2023 FOX-M ANNUAL NUNAVUT WATER BOARD REPORT

FOR THE

NORTH WARNING SYSTEM

Contract # W8485-157352/001/NX
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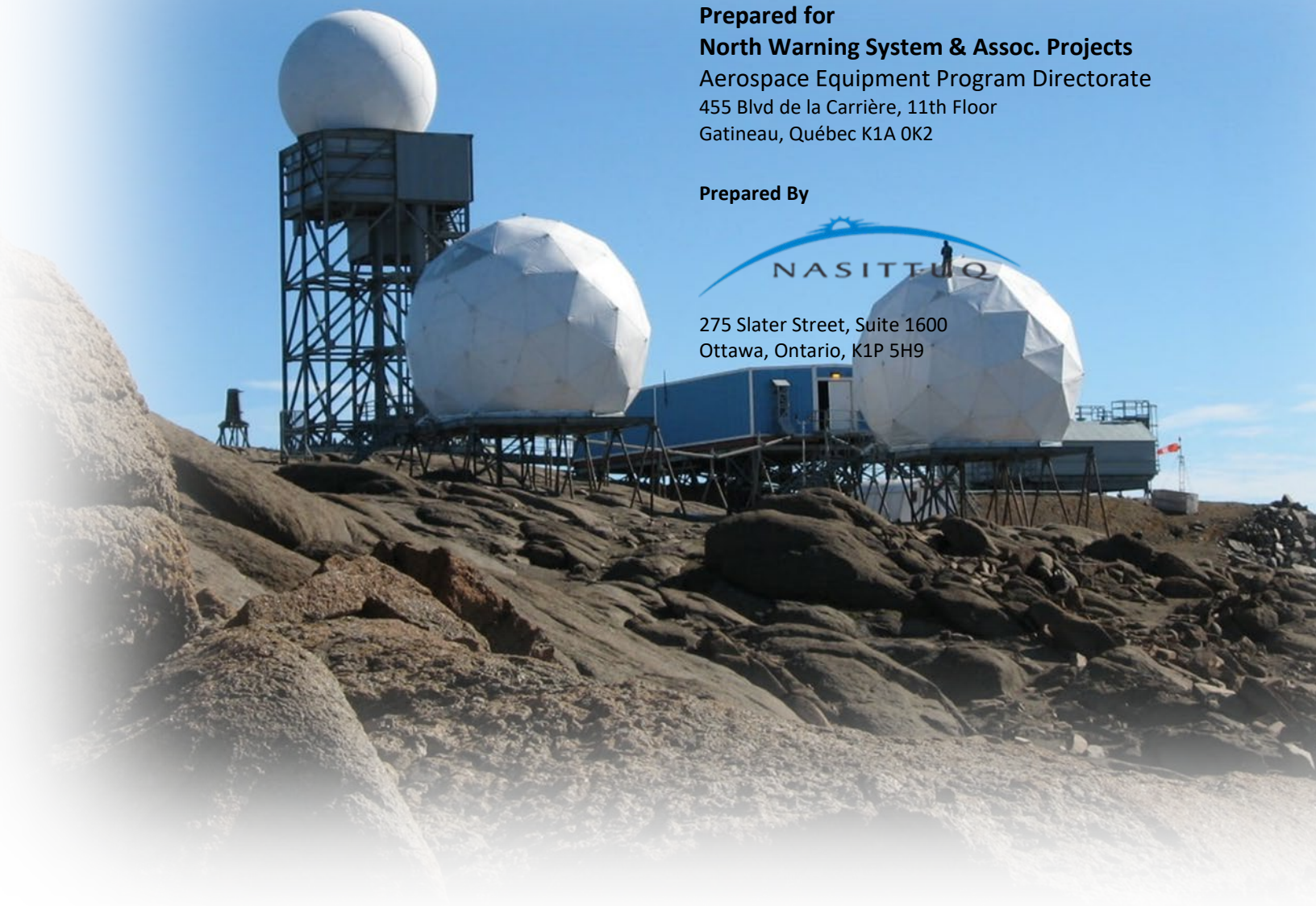

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EXECUTIVE SUMMARY IN ENGLISH FOLLOWS

FOX-M ᐊᐅᓚᑦᑎᔨᓂᖖᒡᖅᑐᑦ ᓇᐃᓈᖅᓯᔪᑦ

ᑖᓐᓇ 2023–ᒥ ᐊᕿᑐᓕᒫᖅᓯᐅᑦ ᐅᓂᒃᑳᖅ ᓄᓇᕗᒻᒥ ᐃᒪᓕᕆᔾᑯᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ ᐱᕚᓘᔾᖅᑕᐅᓚᐅᖅᐳᖅ ᓇᓯᑦᑐᕐᒧᑦ ᑲᓇᑕᒥ ᐅᓇᑕᖅᑐᒃᓴᓕᕆᔾᑰᓄᑦ (DND) ᐱᔾᐅᕆᐊᓕᓐᓄᑦ ᒪᓕᕐᑯᓪᓗᕆᑦ ᐃᓚᖓᑦ B "ᑭᓱᑐᐃᓐᓇᑦ ᒪᓕᒋᐊᓖᑦ", ᑎᑎᕋᖅᓯᒪᔪᑦ ᐊᑲᖓᓐᖓ 1 ᐱᔪᓐᓇᐅᑎᖓ 8BC-FOH1929. ᑖᓐᓇ ᐅᓂᒃᑳᖅ ᐃᓗᓕᖃᖅᑐᖅ 01 ᔮᓄᐊᕆᒥᑦ 31 ᑎᓯᐱᕆ 2023-ᒧᑦ.

ᓇᓯᑦᑐᖅ ᐊᐅᓚᑦᔪᑎᖏᑦ ᐋᖅᑭᐅᒪᑦᔪᑎᖏᓪᓗ (O&M) ᐊᖏᖃᑎᒌᒍᑎᒃᑯᑦ ᐃᖅᑲᓇᐃᔮᖅᑖᑎᑕᖅ ᐅᑭᐅᖅᑕᖅᑐᒥ ᐅᓗᕆᐊᓇᖅᑐᓂᒃ ᖃᐅᔨᓴᖅᑎᓄᑦ (NWS), ᐃᓚᐅᓪᓗᑎᒃ FOX-M, ᐅᐸᒃᓯᒪᔪᖅ (ᐃᒍᖃᖅᑐᖅ) ᓄᓇᕗᒻᒥ ᐃᒪᓕᕌᑦ ᖃᐅᔨᓴᑭᑎᖃᕐᕕᖓ ᓴᓂᕋᔭᒃ (Hall Beach), ᓄᓇᕗᑦ.

ᐃᒪᕐᒥᒃ ᐊᑐᕐᓂᖅ FOX-M–ᒥ 2023–ᒥ **973.9–ᖑᓚᐅᖅᐳᖅ ᑭᐸᓈᕆᒃᑐᑦ ᒦᑕᐃᑦ**, ᑕᒪᓐᓇᓗ ᐃᒪᓐᓇᐸᓘᕚᒃᑯᓂ, **2.67 ᑭᐸᓈᕆᒃᑐᑦ ᒦᑕᐃᑦ** ᐅᓪᓗᒧᑦ ᐊᑕᐅᓯᕐᒧᑦ. ᐃᒪᕐᒥᒃ ᐊᑐᕐᓂᕐᒧᑦ ᑭᒡᓕᖃᖅᑎᑕᐅᙱᑦᑐᑦ ᓚᐃᓴᓐᓯᒧᑦ FOX-M–ᒧᑦ.

ᑭᓈᓗᒃ FOX-M-ᒥᑦ ᐱᓕᕆᐊᕌᓚᐅᖅᑐᖅ ᐃᒪᓕᕆᔾᔪᑎᒧᑦ. ᐃᓚᖏᑦ ᓴᓗᒪᖅᓴᖅᓯᒪᔪᑦ ᑯᕕᑎᑕᐅᒃᑲᓂᖃᑦᑕᖅᑐᑦ ᐃᑎᕈᐃᑦ/ᕐᑯᕐᕕᐅᑉ ᑯᕙᕝᕕᖓ. ᑭᓈᓗᒃ ᖃᐅᔨᓴᖅᑕᐅᖃᑦᑕᓚᐅᖅᐳᖅ ᑕᖅᑭᑕᒦᑦ. ᖃᐅᔨᓴᕋᕐᓴᐃᑦ ᒫᑦᓯᒧᑦ ᐊᒻᒪ ᐊᑦᑑᕚᒧᑦ ᑎᑭᓚᐅᖏᑦᑐᑦ ᖃᐅᔨᓴᕐᕕᒻᒧᑦ ᖃᐅᔨᓴᖅᑕᐅᓗᑎ.

ᖃᐅᔨᓴᕋᕐᓴᐃᑦ ᐃᒥᐅᑉ ᐃᓗᐊᓂ ᐊᕙᓗᖏᓐᓂᑦ ᐅᖅᓱᐊᓗᖃᕐᕖᑦ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᑦ ᓇᔪᖅᑕᐅᔪᒥᑦ ᐊᑐᖅᑐᑎ ᐅᖅᓱᐊᓗᒃᓴᓂᑦ ᖃᐅᔨᓴᓂᕐᒥᑦ ᐊᒻᒪ ᓇᓗᓇᐃᖅᑕᐅᓪᓗᑎ ᐃᓗᐊᓃᕆᐊᖏᓐᓂᑦ ᑯᕕᑎᑕᐅᔪᑦ ᐱᐅᓂᖏᓐᓄᑦ ᑭᓪᓕᖏᑦ ᓄᓇᕗᒻᒥ ᐃᒪᖃᐅᑏᑦ ᐱᔪᓐᓇᐅᑎᖓ ᐃᒥᖅ ᑯᕕᑎᑕᐅᓚᐅᖅᑎᓐᓇᒍ.

ᕐᑯᐊᖅᑲᕐᓇᖅᑐᑦ ᐊᒃᑕᑯᑦ, ᐃᓚᐅᓪᓗᑎᒃ ᐊᑐᖅᓯᒪᔪᓄᑦ ᐅᖅᓱᖅᑎᕈᐱᑦ, ᓇᒃᓯᐅᔾᔭᐅᓚᐅᖅᑐᑦ ᐊᖏᖅᑕᐅᓯᒪᔪᒧᑦ ᐅᓗᕆᐊᓇᖅᑐᓄᑦ ᐊᒃᑕᑯᓄᑦ ᐊᒃᑕᕐᕕᖕᒧᑦ ᓄᓇᕗᑦ ᓯᓚᑖᓂ ᐱᔭᕆᐊᖃᕐᓂᖓᓄᑦ ᓚᐃᓴᓐᓯᒧᑦ. ᕐᑯᐊᖅᑲᕐᓇᖅᑐᑦ ᐊᒃᑕᑯᑦ **90–ᓂᒃ ᖃᑦᑕᐅᔭᕐᔪᐊᓂᒃ** ᐱᑕᖃᓚᐅᖅᐳᑦ ᐊᒃᑕᑯᓂᒃ (ᐅᖅᓱᕐᒥᒃ, ᐅᖅᓱᕐᒥᒃ, ᕐᑯᐊᔾᔭᐃᒃᑯᑎᒥᒃ, ᐊᓯᖏᓐᓂᓪᓗ), ᒪᕐᑰᖕᓂᓪᓗ ᐹᑕᓖᖕᓂᒃ.

ᕐᑯᐊᖅᑲᕐᓇᙱᑦᑐᑦ ᓄᓇᓕᖕᓂ ᐊᒃᑕᑯᐃᑦ ᐃᒋᑕᐅᓚᐅᖅᑐᑦ ᓄᓇᓕᖕᒥ ᐊᒃᑕᑰᓯᕝᕕᖕᒥᑦ ᐊᖏᖃᑎᒌᒍᑎᒃᑯᑦ Hᐋᒻᒪᓚᒃᑯᓐᓄᑦ ᓴᓂᕋᔭᖕᒥ (ᓴᓂᕋᔭᒃ). ᓇᓯᑦᑐᖅ ᑎᑎᕋᖅᓯᒪᕗᖅ ᐱᔪᓐᓇᖅᑎᑦᑎᓂᕐᒥᒃ ᓄᓇᓕᖕᓂ ᐊᒃᑕᑯᓂᒃ ᐱᑎᑕᐅᓂᐊᖅᑎᓪᓗᒋᑦ.

7–ᓂᒃ ᑯᕙᔪᖃᓚᐅᖅᐳᖅ ᐊᕙᑎᒧᑦ FOX-M–ᒥ 2023–ᖑᑎᓪᓗᒍ:

- 31-ᔫᓚᐃ-2023, NT-NU ᑯᕙᔪᖅ #2023-324: ᑯᕙᔪᖅ 1 ᓖᑕᒥᑦ ᖃᖓᑕᓲᖅᓯᐅᑎᒥᑦ ᖃᐅᓯᖅᑐᒧᑦ. ᖃᐅᓯᓕᓚᐅᕐᒪᑦ ᐊᒻᒪᓗ ᑐᐊᐸᒃ ᐲᔭᖅᑕᐅᓪᓗᓂ.
- 04-ᐊᐅᒡᒍᓯ-2023, ᓄᓇᑦᓯᐊᖅ-ᓄᓇᕗᑦ ᑯᕙᔪᖅ # 2023-333: ᑯᕙᔪᖅ 4 ᓖᑕᒥᑦ ᐃᒪᐃᑦ ᐃᒪᖓᓂᑦ ᑯᑐᒃᑐᒧᑦ. ᐊᑦᑕᑕᕐᕕᒃ ᐋᖅᑭᒃᑕᐅᓚᐅᖅᐳᖅ ᐊᒻᒪ ᑐᐊᐸᒃ ᐲᔭᖅᑕᐅᓪᓗᓂ.
- 18-ᐅᑐᐱᕆ-2023, ᓄᓇᑦᓯᐊᖅ-ᓄᓇᕗᑦ ᑯᕙᔪᖅ # 2023-437: ᑯᕙᔪᖅ 25 ᓖᑕᒥᑦ ᐃᒪᐃᑦ ᐃᒪᖏᓐᓂᑦ ᑯᑐᒃᑐᒧᑦ. ᐊᑦᑕᑕᕐᕕᒃ ᐋᖅᑭᒃᑕᐅᓚᐅᖅᐳᖅ ᐊᒻᒪ ᑐᐊᐸᒃ ᐲᔭᖅᑕᐅᓪᓗᓂ.
- 07-ᓄᕕᐱᕆ-2023, ᓄᓇᑦᓯᐊᖅ-ᓄᓇᕗᑦ ᑯᕙᔪᖅ # 2023-467: ᑯᕙᔪᖅ 25 ᓖᑕᓂᒃ ᑎᖕᒥᓲᖅᓯᐅᑦ-A1 ᓯᒥᒃᑕᐅᑎᒥᒃ ᐱᔾᔪᑎᖃᖅᑐᓂ. ᓯᒥᒃᑕᐅᑎᖓ ᒪᑐᔭᐅᓚᐅᖅᑐᖅ ᐊᒻᒪᓗ ᑐᐊᐸᒃ ᐲᔭᖅᑕᐅᓪᓗᓂ.
- 21-ᔫᓐ-2023, ᓄᓇᑦᓯᐊᖅ-ᓄᓇᕗᑦ ᑯᕙᔪᖅ # 2023-272: ᑯᕙᔪᖅ 100 ᓖᑕᓂᑦ ᑭᓈᓗᖃᕐᕕᒻᒥᑦ ᐱᔾᔪᑕᐅᓚᐅᖅᑐᖅ ᐃᓚᒋᔭᐅᑦᓯᐊᖏᓐᓂᖓᓄᑦ ᓴᓗᒪᖅᓴᐃᕝᕕᒻᒥᑦ. ᐊᑦᑕᑕᖅᑎᑕᐅᓂᖓ ᐋᖅᑭᒃᑕᐅᓚᐅᖅᐳᖅ ᑯᑐᒃᑯᓂᓗ ᓄᖅᑲᖅᑎᑕᐅᓪᓗᓂ.
- 15-ᓄᕕᐱᕆ-2023, ᓄᓇᑦᓯᐊᖅ-ᓄᓇᕗᑦ ᑯᕙᔪᖅ # 2023-478: ᑯᕙᔪᖅ 3 ᓖᑕᒥᑦ ᐃᒪᐃᑦ ᐃᒪᖓᓂᑦ ᑯᑐᒃᑐᒧᑦ. ᐊᑦᑕᑕᕐᕕᒃ ᐋᖅᑭᒃᑕᐅᓚᐅᖅᐳᖅ ᐊᒻᒪ ᑐᐊᐸᒃ ᐲᔭᖅᑕᐅᓪᓗᓂ.

- 01-ᒪᐃ-2023, ᓄᓇᕐᓯᐊᖅ-ᓄᓇᕗᑦ ᑯᕕᔾᖅ # 2023-175: ᑯᕕᔾᖅ 45 ᓴᓪᒥᑦ ᐃᒪᐃᑦ ᐃᒪᖏᓐᓂᑦ ᑯᑐᖅᑐᒍᒪᑦ. ᐊᑦᑕᑕᖃᕕᖅ ᐊᖅᑭᑲᑕᐅᓪᓚᖅᓴᖅ ᐊᓪᒪ ᑐᐊᐸᖅ ᐱᓴᖅᑕᐅᓪᓗᓂᓕᓂ.

ᑯᕕᔾᖅᖃᓂᖅᐸᑦ ᐅᐸᓗᖏᐃᔾᖅᓯᒪᔾᔨᐸᑎᑦ ᐱᓇᕋᑎᐃᔾᖅᐅᑦ ᐊᑐᓪᑎᑕᐅᑦᑎᐊᓪᓚᐅᖅᑐᖅ, ᓄᑦᖏᔪᓚᐊᖅᑕᐅᓪᓗᓂᓗ 12-ᓴᓂ-2023–ᒥ.

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EXECUTIVE SUMMARY

This 2023 Annual Report for the Nunavut Water Board (NWB) has been prepared by Nasittuq for the Department of National Defence (DND) in order to meet the requirements of Part B "General Conditions", paragraph 1 of its licence 8BC-FOH1929. This report covers 01 January to 31 December 2023.

Nasittuq is the Operations and Maintenance (O&M) Contractor for the North Warning System (NWS), including FOX-M, the attended (manned) NWS radar site located at Sanirajak (Hall Beach), Nunavut.

The water usage at FOX-M in 2023 was **973.9 cubic metres**, which is an average of **2.67 cubic metres** per day. There is no water usage limit in the licence for FOX-M.

Sewage at FOX-M was processed by the tertiary wastewater treatment system. Some of the treated effluent is recycled as on-site urinal/toilet flush water. The treated sewage was sampled monthly. The samples for March and October did not reach the laboratory in time for analysis.

Samples of the water contained in the berms of fuel storage facilities was tested on-site using hydrocarbon test strips and confirmed to be within effluent quality limits of the NWB licence before the water was discharged.

Hazardous waste, including waste oil, was sent to an approved hazardous waste disposal site outside of Nunavut as required by the licence. The hazardous waste consisted of **90 drums** of assorted waste (oil, fuel, glycol, etc.), and **two crates** of waste batteries.

Non-hazardous domestic solid waste was disposed of at the local landfill through a contract with the Hamlet of Sanirajak (Hall Beach). Nasittuq has documented authorization from the community for receiving the waste.

Seven spills to the environment occurred at FOX-M in 2023:

- 31-Jul-2023, NT-NU Spill #2023-324: A spill of 1 L of Jet-A1 caused by a weeping component. The weep was stopped and the impacted gravel was removed.
- 04-Aug-2023, NT-NU Spill # 2023-333: A spill of 4 L of hydraulic fluid caused by a leaking connection. The connection was repaired and impacted gravel was removed.
- 18-Oct-2023, NT-NU Spill # 2023-437: A spill of 25 L of hydraulic fluid caused by a leaking connection. The connection was repaired and impacted gravel was removed.
- 07-Nov-2023, NT-NU Spill # 2023-467: A spill of 25 L of Jet-A1 caused by an open valve. The valve was closed and impacted gravel was removed.
- 21-Jun-2023, NT-NU Spill # 2023-272: A spill of 100 L of sewage was caused by a failed component on the treatment plant. The connection was repaired and the leak was stopped.
- 15-Nov-2023, NT-NU Spill # 2023-478: A spill of 3 L of hydraulic fluid was caused by a leaking connection. The connection was repaired and impacted gravel was removed.
- 01-May-2023, NT-NU Spill # 2023-175: A spill of 45 L of hydraulic fluid was caused by a leaking connection. The connection was repaired and impacted gravel was removed.

The Spill Contingency Plan was successfully implemented, and updated on 12-Jun-2023.

No progressive reclamation work was undertaken in 2023.

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LIST OF FIGURES

1.0 INTRODUCTION

This 2023 Annual Report for the Nunavut Water Board (NWB) has been prepared by Nasittuq for the Department of National Defence (DND) in order to meet the requirements of Part B "General Conditions", paragraph 1 of its licence 8BC-FOH1929 issued 01 September 2019. This report covers 01 January to 31 December 2023.

