ANNUAL REPORT FOR THE HAMLET OF ARVIAT

YEAR BEING REPORTED: 2014

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water Licence No. **3AM-ARV1015** issued to the **Hamlet of Arviat**.

i)- iii) tabular summaries of all data generated under the "Monitoring Program"; monthly and annual quantities in cubic metres of freshwater obtained from all sources; monthly and annual quantities in cubic metres of each and all wastes discharged;

Attached are results for Monitoring Stations ARV-1, as well as detailed chemical, physical and biological analysis required at ARV-2a, ARV-4, ARV-5 and ARV-6 (for the months of July to September).

Month Reported	Quantity of Water Obtained from all sources (m³)	Quantity of Sewage Waste Discharged (m³)
January	7,034.67365	Same
February	6,469.73362	Same
March	7,327.48162	Same
April	6,902.73016	Same
May	7,978.15220	Same
June	7,517.50192	Same
July	7,237.34640	Same
August	6,943.69240	Same
September	7,359.99390	Same
October	7,711.25170	Same
November	7,421.66530	Same
December	7,611.65020	Same
ANNUAL TOTAL	87,515.87307	87,515.87307

Note: No meter exists to measure the sewage discharge volume, therefore water consumption volume is considered as equal volume to the Sewage discharge volume.

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- iv. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;
 - No modifications and/or major maintenance work was carried out in 2014.
 - The Hamlet partnered with the Summer Hill program in 2014 to undertake shipping materials from the Metal dump back south. Summerhill trained 6 Arviatmuit how to properly de-pollute a vehicle and prep it for shipping. They completed some 75 vehicles this year. The project shipped out some 8 seacans of material containing vehicle batteries, vehicle tires, scrap metals, and vehicles. This was the first time in Arviat's history that ANY metals or waste material was shipped out of the community. Hamlet will continue this summer with depolluting more vehicles and a total segregation of the metal dump. Hamlet is working on a proposal to the GN to purchase a metal shredder and eventually ship all metal out of the community.
- v. a list of unauthorized discharges and summary of follow-up action taken;

Spills:

- 2014134, 2014-05-01, 404 A&B 5th Street, Heating Fuel, 450L
- 2014141, 2014-05-06, 716th Avenue (old house 393), Heating Fuel, 730L
- 2014193, 2014-06-04, End of town, nearby house #803 1st Avenue, Diesel, 0L
- 2014200, 2014-06-04, Arviat, Jet-A-1, 136L
- 2014207, 2014-06-11, Arctic College Administration Building, P50, 3L
- 2014213, 2014-06-13, 801 1st Avenue, Heating Fuel, 0L
- 2014239, 2014-06-26, 400 8th Avenue, Heating Fuel, 0L
- 2014266, 2014-07-16, At 706-D 9th Avenue, Heating Fuel, 40L
- 2014303, 2014-08-19, 700 9th Street, Heating Fuel, 50L
- 2014319, 2014-09-05, Shop Building 32-352, Heating Fuel, 0L
- 2014331, 2014-09-16, QEC Arviat Plant Site Yard, Lube Oil, 205L
- 2014345, 2014-09-25, 702 1st Avenue. Heating Fuel, 0L
- 2014358, 2014-10-16, 403 9th Ave., Heating Fuel, 60L
- 2014373, 2014-10-14, 403 7th Ave., Heating Fuel, 75L

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- vi. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
 - Abandonment and Restoration will take place during 2015 for the Old Sewage Lagoons, as per the *Old Sewage Lagoons Abandonment and Restoration Plan*, *Hamlet of Arviat* prepared by Nuna Burnside, December 2010.
- vii. a summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
 - An Amendment/Renewal Application was submitted to the NWB February 27, 2015.
 - A waste audit was conducting in 2013. The *Hamlet of Arviat Solid Waste Audit Results* prepared by exp Services Inc., November 2013 was submitted to the NWB with the Amendment/Renewal Application.
- viii. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and
 - Signage for the Monitoring Program Stations will be ordered over the winter for installation summer 2015. Pictures of the signage at Monitoring Program Stations will be included in the 2015 Annual Report.
- ix. updates or revisions to the approved Operation and Maintenance Plans.
 - The Water Supply Operation and Maintenance (O&M) Plan, Hamlet of Arviat prepared by Nuna Burnside, May 2009 is currently being updated. The updated O&M Plan will be submitted to the NWB in 2015.
 - The Sewage Treatment Facility Operation and Maintenance (O&M) Plan, Hamlet of Arviat prepared by Nuna Burnside, January 2009, revised May 2009 is currently being updated. The updated O&M Plan will be submitted to the NWB in 2015.
 - The Solid Waste Management Facility Operation and Maintenance (O&M) Plan, Hamlet of Arviat prepared by Nuna Burnside, January 2009, revised May 2009 is currently being updated. The updated O&M Plan will be submitted to the NWB in 2015.
 - The Environmental Monitoring Program and Quality Assurance/Quality Control Plan, Hamlet of Arviat prepared by Nuna Burnside, December 2010 is currently being updated.

ANNUAL REPORT FOR THE HAMLET OF ARVIAT

The updated QA/QC Plan will be submitted to the NWB in 2015.

- The *Environmental Emergency Contingency Plan, Hamlet of Arviat* prepared by Nuna Burnside, May 2009, revised May 2010 is currently being updated. The updated Plan will be submitted to the NWB in 2015.

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

- The 2013 Annual Report submitted to the NWB did not contain the sampling results from the Monitoring Program. A revised version of the 2013 Annual Report containing the sampling results and analysis is found in Appendix F of this report.
- All sampling required under the Monitoring Program will be completed during the 2015 sampling season.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

- No AANDC Inspection took place in 2014.
- The Hamlet of Arviat Compliance Plan was submitted to the NWB on February 27, 2015.

Appendix A: Delivery Summary By Month and Year, January 1 to December 31, 2014 – 1 page

Appendix B: Hazardous Materials Spill Database, Arviat 2014 – 1 page

Appendix C: ARV-4 Effluent Quality Limits – 1 page

Appendix D: Monitoring Program Sampling Parameters Summary – 1 page

Appendix E: Certificates of Analysis, July 17, 2014, August 1, 2014, and

September 13, 2014 – 36 pages

Appendix F: 2013 Annual Report, revised March 30, 2015 – 26 pages

ANNUAL REPORT FOR THE HAMLET OF ARVIAT

Appendix A: Delivery Summary By Month and Year, January 1 to December 31, 2014

Delivery Summary By Month and Year

Date Range From:Jan-01-2014 To: Dec-31-2014

Printed on: Feb 24 2015 @ 2:19:28PM Page: 1 of 1

8000K 7000K 6000K 1/2014 2/2014 3/2014 5000K 4/2014 **Total Litres** 5/2014 6/2014 4000K 7/2014 8/2014 9/2014 3000K 10/2014 11/2014 2000K 12/2014 1000K 0K 1/2014 2/2014 3/2014 4/2014 5/2014 6/2014 7/2014 8/2014 9/201410/201411/201412/2014

Month/Year

Month / Year	<u>Litres Delivered</u>
January 2014	7,034,673.65
February 2014	6,469,733.62
March 2014	7,327,481.62
April 2014	6,902,730.16
May 2014	7,978,152.20
June 2014	7,517,501.92
July 2014	7,237,346.40
August 2014	6,943,692.40
September 2014	7,359,993.90
October 2014	7,711,251.70
November 2014	7,421,665.30
December 2014	7,611,650.20
Grand Total:	07 646 072 07
Grand Total:	87,515,873.07

ANNUAL REPORT FOR THE HAMLET OF ARVIAT

Appendix B: Hazardous Materials Spill Database, Arviat 2014



Hazardous Materials Spill Database
Environment Division of ENR
Scotia 6, 5102-50th Avenue; Yellowknife, NT X1A 3S8
Phone: (867) 873-7654 Fax: (867) 873-0221

Sorted By: SpillNo for the year(s):

Spill No.	Date	Ter	Region	Location	Site Description	Commodity	Quantity	Source	Agency
2014134	2014-05-01	NU	KEE	Arviat	404 A&B 5th Street	Heating Fuel	450 L	PL	GN
2014141	2014-05-06	NU	KEE	Arviat	Arviat, 716th Avenue (old house 393)	Heating Fuel	730 L	ST<	GN
2014193	2014-06-04	NU	KEE	Arviat	Arviat, End of town, nearby house #803 1st Avenue	Diesel	0 L	UK	GN
2014200	2014-06-04	NU	KEE	Arviat	Arviat	Jet-A-1	136 L	DRUM	GN
2014207	2014-06-11	NU	KEE	Arviat	Arctic College Administration Building	P50	3 L	ST<	GN
2014213	2014-06-13	NU	KEE	Arviat	Arviat, 801 1st Avenue	Heating Fuel	0 L	UK	GN
2014239	2014-06-26	NU	KEE	Arviat	Arviat, 400 8th Avenue	Heating Fuel	0 L	ST<	GN
2014266	2014-07-19	NU	KEE	Arviat	Arviat. At 706-D 9th Avenue	Heating Fuel	40 L	ST<	GN
2014303	2014-08-19	NU	KEE	Arviat	700 9th Street	Heating Fuel	50 L	ST<	GN
2014319	2014-09-05	NU	KEE	Arviat	Shop Building 32-352	Heating Fuel	0 L	UK	GN
2014331	2014-09-16	NU	KEE	Arviat	QEC Arviat Plant Site Yard	Lube Oil	205 L	DRUM	GN
2014345	2014-09-25	NU	KEE	Arviat	702 1st Avenue	Heating Fuel	0 L	ST<	GN
2014358	2014-10-06	NU	KEE	Arviat	403 9th Ave	Heating Fuel	60 L	ST<	GN
2014373	2014-10-14	NU	KEE	Arviat	403 7th Ave	Heating Fuel	75 L	ST<	EPS

Total Spills on this Report: 14

This report contains information regarding spills that were reported to the NWT 24-Hour Spill Line. The absence of information on any particular location in no way guarantees that contamination has not occurred at that location.

LEGEND

Region: BAF - Baffin DEH - Deh Cho INU - Inuvik KEE - Keewatin KIT - Kitikmeot NSL - North Slave SAH - Sahtu SSL - South Slave	SL - Sewage Lagoon ST< - Storage Tank <4000 litres		Agency: CCG - Canadian Coast Guard EP - Environment Canada GN - Government of Nunavut GNWT - Government of Northwest Territories ILA - Inuvialiut Land Administration INAC - Indian and Northern Affairs Canada NEB - National Energy Board
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ANNUAL REPORT FOR THE HAMLET OF ARVIAT

Appendix C: ARV-4 Effluent Quality Limits

2014 Arviat Monitoring Stations and Sampling Parameters for Water License No. 3AM-ARV1015 Part D, Item 2: ARV-4 Effluent Quality Limits

Parameter	Maximum Concentration of	ARV-4						
Parameter	any Grab Sample	17-Jul-14	01-Aug-14	12-Sep-14				
BOD ₅	80 mg/L	28.4 mg/L	50.1 mg/L	69.1 mg/L				
Total Suspended Solids	100 mg/L	52.0 mg/L	167 mg/L	156 mg/L				
Fecal Coliforms	1x10 ⁴ CFU/100 mL	9300 MPN/100 mL	4 MPN/100mL	640 MPN/100 mL				
Oil and Grease	no visible sheen	*	<2.0 mg/L	<2.0 mg/L				
pН	between 6 and 9	7.51	8.96	6.77				

^{*} Lab did not send Oil and Grease bottles

Exceeds Effluent Quality Limits

Some ARV-4 sample parameters exceed effluent quality limits set in Part D, Item 2 of the Licence. ARV-4 is sampled from a pond outside of the sewage lagoon berms, not at the end out the wetlands. The location of ARV-4 should be confirmed with an Inspector prior to the 2015 sampling season.

ANNUAL REPORT FOR THE HAMLET OF ARVIAT

Appendix D: Monitoring Program Sampling Parameters Summary

2014 Arviat Monitoring Stations and Sampling Parameters Summary for Water License No. 3AM-ARV1015

				А	RV-2a			А	RV-4			А	RV-5			А	RV-6	
Parameters	Unit	Detection Limit	17-Jul-14	01-Aug-14	12-Sep-14	CCME Guideline ¹	17-Jul-14	01-Aug-14	12-Sep-14	CCME Guideline ¹	17-Jul-14	01-Aug-14	12-Sep-14	CCME Guideline ¹	17-Jul-14	01-Aug-14	12-Sep-14	CCME Guideline ¹
BOD ₅	mg/L	6.0	37.4	37.2	41.2	n/g	28.4	50.1	69.1	n/g	<6.0	<6.0	<6.0	n/g	<6.0	29.3	<6.0	n/g
рН	pH units	0.1	7.79	8.05	8.01	6.5-9.0	7.51	8.96	6.77	6.5-9.0	7.04	8.01	7.63	6.5-9.0	7.21	6.82	7.07	6.5-9.0
Total Suspended Solids	mg/L	5.0	78.0	33.0	62.0		52	167	156		6.0	20.0	6.0		34.0	268	102	
Nitrate-Nitrite	mg/L	0.071	<0.35	< 0.35	<0.35	n/g	0.868	1.44	0.859	n/g	< 0.35	< 0.35	<0.071	n/g	< 0.071	< 0.071	< 0.071	n/g
Total Phenols	mg/L	0.0010	0.0055	0.0106	0.700	0.004	0.035	<0.0050	<0.0010	0.004	<0.0010	<0.0010	<0.0010	0.004	<0.0010	0.0193	0.0013	0.004
Sodium	mg/L	0.010	233	302	248	n/g	66.5	73.9	76.2	n/g	246	419	164	n/g	68.7	79.9	64.7	n/g
Magnesium	mg/L	0.10	45.9	59.2	51.3	n/g	8.88	8.85	9.68	n/g	43.3	61	21.8	n/g	14	15.7	13.5	n/g
Total Arsenic	mg/L	0.0020	0.00743	0.00651	0.0061	0.005	0.00627	0.00844	0.00789	0.005	0.00051	0.00087	0.00047	0.005	0.00052	0.00584	0.00081	0.005
Total Copper	mg/L	0.0020	0.0434	0.0184	0.0173	0.002	0.0437	0.044	0.0283	0.002	0.00095	0.00056	0.00120	0.002	0.00098	0.00561	0.00086	0.002
Total Iron	mg/L	1.0	3.26	0.56	<1.0	0.3	3.22	4.56	3.47	0.3	1.16	3.16	0.96	0.3	7.52	147	19.0	0.3
Total Mercury	mg/L	0.000020	0.00020	<0.000020	<0.000020	0.0000026	<0.000020	<0.00020	<0.00020	0.0000026	<0.000020	<0.000020	0.000024	0.0000026	<0.000020	<0.00020	<0.000020	0.0000026
Total Zinc	mg/L	0.020	0.64	0.0464	0.055	n/g	0.0383	0.0402	0.0214	n/g	0.417	0.0034	0.0035	n/g	0.0656	0.302	0.0227	n/g
Fecal Coliforms	MPN/100mL	3/100	24000	150	23	n/g	9300	4	640	n/g	9	43	<3	n/g	3	23	<3	n/g
Conductivity	umhos/cm	20	2530	2990	2330	n/g	868	570	750	n/g	1730	2700	1100	n/g	655	749	669	n/g
Ammonia Nitrogen	mg/L	0.10	12	12.1	5.6	1.54	39.9	9.4	12.5	0.172	0.085	< 0.010	< 0.010	1.54	< 0.010	0.289	0.075	15.3
Oil and Grease	mg/L	2.0	*	5.7	<2.0	n/g	*	<2.0	<2.0	n/g	*	<2.0	<2.0	8	*	<2.0	<2.0	n/g
Sulphate	mg/L	0.50	419	466	490	n/g	5.15	2.18	4.98	n/g	30.5	16	8.42	n/g	8.83	0.5	<0.50	n/g
Potassium	mg/L	0.20	56.2	68.8	55.0	n/g	25.3	28.1	23.4	n/g	9.79	16.7	6.04	n/g	6.91	7.3	5.52	n/g
Calcium	mg/L	1.0	323	356	298	n/g	20.7	17	16.6	n/g	78	53.4	26.9	n/g	43.9	44.9	37.6	n/g
Total Cadmium	mg/L	0.000220	0.000336	0.000074	<0.00010	0.00013	0.000070	0.000079	0.000088	0.00013	0.000074	<0.000010	<0.000010	0.00013	0.000019	0.000032	0.000010	0.00013
Total Chromium	mg/L	0.010	0.0045	0.0022	<0.010	0.0001	0.0013	0.0015	0.0013	0.0001	0.0016	<0.0010	<0.0010	0.0001	0.317	0.0098	<0.0010	0.0001
Total Lead	mg/L	0.00090	0.0111	0.00278	0.00217	0.00235	0.00162	0.00181	0.00159	0.00235	0.000504	0.000139	<0.000090	0.007	0.000407	0.00172	0.000115	0.00653
Total Nickel	mg/L	0.020	0.0131	0.011	<0.020	0.07982	0.0084	0.009	0.0074	0.0079	<0.0020	<0.0020	<0.0020	0.15	<0.0020	0.0043	<0.0020	0.146

 $^{^1}$ Canadian Environmental Quality Guidelines - Water Quality Guidelines for the Protection of Aquatic Life n/g - no guideline

Exceeds Guidelines for Protection of Aquatic Life

^{*} Lab did not send Oil and Grease bottles

ANNUAL REPORT FOR THE HAMLET OF ARVIAT

Appendix E: Certificates of Analysis, July 17, 2014, August 1, 2014, and September 13, 2014



Hamlet of Arviat ATTN: ED MURPHY

PO Box 150

Arviat NU X0C 0E0

Date Received: 17-JUL-14

Report Date: 29-JUL-14 14:26 (MT)

Version: FINAL

Client Phone: 867-857-2841

Certificate of Analysis

Lab Work Order #: L1488411

Project P.O. #: NOT SUBMITTED

Job Reference: HAMLET OF ARVIAT WWTP

C of C Numbers: Legal Site Desc:

Judy Dalmaijer Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721 ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



L1488411 CONTD.... PAGE 2 of 12 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1488411-1 ARV-2							
Sampled By: CLIENT on 15-JUL-14 @ 13:40							
Matrix: EFFLUENT							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene Benzene	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
Toluene	<0.0010		0.0010	mg/L		25-JUL-14	R2898207
Ethyl benzene	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
o-Xylene	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
m+p-Xylenes	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
F1 (C6-C10)	<0.10		0.10	mg/L		25-JUL-14	R2898207
Surrogate: 4-Bromofluorobenzene (SS)	98.8		70-130	%		25-JUL-14	R2898207
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		29-JUL-14	
F2-Naphth	<0.50		0.50	mg/L		29-JUL-14	
F3-PAH	0.52		0.50	mg/L		29-JUL-14	
Total Hydrocarbons (C6-C50)	<0.87		0.87	mg/L		29-JUL-14	
Sum of Xylene Isomer Concentrations	0.0045		0.0045	m c:/l		20 11 44	
Xylenes (Total) Miscellaneous Parameters	<0.0015		0.0015	mg/L		28-JUL-14	
Total Organic Carbon	70.0	SP	1.0	ma/l	25-JUL-14	25-JUL-14	D2900422
F2-F4 PHC method	70.9	SF.	1.0	mg/L	25-JUL-14	25-JUL-14	R2899422
F2 (C10-C16)	<0.50		0.50	mg/L	25-JUL-14	26-JUL-14	R2900047
F3 (C16-C34)	0.52		0.50	mg/L	25-JUL-14	26-JUL-14	R2900047
F4 (C34-C50)	<0.50		0.50	mg/L	25-JUL-14	26-JUL-14	R2900047
Surrogate: 2-Bromobenzotrifluoride	93.5		65-135	%	25-JUL-14	26-JUL-14	R2900047
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.000037		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Acenaphthene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Acenaphthylene	0.000042		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Anthracene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Acridine	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(a)anthracene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(a)pyrene	<0.000050		0.0000050	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(k)fluoranthene Chrysene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Dibenzo(a,h)anthracene	<0.000020 <0.0000050		0.000020 0.0000050	mg/L	25-JUL-14 25-JUL-14	25-JUL-14 25-JUL-14	R2899723 R2899723
Fluoranthene	<0.000030		0.0000030	mg/L mg/L	25-JUL-14 25-JUL-14	25-JUL-14 25-JUL-14	R2899723
Fluorene	0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Indeno(1,2,3-cd)pyrene	<0.000022		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Naphthalene	0.000053		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Phenanthrene	<0.000050		0.000050	mg/L	25-JUL-14	25-JUL-14	R2899723
Pyrene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Quinoline	0.000032		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	25-JUL-14	25-JUL-14	R2899723
Surrogate: Acenaphthene d10	82.3		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Acridine d9	87.8		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Chrysene d12	78.6		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Naphthalene d8	92.9		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Phenanthrene d10	80.8		40-130	%	25-JUL-14	25-JUL-14	R2899723
Nunavut WW Group 1							
Alkalinity Alkalinity, Total (as CaCO3)	656		20	ma/l		22-JUL-14	P2804373
Airaillity, Total (as GaGGS)	656		20	mg/L		22-JUL-14	R2894373

