90
13MW7	10/16/14 18:35	110	93	94	95	91

ICPMS Internal Standards Relative Intensity Summary

EPA 6020A

Client: DRAPER

Work Order: 1410111

Sequence: 4J16016

Project: RAAP 2014 OBG/HWMU13/B03204-12

Instrument: PEMS

		Internal Standards %RI For:				
Sample No.	**Time**	**Lithium6**	**Scandium45**	**Indium115**	**Terbium159**	**Bismuth209**
LLCCV	10/16/14 18:50	119	103	104	106	104
CCV	10/16/14 18:52	112	102	104	107	102
CCB	10/16/14 18:54	117	104	108	112	105

BLANKS

EPA 6020A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J16016 Instrument ID: PEMS

Client ID	Lab Sample ID	Analyte	Found	MDL	RL	Units	Q	Method
ICB	4J16016-ICB1	Antimony	0.101	0.130	5.00	ug/L	U	EPA 6020A
ICB	4J16016-ICB1	Arsenic	0.0628	0.140	5.00	ug/L	U	EPA 6020A
ICB	4J16016-ICB1	Barium	-0.0000700	0.130	10.0	ug/L	U	EPA 6020A
ICB	4J16016-ICB1	Cadmium	0.00582	0.140	1.00	ug/L	U	EPA 6020A
ICB	4J16016-ICB1	Chromium	-0.00953	0.130	5.00	ug/L	U	EPA 6020A
ICB	4J16016-ICB1	Lead	0.00670	0.0600	5.00	ug/L	U	EPA 6020A
ICB	4J16016-ICB1	Nickel	0.00314	0.100	5.00	ug/L	U	EPA 6020A
ICB	4J16016-ICB1	Selenium	0.140	0.370	5.00	ug/L	U	EPA 6020A
ICB	4J16016-ICB1	Silver	0.00534	0.0400	2.00	ug/L	U	EPA 6020A
ICB	4J16016-ICB1	Zinc	0.0243	0.290	5.00	ug/L	U	EPA 6020A
CCB	4J16016-CCB1	Antimony	0.121	0.130	5.00	ug/L	U	EPA 6020A
CCB	4J16016-CCB1	Arsenic	0.0301	0.140	5.00	ug/L	U	EPA 6020A
CCB	4J16016-CCB1	Barium	0.0145	0.130	10.0	ug/L	U	EPA 6020A
CCB	4J16016-CCB1	Cadmium	0.0000400	0.140	1.00	ug/L	U	EPA 6020A
CCB	4J16016-CCB1	Chromium	-0.0325	0.130	5.00	ug/L	U	EPA 6020A
CCB	4J16016-CCB1	Lead	0.0173	0.0600	5.00	ug/L	U	EPA 6020A
CCB	4J16016-CCB1	Nickel	0.000700	0.100	5.00	ug/L	U	EPA 6020A
CCB	4J16016-CCB1	Selenium	0.0204	0.370	5.00	ug/L	U	EPA 6020A
CCB	4J16016-CCB1	Silver	0.0166	0.0400	2.00	ug/L	U	EPA 6020A
CCB	4J16016-CCB1	Zinc	0.0557	0.290	5.00	ug/L	U	EPA 6020A
PBWJT	4101508-BLK1	Antimony		0.130	5.00	ug/L	U	EPA 6020A
PBWJT	4101508-BLK1	Arsenic		0.140	5.00	ug/L	U	EPA 6020A
PBWJT	4101508-BLK1	Barium		0.130	10.0	ug/L	U	EPA 6020A
PBWJT	4101508-BLK1	Cadmium		0.140	1.00	ug/L	U	EPA 6020A
PBWJT	4101508-BLK1	Chromium		0.130	5.00	ug/L	U	EPA 6020A
PBWJT	4101508-BLK1	Lead		0.0600	5.00	ug/L	U	EPA 6020A
PBWJT	4101508-BLK1	Nickel		0.100	5.00	ug/L	U	EPA 6020A
PBWJT	4101508-BLK1	Selenium		0.370	5.00	ug/L	U	EPA 6020A
PBWJT	4101508-BLK1	Silver		0.0400	2.00	ug/L	U	EPA 6020A
PBWJT	4101508-BLK1	Zinc	0.771	0.290	5.00	ug/L	J	EPA 6020A
CCB	4J16016-CCB2	Antimony	0.110	0.130	5.00	ug/L	U	EPA 6020A
CCB	4J16016-CCB2	Arsenic	0.118	0.140	5.00	ug/L	U	EPA 6020A
CCB	4J16016-CCB2	Barium	0.0161	0.130	10.0	ug/L	U	EPA 6020A
CCB	4J16016-CCB2	Cadmium	-0.00481	0.140	1.00	ug/L	U	EPA 6020A
CCB	4J16016-CCB2	Chromium	-0.165	0.130	5.00	ug/L	J	EPA 6020A
CCB	4J16016-CCB2	Lead	0.00663	0.0600	5.00	ug/L	U	EPA 6020A

BLANKS

EPA 6020A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J16016 Instrument ID: PEMS

Client ID	Lab Sample ID	Analyte	Found	MDL	RL	Units	Q	Method
CCB	4J16016-CCB2	Nickel	0.00338	0.100	5.00	ug/L	*U*	EPA 6020A
CCB	4J16016-CCB2	Selenium	-0.0101	0.370	5.00	ug/L	*U*	EPA 6020A
CCB	4J16016-CCB2	Silver	0.0115	0.0400	2.00	ug/L	*U*	EPA 6020A
CCB	4J16016-CCB2	Zinc	0.0780	0.290	5.00	ug/L	*U*	EPA 6020A
CCB	4J16016-CCB3	Antimony	0.0954	0.130	5.00	ug/L	*U*	EPA 6020A
CCB	4J16016-CCB3	Arsenic	0.0723	0.140	5.00	ug/L	*U*	EPA 6020A
CCB	4J16016-CCB3	Barium	0.0159	0.130	10.0	ug/L	*U*	EPA 6020A
CCB	4J16016-CCB3	Cadmium	0.00107	0.140	1.00	ug/L	*U*	EPA 6020A
CCB	4J16016-CCB3	Chromium	-0.165	0.130	5.00	ug/L	*J*	EPA 6020A
CCB	4J16016-CCB3	Lead	0.00907	0.0600	5.00	ug/L	*U*	EPA 6020A
CCB	4J16016-CCB3	Nickel	0.000330	0.100	5.00	ug/L	*U*	EPA 6020A
CCB	4J16016-CCB3	Selenium	-0.192	0.370	5.00	ug/L	*U*	EPA 6020A
CCB	4J16016-CCB3	Silver	0.0138	0.0400	2.00	ug/L	*U*	EPA 6020A
CCB	4J16016-CCB3	Zinc	0.0769	0.290	5.00	ug/L	*U*	EPA 6020A

BLANKS

EPA 7470A

Client: DRAPER SDG: 1410111 Project: RAAP 2014 OBG/HWMU13/B03204-12

Sequence: 4J17004 Instrument ID: V4

Client ID	Lab Sample ID	Analyte	Found	MDL	RL	Units	Q	Method
ICB	4J17004-ICB1	Mercury	-0.0390	0.0711	0.500	ug/L	*U*	EPA 7470A
CCB	4J17004-CCB1	Mercury	-0.0770	0.0711	0.500	ug/L	*J*	EPA 7470A
PBWJU	4101509-BLK1	Mercury	-0.0730	0.0711	0.500	ug/L	*J*	EPA 7470A
CCB	4J17004-CCB2	Mercury	-0.0830	0.0711	0.500	ug/L	*J*	EPA 7470A
CCB	4J17004-CCB3	Mercury	-0.0830	0.0711	0.500	ug/L	*J*	EPA 7470A

METALS/MERCURY PREPARATION LOG

Metals Method: 3005A / 6020A
Mercury Method: 7470A
Prepared By: SAB

CompuChem — A Division Of Liberty Analytical Corp.

Preparation Date: 10-16-14
Preparation Time: 0930
Batch Number: 4101508/09

Purple Water

COMPUCHEM SAMPLE ID	CLIENT SAMPLE ID	SAMPLE TYPE	ICP Initial (mL)	ICP Final (mL)	HG Initial (mL)	HG Final (mL)	*Description Before	*Description After ICP	pH
4101508/09-BLK1	PBWJT/JU	MB	~~50~~ 100	100	100	100	CS / CL	CS / CL	N/A
4101508/09-BS1	MLCSJT/JU	LCS	~~80~~ 100	100	100	100	CS / CL	CS / CL	N/A
4101508/09-DUP1	13MW5D	DUP	100	100	100	100	CS / CL	CS / CL	<2
4101508/09-MS1	13MW5S	MS	100	100	100	100	CS / CL	CS / CL	<2
4101508/09-MSD1	13MW5SD	MSD	100	100	100	100	CS / CL	CS / CL	<2
1410111-01	13MW5	SAMPLE	100	100	100	100	CS / CL	CS / CL	<2
1410111-02	13MW3	SAMPLE	100	100	100	100	CS / CL	CS / CL	<2
1410111-03	13MW4	SAMPLE	100	100	100	100	CS / CL	CS / CL	<2
1410111-04	13MWDUP	SAMPLE	100	100	100	100	CS / CL	CS / CL	<2
1410111-05	13MW6	SAMPLE	100	100	100	100	CS / CL	CS CL	<2
1410111-06	13MW7	SAMPLE	100	100	100	100	CS / CL	CS / CL	<2
1410113-01	10-6-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410113-02	10-7-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410113-03	10-8-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410113-04	10-9-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410113-05	10-10-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410114-01	10-6-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410114-02	10-7-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410114-03	10-8-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410114-04	10-9-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410114-05	10-10-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410094-01	SLURRY TO QUARRY	SAMPLE			100	100	BR / CY		>2

SAB 10-16-14

Mercury Standards and QC S0 S0.2 S0.5S1 S5 S10 ICV ICB CRI CCV CCB

NOTE: All standards and QC for mercury were prepared at the same day as the associated samples. Refer to the attached. Standard QC Preparation Log, with date matching the above preparation date, for preparation method and instruction.