Nasittuq is the Operations and Maintenance Contractor for the North Warning System (NWS), including FOX-M.

FOX-M is an attended (manned) North Warning System radar site located at Sanirajak (Hall Beach), Nunavut.

1.1 Report Details

Licensee:	Department of National Defence, Government of Canada
Licence:	8BC-FOH1929 – Type "B"
Location:	FOX-M North Warning System Site, Sanirajak (Hall Beach), Qikiqtani Region, Nunavut
Report Prepared by:	Alaina Leslie and reviewed by Don Beattie Nasittuq Corporation, 26-Mar-2024
Time period covered:	01 January to 31 December 2023

2.0 WATER USE

The water usage at FOX-M in 2023 was **973.9 cubic metres,** which is an average of **2.67 cubic metres** per day. See Table 2-1 for the volume of water drawn at FOX-M each month in 2023.

There is no water usage limit in the licence for FOX-M because water is drawn from an artificial (man-made) reservoir and not from a natural source.

Table 2-1: Monthly Raw Water Usage at FOX-M in 2023

Month	Raw water usage (m^3)
January	71
February	80.5
March	92.7
April	87.7
May	87.7
June	89.5
July	73.2
August	95.5
September	81.1
October	85
November	66
December	64
TOTAL	**973.9**

3.0 TREATED SEWAGE DISCHARGE

At FOX-M, the sewage and grey water were both processed through a Cycle-let® advanced tertiary wastewater treatment system. Some of the treated water is recycled as urinal/toilet flush water; the remainder is discharged at the designated outfall and is potable water quality. See Table 3-1 for the volume of sewage and grey water treated by the Cycle-let® system. See **Section 6.0 – Monitoring Program** for details on sewage effluent monitoring.

The location and coordinates of treated sewage effluent outfall location (FOH-2) is contained in **Annex B.** Sewage sample analytical results and certificates of analysis are contained in **Annex C.**

Table 3-1: Monthly and Annual Volume of Sewage and Grey Water Treated at FOX-M in 2023

Month	Volume of sewage and greywater treated then discharged or recycled (m^3)
January	71
February	81
March	93
April	88
May	88
June	90
July	73
August	96
September	81
October	85
November	66
December	64
TOTAL	**974**

4.0 HAZARDOUS WASTE AND WASTE OIL DISPOSAL

Hazardous waste, including waste oil, from FOX-M were sent to an approved hazardous waste disposal facility outside of Nunavut as required by the licence. The hazardous waste was shipped to KBL Environmental.

See Table 3-1 for the list of items sent for disposal.

See Annex A for the shipping documents including the completed movement documents for waste regulated under the Transportation of Dangerous Goods Regulations (TDGR) and non-regulated waste.

The hazardous waste shipped from FOX-M in 2023 consisted of **90 drums of various hazardous waste** (waste oil, waste oil filters etc.) and **two crates of waste batteries.**

Table 4-1: Hazardous Waste and Waste Oil Sent for Disposal from FOX-M in 2023

TDG shipping name	Description	Manifest # (TCN)	Movement Document	Quantity
Waste Batteries, Wet, Filled With Acid	WASTE - BATTERIES, WET, FILLED WITH ACID (CONTAINER)	46994, 46993	Movement Document 2581554-9	2 Crates

TDG shipping name	Description	Manifest # (TCN)	Movement Document	Quantity
Waste Fuel, Aviation, Turbine Engine	WASTE - FUEL	46788, 46988, 46801, 46965, 46786, 46992	Movement Document 281557-2	10 Drums
Waste Fuel, Aviation, Turbine Engine Mixture	WASTE - TANK BOTTOM WATER/ TANK CLEANING EFFLUENT (DRUM)	46799, 46799, 46799, 46799, 46801	Movement Document 2581554-9	5 Drums
Waste Fuel, Aviation, Turbine Engine Mixture	WASTE - FUEL AND WATER MIXTURE (DRUM)	46801, 46801	Movement Document 281557-2	2 Drums
Waste Solids Containing Flammable Liquid, N.O.S. (Fuel, Aviation, Turbine Engine)	WASTE - FUEL FILTERS (DRUM)	46983, 46980, 46966, 46977	Movement Document 2581554-9	5 Drums
Waste Solids Containing Flammable Liquid, N.O.S. (Fuel, Aviation, Turbine Engine)	WASTE - FUEL SOAKED ABSORBENT	46986	Movement Document 2581554-9	1 Drums
Not Regulated	WASTE - OILY RAGS	46979, 46793, 46980, 46976, 46800	Movement Document 2581558-0	8 Drums
Not Regulated	WASTE - ACTIVATED CARBON FILTER (DRUM)	46897, 46974	Movement Document 2581557-2	6 Drums
Not Regulated	WASTE - OIL FILTERS (DRUM)	46983, 46977, 46978, 46800	Movement Document 2581557-2	5 Drums
Not Regulated	WASTE - FUEL CONTAMINATED SOIL (DRUM)	46988, 46982, 46984, 46985	Movement Document 2581558-0	5 Drums
Not Regulated	WASTE - OIL (45 GALLON DRUM)	46792, 46796, 46792, 46792, 46784, 46784, 46784, 46784, 46785, 46785, 46785, 46785, 46899, 46899, 46899, 46899, 46788, 46796, 46990, 46991, 46903, 46903, 46903, 46903, 46986, 46989, 46786, 46786, 46786, 46788, 46788, 46792, 46796, 46796, 46975	Movement Document 2581558-0	44 Drums

5.0 NON-HAZARDOUS SOLID WASTE DISPOSAL

Non-hazardous domestic solid waste was disposed of at the local landfill through a contract with the Municipality of Sanirajak (Hall Beach). Nasittuq has documented authorization from the community for receiving the waste. See Table 5-1, below, for the quantity of non-hazardous waste generated.

Table 5-1: Non-hazardous Domestic Solid Waste Sent for Disposal from FOX-M in 2023

Month	Waste Generated (kg)
January	576
February	439
March	1303
April	2039
May	1776
June	1152
July	1170
August	1232
September	935
October	937
November	1785
December	725
TOTAL	**14,069**

6.0 MONITORING PROGRAM

In 2023, a monitoring program was implemented at FOX-M as required by the water licence. The monitoring program included the following:

1. Volume of raw water drawn from the reservoir (FOH-1). The raw water monitoring information is shown in **Section 2.0 Water Use**.

2. Quality of sewage discharged from the final discharge point of the sewage treatment facility (FOH-2). The location of the sewage effluent outfall is shown in **Annex B**, including coordinates. The treated sewage was sampled monthly with the exception of June to November. The sample was not sent to the laboratory during these months due to miscommunications during the NWS contract transition.

   The results of the analyses are shown in **Annex C.**

3. Quality of the water contained in the berms of fuel storage facilities prior to discharge (FOH-3) was analyzed using hydrocarbon test strips and confirmed within the effluent quality limits listed in the water licence, Part D. The coordinates and the results of the analysis are shown in **Location of** Bermed Fuel Storage Facilities . All samples met the effluent requirements of the water licence, Part D.

4. Final Discharge Point from the Landfarm (FOH-4). No landfarm has been established at FOX-M, so this monitoring station remains inactive.

7.0 SPILLS (UNAUTHORIZED DISCHARGES)

Seven spills to the environment occurred at FOX-M in 2023. Table 7-1, below, describes the spill (unauthorized discharge) details.

The Spill Contingency Plan was successfully implemented.

Table 7-1: Unauthorized Discharges at FOX-M in 2023

Date, NT-NU Spill #	Product	Quantity	Cause and follow-up action	On-site location
31-Jul-2023, Spill # 2023-324	Jet-A1	1 L	A leaking connection on the pipeline caused a weep of Jet-A1 due to a pressure build up. The pressure was relieved and the weep was stopped. Impacted gravel was removed and containerized for off-site disposal.	Sealift Fill Point (68° 45’ 49” N, 81° 12’ 44” W)
04-Aug-2023, Spill # 2023-333	Hydraulic fluid	4 L	A leaking connection on heavy equipment caused a spill of hydraulic fluid on to a gravel pad. Impacted gravel was removed and containerized for off-site disposal. The connection was repaired and the leak was stopped.	FOX-M Outside Warehouse (68° 46' 05"N, 81° 13' 15" W)
18-Oct-2023, Spill # 2023-437	Hydraulic fluid	1 L	A leaking connection on heavy equipment caused a spill of hydraulic fluid on to a gravel pad. Impacted gravel was removed and containerized for off-site disposal. The connection was repaired and the leak was stopped.	Outside Garage (68°45'44.34"N, 81°13'34.53"W)
07-Nov-2023, Spill # 2023-467	Jet-A1	25 L	An open valve on a fuel truck caused a spill of Jet-A1 on to a gravel pad. Impacted gravel was removed and containerized for off-site disposal. The valve was closed and the leak was stopped.	FOX-M Outside Warehouse (68°46'06"N, 81°13'33"W)
21-Jun-2023, Spill # 2023-272	Sewage	100 L	A failed component on the sewage plant caused a spill of sewage from the treatment plant. Sewage leaked out of the building envelope on to the gravel pad below. The connection was repaired and the leak was stopped.	Sewage Plant (68° 45’ 41’’ N, 81° 13’ 39’’ W)
15-Nov-2023, Spill # 2023-478	Hydraulic fluid	3 L	A leaking connection on heavy equipment caused a spill of hydraulic fluid on to a gravel pad. Impacted gravel was removed and containerized for off-site disposal. The connection was repaired and the leak was stopped.	Outside Hangar (68°46'17"N, 81°13'40"W)
01-May-2023, Spill # 2023-175	Hydraulic fluid	45 L	A leaking connection on heavy equipment caused a spill of hydraulic fluid on to a gravel pad. Impacted gravel was removed and containerized for off-site disposal. The connection was repaired and the leak was stopped.	Road near ECCC Weather Building (68° 45’ 52” N, 81° 13’ 34” W)

8.0 REVISIONS TO THE SPILL CONTINGENCY PLAN

The Spill Contingency Plan was updated on **12-Jun-2023**. An updated copy of the Spill Contingency Plan has been submitted to the NWB with this annual report.

9.0 PROGRESSIVE RECLAMATION WORK UNDERTAKEN

No progressive reclamation work was undertaken in 2023.

10.0 ACRONYMS

Table 10-1: Acronyms

Acronym	Definition
n.o.s	Not Otherwise Specified
NWB	Nunavut Water Board
NWS	North Warning System
O&M	Operations and Maintenance
PCB	Polychlorinated Biphenyl
POL	Petroleum, Oil & Lubricant
TDGR	Transportation of Dangerous Goods Regulations

ANNEX A. HAZARDOUS WASTE AND WASTE OIL DISPOSAL

The 2023 Movement Document for TDG Regulated waste and non-TDG Regulated waste (as previously described in Table 4-1) are included in the following pages.

The following documents are enclosed:

1. Movement Document 2581554-9
2. Movement Document 2581557-2
3. Movement Document 2581558-0

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial transport and environmental legislation
Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement et le transport

Movement Document / Manifest Reference No. / N° de référence du document de mouvement/manifeste: **2581554-9**

PAGE 1/3

A — Generator / consignor / Producteur / expéditeur
Registration No. / Provincial ID No.: NUG 100003
Company name: NASITTUQ
Mailing address: 22 WING, BLDG 109 HORNELL HEIGHTS ONTARIO P0H1P0
Tel. No.: 705 494 2011 x3400
Shipping site address: NWS LSS HALL BEACH
PO BOX 46 SANIRAJAK NU X0A 0K0

Intended Receiver / consignee: KEL ENVIRONMENTAL — Registration No.: NTR000123
Mailing address: 17 CAMERON RD PO BOX 1895 YELLOWKNIFE NT X1A2P4
Receiving site address: 17 CAMERON RD, YELLOWKNIFE NT X1A 2P4

B — Carrier / Transporteur
Company name: NEAS
E-mail: Sales@neas.ca — Tel. No.: 8772256327
Name of authorized person: MICHÈLE ROBICHAUD — Tel. No.: 438-334-3958
Year / Month / Day: 23 08 27 — Signature: MRobichaud

C — Receiver / consignee / Réceptionnaire / destinataire
Registration No.: NTR000123
Date received: 23 09 01

Shipping name	Class	UN No.	Packing group	Quantity shipped	Units	Packaging No.	Code	Phys. state	Quantity received	Units	Shipment accepted
WASTE SOLIDS CONTAINING FLAMMABLE LIQUID NOS	4	3175	II	490	KG	5	01	S	500	KG	✓
WASTE SOLIDS CONTAINING FLAMMABLE LIQUID NOS	4	3175	II	114	KG	1	01	S	200	KG	✓
WASTE BATTERIES, WET, FILLED WITH ACID	8	2794	N/A	1723	KG	2	07	S	2000	KG	✓
WASTE FUEL AVIATION TURBINE ENGINE [illegible]	3	1863	III	750	L	5	01	L	1000	L	✓

international use only

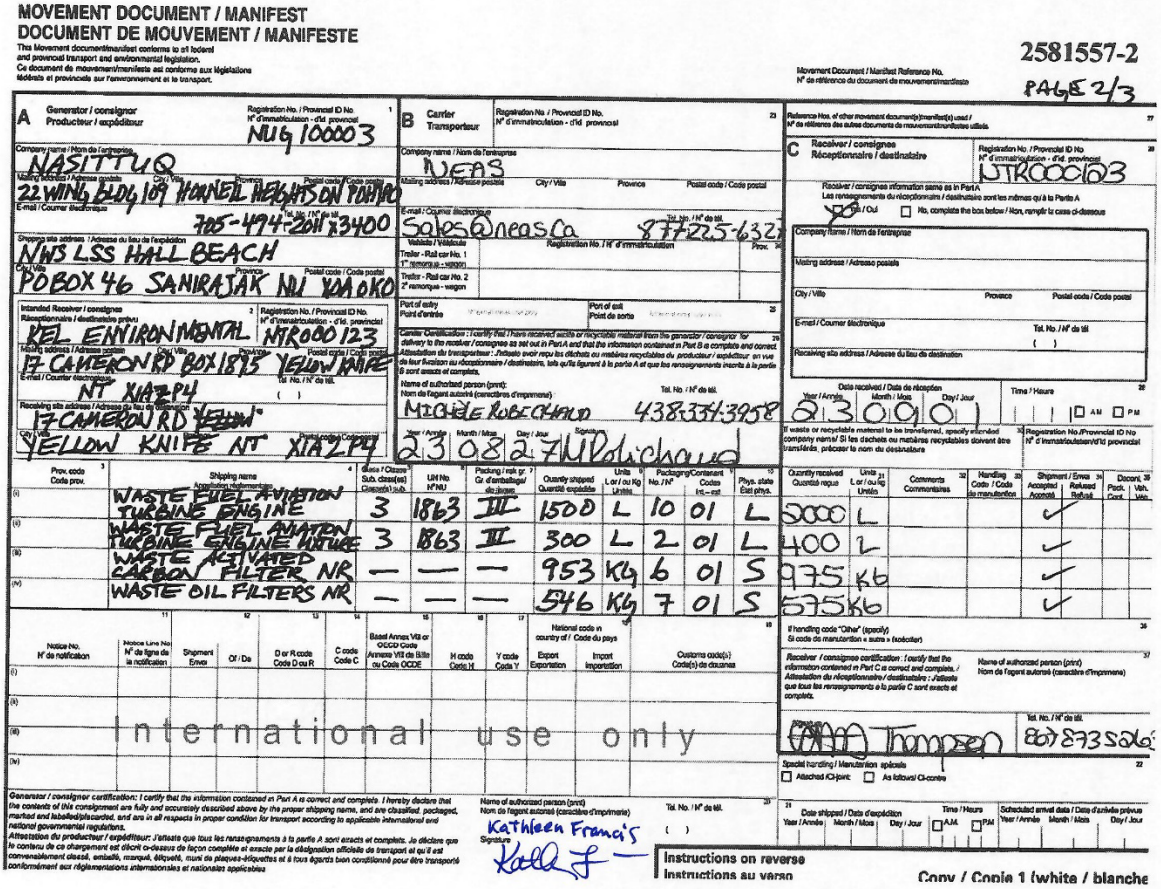
Receiver / consignee certification — Signature: [illegible] Thompson — Tel. No.: 867 873 5263

Generator / consignor certification — Name of authorized person: Kathleen Francis — Signature: [illegible]

Instructions on reverse
Instructions au verso

Copy / Copie 1 (white / bla

UNCONTROLLED WHEN PRINTED



MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial transport and environmental legislation.
Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement et le transport.

Movement Document / Manifest Reference No. / N° de référence du document de mouvement/manifeste: 2581557-2

PAGE 2/3

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: NUG 100003

Company name / Nom de l'entreprise: NASITTUQ

Mailing address / Adresse postale: 22 WING BLDG 109 HOWELL HEIGHTS ON K0A 1R0 — City / Ville — Province — Postal code / Code postal

Tel. No. / N° de tél.: 705-474-2011 x3400

E-mail / Courrier électronique

Shipping site address / Adresse du lieu de l'expédition: NWS LSS HALL BEACH

City / Ville: PO BOX 46 — Province: NU — Postal code / Code postal: X0A 0K0

Intended Receiver / consignee / Réceptionnaire / destinataire prévu: KEL ENVIRONMENTAL — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: NTR000123

Mailing address / Adresse postale: 17 CAMERON RD BOX 1895 — City / Ville: YELLOW KNIFE — Province: NT — Postal code / Code postal: X1A 2P4

Tel. No. / N° de tél.

Receiving site address / Adresse du lieu de destination: 17 CAMERON RD YELLOW KNIFE NT X1A 2P4

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial

Company name / Nom de l'entreprise: NEAS

Mailing address / Adresse postale — City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique: SalesNeas.ca — Tel. No. / N° de tél.: 877-225-6327

Vehicle / Véhicule — Registration No. / N° d'immatriculation — Prov.

Trailer - Rail car No. 1 / 1re remorque - wagon

Trailer - Rail car No. 2 / 2e remorque - wagon

Port of entry / Point d'entrée — Port of exit / Point de sortie

Carrier Certification: I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct. / Attestation du transporteur : J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): MICHELE ROBICHAUD — Tel. No. / N° de tél.: 438-334-3958

Signature

Year / Année: 23 — Month / Mois: 08 — Day / Jour: 27

C Receiver / consignee / Réceptionnaire / destinataire — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: NTR000123

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire sont les mêmes qu'à la Partie A

☒ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél.

Receiving site address / Adresse du lieu de destination

Date received / Date de réception: Year / Année: 23 — Month / Mois: 09 — Day / Jour: 01

Time / Heure — ☐ AM ☐ PM

If waste or recyclable material to be transferred, specify intended company name / Si les déchets ou matières recyclables doivent être transférés, préciser le nom du destinataire

Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe: Sub. class(es) / Classe(s) sub.	UN/ID No. / N° ONU	Packing / Emballage: Gr. / Gr. d'emballage/ de classe	Quantity shipped / Quantité expédiée	Units / Unités: L or / ou Kg	Packaging / Contenant: No. / N°	Packaging / Contenant: Codes	Phys. state / Etat phys.	Quantity received / Quantité reçue	Units / Unités	Comments / Commentaires	Handling / Code / Code de manutention	Shipment / Envoi: Accepted / Accepté	Shipment / Envoi: Rejected / Refusé	Docont. / Partic. / Cont.	Docont. / Véh. / Véh.
(i)	WASTE FUEL AVIATION TURBINE ENGINE	3	1863	III	1500	L	10	01	L	5000	L			✓			
(ii)	WASTE FUEL AVIATION TURBINE ENGINE MIXTURE	3	1863	III	300	L	2	01	L	400	L			✓			
(iii)	WASTE ACTIVATED CARBON FILTER NR	—	—	—	953	Kg	6	01	S	975	Kg			✓			
(iv)	WASTE OIL FILTERS NR	—	—	—	546	Kg	7	01	S	575	Kg			✓			

Notice No. / N° de notification	Notice Line No. / N° de ligne de la notification	Shipment / Envoi	Or / Ou	D or R code / Code D ou R	C code / Code C	Based Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE	H code / Code H	Y code / Code Y	National code in country of / Code du pays: Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes
(i)											
(ii)											
(iii)	International use only										
(iv)											

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

Receiver / consignee certification: I certify that the information contained in Part C is correct and complete. / Attestation du réceptionnaire / destinataire : J'atteste que tous les renseignements à la partie C sont exacts et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie): Tom Thompson

Tel. No. / N° de tél.: 867 873 5262

Special handling / Manutention spéciale: ☐ Attached /Ci-joint ☐ As follows/ Ci-contre

Generator / consignor certification: I certify that the information contained in Part A is correct and complete. I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. / Attestation du producteur / expéditeur: J'atteste que tous les renseignements à la partie A sont exacts et complets. Je déclare que le contenu de ce chargement est décrit ci-dessus de façon complète et exacte par la dénomination officielle de transport et qu'il est convenablement classé, emballé, marqué, étiqueté, muni de placards-étiquettes et à tous égards bien conditionné pour être transporté conformément aux réglementations internationales et nationales applicables

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie): Kathleen Francis — Tel. No. / N° de tél.

