

Appendix F-3

Reportable Spills and Follow-up Reports



Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR January-20-2019		REPORT TIME 7:00		<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 19 - 020
	B	OCCURRENCE DATE: MONTH – DAY – YEAR January-18-2019		OCCURRENCE TIME 1:00		
C		LAND USE PERMIT NUMBER (IF APPLICABLE) KVPL11D01		WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MEL1631		
	D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Meliadine Gold Project			REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E		LATITUDE DEGREES 63 MINUTES 1 SECONDS 37			LONGITUDE DEGREES 92 MINUTES 12 SECONDS 39	
	F	RESPONSIBLE PARTY OR VESSEL NAME Agnico Eagle Mines Ltd.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION Meliadine, Rankin Inlet, Nunavut, X0C 0G0		
G		ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION		
	H	PRODUCT SPILLED Emulsion		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 100L	U.N. NUMBER 332	
I		SECOND PRODUCT SPILLED (IF APPLICABLE) None		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
	J	SPILL SOURCE Storage Tote		SPILL CAUSE Tote fell off forks		AREA OF CONTAMINATION IN SQUARE METRES
K		FACTORS AFFECTING SPILL OR RECOVERY N/A		DESCRIBE ANY ASSISTANCE REQUIRED		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT
	L	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS While loading a storage tote containing 1 cube of emulsion onto the boom truck, the tote shifted out of the forks. The operator tried to correct by lifting the forks but the hydraulics were slow due to cold temperatures and the tote fell off of the forks. The material was picked up right away with a shovel and placed back into the original tote. No water bodies were impacted by the spill. Closest water body is A11 (397m away), and contaminated material will be processed by the emulsion plant and stored as hazmat. A follow up report will be issued. Environment Technician Sr. Environmental Coordinator - Dan Gorton/Jennifer Brown: Ext 3996				
M		REPORTED TO SPILL LINE BY Sean Arruda	POSITION Environment Tech.	EMPLOYER AEM	LOCATION CALLING FROM Meliadine Project	TELEPHONE 8197593555
	N	ANY ALTERNATE CONTACT Dan Gorton	POSITION Env Coordinator	EMPLOYER AEM	ALTERNATE CONTACT Meliadine Project	ALTERNATE TELEPHONE 8197593555
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130	
	LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS		
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						

Follow Up Report: #19-020

January 18, 2019 Emulsion Tote Spill

Description of Incident:

While loading a storage tote containing 1m³ of emulsion onto a boom truck, using a forklift, the tote shifted out of the forks. Due to extreme cold, the forklift hydraulics were unresponsive, and could not prevent the tote from falling. Approximately 100L of emulsion spilled to the ground and froze. No water bodies were impacted by the spill. The nearest water body is A11 which is >390m away. The coordinates of the spill were, 63° 1'36.87"N, 92°12'39.39"W.



Figure 1: Spill at Portal 1 entrance, opposite P3.

Spill Response & Cleanup:

Site personnel shut down equipment and prevented further spillage. The majority of the material was cleaned up immediately with a shovel and placed back into the original tote. The material will be stored until it is reprocessed by the emulsion plant. Snow contaminated with emulsion residue was disposed of as hazmat.

Spill Cause and Corrective Measures

The release occurred due to the failure of forklift hydraulics which were too cold to operate optimally. Operators will ensure equipment has sufficient time to heat hydraulic oil and function correctly, prior to commencing transfers of emulsion, as per standard operating procedures.



Figure 2: Emulsion tote following spill and clean up.



Figure 3: Snow contaminated with emulsion residue disposed of as hazmat.



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TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR January-21-2019		REPORT TIME 8:30		<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 19 - 021
	B	OCCURRENCE DATE: MONTH – DAY – YEAR January-20-2019		OCCURRENCE TIME 13:00		
C		LAND USE PERMIT NUMBER (IF APPLICABLE) KVPL11D01			WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MEL1631	
	D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Meliadine Gold Project			REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E		LATITUDE DEGREES 63 MINUTES 2 SECONDS 18			LONGITUDE DEGREES 92 MINUTES 13 SECONDS 37	
	F	RESPONSIBLE PARTY OR VESSEL NAME Agnico Eagle Mines Ltd.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION Meliadine, Rankin Inlet, Nunavut, X0C 0G0		
G		ANY CONTRACTOR INVOLVED None		CONTRACTOR ADDRESS OR OFFICE LOCATION		
	H	PRODUCT SPILLED Boiler System Water		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 200L	U.N. NUMBER NA	
I		SECOND PRODUCT SPILLED (IF APPLICABLE) None		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES NA	U.N. NUMBER NA	
	J	SPILL SOURCE Boiler System		SPILL CAUSE Equipment Failure		AREA OF CONTAMINATION IN SQUARE METRES 20
K		FACTORS AFFECTING SPILL OR RECOVERY Freezing Temperatures		DESCRIBE ANY ASSISTANCE REQUIRED None		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT None
	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS A failure at an expansion joint of the boiler system led to a leak inside the corridor between the MSB and Mill, which eventually migrated to the road below. Once the leak was noticed and controlled approximately 200L of water containing Drewgard 4109 (corrosion inhibitor) had leaked onto the ground below. The material which froze into the snow will be scraped up and transferred to P3. No water bodies were impacted, and the nearest fresh water body is >300m away. Environment Technician Sr. Environmental Coordinator - Dan Gorton/Jennifer Brown: Ext 3996					
L	REPORTED TO SPILL LINE BY Sean Arruda	POSITION Environment Tech.	EMPLOYER AEM	LOCATION CALLING FROM Meliadine Project	TELEPHONE 8197593555	
	M	ANY ALTERNATE CONTACT Dan Gorton	POSITION Env Coordinator	EMPLOYER AEM	ALTERNATE CONTACT Meliadine Project	ALTERNATE TELEPHONE 8197593555
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130	
	LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS		
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						

Follow Up Report: #19-021

January 20, 2019 Boiler Recirculation Loop Leak

Description of Incident:

Due to failure of an expansion joint on the boiler recirculation system, approximately 200L of water with corrosion inhibitor (Drewgard 4109) spilled to ground. Most recently the of water was analyzed with a concentration of 0.195ppm of Drewgard. The water froze and 12m³ of snow and ice was transferred to P3, a containment pond within the site's managed water system. No water body was impacted. The nearest body of water is >300m away. The coordinates of the spill were, 63° 2'19.52"N, 92°13'39.97"W.



Spill Response & Cleanup:

Site personnel shut off valves preventing further release of water from the boiler recirculation system. Water followed through the floor of the Arctic corridor to ground and froze. Frozen water from the system was cleaned up with heavy equipment. Material was transported and contained in P3, part of the site's water management system.

Spill Cause and Corrective Measures

The release occurred due to the failure of an expansion joint in the boiler recirculation system. The cause of the failed component is unknown and is currently under investigation by the external system provider (BBA). The expansion joint was replaced and the system inspected for leaks.



Figure 1: Water from boiler recirculation system being removed from ground.



Figure 2: Frozen material prior to being transported to P3.

spill-2019158

[View](#)[Edit](#)[Timeline](#)

Sunday, April 14, 2019 - 09:11

Spill Status

Spill Status: Open

Occurance Date/Time: Friday, April 12, 2019 - 11:00

Received Method: Email

Involved Parties Type: Mining Company

Potential Spill: No

Responsible Party Name: Agnico Eagle Mines Ltd.

Responsible Party/Vessel Address:

Meliadine

Rankin Inlet, NU X0C0G0

Canada

Contractor Name: Orbit Garant

Contractor Address: Canada

Spill Information

Spill Region: Keewatin

Spill Location: Meliadine, Mine, Oil Field, etc

Spill Location Description: Local Lake B7 538226.97 m E, 6989369.38 m N

Geolocation: Geolocation is 63.044, -92.22730000000001

Spill Source: Truck

Spill Cause: Fitting Leak

Product Spilled: Petroleum - lubricating oil (lube, hydraulic)

Product Spilled Description: Hydraulic Oil

Spill Quantity: 1.00

Measurement: Litres

Area of Contamination: 0.50

Supporting Information

Land Use Permit Number: KVPL11D01

Water User Permit Number: 2AM-MEL1631

Additional Information: Spill was due to a slow leak on a hydraulic hose of a loader vehicle. The spill occurred at an active surface drill site, and the material spilled was on the lake ice surface. The contaminated material was scraped away and disposed of properly.

File:



[spill report 14-04-2019.pdf](#)



[2019-04-12 orbit drills 7.jpg](#)

Alternative Contact

Alternative's Employer: Agnico Eagle Mines

Alternative Contact: Sean Arruda

Alternative's Position: Environment Technician

Alternative's Location: Meliadine

Alternative's Phone: [759-3555](tel:759-3555) ext. 4603903

Alternative's Email: sean.arruda@agnicoeagle.com

Reporter Information

Reporting Date and Time: Sunday, April 14, 2019 - 08:15

Reported By: Sean Arruda

Reporter Employer: Agnico Eagle Mines Ltd.

Reporter Location: Meliadine

Reporter Position: Environment Technician

Reporter Phone: 759-3555 ext. 4603903

Reporter Email: sean.arruda@agnicoeagle.com

Follow Up Report: #19-158

April 12th, 2019 Orbit Loader

Description of Incident:

On April 12th 2019, a slow leak of hydraulic oil was identified on a loader operating at an active drill site on Lake B7. Approximately 1 litre of hydraulic oil spilled to the frozen lake surface. GPS coordinates of the location are 538226.97m E, 6989369.38m N.

Spill Response & Cleanup:

Contaminated snow was collected from the lake surface and disposed of as hazmat.

Spill Cause and Corrective Measures

An investigation was completed and the cause of the spill was determined to be a failed seal on the hydraulic shaft. The contractor followed the spill reporting procedure and cleaned up the spill as required. The equipment was sent for servicing and the hydraulic seal was replaced.

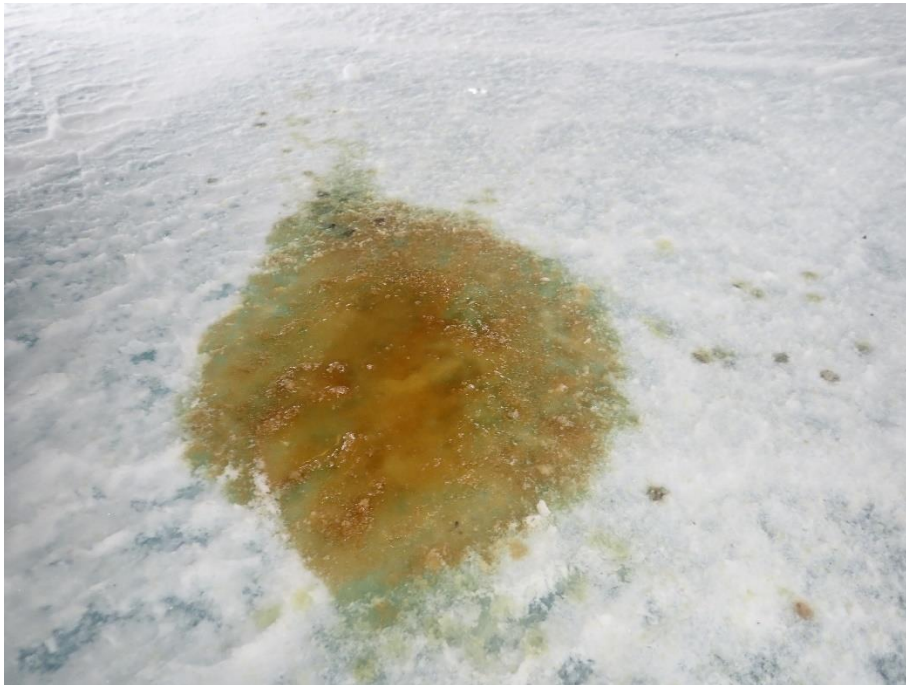


Figure 1: Hydraulic oil over approximately 0.5m² of Lake B7.



Figure 2: Failed hydraulic seal on Orbit Loader



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REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR		REPORT TIME		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____
	B OCCURRENCE DATE: MONTH – DAY – YEAR		OCCURRENCE TIME			
C	LAND USE PERMIT NUMBER (IF APPLICABLE)			WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION				REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE DEGREES MINUTES SECONDS			LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION			
G	ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
I	SPILL SOURCE		SPILL CAUSE		AREA OF CONTAMINATION IN SQUARE METRES	
J	FACTORS AFFECTING SPILL OR RECOVERY		DESCRIBE ANY ASSISTANCE REQUIRED		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE	
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE	

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLED	REPORT LINE NUMBER
		STATION OPERATOR		YELLOWKNIFE, NT	(867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					

Follow Up Report: #19-171

April 16th, 2019 Orbit Drill 3 Spill

Description of Incident:

On April 16th 2019, a valve on Orbit Drill 3 broke, releasing approximately 5 litres of oil to Lake B7. The incident occurred at drill hole M19-2524W2. GPS coordinates of the location are 63°01'46"N, 92°14'12"W.

Spill Response & Cleanup:

The body valve was replaced, stopping the leak. Heat from the operation of the drill caused the ice to melt and oil flowed into the hole under the rig. During clean up on April 25th, it was noted that approximately 1 litre of additional oil had leaked from the rig to the absorbent pads below. Absorbent pads were used to collect oil from the water surface. Used absorbent pads were collected and disposed of in compliance with the hazmat management plan.



Figure 1: Absorbent pads used to remove oil under drill 3, on lake B7.

Spill Cause and Corrective Measures

Agnico Eagle's Environment department completed an investigation and determined the cause of the spill was a failed body valve. It was determined the spill occurred 16th April 2019, but was not reported until 24th April 2019. AEM Geology completed further follow up investigation and determined more thorough pre-op inspections must be completed in order to identify equipment failures.