Record of Tempature/Time		
Hot Block Temp In:	92	C
Hot Block Temp Out:	93	C
Hot Block Identifier	MS BLOCK #1	
Time Hg in water bath:	1020	
Time Hg out water bath:	1220	
Water Bath Temp In:	92	C
Water Bath Temp Out:	92	C
Water Bath Identifier	HG Bath #3	

MS Reference

ICAP: 0.2 mL of ICCV-6
0.1 mL for 50 ml prep
Ref #: 4G01019
ICAP: 0.2 mL of ICCV-4
0.1 mL for 50 ml prep
Ref #: 4D01014
HG: 1.0mL 100ppb Hg
Ref# 4J16001

LCS Reference

ICAP: 0.2 mL of ICCV-6
0.1 mL for 50 ml prep
Ref #: 4G01019
ICAP: 0.2 mL of ICCV-4
0.1 mL for 50 ml prep
Ref #: 4D01014
HG: 0.4 mL of ~~HG MS1~~ HGMS-1PPM
Ref# 4A24021

SAB 10-16-14

* R=red, BL=blue, Y=yellow, G=green, O=orange, V=violet, W=white, CS=colorless, BR=brown, BK=black
GY= grey, F=fine, M=medium, C=coarse, CL=clear, CY=cloudy, OP=opaque

Shading has been applied to unused portions of this worksheet as a substitute for 'Z-out'.

"The presence of the Chemist's/analyst's employee ID number, or signature, on this log attests that strict compliance with the method's SOP has occurred. Any SOP deviations requires documentation by the chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation."

Sample Verification Signature: S. Bolton
This signature corroborates that the sample idenification numbers appearing on the digestion cups are the same as those appearing on the field sample containers.

Reviewed By: Quentisha Jamison
Date: 10-16-14

111611 JCF

METALS/MERCURY PREPARATION LOG

Metals Method: 3005A / 6020A
Mercury Method: 7470A
Prepared By: SAB

CompuChem — A Division Of Liberty Analytical Corp.

Preparation Date: 10-16-14
Preparation Time: 0930
Batch Number: 4101508/09

Purple Water

COMPUCHEM SAMPLE ID	CLIENT SAMPLE ID	SAMPLE TYPE	ICP Initial (mL)	ICP Final (mL)	HG Initial (mL)	HG Final (mL)	*Description Before	*Description After ICP	pH
4101508/09-BLK1	PBWJT/JU	MB	~~50~~ 100	100	100	100	CS / CL	CS / CL	N/A
4101508/09-BS1	MLCSJT/JU	LCS	~~50~~ 100	100	100	100	CS / CL	CS / CL	N/A
4101508/09-DUP1	13MW5D	DUP	100	100	100	100	CS / CL	CS / CL	<2
4101508/09-MS1	13MW5S	MS	100	100	100	100	CS / CL	CS / CL	<2
4101508/09-MSD1	13MW5SD	MSD	100	100	100	100	CS / CL	CS / CL	<2
1410111-01	13MW5	SAMPLE	100	100	100	100	CS / CL	CS / CL	<2
1410111-02	13MW3	SAMPLE	100	100	100	100	CS / CL	CS / CL	<2
1410111-03	13MW4	SAMPLE	100	100	100	100	CS / CL	CS / CL	<2
1410111-04	13MWDUP	SAMPLE	100	100	100	100	CS / CL	CS / CL	<2
1410111-05	13MW6	SAMPLE	100	100	100	100	CS / CL	CS CL	<2
1410111-06	13MW7	SAMPLE	100	100	100	100	CS / CL	CS / CL	<2
1410113-01	10-6-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410113-02	10-7-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410113-03	10-8-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410113-04	10-9-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410113-05	10-10-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410114-01	10-6-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410114-02	10-7-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410114-03	10-8-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410114-04	10-9-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410114-05	10-10-14	SAMPLE	100	100			CS / CL	CS / CL	<2
1410094-01	SLURRY TO QUARRY	SAMPLE			100	100	BR / CY		>2

SAB 10-16-14

Mercury Standards and QC S0 S0.2 S0.5S1 S5 S10 ICV ICB CRI CCV CCB

NOTE: All standards and QC for mercury were prepared at the same day as the associated samples. Refer to the attached.

Standard QC Preparation Log, with date matching the above preparation date, for preparation method and instruction.

Record of Tempature/Time		
Hot Block Temp In:	92	C
Hot Block Temp Out:	93	C
Hot Block Identifier	MS BLOCK #1	
Time Hg in water bath:	1020	
Time Hg out water bath:	1220	
Water Bath Temp In:	92	C
Water Bath Temp Out:	92	C
Water Bath Identifier	HgBath#3	

MS Reference
ICAP: 0.2 mL of ICCV-6
0.1 mL for 50 ml prep
Ref #: 4G01019
ICAP: 0.2 mL of ICCV-4
0.1 mL for 50 ml prep
Ref #: 4D01014
HG: 1.0mL 100ppb Hg
Ref# 4J16001

LCS Reference
ICAP: 0.2 mL of ICCV-6
0.1 mL for 50 ml prep
Ref #: 4G01019
ICAP: 0.2 mL of ICCV-4
0.1 mL for 50 ml prep
Ref #: 4D01014
HG: 0.4 mL of ~~HG MS1~~ HGMS-IPPM
Ref# 4A24021

SAB 10-16-14

* R=red, BL=blue, Y=yellow, G=green, O=orange, V=violet, W=white, CS=colorless, BR=brown, BK=black
GY= grey, F=fine, M=medium, C=coarse, CL=clear, CY=cloudy, OP=opaque

Shading has been applied to unused portions of this worksheet as a substitute for 'Z-out'.

"The presence of the Chemist's/analyst's employee ID number, or signature, on this log attests that strict compliance with the method's SOP has occurred. Any SOP deviations requires documentation by the chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation."

Sample Verification Signature: S. Bolton
This signature corroborates that the sample idenification numbers appearing on the digestion cups are the same as those appearing on the field sample containers.

Reviewed By: Quintisha Jones
Date: 10-16-14

111611 JCF

Microbac

Laboratory Report Number: L14100924

Janet Frazier
Draper Aden Associates
2206 South Main Street
Blacksburg, VA 24060

Abridged data package.
Full deliverable available.

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the accrediting authority listed below. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

This report was certified on October 29 2014

David E. Vandenberg

David Vandenberg – Managing Director

State of Origin: VA
Accrediting Authority: Common Wealth of Virginia ID:460187
QAPP: Microbac OVD

Microbac

Lab Report #: L14100924
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0018794	I	3.0		1Z2373010193640828	X
0019705	I	2.0		1Z2373010193717219	X
001	I	2.0		1Z2373010190138207	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L14100924
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
13MW2	L14100924-01	10/13/2014 15:45	10/15/2014 09:54
13MW3	L14100924-02	10/13/2014 10:00	10/15/2014 09:54
13MW3	L14100924-03	10/13/2014 10:00	10/15/2014 09:54
13MW4	L14100924-04	10/13/2014 11:50	10/15/2014 09:54
13MW4	L14100924-05	10/13/2014 11:50	10/15/2014 09:54
13MWDUP	L14100924-06	10/13/2014 12:00	10/15/2014 09:54
13MWDUP	L14100924-07	10/13/2014 12:00	10/15/2014 09:54
13MW5	L14100924-08	10/13/2014 13:00	10/15/2014 09:54
13MW5	L14100924-09	10/13/2014 13:00	10/15/2014 09:54
13MW5	L14100924-10	10/13/2014 13:00	10/15/2014 09:54
13MW5	L14100924-11	10/13/2014 13:00	10/15/2014 09:54
13MW5	L14100924-12	10/13/2014 13:00	10/15/2014 09:54
13MW5	L14100924-13	10/13/2014 13:00	10/15/2014 09:54
13MW6	L14100924-14	10/13/2014 14:05	10/15/2014 09:54
13MW6	L14100924-15	10/13/2014 14:05	10/15/2014 09:54
13MW7	L14100924-16	10/13/2014 14:55	10/15/2014 09:54
13MW7	L14100924-17	10/13/2014 14:55	10/15/2014 09:54
13MW8	L14100924-18	10/13/2014 11:00	10/15/2014 09:54
13MW8	L14100924-19	10/13/2014 11:00	10/15/2014 09:54

Microbac REPORT L14100924
PREPARED FOR Draper Aden Associates
WORK ID:

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1.0 Summary Data

1.1 Narratives

Login Number: L14100924
Department: General Chromatography
Analyst: John W. Richards Jr.

METHOD

Analysis SW-846 6850

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The MS and MSD are spiked at a concentration equal to that of the method's RL. The parent sample to this MS/MSD had a perchlorate result equal to approximately six times that of the spiked amount.

Sample #	Analyte	Date	Result	Lower	Upper	Type
L14100924-10	Perchlorate	2014-10-25 18:29:47	75.0	80	120	Recovery
L14100924-12	Perchlorate	2014-10-25 18:48:42	70.0	80	120	Recovery

SAMPLES

Samples: Sample 04 was analyzed at a dilution based on historical results. Sample 06 was analyzed at a dilution based on pre-run screen results.

Internal Standards: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 91007
Approved By: Wade DeLong

Login Number: L14100924
Department: General Chromatography
Analyst: John W. Richards Jr.

METHOD

Analysis SW-846 8330

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Surrogates: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peakcompletely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low areacounts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene andbenzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

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Narrative ID: 90943
Approved By: Jeremy Kinney

Login Number: L14100924
Department: Conventionals
Analyst: Ethan Tidd

METHOD

Analysis Water: EPA 415.1/SM5310C/SW846 9060 (Total Organic Carbon)
Soil: Lloyd-Khan Methodology

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 90840
Approved By: Deanna Hesson

1.2 Certificate of Analysis

Certificate of Analysis

Sample #:	L14100924-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW2	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 15:01
Collect Date:	10/13/2014 15:45	**Dilution:**	1	**File ID:**	1LM.LM27126
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	0.590		0.200	0.100

Sample #:	L14100924-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW3	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 15:20
Collect Date:	10/13/2014 10:00	**Dilution:**	1	**File ID:**	1LM.LM27127
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	1.86		0.200	0.100

Sample #:	L14100924-02	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW3	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/26/2014 23:32
Collect Date:	10/13/2014 10:00	**Dilution:**	1	**File ID:**	5L013837.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	1.00	0.250
1,3-Dinitrobenzene	99-65-0		ND	1.00	0.250
2,4-Dinitrotoluene	121-14-2		ND	1.00	0.250
2,6-Dinitrotoluene	606-20-2		ND	1.00	0.250
Nitroglycerin	55-63-0		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	76.5	50	150	

ND	Not detected at or above the reporting limit (RL/MDL).

