

Your C.O.C. #: na

Attention: Moya m Lambert

Antigua Distillery Ltd
PO BOX 149
Friars Hill Rd
St John's
Antigua, --
WestIndies

Report Date: 2017/06/19
Report #: R4549948
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7C1491

Received: 2017/06/12, 14:59

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
ABN Compounds in Water by GC/MS	1	2017/06/14	2017/06/15	CAM SOP-00301	EPA 8270 m
Anions	1	N/A	2017/06/15	CAM SOP-00435	SM 22 4110 B m
Conductivity	1	N/A	2017/06/15	CAM SOP-00414	SM 22 2510 m
Mercury in Water by CVAA	1	2017/06/16	2017/06/16	CAM SOP-00453	EPA 7470A m
Metals Analysis by ICPMS (as received) (1)	1	N/A	2017/06/15	CAM SOP-00447	EPA 6020B m
Total Coliforms/ E. coli, CFU/100mL	1	N/A	2017/06/13	CAM SOP-00551	MOE E3407
Heterotrophic plate count, (CFU/mL)	1	N/A	2017/06/13	CAM SOP-00512	SM 9215B
Pseudomonas aeruginosa, (CFU/100mL)	1	N/A	2017/06/13	CAM SOP-00508	MOE-E3371 V5
pH	1	N/A	2017/06/15	CAM SOP-00413	SM 4500H+ B m
Total Dissolved Solids	1	2017/06/14	2017/06/14	CAM SOP-00428	SM 22 2540C m
Volatile Organic Compounds in Water	1	N/A	2017/06/16	CAM SOP-00226	EPA 8260C m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7C1491

Received: 2017/06/12, 14:59

(1) Metals analysis was performed on the sample 'as received'.

Encryption Key



Nazeema Rahaman
Project Manager
19 Jun 2017 17:48:39

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Gemarie Balatico, Project Manager

Email: gbalatico@maxxam.ca

Phone# (905) 817-5700

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF ANALYSES OF WATER

Maxxam ID		ENW221		
Sampling Date				
COC Number		na		
	UNITS	OASIS PURIFIED WATER	RDL	QC Batch
Inorganics				
Conductivity	umho/cm	20	1.0	5029740
Total Dissolved Solids	mg/L	ND	10	5027694
pH	pH	6.74		5029742
Dissolved Bromide (Br-)	mg/L	ND	1.0	5027903
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				
ND = Not detected				

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		ENW221		
Sampling Date				
COC Number		na		
	UNITS	OASIS PURIFIED WATER	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	ND	0.0001	5031102
. Aluminum (Al)	ug/L	ND	5.0	5028403
. Antimony (Sb)	ug/L	ND	0.50	5028403
. Arsenic (As)	ug/L	ND	1.0	5028403
. Barium (Ba)	ug/L	ND	2.0	5028403
. Beryllium (Be)	ug/L	ND	0.50	5028403
. Bismuth (Bi)	ug/L	ND	1.0	5028403
. Boron (B)	ug/L	1300	10	5028403
. Cadmium (Cd)	ug/L	ND	0.10	5028403
. Calcium (Ca)	ug/L	ND	200	5028403
. Chromium (Cr)	ug/L	ND	5.0	5028403
. Cobalt (Co)	ug/L	ND	0.50	5028403
. Copper (Cu)	ug/L	ND	1.0	5028403
. Iron (Fe)	ug/L	ND	100	5028403
. Lead (Pb)	ug/L	ND	0.50	5028403
. Lithium (Li)	ug/L	ND	5.0	5028403
. Magnesium (Mg)	ug/L	ND	50	5028403
. Manganese (Mn)	ug/L	ND	2.0	5028403
. Molybdenum (Mo)	ug/L	ND	0.50	5028403
. Nickel (Ni)	ug/L	ND	1.0	5028403
. Phosphorus (P)	ug/L	ND	100	5028403
. Potassium (K)	ug/L	ND	200	5028403
. Selenium (Se)	ug/L	ND	2.0	5028403
. Silicon (Si)	ug/L	ND	50	5028403
. Silver (Ag)	ug/L	ND	0.10	5028403
. Sodium (Na)	ug/L	3700	100	5028403
. Strontium (Sr)	ug/L	ND	1.0	5028403
. Tellurium (Te)	ug/L	ND	1.0	5028403
. Thallium (Tl)	ug/L	ND	0.050	5028403
. Tin (Sn)	ug/L	ND	1.0	5028403
. Titanium (Ti)	ug/L	ND	5.0	5028403
. Tungsten (W)	ug/L	ND	1.0	5028403
. Uranium (U)	ug/L	ND	0.10	5028403
. Vanadium (V)	ug/L	ND	0.50	5028403
. Zinc (Zn)	ug/L	ND	5.0	5028403
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected				