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1488411 CONTD.... PAGE 3 of 12 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1488411-1 ARV-2							
Sampled By: CLIENT on 15-JUL-14 @ 13:40							
Matrix: EFFLUENT							
Alkalinity							
Bicarbonate (HCO3)	800		24	mg/L		22-JUL-14	R2894373
Carbonate (CO3)	<12		12	mg/L		22-JUL-14	R2894373
Hydroxide (OH)	<6.8		6.8	mg/L		22-JUL-14	R2894373
Ammonia by colour							
Ammonia, Total (as N)	12.0	DLA	1.0	mg/L		23-JUL-14	R2896468
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand	37.4		6.0	mg/L		18-JUL-14	R2896021
Carbonaceous BOD	37.4		0.0	IIIg/L		10-30L-14	K2090021
BOD Carbonaceous	34.1		6.0	mg/L		18-JUL-14	R2896021
Chloride by Ion Chromatography							
Chloride	291		2.5	mg/L		18-JUL-14	R2893806
Conductivity						00 "" ::	Door ton-
Conductivity	2530		20	umhos/cm		22-JUL-14	R2894373
Fecal Coliform Fecal Coliforms	24000		3	MPN/100mL		21-JUL-14	R2895096
Hardness Calculated	2.000		J				
Hardness (as CaCO3)	997		0.30	mg/L		29-JUL-14	
Mercury Total							
Mercury (Hg)-Total	0.000027		0.000020	mg/L	22-JUL-14	22-JUL-14	R2894549
Nitrate as N by Ion Chromatography Nitrate-N	0.05	DLM	0.05			40 1111 44	Danagaga
Nitrate+Nitrite	<0.25	DLIVI	0.25	mg/L		18-JUL-14	R2893806
Nitrate+Nitrite Nitrate and Nitrite as N	<0.35		0.35	mg/L		22-JUL-14	
Nitrite as N by Ion Chromatography	10.00		0.00				
Nitrite-N	<0.25	DLM	0.25	mg/L		18-JUL-14	R2893806
Phenol (4AAP)							
Phenols (4AAP)	0.0055		0.0010	mg/L	23-JUL-14	23-JUL-14	R2895900
Phosphorus, Total Phosphorus (P)-Total	2.21		0.010	mg/L		22-JUL-14	R2894431
Sulfate by Ion Chromatography	2.21		0.010	1119/12		22 002 14	1(2054451
Sulfate	419		2.5	mg/L		18-JUL-14	R2893806
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.305		0.0050	mg/L	28-JUL-14	28-JUL-14	R2900449
Arsenic (As)-Total	0.00743		0.00020	mg/L	28-JUL-14	28-JUL-14	R2900449
Cadmium (Cd)-Total Calcium (Ca)-Total	0.000336 323	DLA	0.000010	mg/L mg/L	28-JUL-14 28-JUL-14	28-JUL-14 28-JUL-14	R2900449 R2900449
Chromium (Cr)-Total	0.0045		0.0010	mg/L	28-JUL-14 28-JUL-14	28-JUL-14 28-JUL-14	R2900449 R2900449
Cobalt (Co)-Total	0.00396		0.00020	mg/L	28-JUL-14	28-JUL-14	R2900449
Copper (Cu)-Total	0.0434		0.00020	mg/L	28-JUL-14	28-JUL-14	R2900449
Iron (Fe)-Total	3.26		0.10	mg/L	28-JUL-14	28-JUL-14	R2900449
Lead (Pb)-Total	0.0111		0.000090	mg/L	28-JUL-14	28-JUL-14	R2900449
Magnesium (Mg)-Total	45.9	D. A	0.010	mg/L	28-JUL-14	28-JUL-14	R2900449
Manganese (Mn)-Total Nickel (Ni)-Total	1.69	DLA	0.030	mg/L	28-JUL-14	28-JUL-14	R2900449
Nickei (Ni)- i otal Potassium (K)-Total	0.0131 56.2	DLA	0.0020 2.0	mg/L mg/L	28-JUL-14 28-JUL-14	28-JUL-14 28-JUL-14	R2900449 R2900449
Sodium (Na)-Total	233	DLA	3.0	mg/L	28-JUL-14	28-JUL-14 28-JUL-14	R2900449 R2900449
Zinc (Zn)-Total	0.64	DLA	0.20	mg/L	28-JUL-14	28-JUL-14	R2900449
Total Suspended Solids							
Total Suspended Solids	78.0		5.0	mg/L		21-JUL-14	R2893826
pΗ	_		_				
рН	7.79		0.10	pH units		22-JUL-14	R2894373

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1488411-2 ARV-4							
Sampled By: CLIENT on 15-JUL-14 @ 13:25							
Matrix: EFFLUENT							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene Benzene	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
Toluene	<0.0010		0.0010	mg/L		25-JUL-14	R2898207
Ethyl benzene	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
o-Xylene	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
m+p-Xylenes	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
F1 (C6-C10)	<0.10		0.10	mg/L		25-JUL-14	R2898207
Surrogate: 4-Bromofluorobenzene (SS)	108.3		70-130	%		25-JUL-14	R2898207
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		29-JUL-14	
F2-Naphth	<0.50		0.50	mg/L		29-JUL-14	
F3-PAH	4.09		0.50	mg/L		29-JUL-14	
Total Hydrocarbons (C6-C50)	5.53		0.87	mg/L		29-JUL-14	
Sum of Xylene Isomer Concentrations	0.0045		0.0045	m c:/l		20 11 44	
Xylenes (Total) Miscellaneous Parameters	<0.0015		0.0015	mg/L		28-JUL-14	
	64.6		4.0	ma/l	25 1111 14	25 1111 14	D2800422
Total Organic Carbon F2-F4 PHC method	64.6		1.0	mg/L	25-JUL-14	25-JUL-14	R2899422
F2-F4 PHC method F2 (C10-C16)	<0.50		0.50	mg/L	25-JUL-14	26-JUL-14	R2900047
F3 (C16-C34)	4.09		0.50	mg/L	25-JUL-14	26-JUL-14	R2900047
F4 (C34-C50)	1.44		0.50	mg/L	25-JUL-14	26-JUL-14	R2900047
Surrogate: 2-Bromobenzotrifluoride	92.9		65-135	%	25-JUL-14	26-JUL-14	R2900047
Polyaromatic Hydrocarbons (PAHs)	02.0		00 100	,,	2002		112000017
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Acenaphthene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Acenaphthylene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Anthracene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Acridine	0.000039		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(a)anthracene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(a)pyrene	<0.000050		0.0000050	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Chrysene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Dibenzo(a,h)anthracene Fluoranthene	<0.0000050 <0.000020		0.0000050	mg/L	25-JUL-14 25-JUL-14	25-JUL-14 25-JUL-14	R2899723
Fluorene	<0.000020		0.000020 0.000020	mg/L mg/L	25-JUL-14 25-JUL-14	25-JUL-14 25-JUL-14	R2899723 R2899723
Indeno(1,2,3-cd)pyrene	<0.000020		0.000020	mg/L	25-JUL-14 25-JUL-14	25-JUL-14 25-JUL-14	R2899723
Naphthalene	<0.000010		0.000010	mg/L	25-JUL-14 25-JUL-14	25-JUL-14 25-JUL-14	R2899723
Phenanthrene	<0.000050		0.000050	mg/L	25-JUL-14	25-JUL-14	R2899723
Pyrene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Quinoline	<0.000020		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	25-JUL-14	25-JUL-14	R2899723
Surrogate: Acenaphthene d10	85.4		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Acridine d9	93.3		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Chrysene d12	76.7		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Naphthalene d8	76.8		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Phenanthrene d10	86.4		40-130	%	25-JUL-14	25-JUL-14	R2899723
Nunavut WW Group 1							
Alkalinity	070		00	m= ==/1		00 1111 44	D0004070
Alkalinity, Total (as CaCO3)	272		20	mg/L		22-JUL-14	R2894373

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Carbonate (CO3)	Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
Sampled By: CLIENT on 15-JUL-14 @ 13:25 Matrix: EFFLUENT Alkalinity: EFFLUENT Alkalinity: Bicarbonate (HCO3)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							
Matrix EFFLUENT Alkalinity Silarbonate (HCO3) 332 24 mg/L 22-JUL-14 R289437. Ammonia by colour Ammonia by								
Alkalinity Bicathonate (HCO3) 332	•							
Bicarbonste (HCO3)								
Carbonate (CO3)		332		24	ma/L		22-JUL-14	R2894373
Hydroxide (OH)	, ,							R2894373
Ammonia, Total (as N) 39.9 DLA 1.0 mg/L 24-JUL-14 R2897221	Hydroxide (OH)	<6.8		6.8	-		22-JUL-14	R2894373
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand 28.4 6.0 mg/L 18-JUL-14 R289602 Carbonaceous BOD BOD Carbonaceous 17.0 6.0 mg/L 18-JUL-14 R289602								
Biochemical Oxygen Demand		39.9	DLA	1.0	mg/L		24-JUL-14	R2897228
Carbonaceous BOD BOD Carbonaceous BOD BOD Carbonaceous BOD BOD Carbonaceous BOD BOD Carbonaceous 17.0 6.0 mg/L 18-JUL-14 R289602 R289602 R289602 R289602 R289808 R2898		00.4		0.0			40 1111 44	Doggood 1
BOD Carbonaceous		28.4		6.0	mg/L		16-JUL-14	R2896021
Chloride by Ion Chromatography Sa.5 0.50 mg/L 18JUL-14 R2893801		17.0		6.0	ma/L		18-JUL-14	R2896021
Chloride				0.0				
Recal Coliform Fecal Coliform Fecal Coliforms 9300 3 MPN/100mL 21-JUL-14 R289437: R289509! R		83.5		0.50	mg/L		18-JUL-14	R2893806
Fecal Coliform Fecal Coliform Fecal Coliform Fecal Coliforms 9300 3 MPN/100mL 21-JUL-14 R2895091 Rardness Calculated Hardness (as CaCO3) 88.2 0.30 mg/L 29-JUL-14 R2894541 R2895441								
Fecal Coliforms	•	868		20	umhos/cm		22-JUL-14	R2894373
Hardness Calculated Hardness (as CaCO3)		9300		2	MPN/100ml		21 . II II ₋1 <i>/</i>	P2805006
Hardness (as CaCO3)		9300		3	IVII IN/ IUUIIIL		21-JUL-14	1/2030/30
Mercury Total Mercury (Hg)-Total <0.000020		88.2		0.30	mg/L		29-JUL-14	
Mercury (Hg)-Total								
Nitrate-N Nitrate and Nitrite as N Nitrite as N by Ion Chromatography Nitrite-N Phenol (4AAP) Phenols (4AAP) Phosphorus, Total Phosphorus (P)-Total Sulfate by Ion Chromatography Sulfate Aluminum (Al)-Total Arsenic (As)-Total Calcium (Ca)-Total Calcium (Ca)-Total Calcium (Ca)-Total Cobalt (Co)-Total Cobalt (Co)-Total Cobalt (Co)-Total Copper (Cu)-Total Manganese (Mn)-Total Mitrite as N Nitrite as N by Ion Chromatography Nitrite-N 0.868 0.071 mg/L 0.050 mg/L 0.050 mg/L 0.050 mg/L 0.0010 mg/	Mercury (Hg)-Total	<0.000020		0.000020	mg/L	22-JUL-14	22-JUL-14	R2894549
Nitrate+Nitrite Nitrate and Nitrite as N 0.868 0.071 mg/L 22-JUL-14 22-JUL-14 Nitrite as N by lon Chromatography Nitrite as N by lon Chromatography 0.367 0.050 mg/L 18-JUL-14 R2893800 Phenol (4AAP) 0.0350 0.0010 mg/L 22-JUL-14 R2893420 Phosphorus, Total Phosphorus, Total Phosphorus (P)-Total 9.55 DLA 0.050 mg/L 22-JUL-14 R2894431 Sulfate by lon Chromatography Sulfate 5.15 0.50 mg/L 28-JUL-14 R2893800 Total Metals by ICP-MS Aluminum (Al)-Total 0.169 0.0050 mg/L 28-JUL-14 28-JUL-14 R28904431 Cadmium (Cd)-Total 0.00627 0.00020 mg/L 28-JUL-14 28-JUL-14 R29004441 Calcium (Ca)-Total 0.00070 0.00000 mg/L 28-JUL-14 28-JUL-14 R29004441 Chromium (Cr)-Total 0.0013 0.0010 mg/L 28-JUL-14 28-JUL-14 R29004441 Cobalt (Co)-Total 0.0033 0.0010 mg/L 28-JUL								
Nitrate and Nitrite as N 0.868 0.071 mg/L 22-JUL-14 Nitrite as N by Ion Chromatography Nitrite as N by Ion Chromatography Nitrite as N by Ion Chromatography 0.367 0.050 mg/L 18-JUL-14 R2893804 R2893804 R2894427		0.502		0.050	mg/L		18-JUL-14	R2893806
Nitrite as N by Ion Chromatography Nitrite-N 0.367 0.050 mg/L 18-JUL-14 R2893806 Phenol (4AAP) 0.0350 0.0010 mg/L 22-JUL-14 22-JUL-14 R2894426 Phosphorus, Total Phosphorus (P)-Total 9.55 DLA 0.050 mg/L 22-JUL-14 R2894436 Sulfate by Ion Chromatography Sulfate 5.15 0.50 mg/L 28-JUL-14 R2893806 Total Metals by ICP-MS Aluminum (Al)-Total 0.169 0.0050 mg/L 28-JUL-14 R2890443 Arsenic (As)-Total 0.00627 0.00020 mg/L 28-JUL-14 R2890443 Cadmium (Cd)-Total 0.000627 0.00020 mg/L 28-JUL-14 R2890044 Calcium (Ca)-Total 0.000070 0.000010 mg/L 28-JUL-14 R2890044 Calcium (Ca)-Total 0.0013 0.0010 mg/L 28-JUL-14 R2890044 Chromium (Cr)-Total 0.00234 0.00020 mg/L 28-JUL-14 R28-JUL-14 R2890044 Copper (Cu)-T		0.868		0.071	ma/l		22- -14	
Nitrite-N		0.000		0.071	1119/1		22 30L 14	
Phenol (4AAP) 0.0350 0.0010 mg/L 22-JUL-14 22-JUL-14 R2894420 Phosphorus, Total 9.55 DLA 0.050 mg/L 22-JUL-14 R2894430 Sulfate by Ion Chromatography Sulfate by Ion Chromatography 5.15 0.50 mg/L 28-JUL-14 R2893800 Total Metals by ICP-MS Aluminum (Al)-Total 0.169 0.0050 mg/L 28-JUL-14 28-JUL-14 R2890448 Arsenic (As)-Total 0.00627 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Calcium (Ca)-Total 0.000070 0.10 mg/L 28-JUL-14 28-JUL-14 R2900448 Chromium (Cr)-Total 0.0013 0.0010 mg/L 28-JUL-14 28-JUL-14 R2900448 Copper (Cu)-Total 0.00234 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Copper (Cu)-Total 0.0437 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Lead (Pb)-Total 0.00162 0.00090 mg/L 28-JUL-14	· · · · · · · · · · · · · · · · · · ·	0.367		0.050	mg/L		18-JUL-14	R2893806
Phosphorus, Total 9.55 DLA 0.050 mg/L 22-JUL-14 R289443 Sulfate by Ion Chromatography 5.15 0.50 mg/L 28-JUL-14 R289380 Total Metals by ICP-MS Aluminum (Al)-Total 0.169 0.0050 mg/L 28-JUL-14 R2900448 Arsenic (As)-Total 0.00627 0.00020 mg/L 28-JUL-14 R2900448 Cadmium (Cd)-Total 0.000070 0.000010 mg/L 28-JUL-14 R2900448 Calcium (Ca)-Total 0.0013 0.0010 mg/L 28-JUL-14 R2900448 Chromium (Cr)-Total 0.0013 0.0010 mg/L 28-JUL-14 R2900448 Cobalt (Co)-Total 0.00234 0.00020 mg/L 28-JUL-14 R2900448 Copper (Cu)-Total 0.0437 0.00020 mg/L 28-JUL-14 R2900448 Lead (Pb)-Total 0.00162 0.00020 mg/L 28-JUL-14 R2900448 Magnesium (Mg)-Total 8.88 0.010 mg/L 28-JUL-14 R2900448 <	Phenol (4AAP)							
Phosphorus (P)-Total 9.55 DLA 0.050 mg/L 22-JUL-14 R289443 Sulfate by Ion Chromatography Sulfate 5.15 0.50 mg/L 18-JUL-14 R2893806 Total Metals by ICP-MS Aluminum (Al)-Total 0.169 0.0050 mg/L 28-JUL-14 28-JUL-14 R2900448 Arsenic (As)-Total 0.00627 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Cadmium (Cd)-Total 0.000070 0.000010 mg/L 28-JUL-14 R2900448 Calcium (Ca)-Total 0.0013 0.0010 mg/L 28-JUL-14 R2900448 Chromium (Cr)-Total 0.0013 0.0010 mg/L 28-JUL-14 R2900448 Cobalt (Co)-Total 0.00234 0.00020 mg/L 28-JUL-14 R2900448 Copper (Cu)-Total 0.0437 0.00020 mg/L 28-JUL-14 R2900448 Iron (Fe)-Total 0.00162 0.000090 mg/L 28-JUL-14 R2900448 Lead (Pb)-Total 0.00162 0.000090 mg/L 2	Phenols (4AAP)	0.0350		0.0010	mg/L	22-JUL-14	22-JUL-14	R2894428
Sulfate by Ion Chromatography 5.15 0.50 mg/L 18-JUL-14 R2893800 Total Metals by ICP-MS Aluminum (Al)-Total 0.169 0.0050 mg/L 28-JUL-14 28-JUL-14 R2900448 Arsenic (As)-Total 0.00627 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Cadmium (Cd)-Total 0.000070 0.000010 mg/L 28-JUL-14 28-JUL-14 R2900448 Calcium (Ca)-Total 20.7 0.10 mg/L 28-JUL-14 R2900448 Chromium (Cr)-Total 0.0013 0.0010 mg/L 28-JUL-14 R2900448 Cobalt (Co)-Total 0.00234 0.00020 mg/L 28-JUL-14 R2900448 Copper (Cu)-Total 0.0437 0.00020 mg/L 28-JUL-14 R2900448 Iron (Fe)-Total 3.22 0.10 mg/L 28-JUL-14 28-JUL-14 R2900448 Lead (Pb)-Total 0.00162 0.00090 mg/L 28-JUL-14 28-JUL-14 R2900448 Magnesium (Mg)-Total 8.88 0.010			D. A				00 1111 44	
Sulfate 5.15 0.50 mg/L 18-JUL-14 R2893800 Total Metals by ICP-MS Aluminum (Al)-Total 0.169 0.0050 mg/L 28-JUL-14 28-JUL-14 R2900448 Arsenic (As)-Total 0.00627 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Cadmium (Cd)-Total 0.000070 0.000010 mg/L 28-JUL-14 28-JUL-14 R2900448 Calcium (Ca)-Total 0.0013 0.0010 mg/L 28-JUL-14 28-JUL-14 R2900448 Cobalt (Co)-Total 0.00234 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Copper (Cu)-Total 0.0437 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Iron (Fe)-Total 3.22 0.10 mg/L 28-JUL-14 28-JUL-14 R2900448 Lead (Pb)-Total 0.00162 0.000090 mg/L 28-JUL-14 28-JUL-14 R2900448 Magnesium (Mg)-Total 8.88 0.010 mg/L 28-JUL-14 28-JUL-14 R2900448 Manganese (Mn)-Total 0.245 0.00030 mg/L 28-JUL-1	• • • • • • • • • • • • • • • • • • • •	9.55	DLA	0.050	mg/L		22-JUL-14	R2894431
Total Metals by ICP-MS Aluminum (Al)-Total 0.169 0.0050 mg/L 28-JUL-14 28-JUL-14 R2900448 Arsenic (As)-Total 0.00627 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Cadmium (Cd)-Total 0.000070 0.000010 mg/L 28-JUL-14 28-JUL-14 R2900448 Calcium (Ca)-Total 20.7 0.10 mg/L 28-JUL-14 28-JUL-14 R2900448 Chromium (Cr)-Total 0.0013 0.0010 mg/L 28-JUL-14 R2900448 Cobalt (Co)-Total 0.00234 0.00020 mg/L 28-JUL-14 R2900448 Copper (Cu)-Total 0.0437 0.00020 mg/L 28-JUL-14 R2900448 Iron (Fe)-Total 3.22 0.10 mg/L 28-JUL-14 28-JUL-14 R2900448 Lead (Pb)-Total 0.00162 0.000090 mg/L 28-JUL-14 28-JUL-14 R2900448 Magnesium (Mg)-Total 8.88 0.010 mg/L 28-JUL-14 28-JUL-14 R2900448		5 15		0.50	ma/l		18II JI -14	R2893806
Aluminum (Al)-Total 0.169 0.0050 mg/L 28-JUL-14 28-JUL-14 R2900448 Arsenic (As)-Total 0.00627 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Cadmium (Cd)-Total 0.000070 0.000010 mg/L 28-JUL-14 28-JUL-14 R2900448 Calcium (Ca)-Total 20.7 0.10 mg/L 28-JUL-14 28-JUL-14 R2900448 Chromium (Cr)-Total 0.0013 0.0010 mg/L 28-JUL-14 28-JUL-14 R2900448 Copper (Cu)-Total 0.00234 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Iron (Fe)-Total 0.0437 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Lead (Pb)-Total 3.22 0.10 mg/L 28-JUL-14 28-JUL-14 R2900448 Magnesium (Mg)-Total 8.88 0.010 mg/L 28-JUL-14 28-JUL-14 R2900448 Manganese (Mn)-Total 0.245 0.00030 mg/L 28-JUL-14 28-JUL-14 R2900448	Total Metals by ICP-MS	0.10		0.00	9/ =			11200000
Cadmium (Cd)-Total 0.000070 0.000010 mg/L 28-JUL-14 28-JUL-14 R2900448 Calcium (Ca)-Total 20.7 0.10 mg/L 28-JUL-14 28-JUL-14 R2900448 Chromium (Cr)-Total 0.0013 0.0010 mg/L 28-JUL-14 28-JUL-14 R2900448 Cobalt (Co)-Total 0.00234 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Copper (Cu)-Total 0.0437 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Iron (Fe)-Total 3.22 0.10 mg/L 28-JUL-14 28-JUL-14 R2900448 Lead (Pb)-Total 0.00162 0.00090 mg/L 28-JUL-14 28-JUL-14 R2900448 Magnesium (Mg)-Total 8.88 0.010 mg/L 28-JUL-14 28-JUL-14 R2900448 Manganese (Mn)-Total 0.245 0.00030 mg/L 28-JUL-14 28-JUL-14 R2900448		0.169		0.0050	mg/L	28-JUL-14	28-JUL-14	R2900449
Calcium (Ca)-Total 20.7 0.10 mg/L 28-JUL-14 28-JUL-14 R2900448 Chromium (Cr)-Total 0.0013 0.0010 mg/L 28-JUL-14 28-JUL-14 R2900448 Cobalt (Co)-Total 0.00234 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Copper (Cu)-Total 0.0437 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900448 Iron (Fe)-Total 3.22 0.10 mg/L 28-JUL-14 28-JUL-14 R2900448 Lead (Pb)-Total 0.00162 0.000090 mg/L 28-JUL-14 28-JUL-14 R2900448 Magnesium (Mg)-Total 8.88 0.010 mg/L 28-JUL-14 28-JUL-14 R2900448 Manganese (Mn)-Total 0.245 0.00030 mg/L 28-JUL-14 28-JUL-14 R2900448	` '	0.00627		0.00020	mg/L			R2900449
Chromium (Cr)-Total 0.0013 0.0010 mg/L 28-JUL-14 28-JUL-14 R2900445 Cobalt (Co)-Total 0.00234 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900445 Copper (Cu)-Total 0.0437 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900445 Iron (Fe)-Total 3.22 0.10 mg/L 28-JUL-14 28-JUL-14 R2900445 Lead (Pb)-Total 0.00162 0.000090 mg/L 28-JUL-14 28-JUL-14 R2900445 Magnesium (Mg)-Total 8.88 0.010 mg/L 28-JUL-14 28-JUL-14 R2900445 Manganese (Mn)-Total 0.245 0.00030 mg/L 28-JUL-14 28-JUL-14 R2900445	` '				- 1			R2900449
Cobalt (Co)-Total 0.00234 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900445 Copper (Cu)-Total 0.0437 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900445 Iron (Fe)-Total 3.22 0.10 mg/L 28-JUL-14 28-JUL-14 R2900445 Lead (Pb)-Total 0.00162 0.000090 mg/L 28-JUL-14 28-JUL-14 R2900445 Magnesium (Mg)-Total 8.88 0.010 mg/L 28-JUL-14 28-JUL-14 R2900445 Manganese (Mn)-Total 0.245 0.00030 mg/L 28-JUL-14 28-JUL-14 R2900445	,				-			
Copper (Cu)-Total 0.0437 0.00020 mg/L 28-JUL-14 28-JUL-14 R2900449 Iron (Fe)-Total 3.22 0.10 mg/L 28-JUL-14 28-JUL-14 R2900449 Lead (Pb)-Total 0.00162 0.000090 mg/L 28-JUL-14 28-JUL-14 R2900449 Magnesium (Mg)-Total 8.88 0.010 mg/L 28-JUL-14 28-JUL-14 R2900449 Manganese (Mn)-Total 0.245 0.00030 mg/L 28-JUL-14 28-JUL-14 R2900449	` ,							1
Iron (Fe)-Total 3.22 0.10 mg/L 28-JUL-14 28-JUL-14 R2900449 Lead (Pb)-Total 0.00162 0.000090 mg/L 28-JUL-14 28-JUL-14 R2900449 Magnesium (Mg)-Total 8.88 0.010 mg/L 28-JUL-14 28-JUL-14 R2900449 Manganese (Mn)-Total 0.245 0.00030 mg/L 28-JUL-14 28-JUL-14 R2900449	, ,				- 1			
Lead (Pb)-Total 0.00162 0.000090 mg/L 28-JUL-14 28-JUL-14 R2900449 Magnesium (Mg)-Total 8.88 0.010 mg/L 28-JUL-14 28-JUL-14 R2900449 Manganese (Mn)-Total 0.245 0.00030 mg/L 28-JUL-14 28-JUL-14 R2900449	• • • •				-			R2900449
Magnesium (Mg)-Total 8.88 0.010 mg/L 28-JUL-14 28-JUL-14 R2900445 Manganese (Mn)-Total 0.245 0.00030 mg/L 28-JUL-14 28-JUL-14 R2900445								R2900449
	• , •,	8.88		0.010	-			R2900449
Nickel (Ni)-Total 0.0084 0.0020 mg/l 28-JUJ-14 28-JUJ-14 R2900449	3 ()							R2900449
	,	0.0084		0.0020	mg/L	28-JUL-14	28-JUL-14	R2900449
	· /		DIA		- 1			R2900449
0.0	` '		DLA		- 1			R2900449 R2900449
Total Suspended Solids 0.0383 0.0020 mg/L 20-30L-14 20-30L-14 R2900448	• •	0.0303		0.0020	illy/L	20 JUL-14	20-JUL-14	112300443
		52.0		5.0	mg/L		21-JUL-14	R2893826
pH								
		7.51		0.10	pH units		22-JUL-14	R2894373