Certificate of Analysis

Sample #:	L14100924-02	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW3	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497144	**Analyst:**	EPT	**Run Date:**	10/20/2014 11:49
Collect Date:	10/13/2014 10:00	**Dilution:**	1	**File ID:**	TC10202014.006
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Total Organic Carbon	TOC	13.0		1.00	0.500
Total Organic Carbon Rep1		3.08		1.00	0.500
Total Organic Carbon Rep2		4.30		1.00	0.500
Total Organic Carbon Rep3		8.43		1.00	0.500
Total Organic Carbon Rep4		36.3		1.00	0.500

Sample #:	L14100924-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW3	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497333	**Analyst:**	EPT	**Run Date:**	10/21/2014 13:49
Collect Date:	10/13/2014 10:00	**Dilution:**	1	**File ID:**	TC10212014.006
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved	TOC	7.23		1.00	0.500
Organic Carbon, Dissolved Rep1		5.52		1.00	0.500
Organic Carbon, Dissolved Rep2		7.43		1.00	0.500
Organic Carbon, Dissolved Rep3		6.18		1.00	0.500
Organic Carbon, Dissolved Rep4		9.80		1.00	0.500

Sample #:	L14100924-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW4	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 15:39
Collect Date:	10/13/2014 11:50	**Dilution:**	10	**File ID:**	1LM.LM27128
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	13.6		2.00	1.00

Microbac

Lab Report #: L14100924
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L14100924-04	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW4	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 00:11
Collect Date:	10/13/2014 11:50	**Dilution:**	1	**File ID:**	5L013838.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	1.00	0.250
1,3-Dinitrobenzene	99-65-0		ND	1.00	0.250
2,4-Dinitrotoluene	121-14-2		ND	1.00	0.250
2,6-Dinitrotoluene	606-20-2		ND	1.00	0.250
Nitroglycerin	55-63-0		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	81.8	50	150	

ND	Not detected at or above the reporting limit (RL/MDL).

Certificate of Analysis

Sample #:	L14100924-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW4	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497144	**Analyst:**	EPT	**Run Date:**	10/20/2014 12:34
Collect Date:	10/13/2014 11:50	**Dilution:**	1	**File ID:**	TC10202014.007
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Total Organic Carbon	TOC	4.94		1.00	0.500
Total Organic Carbon Rep1		3.83		1.00	0.500
Total Organic Carbon Rep2		4.98		1.00	0.500
Total Organic Carbon Rep3		2.81		1.00	0.500
Total Organic Carbon Rep4		8.14		1.00	0.500

Sample #:	L14100924-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW4	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497333	**Analyst:**	EPT	**Run Date:**	10/21/2014 14:40
Collect Date:	10/13/2014 11:50	**Dilution:**	1	**File ID:**	TC10212014.007
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved	TOC	7.47		1.00	0.500
Organic Carbon, Dissolved Rep1		5.04		1.00	0.500
Organic Carbon, Dissolved Rep2		6.82		1.00	0.500
Organic Carbon, Dissolved Rep3		8.83		1.00	0.500
Organic Carbon, Dissolved Rep4		9.18		1.00	0.500

Sample #:	L14100924-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MWDUP	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 15:58
Collect Date:	10/13/2014 12:00	**Dilution:**	10	**File ID:**	1LM.LM27129
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	11.6		2.00	1.00

Microbac

Lab Report #: L14100924
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L14100924-06	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MWDUP	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 00:50
Collect Date:	10/13/2014 12:00	**Dilution:**	1	**File ID:**	5L013839.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	1.00	0.250
1,3-Dinitrobenzene	99-65-0		ND	1.00	0.250
2,4-Dinitrotoluene	121-14-2		ND	1.00	0.250
2,6-Dinitrotoluene	606-20-2		ND	1.00	0.250
Nitroglycerin	55-63-0		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	88.5	50	150	

ND	Not detected at or above the reporting limit (RL/MDL).

Certificate of Analysis

Sample #:	L14100924-06	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MWDUP	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497144	**Analyst:**	EPT	**Run Date:**	10/20/2014 13:20
Collect Date:	10/13/2014 12:00	**Dilution:**	1	**File ID:**	TC10202014.008
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Total Organic Carbon	TOC	3.34		1.00	0.500
Total Organic Carbon Rep1		2.34		1.00	0.500
Total Organic Carbon Rep2		3.13		1.00	0.500
Total Organic Carbon Rep3		3.25		1.00	0.500
Total Organic Carbon Rep4		4.64		1.00	0.500

Sample #:	L14100924-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MWDUP	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497333	**Analyst:**	EPT	**Run Date:**	10/21/2014 15:30
Collect Date:	10/13/2014 12:00	**Dilution:**	1	**File ID:**	TC10212014.008
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved	TOC	5.89		1.00	0.500
Organic Carbon, Dissolved Rep1		5.37		1.00	0.500
Organic Carbon, Dissolved Rep2		5.83		1.00	0.500
Organic Carbon, Dissolved Rep3		5.57		1.00	0.500
Organic Carbon, Dissolved Rep4		6.79		1.00	0.500

Sample #:	L14100924-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW5	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 18:10
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	1LM.LM27136
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	1.17		0.200	0.100

Certificate of Analysis

Sample #:	L14100924-08	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW5	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 01:29
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	5L013840.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	1.00	0.250
1,3-Dinitrobenzene	99-65-0		ND	1.00	0.250
2,4-Dinitrotoluene	121-14-2		ND	1.00	0.250
2,6-Dinitrotoluene	606-20-2		ND	1.00	0.250
Nitroglycerin	55-63-0		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	91.3	50	150	

ND	Not detected at or above the reporting limit (RL/MDL).

Certificate of Analysis

Sample #:	L14100924-08	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW5	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497144	**Analyst:**	EPT	**Run Date:**	10/20/2014 14:05
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	TC10202014.009
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Total Organic Carbon	TOC	2.18		1.00	0.500
Total Organic Carbon Rep1		2.05		1.00	0.500
Total Organic Carbon Rep2		1.80		1.00	0.500
Total Organic Carbon Rep3		2.13		1.00	0.500
Total Organic Carbon Rep4		2.74		1.00	0.500

Sample #:	L14100924-09	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW5	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497333	**Analyst:**	EPT	**Run Date:**	10/21/2014 16:19
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	TC10212014.009
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved	TOC	8.72		1.00	0.500
Organic Carbon, Dissolved Rep1		3.52		1.00	0.500
Organic Carbon, Dissolved Rep2		3.90		1.00	0.500
Organic Carbon, Dissolved Rep3		4.32		1.00	0.500
Organic Carbon, Dissolved Rep4		23.1		1.00	0.500

Sample #:	L14100924-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW5	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 18:29
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	1LM.LM27137
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	1.32		0.200	0.100

Certificate of Analysis

Sample #:	L14100924-10	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW5	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 02:08
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	5L013841.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4	3.91		1.00	0.250
1,3-Dinitrobenzene	99-65-0	3.98		1.00	0.250
2,4-Dinitrotoluene	121-14-2	3.97		1.00	0.250
2,6-Dinitrotoluene	606-20-2	4.04		1.00	0.250
Nitroglycerin	55-63-0	4.42		1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	83.7	50	150	

Sample #:	L14100924-10	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW5	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497144	**Analyst:**	EPT	**Run Date:**	10/20/2014 14:49
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	TC10202014.010
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Total Organic Carbon	TOC	11.7		1.00	0.500
Total Organic Carbon Rep1		11.5		1.00	0.500
Total Organic Carbon Rep2		11.3		1.00	0.500
Total Organic Carbon Rep3		11.8		1.00	0.500
Total Organic Carbon Rep4		12.4		1.00	0.500

Sample #:	L14100924-11	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW5	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497333	**Analyst:**	EPT	**Run Date:**	10/21/2014 17:04
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	TC10212014.010
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved	TOC	12.3		1.00	0.500
Organic Carbon, Dissolved Rep1		11.9		1.00	0.500
Organic Carbon, Dissolved Rep2		12.1		1.00	0.500

Certificate of Analysis

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved Rep3		12.8		1.00	0.500
Organic Carbon, Dissolved Rep4		12.4		1.00	0.500

Sample #:	L14100924-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW5	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 18:48
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	1LM.LM27138
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	1.31		0.200	0.100

Sample #:	L14100924-12	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW5	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 02:47
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	5L013842.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4	4.30		1.00	0.250
1,3-Dinitrobenzene	99-65-0	4.36		1.00	0.250
2,4-Dinitrotoluene	121-14-2	4.42		1.00	0.250
2,6-Dinitrotoluene	606-20-2	4.54		1.00	0.250
Nitroglycerin	55-63-0	4.79		1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	89.8	50	150	

Sample #:	L14100924-12	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW5	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497144	**Analyst:**	EPT	**Run Date:**	10/20/2014 15:34
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	TC10202014.011
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Total Organic Carbon	TOC	12.0		1.00	0.500
Total Organic Carbon Rep1		11.4		1.00	0.500
Total Organic Carbon Rep2		11.9		1.00	0.500

Certificate of Analysis

Analyte	CAS #	Result	Qual	RL	MDL
Total Organic Carbon Rep3		11.8		1.00	0.500
Total Organic Carbon Rep4		12.8		1.00	0.500

Sample #:	L14100924-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW5	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497333	**Analyst:**	EPT	**Run Date:**	10/21/2014 17:49
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	TC10212014.011
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved	TOC	13.1		1.00	0.500
Organic Carbon, Dissolved Rep1		11.7		1.00	0.500
Organic Carbon, Dissolved Rep2		12.6		1.00	0.500
Organic Carbon, Dissolved Rep3		12.7		1.00	0.500
Organic Carbon, Dissolved Rep4		15.4		1.00	0.500

Sample #:	L14100924-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW6	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 16:17
Collect Date:	10/13/2014 14:05	**Dilution:**	1	**File ID:**	1LM.LM27130
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	0.672		0.200	0.100

Sample #:	L14100924-14	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW6	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 03:26
Collect Date:	10/13/2014 14:05	**Dilution:**	1	**File ID:**	5L013843.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	1.00	0.250
1,3-Dinitrobenzene	99-65-0		ND	1.00	0.250
2,4-Dinitrotoluene	121-14-2		ND	1.00	0.250
2,6-Dinitrotoluene	606-20-2		ND	1.00	0.250
Nitroglycerin	55-63-0		ND	1.00	0.250

Certificate of Analysis

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	100	50	150	

ND	Not detected at or above the reporting limit (RL/MDL).