Signature

Date shipped / Date d'expédition: Year / Année — Month / Mois — Day / Jour — Time / Heure: ☐ A.M. ☐ P.M.

Scheduled arrival date / Date d'arrivée prévue: Year / Année — Month / Mois — Day / Jour

Instructions on reverse / Instructions au verso

Copy / Copie 1 (white / blanche)

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial transport and environmental legislation.
Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement et le transport.

2581558-0

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A Generator / consignor / Producteur / expéditeur
Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: NU69 00003
Company name / Nom de l'entreprise: NASITTUQ
Mailing address / Adresse postale: 22 WING BLDG 109 HORNELL HEIGHTS ON
E-mail / Courrier électronique: POHIPO 705-494-2011 X3400
Shipping site address / Adresse du lieu de l'expédition: NWS LSS HALL BEACH
City / Ville: POBOX 46 SANIKILIAK NU X0A 0K0

Intended Receiver / consignee / Réceptionnaire / destinataire prévu: KEL ENVIRON MENTAL NTR00023
Mailing address / Adresse postale: 17 CAMERON RD BOX 1875 YELLOWKNIFE NT
E-mail / Courrier électronique: X1A 2P4
Receiving site address / Adresse du lieu de livraison: 17 CAMERON RD
City / Ville: YELLOWKNIFE NT X1A 2P4

B Carrier / Transporteur
Company name / Nom de l'entreprise: NEAS
E-mail / Courrier électronique: SOVS@neas.ca
Tel. No. / N° de tél.: 877 334 6327
Vehicle / Véhicule
Trailer - Rail car No. 1
1er remorque - wagon
Trailer - Rail car No. 2
2e remorque - wagon
Port of entry / Point d'entrée
Port of exit / Point de sortie

Carrier Certification: I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct.
Attestation du transporteur : J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets.
Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): MICHÈLE ROBICHAUD
Tel. No. / N° de tél.: 438 334 3958
Year / Année: 23 | Month / Mois: 08 | Day / Jour: 27
Signature: MRobichaud

C Receiver / consignee / Réceptionnaire / destinataire
Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: NTR00023
Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire sont les mêmes qu'à la Partie A: ☒ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous
Company name / Nom de l'entreprise
Mailing address / Adresse postale
City / Ville
Province
Postal code / Code postal
E-mail / Courrier électronique
Tel. No. / N° de tél.
Receiving site address / Adresse du lieu de destination
Date received / Date de réception: Year / Année | Month / Mois | Day / Jour: 23 09 01
Time / Heure: ☐ A.M. ☐ P.M.
If waste or recyclable material to be transferred, specify intended company name / Si les déchets ou matières recyclables doivent être transférés, préciser le nom du destinataire
Registration No. / Provincial ID No. / N° d'immatriculation/id provincial

Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe: Sub. class(es) / Classe(s) sub.	UN No. / N° NU	Packing / Rck gr. / Gr. d'emballage / de rmque	Quantity shipped / Quantité expédiée	Units / Unités	Packaging/Contenant: No. / N°	Codes	Phys. state / Etat phys.	Quantity received / Quantité reçue	Units / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment / Envoi: Accepted / Accepté	Refused / Refusé	Discrepancy: Pack. / Emb.	Veh. / Véh.
(i)	WASTE FUEL CONTAMINATED SOIL	—	—	—	1614	KG	5	01	S	2250	KG			✓			
(ii)	WASTE OILY RAGS-NR	—	—	—	1149	KG	8	01	S	1150	KG			✓			
(iii)	WASTE OIL - NR	—	—	—	6750	L	44	01	S	8800	L			✓			
(iv)																	

Notice No. / N° de notification	Notice Line No. / N° de ligne de la notification	Shipment / Envoi	Or / Ou	D or R code / Code D ou R	C code / Code C	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE	H code / Code H	Y code / Code Y	National code in country of / Code du pays: Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douane
(i)											
(ii)											
(iii)											
(iv)											

International use only

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier):

Receiver / consignee certification: I certify that the information contained in Part C is correct and complete. / Attestation du réceptionnaire / destinataire : J'atteste que tous les renseignements à la partie C sont exacts et complets.
Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie):
Signature: Thompson
Tel. No. / N° de tél.: 867 873 5063

Special handling / Manutention spéciale: ☐ Attached / Ci-joint ☐ As follows / Ci-contre

Generator / consignor certification: I certify that the information contained in Part A is correct and complete. I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.
Attestation du producteur / expéditeur: J'atteste que tous les renseignements à la partie A sont exacts et complets. Je déclare que le contenu de ce chargement est décrit ci-dessus de façon complète et exacte par la désignation officielle de transport et qu'il est convenablement classé, emballé, marqué, étiqueté, muni de plaques-étiquettes et à tous égards bien conditionné pour être transporté conformément aux réglementations internationales et nationales applicables.
Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): Kathleen Francis
Tel. No. / N° de tél.: ( )
Signature:

Date shipped / Date d'expédition: Year / Année | Month / Mois | Day / Jour
Time / Heure: ☐ A.M. ☐ P.M.
Scheduled arrival date / Date d'arrivée prévue: Year / Année | Month / Mois | Day / Jour

Instructions on reverse
Instructions au verso

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ANNEX B. TREATED SEWAGE EFFLUENT OUTFALL (FOH-2) LOCATION WITH COORDINATES

Figure 1: Location and coordinates of sewage treatment outfall: 68° 45’39.50” N, 81°13’28.40” W

ANNEX C. ANALYSIS OF TREATED SEWAGE EFFLUENT

Table C-1 contains the results of sampling analysis of treated sewage effluent. Samples were collected monthly. The laboratory certificates of analysis are included in the pages which follow.

Table C-2: Summary of Analysis of Treated Sewage Effluent at FOX-M in 2023

Sample Date	Parameter				
	pH	Oil and Grease (Present - P / Absent - A)	Biological Oxygen Demand (mg/L)	Total Suspended Solids (mg/L)	Faecal Coliforms[1]
Maximum Concentration	6.0 to 9.0 (pH units)	No visible sheen	120 mg/L	180 mg/L	10,000 CFU/100 mL
30-Dec-22*	8.04	A	<3.0	<3.0	25
28-Feb-23	7.80	A	6.0	<3.0	2
March**					
19-Apr-23	8.31	A	4.9	<3.0	<1
29-May-23	8.40	A	4.3	<3.0	<1
6-Jun-23	8.27	A	<3.0	<3.0	<1
4-Jul-23	8.16	A	<3.0	<3.0	<1
1-Aug-23	8.31	A	9.6	<3.0	1,140
4-Sep-23	8.30	A	3.8	<3.0	14
October**					
10-Nov-23	8.09	A	<3.0	<3.0	1,473
5-Dec-23	7.97	A	<3.0	<3.8	2

Notes:
*The January sample was taken 2 days early
** The March and October sample did not reach the laboratory within sample hold times. Nasittuq is investigating ways to resolve this issue.

The following documents are enclosed:

1. ALS Certificate of Analysis Jan-23 (collected Dec 30)
2. ALS Certificate of Analysis Feb-23
3. ALS Certificate of Analysis Apr-23
4. ALS Certificate of Analysis May-23
5. ALS Certificate of Analysis Jun-23
6. ALS Certificate of Analysis Jul-23
7. ALS Certificate of Analysis Aug-23
8. ALS Certificate of Analysis Sep-23
9. ALS Certificate of Analysis Nov-23
10. ALS Certificate of Analysis Dec-23

[1] This column contains the average of the Cyclet 1A, Cyclet 1B, and Cyclet 1C

ALS Canada Ltd.

right solutions. right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **WT2300689**	Page	: 1 of 3
Client	: **NASITTUQ CORPORATION**	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 11-Jan-2023 09:10
PO	: ----	Date Analysis Commenced	: 11-Jan-2023
C-O-C number	: ----	Issue Date	: 18-Jan-2023 12:30
Sampler	: CLIENT		
Site	: ----		
Quote number	: Water Testing		
No. of samples received	: 4		
No. of samples analysed	: 4		

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

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*
Amanda Ganouri-Lumsden	Department Manager - Microbiology and Prep	Microbiology, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Organics, Waterloo, Ontario

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	*Description*
CFU/100mL	colony forming units per hundred millilitres
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
BODL	*Limit of Reporting for BOD was increased to account for the largest volume of sample tested.*
PEHT	*Parameter exceeded recommended holding time prior to analysis.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	XL CYCLE-LET GEN CHEM AND O&G	XL-CYCLE-LET FAECAL A	XL-CYCLE-LET FAECAL B	XL-CYCLE-LET FAECAL C	----
					Client sampling date / time	30-Dec-2022 11:00	30-Dec-2022 11:00	30-Dec-2022 11:00	30-Dec-2022 11:00	----
						WT2300689-001	WT2300689-002	WT2300689-003	WT2300689-004	--------
						Result	Result	Result	Result	----
Physical Tests										
pH	----	E108	0.10	pH units		8.04	----	----	----	----
Solids, total suspended [TSS]	----	E160	3.0	mg/L		<3.0	----	----	----	----
Microbiological Tests										
Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL		----	32	42	Not Detected	----
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550	2.0	mg/L		<3.0 BODL PEHT	----	----	----	----
Oil & grease (gravimetric)	----	E567	5.0	mg/L		<5.0	----	----	----	----
Oil & grease, animal/vegetable (gravimetric)	----	EC567A.SG	5.0	mg/L		<5.0	----	----	----	----
Oil & grease, mineral (gravimetric)	----	E567SG	5.0	mg/L		<5.0	----	----	----	----

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

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **WT2300689**	Page	: 1 of 4
Client	: NASITTUQ CORPORATION	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 11-Jan-2023 09:10
PO	: ----	Date Analysis Commenced	: 11-Jan-2023
C-O-C number	: ----	Issue Date	: 18-Jan-2023 12:29
Sampler	: CLIENT 613 223 0629		
Site	: ----		
Quote number	: Water Testing		
No. of samples received	: 4		
No. of samples analysed	: 4		

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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

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*
Amanda Ganouri-Lumsden	Department Manager - Microbiology and Prep	Waterloo Microbiology, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Waterloo Organics, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 799556)											
WT2300656-003	Anonymous	pH	----	E108	0.10	pH units	7.78	7.77	0.129%	4%	----
Physical Tests (QC Lot: 803335)											
WT2300516-001	Anonymous	Solids, total suspended [TSS]	----	E160	15.0	mg/L	<15.0	<15.0	0	Diff <2x LOR	----
Microbiological Tests (QC Lot: 800376)											
WT2300735-004	Anonymous	Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	35	23	41.4%	65%	----
Aggregate Organics (QC Lot: 799324)											
WT2300623-001	Anonymous	Biochemical oxygen demand [BOD]	----	E550	3.0	mg/L	<3.0	<3.0	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 803335)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Microbiological Tests (QCLot: 800376)						
Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	<1	----
Aggregate Organics (QCLot: 799324)						
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	<2.0	----
Aggregate Organics (QCLot: 801281)						
Oil & grease (gravimetric)	----	E567	5	mg/L	<5.0	----
Aggregate Organics (QCLot: 801282)						
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	<5.0	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 799556)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 803335)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	93.7	85.0	115	----
Aggregate Organics (QCLot: 799324)									
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	198 mg/L	95.5	85.0	115	----
Aggregate Organics (QCLot: 801281)									
Oil & grease (gravimetric)	----	E567	5	mg/L	200 mg/L	108	70.0	130	----
Aggregate Organics (QCLot: 801282)									
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	100 mg/L	99.9	70.0	130	----

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2300689**	Page	: 1 of 6
Client	: **NASITTUQ CORPORATION**	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 11-Jan-2023 09:10
PO	: ----	Issue Date	: 18-Jan-2023 12:28
C-O-C number	: ----		
Sampler	: CLIENT		
Site	: ----		
Quote number	: Water Testing		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
XL CYCLE-LET GEN CHEM AND O&G	E550	30-Dec-2022	----	----	----		11-Jan-2023	4 days	12 days	✗ EHTR
Aggregate Organics : Mineral Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid)										
XL CYCLE-LET GEN CHEM AND O&G	E567SG	30-Dec-2022	13-Jan-2023	28 days	14 days	✓	13-Jan-2023	40 days	0 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid)										
XL CYCLE-LET GEN CHEM AND O&G	E567	30-Dec-2022	13-Jan-2023	28 days	14 days	✓	13-Jan-2023	40 days	0 days	✓
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate)										
XL-CYCLE-LET FAECAL A	E012.FC	30-Dec-2022	----	----	----		12-Jan-2023	30 hrs	308 hrs	✗ EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate)										
XL-CYCLE-LET FAECAL B	E012.FC	30-Dec-2022	----	----	----		12-Jan-2023	30 hrs	308 hrs	✗ EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate)										
XL-CYCLE-LET FAECAL C	E012.FC	30-Dec-2022	----	----	----		12-Jan-2023	30 hrs	308 hrs	✗ EHTR
Physical Tests : pH by Meter										
HDPE [ON MECP]										
XL CYCLE-LET GEN CHEM AND O&G	E108	30-Dec-2022	11-Jan-2023	----	----		12-Jan-2023	14 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
XL CYCLE-LET GEN CHEM AND O&G	E160	30-Dec-2022	----	----	----		16-Jan-2023	7 days	17 days	× EHTR

Legend & Qualifier Definitions

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Biochemical Oxygen Demand - 5 day	E550	799324	1	13	7.6	5.0	✓
pH by Meter	E108	799556	1	9	11.1	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	800376	1	12	8.3	5.0	✓
TSS by Gravimetry	E160	803335	1	15	6.6	4.7	✓
Laboratory Control Samples (LCS)							
Biochemical Oxygen Demand - 5 day	E550	799324	1	13	7.6	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	801282	1	8	12.5	5.0	✓
Oil & Grease by Gravimetry	E567	801281	1	9	11.1	5.0	✓
pH by Meter	E108	799556	1	9	11.1	5.0	✓
TSS by Gravimetry	E160	803335	1	15	6.6	4.7	✓
Method Blanks (MB)							
Biochemical Oxygen Demand - 5 day	E550	799324	1	13	7.6	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	801282	1	8	12.5	5.0	✓
Oil & Grease by Gravimetry	E567	801281	1	9	11.1	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	800376	1	12	8.3	5.0	✓
TSS by Gravimetry	E160	803335	1	15	6.6	4.7	✓

Methodology References and Summaries

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. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC Waterloo - Environmental	Water	APHA 9222 D (mod)	Following filtration (0.45 µm), and incubation at 44.5 ±0.2°C for 22-26 hours, colonies exhibiting characteristic morphology of the target organism are enumerated and confirmed.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Biochemical Oxygen Demand - 5 day	E550 Waterloo - Environmental	Water	APHA 5210 B (mod)	Samples are diluted and incubated for a specified time period, after which the oxygen depletion is measured using a dissolved oxygen meter. Free chlorine is a negative interference in the BOD method; please advise ALS when free chlorine is present in samples.
Oil & Grease by Gravimetry	E567 Waterloo - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane and the extract is evaporated to dryness. The residue is then weighed to determine Oil and Grease.
Mineral Oil & Grease by Gravimetry	E567SG Waterloo - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane, followed by silica gel treatment after which the extract is evaporated to dryness. The residue is then weighed to determine Mineral Oil and Grease.
Animal & Vegetable Oil & Grease by Gravimetry	EC567A.SG Waterloo - Environmental	Water	APHA 5520 (mod)	Animal & vegetable oil and grease is calculated as follows: Oil & Grease (gravimetric) minus Mineral Oil & Grease (gravimetric)

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Oil & Grease Extraction for Gravimetry	EP567 Waterloo - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane by liquid-liquid extraction.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: P

Environmental Division Waterloo

Work Order Reference WT2300689

Telephone : +1 519 886 6910

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time
Company:	Nasittuq Corp	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - busines
Contact:	Alaina Leslie	Quality Control (QC) Report with Report ☑ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surc
Address:	275 Slater St	☑ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 bus. days if received by 3pm) 100%
	Ottawa ON K1P 5H9	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - contact ALS to c
Phone:	613-223-0629	Email 1 or Fax alaina.leslie@nasittuq.com	Specify Date Required for E2,E or P:
		Email 2 labresults@nasittuq.com	Analysis Reque
Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax labresults@nasittuq.com	
Contact:		Email 2 naccounting@nasittuq.com	
Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q89840	Approver ID: / Cost Center:	
Job #:	NWS Sewage FOX-M	GL Account: / Routing Code:	
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)	WT2300689	ALS Contact: E. Dobbin	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD, pH, TSS	O&G	Faecal Coliforms	Number of Containers
	XL Cycle-let Gen Chem and O&G	30 DEC 22	11:00	Effluent	R	R		3
	XL - Cycle-let Faecal A	30 DEC 22	11:00	Effluent			R	1
	XL - Cycle-let Faecal B	30 DEC 22	11:00	Effluent			R	1
	XL - Cycle-let Faecal C	30 DEC 22	11:00	Effluent			R	1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	NWS Nunavut Water Board Licence Criteria
Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice packs Yes ☑ No ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
1.3			4.8		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: THOMAS STITT	Date: 30 DEC 22	Time: 12:59	Received by:	Date: 11/01/23	Time: 10:30	Received by:	Date: 11 JAN 23	Time: 9:10

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ALS FM 0026a v29 Front04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

OGG - 357; GC - 306; B - 396.

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: **WT2305530**	Page	: 1 of 5
Client	: **NASITTUQ CORPORATION**	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 07-Mar-2023 09:15
PO	: ----	Date Analysis Commenced	: 08-Mar-2023
C-O-C number	: ----	Issue Date	: 16-Mar-2023 17:17
Sampler	: CLIENT		
Site	: ----		
Quote number	: Water Testing		
No. of samples received	: 4		
No. of samples analysed	: 4		

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*
Amanda Ganouri-Lumsden	Department Manager - Microbiology and Prep	Microbiology, Waterloo, Ontario
Cynthia Bauer	Organic Supervisor	Organics, Calgary, Alberta
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Rosalie Van Deelen	Laboratory Assistant	Organics, Calgary, Alberta

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).

Unit	*Description*
CFU/100mL	
mg/L	milligrams per litre
pH units	pH units

>: greater than.
<: less than.
Red shading is applied where the result is greater than the Guideline Upper Limit or the result is lower than the Guideline Lower Limit.
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
PEHR	Parameter exceeded recommended holding time on receipt: Proceeded with analysis as requested.
PEHT	Parameter exceeded recommended holding time prior to analysis.

