TABLE 3-1

2013-2014 Analytical Methods

Class Constituent	Sample Type	EPA Method	PQL (ML)	MDL	Units	Preservation	Holding Time
Conventional							
Oil and Grease	Grab	EPA413.1/EPA1664A	5	1.44	mg/L	H2SO4	28 days
Total Phenols	Grab	EPA420.1	0.1	0.03	mg/L	H3PO4, $CuSO_4$	7 days
Cyanide	Grab	SM4500-CNE	0.005	0.005	mg/L	NaOH	14 days
pH	Comp	SM4500H B	NA	NA		-	immediately
Dissolved Oxygen	Grab	SM4500O G	5	0.5	mg/L	-	immediately
Indicator Bacteria							
Total Coliform	Grab	SM9221E/SM9221B	20	20	MPN/100mL	$Na_2S_2O_3$	6 hours
Fecal Coliform	Grab	SM9221E/SM9221B	20	20	MPN/100mL	$Na_2S_2O_3$	6 hours
e. coli	Grab	SM9223/IDEXX	1	1	MPN/100mL	$Na_2S_2O_3$	6 hours
Fecal Streptococcus	Grab	SM9230B	20	20	MPN/100mL	$Na_2S_2O_3$	6 hours
Fecal Enterococcus	Grab	SM9230B	20	20	MPN/100mL	$Na_2S_2O_3$	6 hours
General							
Ammonia (NH3)	Comp	SM 4500-NH3 D	0.121	0.121	mg/l	-	28 days
Chloride	Comp	EPA300.0	2	1	mg/L	-	28 days
Fluoride	Comp	EPA300.0	0.1	0.1	mg/L	-	28 days
Nitrate (NO3)	Comp	EPA300.0	1	0.1	mg/L	-	48 hours
Sulfate	Comp	EPA300.0	1	0.1	mg/L	-	48 hours
Alkalinity	Comp	SM2320B	2	2	mg/L	-	14 days
Hardness	Comp	SM2340C	2	2	mg/L	HNO_3 or H_2SO_4	6 months
COD	Comp	SM5220D	20	10	mg/L	H_2SO_4	28 days
TPH	Grab	EPA418.1	5	1.5	mg/L	H_2SO_4	28 days
Specific Conductance	Comp	SM2510B	1	1	umhos/cm	-	immediately
Total Dissolved Solids	Comp	SM2540C	1	1	mg/L	-	7 days
Turbidity	Comp	SM2130B	0.1	0.1	NTU	-	48 hours
Total Suspended Solids	Comp	SM2540D	2	1	mg/L	-	7 days
Volatile Suspended Solids	Comp	SM2540E	1	1	mg/L	-	7 days
MBAS	Comp	SM5540 C	0.5	0.01	mg/L	-	48 hours
Total Organic Carbon	Comp	SM5310B/EPA415.1	1	0.5	mg/L	HCl, H_2SO_4, or H_3PO_4	28 days
Methyl Tertiary Butyl Ether	Grab	EPA624	1	0.33	ug/l	HCl	14 days
BOD	Comp	SM5210B	2	1	mg/L	-	24 hours
Nutrients							
Dissolved Phosphorus	Comp	SM4500-PE	0.05	0.05	mg/L	-	48 hours
Total Phosphorus	Comp	SM4500-PE	0.05	0.05	mg/L	H_2SO_4	28 days
NH3-N	Comp	SM4500-NH3	0.1	0.1	mg/L	H2SO4	28 days
Nitrate-N	Comp	EPA300.0	0.1	0.03	mg/L	-	48 hours
Nitrite-N	Comp	EPA300.0	0.03	0.01	mg/L	-	48 hours
Kjeldahl-N	Comp	SM4500NHorg	0.1	0.1	mg/L	H_2SO_4	28 days
Metals							
Dissolved Aluminum	Comp	EPA200.8	100	50	ug/l	HNO_3	6 months
Total Aluminum	Comp	EPA200.8	100	50	ug/l	HNO_3	6 months
Dissolved Antimony	Comp	EPA200.8	0.5	0.2	ug/l	HNO_3	6 months
Total Antimony	Comp	EPA200.8	0.5	0.2	ug/l	HNO_3	6 months
Dissolved Arsenic	Comp	EPA200.8	1	0.2	ug/l	HNO_3	6 months
Total Arsenic	Comp	EPA200.8	1	0.2	ug/l	HNO_3	6 months
Dissolved Barium	Comp	EPA200.8	10	1	ug/l	HNO_3	6 months
Total Barium	Comp	EPA200.8	10	1	ug/l	HNO_3	6 months
Dissolved Berylium	Comp	EPA200.8	0.5	0.1	ug/l	HNO_3	6 months
Total Beryllium	Comp	EPA200.8	0.5	0.1	ug/l	HNO_3	6 months
Dissolved Cadmium	Comp	EPA200.8	0.25	0.1	ug/l	HNO_3	6 months
Total Cadmium	Comp	EPA200.8	0.25	0.1	ug/l	HNO_3	6 months
Dissolved Chromium	Comp	EPA200.8	0.5	0.5	ug/l	HNO_3	6 months
Total Chromium	Comp	EPA200.8	0.5	0.5	ug/l	HNO_3	6 months
Dissolved Chromium +6	Comp	EPA218.6	5	0.25	ug/l	-	24 hours
Total Chromium +6	Comp	EPA218.6	5	0.25	ug/l	-	24 hours