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		ENW221		
Sampling Date				
COC Number		na		
	UNITS	OASIS PURIFIED WATER	RDL	QC Batch
. Zirconium (Zr)	ug/L	ND	1.0	5028403
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected				

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		ENW221		
Sampling Date				
COC Number		na		
	UNITS	OASIS PURIFIED WATER	RDL	QC Batch
Semivolatile Organics				
Acenaphthene	ug/L	ND	0.20	5027176
Acenaphthylene	ug/L	ND	0.20	5027176
Anthracene	ug/L	ND	0.20	5027176
Benzo(a)anthracene	ug/L	ND	0.20	5027176
Benzo(a)pyrene	ug/L	ND	0.20	5027176
Benzo(b/j)fluoranthene	ug/L	ND	0.20	5027176
Benzo(g,h,i)perylene	ug/L	ND	0.20	5027176
Benzo(k)fluoranthene	ug/L	ND	0.20	5027176
1-Chloronaphthalene	ug/L	ND	1.0	5027176
2-Chloronaphthalene	ug/L	ND	0.50	5027176
Chrysene	ug/L	ND	0.20	5027176
Dibenz(a,h)anthracene	ug/L	ND	0.20	5027176
Fluoranthene	ug/L	ND	0.20	5027176
Fluorene	ug/L	ND	0.20	5027176
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.20	5027176
1-Methylnaphthalene	ug/L	ND	0.20	5027176
2-Methylnaphthalene	ug/L	ND	0.20	5027176
Naphthalene	ug/L	ND	0.20	5027176
Perylene	ug/L	ND	0.20	5027176
Phenanthrene	ug/L	ND	0.20	5027176
Pyrene	ug/L	ND	0.20	5027176
1,2-Dichlorobenzene	ug/L	ND	0.50	5027176
1,3-Dichlorobenzene	ug/L	ND	0.50	5027176
1,4-Dichlorobenzene	ug/L	ND	0.50	5027176
Hexachlorobenzene	ug/L	ND	0.50	5027176
Pentachlorobenzene	ug/L	ND	0.50	5027176
1,2,3,5-Tetrachlorobenzene	ug/L	ND	0.50	5027176
1,2,4,5-Tetrachlorobenzene	ug/L	ND	0.50	5027176
1,2,3-Trichlorobenzene	ug/L	ND	0.50	5027176
1,2,4-Trichlorobenzene	ug/L	ND	0.50	5027176
1,3,5-Trichlorobenzene	ug/L	ND	0.50	5027176
2-Chlorophenol	ug/L	ND	0.30	5027176
4-Chloro-3-Methylphenol	ug/L	ND	0.50	5027176
m/p-Cresol	ug/L	ND	0.50	5027176
o-Cresol	ug/L	ND	0.50	5027176
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected				

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		ENW221		
Sampling Date				
COC Number		na		
	UNITS	OASIS PURIFIED WATER	RDL	QC Batch
1,2,3,4-Tetrachlorobenzene	ug/L	ND	0.50	5027176
2,3-Dichlorophenol	ug/L	ND	0.50	5027176
2,4-Dichlorophenol	ug/L	ND	0.30	5027176
2,5-Dichlorophenol	ug/L	ND	0.50	5027176
2,6-Dichlorophenol	ug/L	ND	0.50	5027176
3,4-Dichlorophenol	ug/L	ND	0.50	5027176
3,5-Dichlorophenol	ug/L	ND	0.50	5027176
2,4-Dimethylphenol	ug/L	ND	0.50	5027176
2,4-Dinitrophenol	ug/L	ND	2.0	5027176
4,6-Dinitro-2-methylphenol	ug/L	ND	2.0	5027176
2-Nitrophenol	ug/L	ND	0.50	5027176
4-Nitrophenol	ug/L	ND	1.4	5027176
Pentachlorophenol	ug/L	ND	1.0	5027176
Phenol	ug/L	ND	0.50	5027176
2,3,4,5-Tetrachlorophenol	ug/L	ND	0.40	5027176
2,3,4,6-Tetrachlorophenol	ug/L	ND	0.50	5027176
2,3,5,6-Tetrachlorophenol	ug/L	ND	0.50	5027176
2,3,4-Trichlorophenol	ug/L	ND	0.50	5027176
2,3,5-Trichlorophenol	ug/L	ND	0.50	5027176
2,3,6-Trichlorophenol	ug/L	ND	0.50	5027176
2,4,5-Trichlorophenol	ug/L	ND	0.50	5027176
2,4,6-Trichlorophenol	ug/L	ND	0.50	5027176
3,4,5-Trichlorophenol	ug/L	ND	0.50	5027176
Benzyl butyl phthalate	ug/L	ND	0.50	5027176
Biphenyl	ug/L	ND	0.50	5027176
Bis(2-chloroethyl)ether	ug/L	ND	0.50	5027176
Bis(2-chloroethoxy)methane	ug/L	ND	0.50	5027176
Bis(2-chloroisopropyl)ether	ug/L	ND	0.50	5027176
Bis(2-ethylhexyl)phthalate	ug/L	ND	2.0	5027176
4-Bromophenyl phenyl ether	ug/L	ND	0.30	5027176
p-Chloroaniline	ug/L	ND	1.0	5027176
4-Chlorophenyl phenyl ether	ug/L	ND	0.50	5027176
Di-N-butyl phthalate	ug/L	ND	2.0	5027176
Di-N-octyl phthalate	ug/L	ND	0.80	5027176
2,4-Dinitrotoluene	ug/L	ND	0.50	5027176
Diethyl phthalate	ug/L	ND	1.0	5027176
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected				