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1488411 CONTD.... PAGE 6 of 12 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1488411-3 ARV-5							
Sampled By: CLIENT on 15-JUL-14 @ 13:55							
Matrix: EFFLUENT							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene Benzene	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
Toluene	<0.0010		0.0010	mg/L		25-JUL-14	R2898207
Ethyl benzene	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
o-Xylene	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
m+p-Xylenes	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
F1 (C6-C10)	<0.10		0.10	mg/L		25-JUL-14	R2898207
Surrogate: 4-Bromofluorobenzene (SS)	104.8		70-130	%		25-JUL-14	R2898207
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		29-JUL-14	
F2-Naphth	<0.50		0.50	mg/L		29-JUL-14	
F3-PAH	<0.50		0.50	mg/L		29-JUL-14	
Total Hydrocarbons (C6-C50)	<0.87		0.87	mg/L		29-JUL-14	
Sum of Xylene Isomer Concentrations	0.0045		0.0045	m c:/l		20 11 44	
Xylenes (Total) Miscellaneous Parameters	<0.0015		0.0015	mg/L		28-JUL-14	
Total Organic Carbon	-10	DLM	10	ma/l	25-JUL-14	25-JUL-14	D2800422
	<10	DLIVI	10	mg/L	25-JUL-14	25-JUL-14	R2899422
F2-F4 PHC method F2 (C10-C16)	<0.50		0.50	mg/L	25-JUL-14	26-JUL-14	R2900047
F3 (C16-C34)	<0.50		0.50	mg/L	25-JUL-14	26-JUL-14	R2900047
F4 (C34-C50)	<0.50		0.50	mg/L	25-JUL-14	26-JUL-14	R2900047
Surrogate: 2-Bromobenzotrifluoride	98.2		65-135	%	25-JUL-14	26-JUL-14	R2900047
Polyaromatic Hydrocarbons (PAHs)	33.2		00 .00				
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Acenaphthene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Acenaphthylene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Anthracene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Acridine	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(a)anthracene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(a)pyrene	<0.000050		0.0000050	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Chrysene Dibenzo(a,h)anthracene	<0.000020		0.000020	mg/L	25-JUL-14 25-JUL-14	25-JUL-14 25-JUL-14	R2899723
Fluoranthene	<0.000050		0.0000050	mg/L		25-JUL-14 25-JUL-14	R2899723
Fluorene	<0.000020 <0.000020		0.000020 0.000020	mg/L mg/L	25-JUL-14 25-JUL-14	25-JUL-14 25-JUL-14	R2899723 R2899723
Indeno(1,2,3-cd)pyrene	<0.000020		0.000020	mg/L	25-JUL-14 25-JUL-14	25-JUL-14 25-JUL-14	R2899723
Naphthalene	<0.000010		0.000010	mg/L	25-JUL-14 25-JUL-14	25-JUL-14 25-JUL-14	R2899723
Phenanthrene	<0.000050		0.000050	mg/L	25-JUL-14	25-JUL-14	R2899723
Pyrene	<0.000010		0.000030	mg/L	25-JUL-14	25-JUL-14	R2899723
Quinoline	<0.000020		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	25-JUL-14	25-JUL-14	R2899723
Surrogate: Acenaphthene d10	78.1		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Acridine d9	89.6		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Chrysene d12	75.6		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Naphthalene d8	75.3		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Phenanthrene d10	84.8		40-130	%	25-JUL-14	25-JUL-14	R2899723
Nunavut WW Group 1							
Alkalinity Alkalinity, Total (as CaCO3)	41		20	mg/L		22-JUL-14	R2894373
/ intainity, Total (as CaCCs)	41		20	my/L		22-30L-14	1120343/3

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1488411 CONTD.... PAGE 7 of 12 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1488411-3 ARV-5							
Sampled By: CLIENT on 15-JUL-14 @ 13:55							
Matrix: EFFLUENT							
Alkalinity							
Bicarbonate (HCO3)	50		24	mg/L		22-JUL-14	R2894373
Carbonate (CO3)	<12		12	mg/L		22-JUL-14	R2894373
Hydroxide (OH)	<6.8		6.8	mg/L		22-JUL-14	R2894373
Ammonia by colour							
Ammonia, Total (as N)	0.085		0.010	mg/L		21-JUL-14	R2893720
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand	<6.0		6.0	mg/L		18-JUL-14	R2896021
Carbonaceous BOD	<0.0		0.0	IIIg/L		10-301-14	N2090021
BOD Carbonaceous	<6.0		6.0	mg/L		18-JUL-14	R2896021
Chloride by Ion Chromatography							
Chloride	513		2.5	mg/L		18-JUL-14	R2893806
Conductivity							
Conductivity	1730		20	umhos/cm		22-JUL-14	R2894373
Fecal Coliform Fecal Coliforms	9		3	MPN/100mL		21-JUL-14	R2895096
Hardness Calculated	9		3	IVII IN IOUIIL		21-00L-14	112030030
Hardness (as CaCO3)	373		0.30	mg/L		29-JUL-14	
Mercury Total							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	22-JUL-14	22-JUL-14	R2894549
Nitrate as N by Ion Chromatography		F		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		40	D00
Nitrate-N	<0.25	DLM	0.25	mg/L		18-JUL-14	R2893806
Nitrate+Nitrite Nitrate and Nitrite as N	<0.35		0.35	mg/L		22-JUL-14	
Nitrite as N by Ion Chromatography	<0.55		0.33	IIIg/L		22-30L-14	
Nitrite-N	<0.25	DLM	0.25	mg/L		18-JUL-14	R2893806
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L	22-JUL-14	22-JUL-14	R2894428
Phosphorus, Total							
Phosphorus (P)-Total	0.028		0.010	mg/L		22-JUL-14	R2894431
Sulfate by Ion Chromatography Sulfate	30.5		2.5	mg/L		18-JUL-14	R2893806
Total Metals by ICP-MS	30.3		2.0	1119/1		10 002 14	112033000
Aluminum (Al)-Total	0.282		0.0050	mg/L	28-JUL-14	28-JUL-14	R2900449
Arsenic (As)-Total	0.00051		0.00020	mg/L	28-JUL-14	28-JUL-14	R2900449
Cadmium (Cd)-Total	0.000074		0.000010	mg/L	28-JUL-14	28-JUL-14	R2900449
Calcium (Ca)-Total	78	DLA	10	mg/L	28-JUL-14	28-JUL-14	R2900449
Chromium (Cr)-Total	0.0016		0.0010	mg/L	28-JUL-14	28-JUL-14	R2900449
Cobalt (Co)-Total Copper (Cu)-Total	0.00021 0.00095		0.00020 0.00020	mg/L mg/L	28-JUL-14 28-JUL-14	28-JUL-14 28-JUL-14	R2900449 R2900449
Iron (Fe)-Total	1.16		0.00020	mg/L	28-JUL-14 28-JUL-14	28-JUL-14 28-JUL-14	R2900449 R2900449
Lead (Pb)-Total	0.000504		0.000090	mg/L	28-JUL-14	28-JUL-14	R2900449
Magnesium (Mg)-Total	43.3		0.010	mg/L	28-JUL-14	28-JUL-14	R2900449
Manganese (Mn)-Total	0.188		0.00030	mg/L	28-JUL-14	28-JUL-14	R2900449
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	28-JUL-14	28-JUL-14	R2900449
Potassium (K)-Total	9.79	51.	0.020	mg/L	28-JUL-14	28-JUL-14	R2900449
Sodium (Na)-Total	246	DLA	3.0	mg/L	28-JUL-14	28-JUL-14	R2900449
Zinc (Zn)-Total	0.417		0.0020	mg/L	28-JUL-14	28-JUL-14	R2900449
Total Suspended Solids Total Suspended Solids	6.0		5.0	mg/L		21-JUL-14	R2893826
pH	0.0		0.0				. 12000020
рН	7.04		0.10	pH units		22-JUL-14	R2894373
	I .	1					1

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1488411 CONTD.... PAGE 8 of 12 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1488411-4 ARV-6							
Sampled By: CLIENT on 15-JUL-14 @ 14:09							
Matrix: EFFLUENT							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene Benzene	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
Toluene	<0.0010		0.0010	mg/L		25-JUL-14	R2898207
Ethyl benzene	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
o-Xylene	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
m+p-Xylenes	<0.00050		0.00050	mg/L		25-JUL-14	R2898207
F1 (C6-C10)	<0.10		0.10	mg/L		25-JUL-14	R2898207
Surrogate: 4-Bromofluorobenzene (SS)	121.9		70-130	%		25-JUL-14	R2898207
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		29-JUL-14	
F2-Naphth	<0.50		0.50	mg/L		29-JUL-14	
F3-PAH Tetal Undergarbana (C6 CEO)	0.67		0.50	mg/L		29-JUL-14	
Total Hydrocarbons (C6-C50)	<0.87		0.87	mg/L		29-JUL-14	
Sum of Xylene Isomer Concentrations	40 004E		0.0045	ma/l		20 1111 44	
Xylenes (Total) Miscellaneous Parameters	<0.0015		0.0015	mg/L		28-JUL-14	
Total Organic Carbon	<10	DLM	10	mg/L	25-JUL-14	25-JUL-14	R2899422
F2-F4 PHC method	<10	DEIVI	10	mg/L	23-30L-14	25-30L-14	N2099422
F2 (C10-C16)	<0.50		0.50	mg/L	25-JUL-14	26-JUL-14	R2900047
F3 (C16-C34)	0.67		0.50	mg/L	25-JUL-14	26-JUL-14	R2900047
F4 (C34-C50)	<0.50		0.50	mg/L	25-JUL-14	26-JUL-14	R2900047
Surrogate: 2-Bromobenzotrifluoride	88.3		65-135	%	25-JUL-14	26-JUL-14	R2900047
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Acenaphthene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Acenaphthylene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Anthracene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Acridine	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(a)anthracene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(a)pyrene	<0.000050		0.0000050	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Benzo(g,h,i)perylene Benzo(k)fluoranthene	<0.000020		0.000020	mg/L	25-JUL-14 25-JUL-14	25-JUL-14 25-JUL-14	R2899723
Chrysene	<0.000010 <0.000020		0.000010 0.000020	mg/L mg/L	25-JUL-14 25-JUL-14	25-JUL-14 25-JUL-14	R2899723 R2899723
Dibenzo(a,h)anthracene	<0.000020		0.000020	mg/L	25-JUL-14 25-JUL-14	25-JUL-14 25-JUL-14	R2899723
Fluoranthene	<0.000020		0.0000030	mg/L	25-JUL-14	25-JUL-14	R2899723
Fluorene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Indeno(1,2,3-cd)pyrene	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
Naphthalene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Phenanthrene	<0.000050		0.000050	mg/L	25-JUL-14	25-JUL-14	R2899723
Pyrene	<0.000010		0.000010	mg/L	25-JUL-14	25-JUL-14	R2899723
Quinoline	<0.000020		0.000020	mg/L	25-JUL-14	25-JUL-14	R2899723
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	25-JUL-14	25-JUL-14	R2899723
Surrogate: Acenaphthene d10	78.0		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Acridine d9	101.8		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Chrysene d12	84.1		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Naphthalene d8	70.1		40-130	%	25-JUL-14	25-JUL-14	R2899723
Surrogate: Phenanthrene d10	94.3		40-130	%	25-JUL-14	25-JUL-14	R2899723
Nunavut WW Group 1							
Alkalinity Alkalinity, Total (as CaCO3)	74		20	mg/L		22-JUL-14	R2894373
/ intainity, Total (as CaCCs)	14		20	my/L		22-30L-14	1120343/3

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1488411 CONTD.... PAGE 9 of 12 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1488411-4 ARV-6							
Sampled By: CLIENT on 15-JUL-14 @ 14:09							
Matrix: EFFLUENT							
Alkalinity							
Bicarbonate (HCO3)	90		24	mg/L		22-JUL-14	R2894373
Carbonate (CO3)	<12		12	mg/L		22-JUL-14	R2894373
Hydroxide (OH)	<6.8		6.8	mg/L		22-JUL-14	R2894373
Ammonia by colour							
Ammonia, Total (as N)	<0.010		0.010	mg/L		21-JUL-14	R2893720
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand	<6.0		6.0	mg/L		18-JUL-14	R2896021
Carbonaceous BOD	<0.0		0.0	IIIg/L		10-30L-14	K2090021
BOD Carbonaceous	<6.0		6.0	mg/L		18-JUL-14	R2896021
Chloride by Ion Chromatography							
Chloride	149		0.50	mg/L		18-JUL-14	R2893806
Conductivity			a-			00 11 11 12	
Conductivity	655		20	umhos/cm		22-JUL-14	R2894373
Fecal Coliform Fecal Coliforms	3		3	MPN/100mL		21-JUL-14	R2895096
Hardness Calculated]		3	IVII 14/ TOUTIL		21 00L-14	112030030
Hardness (as CaCO3)	167		0.30	mg/L		29-JUL-14	
Mercury Total							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	22-JUL-14	22-JUL-14	R2894549
Nitrate as N by Ion Chromatography							
Nitrate-N	<0.050		0.050	mg/L		18-JUL-14	R2893806
Nitrate+Nitrite Nitrate and Nitrite as N	<0.071		0.071	mg/L		22-JUL-14	
Nitrite as N by Ion Chromatography	<0.071		0.071	IIIg/L		22-30L-14	
Nitrite-N	<0.050		0.050	mg/L		18-JUL-14	R2893806
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L	22-JUL-14	22-JUL-14	R2894428
Phosphorus, Total						00 1111 44	
Phosphorus (P)-Total	0.069		0.010	mg/L		22-JUL-14	R2894431
Sulfate by Ion Chromatography Sulfate	8.83		0.50	mg/L		18-JUL-14	R2893806
Total Metals by ICP-MS	0.00		0.00	9/ =			11200000
Aluminum (Al)-Total	0.237		0.0050	mg/L	28-JUL-14	28-JUL-14	R2900449
Arsenic (As)-Total	0.00052		0.00020	mg/L	28-JUL-14	28-JUL-14	R2900449
Cadmium (Cd)-Total	0.000019		0.000010	mg/L	28-JUL-14	28-JUL-14	R2900449
Calcium (Ca)-Total	43.9		0.10	mg/L	28-JUL-14	28-JUL-14	R2900449
Chromium (Cr)-Total Cobalt (Co)-Total	0.317 0.00149		0.0010 0.00020	mg/L mg/L	28-JUL-14 28-JUL-14	28-JUL-14 28-JUL-14	R2900449 R2900449
Copper (Cu)-Total	0.00149		0.00020	mg/L	28-JUL-14 28-JUL-14	28-JUL-14 28-JUL-14	R2900449 R2900449
Iron (Fe)-Total	7.52		0.00020	mg/L	28-JUL-14	28-JUL-14	R2900449
Lead (Pb)-Total	0.000407		0.000090	mg/L	28-JUL-14	28-JUL-14	R2900449
Magnesium (Mg)-Total	14.0		0.010	mg/L	28-JUL-14	28-JUL-14	R2900449
Manganese (Mn)-Total	2.14	DLA	0.030	mg/L	28-JUL-14	28-JUL-14	R2900449
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	28-JUL-14	28-JUL-14	R2900449
Potassium (K)-Total	6.91	DI A	0.020	mg/L	28-JUL-14	28-JUL-14	R2900449
Sodium (Na)-Total Zinc (Zn)-Total	68.7	DLA	3.0	mg/L	28-JUL-14	28-JUL-14	R2900449
Total Suspended Solids	0.0656		0.0020	mg/L	28-JUL-14	28-JUL-14	R2900449
Total Suspended Solids Total Suspended Solids	34.0		5.0	mg/L		21-JUL-14	R2893826
рН				3			
pH	7.21		0.10	pH units		22-JUL-14	R2894373
	I.						

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

HAMLET OF ARVIAT WWTP L1488411 CONTD....

Reference Information

PAGE 10 of 12 Version: FINAL

Sample Parameter Qualifier Key:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution
DLM	Detection Limit Adjusted due to sample matrix effects.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
SP	Sample was Preserved at the laboratory

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TOT-WP	Water	Alkalinity	APHA 2320B

Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically.

BOD-CBOD-WP Water Carbonaceous BOD APHA 5210 B-5 day Incub.-O2 electrode

A sample of water is incubated for 5 days at 20 degrees Celcius. Comparison of dissolved oxygen content at beginning and end of incubation provides a measure of Biochemical oxygen demand. If carbonaceous BOD is requested, TCMP is added to the sample to chemically inhibit nitrogenous oxygen demand. If soluble BOD is requested, the sample is filtered prior to analysis.

BOD-WP Water Biochemical Oxygen Demand (BOD) APHA 5210 B

The sample is incubated for 5 days at 20 degrees Celcius. Comparison of dissolved oxygen content at the beginning and end of incubation provides a measure of biochemical oxygen demand. If carbonaceous BOD is requested, TCMP is added to the sample to chemically inhibit nitrogenous oxygen demand. If soluble BOD is requested, the sample is filtered prior to analysis. Surface waters have a DL of 1 mg/L. Effluents are diluted according to their history and will have a sample DL of 6 mg/L or greater, depending on the dilutions used.