Certificate of Analysis

Sample #:	L14100924-14	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW6	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497144	**Analyst:**	EPT	**Run Date:**	10/20/2014 16:19
Collect Date:	10/13/2014 14:05	**Dilution:**	1	**File ID:**	TC10202014.012
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Total Organic Carbon	TOC	4.20		1.00	0.500
Total Organic Carbon Rep1		3.46		1.00	0.500
Total Organic Carbon Rep2		4.18		1.00	0.500
Total Organic Carbon Rep3		4.75		1.00	0.500
Total Organic Carbon Rep4		4.41		1.00	0.500

Sample #:	L14100924-15	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW6	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497333	**Analyst:**	EPT	**Run Date:**	10/21/2014 18:34
Collect Date:	10/13/2014 14:05	**Dilution:**	1	**File ID:**	TC10212014.012
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved	TOC	7.08		1.00	0.500
Organic Carbon, Dissolved Rep1		6.53		1.00	0.500
Organic Carbon, Dissolved Rep2		7.09		1.00	0.500
Organic Carbon, Dissolved Rep3		6.17		1.00	0.500
Organic Carbon, Dissolved Rep4		8.53		1.00	0.500

Sample #:	L14100924-16	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW7	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 16:36
Collect Date:	10/13/2014 14:55	**Dilution:**	1	**File ID:**	1LM.LM27131
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	1.21		0.200	0.100

Microbac

Lab Report #: L14100924
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L14100924-16	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW7	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 04:05
Collect Date:	10/13/2014 14:55	**Dilution:**	1	**File ID:**	5L013844.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	1.00	0.250
1,3-Dinitrobenzene	99-65-0		ND	1.00	0.250
2,4-Dinitrotoluene	121-14-2		ND	1.00	0.250
2,6-Dinitrotoluene	606-20-2		ND	1.00	0.250
Nitroglycerin	55-63-0		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	94.8	50	150	

ND	Not detected at or above the reporting limit (RL/MDL).

Certificate of Analysis

Sample #:	L14100924-16	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW7	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497144	**Analyst:**	EPT	**Run Date:**	10/20/2014 17:04
Collect Date:	10/13/2014 14:55	**Dilution:**	1	**File ID:**	TC10202014.013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Total Organic Carbon	TOC	3.04		1.00	0.500
Total Organic Carbon Rep1		2.78		1.00	0.500
Total Organic Carbon Rep2		2.31		1.00	0.500
Total Organic Carbon Rep3		3.25		1.00	0.500
Total Organic Carbon Rep4		3.84		1.00	0.500

Sample #:	L14100924-17	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW7	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497333	**Analyst:**	EPT	**Run Date:**	10/21/2014 19:21
Collect Date:	10/13/2014 14:55	**Dilution:**	1	**File ID:**	TC10212014.013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved	TOC	4.18		1.00	0.500
Organic Carbon, Dissolved Rep1		3.65		1.00	0.500
Organic Carbon, Dissolved Rep2		3.71		1.00	0.500
Organic Carbon, Dissolved Rep3		3.87		1.00	0.500
Organic Carbon, Dissolved Rep4		5.49		1.00	0.500

Sample #:	L14100924-18	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW8	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 16:55
Collect Date:	10/13/2014 11:00	**Dilution:**	1	**File ID:**	1LM.LM27132
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	4.48		0.200	0.100

Certificate of Analysis

Sample #:	L14100924-18	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW8	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497144	**Analyst:**	EPT	**Run Date:**	10/20/2014 18:09
Collect Date:	10/13/2014 11:00	**Dilution:**	1	**File ID:**	TC10202014.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Total Organic Carbon	TOC	2.03		1.00	0.500
Total Organic Carbon Rep1		1.66		1.00	0.500
Total Organic Carbon Rep2		1.91		1.00	0.500
Total Organic Carbon Rep3		2.06		1.00	0.500
Total Organic Carbon Rep4		2.50		1.00	0.500

Sample #:	L14100924-19	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	13MW8	**Prep Method:**	9060A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9060A	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG497333	**Analyst:**	EPT	**Run Date:**	10/21/2014 20:27
Collect Date:	10/13/2014 11:00	**Dilution:**	1	**File ID:**	TC10212014.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved	TOC	3.34		1.00	0.500
Organic Carbon, Dissolved Rep1		3.07		1.00	0.500
Organic Carbon, Dissolved Rep2		2.95		1.00	0.500
Organic Carbon, Dissolved Rep3		3.30		1.00	0.500
Organic Carbon, Dissolved Rep4		4.05		1.00	0.500

2.0 Full Sample Data Package

2.1 General Chromatography Data

2.1.1 6850 LC/MS Data

2.1.1.1 Summary Data

Login Number: L14100924
Department: General Chromatography
Analyst: John W. Richards Jr.

METHOD

Analysis SW-846 6850

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The MS and MSD are spiked at a concentration equal to that of the method's RL. The parent sample to this MS/MSD had a perchlorate result equal to approximately six times that of the spiked amount.

Sample #	Analyte	Date	Result	Lower	Upper	Type
L14100924-10	Perchlorate	2014-10-25 18:29:47	75.0	80	120	Recovery
L14100924-12	Perchlorate	2014-10-25 18:48:42	70.0	80	120	Recovery

SAMPLES

Samples: Sample 04 was analyzed at a dilution based on historical results. Sample 06 was analyzed at a dilution based on pre-run screen results.

Internal Standards: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 91007
Approved By: Wade DeLong

Microbac

Lab Report #: L14100924
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L14100924-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW2	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 15:01
Collect Date:	10/13/2014 15:45	**Dilution:**	1	**File ID:**	1LM.LM27126
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	0.590		0.200	0.100

Sample #:	L14100924-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW3	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 15:20
Collect Date:	10/13/2014 10:00	**Dilution:**	1	**File ID:**	1LM.LM27127
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	1.86		0.200	0.100

Sample #:	L14100924-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW4	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 15:39
Collect Date:	10/13/2014 11:50	**Dilution:**	10	**File ID:**	1LM.LM27128
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	13.6		2.00	1.00

Sample #:	L14100924-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MWDUP	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 15:58
Collect Date:	10/13/2014 12:00	**Dilution:**	10	**File ID:**	1LM.LM27129
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	11.6		2.00	1.00

Certificate of Analysis

Sample #:	L14100924-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW5	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 18:10
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	1LM.LM27136
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	1.17		0.200	0.100

Sample #:	L14100924-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW5	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 18:29
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	1LM.LM27137
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	1.32		0.200	0.100

Sample #:	L14100924-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW5	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 18:48
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	1LM.LM27138
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	1.31		0.200	0.100

Sample #:	L14100924-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW6	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 16:17
Collect Date:	10/13/2014 14:05	**Dilution:**	1	**File ID:**	1LM.LM27130
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	0.672		0.200	0.100

Certificate of Analysis

Sample #:	L14100924-16	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW7	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 16:36
Collect Date:	10/13/2014 14:55	**Dilution:**	1	**File ID:**	1LM.LM27131
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	1.21		0.200	0.100

Sample #:	L14100924-18	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	13MW8	**Prep Method:**	6850	**Prep Date:**	10/25/2014 11:45
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	10/20/2014 16:49
Workgroup #:	WG498060	**Analyst:**	JWR	**Run Date:**	10/25/2014 16:55
Collect Date:	10/13/2014 11:00	**Dilution:**	1	**File ID:**	1LM.LM27132
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0	4.48		0.200	0.100

2.1.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1409 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG498060-01 MCT	9,930.0	
-02 Blank	0.0	
-03 LCS	0.0	
L14100924-01	728.0	
-02	658.0	
-04	520.0	
-06	525.0	
-08 RS	766.0	
-10 MS	769.0	
-12 MSD	772.0	
-14	901.0	
-16	729.0	
-18	996.0	
L14100978-01	72.4	
L14101007-07	8,160.0	
-08	8,600.0	
-09	5,110.0	
-10	8,220.0	
-11	9,380.0	
L14101034-01 RS	178.7	
-02 MS	182.4	
-03 MSD	178.4	
-04	180.2	

Analyst: John Richards

Date/Time: 10/28/14 | 14:20

DCN#106232

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 102014_CAL.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 130818254-1
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: ICAL Only

Internal STD: COA17578 Surrogate STD: NA Calibration STD STD67080 (10/20/2014)

CCV STD: NA LCS STD: NA MS/MSD STD: NA

Comments: ICAL WG497220 : Alternate Source STD67082

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM27052	WG497220-01 CCB	1	1		10/20/14 14:37
2	1LM.LM27053	WG497220-02 STD (0.1 ug/L)	1	1	STD67080	10/20/14 14:55
3	1LM.LM27054	WG497220-03 STD (0.2 ug/L)	1	1	STD67080	10/20/14 15:14
4	1LM.LM27055	WG497220-04 STD (0.5 ug/L)	1	1	STD67080	10/20/14 15:33
5	1LM.LM27056	WG497220-05 STD (1.0 ug/L)	1	1	STD67080	10/20/14 15:52
6	1LM.LM27057	WG497220-06 STD (2.0 ug/L)	1	1	STD67080	10/20/14 16:11
7	1LM.LM27058	WG497220-07 STD (5.0 ug/L)	1	1	STD67080	10/20/14 16:30
8	1LM.LM27059	WG497220-08 STD (10 ug/L)	1	1	STD67080	10/20/14 16:49
9	1LM.LM27060	WG497220-09 SSCV (1.0 ug/L)	1	1	STD67082	10/20/14 17:08

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 22-OCT-14

Cassie L. Augenstein

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 102514_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 130818254-1
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG498060 (waters)

Internal STD: COA17578 Surrogate STD: NA Calibration STD STD67080 (10/20/2014)