PQL = minimum level (ML)

MDL = method detection limit

- = No preservation required other than cooling the sample to 4 °C.

*** MDL slightly above ML, however all results were detected above the MDL.**

TABLE 3-1

2013-2014 Analytical Methods

Class Constituent	Sample Type	EPA Method	PQL (ML)	MDL	Units	Preservation	Holding Time
Metals							
Dissolved Copper	Comp	EPA200.8	0.5	0.5	ug/l	HNO_3	6 months
Total Copper	Comp	EPA200.8	0.5	0.5	ug/l	HNO_3	6 months
Dissolved Iron	Comp	EPA200.8	100	50	ug/l	HNO_3	6 months
Total Iron	Comp	EPA200.8	100	50	ug/l	HNO_3	6 months
Dissolved Lead	Comp	EPA200.8	0.5	0.2	ug/l	HNO_3	6 months
Total Lead	Comp	EPA200.8	0.5	0.2	ug/l	HNO_3	6 months
Dissolved Mercury	Comp	EPA245.1	0.5	0.1	ug/l	HNO_3	6 months
Total Mercury	Comp	EPA245.1	0.5	0.1	ug/l	HNO_3	6 months
Dissolved Nickel	Comp	EPA200.8	1	0.5	ug/l	HNO_3	6 months
Total Nickel	Comp	EPA200.8	1	0.5	ug/l	HNO_3	6 months
Dissolved Selenium	Comp	EPA200.8	1	0.5	ug/l	HNO_3	6 months
Total Selenium	Comp	EPA200.8	1	0.5	ug/l	HNO_3	6 months
Dissolved Silver	Comp	EPA200.8	0.25	0.1	ug/l	HNO_3	6 months
Total Silver	Comp	EPA200.8	0.25	0.1	ug/l	HNO_3	6 months
Dissolved Thallium	Comp	EPA200.8	1	0.1	ug/l	HNO_3	6 months
Total Thallium	Comp	EPA200.8	1	0.1	ug/l	HNO_3	6 months
Dissolved Zinc	Comp	EPA200.8	1	1	ug/l	HNO_3	6 months
Total Zinc	Comp	EPA200.8	1	1	ug/l	HNO_3	6 months
Semi-Volatiles Organics							
2-Chlorophenol	Comp	EPA625	2	0.7	ug/l	Sodium Thiosulfate if Residual Chlorine is Present	7 Days for extraccion 40 Days for Analysis
2,4-dichlorophenol	Comp	EPA625	1	0.33	ug/l		
2,4-dimethylphenol	Comp	EPA625	2	0.67	ug/l		
2,4-dinitrophenol	Comp	EPA625	5	1	ug/l		
2-nitrophenol	Comp	EPA625	3	1	ug/l		
4-nitrophenol	Comp	EPA625	5	1	ug/l		
4-chloro_3_methylphenol	Comp	EPA625	1	1	ug/l		
Pentachlorophenol	Comp	EPA625	2	0.67	ug/l		
Phenol	Comp	EPA625	1	0.33	ug/l		
2,4,6-trichlophenol	Comp	EPA625	1	0.33	ug/l		
Base/Neutral							
Acenaphthene	Comp	EPA625	1	0.33	ug/l	Sodium Thiosulfate if Residual Chlorine is Present	7 Days for extraccion 40 Days for Analysis
Acenaphthylene	Comp	EPA625	2	0.67	ug/l		
Anthracene	Comp	EPA625	2	0.67	ug/l		
Benzidine	Comp	EPA625	5	1.67	ug/l		
1,2 Benzanthracene	Comp	EPA625	5	1.67	ug/l		
Benzo [b] fluoranthene	Comp	EPA625	10	3.33	ug/l		
Benzo(a)pyrene	Comp	EPA625	2	0.67	ug/l		
Benzo [g-h-i] perylene	Comp	EPA625	5	1.67	ug/l		
Benzo(k)flouranthene	Comp	EPA625	2	0.67	ug/l		
Bis(2-Chloroethoxy) methane	Comp	EPA625	5	1.67	ug/l		
Bis(2-Chloroisopropyl) ether	Comp	EPA625	2	0.67	ug/l		
Bis(2-Chloroethyl) ether	Comp	EPA625	1	0.33	ug/l		
Bis(2-Ethylhexl) phthalate	Comp	EPA625	5	0.67	ug/l		
4-Bromophenyl phenyl ether	Comp	EPA625	5	1.67	ug/l		
Butyl benzyl phthalate	Comp	EPA625	10	3.33	ug/l		
2-Chloronaphthalene	Comp	EPA625	10	3.33	ug/l		
2-Chloroethyl vinyl ether	Grab	EPA624	1	0.33	ug/l		
4-Chlorophenyl phenyl ether	Comp	EPA625	5	1.67	ug/l		
Chrysene	Comp	EPA625	5	1.67	ug/l		
Dibenzo(a,h)anthracene	Comp	EPA625	0.1	0.033	ug/l		
1,3-Dichlorobenzene	Comp	EPA625	1.0	0.5	ug/l		
1,4-Dichlorobenzene	Comp	EPA625	1.0	0.5	ug/l		
1,2-Dichlorobenzene	Comp	EPA625	1.0	0.5	ug/l		