BTEXS+F1-HSMS-WP Water BTX plus F1 by GCMS EPA 8260C / EPA 5021A

The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transfered into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

CL-IC-WP Water Chloride by Ion Chromatography EPA 300.1 (Modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

EC-WP Water Conductivity APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

ETL-HARDNESS-TOT-WP Water Hardness Calculated HARDNESS CALCULATED

F1-F4-CALC-WP Water CCME Total Hydrocarbons CCME CWS-PHC DEC-2000 - PUB# 1310-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

- 1. All extraction and analysis holding times were met.
- 2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
- 3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

- 1. All extraction and analysis holding times were met.
- 2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
- 3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
- 4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-F4-WS-WP Water F2-F4 PHC method EPA 3510/8000

This is the determination of the Petroleum Hydrocarbon fractions in water (F2, F3 and F4). A water sample volume of 200 mL in a 250 mL glass amber bottle is shaken with 10 mL hexane for two hours on a wrist action shaker, and then sonicated for 5 minutes. After extraction, the solvent layer is drawn off and analyzed against C10, C16 and C34 standards on a gas chromatograph equipped with a flame ionization detector.

FC-MPN-WP Water Fecal Coliform APHA 9221E

HAMLET OF ARVIAT WWTP L1488411 CONTD....

Reference Information

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Test Method References:

ALS Test Code Matrix Test Description Method Reference**

The Most Probable Number (MPN) method is based on the Multiple Tube Fermentation technique. The results of examination of replicate tubes and dilutions of a sample are reported after confirmations specific to total coliform, fecal coliform and E. coli are performed. Results are reported in MPN/100 mL for water and MPN/gram for food and solid samples.

and will the found and solid samples.

HG-T-CVAF-WP Water Mercury Total EPA245.7 V2.0

Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.

MET-T-L-MS-WP Water Total Metals by ICP-MS APHA 3030E/EPA 6020A-TL

This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

NH3-COL-WP Water Ammonia by colour APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium

nitroprusside and measured colourmetrically.

NO2+NO3-CALC-WP Water Nitrate+Nitrite CALCULATION

NO2-IC-WP Water Nitrite as N by Ion Chromatography EPA 300.1 (Modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

NO3-IC-WP Water Nitrate as N by Ion Chromatography EPA 300.1 (Modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

P-T-COL-WP Water Phosphorus, Total APHA 4500 P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after

persulphate digestion of the sample.

PAH,PANH-WP Water Polyaromatic Hydrocarbons (PAHs) EPA SW 846/8270-GC/MS

Water is spiked with a surrogate spike mix and extracted using solvent extraction techniques. Analysis is performed by GC/MS in the selected ion

monitoring (SIM) mode.

PH-WP Water pH APHA 4500H

The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a

reference electrode.

XYLENES-SUM-CALC-

WP

PHENOLS-4AAP-WT Water Phenol (4AAP) EPA 9066

An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a

red complex which is measured colorimetrically.

SO4-IC-WP Water Sulfate by Ion Chromatography EPA 300.1 (Modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

SOLIDS-TOTSUS-WP Water Total Suspended Solids APHA 2540 D (modified)

Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.

TOC-WT Water Total Organic Carbon APHA 5310B

Sample is injected into a heated reaction chamber which is packed with an oxidative catalyst. The water is vaporized and the organic cabon is oxidized

CALCULATED RESULT

to carbon dioxide. The carbon dioxide is transported in a carrier gas and is measured by a non-dispersive infrared detector.

Sum of Xylene Isomer Concentrations

WP

Total xylenes represents the sum of o-xylene and m&p-xylene.

Water

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code Laboratory Location

HAMLET OF ARVIAT WWTP L1488411 CONTD....

Reference Information

PAGE 12 of 12 Version: FINAL

Test Method References:

ALS Test Code Matrix Test Description Method Reference**

WT ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chairman Contant Annual Association (Contant Annual Annual Association (Contant Annual Ann

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample mg/kg wwt - milligrams per kilogram based on wet weight of sample mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

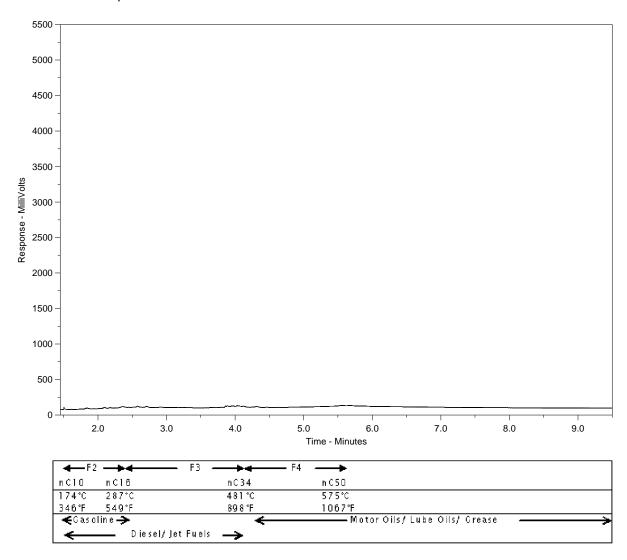
Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



ALS Sample ID: L1488411-1 Client Sample ID: ARV-2



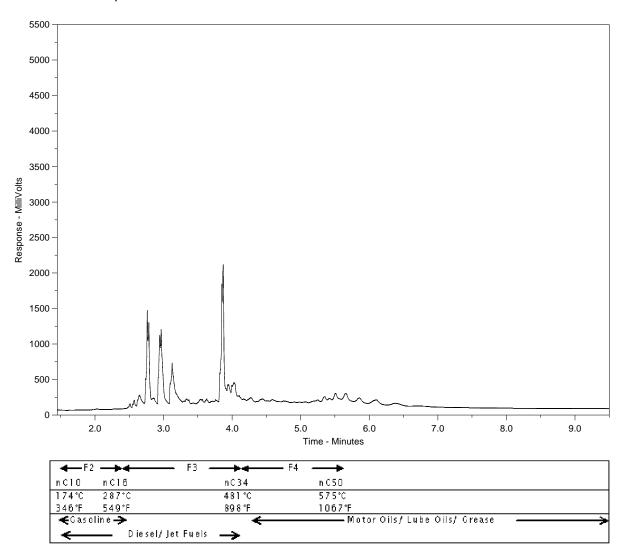
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.



ALS Sample ID: L1488411-2 Client Sample ID: ARV-4



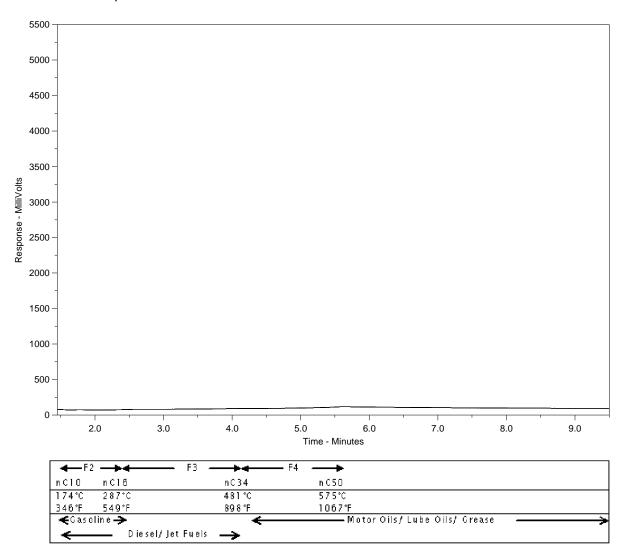
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.



ALS Sample ID: L1488411-3 Client Sample ID: ARV-5



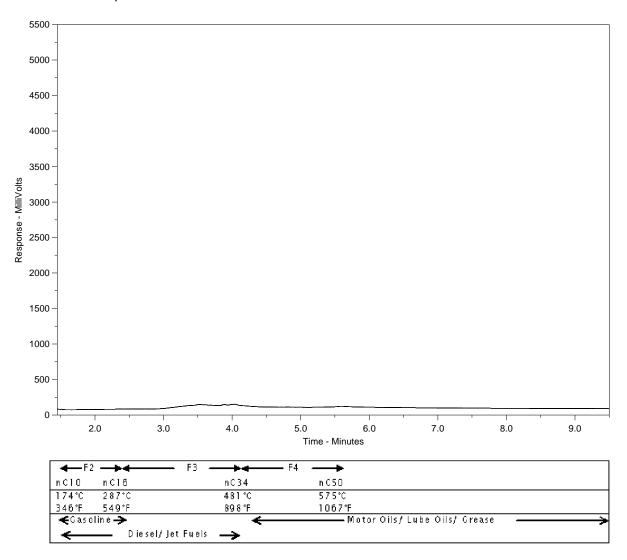
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.



ALS Sample ID: L1488411-4 Client Sample ID: ARV-6



The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.



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Hamlet of Arviat

ATTN: STEVE ENGLAND

PO Box 150

Arviat NU X0C 0E0

Date Received: 01-AUG-14

Report Date: 12-AUG-14 16:31 (MT)

Version: FINAL

Client Phone: 867-857-2841

Certificate of Analysis

Lab Work Order #: L1496287

Project P.O. #: NOT SUBMITTED

Job Reference: ARVIAT MONITORING PROGRAM

C of C Numbers: Legal Site Desc:

Craig Riddell Account Manager

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ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721 ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



L1496287 CONTD.... PAGE 2 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1496287-1 ARV-2							
Sampled By: LAURA on 14-JUL-14 @ 15:30							
Matrix: EFFLUENT							
Miscellaneous Parameters							
Fecal Coliforms	150		3	MPN/100mL		06-AUG-14	R2913349
Total Organic Carbon	101		1.0	mg/L	08-AUG-14	08-AUG-14	R2914016
Nunavut WW Group 1							
Alkalinity						<u>-</u>	
Alkalinity, Total (as CaCO3)	828		20	mg/L		07-AUG-14	R2912364
Bicarbonate (HCO3) Carbonate (CO3)	1010		24 12	mg/L		07-AUG-14 07-AUG-14	R2912364
Hydroxide (OH)	<12 <6.8		6.8	mg/L mg/L		07-AUG-14 07-AUG-14	R2912364 R2912364
Ammonia by colour	<0.0		0.0	IIIg/L		07-400-14	N2912304
Ammonia, Total (as N)	12.1	DLA	1.0	mg/L		06-AUG-14	R2910380
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	37.2		6.0	mg/L		01-AUG-14	R2910068
Carbonaceous BOD							
BOD Carbonaceous	18.5		6.0	mg/L		01-AUG-14	R2910068
Chloride by Ion Chromatography	007		0.5			00 410 44	D0000054
Chloride	397		2.5	mg/L		02-AUG-14	R2908651
Conductivity Conductivity	2990		20	umhos/cm		07-AUG-14	R2912364
Hardness Calculated	2550		20	dimios/om		07 7.00 14	112312304
Hardness (as CaCO3)	1130		0.30	mg/L		12-AUG-14	
Mercury Total							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	06-AUG-14	06-AUG-14	R2910188
Nitrate as N by Ion Chromatography							
Nitrate-N	<0.25	DLM	0.25	mg/L		02-AUG-14	R2908651
Nitrate+Nitrite	0.05		0.05			06 ALIC 14	
Nitrate and Nitrite as N	<0.35		0.35	mg/L		06-AUG-14	
Nitrite as N by Ion Chromatography Nitrite-N	<0.25	DLM	0.25	mg/L		02-AUG-14	R2908651
Oil and Grease, Total	10.20		0.20	9/ =		027.00	112000001
Oil and Grease, Total	5.7		2.0	mg/L	06-AUG-14	06-AUG-14	R2911943
Phenol (4AAP)							
Phenols (4AAP)	0.0106		0.0010	mg/L	11-AUG-14	11-AUG-14	R2914115
Phosphorus, Total			0.01-			44 4110 11	Dog : : :
Phosphorus (P)-Total	1.89		0.010	mg/L		11-AUG-14	R2914269
Sulfate by Ion Chromatography Sulfate	466		2.5	mg/L		02-AUG-14	R2908651
Total Metals by ICP-MS	400		2.0	, , , , , , , , , , , , , , , , , , ,		02 A00-14	112300001
Aluminum (Al)-Total	0.0351		0.0050	mg/L	11-AUG-14	11-AUG-14	R2914909
Arsenic (As)-Total	0.00651		0.00020	mg/L	11-AUG-14	11-AUG-14	R2914909
Cadmium (Cd)-Total	0.000074		0.000010	mg/L	11-AUG-14	11-AUG-14	R2914909
Calcium (Ca)-Total	356		0.10	mg/L	11-AUG-14	11-AUG-14	R2914909
Chromium (Cr)-Total	0.0022		0.0010	mg/L	11-AUG-14	11-AUG-14	R2914909
Cobalt (Co)-Total	0.00193		0.00020	mg/L	11-AUG-14	11-AUG-14	R2914909
Copper (Cu)-Total	0.0184		0.00020	mg/L	11-AUG-14	11-AUG-14	R2914909
Iron (Fe)-Total	0.56		0.10	mg/L	11-AUG-14	11-AUG-14	R2914909
Lead (Pb)-Total	0.00278		0.000090	mg/L	11-AUG-14	11-AUG-14	R2914909
Magnesium (Mg)-Total	59.2		0.010	mg/L	11-AUG-14	11-AUG-14	R2914909
Manganese (Mn)-Total	2.15		0.00030	mg/L	11-AUG-14	11-AUG-14	R2914909
Nickel (Ni)-Total	0.0110		0.0020	mg/L	11-AUG-14	11-AUG-14	R2914909
Potassium (K)-Total	68.8		0.020	mg/L	11-AUG-14	11-AUG-14	R2914909
Sodium (Na)-Total Zinc (Zn)-Total	302		0.030	mg/L mg/l	11-AUG-14 11-AUG-14	11-AUG-14 11-AUG-14	R2914909
ZING (ZN)-10tal	0.0464		0.0020	mg/L	11-AUG-14	11-AUG-14	R2914909

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1496287-1 ARV-2							
Sampled By: LAURA on 14-JUL-14 @ 15:30							
Matrix: EFFLUENT							
Total Suspended Solids							
Total Suspended Solids	33.0		5.0	mg/L		06-AUG-14	R2910855
pH	0.05		0.40			07 1110 44	D0040004
pH	8.05		0.10	pH units		07-AUG-14	R2912364
L1496287-2 ARV-4							
Sampled By: LAURA on 14-JUL-14 @ 15:45 Matrix: EFFLUENT							
Miscellaneous Parameters							
Fecal Coliforms	4		3	MPN/100mL		06-AUG-14	R2913349
Total Organic Carbon	115		1.0	mg/L	08-AUG-14	08-AUG-14	R2914016
Nunavut WW Group 1							
Alkalinity						07.41.0	Dec 45
Alkalinity, Total (as CaCO3) Bicarbonate (HCO3)	138 130		20 24	mg/L		07-AUG-14 07-AUG-14	R2912364 R2912364
Carbonate (CO3)	130		24 12	mg/L mg/L		07-AUG-14 07-AUG-14	R2912364 R2912364
Hydroxide (OH)	<6.8		6.8	mg/L		07-AUG-14	R2912364
Ammonia by colour							
Ammonia, Total (as N)	9.4	DLA	1.0	mg/L		05-AUG-14	R2908889
Biochemical Oxygen Demand (BOD)	50.4		0.0			01-AUG-14	D0040000
Biochemical Oxygen Demand Carbonaceous BOD	50.1		6.0	mg/L		01-AUG-14	R2910068
BOD Carbonaceous	42.2		6.0	mg/L		01-AUG-14	R2910068
Chloride by Ion Chromatography							
Chloride	93.4		0.50	mg/L		02-AUG-14	R2908651
Conductivity Conductivity	570		20	umboo/om		07 1110 14	D0040004
Hardness Calculated	570		20	umhos/cm		07-AUG-14	R2912364
Hardness (as CaCO3)	78.9		0.30	mg/L		12-AUG-14	
Mercury Total							
Mercury (Hg)-Total	<0.00020	DLM	0.00020	mg/L	06-AUG-14	06-AUG-14	R2910188
Nitrate as N by Ion Chromatography Nitrate-N	0.712		0.050	mg/L		02-AUG-14	R2908651
Nitrate+Nitrite	0.712		0.030	IIIg/L		02-800-14	K2900031
Nitrate and Nitrite as N	1.44		0.071	mg/L		06-AUG-14	
Nitrite as N by Ion Chromatography							
Nitrite-N	0.729		0.050	mg/L		02-AUG-14	R2908651
Oil and Grease, Total Oil and Grease, Total	<2.0		2.0	mg/L	06-AUG-14	06-AUG-14	R2911943
Phenol (4AAP)	\2.0		2.0	iiig/L	30 A00-14	00 700-14	112011343
Phenois (4AAP)	<0.0050	DLM	0.0050	mg/L	11-AUG-14	11-AUG-14	R2914115
Phosphorus, Total							
Phosphorus (P)-Total	12.1	DLA	0.050	mg/L		11-AUG-14	R2914269
Sulfate by Ion Chromatography Sulfate	2.18		0.50	mg/L		02-AUG-14	R2908651
Total Metals by ICP-MS	2.10		0.00	g/ L		327.33 14	11200001
Aluminum (Al)-Total	0.269		0.0050	mg/L	11-AUG-14	11-AUG-14	R2914909
Arsenic (As)-Total	0.00844		0.00020	mg/L	11-AUG-14	11-AUG-14	R2914909
Cadmium (Cd)-Total	0.000079		0.000010	mg/L	11-AUG-14	11-AUG-14	R2914909
Calcium (Ca)-Total Chromium (Cr)-Total	17.0 0.0015		0.10 0.0010	mg/L mg/L	11-AUG-14 11-AUG-14	11-AUG-14 11-AUG-14	R2914909 R2914909
Cobalt (Co)-Total	0.0015		0.0010	mg/L	11-AUG-14 11-AUG-14	11-AUG-14	R2914909 R2914909
Copper (Cu)-Total	0.0440		0.00020	mg/L	11-AUG-14	11-AUG-14	R2914909
Iron (Fe)-Total	4.56		0.10	mg/L	11-AUG-14	11-AUG-14	R2914909

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1496287 CONTD.... PAGE 4 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1496287-2 ARV-4							
Sampled By: LAURA on 14-JUL-14 @ 15:45							
Matrix: EFFLUENT							
Total Metals by ICP-MS							
Lead (Pb)-Total	0.00181		0.000090	mg/L	11-AUG-14	11-AUG-14	R2914909
Magnesium (Mg)-Total Manganese (Mn)-Total	8.85 0.279		0.010 0.00030	mg/L	11-AUG-14 11-AUG-14	11-AUG-14 11-AUG-14	R2914909
Nickel (Ni)-Total	0.279		0.00030	mg/L mg/L	11-AUG-14 11-AUG-14	11-AUG-14 11-AUG-14	R2914909 R2914909
Potassium (K)-Total	28.1		0.020	mg/L	11-AUG-14	11-AUG-14	R2914909
Sodium (Na)-Total	73.9		0.030	mg/L	11-AUG-14	11-AUG-14	R2914909
Zinc (Zn)-Total	0.0402		0.0020	mg/L	11-AUG-14	11-AUG-14	R2914909
Total Suspended Solids Total Suspended Solids	167		5.0	mg/L		06-AUG-14	R2910855
pH pH	8.96		0.10	pH units		07-AUG-14	R2912364
L1496287-3 ARV-5							
Sampled By: LAURA on 14-JUL-14 @ 16:00							
Matrix: EFFLUENT Miscellaneous Parameters							
Fecal Coliforms	43		3	MPN/100mL		06-AUG-14	R2913349
Total Organic Carbon	15.7		1.0	mg/L	08-AUG-14	08-AUG-14	R2914016
Nunavut WW Group 1 Alkalinity							
Alkalinity, Total (as CaCO3)	96		20	mg/L		07-AUG-14	R2912364
Bicarbonate (HCO3)	117		24	mg/L		07-AUG-14	R2912364
Carbonate (CO3)	<12		12	mg/L		07-AUG-14	R2912364
Hydroxide (OH)	<6.8		6.8	mg/L		07-AUG-14	R2912364
Ammonia by colour Ammonia, Total (as N)	<0.010		0.010	mg/L		05-AUG-14	R2908889
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand	<6.0		6.0	mg/L		01-AUG-14	R2910068
Carbonaceous BOD BOD Carbonaceous	<6.0		6.0	mg/L		01-AUG-14	R2910068
Chloride by Ion Chromatography Chloride	804		2.5	mg/L		02-AUG-14	R2908651
Conductivity Conductivity	2700		20	umhos/cm		07-AUG-14	R2912364
Hardness Calculated Hardness (as CaCO3)	385		0.30	mg/L		12-AUG-14	
Mercury Total Mercury (Hg)-Total	<0.000020		0.000020	mg/L	06-AUG-14	06-AUG-14	R2910188
Nitrate as N by Ion Chromatography Nitrate-N	<0.25	DLM	0.25	mg/L		02-AUG-14	R2908651
Nitrate+Nitrite Nitrate and Nitrite as N	<0.35		0.35	mg/L		06-AUG-14	
Nitrite as N by Ion Chromatography Nitrite-N	<0.25	DLM	0.25	mg/L		02-AUG-14	R2908651
Oil and Grease, Total Oil and Grease, Total	<2.0		2.0	mg/L	06-AUG-14	06-AUG-14	R2911943
Phenol (4AAP) Phenols (4AAP)	<0.0010		0.0010	mg/L	11-AUG-14	11-AUG-14	R2914115
Phosphorus, Total Phosphorus (P)-Total	0.106		0.010	mg/L		11-AUG-14	R2914269
Sulfate by Ion Chromatography Sulfate	16.0		2.5	mg/L		02-AUG-14	R2908651
Total Metals by ICP-MS							