Analytical Results Evaluation

Matrix: **Water**

Analyte	CAS Number	Unit	Client sample ID	XL-CYCLE-LET GEN CHEM AND O&G	XL-CYCLE-LET FAECAL A	XL-CYCLE-LET FAECALB	XL-CYCLE-LET FAECAL C	----	----	----
			Sampling date/time	28-Feb-2023 09:00	28-Feb-2023 09:00	28-Feb-2023 09:00	28-Feb-2023 09:00	----	----	----
			Sub-Matrix	Water	Water	Water	Water	----	----	----
				WT2305530-001	WT2305530-002	WT2305530-003	WT2305530-004	--------	--------	--------
Physical Tests										
pH	----	pH units		7.80	----	----	----	----	----	----
Solids, total suspended [TSS]	----	mg/L		<3.0	----	----	----	----	----	----
Microbiological Tests										
Coliforms, thermotolerant [fecal]	----	CFU/100mL		----	2 PEHR	2 PEHR	1 PEHR	----	----	----
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	mg/L		6.0 PEHT	----	----	----	----	----	----
Oil & grease (gravimetric)	----	mg/L		<5.0	----	----	----	----	----	----
Oil & grease, animal/vegetable (gravimetric)	----	mg/L		<5.0	----	----	----	----	----	----
Oil & grease, mineral (gravimetric)	----	mg/L		<5.0	----	----	----	----	----	----

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

Summary of Guideline Limits

Analyte	CAS Number	Unit	NVBIM MDMER Schedule 4: Authorized Limits of Deleterious Substances in Grab Samples	NVBIM T10	NVBIM T11	NVBIM T4	NVBIM T5	NVBIM T6	NVBIM T7
Physical Tests									
pH	----	pH units	6 - 9.5 pH units	6 - 9.5 pH units	6 - 9.5 pH units	6 - 9.5 pH units	6 - 9.5 pH units	6 - 9.5 pH units	6 - 9.5 pH units
Solids, total suspended [TSS]	----	mg/L	30 mg/L	15 mg/L	30 mg/L	35 mg/L	120 mg/L	35 mg/L	15 mg/L
Microbiological Tests									
Coliforms, thermotolerant [fecal]	----	CFU/100mL				1000 CFU/100mL	10000 CFU/100mL		
Aggregate Organics									
Biochemical oxygen demand [BOD]	----	mg/L				30 mg/L	100 mg/L		
Oil & grease (gravimetric)	----	mg/L						15 mg/L	
Oil & grease, animal/vegetable (gravimetric)	----	mg/L							
Oil & grease, mineral (gravimetric)	----	mg/L							

Analyte	CAS Number	Unit	NVBIM T8	NVBIM T9	NWS Sewage Limits
Physical Tests					
pH	----	pH units		6 - 9.5 pH units	6 - 9 pH units
Solids, total suspended [TSS]	----	mg/L		15 mg/L	180 mg/L
Microbiological Tests					
Coliforms, thermotolerant [fecal]	----	CFU/100mL			10000 CFU/100mL
Aggregate Organics					
Biochemical oxygen demand [BOD]	----	mg/L			120 mg/L
Oil & grease (gravimetric)	----	mg/L	15 mg/L	15 mg/L	
Oil & grease, animal/vegetable (gravimetric)	----	mg/L			
Oil & grease, mineral (gravimetric)	----	mg/L			

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

Key:

NVBIM	Nunavut - Baffinland Iron Mines Site Specific Guidelines
MDMER Schedule 4: Authorized Limits of Deleterious Substances in Grab Samples	MDMER Schedule 4
T10	Table 10 Effluent
T11	Table 11 Effluent
T4	Table 4 Effluent
T5	Table 5 Effluent
T6	Table 6 Effluent
T7	Table 7 Effluent
T8	Table 8 Effluent
T9	Table 9 Effluent

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **WT2305530**	Page	: 1 of 4
Client	: NASITTUQ CORPORATION	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 07-Mar-2023 09:15
PO	: ----	Date Analysis Commenced	: 08-Mar-2023
C-O-C number	: ----	Issue Date	: 16-Mar-2023 17:17
Sampler	: CLIENT 613 223 0629		
Site	: ----		
Quote number	: Water Testing		
No. of samples received	: 4		
No. of samples analysed	: 4		

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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

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*
Amanda Ganouri-Lumsden	Department Manager - Microbiology and Prep	Waterloo Microbiology, Waterloo, Ontario
Cynthia Bauer	Organic Supervisor	Calgary Organics, Calgary, Alberta
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Rosalie Van Deelen	Laboratory Assistant	Calgary Organics, Calgary, Alberta

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 856338)											
WT2305530-001	XL-CYCLE-LET GEN CHEM AND O&G	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 856790)											
WT2305578-005	Anonymous	pH	----	E108	0.10	pH units	8.27	8.16	1.34%	4%	----
Microbiological Tests (QC Lot: 856336)											
WT2305530-003	XL-CYCLE-LET FAECALB	Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	2	<1	1	Diff <2x LOR	----
Aggregate Organics (QC Lot: 856058)											
WT2305567-001	Anonymous	Biochemical oxygen demand [BOD]	----	E550	2.0	mg/L	<2.0	<2.0	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 856338)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Microbiological Tests (QCLot: 856336)						
Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	<1	----
Aggregate Organics (QCLot: 856058)						
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	<2.0	----
Aggregate Organics (QCLot: 863603)						
Oil & grease (gravimetric)	----	E567	5	mg/L	<5.0	----
Aggregate Organics (QCLot: 863604)						
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	<5.0	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 856338)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	86.5	85.0	115	----
Physical Tests (QCLot: 856790)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Aggregate Organics (QCLot: 856058)									
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	198 mg/L	96.3	85.0	115	----
Aggregate Organics (QCLot: 863603)									
Oil & grease (gravimetric)	----	E567	5	mg/L	100 mg/L	110	70.0	130	----
Aggregate Organics (QCLot: 863604)									
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	50 mg/L	97.1	70.0	130	----

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2305530**	Page	: 1 of 6
Client	: **NASITTUQ CORPORATION**	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 07-Mar-2023 09:15
PO	: ----	Issue Date	: 16-Mar-2023 17:17
C-O-C number	: ----		
Sampler	: CLIENT		
Site	: ----		
Quote number	: Water Testing		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
XL-CYCLE-LET GEN CHEM AND O&G	E550	28-Feb-2023	----	----	----		08-Mar-2023	4 days	8 days	✗ EHTR
Aggregate Organics : Mineral Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid)										
XL-CYCLE-LET GEN CHEM AND O&G	E567SG	28-Feb-2023	15-Mar-2023	28 days	15 days	✓	16-Mar-2023	40 days	1 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid)										
XL-CYCLE-LET GEN CHEM AND O&G	E567	28-Feb-2023	15-Mar-2023	28 days	15 days	✓	16-Mar-2023	40 days	1 days	✓
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP]										
XL-CYCLE-LET FAECAL A	E012.FC	28-Feb-2023	----	----	----		08-Mar-2023	48 hrs	196 hrs	✗ EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP]										
XL-CYCLE-LET FAECAL C	E012.FC	28-Feb-2023	----	----	----		08-Mar-2023	48 hrs	196 hrs	✗ EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP]										
XL-CYCLE-LET FAECALB	E012.FC	28-Feb-2023	----	----	----		08-Mar-2023	48 hrs	196 hrs	✗ EHTR
Physical Tests : pH by Meter										
HDPE [ON MECP]										
XL-CYCLE-LET GEN CHEM AND O&G	E108	28-Feb-2023	08-Mar-2023	----	----		12-Mar-2023	14 days	12 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
XL-CYCLE-LET GEN CHEM AND O&G	E160	28-Feb-2023	----	----	----		08-Mar-2023	7 days	8 days	× EHTL

Legend & Qualifier Definitions

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Biochemical Oxygen Demand - 5 day	E550	856058	1	20	5.0	5.0	✓
pH by Meter	E108	856790	1	17	5.8	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	856336	1	4	25.0	5.0	✓
TSS by Gravimetry	E160	856338	1	18	5.5	4.7	✓
Laboratory Control Samples (LCS)							
Biochemical Oxygen Demand - 5 day	E550	856058	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	863604	1	11	9.0	5.0	✓
Oil & Grease by Gravimetry	E567	863603	1	12	8.3	5.0	✓
pH by Meter	E108	856790	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	856338	1	18	5.5	4.7	✓
Method Blanks (MB)							
Biochemical Oxygen Demand - 5 day	E550	856058	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	863604	1	11	9.0	5.0	✓
Oil & Grease by Gravimetry	E567	863603	1	12	8.3	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	856336	1	4	25.0	5.0	✓
TSS by Gravimetry	E160	856338	1	18	5.5	4.7	✓

Methodology References and Summaries

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. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC Waterloo - Environmental	Water	APHA 9222 D (mod)	Following filtration (0.45 µm), and incubation at 44.5 ±0.2°C for 22-26 hours, colonies exhibiting characteristic morphology of the target organism are enumerated and confirmed.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Biochemical Oxygen Demand - 5 day	E550 Waterloo - Environmental	Water	APHA 5210 B (mod)	Samples are diluted and incubated for a specified time period, after which the oxygen depletion is measured using a dissolved oxygen meter. Free chlorine is a negative interference in the BOD method; please advise ALS when free chlorine is present in samples.
Oil & Grease by Gravimetry	E567 Calgary - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane and the extract is evaporated to dryness. The residue is then weighed to determine Oil and Grease.
Mineral Oil & Grease by Gravimetry	E567SG Calgary - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane, followed by silica gel treatment after which the extract is evaporated to dryness. The residue is then weighed to determine Mineral Oil and Grease.
Animal & Vegetable Oil & Grease by Gravimetry	EC567A.SG Calgary - Environmental	Water	APHA 5520 (mod)	Animal & vegetable oil and grease is calculated as follows: Oil & Grease (gravimetric) minus Mineral Oil & Grease (gravimetric)

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Oil & Grease Extraction for Gravimetry	EP567 Calgary - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane by liquid-liquid extraction.

TCN - 45986

WO 1028506

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 14 -

Page 1 of 1

Environmental Division Waterloo

Work Order Reference WT2305530

Telephone : +1 519 886 6910

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Nasittuq Corp	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business day
Contact:	Alaina Leslie	Quality Control (QC) Report with Report ☑ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharg
Address:	275 Slater St Ottawa ON K1P 5H9	☑ Criteria on Report - provide details below if box checked Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% sur E2 ☐ Same day or weekend emergency - contact ALS to confi
Phone:	613-223-0629	Email 1 or Fax alaina.leslie@nasittuq.com	Specify Date Required for E2,E or P:
		Email 2 labresults@nasittuq.com	

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution	Analysis Request
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Indicate Filtered (F), Preserved (P) or Filtered and Pres
Company:		Email 1 or Fax labresults@nasittuq.com	
Contact:		Email 2 naccounting@nasittuq.com	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q89840	Approver ID:	Cost Center:
Job #:	NWS Sewage FOX-M	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)	ALS Contact: E. Dobbin	Sampler: *

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD, pH, TSS	O&G	Faecal Coliforms								Number
	XL Cycle-let Gen Chem and O&G	*28-02-23	07:00	Effluent	R	R									3
	XL - Cycle-let Faecal A	*28-02-23	09:00	Effluent			R								1
	XL - Cycle-let Faecal B	*28:02-23	09:00	Effluent			R								1
	XL - Cycle-let Faecal C	*28-02-23	09:00	Effluent			R								1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	NWS Nunavut Water Board Licence Criteria
Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice packs Yes ☑ No ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
3.6	6.4

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: *	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Melissa	FEB. 28/23	9:00AM		3/1/23	9:15		03/08/23	@9:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326a v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GC-495, B-511

ALS Canada Ltd.

right solutions. right partner.

CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: **WT2309965**	Page	: 1 of 4
Client	: **NASITTUQ CORPORATION**	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 19-Apr-2023 13:30
PO	: ----	Date Analysis Commenced	: 20-Apr-2023
C-O-C number	: ----	Issue Date	: 27-Apr-2023 16:20
Sampler	: CLIENT		
Site	: ----		
Quote number	: Water Testing		
No. of samples received	: 4		
No. of samples analysed	: 4		

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*
Amanda Ganouri-Lumsden	Department Manager - Microbiology and Prep	Microbiology, Waterloo, Ontario
Rosalie Van Deelen	Laboratory Assistant	Organics, Calgary, Alberta
Victoria Piguing	Laboratory Analyst	Organics, Calgary, Alberta
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Waterloo, Ontario

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).

Unit	*Description*
CFU/100mL	
mg/L	milligrams per litre
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.

Analytical Results Evaluation

Matrix: **Water**

Analyte	CAS Number	Unit	Client sample ID	XL CYCLE-LET GEN CHEM AND O&G	XL-CYCLE-LET FAECAL A	XL-CYCLE-LET FAECAL B	XL-CYCLE-LET FAECAL C	----	----	----
			Sampling date/time	19-Apr-2023 09:25	19-Apr-2023 09:25	19-Apr-2023 09:25	19-Apr-2023 09:25	----	----	----
			Sub-Matrix	Water	Water	Water	Water	----	----	----
				WT2309965-001	WT2309965-002	WT2309965-003	WT2309965-004	--------	--------	--------
Physical Tests										
pH	----	pH units		8.31	----	----	----	----	----	----
Solids, total suspended [TSS]	----	mg/L		<3.0	----	----	----	----	----	----
Microbiological Tests										
Coliforms, thermotolerant [fecal]	----	CFU/100mL		----	Not Detected	Not Detected	Not Detected	----	----	----
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	mg/L		4.9	----	----	----	----	----	----
Oil & grease (gravimetric)	----	mg/L		<5.0	----	----	----	----	----	----
Oil & grease, animal/vegetable (gravimetric)	----	mg/L		<5.0	----	----	----	----	----	----
Oil & grease, mineral (gravimetric)	----	mg/L		<5.0	----	----	----	----	----	----

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

Summary of Guideline Limits

Analyte	CAS Number	Unit	NWS Sewage Limits						
Physical Tests									
pH	----	pH units	**6 - 9 pH units**						
Solids, total suspended [TSS]	----	mg/L	**180 mg/L**						
Microbiological Tests									
Coliforms, thermotolerant [fecal]	----	CFU/100mL	**10000 CFU/100mL**						
Aggregate Organics									
Biochemical oxygen demand [BOD]	----	mg/L	**120 mg/L**						
Oil & grease (gravimetric)	----	mg/L							
Oil & grease, animal/vegetable (gravimetric)	----	mg/L							
Oil & grease, mineral (gravimetric)	----	mg/L							

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

QUALITY CONTROL REPORT

Work Order	: **WT2309965**	Page	: 1 of 4
Client	: NASITTUQ CORPORATION	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 19-Apr-2023 13:30
PO	: ----	Date Analysis Commenced	: 20-Apr-2023
C-O-C number	: ----	Issue Date	: 27-Apr-2023 16:20
Sampler	: CLIENT 613 223 0629		
Site	: ----		
Quote number	: Water Testing		
No. of samples received	: 4		
No. of samples analysed	: 4		

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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

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*
Amanda Ganouri-Lumsden	Department Manager - Microbiology and Prep	Waterloo Microbiology, Waterloo, Ontario
Rosalie Van Deelen	Laboratory Assistant	Calgary Organics, Calgary, Alberta
Victoria Piguing	Laboratory Analyst	Calgary Organics, Calgary, Alberta
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 904844)											
WT2309633-002	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	12.6	13.0	0.4	Diff <2x LOR	----
Physical Tests (QC Lot: 908397)											
WT2309978-001	Anonymous	pH	----	E108	0.10	pH units	8.26	8.12	1.71%	4%	----
Microbiological Tests (QC Lot: 905801)											
WT2309995-003	Anonymous	Coliforms, thermotolerant [fecal]	----	E012.FC	10	CFU/100mL	90	70	25.0%	65%	----
Aggregate Organics (QC Lot: 904386)											
WT2309939-001	Anonymous	Biochemical oxygen demand [BOD]	----	E550	3.0	mg/L	<3.0	<3.0	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 904844)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Microbiological Tests (QCLot: 905801)						
Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	<1	----
Aggregate Organics (QCLot: 904386)						
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	<2.0	----
Aggregate Organics (QCLot: 910134)						
Oil & grease (gravimetric)	----	E567	5	mg/L	<5.0	----
Aggregate Organics (QCLot: 910135)						
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	<5.0	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 904844)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	91.0	85.0	115	----
Physical Tests (QCLot: 908397)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Aggregate Organics (QCLot: 904386)									
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	198 mg/L	110	85.0	115	----
Aggregate Organics (QCLot: 910134)									
Oil & grease (gravimetric)	----	E567	5	mg/L	100 mg/L	77.5	70.0	130	----
Aggregate Organics (QCLot: 910135)									
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	50 mg/L	76.6	70.0	130	----

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2309965**	Page	: 1 of 6
Client	: **NASITTUQ CORPORATION**	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 19-Apr-2023 13:30
PO	: ----	Issue Date	: 27-Apr-2023 16:19
C-O-C number	: ----		
Sampler	: CLIENT		
Site	: ----		
Quote number	: Water Testing		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] XL CYCLE-LET GEN CHEM AND O&G	E550	19-Apr-2023	----	----	----		20-Apr-2023	4 days	1 days	✓
Aggregate Organics : Mineral Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) XL CYCLE-LET GEN CHEM AND O&G	E567SG	19-Apr-2023	26-Apr-2023	28 days	7 days	✓	26-Apr-2023	40 days	0 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) XL CYCLE-LET GEN CHEM AND O&G	E567	19-Apr-2023	26-Apr-2023	28 days	7 days	✓	26-Apr-2023	40 days	0 days	✓
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL-CYCLE-LET FAECAL A	E012.FC	19-Apr-2023	----	----	----		21-Apr-2023	48 hrs	46 hrs	✓
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL-CYCLE-LET FAECAL B	E012.FC	19-Apr-2023	----	----	----		21-Apr-2023	48 hrs	46 hrs	✓
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL-CYCLE-LET FAECAL C	E012.FC	19-Apr-2023	----	----	----		21-Apr-2023	48 hrs	46 hrs	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] XL CYCLE-LET GEN CHEM AND O&G	E108	19-Apr-2023	24-Apr-2023	----	----		24-Apr-2023	14 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
XL CYCLE-LET GEN CHEM AND O&G	E160	19-Apr-2023	----	----	----		20-Apr-2023	7 days	1 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Biochemical Oxygen Demand - 5 day	E550	904386	1	20	5.0	5.0	✓
pH by Meter	E108	908397	1	19	5.2	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	905801	1	7	14.2	5.0	✓
TSS by Gravimetry	E160	904844	1	17	5.8	4.7	✓
Laboratory Control Samples (LCS)							
Biochemical Oxygen Demand - 5 day	E550	904386	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	910135	1	17	5.8	5.0	✓
Oil & Grease by Gravimetry	E567	910134	1	20	5.0	5.0	✓
pH by Meter	E108	908397	1	19	5.2	5.0	✓
TSS by Gravimetry	E160	904844	1	17	5.8	4.7	✓
Method Blanks (MB)							
Biochemical Oxygen Demand - 5 day	E550	904386	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	910135	1	17	5.8	5.0	✓
Oil & Grease by Gravimetry	E567	910134	1	20	5.0	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	905801	1	7	14.2	5.0	✓
TSS by Gravimetry	E160	904844	1	17	5.8	4.7	✓

Methodology References and Summaries

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. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC Waterloo - Environmental	Water	APHA 9222 D (mod)	Following filtration (0.45 µm), and incubation at 44.5 ±0.2°C for 22-26 hours, colonies exhibiting characteristic morphology of the target organism are enumerated and confirmed.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Biochemical Oxygen Demand - 5 day	E550 Waterloo - Environmental	Water	APHA 5210 B (mod)	Samples are diluted and incubated for a specified time period, after which the oxygen depletion is measured using a dissolved oxygen meter. Free chlorine is a negative interference in the BOD method; please advise ALS when free chlorine is present in samples.
Oil & Grease by Gravimetry	E567 Calgary - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane and the extract is evaporated to dryness. The residue is then weighed to determine Oil and Grease.
Mineral Oil & Grease by Gravimetry	E567SG Calgary - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane, followed by silica gel treatment after which the extract is evaporated to dryness. The residue is then weighed to determine Mineral Oil and Grease.
Animal & Vegetable Oil & Grease by Gravimetry	EC567A.SG Calgary - Environmental	Water	APHA 5520 (mod)	Animal & vegetable oil and grease is calculated as follows: Oil & Grease (gravimetric) minus Mineral Oil & Grease (gravimetric)

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Oil & Grease Extraction for Gravimetry	EP567 Calgary - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane by liquid-liquid extraction.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 14 -

Page 1 of 1

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Nasittuq Corp	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Alaina Leslie	Quality Control (QC) Report with Report ☑ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	275 Slater St Ottawa ON K1P 5H9	☑ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge
		Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - con
Phone:	613-223-0629	Email 1 or Fax alaina.leslie@nasittuq.com	Specify Date Required for E2,E or P:
		Email 2 labresults@nasittuq.com	Analy
Invoice To	Same as Report To ☑ Yes ☐ No	Invoice Distribution	Indicate Filtered (F), Preserved (P) or Fil
	Copy of Invoice with Report ☑ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax labresults@nasittuq.com	
Contact:		Email 2 naccounting@nasittuq.com	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q89840	Approver ID:	Cost Center:
Job #:	NWS Sewage FOX-M	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only): WT2309965 | ALS Contact: E. Dobbin | Sampler: *

Environmental Division Waterloo
Work Order Reference
WT2309965

Telephone : +1 519 886 6910

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD, pH, TSS	O&G	Faecal Coliforms										
	XL Cycle-let Gen Chem and O&G	14-Apr-23	9:25am	Effluent	R	R											3
	XL - Cycle-let Faecal A	*		Effluent			R										1
	XL - Cycle-let Faecal B	*		Effluent			R										1
	XL - Cycle-let Faecal C	*		Effluent			R										1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	NWS Nunavut Water Board Licence Criteria
Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice packs Yes ☒ No ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
3.8	8.6

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	14-Apr-23	9:25		14/4/23	13:30	AP	20-APR-23	9:15

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

B606 GC709 OGG-487

CERTIFICATE OF ANALYSIS

Work Order	: **WT2315549**	Page	: 1 of 3
Client	: **NASITTUQ CORPORATION**	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 02-Jun-2023 09:40
PO	: ----	Date Analysis Commenced	: 03-Jun-2023
C-O-C number	: ----	Issue Date	: 12-Jun-2023 13:28
Sampler	: ----		
Site	: ----		
Quote number	: Water - PCB in Oil Testing		
No. of samples received	: 4		
No. of samples analysed	: 4		

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

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*
Jeremy Gingras	Team Leader - Semi-Volatile Instrumentation	Organics, Waterloo, Ontario
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Organics, Waterloo, Ontario
Sophia Magon	Lab Assistant	Microbiology, Waterloo, Ontario
Wayne Smith	Client Services Specialist	Inorganics, Waterloo, Ontario

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	*Description*
CFU/100mL	colony forming units per hundred millilitres
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

No Sample date or times written on the chain of custody. Followed sampling date and time on bottles.