CCV STD: STD67080 LCS STD: STD67080 MS/MSD STD: STD67080

Comments: Sample L14100924-04 was analyzed at a dilution based on its historical results.
Sample L14100924-06 was analyzed at a dilution based on its pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM27120	WG498061-01 CCB	1	1		10/25/14 13:07
2	1LM.LM27121	WG498061-02 CCV (1.0ug/L)	1	1	STD67080	10/25/14 13:26
3	1LM.LM27122	WG498060-10 MRL (0.2ug/L)	1	1	STD67080	10/25/14 13:45
4	1LM.LM27123	WG498060-01 MCT (0.2ug/L)	1	1	STD67080	10/25/14 14:04
5	1LM.LM27124	WG498060-02 BLANK	1	1		10/25/14 14:23
6	1LM.LM27125	WG498060-03 LCS (0.2ug/L)	1	1	STD67080	10/25/14 14:42
7	1LM.LM27126	L14100924-01	1	1		10/25/14 15:01
8	1LM.LM27127	L14100924-02	1	1		10/25/14 15:20
9	1LM.LM27128	L14100924-04 (10x)	1	10		10/25/14 15:39
10	1LM.LM27129	L14100924-06 (10x)	1	10		10/25/14 15:58
11	1LM.LM27130	L14100924-14	1	1		10/25/14 16:17
12	1LM.LM27131	L14100924-16	1	1		10/25/14 16:36
13	1LM.LM27132	L14100924-18	1	1		10/25/14 16:55
14	1LM.LM27133	WG498061-03 CCV (1.0ug/L)	1	1	STD67080	10/25/14 17:14
15	1LM.LM27134	WG498060-11 MRL (0.2ug/L)	1	1	STD67080	10/25/14 17:32
16	1LM.LM27135	WG498061-04 CCB	1	1		10/25/14 17:51
17	1LM.LM27136	L14100924-08 RS	1	1		10/25/14 18:10
18	1LM.LM27137	L14100924-10 MS	1	1	STD67080	10/25/14 18:29
19	1LM.LM27138	L14100924-12 MSD	1	1	STD67080	10/25/14 18:48
20	1LM.LM27139	L14100978-01	1	1		10/25/14 19:07
21	1LM.LM27140	L14101034-01 RS	1	1		10/25/14 19:26
22	1LM.LM27141	L14101034-02 MS	1	1	STD67080	10/25/14 19:45
23	1LM.LM27142	L14101034-03 MSD	1	1	STD67080	10/25/14 20:04
24	1LM.LM27143	L14101034-04	1	1		10/25/14 20:23
25	1LM.LM27144	WG498061-05 CCV (1.0ug/L)	1	1	STD67080	10/25/14 20:42
26	1LM.LM27145	WG498060-12 MRL (0.2ug/L)	1	1	STD67080	10/25/14 21:01
27	1LM.LM27146	WG498061-06 CCB	1	1		10/25/14 21:20
28	1LM.LM27147	L14101007-07	1	1		10/25/14 21:39
29	1LM.LM27148	L14101007-08	1	1		10/25/14 21:58
30	1LM.LM27149	L14101007-09	1	1		10/25/14 22:17
31	1LM.LM27150	L14101007-10	1	1		10/25/14 22:35
32	1LM.LM27151	L14101007-11	1	1		10/25/14 22:54
33	1LM.LM27152	WG498061-07 CCV (1.0ug/L)	1	1	STD67080	10/25/14 23:13

Page: 1 Approved: 29-OCT-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 102514_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 130818254-1
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG498060 (waters)

Internal STD: COA17578 Surrogate STD: NA STD67080 (10/20/2014)
CCV STD: STD67080 LCS STD: STD67080 STD67080

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM27153	WG498060-13 MRL (0.2ug/L)	1	1	STD67080	10/25/14 23:32
35	1LM.LM27154	WG498061-08 CCB	1	1		10/25/14 23:51

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	L14100924-10 MS : The MS %Rec is 75%. This is below the advisory limit of 80%. The MS and MSD are spiked at a concentration equal to that of the method's RL. The parent sample to this MS/MSD had a perchlorate result equal to approximately six times that of the spiked amount.			
19				
	L14100924-12 MSD : The MSD %Rec is 70%. This is below the advisory limit of 80%. The MS and MSD are spiked at a concentration equal to that of the method's RL. The parent sample to this MS/MSD had a perchlorate result equal to approximately six times that of the spiked amount.			

Page: 2 Approved: 29-OCT-14

Microbac Laboratories Inc.

Data Checklist

Date: 20-OCT-2014
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG497220
Runlog ID: 64185
Analytical Workgroups: ICAL ONLY

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (GCMS)	NA
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (GCMS)	NA
Calculations & correct factors	NA
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	NA
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	CAA

Primary Reviewer:
21-OCT-2014
John Richards

Secondary Reviewer:
22-OCT-2014
Cassie L. Augenstein

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-22-2014 14:22:49

Microbac Laboratories Inc.

Data Checklist

Date: 25-OCT-2014
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 64319
Analytical Workgroups: L14100924, 0978, 1007(07-11), 1034

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
28-OCT-2014
John Richards

Secondary Reviewer:
29-OCT-2014
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-29-2014 11:36:18

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG498060

Login Number: L14100924

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
13MW2	01	10/13/14					10/25/2014	11.8	28		10/25/14	.1	28	
13MW3	02	10/13/14					10/25/2014	12.1	28		10/25/14	.1	28	
13MW4	04	10/13/14					10/25/2014	12	28		10/25/14	.2	28	
13MWDUP	06	10/13/14					10/25/2014	12	28		10/25/14	.2	28	
13MW5	08	10/13/14					10/25/2014	11.9	28		10/25/14	.3	28	
13MW5	10	10/13/14					10/25/2014	11.9	28		10/25/14	.3	28	
13MW5	12	10/13/14					10/25/2014	11.9	28		10/25/14	.3	28	
13MW6	14	10/13/14					10/25/2014	11.9	28		10/25/14	.2	28	
13MW7	16	10/13/14					10/25/2014	11.9	28		10/25/14	.2	28	
13MW8	18	10/13/14					10/25/2014	12	28		10/25/14	.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3837339
Report generated 10/29/2014 11:49

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L14100924
Blank File ID: 1LM.LM27124
Prep Date: 10/25/14 11:45
Analyzed Date: 10/25/14 14:23
Analyst: JWR

Work Group: WG498060
Blank Sample ID: WG498060-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG498060-10	1LM.LM27122	10/25/14 13:45	01
MCT	WG498060-01	1LM.LM27123	10/25/14 14:04	01
LCS	WG498060-03	1LM.LM27125	10/25/14 14:42	01
13MW2	L14100924-01	1LM.LM27126	10/25/14 15:01	01
13MW3	L14100924-02	1LM.LM27127	10/25/14 15:20	01
13MW4	L14100924-04	1LM.LM27128	10/25/14 15:39	DL01
13MWDUP	L14100924-06	1LM.LM27129	10/25/14 15:58	DL01
13MW6	L14100924-14	1LM.LM27130	10/25/14 16:17	01
13MW7	L14100924-16	1LM.LM27131	10/25/14 16:36	01
13MW8	L14100924-18	1LM.LM27132	10/25/14 16:55	01
QCMRL	WG498060-11	1LM.LM27134	10/25/14 17:32	01
13MW5	L14100924-08	1LM.LM27136	10/25/14 18:10	01
13MW5	L14100924-10	1LM.LM27137	10/25/14 18:29	01
13MW5	L14100924-12	1LM.LM27138	10/25/14 18:48	01
QCMRL	WG498060-12	1LM.LM27145	10/25/14 21:01	01
QCMRL	WG498060-13	1LM.LM27153	10/25/14 23:32	01

Report Name: BLANK_SUMMARY
PDF File ID: 3837340
Report generated 10/29/2014 11:49

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L14100924 Prep Date: 10/25/14 11:45 Sample ID: WG498060-02
Instrument ID: LCMS1 Run Date: 10/25/14 14:23 Prep Method: 6850
File ID: 1LM.LM27124 Analyst: JWR Method: 6850
Workgroup (AAB#): WG498060 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-20-OCT-14

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.200	0.100	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 3837341
29-OCT-2014 11:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14100924 Run Date: 10/25/2014 Sample ID: WG498060-03
Instrument ID: LCMS1 Run Time: 14:42 Prep Method: 6850
File ID: 1LM.LM27125 Analyst: JWR Method: 6850
Workgroup (AAB#): WG498060 Matrix: Water Units: ug/L
QC Key: STD Lot#: STD67080 Cal ID: LCMS1-20-OCT-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.192	96.0	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 3837342
Report generated: 10/29/2014 11:49

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L14100924 Cal ID: LCMS1- 20-OCT-14 Worknum: WG498060

Instrument ID: LCMS1 Contract #: Prep Method: 6850

Parent ID: L14100924-08 File ID: 1LM.LM27136 Dil: 1 Method: 6850

Sample ID: L14100924-10 MS File ID: 1LM.LM27137 Dil: 1 Matrix: Water

Sample ID: L14100924-12 MSD File ID: 1LM.LM27138 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	1.17	0.200	1.32	75	0.200	1.31	70	0.760	80 - 120	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 3837343
Report generated 10/29/2014 11:49

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L14100924
Analytical Method: 6850
ICAL Workgroup: WG497220

Instrument ID: LCMS1
Initial Calibration Date: 20-OCT-14 16:49
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.268	3.90	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 3837345
Report generated 10/29/2014 11:49

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L14100924

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 20-OCT-14 16:49

Column ID: F

Analyte	WG497220-02			WG497220-03			WG497220-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	6600.00000	1.314	0.200	13000.0000	1.301	0.500	30600.0000	1.235

INT_CAL - Modified 03/06/2008
PDF File ID: 3837345
Report generated 10/29/2014 11:49

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L14100924

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 20-OCT-14 16:49

Column ID: F

Analyte	WG497220-05			WG497220-06			WG497220-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	63000.0000	1.272	2.00	127000.000	1.268	5.00	303000.000	1.229

INT_CAL - Modified 03/06/2008
PDF File ID: 3837345
Report generated 10/29/2014 11:49

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L14100924

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 20-OCT-14 16:49

Column ID: F

Analyte	WG497220-08		
	CONC	RESP	RF
Perchlorate	10.0	592000.000	1.255

INT_CAL - Modified 03/06/2008
PDF File ID: 3837345
Report generated 10/29/2014 11:49

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14100924 Run Date: 10/20/2014 Sample ID: WG497220-09
Instrument ID: LCMS1 Run Time: 17:08 Method: 6850
File ID: 1LM.LM27060 Analyst: JWR QC Key: STD
ICal Workgroup: WG497220 Cal ID: LCMS1 - 20-OCT-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.977	ug/L	1.23	2.30	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3837348
Report generated 10/29/2014 11:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14100924
Run Date: 10/25/2014
Sample ID: WG498061-01
Instrument ID: LCMS1
Run Time: 13:07
Method: 6850
File ID: 1LM.LM27120
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG498060
Cal ID: LCMS1 - 20-OCT-14
Matrix: WATER
QAPP: STD

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3837350
Report generated 10/29/2014 11:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14100924 Run Date: 10/25/2014 Sample ID: WG498061-04

Instrument ID: LCMS1 Run Time: 17:51 Method: 6850

File ID: 1LM.LM27135 Analyst: JWR Units: ug/L

Workgroup (AAB#): WG498060 Cal ID: LCMS1 - 20-OCT-14

Matrix: WATER QAPP: STD

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3837350
Report generated 10/29/2014 11:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14100924 Run Date: 10/25/2014 Sample ID: WG498061-06