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1496287 CONTD.... PAGE 5 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1496287-3 ARV-5							
Sampled By: LAURA on 14-JUL-14 @ 16:00							
Matrix: EFFLUENT							
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.206		0.0050	mg/L	11-AUG-14	11-AUG-14	R2914909
Arsenic (As)-Total	0.00087		0.00020	mg/L	11-AUG-14	11-AUG-14	R2914909
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	11-AUG-14	11-AUG-14	R2914909
Calcium (Ca)-Total	53.4		0.10	mg/L	11-AUG-14	11-AUG-14	R2914909
Chromium (Cr)-Total Cobalt (Co)-Total	<0.0010		0.0010	mg/L	11-AUG-14 11-AUG-14	11-AUG-14 11-AUG-14	R2914909
Copper (Cu)-Total	0.00027 0.00056		0.00020 0.00020	mg/L mg/L	11-AUG-14 11-AUG-14	11-AUG-14 11-AUG-14	R2914909 R2914909
Iron (Fe)-Total	3.16		0.00020	mg/L	11-AUG-14	11-AUG-14	R2914909 R2914909
Lead (Pb)-Total	0.000139		0.000090	mg/L	11-AUG-14	11-AUG-14	R2914909
Magnesium (Mg)-Total	61.0		0.010	mg/L	11-AUG-14	11-AUG-14	R2914909
Manganese (Mn)-Total	0.0691		0.00030	mg/L	11-AUG-14	11-AUG-14	R2914909
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	11-AUG-14	11-AUG-14	R2914909
Potassium (K)-Total	16.7		0.020	mg/L	11-AUG-14	11-AUG-14	R2914909
Sodium (Na)-Total	419		0.030	mg/L	11-AUG-14	11-AUG-14	R2914909
Zinc (Zn)-Total	0.0034		0.0020	mg/L	11-AUG-14	11-AUG-14	R2914909
Total Suspended Solids						00 4110 44	
Total Suspended Solids	20.0		5.0	mg/L		06-AUG-14	R2910855
pH pH	8.01		0.10	pH units		07-AUG-14	R2912364
	0.01		0.10	pri dinto		07 700 14	112912304
L1496287-4 ARV-6							
Sampled By: LAURA on 14-JUL-14 @ 15:20							
Matrix: EFFLUENT Miscellaneous Parameters							
Fecal Coliforms	23		3	MPN/100mL		06-AUG-14	R2913349
Total Organic Carbon	21.0		1.0	mg/L	08-AUG-14	08-AUG-14	R2914016
Nunavut WW Group 1	21.0		1.0	IIIg/L	00 700 14	00 700 14	112914010
Alkalinity							
Alkalinity, Total (as CaCO3)	96		20	mg/L		07-AUG-14	R2912364
Bicarbonate (HCO3)	118		24	mg/L		07-AUG-14	R2912364
Carbonate (CO3)	<12		12	mg/L		07-AUG-14	R2912364
Hydroxide (OH)	<6.8		6.8	mg/L		07-AUG-14	R2912364
Ammonia by colour						05 4110 44	
Ammonia, Total (as N)	0.289		0.010	mg/L		05-AUG-14	R2908889
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand	29.3		6.0	mg/L		01-AUG-14	R2910068
Carbonaceous BOD	29.5		0.0	g/ L		317.00-14	112010000
BOD Carbonaceous	16.1		6.0	mg/L		01-AUG-14	R2910068
Chloride by Ion Chromatography							
Chloride	169		0.50	mg/L		02-AUG-14	R2908651
Conductivity							
Conductivity	749		20	umhos/cm		07-AUG-14	R2912364
Hardness Calculated Hardness (as CaCO3)	176		0.30	ma/l		12-AUG-14	
Mercury Total	176		0.30	mg/L		12-AUG-14	
Mercury (Hg)-Total	<0.00020	DLM	0.00020	mg/L	06-AUG-14	06-AUG-14	R2910188
Nitrate as N by Ion Chromatography	.5.55526		2.30020				
Nitrate-N	<0.050		0.050	mg/L		02-AUG-14	R2908651
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.071		0.071	mg/L		06-AUG-14	
Nitrite as N by Ion Chromatography	1	1		1			
Nitrite-N	<0.050		0.050	mg/L		02-AUG-14	R2908651

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1496287 CONTD.... PAGE 6 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1496287-4 ARV-6							
Sampled By: LAURA on 14-JUL-14 @ 15:20							
Matrix: EFFLUENT							
Oil and Grease, Total							
Oil and Grease, Total	<2.0		2.0	mg/L	06-AUG-14	06-AUG-14	R2911943
Phenol (4AAP)							
Phenols (4AAP)	0.0193		0.0010	mg/L	11-AUG-14	11-AUG-14	R2914115
Phosphorus, Total Phosphorus (P)-Total	0.661		0.010	mg/L		11-AUG-14	R2914269
Sulfate by Ion Chromatography	0.001		0.010	IIIg/L		1170014	1(2914209
Sulfate	0.50		0.50	mg/L		02-AUG-14	R2908651
Total Metals by ICP-MS							
Aluminum (Al)-Total	1.34		0.0050	mg/L	11-AUG-14	11-AUG-14	R2914909
Arsenic (As)-Total	0.00584		0.00020	mg/L	11-AUG-14	11-AUG-14	R2914909
Cadmium (Cd)-Total Calcium (Ca)-Total	0.000032 44.9		0.000010 0.10	mg/L mg/L	11-AUG-14 11-AUG-14	11-AUG-14 11-AUG-14	R2914909 R2914909
Chromium (Cr)-Total	0.0098		0.10	mg/L	11-AUG-14	11-AUG-14 11-AUG-14	R2914909 R2914909
Cobalt (Co)-Total	0.00391		0.00020	mg/L	11-AUG-14	11-AUG-14	R2914909
Copper (Cu)-Total	0.00561		0.00020	mg/L	11-AUG-14	11-AUG-14	R2914909
Iron (Fe)-Total	147		0.10	mg/L	11-AUG-14	11-AUG-14	R2914909
Lead (Pb)-Total	0.00172		0.000090	mg/L	11-AUG-14	11-AUG-14	R2914909
Magnesium (Mg)-Total	15.7		0.010	mg/L	11-AUG-14	11-AUG-14	R2914909
Manganese (Mn)-Total Nickel (Ni)-Total	2.98		0.00030	mg/L	11-AUG-14	11-AUG-14 11-AUG-14	R2914909
Potassium (K)-Total	0.0043 7.30		0.0020 0.020	mg/L mg/L	11-AUG-14 11-AUG-14	11-AUG-14 11-AUG-14	R2914909 R2914909
Sodium (Na)-Total	7.30		0.020	mg/L	11-AUG-14	11-AUG-14	R2914909
Zinc (Zn)-Total	0.302		0.0020	mg/L	11-AUG-14	11-AUG-14	R2914909
Total Suspended Solids							
Total Suspended Solids	268		5.0	mg/L		06-AUG-14	R2910855
pH	0.00		0.40			07 1110 44	D0040004
pH	6.82		0.10	pH units		07-AUG-14	R2912364

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution
DLM	Detection Limit Adjusted due to sample matrix effects.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
SP	Sample was Preserved at the laboratory

Test Method References:

ALS Test Code	Matrix Test Description		Method Reference**
ALK-TOT-WP	Water	Alkalinity	APHA 2320B

Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically.

BOD-CBOD-WP Water Carbonaceous BOD APHA 5210 B-5 day Incub.-O2 electrode

A sample of water is incubated for 5 days at 20 degrees Celcius. Comparison of dissolved oxygen content at beginning and end of incubation provides a measure of Biochemical oxygen demand. If carbonaceous BOD is requested, TCMP is added to the sample to chemically inhibit nitrogenous oxygen demand. If soluble BOD is requested, the sample is filtered prior to analysis.

BOD-WP Water Biochemical Oxygen Demand (BOD) APHA 5210 B

The sample is incubated for 5 days at 20 degrees Celcius. Comparison of dissolved oxygen content at the beginning and end of incubation provides a measure of biochemical oxygen demand. If carbonaceous BOD is requested, TCMP is added to the sample to chemically inhibit nitrogenous oxygen demand. If soluble BOD is requested, the sample is filtered prior to analysis. Surface waters have a DL of 1 mg/L. Effluents are diluted according to their history and will have a sample DL of 6 mg/L or greater, depending on the dilutions used.

CL-IC-WP Water Chloride by Ion Chromatography EPA 300.1 (Modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

EC-WP Water Conductivity APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

ETL-HARDNESS-TOT-WP Water Hardness Calculated HARDNESS CALCULATED

FC-MPN-WP Water Fecal Coliform APHA 9221E

The Most Probable Number (MPN) method is based on the Multiple Tube Fermentation technique. The results of examination of replicate tubes and dilutions of a sample are reported after confirmations specific to total coliform, fecal coliform and E. coli are performed. Results are reported in MPN/100 mL for water and MPN/gram for food and solid samples.

HG-T-CVAF-WP Water Mercury Total EPA245.7 V2.0

Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.

MET-T-L-MS-WP Water Total Metals by ICP-MS APHA 3030E/EPA 6020A-TL

This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma mass spectrometry (EPA Method 6020A).

NH3-COL-WP Water Ammonia by colour APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium

nitroprusside and measured colourmetrically.

NO2+NO3-CALC-WP Water Nitrate+Nitrite CALCULATION

NO2-IC-WP Water Nitrite as N by Ion Chromatography EPA 300.1 (Modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

NO3-IC-WP Water Nitrate as N by Ion Chromatography EPA 300.1 (Modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

OGG-TOT-WT Water Oil and Grease, Total APHA 5520 B

Sample is extracted with hexane, extract is then evaporated and the residue is weighed to determine total oil and grease.

P-T-COL-WP Water Phosphorus, Total APHA 4500 P PHOSPHORUS

L1496287 CONTD....

Reference Information

PAGE 8 of 8
Version: FINAL

Test Method References:

ALS Test Code Matrix Test Description Method Reference**

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after

persulphate digestion of the sample.

PH-WP Water pH APHA 4500H

The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a

reference electrode.

PHENOLS-4AAP-WT Water Phenol (4AAP) EPA 9066

An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a

red complex which is measured colorimetrically.

SO4-IC-WP Water Sulfate by Ion Chromatography EPA 300.1 (Modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

SOLIDS-TOTSUS-WP Water Total Suspended Solids APHA 2540 D (modified)

Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.

TOC-WT Water Total Organic Carbon APHA 5310B

Sample is injected into a heated reaction chamber which is packed with an oxidative catalyst. The water is vaporized and the organic cabon is oxidized to carbon dioxide. The carbon dioxide is transported in a carrier gas and is measured by a non-dispersive infrared detector.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



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Hamlet of Arviat
ATTN: STEVE ENGLAND

PO Box 150

Arviat NU X0C 0E0

Date Received: 13-SEP-14

Report Date: 30-SEP-14 16:08 (MT)

Version: FINAL

Client Phone: 867-857-2841

Certificate of Analysis

Lab Work Order #: L1517374

Project P.O. #: NOT SUBMITTED

Job Reference: ARVIAT - NUNAVUT

C of C Numbers: Legal Site Desc:

Craig Riddell Account Manager

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ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721 ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



L1517374 CONTD.... PAGE 2 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1517374-1 ARV-2							
Sampled By: Laura on 12-SEP-14 @ 14:16							
Matrix: Waste Water							
Wattix. Waste Water							
Nunavut WW Group 1							
Alkalinity							
Alkalinity, Total (as CaCO3)	515		20	mg/L		19-SEP-14	R2955482
Bicarbonate (HCO3) Carbonate (CO3)	628		24	mg/L		19-SEP-14 19-SEP-14	R2955482
Hydroxide (OH)	<12 <6.8		12 6.8	mg/L mg/L		19-SEP-14 19-SEP-14	R2955482 R2955482
Ammonia by colour	<0.0		0.0	IIIg/L		15 021 14	112933402
Ammonia, Total (as N)	5.6	DLA	1.0	mg/L		15-SEP-14	R2948574
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	41.2		6.0	mg/L		13-SEP-14	R2951712
Carbonaceous BOD	00.0		0.0	re = //		40 OED 44	D0054740
BOD Carbonaceous	20.0		6.0	mg/L		13-SEP-14	R2951712
Chloride by Ion Chromatography Chloride	301		2.5	mg/L		13-SEP-14	R2948685
Conductivity				g, -			
Conductivity	2330		20	umhos/cm		19-SEP-14	R2955482
Fecal Coliform							
Fecal Coliforms	23		3	MPN/100mL		17-SEP-14	R2951258
Hardness Calculated Hardness (as CaCO3)	954		0.30	m a/I		17-SEP-14	
Mercury Total	954		0.30	mg/L		17-3EF-14	
Mercury (Hg)-Total	<0.00020	DLM	0.00020	mg/L	15-SEP-14	15-SEP-14	R2948512
Nitrate as N by Ion Chromatography							
Nitrate-N	0.31		0.25	mg/L		13-SEP-14	R2948685
Nitrate+Nitrite				,,			
Nitrate and Nitrite as N	<0.35		0.35	mg/L		16-SEP-14	
Nitrite as N by Ion Chromatography Nitrite-N	<0.25	DLM	0.25	mg/L		13-SEP-14	R2948685
Oil and Grease, Total	10.20		0.20	9/ =			1120 10000
Oil and Grease, Total	<2.0		2.0	mg/L	17-SEP-14	17-SEP-14	R2951949
Phenol (4AAP)							
Phenols (4AAP)	<0.01	DLM	0.010	mg/L	22-SEP-14	22-SEP-14	R2954753
Phosphorus, Total Phosphorus (P)-Total	0.700		0.010	mg/L		16-SEP-14	R2949838
Sulfate by Ion Chromatography	0.700		0.010	ilig/L		10 021 -14	112343000
Sulfate	490		2.5	mg/L		13-SEP-14	R2948685
Total Metals by ICP-MS							
Aluminum (Al)-Total	<0.050	DLM	0.050	mg/L	16-SEP-14	16-SEP-14	R2949523
Arsenic (As)-Total	0.0061	DLM	0.0020	mg/L	16-SEP-14	16-SEP-14	R2949523
Cadmium (Cd)-Total Calcium (Ca)-Total	<0.00010 298	DLM DLM	0.00010 1.0	mg/L mg/l	16-SEP-14 16-SEP-14	16-SEP-14 16-SEP-14	R2949523 R2949523
Chromium (Cr)-Total	<0.010	DLM	0.010	mg/L mg/L	16-SEP-14 16-SEP-14	16-SEP-14 16-SEP-14	R2949523 R2949523
Cobalt (Co)-Total	<0.0020	DLM	0.0020	mg/L	16-SEP-14	16-SEP-14	R2949523
Copper (Cu)-Total	0.0173	DLM	0.0020	mg/L	16-SEP-14	16-SEP-14	R2949523
Iron (Fe)-Total	<1.0	DLM	1.0	mg/L	16-SEP-14	16-SEP-14	R2949523
Lead (Pb)-Total	0.00217	DLM	0.00090	mg/L	16-SEP-14	16-SEP-14	R2949523
Magnesium (Mg)-Total	51.3	DLM	0.10	mg/L	16-SEP-14	16-SEP-14	R2949523
Manganese (Mn)-Total Nickel (Ni)-Total	0.724	DLM DLM	0.0030	mg/L	16-SEP-14	16-SEP-14	R2949523
Potassium (K)-Total	<0.020 55.0	DLM	0.020 0.20	mg/L mg/L	16-SEP-14 16-SEP-14	16-SEP-14 16-SEP-14	R2949523 R2949523
Sodium (Na)-Total	248	DLM	0.20	mg/L	16-SEP-14	16-SEP-14	R2949523 R2949523
Zinc (Zn)-Total	0.055	DLM	0.020	mg/L	16-SEP-14	16-SEP-14	R2949523
				,			

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1517374 CONTD.... PAGE 3 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1517374-1 ARV-2							
Sampled By: Laura on 12-SEP-14 @ 14:16							
Matrix: Waste Water							
Total Organic Carbon							
Total Organic Carbon	45.9		1.0	mg/L		24-SEP-14	R2961647
Total Suspended Solids							
Total Suspended Solids	62.0		5.0	mg/L		16-SEP-14	R2950637
pH pH	8.01		0.10	pH units		19-SEP-14	R2955482
L1517374-2 ARV-4	0.01		0.10	pri unito		10 021 14	112333402
Sampled By: Laura on 12-SEP-14 @ 14:04							
Matrix: Waste Water							
Water Water							
Nunavut WW Group 1							
Alkalinity	0.7		20			40.050.44	D0055400
Alkalinity, Total (as CaCO3) Bicarbonate (HCO3)	67 82		20 24	mg/L mg/L		19-SEP-14 19-SEP-14	R2955482 R2955482
Carbonate (CO3)	<12		12	mg/L		19-SEP-14	R2955482
Hydroxide (OH)	<6.8		6.8	mg/L		19-SEP-14	R2955482
Ammonia by colour							
Ammonia, Total (as N)	12.5	DLA	1.0	mg/L		15-SEP-14	R2948574
Biochemical Oxygen Demand (BOD)				,,			
Biochemical Oxygen Demand	69.1		6.0	mg/L		13-SEP-14	R2951712
Carbonaceous BOD BOD Carbonaceous	40.2		6.0	mg/L		13-SEP-14	R2951712
Chloride by Ion Chromatography	70.2		0.0	mg/L		10 021 14	112331712
Chloride	183		0.50	mg/L		13-SEP-14	R2948685
Conductivity							
Conductivity	750		20	umhos/cm		19-SEP-14	R2955482
Fecal Coliform Fecal Coliforms	640		3	MPN/100mL		17-SEP-14	R2951258
Hardness Calculated	040		3	IVII IV/ IOOIIIL		17-021-14	112931230
Hardness (as CaCO3)	81.2		0.30	mg/L		17-SEP-14	
Mercury Total							
Mercury (Hg)-Total	<0.00020	DLM	0.00020	mg/L	15-SEP-14	15-SEP-14	R2948512
Nitrate as N by Ion Chromatography Nitrate-N	0.563		0.050	mg/L		13-SEP-14	R2948685
Nitrate+Nitrite	0.565		0.030	IIIg/L		13-3LF-14	K2940003
Nitrate and Nitrite as N	0.859		0.071	mg/L		16-SEP-14	
Nitrite as N by Ion Chromatography							
Nitrite-N	0.296		0.050	mg/L		13-SEP-14	R2948685
Oil and Grease, Total	-2.0		2.0	ma/l	17 CED 14	17 CED 14	D2054040
Oil and Grease, Total Phenol (4AAP)	<2.0		2.0	mg/L	17-SEP-14	17-SEP-14	R2951949
Phenois (4AAP)	<0.0010		0.0010	mg/L	22-SEP-14	22-SEP-14	R2954753
Phosphorus, Total							
Phosphorus (P)-Total	6.00	DLA	0.050	mg/L		16-SEP-14	R2949838
Sulfate by Ion Chromatography	4.00		0.50	, /I		12 055 14	D0040005
Sulfate Total Matala by ICR MS	4.98		0.50	mg/L		13-SEP-14	R2948685
Total Metals by ICP-MS Aluminum (AI)-Total	0.211		0.0050	mg/L	16-SEP-14	16-SEP-14	R2949523
Arsenic (As)-Total	0.00789		0.0000	mg/L	16-SEP-14	16-SEP-14	R2949523
Cadmium (Cd)-Total	0.000088		0.000010	mg/L	16-SEP-14	16-SEP-14	R2949523
Calcium (Ca)-Total	16.6		0.10	mg/L	16-SEP-14	16-SEP-14	R2949523
Chromium (Cr)-Total	0.0013		0.0010	mg/L	16-SEP-14	16-SEP-14	R2949523
Cobalt (Co)-Total	0.00204		0.00020	mg/L	16-SEP-14	16-SEP-14	R2949523

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1517374 CONTD.... PAGE 4 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier* D.L.	Units	Extracted	Analyzed	Batch
L1517374-2 ARV-4						
Sampled By: Laura on 12-SEP-14 @ 14:04						
Matrix: Waste Water						
Total Metals by ICP-MS						
Copper (Cu)-Total	0.0283	0.00020	mg/L	16-SEP-14	16-SEP-14	R2949523
Iron (Fe)-Total	3.47	0.10	mg/L	16-SEP-14	16-SEP-14	R2949523
Lead (Pb)-Total	0.00159	0.000090	mg/L	16-SEP-14	16-SEP-14	R2949523
Magnesium (Mg)-Total	9.68	0.010	mg/L	16-SEP-14	16-SEP-14	R2949523
Manganese (Mn)-Total	0.279	0.00030	mg/L	16-SEP-14	16-SEP-14	R2949523
Nickel (Ni)-Total	0.0074	0.0020	mg/L	16-SEP-14	16-SEP-14	R2949523
Potassium (K)-Total	23.4	0.020	mg/L	16-SEP-14	16-SEP-14	R2949523
Sodium (Na)-Total Zinc (Zn)-Total	76.2 0.0214	0.030 0.0020	mg/L mg/L	16-SEP-14 16-SEP-14	16-SEP-14 16-SEP-14	R2949523 R2949523
Total Organic Carbon	0.0214	0.0020	IIIg/L	10-3LF-14	10-3LF-14	K2949525
Total Organic Carbon	89.2	1.0	mg/L		24-SEP-14	R2961647
Total Suspended Solids Total Suspended Solids	156	5.0	mg/L		16-SEP-14	R2950637
pH		3.0	g, L			1,200001
рН	6.77	0.10	pH units		19-SEP-14	R2955482
L1517374-3 ARV-5						
Sampled By: Laura on 12-SEP-14 @ 14:25						
Matrix: Waste Water						
Nunavut WW Group 1						
Alkalinity						
Alkalinity, Total (as CaCO3)	76	20	mg/L		19-SEP-14	R2955482
Bicarbonate (HCO3)	93	24	mg/L		19-SEP-14	R2955482
Carbonate (CO3)	<12	12	mg/L		19-SEP-14	R2955482
Hydroxide (OH)	<6.8	6.8	mg/L		19-SEP-14	R2955482
Ammonia by colour Ammonia, Total (as N)	<0.010	0.010	mg/L		15-SEP-14	R2948574
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand	<6.0	6.0	mg/L		13-SEP-14	R2951712
Carbonaceous BOD						
BOD Carbonaceous	<6.0	6.0	mg/L		13-SEP-14	R2951712
Chloride by Ion Chromatography Chloride	311	0.50	mg/L		13-SEP-14	R2948685
Conductivity Conductivity	1100	20	umhos/cm		19-SEP-14	R2955482
Fecal Coliform Fecal Coliforms	<3	3	MPN/100mL		17-SEP-14	R2951258
Hardness Calculated			IVII IV/ IOOIIIL		17-021-14	1/2301200
Hardness (as CaCO3)	162	0.30	mg/L		17-SEP-14	
Mercury Total Mercury (Hg)-Total	0.000024	0.000020	mg/L	15-SEP-14	15-SEP-14	R2948512
Nitrate as N by Ion Chromatography Nitrate-N	<0.050	0.050	mg/L		13-SEP-14	R2948685
Nitrate+Nitrite Nitrate and Nitrite as N	<0.071	0.071	mg/L		16-SEP-14	
Nitrite as N by Ion Chromatography Nitrite-N	<0.050	0.050	mg/L		13-SEP-14	R2948685
Oil and Grease, Total	<0.030	0.050	ilig/L		10-067-14	1740000
Oil and Grease, Total	<2.0	2.0	mg/L	17-SEP-14	17-SEP-14	R2951949
Phenol (4AAP) Phenols (4AAP)	<0.0010	0.0010	mg/L	22-SEP-14	22-SEP-14	R2954753
Phosphorus, Total						