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		ENW221		
Sampling Date				
COC Number		na		
	UNITS	OASIS PURIFIED WATER	RDL	QC Batch
3,3'-Dichlorobenzidine	ug/L	ND	0.50	5027176
Dimethyl phthalate	ug/L	ND	1.0	5027176
2,6-Dinitrotoluene	ug/L	ND	0.50	5027176
Diphenyl Ether	ug/L	ND	0.30	5027176
Hexachlorobutadiene	ug/L	ND	0.40	5027176
Hexachlorocyclopentadiene	ug/L	ND	2.0	5027176
Hexachloroethane	ug/L	ND	0.50	5027176
Isophorone	ug/L	ND	0.50	5027176
Nitrobenzene	ug/L	ND	0.50	5027176
Nitrosodiphenylamine/Diphenylamine	ug/L	ND	1.0	5027176
N-Nitroso-di-n-propylamine	ug/L	ND	0.50	5027176
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	104		5027176
2-Fluorobiphenyl	%	75		5027176
2-Fluorophenol	%	44		5027176
D14-Terphenyl	%	100		5027176
D5-Nitrobenzene	%	69		5027176
D5-Phenol	%	32		5027176
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected				

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		ENW221		
Sampling Date				
COC Number		na		
	UNITS	OASIS PURIFIED WATER	RDL	QC Batch
Volatiles Organics				
Acetone (2-Propanone)	ug/L	ND	10	5023140
Benzene	ug/L	ND	0.10	5023140
Bromodichloromethane	ug/L	ND	0.10	5023140
Bromoform	ug/L	ND	0.20	5023140
Bromomethane	ug/L	ND	0.50	5023140
Carbon Tetrachloride	ug/L	ND	0.10	5023140
Chlorobenzene	ug/L	ND	0.10	5023140
Chloroform	ug/L	0.13	0.10	5023140
Dibromochloromethane	ug/L	ND	0.20	5023140
1,2-Dichlorobenzene	ug/L	ND	0.20	5023140
1,3-Dichlorobenzene	ug/L	ND	0.20	5023140
1,4-Dichlorobenzene	ug/L	ND	0.20	5023140
Dichlorodifluoromethane (FREON 12)	ug/L	ND	0.50	5023140
1,1-Dichloroethane	ug/L	ND	0.10	5023140
1,2-Dichloroethane	ug/L	ND	0.20	5023140
1,1-Dichloroethylene	ug/L	ND	0.10	5023140
cis-1,2-Dichloroethylene	ug/L	ND	0.10	5023140
trans-1,2-Dichloroethylene	ug/L	ND	0.10	5023140
1,2-Dichloropropane	ug/L	ND	0.10	5023140
cis-1,3-Dichloropropene	ug/L	ND	0.20	5023140
trans-1,3-Dichloropropene	ug/L	ND	0.20	5023140
Ethylbenzene	ug/L	ND	0.10	5023140
Ethylene Dibromide	ug/L	ND	0.20	5023140
Hexane	ug/L	ND	0.50	5023140
Methylene Chloride(Dichloromethane)	ug/L	ND	0.50	5023140
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	5.0	5023140
Methyl Isobutyl Ketone	ug/L	ND	5.0	5023140
Methyl t-butyl ether (MTBE)	ug/L	ND	0.20	5023140
Styrene	ug/L	ND	0.20	5023140
1,1,1,2-Tetrachloroethane	ug/L	ND	0.20	5023140
1,1,2,2-Tetrachloroethane	ug/L	ND	0.20	5023140
Tetrachloroethylene	ug/L	ND	0.10	5023140
Toluene	ug/L	ND	0.20	5023140
1,1,1-Trichloroethane	ug/L	ND	0.10	5023140
1,1,2-Trichloroethane	ug/L	ND	0.20	5023140
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected				