Instrument ID: LCMS1 Run Time: 21:20 Method: 6850

File ID: 1LM.LM27146 Analyst: JWR Units: ug/L

Workgroup (AAB#): WG498060 Cal ID: LCMS1 - 20-OCT-14

Matrix: WATER QAPP: STD

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3837350
Report generated 10/29/2014 11:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L14100924 Run Date: 10/25/2014 Sample ID: WG498061-08

Instrument ID: LCMS1 Run Time: 23:51 Method: 6850

File ID: 1LM.LM27154 Analyst: JWR Units: ug/L

Workgroup (AAB#): WG498060 Cal ID: LCMS1 - 20-OCT-14

Matrix: WATER QAPP: STD

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3837350
Report generated 10/29/2014 11:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14100924
Run Date: 10/25/2014
Sample ID: WG498061-02
Instrument ID: LCMS1
Run Time: 13:26
Method: 6850
File ID: 1LM.LM27121
Analyst: JWR
QC Key: STD
Workgroup (AAB#): WG498060
Cal ID: LCMS1 - 20-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.988	ug/L	1.24	1.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3837349
Report generated 10/29/2014 11:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14100924
Run Date: 10/25/2014
Sample ID: WG498061-03
Instrument ID: LCMS1
Run Time: 17:14
Method: 6850
File ID: 1LM.LM27133
Analyst: JWR
QC Key: STD
Workgroup (AAB#): WG498060
Cal ID: LCMS1 - 20-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.970	ug/L	1.22	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3837349
Report generated 10/29/2014 11:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14100924
Run Date: 10/25/2014
Sample ID: WG498061-05
Instrument ID: LCMS1
Run Time: 20:42
Method: 6850
File ID: 1LM.LM27144
Analyst: JWR
QC Key: STD
Workgroup (AAB#): WG498060
Cal ID: LCMS1 - 20-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.957	ug/L	1.20	4.30	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3837349
Report generated 10/29/2014 11:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14100924
Run Date: 10/25/2014
Sample ID: WG498061-07
Instrument ID: LCMS1
Run Time: 23:13
Method: 6850
File ID: 1LM.LM27152
Analyst: JWR
QC Key: STD
Workgroup (AAB#): WG498060
Cal ID: LCMS1 - 20-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.966	ug/L	1.21	3.40	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3837349
Report generated 10/29/2014 11:50

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L14100924 Run Date: 10/25/2014 Sample ID: WG498060-10

Instrument ID: LCMS1 Run Time: 13:45 Prep Method: 6850

File ID: 1LM.LM27122 Analyst: JWR Method: 6850

Workgroup (AAB#): WG498060 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-20-OCT-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.203	102	70 - 130	

QCMRL - Modified 03/06/2007

PDF File ID: 3837344

Report generated 10/29/2014 11:49

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L14100924 Run Date: 10/25/2014 Sample ID: WG498060-11

Instrument ID: LCMS1 Run Time: 17:32 Prep Method: 6850

File ID: 1LM.LM27134 Analyst: JWR Method: 6850

Workgroup (AAB#): WG498060 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-20-OCT-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.197	98.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 3837344
Report generated 10/29/2014 11:49

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L14100924 Run Date: 10/25/2014 Sample ID: WG498060-12

Instrument ID: LCMS1 Run Time: 21:01 Prep Method: 6850

File ID: 1LM.LM27145 Analyst: JWR Method: 6850

Workgroup (AAB#): WG498060 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-20-OCT-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.197	98.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 3837344
Report generated 10/29/2014 11:49

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L14100924 Run Date: 10/25/2014 Sample ID: WG498060-13

Instrument ID: LCMS1 Run Time: 23:32 Prep Method: 6850

File ID: 1LM.LM27153 Analyst: JWR Method: 6850

Workgroup (AAB#): WG498060 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-20-OCT-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.194	97.0	70 - 130	

QCMRL - Modified 03/06/2007

PDF File ID: 3837344

Report generated 10/29/2014 11:49

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L14100924
Instrument ID: LCMS1
Workgroup (AAB#): WG498060

ICAL CCV Number: WG497220-05
CAL ID: LCMS1-20-OCT-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG497220	NA	NA	247000
Upper Limit	NA	NA	370500
Lower Limit	NA	NA	123500
L14100924-01	1.00	01	256000
L14100924-02	1.00	01	271000
L14100924-04	10.0	DL01	267000
L14100924-06	10.0	DL01	269000
L14100924-08	1.00	01	261000
L14100924-10	1.00	01	269000
L14100924-12	1.00	01	280000
L14100924-14	1.00	01	262000
L14100924-16	1.00	01	278000
L14100924-18	1.00	01	265000
WG498060-02	1.00	01	278000
WG498060-03	1.00	01	262000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 3837351
Report generated 10/29/2014 11:50

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	L14100924-01
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27126
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 15:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38100	13500	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	L14100924-02
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27127
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 15:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	126000	43000	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	L14100924-04
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27128
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 15:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91300	28800	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	L14100924-06
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27129
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 15:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	78100	27900	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	L14100924-08
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27136
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 18:10	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	76600	26100	2.93	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	L14100924-10
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27137
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 18:29	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	88600	30300	2.92	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	L14100924-12
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27138
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 18:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91800	30900	2.97	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	L14100924-14
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27130
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 16:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44400	15500	2.86	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	L14100924-16
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27131
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 16:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	84200	28200	2.99	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	L14100924-18
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27132
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 16:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	296000	98400	3.01	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG497220-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27053
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/20/2014 14:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	6600	2240	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG497220-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27054
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/20/2014 15:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	13000	4540	2.86	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG497220-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27055
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/20/2014 15:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30600	9950	3.08	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG497220-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27056
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/20/2014 15:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	63000	21500	2.93	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG497220-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27057
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/20/2014 16:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	127000	39900	3.18	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG497220-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27058
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/20/2014 16:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	303000	104000	2.91	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG497220-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27059
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/20/2014 16:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	592000	196000	3.02	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG497220-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27060
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/20/2014 17:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	61200	21000	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	WG498060-01
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27123
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 14:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	14000	4760	2.94	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	WG498060-02
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27124
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 14:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	WG498060-03
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27125
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 14:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	13000	4350	2.99	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	WG498060-10
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27122
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 13:45	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	13700	4560	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	WG498060-11
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27134
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 17:32	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	13800	4510	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	WG498060-12
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27145
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 21:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	14100	5140	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**	6850	**Samplenum:**	WG498060-13
Instrument:	LCMS1	**Prep Date:**	10/25/2014 11:45	**File ID:**	1LM.LM27153
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 23:32	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	14200	4620	3.07	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG498061-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27120
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 13:07	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG498061-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27121
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 13:26	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	65600	22300	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG498061-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27133
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 17:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	66100	22700	2.91	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG498061-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27135
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 17:51	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG498061-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27144
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 20:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	67100	22300	3.01	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG498061-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27146
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 21:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG498061-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27152
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 23:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	68400	22800	3.00	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L14100924	**Prep Method:**		**Samplenum:**	WG498061-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27154
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG498060	**Analysis Date:**	10/25/2014 23:51	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.1 Semivolatiles Data

2.1.2 Explosives (8330B)

2.1.2.1 Summary Data

Login Number: L14100924
Department: General Chromatography
Analyst: John W. Richards Jr.

METHOD

Analysis SW-846 8330

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Surrogates: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peakcompletely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low areacounts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene andbenzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 90943
Approved By: Jeremy Kinney

Microbac

Lab Report #: L14100924
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L14100924-02	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW3	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/26/2014 23:32
Collect Date:	10/13/2014 10:00	**Dilution:**	1	**File ID:**	5L013837.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	1.00	0.250
1,3-Dinitrobenzene	99-65-0		ND	1.00	0.250
2,4-Dinitrotoluene	121-14-2		ND	1.00	0.250
2,6-Dinitrotoluene	606-20-2		ND	1.00	0.250
Nitroglycerin	55-63-0		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	76.5	50	150	

ND	Not detected at or above the reporting limit (RL/MDL).

Certificate of Analysis

Sample #:	L14100924-04	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW4	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 00:11
Collect Date:	10/13/2014 11:50	**Dilution:**	1	**File ID:**	5L013838.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	1.00	0.250
1,3-Dinitrobenzene	99-65-0		ND	1.00	0.250
2,4-Dinitrotoluene	121-14-2		ND	1.00	0.250
2,6-Dinitrotoluene	606-20-2		ND	1.00	0.250
Nitroglycerin	55-63-0		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	81.8	50	150	

ND	Not detected at or above the reporting limit (RL/MDL).

Certificate of Analysis

Sample #:	L14100924-06	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MWDUP	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 00:50
Collect Date:	10/13/2014 12:00	**Dilution:**	1	**File ID:**	5L013839.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	1.00	0.250
1,3-Dinitrobenzene	99-65-0		ND	1.00	0.250
2,4-Dinitrotoluene	121-14-2		ND	1.00	0.250
2,6-Dinitrotoluene	606-20-2		ND	1.00	0.250
Nitroglycerin	55-63-0		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	88.5	50	150	

ND	Not detected at or above the reporting limit (RL/MDL).

Certificate of Analysis

Sample #:	L14100924-08	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW5	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 01:29
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	5L013840.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	1.00	0.250
1,3-Dinitrobenzene	99-65-0		ND	1.00	0.250
2,4-Dinitrotoluene	121-14-2		ND	1.00	0.250
2,6-Dinitrotoluene	606-20-2		ND	1.00	0.250
Nitroglycerin	55-63-0		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	91.3	50	150	

ND	Not detected at or above the reporting limit (RL/MDL).

Certificate of Analysis

Sample #:	L14100924-10	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW5	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 02:08
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	5L013841.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4	3.91		1.00	0.250
1,3-Dinitrobenzene	99-65-0	3.98		1.00	0.250
2,4-Dinitrotoluene	121-14-2	3.97		1.00	0.250
2,6-Dinitrotoluene	606-20-2	4.04		1.00	0.250
Nitroglycerin	55-63-0	4.42		1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	83.7	50	150	

Sample #:	L14100924-12	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW5	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 02:47
Collect Date:	10/13/2014 13:00	**Dilution:**	1	**File ID:**	5L013842.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4	4.30		1.00	0.250
1,3-Dinitrobenzene	99-65-0	4.36		1.00	0.250
2,4-Dinitrotoluene	121-14-2	4.42		1.00	0.250
2,6-Dinitrotoluene	606-20-2	4.54		1.00	0.250
Nitroglycerin	55-63-0	4.79		1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	89.8	50	150	

Sample #:	L14100924-14	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW6	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 03:26
Collect Date:	10/13/2014 14:05	**Dilution:**	1	**File ID:**	5L013843.F
Sample Tag:	01	**Units:**	ug/L		

Certificate of Analysis

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	1.00	0.250
1,3-Dinitrobenzene	99-65-0		ND	1.00	0.250
2,4-Dinitrotoluene	121-14-2		ND	1.00	0.250
2,6-Dinitrotoluene	606-20-2		ND	1.00	0.250
Nitroglycerin	55-63-0		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	100	50	150	

ND	Not detected at or above the reporting limit (RL/MDL).