Qualifiers

Qualifier	*Description*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*
PEHR	*Parameter exceeded recommended holding time on receipt: Proceeded with analysis as requested.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	XL-CYCLE-LET GEN CHEM AND O&G	XL-CYCLE-LET FAECAL A	XL-CYCLE-LET FAECAL B	XL-CYCLE-LET FAECAL C	----
					Client sampling date / time	29-May-2023 09:00	29-May-2023 09:00	29-May-2023 09:00	29-May-2023 09:00	----
						WT2315549-001	WT2315549-002	WT2315549-003	WT2315549-004	--------
						Result	Result	Result	Result	----
Physical Tests										
pH	----	E108/WT	0.10	pH units		8.40	----	----	----	----
Solids, total suspended [TSS]	----	E160/WT	3.0	mg/L		<3.0	----	----	----	----
Microbiological Tests										
Coliforms, thermotolerant [fecal]	----	E012.FC/WT	1	CFU/100mL		----	----	Not Detected PEHR	Not Detected PEHR	----
Coliforms, thermotolerant [fecal]	----	E012.FC/WT	1	CFU/100mL		----	Not Detected DLM, PEHR	----	----	----
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/WT	2.0	mg/L		4.3 PEHR	----	----	----	----
Oil & grease (gravimetric)	----	E567/WT	5.0	mg/L		<5.0	----	----	----	----
Oil & grease, animal/vegetable (gravimetric)	----	EC567A.SG/WT	5.0	mg/L		<5.0	----	----	----	----
Oil & grease, mineral (gravimetric)	----	E567SG/WT	5.0	mg/L		<5.0	----	----	----	----

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.

QUALITY CONTROL REPORT

Work Order	: **WT2315549**	Page	: 1 of 4
Client	: NASITTUQ CORPORATION	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 02-Jun-2023 09:40
PO	: ----	Date Analysis Commenced	: 03-Jun-2023
C-O-C number	: ----	Issue Date	: 12-Jun-2023 13:21
Sampler	: ---- 613 223 0629		
Site	: ----		
Quote number	: Water - PCB in Oil Testing		
No. of samples received	: 4		
No. of samples analysed	: 4		

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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

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*
Jeremy Gingras	Team Leader - Semi-Volatile Instrumentation	Waterloo Organics, Waterloo, Ontario
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Waterloo Organics, Waterloo, Ontario
Sophia Magon	Lab Assistant	Waterloo Microbiology, Waterloo, Ontario
Wayne Smith	Client Services Specialist	Waterloo Inorganics, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 971119)											
HA2300243-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	4.7	5.1	0.4	Diff <2x LOR	----
Physical Tests (QC Lot: 975988)											
WT2315735-017	Anonymous	pH	----	E108	0.10	pH units	7.35	7.27	1.09%	4%	----
Microbiological Tests (QC Lot: 972575)											
WT2315549-002	XL-CYCLE-LET FAECAL A	Coliforms, thermotolerant [fecal]	----	E012.FC	10	CFU/100mL	<10	<10	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 971018)											
WT2315501-012	Anonymous	Biochemical oxygen demand [BOD]	----	E550	3.0	mg/L	<3.0	<3.0	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 971119)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Microbiological Tests (QCLot: 972575)						
Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	<1	----
Aggregate Organics (QCLot: 971018)						
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	<2.0	----
Aggregate Organics (QCLot: 972410)						
Oil & grease (gravimetric)	----	E567	5	mg/L	<5.0	----
Aggregate Organics (QCLot: 972411)						
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	<5.0	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 971119)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	93.5	85.0	115	----
Physical Tests (QCLot: 975988)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Aggregate Organics (QCLot: 971018)									
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	198 mg/L	91.3	85.0	115	----
Aggregate Organics (QCLot: 972410)									
Oil & grease (gravimetric)	----	E567	5	mg/L	200 mg/L	87.6	70.0	130	----
Aggregate Organics (QCLot: 972411)									
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	100 mg/L	84.3	70.0	130	----

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2315549**	Page	: 1 of 6
Client	: **NASITTUQ CORPORATION**	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 02-Jun-2023 09:40
PO	: ----	Issue Date	: 12-Jun-2023 13:20
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: Water - PCB in Oil Testing		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [ON MECP] XL-CYCLE-LET GEN CHEM AND O&G	E550	29-May-2023	----	----	----		03-Jun-2023	4 days	5 days	× EHTL
Aggregate Organics : Mineral Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) XL-CYCLE-LET GEN CHEM AND O&G	E567SG	29-May-2023	06-Jun-2023	28 days	8 days	✓	06-Jun-2023	40 days	0 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) XL-CYCLE-LET GEN CHEM AND O&G	E567	29-May-2023	06-Jun-2023	28 days	8 days	✓	06-Jun-2023	40 days	0 days	✓
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL-CYCLE-LET FAECAL A	E012.FC	29-May-2023	----	----	----		05-Jun-2023	48 hrs	172 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL-CYCLE-LET FAECAL B	E012.FC	29-May-2023	----	----	----		05-Jun-2023	48 hrs	172 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL-CYCLE-LET FAECAL C	E012.FC	29-May-2023	----	----	----		05-Jun-2023	48 hrs	172 hrs	× EHTR
Physical Tests : pH by Meter										
HDPE [ON MECP] XL-CYCLE-LET GEN CHEM AND O&G	E108	29-May-2023	07-Jun-2023	----	----		09-Jun-2023	14 days	11 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
XL-CYCLE-LET GEN CHEM AND O&G	E160	29-May-2023	----	----	----		04-Jun-2023	7 days	6 days	✓

Legend & Qualifier Definitions

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Biochemical Oxygen Demand - 5 day	E550	971018	1	20	5.0	5.0	✓
pH by Meter	E108	975988	1	19	5.2	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	972575	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	971119	1	19	5.2	4.7	✓
Laboratory Control Samples (LCS)							
Biochemical Oxygen Demand - 5 day	E550	971018	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	972411	1	9	11.1	5.0	✓
Oil & Grease by Gravimetry	E567	972410	1	19	5.2	5.0	✓
pH by Meter	E108	975988	1	19	5.2	5.0	✓
TSS by Gravimetry	E160	971119	1	19	5.2	4.7	✓
Method Blanks (MB)							
Biochemical Oxygen Demand - 5 day	E550	971018	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	972411	1	9	11.1	5.0	✓
Oil & Grease by Gravimetry	E567	972410	1	19	5.2	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	972575	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	971119	1	19	5.2	4.7	✓

Methodology References and Summaries

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. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC Waterloo - Environmental	Water	APHA 9222 D (mod)	Following filtration (0.45 µm), and incubation at 44.5 ±0.2°C for 22-26 hours, colonies exhibiting characteristic morphology of the target organism are enumerated and confirmed.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Biochemical Oxygen Demand - 5 day	E550 Waterloo - Environmental	Water	APHA 5210 B (mod)	Samples are diluted and incubated for a specified time period, after which the oxygen depletion is measured using a dissolved oxygen meter. Free chlorine is a negative interference in the BOD method; please advise ALS when free chlorine is present in samples.
Oil & Grease by Gravimetry	E567 Waterloo - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane and the extract is evaporated to dryness. The residue is then weighed to determine Oil and Grease.
Mineral Oil & Grease by Gravimetry	E567SG Waterloo - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane, followed by silica gel treatment after which the extract is evaporated to dryness. The residue is then weighed to determine Mineral Oil and Grease.
Animal & Vegetable Oil & Grease by Gravimetry	EC567A.SG Waterloo - Environmental	Water	APHA 5520 (mod)	Animal & vegetable oil and grease is calculated as follows: Oil & Grease (gravimetric) minus Mineral Oil & Grease (gravimetric)

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Oil & Grease Extraction for Gravimetry	EP567 Waterloo - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane by liquid-liquid extraction.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 14

Page

Environmental Division Waterloo

Work Order Reference WT2315549

Telephone : +1 519 886 6910

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is
Company:	Nasittuq Corp	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Alaina Leslie	Quality Control (QC) Report with Report ☑ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - cı
Address:	275 Slater St Ottawa ON K1P 5H9	☑ Criteria on Report - provide details below if box checked Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharc
Phone:	613-223-0629	Email 1 or Fax alaina.leslie@nasittuq.com	E2 ☐ Same day or weekend emergency - contact ALS to confirm TA
		Email 2 labresults@nasittuq.com	Specify Date Required for E2,E or P:

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution	Analysis Request
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
Company:		Email 1 or Fax labresults@nasittuq.com	
Contact:		Email 2 naccounting@nasittuq.com	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q89840	Approver ID:	Cost Center:
Job #:	NWS Sewage FOX-M	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)		ALS Contact: E. Dobbin	Sampler: *

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD, pH, TSS	O&G	Faecal Coliforms	Number of Containers
	XL Cycle-let Gen Chem and O&G	*		Effluent	R	R		3
	XL - Cycle-let Faecal A	*		Effluent			R	1
	XL - Cycle-let Faecal B	*		Effluent			R	1
	XL - Cycle-let Faecal C	*		Effluent			R	1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No Are samples for human drinking water use? ☐ Yes ☑ No	NWS Nunavut Water Board Licence Criteria

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐
Ice packs	Yes ☑	No ☐	Custody seal intact	Yes ☐ No ☐
Cooling Initiated	☐			

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
25.2			18.5		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: *	Date:	Time:	Received by: LR	Date: 06/02/23	Time: 9:40	Received by: EC	Date: Jun 3/23	Time: 12:20

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

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GC-991

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CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: **WT2316492**	Page	: 1 of 4
Amendment	: **1**		
Client	: **NASITTUQ CORPORATION**	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 09-Jun-2023 09:50
PO	: ----	Date Analysis Commenced	: 10-Jun-2023
C-O-C number	: ----	Issue Date	: 16-Jun-2023 16:42
Sampler	: Alex Kelly		
Site	: ----		
Quote number	: Water Testing - SOA 2022-2024		
No. of samples received	: 4		
No. of samples analysed	: 4		

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*
Jocelyn Kennedy	Department Manager - Semi-Volatile Organics	Organics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Inorganics, Waterloo, Ontario
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Organics, Waterloo, Ontario
Ruby Sujeepan		Microbiology, Waterloo, Ontario

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).

Unit	*Description*
CFU/100mL	
mg/L	
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.

Workorder Comments

Samples Faecal A, B, and C: Exceeded Recommended Holding Time prior to receipt at the lab for Microbiology analysis.

Amendment (16/6/2023): This report has been amended to allow the distribution of an Electronic Data Deliverable (EDD) not previously provided. All analysis results are as per the previous report.

Qualifiers

Qualifier	Description
BODL	Limit of Reporting for BOD was increased to account for the largest volume of sample tested.

Analytical Results Evaluation

Matrix: **Water**

Analyte	CAS Number	Method/Lab	Unit	Client sample ID	XL Cycle-let Gen Chem and O&G	XL - Cycle-let Faecal A	XL - Cycle-let Faecal B	XL - Cycle-let Faecal C	----	----	----
				Sampling date/time	06-Jun-2023 08:30	06-Jun-2023 08:30	06-Jun-2023 08:30	06-Jun-2023 08:30	----	----	----
				Sub-Matrix	Water	Water	Water	Water	----	----	----
					WT2316492-001	WT2316492-002	WT2316492-003	WT2316492-004	--------	--------	--------
Physical Tests											
pH	----	E108/WT			8.27	----	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/WT	mg/L		<3.0	----	----	----	----	----	----
Microbiological Tests											
Coliforms, thermotolerant [fecal]	----	E012.FC/WT			----	Not Detected	Not Detected	Not Detected	----	----	----
Aggregate Organics											
Biochemical oxygen demand [BOD]	----	E550/WT	mg/L		<3.0 BODL	----	----	----	----	----	----
Oil & grease (gravimetric)	----	E567/WT			<5.0	----	----	----	----	----	----
Oil & grease, animal/vegetable (gravimetric)	----	EC567A.SG/WT	mg/L		<5.0	----	----	----	----	----	----
Oil & grease, mineral (gravimetric)	----	E567SG/WT			<5.0	----	----	----	----	----	----

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.

Summary of Guideline Limits

Analyte	*CAS Number*	*Unit*	**NWS Sewage Limits**
Physical Tests			
pH	----	pH units	**6 - 9 pH units**
Solids, total suspended [TSS]	----	mg/L	**180 mg/L**
Microbiological Tests			
Coliforms, thermotolerant [fecal]	----	CFU/100mL	**10000 CFU/100mL**
Aggregate Organics			
Biochemical oxygen demand [BOD]	----	mg/L	**120 mg/L**
Oil & grease (gravimetric)	----	mg/L	**--**
Oil & grease, animal/vegetable (gravimetric)	----	mg/L	**--**
Oil & grease, mineral (gravimetric)	----	mg/L	**--**

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

Key:

NWS Sewage Limits NWS Sewage Limits

NWS Sewage Limits NWS Sewage Limits

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QUALITY CONTROL REPORT

Work Order	: **WT2316492**	Page	: 1 of 4
Amendment	: **1**		
Client	: NASITTUQ CORPORATION	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 09-Jun-2023 09:50
PO	: ----	Date Analysis Commenced	: 10-Jun-2023
C-O-C number	: ----	Issue Date	: 16-Jun-2023 16:32
Sampler	: Alex Kelly 613 223 0629		
Site	: ----		
Quote number	: Water Testing - SOA 2022-2024		
No. of samples received	: 4		
No. of samples analysed	: 4		

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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

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*
Jocelyn Kennedy	Department Manager - Semi-Volatile Organics	Waterloo Organics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Waterloo Inorganics, Waterloo, Ontario
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Waterloo Organics, Waterloo, Ontario
Ruby Sujeepan		Waterloo Microbiology, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 983627)											
WT2315876-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 983722)											
WT2316303-001	Anonymous	pH	----	E108	0.10	pH units	7.90	7.94	0.505%	4%	----
Microbiological Tests (QC Lot: 982708)											
WT2316492-003	XL - Cycle-let Faecal B	Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	<1	<1	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 982878)											
WT2316386-001	Anonymous	Biochemical oxygen demand [BOD]	----	E550	3.0	mg/L	<3.0	<3.0	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 983627)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Microbiological Tests (QCLot: 982708)						
Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	<1	----
Aggregate Organics (QCLot: 982878)						
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	<2.0	----
Aggregate Organics (QCLot: 983154)						
Oil & grease (gravimetric)	----	E567	5	mg/L	<5.0	----
Aggregate Organics (QCLot: 983155)						
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	<5.0	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 983627)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	89.7	85.0	115	----
Physical Tests (QCLot: 983722)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Aggregate Organics (QCLot: 982878)									
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	198 mg/L	92.8	85.0	115	----
Aggregate Organics (QCLot: 983154)									
Oil & grease (gravimetric)	----	E567	5	mg/L	200 mg/L	92.9	70.0	130	----
Aggregate Organics (QCLot: 983155)									
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	100 mg/L	75.0	70.0	130	----

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2316492**	Page	: 1 of 6
Amendment	: **1**		
Client	: **NASITTUQ CORPORATION**	Laboratory	: Waterloo - Environmental
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 09-Jun-2023 09:50
PO	: ----	Issue Date	: 16-Jun-2023 16:25
C-O-C number	: ----		
Sampler	: Alex Kelly		
Site	: ----		
Quote number	: Water Testing - SOA 2022-2024		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [ON MECP] XL Cycle-let Gen Chem and O&G	E550	06-Jun-2023	----	----	----		10-Jun-2023	4 days	4 days	✓
Aggregate Organics : Mineral Oil & Grease by Gravimetry										
Amber glass total (hydrochloric acid) XL Cycle-let Gen Chem and O&G	E567SG	06-Jun-2023	12-Jun-2023	28 days	6 days	✓	12-Jun-2023	40 days	0 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass total (hydrochloric acid) XL Cycle-let Gen Chem and O&G	E567	06-Jun-2023	12-Jun-2023	28 days	6 days	✓	12-Jun-2023	40 days	0 days	✓
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL - Cycle-let Faecal A	E012.FC	06-Jun-2023	----	----	----		10-Jun-2023	48 hrs	102 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL - Cycle-let Faecal B	E012.FC	06-Jun-2023	----	----	----		10-Jun-2023	48 hrs	102 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL - Cycle-let Faecal C	E012.FC	06-Jun-2023	----	----	----		10-Jun-2023	48 hrs	102 hrs	× EHTR
Physical Tests : pH by Meter										
HDPE [ON MECP] XL Cycle-let Gen Chem and O&G	E108	06-Jun-2023	12-Jun-2023	----	----		12-Jun-2023	14 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
XL Cycle-let Gen Chem and O&G	E160	06-Jun-2023	----	----	----		12-Jun-2023	7 days	6 days	✓

Legend & Qualifier Definitions

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Biochemical Oxygen Demand - 5 day	E550	982878	1	9	11.1	5.0	✓
pH by Meter	E108	983722	1	15	6.6	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	982708	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	983627	1	18	5.5	4.7	✓
Laboratory Control Samples (LCS)							
Biochemical Oxygen Demand - 5 day	E550	982878	1	9	11.1	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	983155	1	19	5.2	5.0	✓
Oil & Grease by Gravimetry	E567	983154	1	20	5.0	5.0	✓
pH by Meter	E108	983722	1	15	6.6	5.0	✓
TSS by Gravimetry	E160	983627	1	18	5.5	4.7	✓
Method Blanks (MB)							
Biochemical Oxygen Demand - 5 day	E550	982878	1	9	11.1	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	983155	1	19	5.2	5.0	✓
Oil & Grease by Gravimetry	E567	983154	1	20	5.0	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	982708	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	983627	1	18	5.5	4.7	✓

Methodology References and Summaries

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. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC Waterloo - Environmental	Water	APHA 9222 D (mod)	Following filtration (0.45 µm), and incubation at 44.5 ±0.2°C for 22-26 hours, colonies exhibiting characteristic morphology of the target organism are enumerated and confirmed.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Biochemical Oxygen Demand - 5 day	E550 Waterloo - Environmental	Water	APHA 5210 B (mod)	Samples are diluted and incubated for a specified time period, after which the oxygen depletion is measured using a dissolved oxygen meter. Free chlorine is a negative interference in the BOD method; please advise ALS when free chlorine is present in samples.
Oil & Grease by Gravimetry	E567 Waterloo - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane and the extract is evaporated to dryness. The residue is then weighed to determine Oil and Grease.
Mineral Oil & Grease by Gravimetry	E567SG Waterloo - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane, followed by silica gel treatment after which the extract is evaporated to dryness. The residue is then weighed to determine Mineral Oil and Grease.
Animal & Vegetable Oil & Grease by Gravimetry	EC567A.SG Waterloo - Environmental	Water	APHA 5520 (mod)	Animal & vegetable oil and grease is calculated as follows: Oil & Grease (gravimetric) minus Mineral Oil & Grease (gravimetric)

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Oil & Grease Extraction for Gravimetry	EP567 Waterloo - Environmental	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane by liquid-liquid extraction.

EC

Chain of Custody (COC) / Analytical Request Form

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Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Pa

Environmental Division Waterloo

Work Order Reference WT2316492

Telephone : +1 519 886 6910

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (
Company:	Nasittuq Corp	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business c
Contact:	Alaina Leslie	Quality Control (QC) Report with Report ☑ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcha
Address:	275 Slater St Ottawa ON K1P 5H9	☑ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% su
Phone:	613-223-0629	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - contact ALS to con
		Email 1 or Fax alaina.leslie@nasittuq.com	Specify Date Required for E2,E or P:
		Email 2 labresults@nasittuq.com	

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Company:		Email 1 or Fax labresults@nasittuq.com
Contact:		Email 2 naccounting@nasittuq.com

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q89840	Approver ID:	Cost Center:
Job #:	NWS Sewage FOX-M	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only): WT2316492 ALS Contact: E. Dobbin Sampler: Alex Kelly

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD, pH, TSS	O&G	Faecal Coliforms	Number of Containers
	XL Cycle-let Gen Chem and O&G	*06-06-23	08:30	Effluent	R	R		3
	XL - Cycle-let Faecal A	*06-06-23	08:30	Effluent			R	1
	XL - Cycle-let Faecal B	*06-06-23	08:30	Effluent			R	1
	XL - Cycle-let Faecal C	*06-06-23	08:30	Effluent			R	1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	NWS Nunavut Water Board Licence Criteria
Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐			SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☑	No ☐		Custody seal intact	Yes ☐	No ☐	
Cooling Initiated	☐						

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
10.7			16.2		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	06-06-23	8:30AM	LR	06/09/23	9:50	MT	06/10/23	10:50

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0328e v09 Front/04 January 2014

GC-042 EC
OGG-620 MT

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right partner.

CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: **WT2320422**	Page	: 1 of 4
Client	: **NASITTUQ CORPORATION**	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M #1057788	Date Samples Received	: 07-Jul-2023 11:00
PO	: ----	Date Analysis Commenced	: 08-Jul-2023
C-O-C number	: ----	Issue Date	: 14-Jul-2023 13:31
Sampler	: ----		
Site	: ----		
Quote number	: Water Testing - SOA 2022-2024		
No. of samples received	: 4		
No. of samples analysed	: 4		

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*
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Organics, Waterloo, Ontario
Sophia Magon	Lab Assistant	Microbiology, Waterloo, Ontario
Wayne Smith	Client Services Specialist	Inorganics, Waterloo, Ontario

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).

Unit	*Description*
CFU/100mL	
mg/L	
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*
BODL	*Limit of Reporting for BOD was increased to account for the largest volume of sample tested.*

Analytical Results Evaluation

Matrix: **Water**

Analyte	CAS Number	Method/Lab	Unit	Client sample ID	XL CYCLE-LET GEN CHEM AND O&G	XL - CYCLE-LET FAECAL A #1	XL - CYCLE-LET FAECAL B #2	XL - CYCLE -LET FAECAL C #3	----	----	----
				Sampling date/time	04-Jul-2023 11:55	04-Jul-2023 11:55	04-Jul-2023 11:56	04-Jul-2023 11:57	----	----	----
				Sub-Matrix	Water	Water	Water	Water	----	----	----
					WT2320422-001	WT2320422-002	WT2320422-003	WT2320422-004	--------	--------	--------
Physical Tests											
pH	----	E108/WT			8.16	----	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/WT	mg/L		<3.0	----	----	----	----	----	----
Microbiological Tests											
Coliforms, thermotolerant [fecal]	----	E012.FC/WT			----	Not Detected	Not Detected	Not Detected	----	----	----
Aggregate Organics											
Biochemical oxygen demand [BOD]	----	E550/WT	mg/L		<3.0 BODL	----	----	----	----	----	----
Oil & grease (gravimetric)	----	E567/WT			<5.0	----	----	----	----	----	----
Oil & grease, animal/vegetable (gravimetric)	----	EC567A.SG/WT	mg/L		<5.0	----	----	----	----	----	----
Oil & grease, mineral (gravimetric)	----	E567SG/WT			<5.0	----	----	----	----	----	----

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.

Summary of Guideline Limits

Analyte	CAS Number	Unit	NWS Sewage Limits						
Physical Tests									
pH	----	pH units	**6 - 9 pH units**						
Solids, total suspended [TSS]	----	mg/L	**180 mg/L**						
Microbiological Tests									
Coliforms, thermotolerant [fecal]	----	CFU/100mL	**10000 CFU/100mL**						
Aggregate Organics									
Biochemical oxygen demand [BOD]	----	mg/L	**120 mg/L**						
Oil & grease (gravimetric)	----	mg/L	**--**						
Oil & grease, animal/vegetable (gravimetric)	----	mg/L	**--**						
Oil & grease, mineral (gravimetric)	----	mg/L	**--**						

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

Key:

NWS Sewage Limits

NWS Sewage Limits

NWS Sewage Limits

NWS Sewage Limits

QUALITY CONTROL REPORT

Work Order	: **WT2320422**	Page	: 1 of 4
Client	: NASITTUQ CORPORATION	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M #1057788	Date Samples Received	: 07-Jul-2023 11:00
PO	: ----	Date Analysis Commenced	: 08-Jul-2023
C-O-C number	: ----	Issue Date	: 14-Jul-2023 10:18
Sampler	: ---- 613 223 0629		
Site	: ----		
Quote number	: Water Testing - SOA 2022-2024		
No. of samples received	: 4		
No. of samples analysed	: 4		

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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

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*
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Waterloo Organics, Waterloo, Ontario
Sophia Magon	Lab Assistant	Waterloo Microbiology, Waterloo, Ontario
Wayne Smith	Client Services Specialist	Waterloo Inorganics, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1030383)											
WT2319907-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	8.9	9.7	0.8	Diff <2x LOR	----
Physical Tests (QC Lot: 1031062)											
WT2320371-001	Anonymous	pH	----	E108	0.10	pH units	8.03	7.84	2.39%	4%	----
Microbiological Tests (QC Lot: 1029756)											
WT2320422-003	XL - CYCLE-LET FAECAL B #2	Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	<1	<1	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1029649)											
WT2320182-002	Anonymous	Biochemical oxygen demand [BOD]	----	E550	2.0	mg/L	130	126	3.1%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1030383)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Microbiological Tests (QCLot: 1029756)						
Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	<1	----
Aggregate Organics (QCLot: 1029649)						
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	<2.0	----
Aggregate Organics (QCLot: 1030969)						
Oil & grease (gravimetric)	----	E567	5	mg/L	<5.0	----
Aggregate Organics (QCLot: 1030970)						
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	<5.0	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1030383)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	97.8	85.0	115	----
Physical Tests (QCLot: 1031062)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Aggregate Organics (QCLot: 1029649)									
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	198 mg/L	91.7	85.0	115	----
Aggregate Organics (QCLot: 1030969)									
Oil & grease (gravimetric)	----	E567	5	mg/L	200 mg/L	93.6	70.0	130	----
Aggregate Organics (QCLot: 1030970)									
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	100 mg/L	86.3	70.0	130	----

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2320422**	Page	: 1 of 6
Client	: **NASITTUQ CORPORATION**	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M #1057788	Date Samples Received	: 07-Jul-2023 11:00
PO	: ----	Issue Date	: 14-Jul-2023 10:19
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: Water Testing - SOA 2022-2024		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] XL CYCLE-LET GEN CHEM AND O&G	E550	04-Jul-2023	----	----	----		08-Jul-2023	4 days	4 days	✓
Aggregate Organics : Mineral Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) XL CYCLE-LET GEN CHEM AND O&G	E567SG	04-Jul-2023	11-Jul-2023	28 days	7 days	✓	11-Jul-2023	40 days	0 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) XL CYCLE-LET GEN CHEM AND O&G	E567	04-Jul-2023	11-Jul-2023	28 days	7 days	✓	11-Jul-2023	40 days	0 days	✓
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL - CYCLE -LET FAECAL C #3	E012.FC	04-Jul-2023	----	----	----		09-Jul-2023	48 hrs	116 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL - CYCLE-LET FAECAL A #1	E012.FC	04-Jul-2023	----	----	----		09-Jul-2023	48 hrs	116 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL - CYCLE-LET FAECAL B #2	E012.FC	04-Jul-2023	----	----	----		09-Jul-2023	48 hrs	116 hrs	× EHTR
Physical Tests : pH by Meter										
HDPE [BOD HT-4d] XL CYCLE-LET GEN CHEM AND O&G	E108	04-Jul-2023	10-Jul-2023	14 days	6 days	✓	11-Jul-2023	8 days	1 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [BOD HT-4d]										
XL CYCLE-LET GEN CHEM AND O&G	E160	04-Jul-2023	----	----	----		10-Jul-2023	7 days	6 days	✓

Legend & Qualifier Definitions

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Biochemical Oxygen Demand - 5 day	E550	1029649	1	20	5.0	5.0	✓
pH by Meter	E108	1031062	1	13	7.6	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	1029756	1	6	16.6	5.0	✓
TSS by Gravimetry	E160	1030383	1	20	5.0	4.7	✓
Laboratory Control Samples (LCS)							
Biochemical Oxygen Demand - 5 day	E550	1029649	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	1030970	1	9	11.1	5.0	✓
Oil & Grease by Gravimetry	E567	1030969	1	10	10.0	5.0	✓
pH by Meter	E108	1031062	1	13	7.6	5.0	✓
TSS by Gravimetry	E160	1030383	1	20	5.0	4.7	✓
Method Blanks (MB)							
Biochemical Oxygen Demand - 5 day	E550	1029649	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	1030970	1	9	11.1	5.0	✓
Oil & Grease by Gravimetry	E567	1030969	1	10	10.0	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	1029756	1	6	16.6	5.0	✓
TSS by Gravimetry	E160	1030383	1	20	5.0	4.7	✓

Methodology References and Summaries

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. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC ALS Environmental - Waterloo	Water	APHA 9222 D (mod)	Following filtration (0.45 µm), and incubation at 44.5 ±0.2°C for 22-26 hours, colonies exhibiting characteristic morphology of the target organism are enumerated and confirmed.
pH by Meter	E108 ALS Environmental - Waterloo	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 ALS Environmental - Waterloo	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Biochemical Oxygen Demand - 5 day	E550 ALS Environmental - Waterloo	Water	APHA 5210 B (mod)	Samples are diluted and incubated for a specified time period, after which the oxygen depletion is measured using a dissolved oxygen meter. Free chlorine is a negative interference in the BOD method; please advise ALS when free chlorine is present in samples.
Oil & Grease by Gravimetry	E567 ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane and the extract is evaporated to dryness. The residue is then weighed to determine Oil and Grease.
Mineral Oil & Grease by Gravimetry	E567SG ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane, followed by silica gel treatment after which the extract is evaporated to dryness. The residue is then weighed to determine Mineral Oil and Grease.
Animal & Vegetable Oil & Grease by Gravimetry	EC567A.SG ALS Environmental - Waterloo	Water	APHA 5520 (mod)	Animal & vegetable oil and grease is calculated as follows: Oil & Grease (gravimetric) minus Mineral Oil & Grease (gravimetric)

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Oil & Grease Extraction for Gravimetry	EP567 ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane by liquid-liquid extraction.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

Pa

Environmental Division Waterloo

Work Order Reference WT2320422

Telephone : +1 519 886 6910

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (
Company:	Nasittuq Corp	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business d
Contact:	Alaina Leslie	Quality Control (QC) Report with Report ☑ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcha
Address:	275 Slater St Ottawa ON K1P 5H9	☑ Criteria on Report - provide details below if box checked Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% s
Phone:	613-223-0629	Email 1 or Fax alaina.leslie@nasittuq.com	E2 ☐ Same day or weekend emergency - contact ALS to con
		Email 2 labresults@nasittuq.com	Specify Date Required for E2,E or P:

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Company:	Nasittuq	Email 1 or Fax labresults@nasittuq.com
Contact:		Email 2 naccounting@nasittuq.com

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q89840	Approver ID:	Cost Center:
Job #:	NWS Sewage FOX-M #1057788	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact: E. Dobbin	Sampler: Alex Kelly

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD, pH, TSS	O&G	Faecal Coliforms	Number of Containers
	XL Cycle-let Gen Chem and O&G	04-Jul-23	11:55	Effluent	R	R		3
	XL - Cycle-let Faecal A #1	04-Jul-23	11:55	Effluent			R	1
	XL - Cycle-let Faecal B #2	04-Jul-23	11:56	Effluent			R	1
	XL - Cycle-let Faecal C #3	04-Jul-23	11:57	Effluent			R	1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No Are samples for human drinking water use? ☐ Yes ☑ No	NWS Nunavut Water Board Licence Criteria

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☒	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
21.8			20.3		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Dion AKearok	Date: July 4 '23	Time: 1:50PM	Received by: COSTAT F	Date: 7/7/23	Time: 11:00AM	Received by: EC	Date: July 8/23	Time: 12:20

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0329e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

B-821 OGG-715

GC-264

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: **WT2324300**	Page	: 1 of 4
Client	: **NASITTUQ CORPORATION**	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 04-Aug-2023 10:10
PO	: ----	Date Analysis Commenced	: 05-Aug-2023
C-O-C number	: ----	Issue Date	: 10-Aug-2023 20:12
Sampler	: Glenn Sweet Apple		
Site	: ----		
Quote number	: SEWAGE TESTING		
No. of samples received	: 4		
No. of samples analysed	: 4		

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*
Manuel TavaraTello	Supervisor - Semi-Volatile Extractions	Organics, Waterloo, Ontario
Nik Perkio	Inorganics Analyst	Inorganics, Waterloo, Ontario
Sophia Magon	Lab Assistant	Microbiology, Waterloo, Ontario

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).

Unit	*Description*
CFU/100mL	
mg/L	
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).
PEHR	Parameter exceeded recommended holding time on receipt: Proceeded with analysis as requested.
UAL	Unreliable: Sample age exceeds normal limit.

Analytical Results Evaluation

Matrix: **Water**

Analyte	CAS Number	Method/Lab	Unit	Client sample ID	XL-Cycle-let Gen Chem and O&G	XL-Cycle-let Faecal A	XL-Cycle-let Faecal B	XL-Cycle-let Faecal C	----	----	----
				Sampling date/time	01-Aug-2023 08:00	01-Aug-2023 08:00	01-Aug-2023 08:00	01-Aug-2023 08:00	----	----	----
				Sub-Matrix	Water	Water	Water	Water	----	----	----
				WT2324300-001	WT2324300-002	WT2324300-003	WT2324300-004	--------	--------	--------	
Physical Tests											
pH	----	E108/WT		8.31	----	----	----	----	----	----	
Solids, total suspended [TSS]	----	E160/WT	mg/L	<3.0	----	----	----	----	----	----	
Microbiological Tests											
Coliforms, thermotolerant [fecal]	----	E012.FC/WT		----	970 DLM, PEHR, UAL	1100 DLM, PEHR, UAL	1350 DLM, PEHR, UAL	----	----	----	
Aggregate Organics											
Biochemical oxygen demand [BOD]	----	E550/WT	mg/L	9.6	----	----	----	----	----	----	
Oil & grease (gravimetric)	----	E567/WT		<5.0	----	----	----	----	----	----	
Oil & grease, animal/vegetable (gravimetric)	----	EC567A.SG/WT	mg/L	<5.0	----	----	----	----	----	----	
Oil & grease, mineral (gravimetric)	----	E567SG/WT		<5.0	----	----	----	----	----	----	

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.

Summary of Guideline Limits

Analyte	*CAS Number*	*Unit*	**NWS Sewage Limits**						
Physical Tests									
pH	----	pH units	**6 - 9 pH units**						
Solids, total suspended [TSS]	----	mg/L	**180 mg/L**						
Microbiological Tests									
Coliforms, thermotolerant [fecal]	----	CFU/100mL	**10000 CFU/100mL**						
Aggregate Organics									
Biochemical oxygen demand [BOD]	----	mg/L	**120 mg/L**						
Oil & grease (gravimetric)	----	mg/L	**--**						
Oil & grease, animal/vegetable (gravimetric)	----	mg/L	**--**						
Oil & grease, mineral (gravimetric)	----	mg/L	**--**						

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

Key:

NWS Sewage Limits NWS Sewage Limits

NWS Sewage Limits NWS Sewage Limits

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **WT2324300**	Page	: 1 of 4
Client	: NASITTUQ CORPORATION	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 04-Aug-2023 10:10
PO	: ----	Date Analysis Commenced	: 05-Aug-2023
C-O-C number	: ----	Issue Date	: 10-Aug-2023 20:13
Sampler	: Glenn Sweet Apple 613 223 0629		
Site	: ----		
Quote number	: SEWAGE TESTING		
No. of samples received	: 4		
No. of samples analysed	: 4		

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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

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*
Manuel TavaraTello	Supervisor - Semi-Volatile Extractions	Waterloo Organics, Waterloo, Ontario
Nik Perkio	Inorganics Analyst	Waterloo Inorganics, Waterloo, Ontario
Sophia Magon	Lab Assistant	Waterloo Microbiology, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1074476)											
WT2323955-023	Anonymous	pH	----	E108	0.10	pH units	7.75	7.72	0.388%	4%	----
Physical Tests (QC Lot: 1074493)											
WT2324135-005	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	67.7	67.7	0.00%	20%	----
Microbiological Tests (QC Lot: 1073777)											
WT2324300-003	XL-Cycle-let Faecal B	Coliforms, thermotolerant [fecal]	----	E012.FC	10	CFU/100mL	1100	1070	2.76%	65%	----
Aggregate Organics (QC Lot: 1073832)											
WT2324128-009	Anonymous	Biochemical oxygen demand [BOD]	----	E550	2.0	mg/L	<2.0	<2.0	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1074493)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Microbiological Tests (QCLot: 1073777)						
Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	<1	----
Aggregate Organics (QCLot: 1073832)						
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	<2.0	----
Aggregate Organics (QCLot: 1075067)						
Oil & grease (gravimetric)	----	E567	5	mg/L	<5.0	----
Aggregate Organics (QCLot: 1075068)						
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	<5.0	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1074476)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1074493)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	98.2	85.0	115	----
Aggregate Organics (QCLot: 1073832)									
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	198 mg/L	91.3	85.0	115	----
Aggregate Organics (QCLot: 1075067)									
Oil & grease (gravimetric)	----	E567	5	mg/L	200 mg/L	87.6	70.0	130	----
Aggregate Organics (QCLot: 1075068)									
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	100 mg/L	82.8	70.0	130	----

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2324300**	Page	: 1 of 6
Client	: **NASITTUQ CORPORATION**	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 04-Aug-2023 10:10
PO	: ----	Issue Date	: 10-Aug-2023 20:12
C-O-C number	: ----		
Sampler	: Glenn Sweet Apple		
Site	: ----		
Quote number	: SEWAGE TESTING		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] XL-Cycle-let Gen Chem and O&G	E550	01-Aug-2023	----	----	----		05-Aug-2023	4 days	4 days	✓
Aggregate Organics : Mineral Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) XL-Cycle-let Gen Chem and O&G	E567SG	01-Aug-2023	09-Aug-2023	28 days	8 days	✓	09-Aug-2023	40 days	0 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) XL-Cycle-let Gen Chem and O&G	E567	01-Aug-2023	09-Aug-2023	28 days	8 days	✓	09-Aug-2023	40 days	0 days	✓
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL-Cycle-let Faecal A	E012.FC	01-Aug-2023	----	----	----		05-Aug-2023	48 hrs	102 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL-Cycle-let Faecal B	E012.FC	01-Aug-2023	----	----	----		05-Aug-2023	48 hrs	102 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL-Cycle-let Faecal C	E012.FC	01-Aug-2023	----	----	----		05-Aug-2023	48 hrs	102 hrs	× EHTR
Physical Tests : pH by Meter										
HDPE [ON MECP] XL-Cycle-let Gen Chem and O&G	E108	01-Aug-2023	08-Aug-2023	14 days	7 days	✓	09-Aug-2023	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
XL-Cycle-let Gen Chem and O&G	E160	01-Aug-2023	----	----	----		08-Aug-2023	7 days	7 days	✓

Legend & Qualifier Definitions

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Biochemical Oxygen Demand - 5 day	E550	1073832	1	19	5.2	5.0	✓
pH by Meter	E108	1074476	1	18	5.5	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	1073777	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1074493	1	19	5.2	4.7	✓
Laboratory Control Samples (LCS)							
Biochemical Oxygen Demand - 5 day	E550	1073832	1	19	5.2	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	1075068	1	16	6.2	5.0	✓
Oil & Grease by Gravimetry	E567	1075067	1	20	5.0	5.0	✓
pH by Meter	E108	1074476	1	18	5.5	5.0	✓
TSS by Gravimetry	E160	1074493	1	19	5.2	4.7	✓
Method Blanks (MB)							
Biochemical Oxygen Demand - 5 day	E550	1073832	1	19	5.2	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	1075068	1	16	6.2	5.0	✓
Oil & Grease by Gravimetry	E567	1075067	1	20	5.0	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	1073777	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1074493	1	19	5.2	4.7	✓

Methodology References and Summaries

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. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC ALS Environmental - Waterloo	Water	APHA 9222 D (mod)	Following filtration (0.45 µm), and incubation at 44.5 ±0.2°C for 22-26 hours, colonies exhibiting characteristic morphology of the target organism are enumerated and confirmed.
pH by Meter	E108 ALS Environmental - Waterloo	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 ALS Environmental - Waterloo	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Biochemical Oxygen Demand - 5 day	E550 ALS Environmental - Waterloo	Water	APHA 5210 B (mod)	Samples are diluted and incubated for a specified time period, after which the oxygen depletion is measured using a dissolved oxygen meter. Free chlorine is a negative interference in the BOD method; please advise ALS when free chlorine is present in samples.
Oil & Grease by Gravimetry	E567 ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane and the extract is evaporated to dryness. The residue is then weighed to determine Oil and Grease.
Mineral Oil & Grease by Gravimetry	E567SG ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane, followed by silica gel treatment after which the extract is evaporated to dryness. The residue is then weighed to determine Mineral Oil and Grease.
Animal & Vegetable Oil & Grease by Gravimetry	EC567A.SG ALS Environmental - Waterloo	Water	APHA 5520 (mod)	Animal & vegetable oil and grease is calculated as follows: Oil & Grease (gravimetric) minus Mineral Oil & Grease (gravimetric)

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Oil & Grease Extraction for Gravimetry	EP567 ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane by liquid-liquid extraction.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number:

P

Environmental Division Waterloo

Work Order Reference WT2324300

Telephone : +1 519 886 6910

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time
Company:	Nasittuq Corp	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business
Contact:	Alaina Leslie	Quality Control (QC) Report with Report ☑ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcha
Address:	275 Slater St Ottawa ON K1P 5H9	☑ Criteria on Report - provide details below if box checked Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% s E2 ☐ Same day or weekend emergency - contact ALS to cor
Phone:	613-223-0629	Email 1 or Fax alaina.leslie@nasittuq.com	Specify Date Required for E2,E or P:
		Email 2 labresults@nasittuq.com	Analysis Request

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution	
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Company:	Nasittuq	Email 1 or Fax labresults@nasittuq.com	
Contact:		Email 2 naccounting@nasittuq.com	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q89840	Approver ID:	Cost Center:
Job #:	NWS Sewage FOX-M	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only): WT2324300 FA | ALS Contact: E. Dobbin | Sampler: Glenn Sweet Apple

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD, pH, TSS	O&G	Faecal Coliforms										Number of Containers
	XL Cycle-let Gen Chem and O&G	01/08/23	8:00 AM	Effluent	R	R											3
	XL - Cycle-let Faecal A	01/08/23	8:00 AM	Effluent			R										1
	XL - Cycle-let Faecal B	01/08/23	8:00 AM	Effluent			R										1
	XL - Cycle-let Faecal C	01/08/23	8:00 AM	Effluent			R										1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	NWS Nunavut Water Board Licence Criteria
Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐
Ice packs	Yes ☐ No ☒	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐			

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
20.9					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: *	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Dion AKEAROK	08/08/23	8:30 AM	COSTAFF	8/4/23	10:10	SR	Aug 5/23	11:15

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0308e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

GC-466 B-915

CGG-795 EC

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: **WT2330168**	Page	: 1 of 4
Client	: **NASITTUQ CORPORATION**	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 19-Sep-2023 10:20
PO	: ----	Date Analysis Commenced	: 21-Sep-2023
C-O-C number	: ----	Issue Date	: 26-Sep-2023 18:26
Sampler	: Alex Kelly		
Site	: ----		
Quote number	: SEWAGE TESTING		
No. of samples received	: 4		
No. of samples analysed	: 4		

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*
Jeremy Gingras	Supervisor - Semi-Volatile Instrumentation	Organics, Waterloo, Ontario
Kaitlyn Lammers	Lab Assistant	Microbiology, Waterloo, Ontario
Nik Perkio	Inorganics Analyst	Inorganics, Waterloo, Ontario
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Organics, Waterloo, Ontario

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).