PQL = minimum level (ML)

MDL = method detection limit

- = No preservation required other than cooling the sample to 4 °C.

TABLE 3-1

2013-2014 Analytical Methods

Class Constituent	Sample Type	EPA Method	PQL (ML)	MDL	Units	Preservation	Holding Time
Base/Neutral							
3,3-Dichlorobenzidine	Comp	EPA625	5.0	1.67	ug/l	Sodium Thiosulfate if Residual Chlorine is Present	7 Days for extraccion 40 days for analysis
Diethyl phthalate	Comp	EPA625	2.0	1.0	ug/l		
Dimethyl phthalate	Comp	EPA625	2.0	0.67	ug/l		
di-n-Butyl phthalate	Comp	EPA625	10.0	3.33	ug/l		
2,4-Dinitrotoluene	Comp	EPA625	5.0	1.67	ug/l		
2,6-Dinitrotoluene	Comp	EPA625	5.0	1.67	ug/l		
4,6 Dinitro-2-methylphenol	Comp	EPA625	5.0	1.0	ug/l		
1,2-Diphenylhydrazine	Comp	EPA625	1.0	0.33	ug/l		
di-n-Octyl phthalate	Comp	EPA625	10.0	3.33	ug/l		
Fluoranthene	Comp	EPA625	0.05	0.02	ug/l		
Fluorene	Comp	EPA625	0.1	0.03	ug/l		
Hexachlorobenzene	Comp	EPA625	1.0	0.33	ug/l		
Hexachlorobutadiene	Comp	EPA625	1.0	0.33	ug/l		
Hexachloro-cyclopentadiene	Comp	EPA625	5.0	1.67	ug/l		
Hexachloroethane	Comp	EPA625	1.0	0.33	ug/l		
Indeno(1,2,3-cd)pyrene	Comp	EPA625	0.05	0.02	ug/l		
Isophorone	Comp	EPA625	1.0	0.33	ug/l		
Naphthalene	Comp	EPA625	0.2	0.67	ug/l		
Nitrobenzene	Comp	EPA625	1.0	0.33	ug/l		
N-Nitroso-dimethyl amine	Comp	EPA625	5.0	1.67	ug/l		
N-Nitroso-diphenyl amine	Comp	EPA625	1.0	0.33	ug/l		
N-Nitroso-di-n-propyl amine	Comp	EPA625	5.0	1.67	ug/l		
Phenanthrene	Comp	EPA625	0.05	0.02	ug/l		
Pyrene	Comp	EPA625	0.05	0.02	ug/l		
1,2,4-Trichlorobenzene	Comp	EPA625	1.0	0.33	ug/l		
Chlorinated Pesticides							
Aldrin	Comp	EPA608	0.005	0.004	ug/l	Sodium Thiosulfate if Residual Chlorine is Present	7 Days for extraccion 40 days for analysis
alpha-BHC	Comp	EPA608	0.01	0.01	ug/l		
beta-BHC	Comp	EPA608	0.005	0.005	ug/l		
delta-BHC	Comp	EPA608	0.005	0.005	ug/l		
gamma-BHC (lindane)	Comp	EPA608	0.02	0.004	ug/l		