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		ENW221		
Sampling Date				
COC Number		na		
	UNITS	OASIS PURIFIED WATER	RDL	QC Batch
Trichloroethylene	ug/L	ND	0.10	5023140
Trichlorofluoromethane (FREON 11)	ug/L	ND	0.20	5023140
Vinyl Chloride	ug/L	ND	0.20	5023140
p+m-Xylene	ug/L	0.11	0.10	5023140
o-Xylene	ug/L	ND	0.10	5023140
Total Xylenes	ug/L	0.11	0.10	5023140
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	99		5023140
D4-1,2-Dichloroethane	%	109		5023140
D8-Toluene	%	97		5023140
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected				

MICROBIOLOGY (WATER)

Maxxam ID		ENW221	
Sampling Date			
COC Number		na	
	UNITS	OASIS PURIFIED WATER	QC Batch
Microbiological			
Heterotrophic plate count	CFU/mL	0	5025835
Pseudomonas aeruginosa	CFU/100mL	0	5025836
Background	CFU/100mL	0	5025834
Total Coliforms	CFU/100mL	0	5025834
Escherichia coli	CFU/100mL	0	5025834
QC Batch = Quality Control Batch			

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	22.0°C
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Samples received at a temperature above 10 C. Analysis performed with client's consent.

Analysis: Samples analyzed past hold time. Analysis performed with client's consent.