Follow Up Report: #19-171

May 24th, 2019 Orbit Drill 3 Spill

Description of Incident:

On April 16th 2019, a valve on Orbit Drill 3 broke, releasing approximately 5 litres of oil to Lake B7. The incident occurred at drill hole M19-2524W2. GPS coordinates of the location are 63°01'46"N, 92°14'12"W.

Spill Response & Cleanup:

Absorbent sheets and booms have been changed and removed from drill site to finish cleaning the site.

Drill 3 was removed from the spill location May 24th when final inspection was completed.



Figure 1: No oil or sheen remains within drill site

Spill Cause and Corrective Measures

Agnico Eagle's Environment department completed an investigation and determined the cause of the spill was a failed body valve. It was determined the spill occurred 16th April 2019, but was not reported until 24th April 2019. AEM Geology completed further follow up investigation and determined more thorough pre-op inspections must be completed in order to identify equipment failures.



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TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 04-24-2019	REPORT TIME 18:00	<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT		REPORT NUMBER 19 - 169
B	OCCURRENCE DATE: MONTH – DAY – YEAR 04-24-2019	OCCURRENCE TIME 12:00			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) KVPL11D01	WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MEL1631			
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Meliadine Gold Project		REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES MINUTES SECONDS		LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME Agnico Eagle Mines Ltd.	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION Meliadine, Rankin Inlet, Nunavut, X0C 0G0			
G	ANY CONTRACTOR INVOLVED Orbit Garant	CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED Oil	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 4 Litres	U.N. NUMBER NA		
	SECOND PRODUCT SPILLED (IF APPLICABLE) None	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER		
I	SPILL SOURCE Drill 6	SPILL CAUSE Equipment Failure	AREA OF CONTAMINATION IN SQUARE METRES 0.5m2		
J	FACTORS AFFECTING SPILL OR RECOVERY Ice hole under drill	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS On April 24, a spill was identified at drill hole M19-2518 under Rig 6. Absorbent pads have been placed in the water to remove the oil. The absorbent pads will be changed on a regular basis until the contaminant is completely removed. Heat from the drill has melted ice, allowing contaminants to enter Lake B7. Exact location of the spill is 538374.94 E, 6989189.85 N A investigation will be completed and a follow up report will be submitted. The spill is being reported as per: NWB License 2AM-MEL1631 Part H, item 9 b, subsections 38(4), of the Fisheries Act.				
L	REPORTED TO SPILL LINE BY Dan Gorton	POSITION Env. Coordinator	EMPLOYER AEM	LOCATION CALLING FROM Meliadine Project	TELEPHONE 8197593555
M	ANY ALTERNATE CONTACT Terry Ternes	POSITION Env. Gen. Supervisor	EMPLOYER AEM	ALTERNATE CONTACT Meliadine Project	ALTERNATE TELEPHONE 8197593555
REPORT LINE USE ONLY					
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					

Follow Up Report: #19-169

April 24th, 2019 Orbit Drill 6 Spill

Description of Incident:

On April 24th 2019, an inspection of Orbit Drill 6 was completed. A spill was discovered covering an area of approximately 0.5m². It was estimated approximately 4 litres of oil was released onto the frozen surface of Lake B7. The incident occurred at drill hole M19-2518. GPS coordinates of the location are 538374.94N, 6989189.85W.

Spill Response & Cleanup:

Heat from the operation of the drill caused the ice to melt and oil flowed into the hole under the rig. Absorbent pads were used to collect oil from the water surface. Used absorbent pads were collected and disposed of in compliance with the hazmat management plan.



Figure 1: Absorbent pads used to clean up oil spilled beneath drill 6, on Lake B7.

Spill Cause and Corrective Measures

The rotation head broke causing oil to leak to the drill floor and flow into the cutting tub. The cutting tub overflowed releasing approximately 4 litres of oil to the ice hole beneath the rig on Lake B7.

During the investigation it was determined a spill occurred 15th February 2019, at this location and an internal spill report was filed by Orbit Garant (the contractor). Due to a miscommunication between the environment department and the contractor, the report was not filed correctly and subsequently, the spill was not reported to regulatory authorities. It is unclear if the spilled oil at this location was a result of improper clean-up on 15th February 2019, or if a second spill occurred at a later date.

Agnico Eagle's Geology department completed an additional follow up investigation and deemed the following corrective measures are necessary:

- Agnico Eagle staff will confirm clean-up of spills and complete drill inspections prior to drills relocating.
- Maintenance records will be kept for decantation tubs and cutting tubs under the drill.
- Orbit foremen will ensure thorough pre-operation inspections are completed.
- This incident will be used as an example during toolbox talks to remind staff of the importance of inspections and spill reporting.



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EMAIL: spills@gov.nt.ca

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A	REPORT DATE: MONTH – DAY – YEAR 04-24-2019	REPORT TIME 18:19 pm	<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 19 - 172
B	OCCURRENCE DATE: MONTH – DAY – YEAR 04-24-2019	OCCURRENCE TIME 9:00 am		
C	LAND USE PERMIT NUMBER (IF APPLICABLE) KVPL11D01	WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MEL1631		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Meliadine Gold Project	REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES 63 MINUTES 01 SECONDS 55	LONGITUDE DEGREES 92 MINUTES 14 SECONDS 37		
F	RESPONSIBLE PARTY OR VESSEL NAME Agnico Eagle Mines Ltd.	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION Meliadine Rankin Inlet, NU X0C0G0 Canada		
G	ANY CONTRACTOR INVOLVED Orbit Garant	CONTRACTOR ADDRESS OR OFFICE LOCATION Canada		
H	PRODUCT SPILLED Diesel Fuel	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 0.5 Litre	U.N. NUMBER NA	
	SECOND PRODUCT SPILLED (IF APPLICABLE) None	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
I	SPILL SOURCE Pump Shack	SPILL CAUSE Equipment Failure	AREA OF CONTAMINATION IN SQUARE METRES 0.25 m2	
J	FACTORS AFFECTING SPILL OR RECOVERY	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT	

K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS A small amount of diesel was observed on the snow beside the drill pump shack bh-102 on Lake B7. The diesel leaked out of a hose connected to the main fuel cache. The contaminated snow was scooped up with a shovel and placed in a 5 gallon pail. The contaminated snow was deposited in the snow cell. The spill is being reported as per: NWB License 2AM-MEL1631 Part H, item 9 b, subsections 38(4), of the Fisheries Act. Exact location of the spill is 63° 01'55"N, 92°14'37"W A investigation will be completed and a follow up report will be submitted.			
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L	REPORTED TO SPILL LINE BY Bethany Hodgins	POSITION Environment Tech.	EMPLOYER AEM	LOCATION CALLING FROM Meliadine	TELEPHONE 8197593555
M	ANY ALTERNATE CONTACT Dan Gorton	POSITION Env Coordinator	EMPLOYER AEM	ALTERNATE CONTACT Meliadine	ALTERNATE TELEPHONE 8197593555

REPORT LINE USE ONLY					
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					

Follow Up Report: #19-172

April 24th, 2019 – Pump Shack BH-102 - 0.5L Oil Spill

Description of Incident:

On April 24th 2019, during an inspection, approximately 0.5 litres of diesel was identified on the frozen surface of Lake B7. The incident occurred at pump shack BH-102. GPS coordinates of the location are 63° 01'55"N, 92°14'37"W

Spill Response & Cleanup:

Contaminated snow was collected and transported to the snow cell, where it will be processed using an oil/water separator.



Figure 1: Contaminated snow removed from the surface of Lake B7.

Spill Cause and Corrective Measures

Agnico Eagle's Environment department completed an investigation and determined the cause of the spill was human error. Diesel spilled to ground from a hose connected to the main fuel cache. Operators have since been instructed to take care to prevent diesel leaking from the hose between refueling events.

AEM Geology completed further follow up investigation and determined more thorough pre-op inspections must be completed in order to identify equipment failures.



Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 5-18-2019	REPORT TIME 16:30	<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT		REPORT NUMBER _____
B	OCCURRENCE DATE: MONTH – DAY – YEAR 5-18-2019	OCCURRENCE TIME 10:30			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) KVPL11D01	WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MEL1631			
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Meliadine Gold Project		REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES 63 MINUTES 2 SECONDS 23		LONGITUDE DEGREES 92 MINUTES 13 SECONDS 37		
F	RESPONSIBLE PARTY OR VESSEL NAME Agnico Eagle Mines Ltd.	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION Meliadine, Rankin Inlet, Nunavut, X0C 0G0			
G	ANY CONTRACTOR INVOLVED None	CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED Waste Oil	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 200L	U.N. NUMBER N.A.		
	SECOND PRODUCT SPILLED (IF APPLICABLE) None	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER		
I	SPILL SOURCE Punctured Tote	SPILL CAUSE Human Error	AREA OF CONTAMINATION IN SQUARE METRES 5		
J	FACTORS AFFECTING SPILL OR RECOVERY N/A	DESCRIBE ANY ASSISTANCE REQUIRED N/A	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS On May 18, 2019 an operator was using a telehandler to load waste oil totes into a seacan. The operator punctured a tote causing ~200L of waste oil to ground. Waste oil was confined to a puddle on the access road. Absorbent pads were used to recover the oil, which was disposed of as hazmat. No water bodies were impacted by this release. The closest natural water body is approximately 560m away. The spill is being reported as per NWB License 2AM-MEL1631 Part H, item 8. The exact location of the spill is 63° 2'12.60"N, 92°13'12.41"W. A follow up report will be issued once completed.				
L	REPORTED TO SPILL LINE BY Sean Arruda	POSITION Acting EnvCoordinator	EMPLOYER AEM	LOCATION CALLING FROM Meliadine	TELEPHONE 8197593555
M	ANY ALTERNATE CONTACT Dan Gorton	POSITION Env. Coordinator	EMPLOYER AEM	ALTERNATE CONTACT LOCATION Meliadine	ALTERNATE TELEPHONE 8197593555
REPORT LINE USE ONLY					
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					

Follow Up Report: #19-210

May 18, 2019 Waste Oil Tote Spill

Description of Incident:

On May 18 2019, an operator was using a tele-handler to load waste oil totes into a seacan. The operator punctured a tote causing ~200L of waste oil to spill to ground. Waste oil was confined to a puddle on the access road. No water bodies were impacted by this release. The closest natural water body is approximately 560m away. The exact location of the spill was 63° 2'12.60"N, 92°13'12.41"W.



Figure 1: Waste Oil Spill at Hazmat laydown, opposite incinerator building.

Spill Response & Cleanup:

Site personnel maneuvered the leaking tote to prevent further spillage. Waste oil, which had flowed into a puddle on the adjacent access road, was contained using a hydrocarbon absorbent boom. Waste oil was removed from the water surface using absorbent pads, which were disposed of as hazmat.

Spill Cause and Corrective Measures

The release occurred due to an operator pushing totes into a seacan, which crushed a tote at the rear, causing a puncture. Operators will be briefed on how to avoid this type of incident in future. Spill response materials used in the clean-up will be restocked. Additional spill response equipment will be purchased, to improve response time.



Figure 2: Waste oil contained by hydrocarbon boom at hazmat laydown.



Figure 3: Waste oil was absorbed using spill response supplies.



Figure 4: Loader used to transport waste oil contaminated road base to landfarm.



Figure 5: Sump used to collect floating waste oil was backfilled.



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OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 07-08-2019	REPORT TIME 08:21	<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT		REPORT NUMBER 19 - 269
B	OCCURRENCE DATE: MONTH – DAY – YEAR 07-07-2019	OCCURRENCE TIME 11:30			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) KVPL11D01	WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MEL1631			
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Meliadine Gold Project		REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES 63 MINUTES 2 SECONDS 23		LONGITUDE DEGREES 92 MINUTES 13 SECONDS 37		
F	RESPONSIBLE PARTY OR VESSEL NAME Agnico Eagle Mines Ltd.	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION Meliadine, Rankin Inlet, Nunavut, X0C 0G0			
G	ANY CONTRACTOR INVOLVED None	CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED Diesel Exhaust Fluid (DEF)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 150	U.N. NUMBER N/A		
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER		
I	SPILL SOURCE Storage Tote	SPILL CAUSE Improper storage/Human error	AREA OF CONTAMINATION IN SQUARE METRES 4		
J	FACTORS AFFECTING SPILL OR RECOVERY N/A	DESCRIBE ANY ASSISTANCE REQUIRED None	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT None		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS On Sunday July 7, 2019 A full tote of Diesel Exhaust Fluid (DEF) was found knocked over on its side. Fluid had leaked out to the level of the cap (approximately 150L). The Environment department was contacted and the contaminated gravel was removed into a quatrex bag. No water bodies were impacted. The closest natural water body is 700m away. The exact location of the spill was 63.02707206602569, -92.21127783747073 This spill was reported using the online reporting system.				
L	REPORTED TO SPILL LINE BY Sean Arruda	POSITION Env. Coordinator	EMPLOYER AEM	LOCATION CALLING FROM Meliadine	TELEPHONE 8197593555
M	ANY ALTERNATE CONTACT Dan Gorton	POSITION Env. Coordinator	EMPLOYER AEM	ALTERNATE CONTACT Meliadine	ALTERNATE TELEPHONE 8197593555
REPORT LINE USE ONLY					
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					

Follow Up Report: #19-269

July 7, 2019 Diesel Exhaust Fluid Tote Spill

Description of Incident:

On July 7 2019, a tote of diesel exhaust fluid (DEF) was found laying on its side. Some of the contents had leaked out to the level of the cap (approximately 150L). No water bodies were impacted by this release. The closest natural water body is approximately 700m away. The exact location of the spill was 63.02707206602569, -92.21127783747073.