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1517374 CONTD.... PAGE 5 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1517374-3 ARV-5							
Sampled By: Laura on 12-SEP-14 @ 14:25							
Matrix: Waste Water							
Phosphorus, Total							
Phosphorus (P)-Total	<0.050	DLA	0.050	mg/L		16-SEP-14	R2949838
Sulfate by Ion Chromatography							
Sulfate	8.42		0.50	mg/L		13-SEP-14	R2948685
Total Metals by ICP-MS				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10.050.11	40.055.44	
Aluminum (Al)-Total Arsenic (As)-Total	0.0319 0.00047		0.0050 0.00020	mg/L	16-SEP-14 16-SEP-14	16-SEP-14 16-SEP-14	R2949523 R2949523
Cadmium (Cd)-Total	<0.00047		0.00020	mg/L mg/L	16-SEP-14 16-SEP-14	16-SEP-14	R2949523 R2949523
Calcium (Ca)-Total	28.9		0.10	mg/L	16-SEP-14	16-SEP-14	R2949523
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	16-SEP-14	16-SEP-14	R2949523
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	16-SEP-14	16-SEP-14	R2949523
Copper (Cu)-Total	0.00120		0.00020	mg/L	16-SEP-14	16-SEP-14	R2949523
Iron (Fe)-Total	0.96		0.10	mg/L	16-SEP-14	16-SEP-14	R2949523
Lead (Pb)-Total	<0.000090		0.000090	mg/L	16-SEP-14	16-SEP-14	R2949523
Magnesium (Mg)-Total	21.8		0.010	mg/L	16-SEP-14	16-SEP-14	R2949523
Manganese (Mn)-Total	0.0463		0.00030	mg/L	16-SEP-14	16-SEP-14	R2949523
Nickel (Ni)-Total Potassium (K)-Total	<0.0020 6.04		0.0020 0.020	mg/L	16-SEP-14 16-SEP-14	16-SEP-14 16-SEP-14	R2949523 R2949523
Sodium (Na)-Total	164		0.020	mg/L mg/L	16-SEP-14 16-SEP-14	16-SEP-14 16-SEP-14	R2949523 R2949523
Zinc (Zn)-Total	0.0035		0.0020	mg/L	16-SEP-14	16-SEP-14	R2949523
Total Organic Carbon	0.0000		0.0020	1119/ =	10 021 11	10021 11	112040020
Total Organic Carbon	9.0		1.0	mg/L		25-SEP-14	R2961647
Total Suspended Solids							
Total Suspended Solids	6.0		5.0	mg/L		16-SEP-14	R2950637
pH							
pH	7.63		0.10	pH units		19-SEP-14	R2955482
L1517374-4 ARV-6							
Sampled By: Laura on 12-SEP-14 @ 13:50							
Matrix: Waste Water							
Nunavut WW Group 1							
Alkalinity							
Alkalinity, Total (as CaCO3)	103		20	mg/L		19-SEP-14	R2955482
Bicarbonate (HCO3)	126		24	mg/L		19-SEP-14	R2955482
Carbonate (CO3)	<12		12	mg/L		19-SEP-14	R2955482
Hydroxide (OH)	<6.8		6.8	mg/L		19-SEP-14	R2955482
Ammonia by colour Ammonia, Total (as N)	0.075		0.010	ma/l		16-SEP-14	R2950114
Biochemical Oxygen Demand (BOD)	0.075		0.010	mg/L		10-357-14	KZ900114
Biochemical Oxygen Demand	<6.0		6.0	mg/L		13-SEP-14	R2951712
Carbonaceous BOD				<i>y</i> –			
BOD Carbonaceous	<6.0		6.0	mg/L		13-SEP-14	R2951712
Chloride by Ion Chromatography							
Chloride	155		0.50	mg/L		13-SEP-14	R2948685
Conductivity Conductivity	669		20	umhos/cm		19-SEP-14	R2955482
Fecal Coliform	800		20	ummos/CIII		19-057-14	KZ90048Z
Fecal Coliforms	<3		3	MPN/100mL		17-SEP-14	R2951258
Hardness Calculated							
Hardness (as CaCO3)	149		0.30	mg/L		17-SEP-14	
Mercury Total							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	15-SEP-14	15-SEP-14	R2948512
Nitrate as N by Ion Chromatography							

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1517374 CONTD.... PAGE 6 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1517374-4 ARV-6							
L1517374-4 ARV-6 Sampled By: Laura on 12-SEP-14 @ 13:50							
Nitrate as N by Ion Chromatography Nitrate-N	<0.050		0.050	mg/L		13-SEP-14	R2948685
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.071		0.071	mg/L		16-SEP-14	
Nitrite as N by Ion Chromatography							
Nitrite-N	<0.050		0.050	mg/L		13-SEP-14	R2948685
Oil and Grease, Total Oil and Grease, Total	<2.0		2.0	mg/L	17-SEP-14	17-SEP-14	R2951949
Phenol (4AAP)	\2.0		2.0	1119/ =	17 021 14	17 021 14	112551545
Phenols (4AAP)	0.0013		0.0010	mg/L	22-SEP-14	22-SEP-14	R2954753
Phosphorus, Total							
Phosphorus (P)-Total	0.059	DLA	0.050	mg/L		16-SEP-14	R2949838
Sulfate by Ion Chromatography	-0.50		0.50	mc/l		12 CED 44	D2049005
Sulfate Total Motals by ICP MS	<0.50		0.50	mg/L		13-SEP-14	R2948685
Total Metals by ICP-MS Aluminum (Al)-Total	0.0369		0.0050	mg/L	16-SEP-14	16-SEP-14	R2949523
Arsenic (As)-Total	0.00081		0.00020	mg/L	16-SEP-14	16-SEP-14	R2949523
Cadmium (Cd)-Total	0.000010		0.000010	mg/L	16-SEP-14	16-SEP-14	R2949523
Calcium (Ca)-Total	37.6		0.10	mg/L	16-SEP-14	16-SEP-14	R2949523
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	16-SEP-14	16-SEP-14	R2949523
Cobalt (Co)-Total	0.00165		0.00020	mg/L	16-SEP-14	16-SEP-14	R2949523
Copper (Cu)-Total	0.00086		0.00020	mg/L	16-SEP-14	16-SEP-14	R2949523
Iron (Fe)-Total	19.0		0.10	mg/L	16-SEP-14	16-SEP-14	R2949523
Lead (Pb)-Total Magnesium (Mg)-Total	0.000115 13.5		0.000090 0.010	mg/L mg/L	16-SEP-14 16-SEP-14	16-SEP-14 16-SEP-14	R2949523 R2949523
Manganese (Mn)-Total	1.91		0.00030	mg/L	16-SEP-14	16-SEP-14 16-SEP-14	R2949523 R2949523
Nickel (Ni)-Total	<0.0020		0.0000	mg/L	16-SEP-14	16-SEP-14	R2949523
Potassium (K)-Total	5.52		0.020	mg/L	16-SEP-14	16-SEP-14	R2949523
Sodium (Na)-Total	64.7		0.030	mg/L	16-SEP-14	16-SEP-14	R2949523
Zinc (Zn)-Total	0.0227		0.0020	mg/L	16-SEP-14	16-SEP-14	R2949523
Total Organic Carbon				,,			
Total Organic Carbon	<1.0		1.0	mg/L		25-SEP-14	R2961647
Total Suspended Solids Total Suspended Solids	102		5.0	mg/L		16-SEP-14	R2950637
pH	102		0.0	g, L		.502. 17	
pH	7.07		0.10	pH units		19-SEP-14	R2955482

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

ARVIAT - NUNAVUT L1517374 CONTD....

Reference Information

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Sample Parameter Qualifier Kev:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution
DLM	Detection Limit Adjusted due to sample matrix effects.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

root mounda residion			
ALS Test Code	Matrix	Test Description	Method Reference**
ALK TOT WD	Motor	Allcolinity	ADLIA 2220D
ALK-TOT-WP	Water	Alkalinity	APHA 2320B

Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically.

BOD-CBOD-WP Water Carbonaceous BOD APHA 5210 B-5 day Incub.-O2 electrode

A sample of water is incubated for 5 days at 20 degrees Celcius. Comparison of dissolved oxygen content at beginning and end of incubation provides a measure of Biochemical oxygen demand. If carbonaceous BOD is requested, TCMP is added to the sample to chemically inhibit nitrogenous oxygen demand. If soluble BOD is requested, the sample is filtered prior to analysis.

BOD-WP Water Biochemical Oxygen Demand (BOD) APHA 5210 B

The sample is incubated for 5 days at 20 degrees Celcius. Comparison of dissolved oxygen content at the beginning and end of incubation provides a measure of biochemical oxygen demand. If carbonaceous BOD is requested, TCMP is added to the sample to chemically inhibit nitrogenous oxygen demand. If soluble BOD is requested, the sample is filtered prior to analysis. Surface waters have a DL of 1 mg/L. Effluents are diluted according to their history and will have a sample DL of 6 mg/L or greater, depending on the dilutions used.

C-TOT-ORG-WP Water Total Organic Carbon APHA 5310 B-INSTRUMENTAL-WP

This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.

The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC.

TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.

CL-IC-WP Water Chloride by Ion Chromatography EPA 300.1 (Modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

EC-WP Water Conductivity APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

ETL-HARDNESS-TOT-WP Water Hardness Calculated HARDNESS CALCULATED

FC-MPN-WP Water Fecal Coliform APHA 9221E

The Most Probable Number (MPN) method is based on the Multiple Tube Fermentation technique. The results of examination of replicate tubes and dilutions of a sample are reported after confirmations specific to total coliform, fecal coliform and E. coli are performed. Results are reported in MPN/100 mL for water and MPN/gram for food and solid samples.

HG-T-CVAF-WP Water Mercury Total EPA245.7 V2.0

Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.

MET-T-L-MS-WP Water Total Metals by ICP-MS APHA 3030E/EPA 6020A-TL

This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma mass spectrometry (EPA Method 6020A).

NH3-COL-WP Water Ammonia by colour APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2+NO3-CALC-WP Water Nitrate+Nitrite CALCULATION

NO2-IC-WP Water Nitrite as N by Ion Chromatography EPA 300.1 (Modified)

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Reference Information

Test Method References:

ALS Test Code Matrix Test Description Method Reference**

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

NO3-IC-WP Water Nitrate as N by Ion Chromatography EPA 300.1 (Modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

OGG-TOT-WT Water Oil and Grease, Total APHA 5520 B

Sample is extracted with hexane, extract is then evaporated and the residue is weighed to determine total oil and grease.

P-T-COL-WP Water Phosphorus, Total APHA 4500 P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after persulphate digestion of the sample.

PH-WP Water pH APHA 4500H

The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a

reference electrode.

PHENOLS-4AAP-WT Water Phenol (4AAP) EPA 9066

An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a

red complex which is measured colorimetrically.

SO4-IC-WP Water Sulfate by Ion Chromatography EPA 300.1 (Modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

SOLIDS-TOTSUS-WP Water Total Suspended Solids APHA 2540 D (modified)

Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

 Laboratory Definition Code
 Laboratory Location

 WP
 ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

 WT
 ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

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Appendix F: 2013 Annual Report, revised March 30, 2015

Revised March 30, 2015

YEAR BEING REPORTED: 2013

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water Licence No. **3AM-ARV1015** issued to the Hamlet of Arviat.

 i) - iii) tabular summaries of all data generated under the "Monitoring Program"; monthly and annual quantities in cubic metres of freshwater obtained from all sources; monthly and annual quantities in cubic metres of each and all wastes discharged;

Attached are quantities of water used as reported in our On Tap Water Delivery System and the estimated discharge of sewage waste based on quantities used.

Month Reported	Quantity of Water Obtained from all sources (litres)	Quantity of Sewage Waste Discharged
January 2013	7,140,851.10	Same
February 2013	6,460,473.40	Same
March 2013	6,928,125.40	Same
April 2013	6,619,917.76	Same
May 2013	6,777,028.53	Same
June 2013	6,607,188.00	Same
July 2013	6,853,929.90	Same
August 2013	6,942,504.00	Same
September 2013	6,768,278.40	Same
October 2013	7,188,547.10	Same
November 2013	7,256,243.70	Same
December 2013	7,535,727.50	Same
ANNUAL TOTAL	83,078,814.79	83,078,814.79

NB: No meter is existing to measure the sewage discharge volume. Therefore water consumption volume is considered as equal volume to the Sewage discharge volume.

Revised March 30, 2015

- iv. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities:
 - no major maintenance or modifications work has been undertaken during 2013
 - A RO unit was procured to treat one million litres of sea water, lake water or brackish water every day. Original supplier was contacted in the fall of 2012 for making RO unit as plug and Play so that it can be easily transported by air to any of the communities in case of emergency.

•

v. a list of unauthorized discharges and summary of follow-up action taken;

Spills:

- 2013005, 2013-01-10, 4 miles East of Arviat, Helicopter
- 2013091, 2013-03-19, near the Arctic College, Hydraulic oil, 60L.
- 2013183, 2013-06-03, Arviat High School, Heating Fuel, 300L
- 2013187, 2013-06-04, lot 493, Heating fuel, 15L
- 2013241, 2013-07-08, Bay 2 Garage, Heating Fuel, 50L
- 2013274, 2013-08-02, Hydraulic oil, 200L
- vi. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;

No abandonment or restoration work completed in 2013 and none planned for 2014

- vii. Summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
 - An engineering consultant ARKTIS Solutions Inc. has completed a feasibility study on Nunavut Communities waste management facilities and recommended new guidelines. CGS is planning to implement these new standard and criteria for the future waste management projects as the GN guidelines.
 - William Engineering Ltd is conducting water quality study on the existing water source and the proposed secondary water source. This study will be completed in 2014.

Revised March 30, 2015

- viii. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and updates or revisions to the approved Operation and Maintenance Plans.
 - O&M plans will be updated as the facilities are updated and modified or the new construction takes place.
 - No specific instruction was received for any of the items under this License on O&M plan.

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

• Attached to this report are the lab analysis results that were collected, submitted and analyzed as per the Monitoring Program. These results were not submitted with the original 2013 Annual Report.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

The Hamlet is working closely with CGS to satisfy the requirements of Water Licence and the demand of the AANDC inspector.

Appendix A: ARV-4 Effluent Quality Limits – 1 page

Appendix B: Monitoring Program Sampling Parameters Summary – 1 page

Appendix C: Certificates of Analysis, July 31, 2013 and August 20, 2013 – 18 pages

Revised March 30, 2015

Appendix A: ARV-4 Effluent Quality Limits

2013 Arviat Monitoring Stations and Sampling Parameters for Water License No. 3AM-ARV1015 Part D, Item 2: ARV-4 Effluent Quality Limits

Parameter	Maximum Concentration of	ARV-4					
Parameter	any Grab Sample	31-Jul-13	20-Aug-13				
BOD ₅	80 mg/L	79 mg/L	80.1 mg/L				
Total Suspended Solids	100 mg/L	150 mg/L	118 mg/L				
Fecal Coliforms	1x10 ⁴ CFU/100 mL	2300 MPN/100 mL	2300 MPN/100 mL				
Oil and Grease	no visible sheen	2.0 mg/L	2.2 mg/L				
рН	between 6 and 9	7.95	7.43				

Exceeds Effluent Quality Limits

Some ARV-4 sample parameters exceed effluent quality limits set in Part D, Item 2 of the Licence. ARV-4 is sampled from a pond outside of the sewage lagoon berms, not at the end out the wetlands. The location of ARV-4 should be confirmed with an Inspector prior to the 2015 sampling season.

Revised March 30, 2015

Appendix B: Monitoring Program Sampling Parameters Summary

2013 Arviat Monitoring Stations and Sampling Parameters Summary for Water License No. 3AM-ARV1015

				ARV-2a		ARV-4				ARV-5		ARV-6		
Parameters	Unit	Detection Limit	31-Jul-13	20-Aug-13	CCME Guideline ¹									
BOD ₅	mg/L	6.0	24.9	<6.0	n/g	79	80.1	n/g	<6.0	<6.0	n/g	<6.0	<6.0	n/g
рН	pH units	0.1	8.16	7.96	6.5-9.0	7.95	7.43	6.5-9.0	7.11	6.88	6.5-9.0	6.39	6.57	6.5-9.0
Total Suspended Solids	mg/L	5.0	62	26		150	118		50	16		116	9	
Nitrate-Nitrite	mg/L	0.071	<0.35	<0.35	n/g	0.605	1.39	n/g	<0.35	<0.35	n/g	<0.071	< 0.071	n/g
Total Phenols	mg/L	0.0010	0.0014	<0.0010	0.004	<0.005	< 0.005	0.004	<0.0010	<0.0010	0.004	0.0013	<0.0010	0.004
Sodium	mg/L	0.010	268	75.3	n/g	77.9	97.3	n/g	350	275	n/g	66.6	345	n/g
Magnesium	mg/L	0.10	47.5	10.7	n/g	9.78	12.2	n/g	50.1	31.9	n/g	9.9	66.2	n/g
Total Arsenic	mg/L	0.0020	0.00528	0.00036	0.005	0.0103	0.00918	0.005	0.00206	0.00099	0.005	0.00152	0.00445	0.005
Total Copper	mg/L	0.0020	0.00108	0.00094	0.002	0.0401	0.0256	0.002	0.00102	0.00052	0.002	0.00151	0.00064	0.002
Total Iron	mg/L	1.0	0.26	1.34	0.3	4.55	3.65	0.3mg/L	6.39	5.69	0.3	36.4	0.24	0.3
Total Mercury	mg/L	0.000020	<0.000020	<0.000020	0.0000026	<0.000020	<0.00020	0.0000026	<0.000020	<0.000020	0.0000026	<0.000020	<0.000020	0.0000026
Total Zinc	mg/L	0.020	0.0106	0.0473	n/g	0.0365	0.0312	n/g	0.0054	0.0102	n/g	0.0977	0.0143	n/g
Fecal Coliforms	MPN/100mL	3/100	9	930	n/g	2300	2300	n/g	93	430	n/g	<3		n/g
Conductivity	umhos/cm	20	2370	3020	n/g	810	832	n/g	2080	1770	n/g	543	634	n/g
Ammonia Nitrogen	mg/L	0.10	3.69	0.065	1.54	31.7	17.9	4.84	0.068	0.012	15.5	0.245	10.1	48.3
Oil&Grease	mg/L	2.0	<2.0	<2.0	n/g	2	2.2	n/g	<2.0	<2.0	n/g	<2.0	<2.0	n/g
Sulphate	mg/L	0.50	439	449	n/g	5.06	7.67	n/g	8.6	6.3	n/g	<0.50	9.84	n/g
Potassium	mg/L	0.20	48.4	7.84	n/g	28.7	33.4	n/g	12.9	12	n/g	1.72	56.9	n/g
Calcium	mg/L	1.0	249	29	n/g	18.2	20.7	n/g	40.7	39.9	n/g	28.9	265	n/g
Total Cadmium	mg/L	0.000220	<0.000010	<0.000010	0.00013	0.000078	0.000056	0.00013	<0.000010	<0.000010	0.00013	<0.000010	0.000012	0.00013
Total Chromium	mg/L	0.010	0.0013	<0.0010	0.0001	0.0014	0.0012	0.0001	<0.0010	<0.0010	0.0001	0.0018	0.0011	0.0001
Total Lead	mg/L	0.00090	0.000159	<0.000090	0.00235	0.00185	0.00125	0.00235	0.000461	<0.000090	0.007	0.000354	0.000112	0.00653
Total Nickel	mg/L	0.020	0.0057	<0.0020	0.07982	0.0102	0.0089	0.0079	<0.0020	<0.0020	0.15	<0.0020	<0.0020	0.146

 $^{^1}$ Canadian Environmental Quality Guidelines - Water Quality Guidelines for the Protection of Aquatic Life n/g - no guideline

Exceeds Guidelines for Protection of Aquatic Life

Revised March 30, 2015

Appendix C: Certificates of Analysis, July 31, 2013 and August 20, 2013



Hamlet of Arviat ATTN: ED MURPHY

PO Box 150

Arviat NU X0C 0E0

Date Received: 01-AUG-13

Report Date: 15-AUG-13 09:02 (MT)

Version: FINAL

Client Phone: 867-857-2841

Certificate of Analysis

Lab Work Order #: L1341687

Project P.O. #: NOT SUBMITTED

Job Reference: HAMLET OF ARVIAT WWTP

C of C Numbers: Legal Site Desc:

Paul Nicolas Account Manager

Paul Necolas

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ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721 ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