Analysis: Samples were submitted using an incorrect bottle type. Analysis performed with client's consent.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5023140	4-Bromofluorobenzene	2017/06/15	98	70 - 130	98	70 - 130	96	%				
5023140	D4-1,2-Dichloroethane	2017/06/15	98	70 - 130	99	70 - 130	101	%				
5023140	D8-Toluene	2017/06/15	101	70 - 130	99	70 - 130	100	%				
5027176	2,4,6-Tribromophenol	2017/06/14			112	10 - 130	107	%				
5027176	2-Fluorobiphenyl	2017/06/14			81	30 - 130	82	%				
5027176	2-Fluorophenol	2017/06/14			51	10 - 130	50	%				
5027176	D14-Terphenyl	2017/06/14			99	30 - 130	97	%				
5027176	D5-Nitrobenzene	2017/06/14			84	30 - 130	82	%				
5027176	D5-Phenol	2017/06/14			35	10 - 130	34	%				
5023140	1,1,1,2-Tetrachloroethane	2017/06/16	100	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	1,1,1-Trichloroethane	2017/06/16	87	70 - 130	92	70 - 130	ND, RDL=0.10	ug/L	NC	30		
5023140	1,1,2,2-Tetrachloroethane	2017/06/16	100	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	1,1,2-Trichloroethane	2017/06/16	99	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	1,1-Dichloroethane	2017/06/16	96	70 - 130	101	70 - 130	ND, RDL=0.10	ug/L	NC	30		
5023140	1,1-Dichloroethylene	2017/06/16	102	70 - 130	107	70 - 130	ND, RDL=0.10	ug/L	NC	30		
5023140	1,2-Dichlorobenzene	2017/06/16	94	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	1,2-Dichloroethane	2017/06/16	92	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30		
5023140	1,2-Dichloropropane	2017/06/16	89	70 - 130	95	70 - 130	ND, RDL=0.10	ug/L	NC	30		
5023140	1,3-Dichlorobenzene	2017/06/16	96	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	1,4-Dichlorobenzene	2017/06/16	94	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	Acetone (2-Propanone)	2017/06/16	90	60 - 140	93	60 - 140	ND, RDL=10	ug/L	NC	30		
5023140	Benzene	2017/06/16	NC	70 - 130	101	70 - 130	ND, RDL=0.10	ug/L	0.12	30		
5023140	Bromodichloromethane	2017/06/16	92	70 - 130	96	70 - 130	ND, RDL=0.10	ug/L	NC	30		
5023140	Bromoform	2017/06/16	101	70 - 130	104	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	Bromomethane	2017/06/16	74	60 - 140	79	60 - 140	ND, RDL=0.50	ug/L	NC	30		
5023140	Carbon Tetrachloride	2017/06/16	87	70 - 130	91	70 - 130	ND, RDL=0.10	ug/L	NC	30		
5023140	Chlorobenzene	2017/06/16	93	70 - 130	96	70 - 130	ND, RDL=0.10	ug/L	NC	30		
5023140	Chloroform	2017/06/16	91	70 - 130	97	70 - 130	ND, RDL=0.10	ug/L	NC	30		
5023140	cis-1,2-Dichloroethylene	2017/06/16	91	70 - 130	95	70 - 130	ND, RDL=0.10	ug/L	NC	30		
5023140	cis-1,3-Dichloropropene	2017/06/16	88	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	Dibromochloromethane	2017/06/16	100	70 - 130	102	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	Dichlorodifluoromethane (FREON 12)	2017/06/16	69	60 - 140	72	60 - 140	ND, RDL=0.50	ug/L	NC	30		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5023140	Ethylbenzene	2017/06/16	95	70 - 130	96	70 - 130	ND, RDL=0.10	ug/L	6.2	30		
5023140	Ethylene Dibromide	2017/06/16	100	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	Hexane	2017/06/15	93	70 - 130	97	70 - 130	ND, RDL=0.50	ug/L				
5023140	Methyl Ethyl Ketone (2-Butanone)	2017/06/16	93	60 - 140	98	60 - 140	ND, RDL=5.0	ug/L	NC	30		
5023140	Methyl Isobutyl Ketone	2017/06/16	94	70 - 130	100	70 - 130	ND, RDL=5.0	ug/L	NC	30		
5023140	Methyl t-butyl ether (MTBE)	2017/06/16	93	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	Methylene Chloride(Dichloromethane)	2017/06/16	83	70 - 130	89	70 - 130	ND, RDL=0.50	ug/L	NC	30		
5023140	o-Xylene	2017/06/16	96	70 - 130	98	70 - 130	ND, RDL=0.10	ug/L	5.7	30		
5023140	p+m-Xylene	2017/06/16	NC	70 - 130	99	70 - 130	ND, RDL=0.10	ug/L	6.2	30		