Figure 1: Waste Oil Spill at Hazmat laydown, opposite incinerator building.

Spill Response & Cleanup:

The environment department was contacted and the contaminated gravel was placed in a quatrex bag to be disposed of as hazmat. Site personnel maneuvered the leaking tote to prevent further spillage and transferred the remaining contents for later use.

Spill Cause and Corrective Measures

The root causes of the spill were improper storage and human error. Staff were advised to follow product transfer procedures. Spill response materials used in the clean-up will be restocked.



Figure 2: Damaged DEF tote outside of workshop, prior to clean-up.



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NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 2019-08-25		REPORT TIME		<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____
	B	OCCURRENCE DATE: MONTH – DAY – YEAR 2019-08-23		OCCURRENCE TIME		
C		LAND USE PERMIT NUMBER (IF APPLICABLE) KVPL11D01		WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MEL1631		
	D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Melvin Bay			REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E		LATITUDE DEGREES 62 MINUTES 48 SECONDS 45			LONGITUDE DEGREES 92 MINUTES 61 SECONDS 44	
	F	RESPONSIBLE PARTY OR VESSEL NAME Agnico Eagle Mines LTD.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION Meliadine, Rankin Inlet, Nunavut, X0C 0G0		
G		ANY CONTRACTOR INVOLVED KCG		CONTRACTOR ADDRESS OR OFFICE LOCATION Rankin Inlet, Nunavut		
	H	PRODUCT SPILLED Treat salt water		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 52m3		U.N. NUMBER
I		SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER
	J	SPILL SOURCE Truck		SPILL CAUSE Instrumentation failure		AREA OF CONTAMINATION IN SQUARE METRES unknown
K		FACTORS AFFECTING SPILL OR RECOVERY N/A		DESCRIBE ANY ASSISTANCE REQUIRED None		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT None
	L	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS During the saline water discharge to sea, Itivia location experienced a power bump and reset the daily volume allocation on the Human Machine Interface (HMI). When operators off loaded the saline water the value on the HMI was incorrect which allowed the operators to discharge an additional 52 m3 of water into Melvin Bay. Permitted limit is 800 m3/day. They discharged 852 m3/day. The actual volume of water discharged was found on the Histogram which did not reset during the power outage. This extra water discharged was detected when the values for the histogram were reviewed. AEM is investigating this incident and will be provide a follow-up to mitigate this situation for the future.				
M		REPORTED TO SPILL LINE BY Terry Ternes	POSITION General Supervisor	EMPLOYER AEM	LOCATION CALLING FROM Meliadine	TELEPHONE 8197593555
	N	ANY ALTERNATE CONTACT Sean Arruda	POSITION Env. Coordinator	EMPLOYER AEM	ALTERNATE CONTACT Meliadine	ALTERNATE TELEPHONE 8197593555
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130	
	LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS		
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						

Follow Up Report: #19-340

August 23, 2019 Saline Discharge Volume Exceedance – Melvin Bay

Description of Incident:

During the saline water discharge to sea, the Itivia location (Figure 1) experienced a power issue, which reset the daily volume allocation on the Human Machine Interface (HMI). The operators were relying only on this system to determine when they reached the 800m³ discharge limit for the day. When operators offloaded the saline water, the value on the HMI was incorrect which lead operators to discharge an additional 52 m³ of water into Melvin Bay. In Meliadine's NIRB agreement, the permitted limit is 800 m³/day. This was not apparent until the following evening when the Energy and Infrastructure team (E&I) produced the daily histogram (Figure 2).



Figure 1: Location of the truck offloading station of treated saline water, and the end of the pipe where discharge enter Melvin Bay.

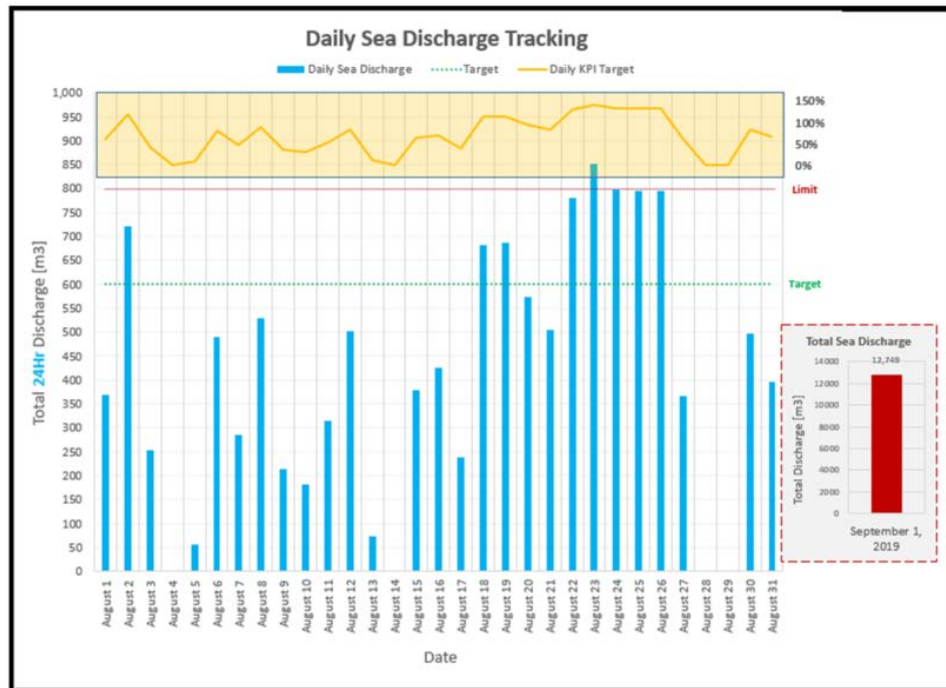


Figure 2: Daily discharge to sea volumes for the month of August, 2019. 800m³ exceedance on August 23.

Spill Response & Cleanup:

This treated water was discharged at a permitted and planned discharge point, therefore no cleanup or immediate response was required. No impact to the receiving environment occurred due to the additional 52m³ of water discharged from this event.

Cause of Incident and Corrective Measures

The root cause of the discharge volume exceedance was that there was no back-up measure in place to monitor how much water was discharged. The operators continued hauling water to Itivia and over the 24 hour period and approximately two additional trucks were offloaded. As a mitigation measure, a manual log sheet has been created and placed in the offloading station (Figure 3). When an operator arrives and begins offloading water, they must record the time, date, truck number, etc. No more than 22 trucks are to be offloaded during a single day. Furthermore, next year a cutoff system is planned to be installed at the offloading station. This will be programmed to divert water from being discharge to Melvin Bay, and store it in a holding tank, when the daily limit is reached.

Discharge to Sea: Maximum of 22 trucks per day

Date: _____

Truck Load	Time	Truck Number	Operator	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

Figure 3: Example of a similar tracking sheet now located at the Itivia discharge to sea offloading station.



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TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 08-27-2019		REPORT TIME 18:00		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input checked="" type="checkbox"/> UPDATE # 19-346 TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____
	B	OCCURRENCE DATE: MONTH – DAY – YEAR 08-19-2019		OCCURRENCE TIME 6:00		
C		LAND USE PERMIT NUMBER (IF APPLICABLE) KVPL11D01		WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MEL1631		
	D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Melvin Bay			REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E		LATITUDE DEGREES 62 MINUTES 48 SECONDS 1			LONGITUDE DEGREES 92 MINUTES 5 SECONDS 57	
	F	RESPONSIBLE PARTY OR VESSEL NAME Agnico Eagle Mines LTD.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION Meliadine, Rankin Inlet, Nunavut, X0C 0G0		
G		ANY CONTRACTOR INVOLVED KCG		CONTRACTOR ADDRESS OR OFFICE LOCATION Rankin Inlet, Nunavut		
	H	PRODUCT SPILLED Treated saline water		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES TBD		U.N. NUMBER
I		SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER
	J	SPILL SOURCE Truck		SPILL CAUSE TSS Exceedence		AREA OF CONTAMINATION IN SQUARE METRES unknown
K		FACTORS AFFECTING SPILL OR RECOVERY Organic TSS		DESCRIBE ANY ASSISTANCE REQUIRED None		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT None
	L	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS During the discharge to sea, regulatory samples were collected at compliance point (MEL-26) on August 19, 2019. The preliminary results from the sample were received on 26 August 2019 with the TSS being 53 ppm and 33 ppm for the duplicate which are above the MDMER limit. As a result of this, AEM took internal TSS/turbidity samples to monitor the water quality. TSS analysis showed 53mg/l, exceeding the 30mg/l monthly grab limit. VSS analysis indicated algae to be a contributing factor, and chlorine dosing was used to rectify the issue. Acute toxicology samples collected September 2nd showed discharge was toxic. Following mitigation, discharge resumed until September 12th, when acute toxicology failed. Discharge to sea ceased immediately. A follow-up report will be completed regarding this exceedence.				
M		REPORTED TO SPILL LINE BY Terry Ternes		POSITION General Supervisor	EMPLOYER AEM	LOCATION CALLING FROM Meliadine
	N	ANY ALTERNATE CONTACT Sean Arruda		POSITION Env. Coordinator	EMPLOYER AEM	ALTERNATE CONTACT Meliadine
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY		POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130
	LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME		CONTACT TIME	REMARKS	
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						

Follow Up Report: #19-346 (formerly #19-345) August 19, 2019 Total Suspended Solids (TSS) Exceedance– MEL-26 Discharge Point

The following information is being provided in accordance with MDMER Section 31 and section 38(7) of the Fisheries Act, and relates to spill report #19-346, submitted August 27th 2019, by Agnico Eagle Mines Ltd., Meliadine Division.

Description of Incident:

Table 1: Summary of events following sample collection

Date	Event
19 August 2019	Weekly MDMER sample collected at MDMER FDP MEL-26 during discharge of treated saline water into Melvin Bay, Artic Ocean
23 August 2019	Algae identified in Saline Pond 3
24 August 2019	Chlorine dosing increased at SETP inflow to reduce algal growth
26 August 2019	Technician noted chlorine smell in outflow during sampling
	Preliminary results determined a TSS exceedance of 53mg/L and 33mg/L (duplicate)
27 August 2019	Final results received showing TSS exceedance, with VSS being a contributing source.
	SP3 cleaned of sediment and algaecide added to control VSS.
	Spill Report 19-345 (later changed to 19-346) submitted as per 38(5) of the Fisheries Act and section 24(1) of the MDMER and discharge was stopped at FDP MEL-26.
2 September 2019	Conducted acute lethality testing for stickleback as per MDMER section 31.1
5 September 2019	Preliminary notification submitted to ECCC reporting acute lethality test failure
	Various measures were put in place at the SETP to mitigate potential adverse effects related to the failed acute lethality test. Examples of such measures include: adjustment of SETP chlorine dosage rates, back washing carbon filters, calibrating and verifying SETP probes etc.)
6 September 2019	ECCC notified of the MDMER section 31.1 acute lethality failure and that increased acute lethality testing would be conducted on September 9, September 23 rd and October 7 th , with characterization samples to be taken at the same time for all 3 samples. ECCC was also informed that the lab that Agnico Eagle uses (Harris), based was in Nova Scotia, was in the path of hurricane Dorian. Power failures were expected potentially impacting the analysis (fish availability) and also the reporting.
12 September 2019	Spill Report 2019-345/346 Update submitted. VSS analysis indicated algae to be a contributing factor.
	Preliminary results of acute lethality testing conducted on September 9, failed. Chlorine was suspected to have caused test failure.
	Discharge to sea ceased immediately.
13 September 2019	Preliminary notification submitted to ECCC reporting acute lethality test failure and that discharge had ceased until the chlorine issue could be rectified.

Table 2: Summary of responses to MDMER section 31 conditions

Condition	Response
(a) the name, description and concentration of the deleterious substance deposited;	53mg/L and 33mg/L of TSS
(b) the estimated quantity of the deposit and how the estimate was achieved;	Effluent volume for August 19 th discharge was 792m ³ which equates to approximately 42 kg of TSS given the TSS concentration of 53 mg/L on that day.
(c) the day on which, and hour at which, the deposit occurred;	August 19 th for 24hrs.
(d) the quantity of the deleterious substance that was deposited at a place other than through a final discharge point and the identification of that place, including the location by latitude and longitude and, if applicable, the civic address;	Not applicable. Discharge occurred at authorized discharge point, Mel-26.
(e) the quantity of the deleterious substance that was deposited through a final discharge point and the identification of that discharge point;	Aug 19 th discharge quantity based on total truckloads offloaded at Mel-26.
(f) the name of the receiving body of water, if there is a name, and the location by latitude and longitude where the deleterious substance entered the receiving body of water;	MDMER FDP MEL-26, Melvin Bay, Arctic Ocean. 545955.56 m E, 6963638.39 m N.
(g) the results of the acute lethality tests conducted under subsection 31.1(1) or a statement indicating that acute lethality tests were not conducted but that notification was given under subsection 31.1(2);	<u>2nd Sept 2019</u> 96hr LC ⁵⁰ value = 25.0 (fail) <u>9th Sept 2019</u> 96hr LC ⁵⁰ value = 16.5 (fail)
(h) the circumstances of the deposit, the measures that were taken to mitigate the effects of the deposit and, if the emergency response plan was implemented, details concerning its implementation; and	The emergency response plan was implemented in that environmental staff responded to the exceedance by investigating and mitigating the cause.
(i) the measures that were taken, or that are intended to be taken, to prevent any similar occurrence of an unauthorized deposit.	See corrective measures section.

A weekly effluent sample at the MEL-26 final discharge point (Figure 1) for treated saline water was collected on August 19, 2019. Visually, the sample did not appear to be indicative of high TSS, and the field measurements taken at the time were within the acceptable limits.

Results from this sample were received August 27, 2019, at which time Total Suspended Solids (TSS) analysis showed 53mg/L and 33mg/L on a duplicate sample, which exceeded the limit of 30mg/L for any given grab sample to comply with MDMER Schedule 4 authorized limits.

During the week leading up to August 27th, algae was observed in the SP3 (Figure 2) pond which was thought to have been a major contributor to the high TSS in the MEL-26 sample. Before receiving lab results, BV Labs was contacted and asked to include Volatile Suspended Solids (VSS) analysis to elucidate between organic and inorganic solids. Laboratory analysis showed VSS accounted for approximately 50% of TSS, indicating the TSS exceedance was likely due to algal growth in the sample post-collection.

Table 3: TSS results collected following exceedance

	Lab	Lab	Lab	Field	Field	Lab	Lab	Lab	Lab
Date	19/8/19	19/8/19	19/8/19	23/8/19	23/8/19	24/8/19	24/8/19	26/8/19	26/8/19
Location	Mel-26	Mel-26 Dup	Mel-26 FB	SETP Outflow	SP3 Pond	SETP Outflow	SP3 Pond	SETP Outflow	SP3 Pond
TSS (mg/L)	53	33	<1	5	25	27	110	15	13
VSS (mg/L)	24	16	<1	-	-	13	15	9	8

While investigating the cause of the TSS exceedance, an internal confirmation sample was collected from the SETP outflow 19th August. On August 26th, technicians noticed the smell of chlorine, suggesting the Saline Effluent Treatment Plant (SETP) was unable to remove the chlorine used in the treatment process. Field readings indicated chlorine was present in Saline Pond 3 (SP3). It was anticipated chlorine levels would be diluted within SP3 following adjustments to the SETP process, and any remaining chlorine would degrade prior to discharge. The Environment Department began conducting in-house testing for TSS and chlorine levels in order to monitor the situation. A conservative estimate of the volume of chlorine released to Melvin Bay, Arctic Ocean between August 26th and September 11th is approximately 0.3 L/day.

An acute toxicology sample was collected September 2nd, and failed on September 5th. Toxicology sampling frequency was increased to include September 9th, September 23rd and October 7th, with characterization samples to be taken at the same time for all three samples. Acute toxicology samples collected on September 9th, failed on September 12th. Discharge to sea was immediately stopped. Volumes discharged to sea were 864 m³ on September 2nd and 794 m³ on September 9th.



Figure 1: Location of the truck offloading station of treated saline water, and the end of the pipe where discharge enters Melvin Bay.



Figure 2: Locations of SETP and SP3.

Spill Response & Cleanup:

In response to the TSS exceedance, VSS analysis was added to determine the source of the TSS. Results showed the source was approximately 1:1 organic to inorganic, indicating algae was a contributing factor. Algaecide was added to SP3 to reduce TSS. The intake pipe was raised approximately 30cm from the bottom of the pond to reduce the quantity of sediment being pumped into tanker trucks, which transport effluent to the discharge point at Itivia. A minimum operating water level was implemented to allow settling within the retention pond.

Chlorine used to eliminate organic TSS in the SETP, appeared to be above target concentration at the outflow to Saline Pond 3. In response, an investigation began to identify if chlorine was not being removed effectively in the SETP process. The suspected cause was failure of the carbon filters. To rectify the issue, daily back flushing was implemented to improve the functionality of the carbon filters. This practice reduced chlorine levels in outflow, however this was not sufficient to prevent the failure of the acute toxicology test, completed September 5th. Further adjustments to the SETP dosing system also proved unsuccessful when acute toxicology tests for samples taken on September 9th failed on September 12th.

Following the first failed lethality result from the September 5th sample, various mitigation measures were put in place in the Saline Effluent Treatment Plant while discontinuous discharge continued. These mitigation measures include: adjusting chlorine dosing rates, back flushing the carbon filters daily, collecting daily field readings by environment team at different stages of the treatment; interviewing the operators to ensure their understanding of discharge criteria; calibrating and verifying probes with other probes from the environment department.

The discharge to the environment ceased immediately upon reception of preliminary results of the second failed acute lethality test September 12th and resumed September 24th 2019 after in-house analysis showed it was safe to do so.

Samples were taken for toxicology tests October 1st and October 7th which showed non-lethal results. Discharge to sea ended October 11th, before it was possible to take the third sample requested by Metal and Dimond Mining

Effluent Regulations (MDMER) section 15 (1) to resume regular sampling and testing frequency prescribed in section 14.

Cause of Incident and Corrective Measures

The initial cause of the Total Suspended Solid exceedance was due a combination of high wind agitating sediment and algae in Saline Pond 3. Algae growth is suspected to be the result of nutrient levels. Sediment is suspected to be the result of dust, insufficient filtration, and feed source.

Table 3: Summary of causes and corrective measures

Incident	Corrective measure
TSS exceedance	VSS analysis added to lab analysis to determine organic and inorganic TSS
TSS exceedance due to VSS	Algaecide application in SP3
	Chlorine dosing increased to eliminate organic TSS
TSS exceedance due to sediment	Intake pipe raised to prevent discharge of sediment
Toxicology test failure Sept 6 th due to chlorine	SETP operators adjusted chlorine dosing rate
	Carbon filters back flushed daily
	Field readings collected by environment team in SP3
	SETP operators interviewed to ensure understanding of discharge criteria
	SETP probes calibrated and verified with environment team probes
Toxicology test failure Sept 12 th due to chlorine	Discharge ceased immediately
	Replacement of carbon in filtration system to be completed prior to recommencing discharge

When discharge to sea restarts in 2020, three consecutive acute lethality tests showing non-lethal results will be conducted prior to resuming regular sampling and testing frequency as per MDMER section 15(1).

Furthermore, mitigation measures have been implemented to avoid such incidents in the future, namely in-house chlorine readings will be taken daily, and carbon is available on the site for maintenance of the Granular Activated Carbon (GAC) filters.

All chemistry and toxicity laboratory results are in following appendix.

Appendix: Chemistry and Toxicity Laboratory results

CLIENT INFORMATION	TEST FACILITY INFORMATION
Aquatox/Agnico Eagle Mines - Meliadine Rankin Inlet, Nunavut, Canada Contact: Martina Rendas	Harris Industrial Testing Service Ltd. 1320 Ashdale Rd., South Rawdon Nova Scotia B0N 1Z0 Ph: 902 757-0232 Fax: 902 757-2839 office@harrisindustrial.info

SAMPLE INFORMATION (Client-provided data italicised)	GENERAL TEST INFORMATION
Lab Identification #: 19-441 Sample Name/Location: MEL-26 GPS 62°48'01.99" 92°06'00.05" Sampling Method: Grab Sample Homogenized: Yes Sampler Name: S. Arruda/R. Schwandt Date & Time Sampled: Sept. 02 2019 0600 Hrs Date & Time Received: Sept. 05 2019 1255 Hrs Sample Description: Clear, colourless liquid with chlorine-like odour.	Reference Method: EPS 1/RM/10 2 nd Ed. December 2017 Type: LC50 Tox 9B General Test Procedures held on file Test Organism: <i>Gasterosteus aculeatus</i> (Threespine stickleback)

PRE-TEST PARAMETERS	SAMPLE PRE-TREATMENT
Pre-test Temp. (°C): 16.0 Pre-test D.O. (mg/L): 7.3 D.O. Saturation (%): 92 Pre-test pH: 7.4 pH Adjusted: No Sample Salinity ¹ (‰): 18.8 Seawater Control Salinity ¹ (‰): 31.0 Salinity adjusted Control (‰): 19.0	Filtration of sample: No Adjustment of sample salinity: No Mandatory Pre-aeration: Yes Duration: 30 minutes Rate: 6.5 ± 1 ml/min/L Time: 1415 hrs D.O. (mg/L): 7.9 D.O. saturation (%): 90 Continued: No Duration: -- min. @ -- hrs D.O. (mg/L): -- Aeration continued throughout test by airstone @ 6.5 + 1 ml/min/L

TEST CONDITIONS		
Date & Time Test Initiated: Sept. 05 2019 1445 Hrs Date & Time Test Terminated: Sept. 09 2019 1445 Hrs		Deviations from Test Method: No Description: N/A
Fish Batch #: 61 % Mortality over 7 days prior to test: 0	Loading Density (g/L): 0.24 Mean Fork Length (mm): 32 ± 3.8 SD Range (mm): 28 - 39	Temperature: 15 ± 1°C Photoperiod: 16L/8D Lux: 100 – 500 Static Test, Duration: 96 hours Control/Dilution Water: Natural Seawater
Test Volume (L): 10 Depth (cm): 17.7 Replicates: No Number of fish per vessel: 10	Mean Wet Weight (g): 0.24 ± 0.09 SD Range (g): 0.15 – 0.40	

¹When salinity is >40‰, it is measured using refractometry method (Environment Canada, 2017). When salinity is <40‰, the salinity is measured using conductivity method (*ibid.*).

TEST PARAMETERS							
INITIAL (0 hrs)					FINAL (96 hrs)		
CONC. %	TEMP. °C	D.O. mg/L	pH	SALINITY ‰	TEMP. °C	D.O. mg/L	pH
100	15.0	7.9	7.3	18.8	15.5	8.0	7.4
50	15.0	7.8	7.6	24.8	15.0	7.9	7.9
25	15.0	8.0	7.8	28.1	16.0	8.4	7.6
12.5	15.0	7.9	7.9	29.5	14.0	8.4	7.6
6.25	15.0	7.9	7.9	30.0	15.5	8.3	7.7
Control	15.0	7.8	7.9	31.0	15.5	8.2	7.7
Salinity Adj. Control	15.0	7.9	7.9	19.0	15.0	9.2	7.7

TEST RESULTS								
CONC. %	TOTAL MORTALITY #				PERCENT MORTALITY %			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	10/10	10/10	10/10	10/10	100	100	100	100
50	10/10	10/10	10/10	10/10	100	100	100	100
25	2/10	4/10	5/10	5/10	20	40	50	50
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Salinity Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0
CONC. %	TOTAL STRESS #				PERCENT STRESS %			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	8/10	0/10	0/10	0/10	80	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Salinity Adj Control	0/10	0/10	0/10	0/10	0	0	0	0

96 HR LC₅₀ RESULTS

LC₅₀ Value (%): 25.0
Result: Fail
95% Confidence Limits (%): 20.1 – 31.1
Statistical Method: Untrimmed Spearman
 Karber - CETIS

REFERENCE TOXICANT DATA

Performed under laboratory conditions as above, no deviations

Batch: 61 Test Date: Sept. 06 – 10 2019*

Reference Substance: Phenol

LC₅₀ Value (mg/L): 17.7
 95% Confidence Limits (mg/L): 12.5 – 25.0
 Historical Mean (mg/L): 15.7
 Warning Limits \pm 2 SD (mg/L): 12.1 – 20.4

COMMENTS

Test meets all conditions for test validity (preliminary). An additional Salinity-adjusted control was run at sample salinity. At termination, all fish stressed in 100 and 50% concentrations at 1 hr. 9 fish dead in 100% concentration at 2 hrs.

*Revision: Updated reference toxicant data added. Typographical error in template for D.O. at 96 hours (%) removed from report.

TEST AUTHORIZATION AND VERIFICATION

Analyst(s): G. Harris and A. Huybers

Verified by: C. Harris

Revision Date: Sept. 11 2019

Signed:

**REFERENCES**

Tidepool Scientific Software, 2001 - 2014. Comprehensive Environmental Toxicity Information System – CETIS v1.8.7.20

Environment Canada, 2017. Biological Test Method: Reference Method for Determining Acute Lethality Using Threespine Stickleback.

Environment and Climate Change Canada, Ottawa, Ontario, Report EPS 1/RM/10, 2nd Edition December 2017.

Accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA Inc.).

The test included in this report is within the scope of this accreditation.

Results apply to the sample as received. The results reported apply only to the sample tested. Results are based on nominal concentrations.

CLIENT INFORMATION	TEST FACILITY INFORMATION
Aquatox/Agnico Eagle Mines - Meliadine Rankin Inlet Nunavut, Canada Contact: Martina Rendas	Harris Industrial Testing Service Ltd. 1320 Ashdale Rd., South Rawdon Nova Scotia B0N 1Z0 Ph : 902 757-0232 Fax: 902 757-2839 office@harrisindustrial.info

SAMPLE INFORMATION (Client-provided data italicised)	GENERAL TEST INFORMATION
Lab Identification #: 19-449 Sample Name/Location: MEL-26 GPS 62°48'01.99" 92°06'00.05" Sampling Method: Grab Sample Homogenized: Yes Sampler Name: S. Arruda/D. Morin Date & Time Sampled: Sept. 09 2019 0600 Hrs Date & Time Received: Sept. 12 2019 1310 Hrs Sample Description: Clear, colourless liquid with a faint chlorine-like odour.	Reference Method: EPS 1/RM/10 July 1990 2 nd Ed. December 2017 Type: LC50 Tox 9B General Test Procedures held on file Test Organism: <i>Gasterosteus aculeatus</i> (Threespine stickleback)

PRE-TEST PARAMETERS	SAMPLE PRE-TREATMENT
Pre-test Temp. (°C): 16.0 Pre-test D.O. (mg/L): 8.6 D.O. Saturation (%): 97 Pre-test pH: 6.7 pH Adjusted: No Sample Salinity ¹ (‰): 13.9 Seawater Control Salinity ¹ (‰): 30.4 Salinity adjusted Control (‰): 14.4	Filtration of sample: No Adjustment of sample salinity: No Mandatory Pre-aeration: Yes Duration: 30 minutes Rate: 6.5 ± 1 ml/min/L Time: 1430 hrs D.O. (mg/L): 9.0 D.O. saturation (%): 98 Pre-aeration Continued: No Duration: -- min. @ -- hrs D.O. (mg/L): -- D.O. saturation (%): -- Aeration continued throughout test by airstone @ 6.5 + 1 ml/min/L

TEST CONDITIONS		
Date & Time Test Initiated: Sept. 12 2019 1500 Hrs Date & Time Test Terminated: Sept. 16 2019 1500 Hrs		Deviations from Test Method: No Description: N/A
Fish Batch #: 61 % Mortality over 7 days prior to test: 0	Loading Density (g/L): 0.50 Mean Fork Length (mm): 34 ± 5.0 SD Range (mm): 26 - 44	Temperature: 15 ± 1°C Photoperiod: 16L/8D Lux: 100 – 500
Test Volume (L): 10 Depth (cm): 17.7 Replicates: No Number of fish per vessel: 10	Mean Wet Weight (g): 0.50 ± 0.28 SD Range (g): 0.19 – 1.09	Static Test, Duration: 96 hours Control/Dilution Water: Natural Seawater

¹When salinity is >40‰, it is measured using refractometry method (Environment Canada, 2017). When salinity is <40‰, the salinity is measured using conductivity method (*ibid.*).

TEST PARAMETERS							
INITIAL (0 hrs)					FINAL (96 hrs)		
CONC. %	TEMP. °C	D.O. mg/L	pH	SALINITY ‰	TEMP. °C	D.O. mg/L	pH
100	16.0	9.0	6.9	13.8	16.0	9.0	6.9
50	16.0	8.5	7.3	21.7	15.0	8.2	7.6
25	16.0	8.1	7.5	26.0	15.0	8.2	7.6
12.5	16.0	8.3	7.6	28.2	15.5	8.6	7.6
6.25	16.0	8.1	7.6	29.5	15.0	8.2	7.6
Control	16.0	8.1	7.6	30.4	15.0	8.1	7.7
Sal. Adj. Control	16.0	8.8	7.6	14.4	15.0	9.3	7.7

TEST RESULTS								
TOTAL MORTALITY					PERCENT MORTALITY			
CONC. %	#				%			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	10/10	10/10	10/10	10/10	100	100	100	100
50	10/10	10/10	10/10	10/10	100	100	100	100
25	10/10	10/10	10/10	10/10	100	100	100	100
12.5	1/10	1/10	1/10	1/10	10	10	10	10
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Sal. Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0

TOTAL STRESS					PERCENT STRESS			
CONC. %	#				%			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	0/10	0/10	0/10	0/10	0	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Sal. Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0

96 HR LC₅₀ RESULTS

LC₅₀ Value (%): 16.5
Result: Fail
95% Confidence Limits (%): 14.5 – 18.8
Statistical Method: Untrimmed Spearman
 Karber - CETIS

REFERENCE TOXICANT DATA

Performed under laboratory conditions as above, no deviations

Batch: 61 Test Date: Sept. 06 – 10 2019

Reference Substance: Phenol

LC₅₀ Value (mg/L): 17.7
 95% Confidence Limits (mg/L): 12.5 – 25.0
 Historical Mean (mg/L): 15.7
 Warning Limits \pm 2 SD (mg/L): 12.1 – 20.4

COMMENTS

Test meets all conditions for test validity. An additional Salinity-adjusted control was run at sample salinity.
1 hr. after test initiation: 100% conc. – 100% mortality; 50% conc. – 100% stressed; 25% conc. – 10% stressed. 17 hrs. after test initiation: 50% conc. – 100% mortality; 25% conc. – 100% mortality; 12.5% conc. – 10% mortality.

TEST AUTHORIZATION AND VERIFICATION

Analyst(s): K. Marks and A. Huybers

Verified by: C. Harris

Date: Sept. 16 2019

Signed:



REFERENCES

Tidepool Scientific Software, 2001 - 2014. Comprehensive Environmental Toxicity Information System – CETIS v1.8.7.20
Environment Canada, 2017. Biological Test Method: Reference Method for Determining Acute Lethality Using Threespine Stickleback.
Environment and Climate Change Canada, Ottawa, Ontario, Report EPS 1/RM/10, 2nd Edition December 2017.

Accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA Inc.).

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Results apply to the sample as received. The results reported apply only to the sample tested. Results are based on nominal concentrations.

CLIENT INFORMATION	TEST FACILITY INFORMATION
Aquatox/Agnico Eagle Mines - Meliadine Rankin Inlet, Nunavut, Canada Contact: Martina Rendas	Harris Industrial Testing Service Ltd. 1320 Ashdale Rd., South Rawdon Nova Scotia B0N 1Z0 Ph : 902 757-0232 Fax: 902 757-2839 office@harrisindustrial.info

SAMPLE INFORMATION (Client-provided data italicised)	GENERAL TEST INFORMATION
Lab Identification #: 19-507 Sample Name/Location: MEL-26 GPS 62°48'01.99" 92°06'00.05" Sampling Method: Grab Sample Homogenized: Yes Sampler Name: R. Schwandt Date & Time Sampled: Oct. 01 2019 0700 Hrs Date & Time Received: Oct. 04 2019 1130 Hrs Sample Description: Clear, colourless liquid.	Reference Method: EPS 1/RM/10 July 1990 2 nd Ed. December 2017 Type: LC50 Tox 9B General Test Procedures held on file Test Organism: <i>Gasterosteus aculeatus</i> (Threespine stickleback)

PRE-TEST PARAMETERS	SAMPLE PRE-TREATMENT
Pre-test Temp. (°C): 14.5 Pre-test D.O. (mg/L): 9.4 D.O. Saturation (%): 102 Pre-test pH: 6.2 pH Adjusted: No Sample Salinity ¹ (‰): 15.7 Seawater Control Salinity ¹ (‰): 29.8 Salinity adjusted Control (‰): 16.0	Filtration of sample: No Adjustment of sample salinity: No Mandatory Pre-aeration: Yes Duration: 30 minutes Rate: 6.5 ± 1 ml/min/L Time: 1145 hrs D.O. (mg/L): 9.2 D.O. saturation (%): 100 Pre-aeration Continued: No Duration: -- min. @ -- hrs D.O. (mg/L): -- D.O. saturation (%): -- Aeration continued throughout test by airstone @ 6.5 ± 1 ml/min/L

TEST CONDITIONS		
Date & Time Test Initiated: Oct. 05 2019 1215 Hrs Date & Time Test Terminated: Oct. 09 2019 1215 Hrs		Deviations from Test Method: No Description: N/A
Fish Batch #: 61 % Mortality over 7 days prior to test: 1.0	Loading Density (g/L): 0.42 Mean Fork Length (mm): 40 ± 2.5 SD Range (mm): 37 - 44	Temperature: 15 ± 1°C Photoperiod: 16L/8D Lux: 100 – 500
Test Volume (L): 10 Depth (cm): 17.7 Replicates: No Number of fish per vessel: 10	Mean Wet Weight (g): 0.42 ± 0.09 SD Range (g): 0.33 – 0.60	Static Test, Duration: 96 hours Control/Dilution Water: Natural Seawater

¹When salinity is >40‰, it is measured using refractometry method (Environment Canada, 2017). When salinity is <40‰, the salinity is measured using conductivity method (*ibid.*).

TEST PARAMETERS							
INITIAL (0 hrs)					FINAL (96 hrs)		
CONC. %	TEMP. °C	D.O. mg/L	pH	SALINITY ‰	TEMP. °C	D.O. mg/L	pH
100	14.5	9.2	6.3	15.7	16.0	9.0	6.9
50	15.5	8.4	7.1	22.7	16.0	8.3	7.3
25	15.0	8.4	7.4	26.3	16.0	8.0	7.4
12.5	15.5	8.3	7.6	28.0	16.0	8.1	7.6
6.25	15.0	8.2	7.7	28.9	16.0	8.0	7.7
Control	15.5	8.0	7.7	29.8	16.0	8.1	7.7
Sal. Adj. Control	15.0	9.1	7.7	16.0	16.0	8.8	7.6

TEST RESULTS								
TOTAL MORTALITY					PERCENT MORTALITY			
CONC. %	#				%			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	0/10	0/10	0/10	0/10	0	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Sal. Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0

TOTAL STRESS					PERCENT STRESS			
CONC. %	#				%			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	0/10	0/10	0/10	0/10	0	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Sal. Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0

96 HR LC₅₀ RESULTS

LC₅₀ Value (%): Non-lethal
Result: Pass
95% Confidence Limits (%): N/A
Statistical Method: N/A

REFERENCE TOXICANT DATA

Performed under laboratory conditions as above, no deviations

Batch: 61 Test Date: Sept. 27 – Oct. 01 2019

Reference Substance: Phenol

LC₅₀ Value (mg/L): 14.3
 95% Confidence Limits (mg/L): 11.4 – 18.0
 Historical Mean (mg/L): 15.6
 Warning Limits \pm 2 SD (mg/L): 12.0 – 20.1

COMMENTS

Test meets all conditions for test validity. Adjusted control run.

TEST AUTHORIZATION AND VERIFICATION

Analyst(s): K. Marks and A. Huybers

Verified by: C. Harris

Date: Oct. 09 2019

Signed:



REFERENCES

Tidepool Scientific Software, 2001 - 2014. Comprehensive Environmental Toxicity Information System – CETIS v1.8.7.20
Environment Canada, 2017. Biological Test Method: Reference Method for Determining Acute Lethality Using Threespine Stickleback.
Environment and Climate Change Canada, Ottawa, Ontario, Report EPS 1/RM/10, 2nd Edition December 2017.

Accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA Inc.).

The test included in this report is within the scope of this accreditation.

Results apply to the sample as received. The results reported apply only to the sample tested. Results are based on nominal concentrations.

CLIENT INFORMATION	TEST FACILITY INFORMATION
Aquatox/Agnico Eagle Mines - Meliadine Rankin Inlet, Nunavut, Canada Contact: Martina Rendas	Harris Industrial Testing Service Ltd. 1320 Ashdale Rd., South Rawdon Nova Scotia B0N 1Z0 Ph : 902 757-0232 Fax: 902 757-2839 office@harrisindustrial.info

SAMPLE INFORMATION (Client-provided data italicised)	GENERAL TEST INFORMATION
Lab Identification #: 19-519 Sample Name/Location: MEL-26 GPS: 62°48'01.99" 92°06'00.05" Sampling Method: Grab Sample Homogenized: Yes Sampler Name: D.M. Date & Time Sampled: Oct. 07 2019 0630 Hrs Date & Time Received: Oct. 10 2019 1320 Hrs Sample Description: Pale yellow, transparent liquid.	Reference Method: EPS 1/RM/10 July 1990 2 nd Ed. December 2017 Type: LC50 Tox 9B General Test Procedures held on file Test Organism: <i>Gasterosteus aculeatus</i> (Threespine stickleback)

PRE-TEST PARAMETERS	SAMPLE PRE-TREATMENT
Pre-test Temp. (°C): 16.0 Pre-test D.O. (mg/L): 9.1 D.O. Saturation (%): 104 Pre-test pH: 7.0 pH Adjusted: No Sample Salinity ¹ (‰): 16.5 Seawater Control Salinity ¹ (‰): 30.2 Salinity adjusted Control (‰): 16.6	Filtration of sample: No Adjustment of sample salinity: No Mandatory Pre-aeration: Yes Duration: 30 minutes Rate: 6.5 ± 1 ml/min/L Time: 1115 hrs D.O. (mg/L): 9.2 D.O. saturation (%): 103 Pre-aeration Continued: Yes Duration: 90 min. @ 1145 hrs D.O. (mg/L): 9.2 D.O. saturation (%): 101 Aeration continued throughout test by airstone @ 6.5 ± 1 ml/min/L

TEST CONDITIONS		
Date & Time Test Initiated: Oct. 12 2019 1315 Hrs Date & Time Test Terminated: Oct. 16 2019 1315 Hrs		Deviations from Test Method: No Description: N/A
Fish Batch #: 62 % Mortality over 7 days prior to test: 0	Loading Density (g/L): 0.44 Mean Fork Length (mm): 39 ± 4.2 SD Range (mm): 30 - 44	Temperature: 15 ± 1°C Photoperiod: 16L/8D Lux: 100 – 500
Test Volume (L): 10 Depth (cm): 17.7 Replicates: No Number of fish per vessel: 10	Mean Wet Weight (g): 0.44 ± 0.17 SD Range (g): 0.19 – 0.69	Static Test, Duration: 96 hours Control/Dilution Water: Natural Seawater

¹When salinity is >40‰, it is measured using refractometry method (Environment Canada, 2017). When salinity is <40‰, the salinity is measured using conductivity method (*ibid.*).

TEST PARAMETERS							
INITIAL (0 hrs)					FINAL (96 hrs)		
CONC. %	TEMP. °C	D.O. mg/L	pH	SALINITY ‰	TEMP. °C	D.O. mg/L	pH
100	15.5	9.2	7.2	16.4	15.5	7.6	7.4
50	15.5	8.7	7.5	23.2	16.0	7.2	7.5
25	15.5	8.6	7.7	26.8	15.5	6.8	7.5
12.5	15.5	8.6	7.7	28.6	15.0	7.2	7.6
6.25	15.5	8.6	7.8	29.4	15.5	7.2	7.7
Control	15.5	8.6	7.8	30.2	15.5	7.1	7.7
Sal. Adj. Control	15.5	8.5	7.8	16.6	15.5	7.3	7.5

TEST RESULTS								
TOTAL MORTALITY					PERCENT MORTALITY			
CONC. %	#				%			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	0/10	0/10	0/10	0/10	0	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Sal. Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0

TOTAL STRESS					PERCENT STRESS			
CONC. %	#				%			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	0/10	0/10	0/10	0/10	0	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Sal. Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0

96 HR LC₅₀ RESULTS

LC₅₀ Value (%): Non-lethal
Result: Pass
95% Confidence Limits (%): N/A
Statistical Method: N/A

REFERENCE TOXICANT DATA

Performed under laboratory conditions as above, no deviations

Batch: 62 Test Date: Oct. 15 – 19 2019*

Reference Substance: Phenol

LC₅₀ Value (mg/L): --
 95% Confidence Limits (mg/L): -- --
 Historical Mean (mg/L): --
 Warning Limits \pm 2 SD (mg/L): -- --

COMMENTS

Test meets all conditions for test validity. Adjusted salinity control run. *Reference toxicant data to follow.

TEST AUTHORIZATION AND VERIFICATION

Analyst(s): K. Marks & A. Huybers

Verified by: C. Harris

Date: Oct. 16 2019

Signed:



REFERENCES

Tidepool Scientific Software, 2001 - 2014. Comprehensive Environmental Toxicity Information System – CETIS v1.8.7.20
Environment Canada, 2017. Biological Test Method: Reference Method for Determining Acute Lethality Using Threespine Stickleback.
Environment and Climate Change Canada, Ottawa, Ontario, Report EPS 1/RM/10, 2nd Edition December 2017.

Accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA Inc.).

The test included in this report is within the scope of this accreditation.

Results apply to the sample as received. The results reported apply only to the sample tested. Results are based on nominal concentrations.



Your P.O. #: OL-762849
 Site#: 62°48'01.99" 92°06'00.05"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/09/18
 Report #: R5884395
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9O0837

Received: 2019/08/30, 09:10

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/09/03	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/09/04	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	1	N/A	2019/09/04	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2019/09/03	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/08/30	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/08/30	2019/08/30	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/08/30	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/08/30	2019/08/30	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	1	2019/08/30	2019/08/30	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/08/30	2019/08/30	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 6)	1	N/A	2019/09/05	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/09/05	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/09/05	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/09/04	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/08/29	2019/09/05	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/09/04	2019/09/05	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/09/05	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/08/30	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 7)	1	N/A	2019/09/01	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/08/30	2019/09/03	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/09/03	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 8)	1	N/A	2019/09/16	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/09/03	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/08/30	2019/08/31	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/08/30	2019/09/03	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 9)	1	N/A	2019/08/30	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/08/30	2019/08/30	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/08/30	2019/08/30	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/08/30	CAM SOP-00417	SM 23 2130 B m



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/18
Report #: R5884395
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9O0837

Received: 2019/08/30, 09:10

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Laboratory Method	Reference
	Quantity	Extracted		
Low Level Volatile Suspended Solids (1)	1	2019/08/30	2019/09/03 CAM SOP-00428	SM 23 2540

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

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

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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

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

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

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(7) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(8) Radium-226 results have not been corrected for blanks.

(9) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/18
Report #: R5884395
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9O0837

Received: 2019/08/30, 09:10

Encryption Key

Alisha Williamson
Project Manager
18 Sep 2019 08:04:30

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

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B900837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KQL384		
Sampling Date		2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO3)	mg/L	4480	0.50	6316497
Metals				
Dissolved Aluminum (Al)	ug/L	161	30	6316499
Dissolved Antimony (Sb)	ug/L	<5.0	5.0	6316499
Dissolved Arsenic (As)	ug/L	10.2	1.0	6316499
Dissolved Barium (Ba)	ug/L	181	10	6316499
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	6316499
Dissolved Bismuth (Bi)	ug/L	<10	10	6316499
Dissolved Boron (B)	ug/L	628	500	6316499
Dissolved Cadmium (Cd)	ug/L	<0.10	0.10	6316499
Dissolved Chromium (Cr)	ug/L	<10	10	6316499
Dissolved Cobalt (Co)	ug/L	3.6	2.0	6316499
Dissolved Copper (Cu)	ug/L	5.0	2.0	6316499
Dissolved Iron (Fe)	ug/L	<50	50	6316499
Dissolved Lead (Pb)	ug/L	<2.0	2.0	6316499
Dissolved Lithium (Li)	ug/L	432	20	6316499
Dissolved Manganese (Mn)	ug/L	15	10	6316499
Dissolved Molybdenum (Mo)	ug/L	13	10	6316499
Dissolved Nickel (Ni)	ug/L	19	10	6316499
Dissolved Selenium (Se)	ug/L	<1.0	1.0	6316499
Dissolved Silicon (Si)	ug/L	<1000	1000	6316499
Dissolved Silver (Ag)	ug/L	<0.20	0.20	6316499
Dissolved Strontium (Sr)	ug/L	20800	10	6316499
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	6316499
Dissolved Tin (Sn)	ug/L	<50	50	6316499
Dissolved Titanium (Ti)	ug/L	<50	50	6316499
Dissolved Uranium (U)	ug/L	4.1	1.0	6316499
Dissolved Vanadium (V)	ug/L	<50	50	6316499
Dissolved Zinc (Zn)	ug/L	67	50	6316499
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	6316499
Dissolved Calcium (Ca)	mg/L	875	0.50	6316498
Dissolved Magnesium (Mg)	mg/L	557	0.50	6316498
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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VERITAS

BV Labs Job #: B9O0837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KQL384		
Sampling Date		2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch
Dissolved Potassium (K)	mg/L	162	0.50	6316498
Dissolved Sodium (Na)	mg/L	4550	0.50	6316498
Dissolved Sulphur (S)	mg/L	368	30	6316498
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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VERITAS

BV Labs Job #: B900837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KQL384		
Sampling Date		2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	351	300	6317652
Total Antimony (Sb)	ug/L	<50	50	6317652
Total Arsenic (As)	ug/L	12	10	6317652
Total Barium (Ba)	ug/L	181	100	6317652
Total Beryllium (Be)	ug/L	<10	10	6317652
Total Bismuth (Bi)	ug/L	<100	100	6317652
Total Boron (B)	ug/L	<5000	5000	6317652
Total Cadmium (Cd)	ug/L	<1.0	1.0	6317652
Total Chromium (Cr)	ug/L	<100	100	6317652
Total Cobalt (Co)	ug/L	<20	20	6317652
Total Copper (Cu)	ug/L	<50	50	6317652
Total Iron (Fe)	ug/L	<1000	1000	6317652
Total Lead (Pb)	ug/L	<20	20	6317652
Total Lithium (Li)	ug/L	498	200	6317652
Total Manganese (Mn)	ug/L	<100	100	6317652
Total Molybdenum (Mo)	ug/L	<100	100	6317652
Total Nickel (Ni)	ug/L	<100	100	6317652
Total Selenium (Se)	ug/L	<10	10	6317652
Total Silicon (Si)	ug/L	<10000	10000	6317652
Total Silver (Ag)	ug/L	<2.0	2.0	6317652
Total Strontium (Sr)	ug/L	20200	100	6317652
Total Thallium (Tl)	ug/L	<1.0	1.0	6317652
Total Tin (Sn)	ug/L	<500	500	6317652
Total Titanium (Ti)	ug/L	<500	500	6317652
Total Uranium (U)	ug/L	<10	10	6317652
Total Vanadium (V)	ug/L	<500	500	6317652
Total Zinc (Zn)	ug/L	<500	500	6317652
Total Zirconium (Zr)	ug/L	<10	10	6317652
Total Calcium (Ca)	ug/L	866000	5000	6317651
Total Magnesium (Mg)	ug/L	555000	5000	6317651
Total Potassium (K)	ug/L	170000	5000	6317651
Total Sodium (Na)	ug/L	4380000	5000	6317651
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9O0837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KQL384		
Sampling Date		2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch
Total Sulphur (S)	ug/L	375000	300000	6317651
Calculated Parameters				
Total Hardness (CaCO ₃)	ug/L	4450000	500	6317650
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B900837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

RESULTS OF ANALYSES OF WATER

BV Labs ID		KQL384			KQL384		
Sampling Date		2019/08/26 11:30			2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch

Calculated Parameters

Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	57	1.0	6306459			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6306459			

Inorganics

Total Ammonia-N	mg/L	3.8	0.050	6308627			
Conductivity	umho/cm	27000	1.0	6309972	27000	1.0	6309972
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	6316470			
Total Dissolved Solids	mg/L	17800	20	6308855			
Total Kjeldahl Nitrogen (TKN)	mg/L	14	2.0	6308760			
Dissolved Organic Carbon	mg/L	17	0.50	6307745			
Total Organic Carbon (TOC)	mg/L	17	0.50	6309575			
Orthophosphate (P)	mg/L	0.012	0.010	6310908			
Dissolved Oxygen	mg/L	9.44		6309668	9.46		6309668
pH	pH	7.32		6309976	7.35		6309976
Total Phosphorus	mg/L	0.080	0.020	6308656			
Reactive Silica (SiO ₂)	mg/L	4.4	0.050	6321220	4.7	0.050	6321220
Total Suspended Solids	mg/L	14	1	6308560	14	1	6308560
Dissolved Sulphate (SO ₄)	mg/L	870	5.0	6310910			
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6308850	<0.0050	0.0050	6308850
Turbidity	NTU	0.5	0.1	6307644			
Volatile Suspended Solids	mg/L	8	1	6307169	8	1	6307169
WAD Cyanide (Free)	mg/L	0.0035	0.0010	6308856	0.0033	0.0010	6308856
Alkalinity (Total as CaCO ₃)	mg/L	57	1.0	6309970	58	1.0	6309970
Dissolved Chloride (Cl ⁻)	mg/L	9500	100	6310907			
Nitrite (N)	mg/L	<0.010	0.010	6309619			
Nitrate (N)	mg/L	43.5	0.50	6309619			
Nitrate + Nitrite (N)	mg/L	43.5	0.50	6309619			

RADIONUCLIDE

Radium-226	Bq/L	0.16	0.0050	6318584			
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

(1) See general comments for notes regarding CNFREE-W.



BUREAU
VERITAS

BV Labs Job #: B9O0837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KQL384		
Sampling Date		2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6308649
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6308661
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B900837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

TEST SUMMARY

BV Labs ID: KQL384

Sample ID: MEL-26

Matrix: Water

Collected: 2019/08/26

Shipped:

Received: 2019/08/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6309970	N/A	2019/09/03	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6306459	N/A	2019/09/04	Automated Statchk
Chloride by Automated Colourimetry	KONE	6310907	N/A	2019/09/04	Deonarine Ramnarine
Conductivity	AT	6309972	N/A	2019/09/03	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6308856	N/A	2019/08/30	Barbara Kalbasi Esfahani
Total Cyanide	SKAL/CN	6308850	2019/08/30	2019/08/30	Barbara Kalbasi Esfahani
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6307745	N/A	2019/08/30	Mandeep Kaur
Dissolved Oxygen	DO	6309668	2019/08/30	2019/08/30	Prakash Piya
Dissolved Mercury (low level)	CV/AA	6308661	2019/08/30	2019/08/30	Ron Morrison
Mercury (low level)	CV/AA	6308649	2019/08/30	2019/08/30	Ron Morrison
Cyanide (Free)	SPEC	6316470	2019/09/03	2019/09/03	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6317650	N/A	2019/09/05	Report Automation Engine
Hardness (calculated as CaCO ₃)	CALC	6316497	N/A	2019/09/05	Report Automation Engine
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6316498	N/A	2019/09/05	Report Automation Engine
Elements by CRC ICPMS (dissolved)	ICP/MS	6316499	N/A	2019/09/04	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6317651	2019/09/05	2019/09/05	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6317652	2019/09/04	2019/09/05	Andrew An
Silica (Reactive)	KONE	6321220	N/A	2019/09/05	Serena Tian
Total Ammonia-N	LACH/NH ₄	6308627	N/A	2019/08/30	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6309619	N/A	2019/09/01	Amanpreet Sappal
pH	AT	6309976	2019/08/30	2019/09/03	Surinder Rai
Orthophosphate	KONE	6310908	N/A	2019/09/03	Alina Doboreanu
Radium-226 Low Level	AS	6318584	N/A	2019/09/16	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6310910	N/A	2019/09/03	Alina Doboreanu
Total Dissolved Solids	BAL	6308855	2019/08/30	2019/08/31	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6308760	2019/08/30	2019/09/03	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6309575	N/A	2019/08/30	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6308656	2019/08/30	2019/08/30	Shivani Shivani
Low Level Total Suspended Solids	BAL	6308560	2019/08/30	2019/08/30	Xinyue (Sarah) Hou
Turbidity	AT	6307644	N/A	2019/08/30	Kazzandra Adeva
Low Level Volatile Suspended Solids	BAL	6307169	2019/08/30	2019/09/03	Xinyue (Sarah) Hou

BV Labs ID: KQL384 Dup

Sample ID: MEL-26

Matrix: Water

Collected: 2019/08/26

Shipped:

Received: 2019/08/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6309970	N/A	2019/09/03	Surinder Rai
Conductivity	AT	6309972	N/A	2019/09/03	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6308856	N/A	2019/08/30	Barbara Kalbasi Esfahani
Total Cyanide	SKAL/CN	6308850	2019/08/30	2019/08/30	Barbara Kalbasi Esfahani
Dissolved Oxygen	DO	6309668	2019/08/30	2019/08/30	Prakash Piya
Silica (Reactive)	KONE	6321220	N/A	2019/09/05	Serena Tian
pH	AT	6309976	2019/08/30	2019/09/03	Surinder Rai
Low Level Total Suspended Solids	BAL	6308560	2019/08/30	2019/08/30	Xinyue (Sarah) Hou



BUREAU
VERITAS

BV Labs Job #: B9O0837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

TEST SUMMARY

BV Labs ID: KQL384 Dup

Sample ID: MEL-26

Matrix: Water

Collected: 2019/08/26

Shipped:

Received: 2019/08/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Low Level Volatile Suspended Solids	BAL	6307169	2019/08/30	2019/09/03	Xinyue (Sarah) Hou



GENERAL COMMENTS

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

Package 1	10.0°C
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Sample KQL384 [MEL-26] : Total Cyanide < Free Cyanide: Both values fall within the method uncertainty for duplicates and are likely equivalent. Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely. Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely. Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. V2: Report re-issued with salinity results for sample MEL-26. 2019/09/16

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KQL384 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KQL384 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.



BV Labs Job #: B9O0837
Report Date: 2019/09/18

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: KB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6307169	Volatile Suspended Solids	2019/09/03					<1	mg/L	2.4	25		
6307644	Turbidity	2019/08/30			96	85 - 115	<0.1	NTU	1.7	20		
6307745	Dissolved Organic Carbon	2019/08/30	93	80 - 120	95	80 - 120	<0.50	mg/L	3.1	20		
6308560	Total Suspended Solids	2019/08/30					<1	mg/L	4.3	25	95	85 - 115
6308627	Total Ammonia-N	2019/08/30	101	75 - 125	99	80 - 120	<0.050	mg/L	NC	20		
6308649	Mercury (Hg)	2019/08/30	109	75 - 125	99	80 - 120	<0.00001	mg/L	NC	20		
6308656	Total Phosphorus	2019/08/30	100	80 - 120	101	80 - 120	<0.020	mg/L	3.5	20	99	80 - 120
6308661	Dissolved Mercury (Hg)	2019/08/30	102	75 - 125	104	80 - 120	<0.00001	mg/L	NC	20		
6308760	Total Kjeldahl Nitrogen (TKN)	2019/08/30	102	80 - 120	97	80 - 120	<0.10	mg/L	10	20	94	80 - 120
6308850	Total Cyanide (CN)	2019/08/30	-0.10 (1)	80 - 120	104	80 - 120	<0.0050	mg/L	NC	20		
6308855	Total Dissolved Solids	2019/08/31					<10	mg/L	0	25	100	90 - 110
6308856	WAD Cyanide (Free)	2019/08/30	0.30 (1)	80 - 120	105	80 - 120	<0.0010	mg/L	5.9	20		
6309575	Total Organic Carbon (TOC)	2019/08/30	92	80 - 120	96	80 - 120	<0.50	mg/L	0.061	20		
6309619	Nitrate (N)	2019/09/01	99	80 - 120	101	80 - 120	<0.10	mg/L	1.7	20		
6309619	Nitrite (N)	2019/09/01	103	80 - 120	105	80 - 120	<0.010	mg/L	NC	20		
6309970	Alkalinity (Total as CaCO3)	2019/09/03			99	85 - 115	<1.0	mg/L	1.1	20		
6309972	Conductivity	2019/09/03			101	85 - 115	<1.0	umho/cm	0.000014	25		
6309976	pH	2019/09/03			102	98 - 103			0.36	N/A		
6310907	Dissolved Chloride (Cl-)	2019/09/04	NC	80 - 120	102	80 - 120	<1.0	mg/L	0.12	20		
6310908	Orthophosphate (P)	2019/09/03	107	75 - 125	100	80 - 120	<0.010	mg/L	NC	25		
6310910	Dissolved Sulphate (SO4)	2019/09/03	NC	75 - 125	103	80 - 120	<1.0	mg/L	0.51	20		
6316470	Free Cyanide (CN)	2019/09/03	83	80 - 120	94	80 - 120	<1.0	ug/L	4.7	20		
6316499	Dissolved Aluminum (Al)	2019/09/04	98	80 - 120	103	80 - 120	<3.0	ug/L				
6316499	Dissolved Antimony (Sb)	2019/09/04	97	80 - 120	101	80 - 120	<0.50	ug/L				
6316499	Dissolved Arsenic (As)	2019/09/04	105	80 - 120	100	80 - 120	<0.10	ug/L				
6316499	Dissolved Barium (Ba)	2019/09/04	95	80 - 120	104	80 - 120	<1.0	ug/L				
6316499	Dissolved Beryllium (Be)	2019/09/04	92	80 - 120	97	80 - 120	<0.10	ug/L				
6316499	Dissolved Bismuth (Bi)	2019/09/04	95	80 - 120	103	80 - 120	<1.0	ug/L				
6316499	Dissolved Boron (B)	2019/09/04	92	80 - 120	99	80 - 120	<50	ug/L				
6316499	Dissolved Cadmium (Cd)	2019/09/04	94	80 - 120	100	80 - 120	<0.010	ug/L				
6316499	Dissolved Chromium (Cr)	2019/09/04	91	80 - 120	99	80 - 120	<1.0	ug/L				



BV Labs Job #: B9O0837
Report Date: 2019/09/18

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: KB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6316499	Dissolved Cobalt (Co)	2019/09/04	91	80 - 120	100	80 - 120	<0.20	ug/L				
6316499	Dissolved Copper (Cu)	2019/09/04	86	80 - 120	99	80 - 120	<0.20	ug/L				
6316499	Dissolved Iron (Fe)	2019/09/04	96	80 - 120	106	80 - 120	<5.0	ug/L				
6316499	Dissolved Lead (Pb)	2019/09/04	100	80 - 120	106	80 - 120	<0.20	ug/L				
6316499	Dissolved Lithium (Li)	2019/09/04	93	80 - 120	101	80 - 120	<2.0	ug/L				
6316499	Dissolved Manganese (Mn)	2019/09/04	93	80 - 120	103	80 - 120	<1.0	ug/L				
6316499	Dissolved Molybdenum (Mo)	2019/09/04	NC	80 - 120	104	80 - 120	<1.0	ug/L				
6316499	Dissolved Nickel (Ni)	2019/09/04	90	80 - 120	102	80 - 120	<1.0	ug/L				
6316499	Dissolved Selenium (Se)	2019/09/04	100	80 - 120	98	80 - 120	<0.10	ug/L				
6316499	Dissolved Silicon (Si)	2019/09/04	NC	80 - 120	102	80 - 120	<100	ug/L				
6316499	Dissolved Silver (Ag)	2019/09/04	94	80 - 120	101	80 - 120	<0.020	ug/L				
6316499	Dissolved Strontium (Sr)	2019/09/04	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6316499	Dissolved Thallium (Tl)	2019/09/04	99	80 - 120	104	80 - 120	<0.010	ug/L				
6316499	Dissolved Tin (Sn)	2019/09/04	96	80 - 120	104	80 - 120	<5.0	ug/L				
6316499	Dissolved Titanium (Ti)	2019/09/04	97	80 - 120	101	80 - 120	<5.0	ug/L				
6316499	Dissolved Uranium (U)	2019/09/04	106	80 - 120	105	80 - 120	<0.10	ug/L				
6316499	Dissolved Vanadium (V)	2019/09/04	96	80 - 120	100	80 - 120	<5.0	ug/L				
6316499	Dissolved Zinc (Zn)	2019/09/04	91	80 - 120	101	80 - 120	<5.0	ug/L				
6316499	Dissolved Zirconium (Zr)	2019/09/04	108	80 - 120	105	80 - 120	<0.10	ug/L				
6317652	Total Aluminum (Al)	2019/09/05	101	80 - 120	100	80 - 120	<3.0	ug/L				
6317652	Total Antimony (Sb)	2019/09/05	100	80 - 120	99	80 - 120	<0.50	ug/L				
6317652	Total Arsenic (As)	2019/09/05	106	80 - 120	100	80 - 120	<0.10	ug/L				
6317652	Total Barium (Ba)	2019/09/05	101	80 - 120	100	80 - 120	<1.0	ug/L				
6317652	Total Beryllium (Be)	2019/09/05	97	80 - 120	98	80 - 120	<0.10	ug/L				
6317652	Total Bismuth (Bi)	2019/09/05	97	80 - 120	102	80 - 120	<1.0	ug/L				
6317652	Total Boron (B)	2019/09/05	101	80 - 120	104	80 - 120	<50	ug/L				
6317652	Total Cadmium (Cd)	2019/09/05	97	80 - 120	98	80 - 120	<0.010	ug/L				
6317652	Total Chromium (Cr)	2019/09/05	96	80 - 120	97	80 - 120	<1.0	ug/L				
6317652	Total Cobalt (Co)	2019/09/05	92	80 - 120	96	80 - 120	<0.20	ug/L				
6317652	Total Copper (Cu)	2019/09/05	89	80 - 120	96	80 - 120	<0.50	ug/L				
6317652	Total Iron (Fe)	2019/09/05	101	80 - 120	103	80 - 120	<10	ug/L				
6317652	Total Lead (Pb)	2019/09/05	101	80 - 120	104	80 - 120	<0.20	ug/L				



BV Labs Job #: B9O0837
Report Date: 2019/09/18

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: KB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6317652	Total Lithium (Li)	2019/09/05	95	80 - 120	102	80 - 120	<2.0	ug/L				
6317652	Total Manganese (Mn)	2019/09/05	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6317652	Total Molybdenum (Mo)	2019/09/05	114	80 - 120	101	80 - 120	<1.0	ug/L				
6317652	Total Nickel (Ni)	2019/09/05	92	80 - 120	99	80 - 120	<1.0	ug/L				
6317652	Total Selenium (Se)	2019/09/05	102	80 - 120	98	80 - 120	<0.10	ug/L				
6317652	Total Silicon (Si)	2019/09/05	NC	80 - 120	105	80 - 120	<100	ug/L				
6317652	Total Silver (Ag)	2019/09/05	96	80 - 120	98	80 - 120	<0.020	ug/L				
6317652	Total Strontium (Sr)	2019/09/05	NC	80 - 120	98	80 - 120	<1.0	ug/L				
6317652	Total Thallium (Tl)	2019/09/05	100	80 - 120	102	80 - 120	<0.010	ug/L				
6317652	Total Tin (Sn)	2019/09/05	103	80 - 120	100	80 - 120	<5.0	ug/L				
6317652	Total Titanium (Ti)	2019/09/05	101	80 - 120	98	80 - 120	<5.0	ug/L				
6317652	Total Uranium (U)	2019/09/05	103	80 - 120	100	80 - 120	<0.10	ug/L				
6317652	Total Vanadium (V)	2019/09/05	100	80 - 120	98	80 - 120	<5.0	ug/L				
6317652	Total Zinc (Zn)	2019/09/05	NC	80 - 120	99	80 - 120	<5.0	ug/L				
6317652	Total Zirconium (Zr)	2019/09/05	109	80 - 120	103	80 - 120	<0.10	ug/L				
6318584	Radium-226	2019/09/16			86	85 - 115	<0.0050	Bq/L				
6321220	Reactive Silica (SiO2)	2019/09/05	92	80 - 120	99	80 - 120	<0.050	mg/L	6.4	20		

N/A = Not Applicable

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

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

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

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

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

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

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

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



BUREAU
VERITAS

BV Labs Job #: B900837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

VALIDATION SIGNATURE PAGE

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

Harry (Peng) Liang, Senior Analyst

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

Rob Reinert, B.Sc., Scientific Specialist

Steven Simpson, Lab Director

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9O0837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: Campobello job# B9O0837

Attention: Alisha Williamson

BUREAU VERITAS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2019/09/16

Report #: R2781426

Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B972023

Received: 2019/08/29, 12:39

Sample Matrix: Water

Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Chloride/Sulphate by Auto Colourimetry	1	N/A	2019/09/13	AB SOP-00020 / AB SOP-00018	SM23-4500-Cl/SO4-E m
Cyanide (Free)	1	2019/09/03	2019/09/03	CAL SOP-00266	EPA 9016d R0 m
Conductivity @25C	1	N/A	2019/09/13	AB SOP-00005	SM 23 2510 B m
Elements by ICP-Dissolved-Lab Filtered (1)	1	N/A	2019/09/14	AB SOP-00042	EPA 6010d R5 m
pH @25°C (2)	1	N/A	2019/09/13	AB SOP-00005	SM 23 4500-H+B m
Silica (Reactive)	1	N/A	2019/09/05	AB SOP-00011	EPA 370.1 R1978 m
Total Dissolved Solids (Filt. Residue)	1	2019/09/12	2019/09/12	AB SOP-00065	SM 23 2540 C m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

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

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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

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

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

(1) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(2) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.



Your Project #: Campobello job# B9O0837

Attention: Alisha Williamson

BUREAU VERITAS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2019/09/16

Report #: R2781426

Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B972023

Received: 2019/08/29, 12:39

Encryption Key

Joyce Kimani
Project Manager
16 Sep 2019 09:40:19

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bvlabs.com
Phone# (403) 291-3077

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SALINITY - WATER - FILTERED (WATER)

BV Labs ID		WJ7306			WJ7306		
Sampling Date		2019/08/26 11:30			2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Misc. Inorganics							
Conductivity	uS/cm	27000	2.0	9585740			
pH	pH	7.18	N/A	9585739			
Total Dissolved Solids	mg/L	>8000 (1)	10	9585163			
Anions							
Dissolved Chloride (Cl)	mg/L	8500 (2)	100	9586943	7900	100	9586943
Dissolved Sulphate (SO ₄)	mg/L	980 (2)	10	9586943	980	10	9586943
Lab Filtered Elements							
Dissolved Calcium (Ca)	mg/L	900 (2)	6.0	9588030			
Dissolved Magnesium (Mg)	mg/L	560 (2)	4.0	9588030			
Dissolved Potassium (K)	mg/L	160	0.30	9588030			
Dissolved Sodium (Na)	mg/L	4300 (2)	10	9588030			
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Sample exceeds calibration range. (2) Detection limits raised due to dilution to bring analyte within the calibrated range.							



