

CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: WP2417729	Page	: 1 of 6
Client	: Hamlet of Chesterfield Inlet	Laboratory	: ALS Environmental - Winnipeg
Contact	: Kivalliq Water Samples	Account Manager	: Craig Riddell
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Telephone	: 867 898 4601	Telephone	: +1 204 255 9720
Project	: ----	Date Samples Received	: 18-Jul-2024 16:20
PO	: ----	Date Analysis Commenced	: 18-Jul-2024
C-O-C number	: ----	Issue Date	: 27-Nov-2024 09:41
Sampler	: ----		
Site	: ----		
Quote number	: 2024 Analytical Testing		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Guideline Comparison

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Abiodun George	Lab Assistant	Organics, Winnipeg, Manitoba
Ana Srzic		Organics, Winnipeg, Manitoba
Brennan Dugas	Analyst	Microbiology, Winnipeg, Manitoba
Greg Pokocky	Manager - Inorganics	Inorganics, Waterloo, Ontario
Lee McTavish		Inorganics, Winnipeg, Manitoba
Lee McTavish		Metals, Winnipeg, Manitoba
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Oleksandr Busel		Inorganics, Winnipeg, Manitoba



No Breaches Found

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key : LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
MPN/100mL	most probable number per hundred millilitres
pH units	pH units

>: greater than.

<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).

For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.



Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
MBHT	The APHA 30 hour holding time was exceeded for microbiological testing. Samples processed within 48 hours from time of sampling may be valid in some cases (refer to Health Canada guidance).



Analytical Results Evaluation

				Client sample ID	CHE-3	CHE-3a	CHE-4	----	----	----	----
Matrix: Wastewater				Sampling date/time	17-Jul-2024 11:30	17-Jul-2024 11:20	17-Jul-2024 11:50	----	----	----	----
				Sub-Matrix	Wastewater	Wastewater	Wastewater	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit		WP2417729-001	WP2417729-002	WP2417729-003	-----	-----	-----	-----
Physical Tests											
Alkalinity, bicarbonate (as HCO ₃)	71-52-3	E290/WP	mg/L		54.9	425	58.4	----	----	----	----
Alkalinity, carbonate (as CO ₃)	3812-32-6	E290/WP	mg/L		<1.0	<1.0	<1.0	----	----	----	----
Alkalinity, hydroxide (as OH)	14280-30-9	E290/WP	mg/L		<1.0	<1.0	<1.0	----	----	----	----
Conductivity	----	E100/WP	µS/cm		166	1020	356	----	----	----	----
Hardness (as CaCO ₃), from total Ca/Mg	----	EC100A/WP	mg/L		50.9	68.0	72.0	----	----	----	----
pH	----	E108/WP	pH units		7.80	8.00	7.67	----	----	----	----
Solids, total suspended [TSS]	----	E160/WP	mg/L		<3.0	115	3.2	----	----	----	----
Anions and Nutrients											
Ammonia, total (as N)	7664-41-7	E298/WP	mg/L		0.0150	73.9	0.0316	----	----	----	----
Chloride	16887-00-6	E235.Cl/WP	mg/L		20.7	79.0	59.9	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3/WP	mg/L		<0.020	<0.040 ^{DLM}	0.031	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/WP	mg/L		<0.0224	<0.0447	0.0310	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2/WP	mg/L		<0.010	<0.020 ^{DLM}	<0.010	----	----	----	----
Phosphorus, total	7723-14-0	E372/WP	mg/L		0.025	10.0	0.050	----	----	----	----
Sulfate (as SO ₄)	14808-79-8	E235.SO4/WP	mg/L		3.29	9.24	27.6	----	----	----	----
Organic / Inorganic Carbon											
Carbon, total organic [TOC]	----	E355-L/WP	mg/L		6.91	271	12.9	----	----	----	----
Microbiological Tests											
Coliforms, thermotolerant [fecal]	----	E010.FC/WP	MPN/10 0mL		23	>2420 ^{MBHT}	<1	----	----	----	----
Coliforms, total	----	E010.QT97/WP	MPN/100 mL		299	>2420 ^{MBHT}	2420	----	----	----	----
Coliforms, Escherichia coli [E. coli]	----	E010.QT97/WP	MPN/10 0mL		46	>2420 ^{MBHT}	<1	----	----	----	----
Total Metals											
Aluminum, total	7429-90-5	E420/WP	mg/L		0.171	0.278	0.0282	----	----	----	----
Antimony, total	7440-36-0	E420/WP	mg/L		0.00167	0.00104	<0.00010	----	----	----	----
Arsenic, total	7440-38-2	E420/WP	mg/L		0.00049	0.00084	0.00046	----	----	----	----
Barium, total	7440-39-3	E420/WP	mg/L		0.0157	0.00796	0.00709	----	----	----	----