5023140	Styrene	2017/06/16	100	70 - 130	102	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	Tetrachloroethylene	2017/06/16	89	70 - 130	91	70 - 130	ND, RDL=0.10	ug/L	NC	30		
5023140	Toluene	2017/06/16	NC	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	0.51	30		
5023140	Total Xylenes	2017/06/16					ND, RDL=0.10	ug/L	6.0	30		
5023140	trans-1,2-Dichloroethylene	2017/06/16	94	70 - 130	98	70 - 130	ND, RDL=0.10	ug/L	NC	30		
5023140	trans-1,3-Dichloropropene	2017/06/16	93	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	Trichloroethylene	2017/06/16	89	70 - 130	95	70 - 130	ND, RDL=0.10	ug/L	NC	30		
5023140	Trichlorofluoromethane (FREON 11)	2017/06/16	84	70 - 130	89	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5023140	Vinyl Chloride	2017/06/16	83	70 - 130	87	70 - 130	ND, RDL=0.20	ug/L	NC	30		
5027176	1,2,3,4-Tetrachlorobenzene	2017/06/14			82	30 - 130	ND, RDL=0.50	ug/L	9.2	40		
5027176	1,2,3,5-Tetrachlorobenzene	2017/06/14			74	30 - 130	ND, RDL=0.50	ug/L	0.27	40		
5027176	1,2,3-Trichlorobenzene	2017/06/14			72	30 - 130	ND, RDL=0.50	ug/L	12	40		
5027176	1,2,4,5-Tetrachlorobenzene	2017/06/14			80	30 - 130	ND, RDL=0.50	ug/L	20	40		
5027176	1,2,4-Trichlorobenzene	2017/06/14			71	30 - 130	ND, RDL=0.50	ug/L	13	40		
5027176	1,2-Dichlorobenzene	2017/06/14			66	30 - 130	ND, RDL=0.50	ug/L	12	40		
5027176	1,3,5-Trichlorobenzene	2017/06/14			81	30 - 130	ND, RDL=0.50	ug/L	12	40		
5027176	1,3-Dichlorobenzene	2017/06/14			61	30 - 130	ND, RDL=0.50	ug/L	12	40		
5027176	1,4-Dichlorobenzene	2017/06/14			60	30 - 130	ND, RDL=0.50	ug/L	11	40		
5027176	1-Chloronaphthalene	2017/06/14			83	30 - 130	ND, RDL=1.0	ug/L	7.1	40		
5027176	1-Methylnaphthalene	2017/06/14			92	30 - 130	ND, RDL=0.20	ug/L	11	40		
5027176	2,3,4,5-Tetrachlorophenol	2017/06/14			98	10 - 130	ND, RDL=0.40	ug/L	0.15	40		
5027176	2,3,4,6-Tetrachlorophenol	2017/06/14			109	10 - 130	ND, RDL=0.50	ug/L	0.42	40		
5027176	2,3,4-Trichlorophenol	2017/06/14			95	10 - 130	ND, RDL=0.50	ug/L	2.0	40		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5027176	2,3,5,6-Tetrachlorophenol	2017/06/14			82	10 - 130	ND, RDL=0.50	ug/L	11	40		
5027176	2,3,5-Trichlorophenol	2017/06/14			110	10 - 130	ND, RDL=0.50	ug/L	3.7	40		
5027176	2,3,6-Trichlorophenol	2017/06/14			93	10 - 130	ND, RDL=0.50	ug/L	3.4	40		
5027176	2,3-Dichlorophenol	2017/06/14			91	10 - 130	ND, RDL=0.50	ug/L	10	40		
5027176	2,4,5-Trichlorophenol	2017/06/14			105	10 - 130	ND, RDL=0.50	ug/L	2.5	40		
5027176	2,4,6-Trichlorophenol	2017/06/14			104	10 - 130	ND, RDL=0.50	ug/L	4.8	40		
5027176	2,4-Dichlorophenol	2017/06/14			92	10 - 130	ND, RDL=0.30	ug/L	13	40		
5027176	2,4-Dimethylphenol	2017/06/14			44	10 - 130	ND, RDL=0.50	ug/L	42 (2)	40		
5027176	2,4-Dinitrophenol	2017/06/14			96	10 - 130	ND, RDL=2.0	ug/L	6.3	40		
5027176	2,4-Dinitrotoluene	2017/06/14			98	30 - 130	ND, RDL=0.50	ug/L	0.71	40		
5027176	2,5-Dichlorophenol	2017/06/14			89	10 - 130	ND, RDL=0.50	ug/L	6.2	40		
5027176	2,6-Dichlorophenol	2017/06/14			90	10 - 130	ND, RDL=0.50	ug/L	7.2	40		
5027176	2,6-Dinitrotoluene	2017/06/14			93	30 - 130	ND, RDL=0.50	ug/L	0.30	40		
5027176	2-Chloronaphthalene	2017/06/14			95	30 - 130	ND, RDL=0.50	ug/L	10	40		
5027176	2-Chlorophenol	2017/06/14			81	10 - 130	ND, RDL=0.30	ug/L	13	40		
5027176	2-Methylnaphthalene	2017/06/14			88	30 - 130	ND, RDL=0.20	ug/L	12	40		
5027176	2-Nitrophenol	2017/06/14			87	10 - 130	ND, RDL=0.50	ug/L	9.5	40		
5027176	3,3'-Dichlorobenzidine	2017/06/14			129	30 - 130	ND, RDL=0.50	ug/L	0.73	40		
5027176	3,4,5-Trichlorophenol	2017/06/14			91	10 - 130	ND, RDL=0.50	ug/L	3.2	40		
5027176	3,4-Dichlorophenol	2017/06/14			84	10 - 130	ND, RDL=0.50	ug/L	1.6	40		
5027176	3,5-Dichlorophenol	2017/06/14			88	10 - 130	ND, RDL=0.50	ug/L	0.48	40		
5027176	4,6-Dinitro-2-methylphenol	2017/06/14			97	10 - 130	ND, RDL=2.0	ug/L	1.7	40		