Microbac

Lab Report #: L14100924
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L14100924-16	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	13MW7	**Prep Method:**	METHOD	**Prep Date:**	10/20/2014 08:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	10/24/2014 21:41
Workgroup #:	WG498078	**Analyst:**	ECL	**Run Date:**	10/27/2014 04:05
Collect Date:	10/13/2014 14:55	**Dilution:**	1	**File ID:**	5L013844.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	1.00	0.250
1,3-Dinitrobenzene	99-65-0		ND	1.00	0.250
2,4-Dinitrotoluene	121-14-2		ND	1.00	0.250
2,6-Dinitrotoluene	606-20-2		ND	1.00	0.250
Nitroglycerin	55-63-0		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	94.8	50	150	

ND	Not detected at or above the reporting limit (RL/MDL).

2.1.2.2 QC Summary Data

Example 8330 Calculations

Sample Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot (y = mx + b)

y = response of analyte as area (from quantitation report)
x = concentration analyte
m = slope from curve
b = intercept from curve

Step 2: Retrieve y from quantitation report

Step 3: Retreive extraction data from logsheet

Vf = Final extract volume (mL)
Vi = Initial vome of sample (mL) or initial weight (g)

Step 4: Solve for concentration in extract (x):

x = (y - b)/m = [(7.774 -(- 0.04773)]/ 0.1711 = 45.2

Step 5: Solve for analyte concentration in sample (Cx):

Cx = (x) (Vf /Vi)

Example CCV Calculation: **(Vf/Vi) = 1**
HMX

Slope from curve, m:	0.171145
Intercept from curve, b:	0.0436711
Area of analyte, y:	7.774
Concentration (ug/L):	45.16830115

Example Water Calculation:

Slope from curve, m:	0.171145
Intercept from curve, b:	0.0436711
Area of analyte, y:	7.774
Volume of extract (mL):	10.00
Volume of sample extracted (mL):	1000.00
Concentration (ug/L):	0.451683011

Example Soil Calculation:
1,3,5-Trinitrobenzene

Slope from curve, m:	0.411263
Intercept from curve, b:	-0.0850241
Area of analyte, y:	20.26089
Volume of extract (mL):	20.00
Weight of sample extracted (g):	2.00
Concentration (ug/kg):	494.7178351
Concentration (mg/kg):	0.494717835

Microbac Laboratories Inc.
Sample Extract Log

Workgroup: WG497157
Analyst: RAH
Spike Analyst: RAH
Method: METHOD
Run Date: 10/20/2014 08:00
SOP: EXTNT01 Revision 1
Spike Witness: CSH
Surr Solution: STD66107

Acetonitrile Lot #: COA17758
WATER Lot #: COA17757
Methanol Lot #: COA17742
SDB-RPS (SPE DISK) Lot #: COA17603

	SAMPLE #	Type	Reference	pH	Prod	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L14100924-02	SAMP			8330-SPE	1000 mL	.5 mL			10 mL	Transparent
2	L14100924-04	SAMP			8330-SPE	1000 mL	.5 mL			10 mL	Transparent
3	L14100924-06	SAMP			8330-SPE	1000 mL	.5 mL			10 mL	Transparent
4	L14100924-08	RS01			8330-SPE	1000 mL	.5 mL			10 mL	Transparent
5	L14100924-10	MS01	L14100924-08		8330-SPE	1000 mL	.5 mL	.5 mL	STD67105	10 mL	Transparent
6	L14100924-12	SD01	L14100924-08		8330-SPE	1000 mL	.5 mL	.5 mL	STD67105	10 mL	Transparent
7	L14100924-14	SAMP			8330-SPE	1000 mL	.5 mL			10 mL	Transparent
8	L14100924-16	SAMP			8330-SPE	1000 mL	.5 mL			10 mL	Transparent
9	WG497157-01	BLANK			8330-SPE	1000 mL	.5 mL			10 mL	Transparent
10	WG497157-02	LCS			8330-SPE	1000 mL	.5 mL	.5 mL	STD67105	10 mL	Transparent
11	WG497157-03	REF	L14100924-08		8330-SPE	1000 mL	.5 mL			10 mL	Transparent
12	WG497157-04	MS	L14100924-08		8330-SPE	1000 mL	.5 mL	.5 mL	STD67105	10 mL	Transparent
13	WG497157-05	MSD	L14100924-08		8330-SPE	1000 mL	.5 mL	.5 mL	STD67105	10 mL	Transparent

Analyst: [signature]

Reviewer: Chris Hill

EXTRACT - Modified 10/22/2008
PDF ID: 3823785
Report generated: 10/23/2014 10:16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPLC5 Dataset: 102414
Analyst1: JWR Analyst2: NA
Method: 8330-PLUS SOP: HPLC02 Rev: 18

Maintenance Log ID: 52132 Syringe Filter Lot#: NA
Eluent ID#:
Column 1 ID: ULTRACARB 5UM Column 2 ID: NA
Workgroups: ICAL-Only
Internal STD: NA Surrogate STD: COA17825 Calibration STD STD67161 (10/24/2014)
CCV STD: NA LCS STD: NA MS/MSD STD: NA

Comments: New Analytical Column : Phenomenex S/N 740424-1
ICAL WG498049 : Alternate STD67162

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	5L013819.F	WG498049-01 STD	1	1	STD67161	10/24/14 18:26
2	5L013820.F	WG498049-02 STD	1	1	STD67161	10/24/14 19:05
3	5L013821.F	WG498049-03 STD-CCV	1	1	STD67161	10/24/14 19:44
4	5L013822.F	WG498049-04 STD	1	1	STD67161	10/24/14 20:23
5	5L013823.F	WG498049-05 STD	1	1	STD67161	10/24/14 21:02
6	5L013824.F	WG498049-06 STD	1	1	STD67161	10/24/14 21:41
7	5L013825.F	WG498049-07 SSCV	1	1	STD67162	10/24/14 22:20
8	5L013826.F	AcCN Rinse	1	1		10/24/14 23:00

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 28-OCT-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPLC5 Dataset: 102614
Analyst1: JWR Analyst2: NA
Method: 8330-PLUS SOP: HPLC02 Rev: 18

Maintenance Log ID: Syringe Filter Lot#: 00185599
Eluent ID#:

Column 1 ID: ULTRACARB5 ODS Column 2 ID: NA

Workgroups: Analytical WG498078 (waters) Analytical WG498079 (waters)

Internal STD: NA Surrogate STD: STD66107 Calibration STD STD67161 (10/24/2014)

CCV STD: STD67161 LCS STD: STD67105 MS/MSD STD: STD67105

Comments: System backpressure = 162bar.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	5L013827.F	WG498080-01 CCV	1	1	STD67161	10/26/14 17:02
2	5L013828.F	WG497738-01 BLK	1	1	STD66107	10/26/14 17:41
3	5L013829.F	WG497738-02 LCS	1	1	STD67105	10/26/14 18:20
4	5L013830.F	WG497738-03 LCS2	1	1	STD67105	10/26/14 18:59
5	5L013831.F	L14101310-01	1	1		10/26/14 19:38
6	5L013832.F	L14101310-02	1	1		10/26/14 20:17
7	5L013833.F	L14101310-03	1	1		10/26/14 20:56
8	5L013834.F	WG498080-02 CCV	1	1	STD67161	10/26/14 21:35
9	5L013835.F	WG497157-01 BLK	1	1	STD66107	10/26/14 22:14
10	5L013836.F	WG497157-02 LCS	1	1	STD67105	10/26/14 22:53
11	5L013837.F	L14100924-02	1	1		10/26/14 23:32
12	5L013838.F	L14100924-04	1	1		10/27/14 00:11
13	5L013839.F	L14100924-06	1	1		10/27/14 00:50
14	5L013840.F	L14100924-08 RS	1	1		10/27/14 01:29
15	5L013841.F	L14100924-10 MS	1	1	STD67105	10/27/14 02:08
16	5L013842.F	L14100924-12 MSD	1	1	STD67105	10/27/14 02:47
17	5L013843.F	L14100924-14	1	1		10/27/14 03:26
18	5L013844.F	L14100924-16	1	1		10/27/14 04:05
19	5L013845.F	WG498080-03 CCV	1	1	STD67161	10/27/14 04:44
20	5L013846.F	AcCN Rinse	1	1		10/27/14 05:24
21	5L013847.F	WG498080-04 CCV	1	1	STD67161	10/27/14 15:51
22	5L013848.F	L14101310-01 5x	1	5		10/27/14 16:30
23	5L013849.F	L14101310-02 5x	1	5		10/27/14 17:09
24	5L013850.F	WG498080-05 CCV	1	1	STD67161	10/27/14 17:48
25	5L013851.F	AcCN Rinse	1	1		10/27/14 18:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X	5	Over Calibration Range	HMX and RDX
	L14101310-01 : This sample was reanalyzed at a 5x dilution for HMX and RDX on the end of this run.			
6	X	5	Over Calibration Range	HMX and RDX
	L14101310-02 : This sample was reanalyzed at a 5x dilution for HMX and RDX on the end of this run.			

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Microbac Laboratories Inc.

Data Checklist

Date: 24-OCT-2014
Analyst: JWR
Analyst: NA
Method: 8330-PLUS
Instrument: HPLC5
Curve Workgroup: WG498049
Runlog ID: 64302
Analytical Workgroups: ICAL ONLY

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	163 BAR
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	NA
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	NA
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	JBK

Primary Reviewer:
27-OCT-2014
John Richards

Secondary Reviewer:
28-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-28-2014 09:11:19

Microbac Laboratories Inc.