L1341687 CONTD.... PAGE 2 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1341687-1 ARV-2							
Sampled By: CLIENT on 31-JUL-13 @ 16:05							
Matrix: Eff							
Nitrate + Nitrite							
Nitrate as N by Ion Chromatography							
Nitrate-N	<0.25	DLM	0.25	mg/L		02-AUG-13	R2666791
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.35		0.35	mg/L		06-AUG-13	
Nitrite as N by Ion Chromatography		DIM					
Nitrite-N	<0.25	DLM	0.25	mg/L		02-AUG-13	R2666791
Miscellaneous Parameters	2.60	DLA	0.10	ma/l		06 ALIC 13	D2667202
Ammonia, Total (as N)	3.69	DLA	0.10	mg/L		06-AUG-13	R2667383
Biochemical Oxygen Demand Conductivity	24.9		6.0	mg/L		02-AUG-13	R2667237
,	2370		20	umhos/cm		02-AUG-13	R2665584
Fecal Coliforms Moroupy (Ha) Total	9		3	MPN/100mL	09-AUG-13	02-AUG-13 09-AUG-13	R2667219
Mercury (Hg)-Total Oil and Grease, Total	<0.000020		0.000020	mg/L			R2669217
Phenols (4AAP)	<2.0		2.0	mg/L	07-AUG-13	07-AUG-13	R2668652
Sulfate	0.0014 439		0.0010	mg/L	06-AUG-13	06-AUG-13 02-AUG-13	R2667862
			2.5	mg/L		02-AUG-13 02-AUG-13	R2666791
Total Suspended Solids pH	62.0		5.0	mg/L		02-AUG-13 02-AUG-13	R2666381
	8.16		0.10	pH units		02-AUG-13	R2665584
Total Metals by ICP-MS Aluminum (Al)-Total	0.0119		0.0050	mg/L	06-AUG-13	06-AUG-13	R2667048
Antimony (Sb)-Total	0.00969		0.0000	mg/L	06-AUG-13	06-AUG-13	R2667048
Arsenic (As)-Total	0.00528		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Barium (Ba)-Total	0.0716		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Boron (B)-Total	1.4	DLA	1.0	mg/L	06-AUG-13	07-AUG-13	R2667800
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	06-AUG-13	06-AUG-13	R2667048
Calcium (Ca)-Total	249	DLA	10	mg/L	06-AUG-13	07-AUG-13	R2667800
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Chromium (Cr)-Total	0.0013		0.0010	mg/L	06-AUG-13	06-AUG-13	R2667048
Cobalt (Co)-Total	0.00063		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Copper (Cu)-Total Iron (Fe)-Total	0.00108 0.26		0.00020	mg/L	06-AUG-13 06-AUG-13	06-AUG-13 06-AUG-13	R2667048
Lead (Pb)-Total	0.000159		0.10 0.000090	mg/L	06-AUG-13	06-AUG-13	R2667048 R2667048
Lithium (Li)-Total	0.000139		0.00090	mg/L mg/L	06-AUG-13	06-AUG-13	R2667048
Magnesium (Mg)-Total	47.5		0.010	mg/L	06-AUG-13	06-AUG-13	R2667048
Manganese (Mn)-Total	0.556	DLA	0.030	mg/L	06-AUG-13	07-AUG-13	R2667800
Molybdenum (Mo)-Total	0.00028		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Nickel (Ni)-Total	0.0057		0.0020	mg/L	06-AUG-13	06-AUG-13	R2667048
Phosphorus (P)-Total	2.08		0.10	mg/L	06-AUG-13	06-AUG-13	R2667048
Potassium (K)-Total	48.4	DLA	2.0	mg/L	06-AUG-13	07-AUG-13	R2667800
Rubidium (Rb)-Total	0.0471		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Selenium (Se)-Total	<0.0010		0.0010	mg/L	06-AUG-13	06-AUG-13	R2667048
Silicon (Si)-Total	8.92		0.050	mg/L	06-AUG-13	06-AUG-13	R2667048
Silver (Ag)-Total	<0.00010	_{D1} .	0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Sodium (Na)-Total	268	DLA	3.0	mg/L	06-AUG-13	07-AUG-13	R2667800
Strontium (Sr)-Total	1.87	DLA	0.010	mg/L	06-AUG-13	07-AUG-13	R2667800
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Thallium (TI)-Total Thorium (Th)-Total	<0.00010		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Tin (Sn)-Total	<0.00010 <0.00020		0.00010 0.00020	mg/L mg/L	06-AUG-13 06-AUG-13	06-AUG-13 06-AUG-13	R2667048
Titanium (Ti)-Total	0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048 R2667048
manium (m) rotal	U.UU00 I		0.00050	illy/L	00-A0G-13	00-400-13	112007040

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1341687 CONTD.... PAGE 3 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1341687-1 ARV-2							
Sampled By: CLIENT on 31-JUL-13 @ 16:05							
' '							
Total Metals by ICP-MS Tungsten (W)-Total	0.00018		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Uranium (U)-Total	0.00018		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Vanadium (V)-Total	0.00077		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Zinc (Zn)-Total	0.0106		0.0020	mg/L	06-AUG-13	06-AUG-13	R2667048
Zirconium (Zr)-Total	0.00047		0.00040	mg/L	06-AUG-13	06-AUG-13	R2667048
L1341687-2 ARV-4							
Sampled By: CLIENT on 31-JUL-13 @ 15:50							
Matrix: Eff							
Nitrate + Nitrite							
Nitrate as N by Ion Chromatography							
Nitrate-N	0.379		0.050	mg/L		02-AUG-13	R2666791
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.605		0.071	mg/L		06-AUG-13	
Nitrite as N by Ion Chromatography							
Nitrite-N	0.226		0.050	mg/L		02-AUG-13	R2666791
Miscellaneous Parameters							
Ammonia, Total (as N)	31.7	DLA	1.0	mg/L		13-AUG-13	R2671680
Biochemical Oxygen Demand	79		20	mg/L		02-AUG-13	R2667237
Conductivity	810		20	umhos/cm		02-AUG-13	R2665584
Fecal Coliforms	2300		3	MPN/100mL		02-AUG-13	R2667219
Mercury (Hg)-Total	<0.00020	DLM	0.00020	mg/L	09-AUG-13	09-AUG-13	R2669217
Oil and Grease, Total	2.0		2.0	mg/L	07-AUG-13	07-AUG-13	R2668652
Phenols (4AAP)	<0.005	DLM	0.0050	mg/L	08-AUG-13	08-AUG-13	R2668743
Sulfate	5.06		0.50	mg/L		02-AUG-13	R2666791
Total Suspended Solids	150		5.0	mg/L		02-AUG-13	R2666381
рН	7.95		0.10	pH units		02-AUG-13	R2665584
Total Metals by ICP-MS							
Aluminum (AI)-Total	0.191		0.0050	mg/L	06-AUG-13	06-AUG-13	R2667048
Antimony (Sb)-Total	0.00049		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Arsenic (As)-Total	0.0103		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Barium (Ba)-Total	0.0307		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13 06-AUG-13	R2667048
Bismuth (Bi)-Total Boron (B)-Total	0.00023 0.213		0.00020 0.010	mg/L mg/L	06-AUG-13 06-AUG-13	06-AUG-13 06-AUG-13	R2667048 R2667048
Cadmium (Cd)-Total	0.000078		0.010	mg/L	06-AUG-13	06-AUG-13	R2667048
Calcium (Ca)-Total	18.2		0.000010	mg/L	06-AUG-13	06-AUG-13	R2667048
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Chromium (Cr)-Total	0.0014		0.0010	mg/L	06-AUG-13	06-AUG-13	R2667048
Cobalt (Co)-Total	0.00237		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Copper (Cu)-Total	0.0401		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Iron (Fe)-Total	4.55		0.10	mg/L	06-AUG-13	06-AUG-13	R2667048
Lead (Pb)-Total	0.00185		0.000090	mg/L	06-AUG-13	06-AUG-13	R2667048
Lithium (Li)-Total	0.0059		0.0020	mg/L	06-AUG-13	06-AUG-13	R2667048
Magnesium (Mg)-Total	9.78		0.010	mg/L	06-AUG-13	06-AUG-13	R2667048
Manganese (Mn)-Total	0.271		0.00030	mg/L	06-AUG-13	06-AUG-13	R2667048
Molybdenum (Mo)-Total	0.00086		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Nickel (Ni)-Total	0.0102		0.0020	mg/L	06-AUG-13	06-AUG-13	R2667048
Phosphorus (P)-Total	9.96		0.10	mg/L	06-AUG-13	06-AUG-13	R2667048
Potassium (K)-Total	28.7		0.020	mg/L	06-AUG-13	06-AUG-13	R2667048
Rubidium (Rb)-Total	0.0297		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1341687 CONTD.... PAGE 4 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1341687-2 ARV-4							
Sampled By: CLIENT on 31-JUL-13 @ 15:50							
Matrix: Eff							
Total Metals by ICP-MS Selenium (Se)-Total	<0.0010		0.0010	mg/L	06-AUG-13	06-AUG-13	R2667048
Silicon (Si)-Total	4.37		0.050	mg/L	06-AUG-13	06-AUG-13	R2667048
Silver (Ag)-Total	0.00033		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Sodium (Na)-Total	77.9	DLA	3.0	mg/L	06-AUG-13	07-AUG-13	R2667800
Strontium (Sr)-Total	0.210		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Thallium (TI)-Total	<0.00010		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Thorium (Th)-Total	0.00013		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Tin (Sn)-Total	0.00059		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Titanium (Ti)-Total	0.0106		0.00050	mg/L	06-AUG-13	06-AUG-13	R2667048
Tungsten (W)-Total	0.00021		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Uranium (U)-Total	0.00049		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Vanadium (V)-Total	0.00714		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Zinc (Zn)-Total	0.0365		0.0020	mg/L	06-AUG-13	06-AUG-13	R2667048
Zirconium (Zr)-Total	0.00057		0.00040	mg/L	06-AUG-13	06-AUG-13	R2667048
L1341687-3 ARV-5							
Sampled By: CLIENT on 31-JUL-13 @ 16:15							
Matrix: Eff							
Nitrate + Nitrite							
Nitrate as N by Ion Chromatography	0.05	DLM	0.05			00 4110 40	D0000704
Nitrate-N	<0.25	DLIVI	0.25	mg/L		02-AUG-13	R2666791
Nitrate+Nitrite Nitrate and Nitrite as N	<0.35		0.35	mg/L		06-AUG-13	
Nitrite as N by Ion Chromatography	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		0.55	1119/2		00710010	
Nitrite as it by for childrengraphy	<0.25	DLM	0.25	mg/L		02-AUG-13	R2666791
Miscellaneous Parameters							
Ammonia, Total (as N)	0.068		0.010	mg/L		06-AUG-13	R2667383
Biochemical Oxygen Demand	<6.0		6.0	mg/L		02-AUG-13	R2667237
Conductivity	2080		20	umhos/cm		02-AUG-13	R2665584
Fecal Coliforms	93		3	MPN/100mL		02-AUG-13	R2667219
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	09-AUG-13	09-AUG-13	R2669217
Oil and Grease, Total	<2.0		2.0	mg/L	07-AUG-13	07-AUG-13	R2668652
Phenols (4AAP)	<0.0010		0.0010	mg/L	06-AUG-13	06-AUG-13	R2667862
Sulfate	8.6		2.5	mg/L		02-AUG-13	R2666791
Total Suspended Solids	50.0		5.0	mg/L		02-AUG-13	R2666381
pH	7.11		0.10	pH units		02-AUG-13	R2665584
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.123		0.0050	mg/L	06-AUG-13	06-AUG-13	R2667048
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Arsenic (As)-Total	0.00206		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Barium (Ba)-Total	0.0653		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Boron (B)-Total	0.173		0.010	mg/L	06-AUG-13	06-AUG-13	R2667048
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	06-AUG-13	06-AUG-13	R2667048
Calcium (Ca)-Total	40.7		0.10	mg/L	06-AUG-13	06-AUG-13	R2667048
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	06-AUG-13	06-AUG-13	R2667048
Cobalt (Co)-Total Copper (Cu)-Total	0.00029 0.00102		0.00020 0.00020	mg/L mg/L	06-AUG-13 06-AUG-13	06-AUG-13 06-AUG-13	R2667048 R2667048
ουρρεί (ου)-1 οιαί	0.00102		0.00020	IIIg/L	00-A0G-13	00-700-13	112007040

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1341687 CONTD.... PAGE 5 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1341687-3 ARV-5							
Sampled By: CLIENT on 31-JUL-13 @ 16:15							
Matrix: Eff							
Total Metals by ICP-MS							
Iron (Fe)-Total	6.39		0.10	mg/L	06-AUG-13	06-AUG-13	R2667048
Lead (Pb)-Total	0.000461		0.000090	mg/L	06-AUG-13	06-AUG-13	R2667048
Lithium (Li)-Total	0.0147		0.0020	mg/L	06-AUG-13	06-AUG-13	R2667048
Magnesium (Mg)-Total	50.1		0.010	mg/L	06-AUG-13	06-AUG-13	R2667048
Manganese (Mn)-Total	0.168		0.00030	mg/L	06-AUG-13	06-AUG-13	R2667048
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	06-AUG-13	06-AUG-13	R2667048
Phosphorus (P)-Total Potassium (K)-Total	0.12 12.9		0.10	mg/L	06-AUG-13	06-AUG-13	R2667048
Rubidium (Rb)-Total	0.00873		0.020 0.00020	mg/L mg/L	06-AUG-13 06-AUG-13	06-AUG-13 06-AUG-13	R2667048 R2667048
Selenium (Se)-Total	<0.00873		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Silicon (Si)-Total	2.34		0.050	mg/L	06-AUG-13	06-AUG-13	R2667048
Silver (Ag)-Total	<0.00010		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Sodium (Na)-Total	350	DLA	3.0	mg/L	06-AUG-13	07-AUG-13	R2667800
Strontium (Sr)-Total	0.409		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Thallium (TI)-Total	<0.00010		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Thorium (Th)-Total	<0.00010		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Tin (Sn)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Titanium (Ti)-Total Tungsten (W)-Total	0.00866		0.00050	mg/L	06-AUG-13 06-AUG-13	06-AUG-13 06-AUG-13	R2667048
Uranium (U)-Total	<0.00010 0.00012		0.00010 0.00010	mg/L mg/L	06-AUG-13	06-AUG-13	R2667048 R2667048
Vanadium (V)-Total	0.00012		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Zinc (Zn)-Total	0.0054		0.0020	mg/L	06-AUG-13	06-AUG-13	R2667048
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	06-AUG-13	06-AUG-13	R2667048
L1341687-4 ARV-6							
Sampled By: CLIENT on 31-JUL-13 @ 15:31							
Matrix: Eff							
Nitrate + Nitrite							
Nitrate as N by Ion Chromatography							
Nitrate-N	<0.050		0.050	mg/L		02-AUG-13	R2666791
Nitrate+Nitrite Nitrate and Nitrite as N	<0.071		0.071	ma/l		06-AUG-13	
Nitrite as N by Ion Chromatography	<0.071		0.07 1	mg/L		00-A0G-13	
Nitrite as N by lon Chromatography Nitrite-N	<0.050		0.050	mg/L		02-AUG-13	R2666791
Miscellaneous Parameters							
Ammonia, Total (as N)	0.245		0.010	mg/L		06-AUG-13	R2667383
Biochemical Oxygen Demand	<6.0		6.0	mg/L		02-AUG-13	R2667237
Conductivity	543		20	umhos/cm		02-AUG-13	R2665584
Fecal Coliforms	<3		3	MPN/100mL		02-AUG-13	R2667219
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	09-AUG-13	09-AUG-13	R2669217
Oil and Grease, Total	<2.0		2.0	mg/L	07-AUG-13	07-AUG-13	R2668652
Phenols (4AAP)	0.0013		0.0010	mg/L	06-AUG-13	06-AUG-13	R2667862
Sulfate	<0.50		0.50	mg/L		02-AUG-13	R2666791
Total Suspended Solids	116		5.0	mg/L		02-AUG-13	R2666381
рН	6.39		0.10	pH units		02-AUG-13	R2665584
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.175		0.0050	mg/L	06-AUG-13	06-AUG-13	R2667048
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Arsenic (As)-Total	0.00152		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1341687 CONTD.... PAGE 6 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1341687-4 ARV-6							
Sampled By: CLIENT on 31-JUL-13 @ 15:31							
Matrix: Eff							
Total Metals by ICP-MS Barium (Ba)-Total	0.111		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Boron (B)-Total	0.050		0.010	mg/L	06-AUG-13	06-AUG-13	R2667048
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	06-AUG-13	06-AUG-13	R2667048
Calcium (Ca)-Total	28.9		0.10	mg/L	06-AUG-13	06-AUG-13	R2667048
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Chromium (Cr)-Total	0.0018		0.0010	mg/L	06-AUG-13	06-AUG-13	R2667048
Cobalt (Co)-Total	0.00205		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Copper (Cu)-Total	0.00151		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Iron (Fe)-Total	36.4		0.10	mg/L	06-AUG-13	06-AUG-13	R2667048
Lead (Pb)-Total	0.000354		0.000090	mg/L	06-AUG-13	06-AUG-13	R2667048
Lithium (Li)-Total	0.0061		0.0020	mg/L	06-AUG-13	06-AUG-13	R2667048
Magnesium (Mg)-Total	9.90		0.010	mg/L	06-AUG-13	06-AUG-13	R2667048
Manganese (Mn)-Total	1.64	DLA	0.030	mg/L	06-AUG-13	07-AUG-13	R2667800
Molybdenum (Mo)-Total	0.00027		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	06-AUG-13	06-AUG-13	R2667048
Phosphorus (P)-Total Potassium (K)-Total	0.12 1.72		0.10	mg/L	06-AUG-13 06-AUG-13	06-AUG-13 06-AUG-13	R2667048
Rubidium (Rb)-Total	0.00471		0.020 0.00020	mg/L mg/L	06-AUG-13	06-AUG-13	R2667048 R2667048
Selenium (Se)-Total	<0.00471		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Silicon (Si)-Total	2.94		0.050	mg/L	06-AUG-13	06-AUG-13	R2667048
Silver (Ag)-Total	<0.00010		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Sodium (Na)-Total	66.6	DLA	3.0	mg/L	06-AUG-13	07-AUG-13	R2667800
Strontium (Sr)-Total	0.179		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Thallium (TI)-Total	<0.00010		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Thorium (Th)-Total	0.00015		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Tin (Sn)-Total	<0.00020		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Titanium (Ti)-Total	0.0121		0.00050	mg/L	06-AUG-13	06-AUG-13	R2667048
Tungsten (W)-Total	<0.00010		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Uranium (U)-Total	<0.00010		0.00010	mg/L	06-AUG-13	06-AUG-13	R2667048
Vanadium (V)-Total	0.00191		0.00020	mg/L	06-AUG-13	06-AUG-13	R2667048
Zinc (Zn)-Total	0.0977		0.0020	mg/L	06-AUG-13	06-AUG-13	R2667048
Zirconium (Zr)-Total	0.00055		0.00040	mg/L	06-AUG-13	06-AUG-13	R2667048

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

HAMLET OF ARVIAT WWTP L1341687 CONTD....

Reference Information

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Sample Parameter Qualifier Key:

Qualifier	Description
DLA	Detection Limit Adjusted For required dilution
DLM	Detection Limit Adjusted For Sample Matrix Effects
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BOD-WP	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B

The sample is incubated for 5 days at 20 degrees Celcius. Comparison of dissolved oxygen content at the beginning and end of incubation provides a measure of biochemical oxygen demand. If carbonaceous BOD is requested, TCMP is added to the sample to chemically inhibit nitrogenous oxygen demand. If soluble BOD is requested, the sample is filtered prior to analysis. Surface waters have a DL of 1 mg/L. Effluents are diluted according to their history and will have a sample DL of 6 mg/L or greater, depending on the dilutions used.

EC-WP Water Conductivity APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

FC-MPN-WP Water Fecal Coliform APHA 9221A-C

The Most Probable Number (MPN) method is based on the Multiple Tube Fermentation technique. The results of examination of replicate tubes and dilutions of a sample are reported after confirmations specific to total coliform, fecal coliform and E. coli are performed. Results are reported in MPN/100 mL for water and MPN/gram for food and solid samples.

HG-T-CVAF-WP Water Mercury Total EPA245.7 V2.0

Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.

MET-T-L-MS-WP Water Total Metals by ICP-MS U.S. EPA 200.8-TL

Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometery.

NH3-COL-WP Water Ammonia by colour APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2+NO3-CALC-WP Water Nitrate+Nitrite CALCULATION

NO2-IC-WP Water Nitrite as N by Ion Chromatography EPA 300.1 (modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

NO3-IC-WP Water Nitrate as N by Ion Chromatography EPA 300.1 (modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

OGG-TOT-WT Water Oil and Grease, Total APHA 5520 B

Sample is extracted with hexane, extract is then evaporated and the residue is weighed to determine total oil and grease.

PH-WP Water pH APHA 4500H

The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.

PHENOLS-4AAP-WT Water Phenol (4AAP) EPA 9066

An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.

SO4-IC-WP Water Sulfate by Ion Chromatography EPA 300.1 (modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

SOLIDS-TOTSUS-WP Water Total Suspended Solids APHA 2540 D (modified)

Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.

^{**} ALS test methods may incorporate modifications from specified reference methods to improve performance.

HAMLET OF ARVIAT WWTP L1341687 CONTD....