Analytical Results Evaluation

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Matrix: Wastewater				Sampling date/time	17-Jul-2024 11:30	17-Jul-2024 11:20	17-Jul-2024 11:50	----	----	----	----
				Sub-Matrix	Wastewater	Wastewater	Wastewater	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit		WP2417729-001	WP2417729-002	WP2417729-003	-----	-----	-----	-----
Total Metals											
Beryllium, total	7440-41-7	E420/WP	mg/L		Not Detected	<0.000020	<0.000020	----	----	----	----
Bismuth, total	7440-69-9	E420/WP	mg/L		<0.000050	0.00120	<0.000050	----	----	----	----
Boron, total	7440-42-8	E420/WP	mg/L		0.040	0.328	0.116	----	----	----	----
Cadmium, total	7440-43-9	E420/WP	mg/L		0.0000108	0.000208	0.0000097	----	----	----	----
Calcium, total	7440-70-2	E420/WP	mg/L		16.5	17.8	19.5	----	----	----	----
Cesium, total	7440-46-2	E420/WP	mg/L		0.000017	0.000159	0.000020	----	----	----	----
Chromium, total	7440-47-3	E420/WP	mg/L		<0.00050	0.00542	<0.00050	----	----	----	----
Cobalt, total	7440-48-4	E420/WP	mg/L		0.00011	0.00051	0.00018	----	----	----	----
Copper, total	7440-50-8	E420/WP	mg/L		0.00340	0.154	0.00700	----	----	----	----
Iron, total	7439-89-6	E420/WP	mg/L		0.241	1.50	0.139	----	----	----	----
Lead, total	7439-92-1	E420/WP	mg/L		0.000405	0.00226	0.000098	----	----	----	----
Lithium, total	7439-93-2	E420/WP	mg/L		0.0022	0.0032	0.0049	----	----	----	----
Magnesium, total	7439-95-4	E420/WP	mg/L		2.35	5.71	5.66	----	----	----	----
Manganese, total	7439-96-5	E420/WP	mg/L		0.00940	0.0497	0.00382	----	----	----	----
Molybdenum, total	7439-98-7	E420/WP	mg/L		0.00105	0.00166	0.000916	----	----	----	----
Nickel, total	7440-02-0	E420/WP	mg/L		0.00061	0.00610	0.00292	----	----	----	----
Phosphorus, total	7723-14-0	E420/WP	mg/L		<0.050	12.8	<0.050	----	----	----	----
Potassium, total	7440-09-7	E420/WP	mg/L		2.25	31.5	3.60	----	----	----	----
Rubidium, total	7440-17-7	E420/WP	mg/L		0.00446	0.0326	0.00452	----	----	----	----
Selenium, total	7782-49-2	E420/WP	mg/L		<0.000050	0.000689	0.000094	----	----	----	----
Silicon, total	7440-21-3	E420/WP	mg/L		0.79	1.23	1.48	----	----	----	----
Silver, total	7440-22-4	E420/WP	mg/L		<0.000010	0.000139	<0.000010	----	----	----	----
Sodium, total	7440-23-5	E420/WP	mg/L		11.8	61.4	43.9	----	----	----	----
Strontium, total	7440-24-6	E420/WP	mg/L		0.0632	0.0617	0.101	----	----	----	----
Sulfur, total	7704-34-9	E420/WP	mg/L		1.64	10.2	10.2	----	----	----	----
Tellurium, total	13494-80-9	E420/WP	mg/L		Not Detected	<0.00020	Not Detected	----	----	----	----
Thallium, total	7440-28-0	E420/WP	mg/L		<0.000010	0.000012	0.000012	----	----	----	----
Thorium, total	7440-29-1	E420/WP	mg/L		<0.00010	<0.00010	0.00012	----	----	----	----
Tin, total	7440-31-5	E420/WP	mg/L		0.00010	0.00219	<0.00010	----	----	----	----



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				Sub-Matrix	Wastewater	Wastewater	Wastewater	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit		WP2417729-001	WP2417729-002	WP2417729-003	-----	-----	-----	-----
Total Metals											
Titanium, total	7440-32-6	E420/WP	mg/L		0.00217	0.00885	0.00054	----	----	----	----
Tungsten, total	7440-33-7	E420/WP	mg/L		<0.00010	<0.00010	Not Detected	----	----	----	----
Uranium, total	7440-61-1	E420/WP	mg/L		0.00212	0.00109	0.00109	----	----	----	----
Vanadium, total	7440-62-2	E420/WP	mg/L		0.00073	0.00103	0.00056	----	----	----	----
Zinc, total	7440-66-6	E420/WP	mg/L		0.0250	0.198	<0.0030	----	----	----	----
Zirconium, total	7440-67-7	E420/WP	mg/L		<0.00020	0.00362	0.00021	----	----	----	----
Aggregate Organics											
Biochemical oxygen demand [BOD]	----	E550/WP	mg/L		<2.0	466	<2.0	----	----	----	----
Carbonaceous biochemical oxygen demand [CBOD]	----	E555/WP	mg/L		<2.0	424	<2.0	----	----	----	----
Oil & grease (gravimetric)	----	E567/WP	mg/L		<5.0	74.4	<5.0	----	----	----	----
Phenols, total (4AAP)	----	E562/WT	mg/L		<0.0010	0.171	<0.0010	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Key: