

MVLWB Registry

From: Miki <mehrlich@mvlwb.com>
Sent: Friday, June 12, 2015 9:58 AM
To: permits@mvlwb.com
Subject: FW: CARO Analytical Services OTHER - Work Order: 5060092, Project: Sewage Lagoon
Attachments: 5060092_1 RPT_CARO-M0 Jun 09 15 1559.pdf

Please post email and attachments to MV2009L3-0025 - Reports and studies - Operations and notifications
Title: Ft Liard - Lab results for decant request - Jun10-15

-----Original Message-----

From: Manager Works and Services [mailto:mws@fortliard.com]
Sent: Wednesday, June 10, 2015 9:42 AM
To: Wendy Bidwell
Cc: Miki Ehrlich
Subject: FW: CARO Analytical Services OTHER - Work Order: 5060092, Project: Sewage Lagoon

Good morning Wendy,

Please find attached the sample results from sewage lagoon #3 of our waste water system. We do not quite pass on the tests. Due to the high levels in our lagoons we must request permission to perform an emergency decant. Please if you can give me an answer to our request as quickly as is possible, we can hopefully avoid being forced to suspend community sewage services.

I will call you to talk about our situation as soon as I can this morning.

Regards,

Alan

Manager Municipal Operations
Hamlet of Fort Liard
867 770 4104 ext. 103
mws@fortliard.com

-----Original Message-----

From: reports@mail133-24.atl131.mandrillapp.com [mailto:reports@mail133-24.atl131.mandrillapp.com] On Behalf Of reports@caro.ca
Sent: Tuesday, June 09, 2015 5:20 PM
To: Manager Works and Services
Subject: CARO Analytical Services OTHER - Work Order: 5060092, Project: Sewage Lagoon

Dear Alan Harris: Thank you for using CARO for your analytical testing. Please find your document(s) attached. If you have any questions, or if this email has been sent to you in error, please contact us.

REPORTED TO Fort Liard, Hamlet of
174 Valley Main Street
Fort Liard, NT X0G 0A0

TEL (867) 770-4104
FAX (867) 770-4004

ATTENTION Alan Harris

WORK ORDER 5060092

PO NUMBER 3900

RECEIVED / TEMP Jun-02-15 10:30 / 18°C

PROJECT Sewage Lagoon

REPORTED Jun-09-15

PROJECT INFO Sewage Lagoon 3

COC NUMBER C00629

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.



Authorized By:

Michelle LaBonte, B.Sc., P.Chem.
Lab Manager, Edmonton

Please contact CARO if more information is needed or to provide feedback on our services.

Locations:

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#102 3677 Highway 97N
Kelowna, BC V1X 5C3
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Tel: 780-489-9100 Fax: 780-489-9700

www.caro.ca

REPORTED TO PROJECT Fort Liard, Hamlet of Sewage Lagoon

WORK ORDER REPORTED 5060092 Jun-09-15

Analysis Description	Method Reference	Technique	Location
BOD (5-day)	APHA 5210 B	Dissolved Oxygen Meter	Edmonton
BOD, Carbonaceous (5-day)	APHA 5210 B	Dissolved Oxygen Meter	Edmonton
Conductivity in Water	APHA 2510 B	Conductivity Meter	Edmonton
Fecal Coliforms (Quanti-Tray)	APHA 9223 B*	Most Probable Number / Enzyme Substrate Endo Agar	Edmonton
pH in Water	APHA 4500-H+ B	Electrometry	Edmonton
Total Ammonia-N in Water	APHA 4500-NH3 D	Ion Selective Electrode	Edmonton
Total Dissolved Solids (Gravimetric)	APHA 2540 C*	Gravimetry (Dried at 103-105C)	Edmonton
Total Suspended Solids	APHA 2540 D*	Gravimetry (Dried at 103-105C)	Edmonton

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation

Glossary of Terms:

MRL Method Reporting Limit
 < Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
 mg/L Milligrams per litre
 MPN/100 mL Most Probable Number per 100 millilitres
 pH units pH < 7 = acidic, pH > 7 = basic
 µS/cm Microsiemens per centimetre

REPORTED TO PROJECT Fort Liard, Hamlet of Sewage Lagoon

WORK ORDER REPORTED 5060092 Jun-09-15

Analyte	Result / Recovery	MRL / Units Limits	Prepared	Analyzed	Notes
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Sample ID: Lagoon #3 (5060092-01) [Water] Sampled: Jun-01-15 09:50

General Parameters

BOD, 5-day	38	2 mg/L	N/A	Jun-02-15	
BOD, 5-day Carbonaceous	41	2 mg/L	Jun-02-15	Jun-02-15	
Conductivity (EC)	906	2 µS/cm	N/A	Jun-05-15	
Ammonia as N, Total	7.65	0.05 mg/L	N/A	Jun-04-15	
pH	8.76	0.01 pH units	N/A	Jun-05-15	HT2
Solids, Total Dissolved	600	10 mg/L	N/A	Jun-03-15	
Solids, Total Suspended	63	2 mg/L	N/A	Jun-03-15	

Microbiological Parameters

Coliforms, Fecal (Q-Tray)	5.3	1.0 MPN/100 mL	Jun-02-15	Jun-03-15	
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Sample / Analysis Qualifiers:

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

REPORTED TO PROJECT Fort Liard, Hamlet of Sewage Lagoon

WORK ORDER REPORTED 5060092 Jun-09-15

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk):** Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup):** Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS):** A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM):** A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B5F0098									
Blank (B5F0098-BLK1)			Prepared: Jun-02-15, Analyzed: Jun-02-15						
BOD, 5-day	< 2	2 mg/L							
Blank (B5F0098-BLK2)			Prepared: Jun-02-15, Analyzed: Jun-02-15						
BOD, 5-day	< 2	2 mg/L							
LCS (B5F0098-BS1)			Prepared: Jun-02-15, Analyzed: Jun-02-15						
BOD, 5-day	195	2 mg/L	198		99	85-115			
General Parameters, Batch B5F0118									
Blank (B5F0118-BLK1)			Prepared: Jun-02-15, Analyzed: Jun-02-15						
BOD, 5-day Carbonaceous	< 2	2 mg/L							
Blank (B5F0118-BLK2)			Prepared: Jun-02-15, Analyzed: Jun-02-15						
BOD, 5-day Carbonaceous	< 2	2 mg/L							
LCS (B5F0118-BS1)			Prepared: Jun-02-15, Analyzed: Jun-02-15						
BOD, 5-day Carbonaceous	196	2 mg/L	198		99	85-115			
Duplicate (B5F0118-DUP1)			Source: 5060092-01 Prepared: Jun-02-15, Analyzed: Jun-02-15						
BOD, 5-day Carbonaceous	39	2 mg/L		41			4	20	
General Parameters, Batch B5F0164									
Blank (B5F0164-BLK1)			Prepared: Jun-03-15, Analyzed: Jun-03-15						
Solids, Total Suspended	< 2	2 mg/L							
LCS (B5F0164-BS1)			Prepared: Jun-03-15, Analyzed: Jun-03-15						
Solids, Total Suspended	50	2 mg/L	50.0		100	86-106			

General Parameters, Batch B5F0165

REPORTED TO PROJECT Fort Liard, Hamlet of Sewage Lagoon

WORK ORDER REPORTED 5060092 Jun-09-15

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B5F0165, Continued									
Blank (B5F0165-BLK1)			Prepared: Jun-03-15, Analyzed: Jun-03-15						
Solids, Total Dissolved	< 20	10 mg/L							
Duplicate (B5F0165-DUP1)			Source: 5060092-01 Prepared: Jun-03-15, Analyzed: Jun-03-15						
Solids, Total Dissolved	626	10 mg/L		600			4	7	
Reference (B5F0165-SRM1)			Prepared: Jun-03-15, Analyzed: Jun-03-15						
Solids, Total Dissolved	1050	10 mg/L	1000		105	0-200			
General Parameters, Batch B5F0238									
Blank (B5F0238-BLK1)			Prepared: Jun-04-15, Analyzed: Jun-04-15						
Ammonia as N, Total	< 0.05	0.05 mg/L							
LCS (B5F0238-BS1)			Prepared: Jun-04-15, Analyzed: Jun-04-15						
Ammonia as N, Total	0.19	0.05 mg/L	0.200		96	92-111			
General Parameters, Batch B5F0328									
Reference (B5F0328-SRM1)			Prepared: Jun-05-15, Analyzed: Jun-05-15						
pH	7.03	0.01 pH units	7.00		100	90-110			
General Parameters, Batch B5F0329									
Blank (B5F0329-BLK1)			Prepared: Jun-05-15, Analyzed: Jun-05-15						
Conductivity (EC)	< 2	2 µS/cm							
LCS (B5F0329-BS1)			Prepared: Jun-05-15, Analyzed: Jun-05-15						
Conductivity (EC)	1440	2 µS/cm	1410		102	97-103			
Microbiological Parameters, Batch B5F0143									
Blank (B5F0143-BLK1)			Prepared: Jun-02-15, Analyzed: Jun-03-15						
Coliforms, Fecal (Q-Tray)	< 1.0	1.0 MPN/100 mL							
Duplicate (B5F0143-DUP1)			Source: 5060092-01 Prepared: Jun-02-15, Analyzed: Jun-03-15						
Coliforms, Fecal (Q-Tray)	4.2	1.0 MPN/100 mL	5.3				23	36	