Unit	*Description*
CFU/100mL	
mg/L	
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*
PEHR	*Parameter exceeded recommended holding time on receipt: Proceeded with analysis as requested.*

Analytical Results Evaluation

Matrix: **Water**

Analyte	CAS Number	Method/Lab	Unit	Client sample ID	XL CYCLE-LET GEN CHEM & OGG	XL - CYCLE-LET FAECAL A	XL - CYCLE-LET FAECAL B	XL - CYCLE-LET FAECAL C	----	----	----
				Sampling date/time	04-Sep-2023 10:30	04-Sep-2023 10:30	04-Sep-2023 10:30	04-Sep-2023 10:30	----	----	----
				Sub-Matrix	Water	Water	Water	Water	----	----	----
				WT2330168-001	WT2330168-002	WT2330168-003	WT2330168-004	--------	--------	--------	
Physical Tests											
pH	----	E108/WT	pH units	8.30	----	----	----	----	----	----	
Solids, total suspended [TSS]	----	E160/WT	mg/L	<3.0	----	----	----	----	----	----	
Microbiological Tests											
Coliforms, thermotolerant [fecal]	----	E012.FC/WT	CFU/100 mL	----	17 PEHR	8 PEHR	18 PEHR	----	----	----	
Aggregate Organics											
Biochemical oxygen demand [BOD]	----	E550/WT	mg/L	3.8	----	----	----	----	----	----	
Oil & grease (gravimetric)	----	E567/WT	mg/L	<5.0	----	----	----	----	----	----	
Oil & grease, animal/vegetable (gravimetric)	----	EC567A.SG/WT	mg/L	<5.0	----	----	----	----	----	----	
Oil & grease, mineral (gravimetric)	----	E567SG/WT	mg/L	<5.0	----	----	----	----	----	----	

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.

Summary of Guideline Limits

Analyte	CAS Number	Unit	NWS Sewage Limits						
Physical Tests									
pH	----	pH units	**6 - 9 pH units**						
Solids, total suspended [TSS]	----	mg/L	**180 mg/L**						
Microbiological Tests									
Coliforms, thermotolerant [fecal]	----	CFU/100mL	**10000 CFU/100mL**						
Aggregate Organics									
Biochemical oxygen demand [BOD]	----	mg/L	**120 mg/L**						
Oil & grease (gravimetric)	----	mg/L	**--**						
Oil & grease, animal/vegetable (gravimetric)	----	mg/L	**--**						
Oil & grease, mineral (gravimetric)	----	mg/L	**--**						

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

Key:

NWS Sewage Limits

NWS Sewage Limits

NWS Sewage Limits

NWS Sewage Limits

QUALITY CONTROL REPORT

Work Order	: **WT2330168**	Page	: 1 of 4
Client	: NASITTUQ CORPORATION	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 19-Sep-2023 10:20
PO	: ----	Date Analysis Commenced	: 21-Sep-2023
C-O-C number	: ----	Issue Date	: 26-Sep-2023 18:25
Sampler	: Alex Kelly 613 223 0629		
Site	: ----		
Quote number	: SEWAGE TESTING		
No. of samples received	: 4		
No. of samples analysed	: 4		

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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

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*
Jeremy Gingras	Supervisor - Semi-Volatile Instrumentation	Waterloo Organics, Waterloo, Ontario
Kaitlyn Lammers	Lab Assistant	Waterloo Microbiology, Waterloo, Ontario
Nik Perkio	Inorganics Analyst	Waterloo Inorganics, Waterloo, Ontario
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Waterloo Organics, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1145366)											
WT2330110-008	Anonymous	pH	----	E108	0.10	pH units	7.73	7.70	0.389%	4%	----
Physical Tests (QC Lot: 1145377)											
WT2329791-003	Anonymous	Solids, total suspended [TSS]	----	E160	30.0	mg/L	1550	1530	1.04%	20%	----
Microbiological Tests (QC Lot: 1145962)											
WT2330168-004	XL - CYCLE-LET FAECAL C	Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	18	15	18.2%	65%	----
Aggregate Organics (QC Lot: 1145627)											
WT2330189-001	Anonymous	Biochemical oxygen demand [BOD]	----	E550	2.0	mg/L	2.9	2.9	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1145377)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Microbiological Tests (QCLot: 1145962)						
Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	<1	----
Aggregate Organics (QCLot: 1145324)						
Oil & grease (gravimetric)	----	E567	5	mg/L	<5.0	----
Aggregate Organics (QCLot: 1145325)						
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	<5.0	----
Aggregate Organics (QCLot: 1145627)						
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	<2.0	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1145366)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 1145377)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	99.2	85.0	115	----
Aggregate Organics (QCLot: 1145324)									
Oil & grease (gravimetric)	----	E567	5	mg/L	200 mg/L	102	70.0	130	----
Aggregate Organics (QCLot: 1145325)									
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	100 mg/L	96.8	70.0	130	----
Aggregate Organics (QCLot: 1145627)									
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	198 mg/L	98.8	85.0	115	----

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2330168**	Page	: 1 of 6
Client	: **NASITTUQ CORPORATION**	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 19-Sep-2023 10:20
PO	: ----	Issue Date	: 26-Sep-2023 18:25
C-O-C number	: ----		
Sampler	: Alex Kelly		
Site	: ----		
Quote number	: SEWAGE TESTING		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] XL CYCLE-LET GEN CHEM & OGG	E550	04-Sep-2023	----	----	----		21-Sep-2023	4 days	16 days	× EHTR
Aggregate Organics : Mineral Oil & Grease by Gravimetry										
Amber glass total (hydrochloric acid) XL CYCLE-LET GEN CHEM & OGG	E567SG	04-Sep-2023	22-Sep-2023	28 days	18 days	✓	22-Sep-2023	40 days	0 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass total (hydrochloric acid) XL CYCLE-LET GEN CHEM & OGG	E567	04-Sep-2023	22-Sep-2023	28 days	18 days	✓	22-Sep-2023	40 days	0 days	✓
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL - CYCLE-LET FAECAL A	E012.FC	04-Sep-2023	----	----	----		21-Sep-2023	48 hrs	407 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL - CYCLE-LET FAECAL B	E012.FC	04-Sep-2023	----	----	----		21-Sep-2023	48 hrs	407 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL - CYCLE-LET FAECAL C	E012.FC	04-Sep-2023	----	----	----		21-Sep-2023	48 hrs	407 hrs	× EHTR
Physical Tests : pH by Meter										
HDPE [ON MECP] XL CYCLE-LET GEN CHEM & OGG	E108	04-Sep-2023	21-Sep-2023	14 days	16 days	× EHTR	21-Sep-2023	14 days	17 days	× EHTR-FM

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
XL CYCLE-LET GEN CHEM & OGG	E160	04-Sep-2023	----	----	----		21-Sep-2023	7 days	17 days	× EHTR

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Biochemical Oxygen Demand - 5 day	E550	1145627	1	20	5.0	5.0	✓
pH by Meter	E108	1145366	1	18	5.5	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	1145962	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1145377	1	20	5.0	4.7	✓
Laboratory Control Samples (LCS)							
Biochemical Oxygen Demand - 5 day	E550	1145627	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	1145325	1	16	6.2	5.0	✓
Oil & Grease by Gravimetry	E567	1145324	1	20	5.0	5.0	✓
pH by Meter	E108	1145366	1	18	5.5	5.0	✓
TSS by Gravimetry	E160	1145377	1	20	5.0	4.7	✓
Method Blanks (MB)							
Biochemical Oxygen Demand - 5 day	E550	1145627	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	1145325	1	16	6.2	5.0	✓
Oil & Grease by Gravimetry	E567	1145324	1	20	5.0	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	1145962	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1145377	1	20	5.0	4.7	✓

Methodology References and Summaries

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. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC ALS Environmental - Waterloo	Water	APHA 9222 D (mod)	Following filtration (0.45 µm), and incubation at 44.5 ±0.2°C for 22-26 hours, colonies exhibiting characteristic morphology of the target organism are enumerated and confirmed.
pH by Meter	E108 ALS Environmental - Waterloo	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 ALS Environmental - Waterloo	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Biochemical Oxygen Demand - 5 day	E550 ALS Environmental - Waterloo	Water	APHA 5210 B (mod)	Samples are diluted and incubated for a specified time period, after which the oxygen depletion is measured using a dissolved oxygen meter. Free chlorine is a negative interference in the BOD method; please advise ALS when free chlorine is present in samples.
Oil & Grease by Gravimetry	E567 ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane and the extract is evaporated to dryness. The residue is then weighed to determine Oil and Grease.
Mineral Oil & Grease by Gravimetry	E567SG ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane, followed by silica gel treatment after which the extract is evaporated to dryness. The residue is then weighed to determine Mineral Oil and Grease.
Animal & Vegetable Oil & Grease by Gravimetry	EC567A.SG ALS Environmental - Waterloo	Water	APHA 5520 (mod)	Animal & vegetable oil and grease is calculated as follows: Oil & Grease (gravimetric) minus Mineral Oil & Grease (gravimetric)

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Oil & Grease Extraction for Gravimetry	EP567 ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane by liquid-liquid extraction.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 14 -

Page ___ of ___

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Nasittuq Corp	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Alaina Leslie	Quality Control (QC) Report with Report ☑ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	275 Slater St Ottawa ON K1P 5H9	☑ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
Phone:	613-223-0629	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
		Email 1 or Fax alaina.leslie@nasittuq.com	Specify Date Required for E2,E or P:
		Email 2 labresults@nasittuq.com	

Invoice To		Invoice Distribution
	Same as Report To ☐ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
	Copy of Invoice with Report ☐ Yes ☐ No	Email 1 or Fax labresults@nasittuq.com
Company:	Nasittuq	Email 2 naccounting@nasittuq.com
Contact:	Alaina Leslie	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q89840	Approver ID:	Cost Center:
Job #:	NWS Sewage FOX-M	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)	WT2330168	ALS Contact: E. Dobbin	Sampler: Alex Kelly

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD, pH, TSS	O&G	Faeca Coliforms		Number of Containers
	XL Cycle-let Gen Chem and O&G	04-Sep-23	10:30	Effluent	R	R			3
	XL - Cycle-let Faecal A	04-Sep-23	10:30	Effluent			R		1
	XL - Cycle-let Faecal B	04-Sep-23	10:30	Effluent			R		1
	XL - Cycle-let Faecal C	04-Sep-23	10:30	Effluent			R		1

Environmental Division
Waterloo
Work Order Reference
WT2330168

Telephone : +1 519 886 6910

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	NWS Nunavut Water Board Licence Criteria
Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☑	No ☐	Custody seal intact	Yes ☑	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
15.8			4.2		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
KathleenFrancis	4Sept 23	1:30pm	LR	09/19/23	11:10	SF	Sep20	10:20

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY

NA-FM-0326e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

B-050 OGG-921
GC-762

CM

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CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: **WT2337216**	Page	: 1 of 4
Client	: **NASITTUQ CORPORATION**	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 14-Nov-2023 11:25
PO	: ----	Date Analysis Commenced	: 15-Nov-2023
C-O-C number	: ----	Issue Date	: 20-Nov-2023 15:48
Sampler	: ROG THOMAS		
Site	: ----		
Quote number	: NWS SEWAGE TESTING - FOX-M		
No. of samples received	: 4		
No. of samples analysed	: 4		

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*
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Organics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Zeba Patel	Analyst	Microbiology, Waterloo, Ontario

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).

Unit	*Description*
CFU/100mL	colony forming units per hundred millilitres
mg/L	
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
BODL	Limit of Reporting for BOD was increased to account for the largest volume of sample tested.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
PEHR	Parameter exceeded recommended holding time on receipt: Proceeded with analysis as requested.

Analytical Results Evaluation

Matrix: **Water**

Analyte	CAS Number	Method/Lab	Unit	Client sample ID	XL-CYCLE-LET GEN CHEM AND O&G	XL-CYCLE-LET FAECAL A	XL-CYCLE-LET FAECAL B	XL-CYCLE-LET FAECAL C	----	----	----
				Sampling date/time	10-Nov-2023 10:00	10-Nov-2023 10:00	10-Nov-2023 10:00	10-Nov-2023 10:00	----	----	----
				Sub-Matrix	Water	Water	Water	Water	----	----	----
					WT2337216-001	WT2337216-002	WT2337216-003	WT2337216-004	--------	--------	--------
Physical Tests											
pH	----	E108/WT	pH units		8.09	----	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/WT	mg/L		<3.0	----	----	----	----	----	----
Microbiological Tests											
Coliforms, thermotolerant [fecal]	----	E012.FC/WT	CFU/100 mL		----	1480 DLM, PEHR	1400 DLM, PEHR	1540 DLM, PEHR	----	----	----
Aggregate Organics											
Biochemical oxygen demand [BOD]	----	E550/WT	mg/L		<3.0 BODL	----	----	----	----	----	----
Oil & grease (gravimetric)	----	E567/WT	mg/L		<5.0	----	----	----	----	----	----
Oil & grease, animal/vegetable (gravimetric)	----	EC567A.SG/WT	mg/L		<5.0	----	----	----	----	----	----
Oil & grease, mineral (gravimetric)	----	E567SG/WT	mg/L		<5.0	----	----	----	----	----	----

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.

Summary of Guideline Limits

Analyte	*CAS Number*	*Unit*	**NWS Sewage Limits**						
Physical Tests									
pH	----	pH units	**6 - 9 pH units**						
Solids, total suspended [TSS]	----	mg/L	**180 mg/L**						
Microbiological Tests									
Coliforms, thermotolerant [fecal]	----	CFU/100mL							
Aggregate Organics									
Biochemical oxygen demand [BOD]	----	mg/L	**120 mg/L**						
Oil & grease (gravimetric)	----	mg/L	**--**						
Oil & grease, animal/vegetable (gravimetric)	----	mg/L	**--**						
Oil & grease, mineral (gravimetric)	----	mg/L	**--**						

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

Key:

NWS Sewage Limits NWS Sewage Limits

NWS Sewage Limits NWS Sewage Limits

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **WT2337216**	Page	: 1 of 4
Client	: NASITTUQ CORPORATION	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 14-Nov-2023 11:25
PO	: ----	Date Analysis Commenced	: 15-Nov-2023
C-O-C number	: ----	Issue Date	: 20-Nov-2023 15:48
Sampler	: ROG THOMAS 613 223 0629		
Site	: ----		
Quote number	: NWS SEWAGE TESTING - FOX-M		
No. of samples received	: 4		
No. of samples analysed	: 4		

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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

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*
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Waterloo Organics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Zeba Patel	Analyst	Waterloo Microbiology, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1238087)											
WT2337218-003	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1241120)											
WT2337278-005	Anonymous	pH	----	E108	0.10	pH units	7.65	7.70	0.651%	4%	----
Microbiological Tests (QC Lot: 1237545)											
WT2337216-004	XL-CYCLE-LET FAECAL C	Coliforms, thermotolerant [fecal]	----	E012.FC	10	CFU/100mL	1540	1340	13.9%	65%	----
Aggregate Organics (QC Lot: 1237912)											
WT2337268-001	Anonymous	Biochemical oxygen demand [BOD]	----	E550	2.0	mg/L	<2.0	<2.0	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1238087)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Microbiological Tests (QCLot: 1237545)						
Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	<1	----
Aggregate Organics (QCLot: 1237890)						
Oil & grease (gravimetric)	----	E567	5	mg/L	<5.0	----
Aggregate Organics (QCLot: 1237891)						
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	<5.0	----
Aggregate Organics (QCLot: 1237912)						
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	<2.0	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1238087)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	93.7	85.0	115	----
Physical Tests (QCLot: 1241120)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Aggregate Organics (QCLot: 1237890)									
Oil & grease (gravimetric)	----	E567	5	mg/L	200 mg/L	88.8	70.0	130	----
Aggregate Organics (QCLot: 1237891)									
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	100 mg/L	86.9	70.0	130	----
Aggregate Organics (QCLot: 1237912)									
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	198 mg/L	99.9	85.0	115	----

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2337216**	Page	: 1 of 6
Client	: **NASITTUQ CORPORATION**	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage FOX-M	Date Samples Received	: 14-Nov-2023 11:25
PO	: ----	Issue Date	: 20-Nov-2023 15:48
C-O-C number	: ----		
Sampler	: ROG THOMAS		
Site	: ----		
Quote number	: NWS SEWAGE TESTING - FOX-M		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [ON MECP] XL-CYCLE-LET GEN CHEM AND O&G	E550	10-Nov-2023	----	----	----		15-Nov-2023	4 days	4 days	✓
Aggregate Organics : Mineral Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) XL-CYCLE-LET GEN CHEM AND O&G	E567SG	10-Nov-2023	17-Nov-2023	28 days	7 days	✓	17-Nov-2023	40 days	0 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) XL-CYCLE-LET GEN CHEM AND O&G	E567	10-Nov-2023	17-Nov-2023	28 days	7 days	✓	17-Nov-2023	40 days	0 days	✓
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL-CYCLE-LET FAECAL A	E012.FC	10-Nov-2023	----	----	----		15-Nov-2023	48 hrs	120 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL-CYCLE-LET FAECAL B	E012.FC	10-Nov-2023	----	----	----		15-Nov-2023	48 hrs	120 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] XL-CYCLE-LET FAECAL C	E012.FC	10-Nov-2023	----	----	----		15-Nov-2023	48 hrs	120 hrs	× EHTR
Physical Tests : pH by Meter										
HDPE [ON MECP] XL-CYCLE-LET GEN CHEM AND O&G	E108	10-Nov-2023	17-Nov-2023	14 days	7 days	✓	17-Nov-2023	14 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
XL-CYCLE-LET GEN CHEM AND O&G	E160	10-Nov-2023	----	----	----		15-Nov-2023	7 days	5 days	✓

Legend & Qualifier Definitions

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Biochemical Oxygen Demand - 5 day	E550	1237912	1	20	5.0	5.0	✓
pH by Meter	E108	1241120	1	16	6.2	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	1237545	1	5	20.0	5.0	✓
TSS by Gravimetry	E160	1238087	1	18	5.5	4.7	✓
Laboratory Control Samples (LCS)							
Biochemical Oxygen Demand - 5 day	E550	1237912	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	1237891	1	11	9.0	5.0	✓
Oil & Grease by Gravimetry	E567	1237890	1	20	5.0	5.0	✓
pH by Meter	E108	1241120	1	16	6.2	5.0	✓
TSS by Gravimetry	E160	1238087	1	18	5.5	4.7	✓
Method Blanks (MB)							
Biochemical Oxygen Demand - 5 day	E550	1237912	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	1237891	1	11	9.0	5.0	✓
Oil & Grease by Gravimetry	E567	1237890	1	20	5.0	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	1237545	1	5	20.0	5.0	✓
TSS by Gravimetry	E160	1238087	1	18	5.5	4.7	✓

Methodology References and Summaries

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. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC ALS Environmental - Waterloo	Water	APHA 9222 D (mod)	Following filtration (0.45 µm), and incubation at 44.5 ±0.2°C for 22-26 hours, colonies exhibiting characteristic morphology of the target organism are enumerated and confirmed.
pH by Meter	E108 ALS Environmental - Waterloo	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 ALS Environmental - Waterloo	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Biochemical Oxygen Demand - 5 day	E550 ALS Environmental - Waterloo	Water	APHA 5210 B (mod)	Samples are diluted and incubated for a specified time period, after which the oxygen depletion is measured using a dissolved oxygen meter. Free chlorine is a negative interference in the BOD method; please advise ALS when free chlorine is present in samples.
Oil & Grease by Gravimetry	E567 ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane and the extract is evaporated to dryness. The residue is then weighed to determine Oil and Grease.
Mineral Oil & Grease by Gravimetry	E567SG ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane, followed by silica gel treatment after which the extract is evaporated to dryness. The residue is then weighed to determine Mineral Oil and Grease.
Animal & Vegetable Oil & Grease by Gravimetry	EC567A.SG ALS Environmental - Waterloo	Water	APHA 5520 (mod)	Animal & vegetable oil and grease is calculated as follows: Oil & Grease (gravimetric) minus Mineral Oil & Grease (gravimetric)

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Oil & Grease Extraction for Gravimetry	EP567 ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane by liquid-liquid extraction.