5027176	4-Bromophenyl phenyl ether	2017/06/14			99	30 - 130	ND, RDL=0.30	ug/L	2.7	40		
5027176	4-Chloro-3-Methylphenol	2017/06/14			83	10 - 130	ND, RDL=0.50	ug/L	4.0	40		
5027176	4-Chlorophenyl phenyl ether	2017/06/14			92	30 - 130	ND, RDL=0.50	ug/L	5.3	40		
5027176	4-Nitrophenol	2017/06/14			43	10 - 130	ND, RDL=1.4	ug/L	27	40		
5027176	Acenaphthene	2017/06/14			103	30 - 130	ND, RDL=0.20	ug/L	5.4	40		
5027176	Acenaphthylene	2017/06/14			100	30 - 130	ND, RDL=0.20	ug/L	6.6	40		
5027176	Anthracene	2017/06/14			102	30 - 130	ND, RDL=0.20	ug/L	0.059	40		
5027176	Benzo(a)anthracene	2017/06/14			116	30 - 130	ND, RDL=0.20	ug/L	0.34	40		
5027176	Benzo(a)pyrene	2017/06/14			108	30 - 130	ND, RDL=0.20	ug/L	1.8	40		
5027176	Benzo(b/j)fluoranthene	2017/06/14			116	30 - 130	ND, RDL=0.20	ug/L	1.5	40		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5027176	Benzo(g,h,i)perylene	2017/06/14			120	30 - 130	ND, RDL=0.20	ug/L	1.2	40		
5027176	Benzo(k)fluoranthene	2017/06/14			106	30 - 130	ND, RDL=0.20	ug/L	4.2	40		
5027176	Benzyl butyl phthalate	2017/06/14			92	30 - 130	ND, RDL=0.50	ug/L	0.98	40		
5027176	Biphenyl	2017/06/14			90	30 - 130	ND, RDL=0.50	ug/L	8.6	40		
5027176	Bis(2-chloroethoxy)methane	2017/06/14			87	30 - 130	ND, RDL=0.50	ug/L	13	40		
5027176	Bis(2-chloroethyl)ether	2017/06/14			88	30 - 130	ND, RDL=0.50	ug/L	14	40		
5027176	Bis(2-chloroisopropyl)ether	2017/06/14			90	30 - 130	ND, RDL=0.50	ug/L	16	40		
5027176	Bis(2-ethylhexyl)phthalate	2017/06/14			94	30 - 130	ND, RDL=2.0	ug/L	0.26	40		
5027176	Chrysene	2017/06/14			107	30 - 130	ND, RDL=0.20	ug/L	0.72	40		
5027176	Dibenz(a,h)anthracene	2017/06/14			120	30 - 130	ND, RDL=0.20	ug/L	0.70	40		
5027176	Diethyl phthalate	2017/06/14			96	30 - 130	ND, RDL=1.0	ug/L	0.72	40		
5027176	Dimethyl phthalate	2017/06/14			95	30 - 130	ND, RDL=1.0	ug/L	1.8	40		
5027176	Di-N-butyl phthalate	2017/06/14			101	30 - 130	ND, RDL=2.0	ug/L	0.55	40		
5027176	Di-N-octyl phthalate	2017/06/14			93	30 - 130	ND, RDL=0.80	ug/L	1.4	40		
5027176	Diphenyl Ether	2017/06/14			89	30 - 130	ND, RDL=0.30	ug/L	11	40		
5027176	Fluoranthene	2017/06/14			115	30 - 130	ND, RDL=0.20	ug/L	2.1	40		
5027176	Fluorene	2017/06/14			105	30 - 130	ND, RDL=0.20	ug/L	3.0	40		
5027176	Hexachlorobenzene	2017/06/14			107	30 - 130	ND, RDL=0.50	ug/L	1.2	40		
5027176	Hexachlorobutadiene	2017/06/14			67	30 - 130	ND, RDL=0.40	ug/L	20	40		
5027176	Hexachlorocyclopentadiene	2017/06/14			73	30 - 130	ND, RDL=2.0	ug/L	19	40		
5027176	Hexachloroethane	2017/06/14			59	30 - 130	ND, RDL=0.50	ug/L	18	40		
5027176	Indeno(1,2,3-cd)pyrene	2017/06/14			119	30 - 130	ND, RDL=0.20	ug/L	0.43	40		
5027176	Isophorone	2017/06/14			88	30 - 130	ND, RDL=0.50	ug/L	8.2	40		
5027176	m/p-Cresol	2017/06/14			65	10 - 130	ND, RDL=0.50	ug/L	7.6	40		
5027176	Naphthalene	2017/06/14			98	30 - 130	ND, RDL=0.20	ug/L	19	40		
5027176	Nitrobenzene	2017/06/14			89	30 - 130	ND, RDL=0.50	ug/L	12	40		
5027176	Nitrosodiphenylamine/Diphenylamine	2017/06/14			86	30 - 130	ND, RDL=1.0	ug/L	2.5	40		
5027176	N-Nitroso-di-n-propylamine	2017/06/14			86	30 - 130	ND, RDL=0.50	ug/L	12	40		
5027176	o-Cresol	2017/06/14			66	10 - 130	ND, RDL=0.50	ug/L	4.1	40		
5027176	p-Chloroaniline	2017/06/14			94	30 - 130	ND, RDL=1.0	ug/L	3.2	40		
5027176	Pentachlorobenzene	2017/06/14			84	30 - 130	ND, RDL=0.50	ug/L	7.0	40		
5027176	Pentachlorophenol	2017/06/14			93	10 - 130	ND, RDL=1.0	ug/L	3.0	40		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5027176	Perylene	2017/06/14			104	30 - 130	ND, RDL=0.20	ug/L	1.7	40		
5027176	Phenanthrene	2017/06/14			101	30 - 130	ND, RDL=0.20	ug/L	0.97	40		
5027176	Phenol	2017/06/14			36	10 - 130	ND, RDL=0.50	ug/L	11	40		
5027176	Pyrene	2017/06/14			108	30 - 130	ND, RDL=0.20	ug/L	0.94	40		