alpha-chlordane	Comp	EPA608	0.10	0.033	ug/l		
gamma-chlordane	Comp	EPA608	0.10	0.033	ug/l		
4,4'-DDD	Comp	EPA608	0.05	0.011	ug/l		
4,4'-DDE	Comp	EPA608	0.05	0.004	ug/l		
4,4'-DDT	Comp	EPA608	0.01	0.01	ug/l		
Dieldrin	Comp	EPA608	0.01	0.002	ug/l		
alpha-Endosulfan	Comp	EPA608	0.02	0.01	ug/l		
beta-Endosulfan	Comp	EPA608	0.01	0.004	ug/l		
Endosulfan sulfate	Comp	EPA608	0.05	0.05	ug/l		
Endrin	Comp	EPA608	0.01	0.006	ug/l		
Endrin aldehyde	Comp	EPA608	0.01	0.01	ug/l		
Heptachlor	Comp	EPA608	0.01	0.003	ug/l		
Heptachlor Epoxide	Comp	EPA608	0.01	0.01	ug/l		
Methoxychlor	Comp	EPA608	0.50	0.50	ug/l		
Toxaphene	Comp	EPA608	0.50	0.24	ug/l		
Polychlorinated Biphenyls							
Aroclor-1016	Comp	EPA608	0.50	0.065		Sodium Thiosulfate if Residual Chlorine is Present	7 Days for extraccion 40 days for analysis
Aroclor-1221	Comp	EPA608	0.50	0.065			
Aroclor-1232	Comp	EPA608	0.50	0.065			
Aroclor-1242	Comp	EPA608	0.50	0.065			
Aroclor-1248	Comp	EPA608	0.50	0.065			
Aroclor-1254	Comp	EPA608	0.50	0.065			
Aroclor-1260	Comp	EPA608	0.50	0.065			

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TABLE 3-1

2013-2014 Analytical Methods

Class Constituent	Sample Type	EPA Method	PQL (ML)	MDL	Units	Preservation	Holding Time
Organophosphate Pesticides							
Chlorpyrifos	Comp	EPA507	0.05	0.02	ug/l	-	7 days
Diazinon	Comp	EPA507	0.01	0.003	ug/l	-	7 days
Prometryn	Comp	EPA507	2.0	0.67	ug/l	Sodium thiosulfate if residual Chlorine is present	14 days
Atrazine	Comp	EPA507	2.0	0.67	ug/l		14 days
Simazine	Comp	EPA507	2.0	0.67	ug/l		14 days
Cyanazine	Comp	EPA507	2.0	0.67	ug/l		14 days
Malathion	Comp	EPA507	1.0	0.33	ug/l	-	14 days
Herbicides							
Glyphosate	Comp	EPA547	5.0	5.0	ug/l	$Na_2S_2O_3$	14 days
2,4-D	Comp	EPA515.3	0.02	0.02	ug/l	-	7 days
2,4,5-TP-SILVEX	Comp	EPA515.3	0.2	0.07	ug/l	-	7 days

PQL = minimum level (ML)

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