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Affix ALS barcode label here (lab use only)

COC Number

Environmental Division
Waterloo
Work Order Reference
WT2337216

Telephone : +1 519 886 6910

Report To	
Company:	Nasittuq Corp
Contact:	Alaina Leslie
Address:	275 Slater St, Ottawa ON K1P 5H9
Phone:	613-223-0629

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ Yes ☐ No
☑ Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	alaina.leslie@nasittuq.com
Email 2	labresults@nasittuq.com

Select Service Level Below (Rush Turnaround Time

- R ☑ Regular (Standard TAT if received by 3 pm - busines
- P ☐ Priority (2-4 bus. days if received by 3pm) 50% surch
- E ☐ Emergency (1-2 bus. days if received by 3pm) 100%
- E2 ☐ Same day or weekend emergency - contact ALS to co

Specify Date Required for E2,E or P:

Invoice To		
	Same as Report To	☐ Yes ☐ No
	Copy of Invoice with Report	☐ Yes ☐ No
Company:		
Contact:		

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	labresults@nasittuq.com
Email 2	naccounting@nasittuq.com

Project Information	
ALS Quote #:	Q89840
Job #:	NWS Sewage FOX-M
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only)

ALS Contact: E. Dobbin | Sampler: Roy Thomas

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Pre

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD, pH, TSS	O&G	Faeca Coliforms	Number of Containers
	XL Cycle-let Gen Chem and O&G	10/11/23	1000	Effluent	R	R		3
	XL - Cycle-let Faecal A	10/11/23	10:00	Effluent			R	1
	XL - Cycle-let Faecal B	10/11/23	10:00	Effluent			R	1
	XL - Cycle-let Faecal C	10/11/23	10:00	Effluent			R	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ Yes ☑ No

Are samples for human drinking water use? ☐ Yes ☑ No

Special Instructions / Specify Criteria to add on report (client Use)

NWS Nunavut Water Board Licence Criteria

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice packs Yes ☑ No ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C: 8.8

FINAL COOLER TEMPERATURES °C: 4.5

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Kathleen Frael	Date: 10/11/23	Time: 11AM	Received by: LR	Date: 11/14/23	Time: 11:25	Received by: [signature]	Date: 11/15/23	Time: 9:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

NA-FM-0326a January 2014

O&G – 073
GC – 183
B – 247
SF

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: **WT2340186**	Page	: 1 of 4
Client	: **NASITTUQ CORPORATION**	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage Fox Main	Date Samples Received	: 08-Dec-2023 10:45
PO	: ----	Date Analysis Commenced	: 09-Dec-2023
C-O-C number	: ----	Issue Date	: 14-Dec-2023 16:53
Sampler	: Alex Kelly		
Site	: ----		
Quote number	: NWS SEWAGE TESTING - FOX-M		
No. of samples received	: 4		
No. of samples analysed	: 4		

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*
Hannah Lewis	Inorganics Analyst	Inorganics, Waterloo, Ontario
Jocelyn Kennedy	Department Manager - Semi-Volatile Organics	Organics, Waterloo, Ontario
Nik Perkio	Inorganics Analyst	Inorganics, Waterloo, Ontario
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Organics, Waterloo, Ontario
Ruby Sujeepan	Analyst	Microbiology, Waterloo, Ontario

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).

Unit	*Description*
CFU/100mL	colony forming units per hundred millilitres
mg/L	
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.

Workorder Comments

Samples Faecal A,B, and C: Exceeded Recommended Holding Time prior to receipt at the lab for Microbiology analysis.

Qualifiers

Qualifier	Description
BODL	Limit of Reporting for BOD was increased to account for the largest volume of sample tested.
DLIS	Detection Limit Adjusted due to insufficient sample.

Analytical Results Evaluation

Matrix: **Water**

Analyte	CAS Number	Method/Lab	Unit	Client sample ID	CYCLE-LET GEN CHEM AND O&G	CYCLE-LET FAECAL A	CYCLE-LET FAECAL B	CYCLE-LET FAECAL C	----	----	----
				Sampling date/time	05-Dec-2023 09:00	05-Dec-2023 09:01	05-Dec-2023 09:02	05-Dec-2023 09:03	----	----	----
				Sub-Matrix	Water	Water	Water	Water	----	----	----
				WT2340186-001	WT2340186-002	WT2340186-003	WT2340186-004	--------	--------	--------	
Physical Tests											
pH	----	E108/WT	pH units	7.97	----	----	----	----	----	----	
Solids, total suspended [TSS]	----	E160/WT	mg/L	<3.8 DLIS	----	----	----	----	----	----	
Microbiological Tests											
Coliforms, thermotolerant [fecal]	----	E012.FC/WT	CFU/100 mL	----	Not Detected	2	2	----	----	----	
Aggregate Organics											
Biochemical oxygen demand [BOD]	----	E550/WT	mg/L	<3.0 BODL	----	----	----	----	----	----	
Oil & grease (gravimetric)	----	E567/WT	mg/L	<5.0	----	----	----	----	----	----	
Oil & grease, animal/vegetable (gravimetric)	----	EC567A.SG/WT	mg/L	<5.0	----	----	----	----	----	----	
Oil & grease, mineral (gravimetric)	----	E567SG/WT	mg/L	<5.0	----	----	----	----	----	----	

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.

Summary of Guideline Limits

Analyte	CAS Number	Unit	NWS Sewage Limits						
Physical Tests									
pH	----	pH units	**6 - 9 pH units**						
Solids, total suspended [TSS]	----	mg/L	**180 mg/L**						
Microbiological Tests									
Coliforms, thermotolerant [fecal]	----	CFU/100mL							
Aggregate Organics									
Biochemical oxygen demand [BOD]	----	mg/L	**120 mg/L**						
Oil & grease (gravimetric)	----	mg/L	**--**						
Oil & grease, animal/vegetable (gravimetric)	----	mg/L	**--**						
Oil & grease, mineral (gravimetric)	----	mg/L	**--**						

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

Key:

NWS Sewage Limits NWS Sewage Limits

NWS Sewage Limits NWS Sewage Limits

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **WT2340186**	Page	: 1 of 4
Client	: NASITTUQ CORPORATION	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: 613 225 8279
Project	: NWS Sewage Fox Main	Date Samples Received	: 08-Dec-2023 10:45
PO	: ----	Date Analysis Commenced	: 09-Dec-2023
C-O-C number	: ----	Issue Date	: 14-Dec-2023 16:53
Sampler	: Alex Kelly 613 223 0629		
Site	: ----		
Quote number	: NWS SEWAGE TESTING - FOX-M		
No. of samples received	: 4		
No. of samples analysed	: 4		

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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

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*
Hannah Lewis	Inorganics Analyst	Waterloo Inorganics, Waterloo, Ontario
Jocelyn Kennedy	Department Manager - Semi-Volatile Organics	Waterloo Organics, Waterloo, Ontario
Nik Perkio	Inorganics Analyst	Waterloo Inorganics, Waterloo, Ontario
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Waterloo Organics, Waterloo, Ontario
Ruby Sujeepan	Analyst	Waterloo Microbiology, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1271172)											
WT2340083-001	Anonymous	Solids, total suspended [TSS]	----	E160	15.0	mg/L	920	1050	13.6%	20%	----
Physical Tests (QC Lot: 1274414)											
WT2340308-001	Anonymous	pH	----	E108	0.10	pH units	8.36	8.37	0.120%	4%	----
Microbiological Tests (QC Lot: 1270810)											
WT2340186-004	CYCLE-LET FAECAL C	Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	2	1	1	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1270857)											
WT2340014-001	Anonymous	Biochemical oxygen demand [BOD]	----	E550	2.0	mg/L	<2.0	<2.0	0.0%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1271172)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Microbiological Tests (QCLot: 1270810)						
Coliforms, thermotolerant [fecal]	----	E012.FC	1	CFU/100mL	<1	----
Aggregate Organics (QCLot: 1270857)						
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	<2.0	----
Aggregate Organics (QCLot: 1272528)						
Oil & grease (gravimetric)	----	E567	5	mg/L	<5.0	----
Aggregate Organics (QCLot: 1272529)						
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	<5.0	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1271172)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	102	85.0	115	----
Physical Tests (QCLot: 1274414)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Aggregate Organics (QCLot: 1270857)									
Biochemical oxygen demand [BOD]	----	E550	2	mg/L	198 mg/L	96.5	85.0	115	----
Aggregate Organics (QCLot: 1272528)									
Oil & grease (gravimetric)	----	E567	5	mg/L	200 mg/L	102	70.0	130	----
Aggregate Organics (QCLot: 1272529)									
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	100 mg/L	98.6	70.0	130	----

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2340186**	Page	: 1 of 6
Client	: **NASITTUQ CORPORATION**	Laboratory	: ALS Environmental - Waterloo
Contact	: Alaina Leslie	Account Manager	: Costas Farassoglou
Address	: 275 Slater Street Suite 1600 Ottawa ON Canada K1P 5H9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 223 0629	Telephone	: 613 225 8279
Project	: NWS Sewage Fox Main	Date Samples Received	: 08-Dec-2023 10:45
PO	: ----	Issue Date	: 14-Dec-2023 16:57
C-O-C number	: ----		
Sampler	: Alex Kelly		
Site	: ----		
Quote number	: NWS SEWAGE TESTING - FOX-M		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [ON MECP] CYCLE-LET GEN CHEM AND O&G	E550	05-Dec-2023	----	----	----		09-Dec-2023	4 days	4 days	✓
Aggregate Organics : Mineral Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) CYCLE-LET GEN CHEM AND O&G	E567SG	05-Dec-2023	12-Dec-2023	28 days	7 days	✓	12-Dec-2023	40 days	0 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid) CYCLE-LET GEN CHEM AND O&G	E567	05-Dec-2023	12-Dec-2023	28 days	7 days	✓	12-Dec-2023	40 days	0 days	✓
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] CYCLE-LET FAECAL A	E012.FC	05-Dec-2023	----	----	----		09-Dec-2023	48 hrs	99 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] CYCLE-LET FAECAL B	E012.FC	05-Dec-2023	----	----	----		09-Dec-2023	48 hrs	99 hrs	× EHTR
Microbiological Tests : Thermotolerant (Fecal) Coliform (MF-mFC)										
Sterile HDPE (Sodium thiosulphate) [ON MECP] CYCLE-LET FAECAL C	E012.FC	05-Dec-2023	----	----	----		09-Dec-2023	48 hrs	99 hrs	× EHTR
Physical Tests : pH by Meter										
HDPE [ON MECP] CYCLE-LET GEN CHEM AND O&G	E108	05-Dec-2023	13-Dec-2023	14 days	8 days	✓	13-Dec-2023	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
CYCLE-LET GEN CHEM AND O&G	E160	05-Dec-2023	----	----	----		10-Dec-2023	7 days	5 days	✓

Legend & Qualifier Definitions

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Biochemical Oxygen Demand - 5 day	E550	1270857	1	20	5.0	5.0	✓
pH by Meter	E108	1274414	1	19	5.2	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	1270810	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1271172	1	20	5.0	4.7	✓
Laboratory Control Samples (LCS)							
Biochemical Oxygen Demand - 5 day	E550	1270857	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	1272529	1	11	9.0	5.0	✓
Oil & Grease by Gravimetry	E567	1272528	1	15	6.6	5.0	✓
pH by Meter	E108	1274414	1	19	5.2	5.0	✓
TSS by Gravimetry	E160	1271172	1	20	5.0	4.7	✓
Method Blanks (MB)							
Biochemical Oxygen Demand - 5 day	E550	1270857	1	20	5.0	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	1272529	1	11	9.0	5.0	✓
Oil & Grease by Gravimetry	E567	1272528	1	15	6.6	5.0	✓
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC	1270810	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1271172	1	20	5.0	4.7	✓

Methodology References and Summaries

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. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Thermotolerant (Fecal) Coliform (MF-mFC)	E012.FC ALS Environmental - Waterloo	Water	APHA 9222 D (mod)	Following filtration (0.45 µm), and incubation at 44.5 ±0.2°C for 22-26 hours, colonies exhibiting characteristic morphology of the target organism are enumerated and confirmed.
pH by Meter	E108 ALS Environmental - Waterloo	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 ALS Environmental - Waterloo	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Biochemical Oxygen Demand - 5 day	E550 ALS Environmental - Waterloo	Water	APHA 5210 B (mod)	Samples are diluted and incubated for a specified time period, after which the oxygen depletion is measured using a dissolved oxygen meter. Free chlorine is a negative interference in the BOD method; please advise ALS when free chlorine is present in samples.
Oil & Grease by Gravimetry	E567 ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane and the extract is evaporated to dryness. The residue is then weighed to determine Oil and Grease.
Mineral Oil & Grease by Gravimetry	E567SG ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane, followed by silica gel treatment after which the extract is evaporated to dryness. The residue is then weighed to determine Mineral Oil and Grease.
Animal & Vegetable Oil & Grease by Gravimetry	EC567A.SG ALS Environmental - Waterloo	Water	APHA 5520 (mod)	Animal & vegetable oil and grease is calculated as follows: Oil & Grease (gravimetric) minus Mineral Oil & Grease (gravimetric)

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Oil & Grease Extraction for Gravimetry	EP567 ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane by liquid-liquid extraction.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Environmental Division Waterloo
Work Order Reference
WT2340186

Telephone : +1 519 886 6910

COC Number: 14 -

Page ____ of ____

Report To		Report Format / D
Company:	Nasittuq Corp	Select Report Format: PDF
Contact:	Alaina Leslie	Quality Control (QC) Report with Repo
Address:	275 Slater St Ottawa ON K1P 5H9	Criteria on Report - provide details below if
Phone:	613-223-0629	Select Distribution: EMAIL
		Email 1 or Fax alaina.leslie@nasittuc
		Email 2 labresults@nasittuq.c

Invoice To	Same as Report To ☑ Yes ☐ No	Invoice Distribution
	Copy of Invoice with Report ☑ Yes ☐ No	Select Invoice Distribution: EMAIL | MAIL ☐ FAX
Company:		Email 1 or Fax labresults@nasittuq.com
Contact:		Email 2 accounting@nasittuq.com

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q89840	Approver ID:	Cost Center:
Job #:	NWS Sewage Fox Main	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)		ALS Contact: E. Dobbin	Sampler: Alex Kelly

Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
- Standard TAT if received by 3 pm - business days)
- bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
- (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
- r weekend emergency - contact ALS to confirm TAT and surcharge

uired for E2,E or P:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD, pH, TSS	O&G	Faecal Coliforms	Number of Containers
	- Cycle-let Gen Chem and O&G	*05-Dec-23	09:00	Effluent	R	R		3
	- Cycle-let Faecal A	*05-Dec-23	09:01	Effluent			R	1
	- Cycle-let Faecal B	*05-Dec-23	09:02	Effluent			R	1
	- Cycle-let Faecal C	*05-Dec-23	09:03	Effluent			R	1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No Are samples for human drinking water use? ☐ Yes ☑ No	NWS Nunavut Water Board Licence Criteria

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐			SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☑	No ☐		Custody seal intact	Yes ☐	No ☐	
Cooling Initiated	☐						

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
1.2			5.4		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	12-05-23		LR	12/08/23	10:45		9-Dec-23	9:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-EM-0326e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

New GC-321 066-138

ANNEX D. LOCATION OF BERMED FUEL STORAGE FACILITIES

Table D-1 contains the locations and sampling dates for the wastewater discharged from the bermed fuel storage facilities.

Table D-3: Location of Bermed Fuel Storage Facilities and Date Sampled in 2023

Berm	Location on-site	Discharge Latitude[2]	Discharge Longitude	Date
HAL W20B	Beach	68°46'23.93"N	81°12'51.11"W	19-Jun-2023
HAL W20D&E	Airstrip	68°46'15.85"N	81°13'58.33"W	29-Jul-2023
HAL W20F	Beach	68°46'23.75"N	81°12'46.12"W	19-Jun-2023
HAL W22A	Summit	68°45'42.24"N	81°13'25.04"W	19-Jun-2023
HAL W22B	Summit	68°45'43.00"N	81°13'27.27"W	19-Jun-2023

[2] Final discharge point of bermed fuel storage facility

ANNEX E. ANALYSIS OF BERM WATER [3]

The berms at FOX-M were sampled using hydrocarbon test strips as per the approved QA/QC Plan for Berm Water Sampling as stated in the water licence 8BC-FOH1929, PART D, Item 11. The photo log of the hydrocarbon test strips is included below.

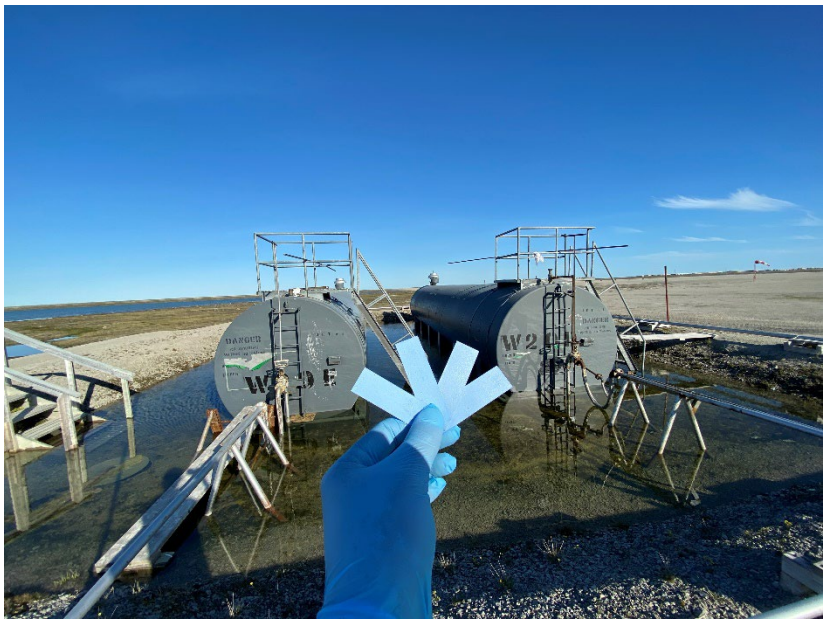
Photo Log

June 19, Summit W22A

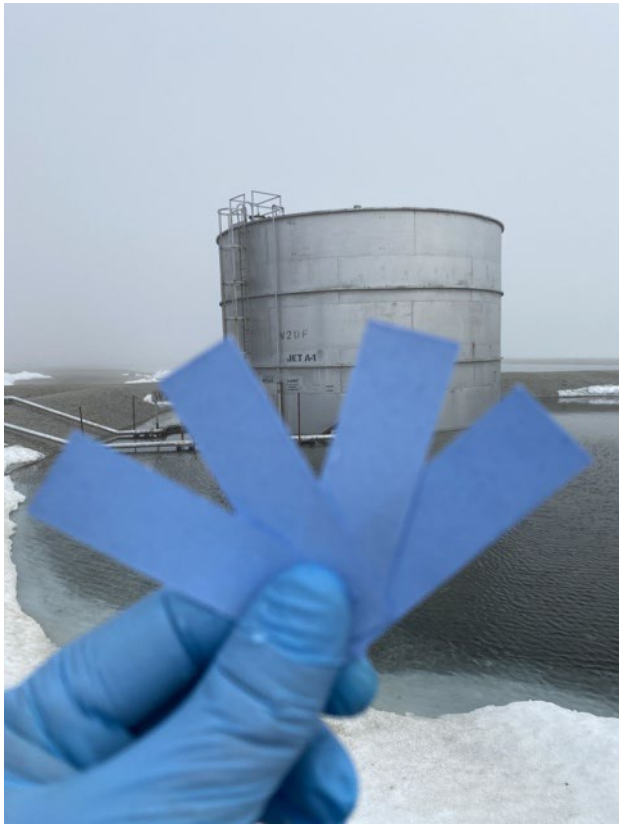
[3] Effluent from bermed fuel storage facilities.

June 19, Summit W22B

June 19, Beach, W20B



July 29, Aviation, W20D & W20E



June 19, Beach, W20F