5027694	Total Dissolved Solids	2017/06/14					ND, RDL=10	mg/L	2.9	25	96	90 - 110
5027903	Dissolved Bromide (Br-)	2017/06/15	103	80 - 120	107	80 - 120	ND, RDL=1.0	mg/L	NC	20		
5028403	. Aluminum (Al)	2017/06/15	108	80 - 120	104	80 - 120	ND, RDL=5.0	ug/L	3.7	20		
5028403	. Antimony (Sb)	2017/06/15	106	80 - 120	101	80 - 120	ND, RDL=0.50	ug/L	NC	20		
5028403	. Arsenic (As)	2017/06/15	105	80 - 120	101	80 - 120	ND, RDL=1.0	ug/L	NC	20		
5028403	. Barium (Ba)	2017/06/15	99	80 - 120	99	80 - 120	ND, RDL=2.0	ug/L	1.8	20		
5028403	. Beryllium (Be)	2017/06/15	110	80 - 120	101	80 - 120	ND, RDL=0.50	ug/L	NC	20		
5028403	. Bismuth (Bi)	2017/06/15	99	80 - 120	99	80 - 120	ND, RDL=1.0	ug/L	NC	20		
5028403	. Boron (B)	2017/06/15	110	80 - 120	99	80 - 120	ND, RDL=10	ug/L	5.0	20		
5028403	. Cadmium (Cd)	2017/06/15	104	80 - 120	99	80 - 120	ND, RDL=0.10	ug/L	NC	20		
5028403	. Calcium (Ca)	2017/06/15	NC	80 - 120	101	80 - 120	ND, RDL=200	ug/L	3.2	20		
5028403	. Chromium (Cr)	2017/06/15	102	80 - 120	99	80 - 120	ND, RDL=5.0	ug/L	NC	20		
5028403	. Cobalt (Co)	2017/06/15	106	80 - 120	102	80 - 120	ND, RDL=0.50	ug/L	NC	20		
5028403	. Copper (Cu)	2017/06/15	105	80 - 120	103	80 - 120	ND, RDL=1.0	ug/L	1.0	20		
5028403	. Iron (Fe)	2017/06/15	104	80 - 120	100	80 - 120	ND, RDL=100	ug/L	0.82	20		
5028403	. Lead (Pb)	2017/06/15	101	80 - 120	101	80 - 120	ND, RDL=0.50	ug/L	3.6	20		
5028403	. Lithium (Li)	2017/06/15	107	80 - 120	104	80 - 120	ND, RDL=5.0	ug/L	NC	20		
5028403	. Magnesium (Mg)	2017/06/15	103	80 - 120	102	80 - 120	ND, RDL=50	ug/L	1.7	20		
5028403	. Manganese (Mn)	2017/06/15	103	80 - 120	100	80 - 120	ND, RDL=2.0	ug/L	0.18	20		
5028403	. Molybdenum (Mo)	2017/06/15	107	80 - 120	100	80 - 120	ND, RDL=0.50	ug/L	3.3	20		
5028403	. Nickel (Ni)	2017/06/15	102	80 - 120	99	80 - 120	ND, RDL=1.0	ug/L	10	20		
5028403	. Phosphorus (P)	2017/06/15	108	80 - 120	111	80 - 120	ND, RDL=100	ug/L	NC	20		
5028403	. Potassium (K)	2017/06/15	106	80 - 120	103	80 - 120	ND, RDL=200	ug/L	0.46	20		
5028403	. Selenium (Se)	2017/06/15	108	80 - 120	104	80 - 120	ND, RDL=2.0	ug/L	NC	20		
5028403	. Silicon (Si)	2017/06/15	105	80 - 120	102	80 - 120	ND, RDL=50	ug/L	3.9	20		
5028403	. Silver (Ag)	2017/06/15	104	80 - 120	99	80 - 120	ND, RDL=0.10	ug/L	NC	20		
5028403	. Sodium (Na)	2017/06/15	NC	80 - 120	101	80 - 120	ND, RDL=100	ug/L	0.97	20		
5028403	. Strontium (Sr)	2017/06/15	103	80 - 120	99	80 - 120	ND, RDL=1.0	ug/L	1.1	20		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5028403	. Tellurium (Te)	2017/06/15	103	80 - 120	100	80 - 120	ND, RDL=1.0	ug/L	NC	20		
5028403	. Thallium (Tl)	2017/06/15	103	80 - 120	101	80 - 120	ND, RDL=0.050	ug/L	NC	20		
5028403	. Tin (Sn)	2017/06/15	105	80 - 120	101	80 - 120	ND, RDL=1.0	ug/L	NC	20		
5028403	. Titanium (Ti)	2017/06/15	106	80 - 120	99	80 - 120	ND, RDL=5.0	ug/L	NC	20		
5028403	. Tungsten (W)	2017/06/15	106	80 - 120	103	80 - 120	ND, RDL=1.0	ug/L	NC	20		
5028403	. Uranium (U)	2017/06/15	101	80 - 120	97	80 - 120	ND, RDL=0.10	ug/L	3.6	20		
5028403	. Vanadium (V)	2017/06/15	102	80 - 120	97	80 - 120	ND, RDL=0.50	ug/L	NC	20		
5028403	. Zinc (Zn)	2017/06/15	103	80 - 120	100	80 - 120	ND, RDL=5.0	ug/L	2.0	20		
5028403	. Zirconium (Zr)	2017/06/15	104	80 - 120	98	80 - 120	ND, RDL=1.0	ug/L	NC	20		
5029740	Conductivity	2017/06/15			101	85 - 115	ND, RDL=1.0	umho/cm	0.34	25		
5029742	pH	2017/06/15			101	98 - 103			0.27	N/A		
5031102	Mercury (Hg)	2017/06/16	104	75 - 125	105	80 - 120	ND, RDL=0.0001	mg/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) VOC Analysis: Detection limits were raised due to matrix interferences.

(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Brad Newman, Scientific Specialist



Sirimathie Aluthwala, Campobello Micro

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.