Data Checklist

Date: 26-OCT-2014
Analyst: JWR
Analyst: NA
Method: 8330-PLUS
Instrument: HPLC5
Curve Workgroup: NA
Runlog ID: 64303
Analytical Workgroups: L14100924 L14101310

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	162 BAR
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	X
Internal standard areas (MS)	NA
Library searches (MS)	DIODE ARRAY CONFIRMED
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	JBK

Primary Reviewer:
27-OCT-2014

Secondary Reviewer:
28-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-28-2014 09:20:32

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8330B

AAB#: WG498078

Login Number: L14100924

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
13MW3	02	10/13/14					10/20/2014	6.9	7		10/26/14	6.6	40	
13MW4	04	10/13/14					10/20/2014	6.8	7		10/27/14	6.7	40	
13MWDUP	06	10/13/14					10/20/2014	6.8	7		10/27/14	6.7	40	
13MW5	08	10/13/14					10/20/2014	6.8	7		10/27/14	6.7	40	
13MW5	10	10/13/14					10/20/2014	6.8	7		10/27/14	6.8	40	
13MW5	12	10/13/14					10/20/2014	6.8	7		10/27/14	6.8	40	
13MW6	14	10/13/14					10/20/2014	6.7	7		10/27/14	6.8	40	
13MW7	16	10/13/14					10/20/2014	6.7	7		10/27/14	6.8	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3836240
Report generated 10/28/2014 11:23

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L14100924
Instrument Id: HPLC5
Workgroup (AAB#): WG498078

Method: 8330
CAL ID: HPLC5-24-OCT-14
Matrix: Water

Sample Number	Dilution	Tag	1
L14100924-02	1.00	01	76.5
L14100924-04	1.00	01	81.8
L14100924-06	1.00	01	88.5
L14100924-08	1.00	01	91.3
L14100924-10	1.00	01	83.7
L14100924-12	1.00	01	89.8
L14100924-14	1.00	01	100
L14100924-16	1.00	01	94.8
WG497157-01	1.00	01	103
WG497157-02	1.00	01	93.3

Surrogates	Surrogate Limits		
1 - 1,2-Dinitrobenzene	50	-	150

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 3836248
Report generated: 10/28/2014 11:23

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L14100924
Blank File ID: 5L013835.F
Prep Date: 10/20/14 08:00
Analyzed Date: 10/26/14 22:14
Analyst: ECL

Work Group: WG498078
Blank Sample ID: WG497157-01
Instrument ID: HPLC5
Method: 8330B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG497157-02	5L013836.F	10/26/14 22:53	01
13MW3	L14100924-02	5L013837.F	10/26/14 23:32	01
13MW4	L14100924-04	5L013838.F	10/27/14 00:11	01
13MWDUP	L14100924-06	5L013839.F	10/27/14 00:50	01
13MW5	L14100924-08	5L013840.F	10/27/14 01:29	01
13MW5	L14100924-10	5L013841.F	10/27/14 02:08	01
13MW5	L14100924-12	5L013842.F	10/27/14 02:47	01
13MW6	L14100924-14	5L013843.F	10/27/14 03:26	01
13MW7	L14100924-16	5L013844.F	10/27/14 04:05	01

Report Name: BLANK_SUMMARY
PDF File ID: 3836241
Report generated 10/28/2014 11:23

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L14100924 Prep Date: 10/20/14 08:00 Sample ID: WG497157-01
Instrument ID: HPLC5 Run Date: 10/26/14 22:14 Prep Method: METHOD
File ID: 5L013835.F Analyst: ECL Method: 8330B
Workgroup (AAB#): WG498078 Matrix: Water Units: ug/L
Contract #: Cal ID: HPLC5-24-OCT-14

Analytes	MDL	RL	Concentration	Dilution	Qualifier
1,3,5-Trinitrobenzene	0.250	1.00	0.250	1	U
1,3-Dinitrobenzene	0.250	1.00	0.250	1	U
2,4-Dinitrotoluene	0.250	1.00	0.250	1	U
2,6-Dinitrotoluene	0.250	1.00	0.250	1	U
Nitroglycerin	0.250	1.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dinitrobenzene	103	50 - 150	PASS

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 3836242
28-OCT-2014 11:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L14100924 Run Date: 10/26/2014 Sample ID: WG497157-02
Instrument ID: HPLC5 Run Time: 22:53 Prep Method: METHOD
File ID: 5L013836.F Analyst: ECL Method: 8330B
Workgroup (AAB#): WG498078 Matrix: Water Units: ug/L
QC Key: STD Lot#: STD67105 Cal ID: HPLC5-24-OCT-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,3,5-Trinitrobenzene	5.00	4.59	91.9	65 - 140	
1,3-Dinitrobenzene	5.00	4.58	91.6	45 - 160	
2,4-Dinitrotoluene	5.00	4.81	96.1	60 - 135	
2,6-Dinitrotoluene	5.00	4.81	96.2	60 - 135	
Nitroglycerin	5.00	4.87	97.5	50 - 150	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dinitrobenzene	93.3	50 - 150	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 3836243
Report generated: 10/28/2014 11:23

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L14100924 Cal ID: HPLC5- 24-OCT-14 Worknum: WG498078

Instrument ID: HPLC5 Contract #: Prep Method: METHOD

Parent ID: L14100924-08 File ID: 5L013840.F Dil: 1 Method: 8330B

Sample ID: L14100924-10 MS File ID: 5L013841.F Dil: 1 Matrix: Water

Sample ID: L14100924-12 MSD File ID: 5L013842.F Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,3-Dinitrobenzene	ND	5.00	3.98	79.5	5.00	4.36	87.2	9.26	45 - 160	20	
2,4-Dinitrotoluene	ND	5.00	3.97	79.5	5.00	4.42	88.5	10.7	60 - 135	20	
2,6-Dinitrotoluene	ND	5.00	4.04	80.8	5.00	4.54	90.8	11.6	60 - 135	20	
Nitroglycerin	ND	5.00	4.42	88.4	5.00	4.79	95.9	8.11	50 - 150	20	
1,3,5-Trinitrobenzene	ND	5.00	3.91	78.1	5.00	4.30	85.9	9.52	65 - 140	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 3836244
Report generated 10/28/2014 11:23

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L14100924
Analytical Method: 8330B
ICAL Workgroup: WG498049

Instrument ID: HPLC5
Initial Calibration Date: 24-OCT-14 21:41
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,3,5-Trinitrobenzene		2.353	2.75	1.00000	
1,3-Dinitrobenzene		1.713	2.40	1.00000	
2,4-Dinitrotoluene		1.839	4.62	1.00000	
2,6-Dinitrotoluene		3.962	6.62	1.00000	
Nitroglycerin		4.933	9.29	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

This method always uses linear calibration model (R)

INT_CAL - Modified 03/06/2008
PDF File ID: 3836245
Report generated 10/28/2014 11:23

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L14100924

Analytical Method: 8330B

Instrument ID: HPLC5

Initial Calibration Date: 24-OCT-14 21:41

Column ID: F

Analyte	WG498049-01			WG498049-02			WG498049-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,3,5-Trinitrobenzene	2500	1048.78650	2.384	1000	421.029053	2.375	500	208.798492	2.395
1,3-Dinitrobenzene	2500	1425.73547	1.753	1000	572.917358	1.745	500	286.819092	1.743
2,4-Dinitrotoluene	2500	1306.97058	1.913	1000	524.290588	1.907	500	263.404846	1.898
2,6-Dinitrotoluene	2500	601.080627	4.159	1000	241.664078	4.138	500	122.638725	4.077
Nitroglycerin	2500	506.068115	4.940	1000	203.020447	4.926	500	101.461609	4.928

INT_CAL - Modified 03/06/2008
PDF File ID: 3836245
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Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L14100924

Analytical Method: 8330B

Instrument ID: HPLC5

Initial Calibration Date: 24-OCT-14 21:41

Column ID: F

Analyte	WG498049-04			WG498049-05			WG498049-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,3,5-Trinitrobenzene	100	42.3998451	2.358	50.0	21.0309334	2.377	25.0	11.2173491	2.229
1,3-Dinitrobenzene	100	58.6460381	1.705	50.0	29.8918610	1.673	25.0	15.0798826	1.658
2,4-Dinitrotoluene	100	54.4535217	1.836	50.0	28.2848072	1.768	25.0	14.5861855	1.714
2,6-Dinitrotoluene	100	25.1682472	3.973	50.0	12.7488441	3.922	25.0	7.13690853	3.503
Nitroglycerin	100	17.1263962	5.839	50.0	11.1586008	4.481	25.0	5.57395315	4.485

INT_CAL - Modified 03/06/2008
PDF File ID: 3836245
Report generated 10/28/2014 11:23

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L14100924 Run Date: 10/24/2014 Sample ID: WG498049-07
Instrument ID: HPLC5 Run Time: 22:20 Method: 8330B
File ID: 5L013825.F Analyst: ECL QC Key: STD
ICal Workgroup: WG498049 Cal ID: HPLC5 - 24-OCT-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Sym-Trinitrobenzene		500	483	ug/L	2.47	3.50	30	
1,3-Dinitrobenzene		500	486	ug/L	1.79	2.70	30	
2,4-Dinitrotoluene		500	497	ug/L	1.91	0.700	30	
2,6-Dinitrotoluene		500	504	ug/L	4.09	0.800	30	
Nitroglycerin		500	528	ug/L	4.68	5.60	30	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3836246
Report generated 10/28/2014 11:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14100924
Run Date: 10/26/2014
Sample ID: WG498080-02
Instrument ID: HPLC5
Run Time: 21:35
Method: 8330B
File ID: 5L013834.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG498078
Cal ID: HPLC5 - 24-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Sym-Trinitrobenzene		500	499	ug/L	2.38	0.101	20	
1,3-Dinitrobenzene		500	503	ug/L	1.74	0.553	20	
2,4-Dinitrotoluene		500	509	ug/L	1.87	1.76	20	
2,6-Dinitrotoluene		500	507	ug/L	4.06	1.46	20	
Nitroglycerin		500	511	ug/L	4.84	2.29	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3836247
Report generated 10/28/2014 11:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L14100924
Run Date: 10/27/2014
Sample ID: WG498080-03
Instrument ID: HPLC5
Run Time: 04:44
Method: 8330B
File ID: 5L013845.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG498078
Cal ID: HPLC5 - 24-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Sym-Trinitrobenzene		500	501	ug/L	2.38	0.129	20	
1,3-Dinitrobenzene		500	501	ug/L	1.74	0.213	20	
2,4-Dinitrotoluene		500	502	ug/L	1.89	0.449	20	
2,6-Dinitrotoluene		500	507	ug/L	4.06	1.35	20	
Nitroglycerin		500	498	ug/L	4.97	0.499	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3836247
Report generated 10/28/2014 11:23