Reference Information

PAGE 8 of 8 Version: FINAL

Test Method References:

ALS Test Code Matrix Test Description Method Reference**

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

 Laboratory Definition Code
 Laboratory Location

 WT
 ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

 WP
 ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

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Hamlet of Arviat ATTN: ED MURPHY

PO Box 150

Arviat NU X0C 0E0

Date Received: 21-AUG-13

Report Date: 03-SEP-13 12:34 (MT)

Version: FINAL

Client Phone: 867-857-2841

Certificate of Analysis

Lab Work Order #: L1351289

Project P.O. #: NOT SUBMITTED

Job Reference: HAMLET OF ARVIAT WWTP

C of C Numbers: Legal Site Desc:

Paul Nicolas Account Manager

Paul Necolas

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ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721 ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



L1351289 CONTD.... PAGE 2 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1351289-1 ARV 2							
Sampled By: CLIENT on 20-AUG-13 @ 09:06							
Matrix: EFFLUENT							
Nitrate + Nitrite							
Nitrate as N by Ion Chromatography							
Nitrate-N	<0.25	DLM	0.25	mg/L		22-AUG-13	R2679780
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.35		0.35	mg/L		26-AUG-13	
Nitrite as N by Ion Chromatography		51.14					
Nitrite-N	<0.25	DLM	0.25	mg/L		22-AUG-13	R2679780
Miscellaneous Parameters Ammonia, Total (as N)	0.065		0.010	ma/l		22-AUG-13	R2678233
Biochemical Oxygen Demand	<6.0		6.0	mg/L mg/L		22-AUG-13 22-AUG-13	R2680412
Conductivity	3020		20	umhos/cm		22-AUG-13 22-AUG-13	R2678122
Fecal Coliforms	930			MPN/100mL		22-AUG-13 22-AUG-13	
Mercury (Hg)-Total	<0.000020		3 0.000020	mg/L	28-AUG-13	28-AUG-13	R2681336 R2681294
Oil and Grease, Total	<0.000020		2.0	mg/L	23-AUG-13	23-AUG-13	R2679371
Phenols (4AAP)	<0.0010		0.0010	mg/L	27-AUG-13	27-AUG-13	R2680612
Sulfate	<0.0010 449		2.5	mg/L	21-A00-10	27-AUG-13 22-AUG-13	R2679780
Total Suspended Solids	26.0		5.0	mg/L		23-AUG-13	R2679665
pH	7.96		0.10	pH units		22-AUG-13	R2678122
Total Metals by ICP-MS	7.90		0.10	pri dinto		22 A00 13	1(20/0122
Aluminum (Al)-Total	0.0169		0.0050	mg/L	23-AUG-13	23-AUG-13	R2679374
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Arsenic (As)-Total	0.00036		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Barium (Ba)-Total	0.0674		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Boron (B)-Total	0.044		0.010	mg/L	23-AUG-13	23-AUG-13	R2679374
Cadmium (Cd)-Total Calcium (Ca)-Total	<0.000010		0.000010	mg/L	23-AUG-13	23-AUG-13	R2679374
Cesium (Cs)-Total Cesium (Cs)-Total	29.0 <0.00010		0.10 0.00010	mg/L mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374 R2679374
Chromium (Cr)-Total	<0.0010		0.00010	mg/L	23-AUG-13	23-AUG-13 23-AUG-13	R2679374
Cobalt (Co)-Total	0.00052		0.0000	mg/L	23-AUG-13	23-AUG-13	R2679374
Copper (Cu)-Total	0.00094		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Iron (Fe)-Total	1.34		0.10	mg/L	23-AUG-13	23-AUG-13	R2679374
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-13	23-AUG-13	R2679374
Lithium (Li)-Total	0.0072		0.0020	mg/L	23-AUG-13	23-AUG-13	R2679374
Magnesium (Mg)-Total	10.7		0.010	mg/L	23-AUG-13	23-AUG-13	R2679374
Manganese (Mn)-Total	1.11	DLA	0.030	mg/L	23-AUG-13	26-AUG-13	R2680182
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-13	23-AUG-13	R2679374
Phosphorus (P)-Total	<0.10		0.10	mg/L	23-AUG-13	23-AUG-13	R2679374
Potassium (K)-Total Rubidium (Rb)-Total	7.84 0.00955		0.020 0.00020	mg/L mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374 R2679374
Selenium (Se)-Total	<0.00955		0.00020	mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374 R2679374
Silicon (Si)-Total	2.73		0.050	mg/L	23-AUG-13	23-AUG-13	R2679374
Silver (Ag)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Sodium (Na)-Total	75.3	DLA	3.0	mg/L	23-AUG-13	26-AUG-13	R2680182
Strontium (Sr)-Total	0.179		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Thallium (TI)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Titanium (Ti)-Total	0.00114		0.00050	mg/L	23-AUG-13	23-AUG-13	R2679374

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1351289 CONTD.... PAGE 3 of 8 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1351289-1 ARV 2							
Sampled By: CLIENT on 20-AUG-13 @ 09:06							
Matrix: EFFLUENT							
Total Metals by ICP-MS Tungsten (W)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Vanadium (V)-Total	0.00042		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Zinc (Zn)-Total	0.0473		0.0020	mg/L	23-AUG-13	23-AUG-13	R2679374
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	23-AUG-13	23-AUG-13	R2679374
L1351289-2 ARV 4							
Sampled By: CLIENT on 20-AUG-13 @ 10:10							
Matrix: EFFLUENT							
Nitrate + Nitrite							
Nitrate as N by Ion Chromatography							
Nitrate-N	1.00		0.050	mg/L		22-AUG-13	R2679780
Nitrate+Nitrite							
Nitrate and Nitrite as N	1.39		0.071	mg/L		26-AUG-13	
Nitrite as N by Ion Chromatography							
Nitrite-N	0.388		0.050	mg/L		22-AUG-13	R2679780
Miscellaneous Parameters	4	DI A	4.5			00 4110 45	D0076 100
Ammonia, Total (as N)	17.9	DLA	1.0	mg/L		23-AUG-13	R2679432
Biochemical Oxygen Demand	80.1		6.0	mg/L		22-AUG-13	R2680412
Conductivity	832		20	umhos/cm		22-AUG-13	R2678122
Fecal Coliforms	2300		3	MPN/100mL		22-AUG-13	R2681336
Mercury (Hg)-Total	<0.00020	DLM	0.00020	mg/L	28-AUG-13	28-AUG-13	R2681294
Oil and Grease, Total	2.2		2.0	mg/L	23-AUG-13	23-AUG-13	R2679371
Phenols (4AAP)	<0.005	DLM	0.0050	mg/L	27-AUG-13	27-AUG-13	R2680612
Sulfate	7.67		0.50	mg/L		22-AUG-13	R2679780
Total Suspended Solids	118		5.0	mg/L		23-AUG-13	R2679665
pH	7.43		0.10	pH units		22-AUG-13	R2678122
Total Metals by ICP-MS				,,			
Aluminum (Al)-Total	0.154		0.0050	mg/L	23-AUG-13	23-AUG-13	R2679374
Antimony (Sb)-Total	0.00036		0.00020	mg/L	23-AUG-13 23-AUG-13	23-AUG-13	R2679374
Arsenic (As)-Total Barium (Ba)-Total	0.00918 0.0235		0.00020 0.00020	mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374
Beryllium (Be)-Total	<0.00235		0.00020	mg/L mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374 R2679374
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Boron (B)-Total	0.208		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Cadmium (Cd)-Total	0.000056		0.000010	mg/L	23-AUG-13	23-AUG-13	R2679374
Calcium (Ca)-Total	20.7		0.10	mg/L	23-AUG-13	23-AUG-13	R2679374
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Chromium (Cr)-Total	0.0012		0.0010	mg/L	23-AUG-13	23-AUG-13	R2679374
Cobalt (Co)-Total	0.00207		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Copper (Cu)-Total	0.0256		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Iron (Fe)-Total	3.65		0.10	mg/L	23-AUG-13	23-AUG-13	R2679374
Lead (Pb)-Total	0.00125		0.000090	mg/L	23-AUG-13	23-AUG-13	R2679374
Lithium (Li)-Total	0.0060		0.0020	mg/L	23-AUG-13	23-AUG-13	R2679374
Magnesium (Mg)-Total	12.2		0.010	mg/L	23-AUG-13	23-AUG-13	R2679374
Manganese (Mn)-Total	0.284		0.00030	mg/L	23-AUG-13	23-AUG-13	R2679374
Molybdenum (Mo)-Total Nickel (Ni)-Total	0.00083 0.0089		0.00020 0.0020	mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374
Phosphorus (P)-Total	8.32		0.0020	mg/L mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374 R2679374
Potassium (K)-Total	33.4		0.10	mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374
Rubidium (Rb)-Total	0.0304		0.020	mg/L	23-AUG-13	23-AUG-13 23-AUG-13	R2679374
radiatin (ra) rotal	0.0004		0.00020	1119/L	207.00-10	207.00-10	112013314

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1351289-2 ARV 4							
Sampled By: CLIENT on 20-AUG-13 @ 10:10							
Matrix: EFFLUENT							
Total Metals by ICP-MS							
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-13	23-AUG-13	R2679374
Silicon (Si)-Total	5.91		0.050	mg/L	23-AUG-13	23-AUG-13	R2679374
Silver (Ag)-Total	0.00018		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Sodium (Na)-Total	97.3	DLA	3.0	mg/L	23-AUG-13	26-AUG-13	R2680182
Strontium (Sr)-Total	0.233		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Thallium (TI)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Thorium (Th)-Total	0.00011		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Tin (Sn)-Total	0.00047		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Titanium (Ti)-Total	0.00871		0.00050	mg/L	23-AUG-13	23-AUG-13	R2679374
Tungsten (W)-Total	0.00020		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Uranium (U)-Total	0.00042		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Vanadium (V)-Total	0.00624		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Zinc (Zn)-Total	0.0312		0.0020	mg/L	23-AUG-13	23-AUG-13	R2679374
Zirconium (Zr)-Total	0.00064		0.00040	mg/L	23-AUG-13	23-AUG-13	R2679374
L1351289-3 ARV 5							
Sampled By: CLIENT on 20-AUG-13 @ 10:13							
Matrix: EFFLUENT							
Nitrate + Nitrite							
Nitrate as N by Ion Chromatography							
Nitrate-N	<0.25	DLM	0.25	mg/L		22-AUG-13	R2679780
Nitrate+Nitrite	0.05		0.05			00 4110 40	
Nitrate and Nitrite as N	<0.35		0.35	mg/L		26-AUG-13	
Nitrite as N by Ion Chromatography Nitrite-N	<0.25	DLM	0.25	mg/L		22-AUG-13	R2679780
Miscellaneous Parameters	<0.25	DEM	0.23	IIIg/L		22 A00 13	102079700
Ammonia, Total (as N)	0.012		0.010	mg/L		22-AUG-13	R2678233
Biochemical Oxygen Demand	<6.0		6.0	mg/L		22-AUG-13	R2680412
Conductivity	1770		20	umhos/cm		22-AUG-13	R2678122
Fecal Coliforms	430		3	MPN/100mL		22-AUG-13	R2681336
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	28-AUG-13	28-AUG-13	R2681294
Oil and Grease, Total	<2.0		2.0	_	23-AUG-13	23-AUG-13	R2679371
Phenols (4AAP)				mg/L	27-AUG-13	27-AUG-13	
	<0.0010		0.0010	mg/L	21-AUG-13		R2680612
Sulfate Total Supponded Solids	6.3		2.5	mg/L		22-AUG-13	R2679780
Total Suspended Solids	16.0		5.0	mg/L		23-AUG-13	R2679665
pH Total Matala by ICP MS	6.88		0.10	pH units		22-AUG-13	R2678122
Total Metals by ICP-MS Aluminum (Al)-Total	0.0372		0.0050	mg/L	23-AUG-13	23-AUG-13	R2679374
Antimony (Sb)-Total	<0.00020		0.0030	mg/L	23-AUG-13	23-AUG-13 23-AUG-13	R2679374
Arsenic (As)-Total	0.00099		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Barium (Ba)-Total	0.0701		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Boron (B)-Total	0.091		0.010	mg/L	23-AUG-13	23-AUG-13	R2679374
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	23-AUG-13	23-AUG-13	R2679374
Calcium (Ca)-Total	39.9		0.10	mg/L	23-AUG-13	23-AUG-13	R2679374
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	23-AUG-13	23-AUG-13	R2679374
Cobalt (Co)-Total	0.00030		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Copper (Cu)-Total	0.00052		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1351289-3 ARV 5							
Sampled By: CLIENT on 20-AUG-13 @ 10:13							
Matrix: EFFLUENT							
Total Metals by ICP-MS							
Iron (Fe)-Total	5.69		0.10	mg/L	23-AUG-13	23-AUG-13	R2679374
Lead (Pb)-Total	<0.000090		0.000090	mg/L	23-AUG-13	23-AUG-13	R2679374
Lithium (Li)-Total	0.0141		0.0020	mg/L	23-AUG-13	23-AUG-13	R2679374
Magnesium (Mg)-Total	31.9		0.010	mg/L	23-AUG-13	23-AUG-13	R2679374
Manganese (Mn)-Total	0.256		0.00030	mg/L	23-AUG-13	23-AUG-13	R2679374
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-13	23-AUG-13	R2679374
Phosphorus (P)-Total	<0.10		0.10	mg/L	23-AUG-13	23-AUG-13	R2679374
Potassium (K)-Total	12.0		0.020	mg/L	23-AUG-13	23-AUG-13	R2679374
Rubidium (Rb)-Total	0.0104		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Selenium (Se)-Total Silicon (Si)-Total	0.0013 2.94		0.0010 0.050	mg/L mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374 R2679374
Silver (Ag)-Total	<0.00010		0.050	mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374 R2679374
Sodium (Na)-Total	275	DLA	3.0	mg/L	23-AUG-13	26-AUG-13	R2680182
Strontium (Sr)-Total	0.347		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Thallium (TI)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Tin (Sn)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Titanium (Ti)-Total	0.00272		0.00050	mg/L	23-AUG-13	23-AUG-13	R2679374
Tungsten (W)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Uranium (U)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Vanadium (V)-Total	0.00028		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Zinc (Zn)-Total Zirconium (Zr)-Total	0.0102 <0.00040		0.0020 0.00040	mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374 R2679374
	<0.00040		0.00040	mg/L	23-AUG-13	23-AUG-13	R20/93/4
L1351289-4 ARV 6							
Sampled By: CLIENT on 20-AUG-13 @ 10:30							
Matrix: EFFLUENT Nitrate + Nitrite							
Nitrate as N by Ion Chromatography							
Nitrate-N	<0.050		0.050	mg/L		22-AUG-13	R2679780
Nitrate+Nitrite	10.000		0.000				
Nitrate and Nitrite as N	<0.071		0.071	mg/L		26-AUG-13	
Nitrite as N by Ion Chromatography							
Nitrite-N	<0.050		0.050	mg/L		22-AUG-13	R2679780
Miscellaneous Parameters		5.4					
Ammonia, Total (as N)	10.1	DLA	1.0	mg/L		23-AUG-13	R2679432
Biochemical Oxygen Demand	<6.0		6.0	mg/L		22-AUG-13	R2680412
Conductivity	634		20	umhos/cm		22-AUG-13	R2678122
Fecal Coliforms	See Below.	NDLA	3	MPN/100mL	00 4110 15	22-AUG-13	R2683125
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	28-AUG-13	28-AUG-13	R2681294
Oil and Grease, Total	<2.0		2.0	mg/L	23-AUG-13	23-AUG-13	R2679371
Phenols (4AAP)	<0.0010		0.0010	mg/L	27-AUG-13	27-AUG-13	R2680612
Sulfate	9.84		0.50	mg/L		22-AUG-13	R2679780
Total Suspended Solids	9.0		5.0	mg/L		23-AUG-13	R2679665
pH	6.57		0.10	pH units		22-AUG-13	R2678122
Total Metals by ICP-MS	0.0420		0.0050	m c /l	22 110 42	22 110 42	D0670074
Aluminum (Al)-Total Antimony (Sb)-Total	0.0136 0.00744		0.0050 0.00020	mg/L mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374 R2679374
Arsenic (As)-Total	0.00744		0.00020	mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374 R2679374
7.1301110 (7.10) 1.0101	0.00740		0.00020	9, L	207.00-10	207.00-10	

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
LAGE ADVA							
L1351289-4 ARV 6							
Sampled By: CLIENT on 20-AUG-13 @ 10:30							
Matrix: EFFLUENT							
Total Metals by ICP-MS				"	00 1110 10	00 4110 40	
Barium (Ba)-Total	0.0853		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	23-AUG-13 23-AUG-13	23-AUG-13	R2679374
Boron (B)-Total Cadmium (Cd)-Total	1.21 0.000012		0.010 0.000010	mg/L mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374 R2679374
Calcium (Ca)-Total	265	DLA	10	mg/L	23-AUG-13 23-AUG-13	26-AUG-13	R2680182
Cesium (Cs)-Total	<0.00010	DEX	0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Chromium (Cr)-Total	0.0011		0.0010	mg/L	23-AUG-13	23-AUG-13	R2679374
Cobalt (Co)-Total	0.00055		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Copper (Cu)-Total	0.00064		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Iron (Fe)-Total	0.24		0.10	mg/L	23-AUG-13	23-AUG-13	R2679374
Lead (Pb)-Total	0.000112		0.000090	mg/L	23-AUG-13	23-AUG-13	R2679374
Lithium (Li)-Total	0.0388		0.0020	mg/L	23-AUG-13	23-AUG-13	R2679374
Magnesium (Mg)-Total	66.2	DLA	1.0	mg/L	23-AUG-13	26-AUG-13	R2680182
Manganese (Mn)-Total	0.815	DLA	0.030	mg/L	23-AUG-13	26-AUG-13	R2680182
Molybdenum (Mo)-Total	0.00029		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	23-AUG-13	23-AUG-13	R2679374
Phosphorus (P)-Total	2.36		0.10	mg/L	23-AUG-13	23-AUG-13	R2679374
Potassium (K)-Total	56.9	DLA	2.0	mg/L	23-AUG-13	26-AUG-13	R2680182
Rubidium (Rb)-Total	0.0486		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Selenium (Se)-Total	<0.0010		0.0010	mg/L	23-AUG-13	23-AUG-13	R2679374
Silicon (Si)-Total	13.2		0.050	mg/L	23-AUG-13	23-AUG-13	R2679374
Silver (Ag)-Total	<0.00010	DIA	0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Sodium (Na)-Total Strontium (Sr)-Total	345	DLA DLA	3.0	mg/L	23-AUG-13	26-AUG-13	R2680182
Tellurium (Te)-Total	1.87 <0.00020	DLA	0.010 0.00020	mg/L mg/L	23-AUG-13 23-AUG-13	26-AUG-13 23-AUG-13	R2680182 R2679374
Thallium (TI)-Total	<0.00020		0.00020	mg/L	23-AUG-13 23-AUG-13	23-AUG-13 23-AUG-13	R2679374
Thorium (Th)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Tin (Sn)-Total	<0.00010		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Titanium (Ti)-Total	0.0106		0.00050	mg/L	23-AUG-13	23-AUG-13	R2679374
Tungsten (W)-Total	0.00014		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Uranium (U)-Total	0.00036		0.00010	mg/L	23-AUG-13	23-AUG-13	R2679374
Vanadium (V)-Total	0.00050		0.00020	mg/L	23-AUG-13	23-AUG-13	R2679374
Zinc (Zn)-Total	0.0143		0.0020	mg/L	23-AUG-13	23-AUG-13	R2679374
Zirconium (Zr)-Total	0.00045		0.00040	mg/L	23-AUG-13	23-AUG-13	R2679374
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^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

HAMLET OF ARVIAT WWTP L1351289 CONTD....

Reference Information

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Sample Parameter Qualifier Kev:

Qualifier	Description
DLA	Detection Limit Adjusted For required dilution
DLM	Detection Limit Adjusted For Sample Matrix Effects
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
NDLA	No Data: Sample spoiled in Laboratory Accident

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BOD-WP	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B

The sample is incubated for 5 days at 20 degrees Celcius. Comparison of dissolved oxygen content at the beginning and end of incubation provides a measure of biochemical oxygen demand. If carbonaceous BOD is requested, TCMP is added to the sample to chemically inhibit nitrogenous oxygen demand. If soluble BOD is requested, the sample is filtered prior to analysis. Surface waters have a DL of 1 mg/L. Effluents are diluted according to their history and will have a sample DL of 6 mg/L or greater, depending on the dilutions used.

EC-WP Water Conductivity APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

FC-MPN-WP Water Fecal Coliform APHA 9221A-C

The Most Probable Number (MPN) method is based on the Multiple Tube Fermentation technique. The results of examination of replicate tubes and dilutions of a sample are reported after confirmations specific to total coliform, fecal coliform and E. coli are performed. Results are reported in MPN/100 mL for water and MPN/gram for food and solid samples.

HG-T-CVAF-WP Water Mercury Total EPA245.7 V2.0

Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.

MET-T-L-MS-WP Water Total Metals by ICP-MS U.S. EPA 200.8-TL

Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometery.

NH3-COL-WP Water Ammonia by colour APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2+NO3-CALC-WP Water Nitrate+Nitrite CALCULATION

NO2-IC-WP Water Nitrite as N by Ion Chromatography EPA 300.1 (modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

NO3-IC-WP Water Nitrate as N by Ion Chromatography EPA 300.1 (modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

OGG-TOT-WT Water Oil and Grease, Total APHA 5520 B

Sample is extracted with hexane, extract is then evaporated and the residue is weighed to determine total oil and grease.

PH-WP Water pH APHA 4500H

The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.

PHENOLS-4AAP-WT Water Phenol (4AAP) EPA 9066

An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.

SO4-IC-WP Water Sulfate by Ion Chromatography EPA 300.1 (modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

SOLIDS-TOTSUS-WP Water Total Suspended Solids APHA 2540 D (modified)

Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.

^{**} ALS test methods may incorporate modifications from specified reference methods to improve performance.

HAMLET OF ARVIAT WWTP L1351289 CONTD....

Reference Information

PAGE 8 of 8 Version: FINAL

Test Method References:

ALS Test Code Matrix Test Description Method Reference**

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition CodeLaboratory LocationWTALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADAWPALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample mg/kg wwt - milligrams per kilogram based on wet weight of sample mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

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Contact:	ED MURPHY				PDF Excel Digital Fax							O Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT												
Address:	PO Box 150 Email 1: arviatsao@giniq.com								O Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT															
	ARVIAT, NUNAVUT, XOC 0E0 Email 2:							O Same Day or Weekend Emergency - Contact ALS to Confirm TAT																
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Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses. SHIPMENT RELEASE (client use) SHIPMENT RECEPTION (lab use only)																								
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