BUREAU
VERITAS

BV Labs Job #: B972023
Report Date: 2019/09/16

BUREAU VERITAS
Client Project #: Campobello job# B9O0837
Sampler Initials: KB

RESULTS OF CHEMICAL ANALYSES OF WATER

BV Labs ID		WJ7306			WJ7306		
Sampling Date		2019/08/26 11:30			2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Misc. Inorganics							
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	9572721			
Reactive Silica	mg/L	4.4	0.050	9576053	4.7	0.050	9576053
RDL = Reportable Detection Limit							
Lab-Dup = Laboratory Initiated Duplicate							
(1) See general comments for notes regarding CNFREE-W.							



BUREAU
VERITAS

BV Labs Job #: B972023
Report Date: 2019/09/16

BUREAU VERITAS
Client Project #: Campobello job# B9O0837
Sampler Initials: KB

TEST SUMMARY

BV Labs ID: WJ7306
Sample ID: MEL-26
Matrix: Water

Collected: 2019/08/26
Shipped:
Received: 2019/08/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9586943	N/A	2019/09/13	Zafar Iqbal
Cyanide (Free)	SPEC	9572721	2019/09/03	2019/09/03	Amy Phan
Conductivity @25C	COND	9585740	N/A	2019/09/13	Ilonka Kovac
Elements by ICP-Dissolved-Lab Filtered	ICPA	9588030	N/A	2019/09/14	Ahmed Loai
pH @25°C	AT/ALK	9585739	N/A	2019/09/13	Ilonka Kovac
Silica (Reactive)	KONE/SL	9576053	N/A	2019/09/05	Serena Tian
Total Dissolved Solids (Filt. Residue)	BAL	9585163	2019/09/12	2019/09/12	Haydee Estilong

BV Labs ID: WJ7306 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/08/26
Shipped:
Received: 2019/08/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9586943	N/A	2019/09/13	Zafar Iqbal
Silica (Reactive)	KONE/SL	9576053	N/A	2019/09/05	Serena Tian



GENERAL COMMENTS

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

Package 1	6.7°C
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V2: Report re-issued with salinity results for sample MEL-26. 2019/09/16

Sample WJ7306 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely. Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9572721	Free Cyanide (CN)	2019/09/03	83	80 - 120	94	80 - 120	<1.0	ug/L	4.7	20
9576053	Reactive Silica	2019/09/05	92	80 - 120	99	80 - 120	<0.050	mg/L	6.4	20
9585163	Total Dissolved Solids	2019/09/12	98	80 - 120	99	80 - 120	<10	mg/L	6.4	20
9585739	pH	2019/09/13			100	97 - 103			1.0	N/A
9585740	Conductivity	2019/09/13			102	90 - 110	<2.0	uS/cm	3.0	10
9586943	Dissolved Chloride (Cl)	2019/09/13	NC	80 - 120	101	80 - 120	<1.0	mg/L	7.4	20
9586943	Dissolved Sulphate (SO4)	2019/09/13	NC	80 - 120	99	80 - 120	<1.0	mg/L	0.29	20
9588030	Dissolved Calcium (Ca)	2019/09/13	92	80 - 120	97	80 - 120	<0.30	mg/L	1.1	20
9588030	Dissolved Magnesium (Mg)	2019/09/13	98	80 - 120	102	80 - 120	<0.20	mg/L	0.90	20
9588030	Dissolved Potassium (K)	2019/09/13	97	80 - 120	99	80 - 120	<0.30	mg/L	0.28	20
9588030	Dissolved Sodium (Na)	2019/09/13	98	80 - 120	103	80 - 120	<0.50	mg/L	1.4	20

N/A = Not Applicable

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

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

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

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

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



BUREAU
VERITAS

BV Labs Job #: B972023
Report Date: 2019/09/16

BUREAU VERITAS
Client Project #: Campobello job# B9O0837
Sampler Initials: KB

VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

Harry (Peng) Liang, Senior Analyst

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Your Project #: MB905316
Site Location: MELIADINE
Your C.O.C. #: B905316-M060-01-01

Attention: Alisha Williamson

Agnico-Eagle
Meliadine
Rankin Inlet, NU
Canada X0C 0G0

Report Date: 2019/09/09
Report #: R2778415
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B974697

Received: 2019/09/06, 10:00

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Chloride/Sulphate by Auto Colourimetry	1	N/A	2019/09/08	AB SOP-00020 / AB SOP-00018	SM23-4500-Cl/SO4-E m
Conductivity @25C	1	N/A	2019/09/07	AB SOP-00005	SM 23 2510 B m
Elements by ICP-Dissolved-Lab Filtered (1)	1	N/A	2019/09/07	AB SOP-00042	EPA 6010d R5 m
pH @25°C (2)	1	N/A	2019/09/07	AB SOP-00005	SM 23 4500-H+B m
Sodium Adsorption Ratio	1	N/A	2019/09/09		Auto Calc
Total Dissolved Solids (Calc. from EC)	1	N/A	2019/09/09		Auto Calc

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

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

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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

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

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

(1) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(2) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.



Your Project #: MB905316
Site Location: MELIADINE
Your C.O.C. #: B905316-M060-01-01

Attention: Alisha Williamson

Agnico-Eagle
Meliadine
Rankin Inlet, NU
Canada X0C 0G0

Report Date: 2019/09/09
Report #: R2778415
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B974697

Received: 2019/09/06, 10:00

Encryption Key



Bureau Veritas Laboratories
09 Sep 2019 16:05:55

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bvlabs.com
Phone# (403) 291-3077

=====

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B974697
Report Date: 2019/09/09

Agnico-Eagle
Client Project #: MB9O5316
Site Location: MELIADINE
Sampler Initials: RS

SALINITY WATER (WATER)

BV Labs ID		WL1311		
Sampling Date		2019/09/02 06:50		
COC Number		B9O5316-M060-01-01		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Sodium Adsorption Ratio	N/A	29	0.10	9578263
Total dissolved solids (calc., EC)	mg/L	30000	10	9578264
Misc. Inorganics				
Conductivity	uS/cm	30000	2.0	9578985
pH	pH	7.28	N/A	9578984
Anions				
Dissolved Chloride (Cl)	mg/L	9700 (1)	100	9579880
Dissolved Sulphate (SO4)	mg/L	1100 (1)	10	9579880
Lab Filtered Elements				
Dissolved Calcium (Ca)	mg/L	950 (1)	6.0	9579697
Dissolved Magnesium (Mg)	mg/L	630 (1)	4.0	9579697
Dissolved Potassium (K)	mg/L	190	0.30	9579697
Dissolved Sodium (Na)	mg/L	4700 (1)	10	9579697
RDL = Reportable Detection Limit N/A = Not Applicable (1) Detection limits raised due to dilution to bring analyte within the calibrated range.				



BUREAU
VERITAS

BV Labs Job #: B974697
Report Date: 2019/09/09

Agnico-Eagle
Client Project #: MB9O5316
Site Location: MELIADINE
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: WL1311
Sample ID: MEL-26
Matrix: Water

Collected: 2019/09/02
Shipped:
Received: 2019/09/06

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9579880	N/A	2019/09/08	Serena Tian
Conductivity @25C	COND	9578985	N/A	2019/09/07	Kathleen Dalton
Elements by ICP-Dissolved-Lab Filtered	ICPA	9579697	N/A	2019/09/07	Ahmed Loai
pH @25°C	AT/ALK	9578984	N/A	2019/09/07	Kathleen Dalton
Sodium Adsorption Ratio	CALC	9578263	N/A	2019/09/09	Automated Statchk
Total Dissolved Solids (Calc. from EC)	CALC	9578264	N/A	2019/09/09	Automated Statchk



BUREAU
VERITAS

BV Labs Job #: B974697
Report Date: 2019/09/09

Agnico-Eagle
Client Project #: MB9O5316
Site Location: MELIADINE
Sampler Initials: RS

GENERAL COMMENTS

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

Package 1	4.7°C
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Results relate only to the items tested.



BUREAU
VERITAS
LABS

BV Labs Job #: B974697
Report Date: 2019/09/09

QUALITY ASSURANCE REPORT

Agnico-Eagle
Client Project #: MB905316
Site Location: MELIADINE
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9578984	pH	2019/09/07			100	97 - 103			1.4	N/A
9578985	Conductivity	2019/09/07			101	90 - 110	<2.0	uS/cm	0.059	10
9579697	Dissolved Calcium (Ca)	2019/09/07	93	80 - 120	93	80 - 120	<0.30	mg/L	NC	20
9579697	Dissolved Magnesium (Mg)	2019/09/07	98	80 - 120	99	80 - 120	<0.20	mg/L	NC	20
9579697	Dissolved Potassium (K)	2019/09/07	96	80 - 120	96	80 - 120	<0.30	mg/L	NC	20
9579697	Dissolved Sodium (Na)	2019/09/07	96	80 - 120	99	80 - 120	<0.50	mg/L	NC	20
9579880	Dissolved Chloride (Cl)	2019/09/08	101	80 - 120	101	80 - 120	<1.0	mg/L	NC	20
9579880	Dissolved Sulphate (SO4)	2019/09/08	100	80 - 120	101	80 - 120	<1.0	mg/L	NC	20

N/A = Not Applicable

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

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

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

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

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



BUREAU
VERITAS

BV Labs Job #: B974697
Report Date: 2019/09/09

Agnico-Eagle
Client Project #: MB9O5316
Site Location: MELIADINE
Sampler Initials: RS

VALIDATION SIGNATURE PAGE

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

Harry (Peng) Liang, Senior Analyst

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Your P.O. #: OL-762849
 Site#: 62°48'01.99" 92°06'00.05"
 Site Location: MELIADINE
 Your C.O.C. #: N/A

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/10/08
 Report #: R5912435
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9P4257

Received: 2019/09/11, 10:35

Sample Matrix: Water
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	2	N/A	2019/09/13	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	2	N/A	2019/09/16	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	2	N/A	2019/09/13	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	2	N/A	2019/09/13	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	2	N/A	2019/09/12	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	2	2019/09/12	2019/09/12	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	2	N/A	2019/09/13	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	2	2019/09/12	2019/09/12	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	2	2019/09/12	2019/09/12	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	2	2019/09/12	2019/09/12	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	2	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 6)	2	N/A	2019/09/16	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	2	N/A	2019/09/16	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	2	N/A	2019/09/16	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	2	N/A	2019/09/16	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	2	2019/09/12	2019/09/16	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	2	2019/09/16	2019/09/16	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	2	N/A	2019/09/15	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	2	N/A	2019/09/17	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 7)	2	N/A	2019/09/16	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	2	2019/09/12	2019/09/13	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	2	N/A	2019/09/13	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 8)	2	N/A	2019/09/17	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	2	N/A	2019/09/13	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	2	2019/09/12	2019/09/13	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	2	2019/09/12	2019/09/17	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 9)	1	N/A	2019/09/12	CAM SOP-00446	SM 23 5310B m
Total Organic Carbon (TOC) (1, 9)	1	N/A	2019/09/13	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	2	2019/09/12	2019/09/12	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	2	2019/09/12	2019/09/12	CAM SOP-00428	SM 23 2540D m



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE
Your C.O.C. #: N/A

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/08
Report #: R5912435
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9P4257

Received: 2019/09/11, 10:35

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Turbidity (1)	2	N/A	2019/09/12	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

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

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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

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

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(7) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(8) Radium-226 results have not been corrected for blanks.

(9) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE
Your C.O.C. #: N/A

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/08
Report #: R5912435
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9P4257

Received: 2019/09/11, 10:35

Encryption Key

Alisha Williamson
Project Manager
08 Oct 2019 11:32:41

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

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

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BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KTH941	KTH942		
Sampling Date		2019/09/09 06:00	2019/09/09 06:00		
COC Number		N/A	N/A		
	UNITS	MEL-26	MEL-26 DUP	RDL	QC Batch
Calculated Parameters					
Dissolved Hardness (CaCO ₃)	mg/L	4010	4040	0.50	6337845
Metals					
Dissolved Aluminum (Al)	ug/L	166	168	30	6337847
Dissolved Antimony (Sb)	ug/L	<5.0	<5.0	5.0	6337847
Dissolved Arsenic (As)	ug/L	13.7	12.8	1.0	6337847
Dissolved Barium (Ba)	ug/L	187	191	10	6337847
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	1.0	6337847
Dissolved Bismuth (Bi)	ug/L	<10	<10	10	6337847
Dissolved Boron (B)	ug/L	639	637	500	6337847
Dissolved Cadmium (Cd)	ug/L	0.13	0.11	0.10	6337847
Dissolved Chromium (Cr)	ug/L	<10	<10	10	6337847
Dissolved Cobalt (Co)	ug/L	4.1	4.2	2.0	6337847
Dissolved Copper (Cu)	ug/L	4.0	4.0	2.0	6337847
Dissolved Iron (Fe)	ug/L	<50	<50	50	6337847
Dissolved Lead (Pb)	ug/L	2.2	2.1	2.0	6337847
Dissolved Lithium (Li)	ug/L	428	441	20	6337847
Dissolved Manganese (Mn)	ug/L	42	43	10	6337847
Dissolved Molybdenum (Mo)	ug/L	17	15	10	6337847
Dissolved Nickel (Ni)	ug/L	22	22	10	6337847
Dissolved Selenium (Se)	ug/L	<1.0	<1.0	1.0	6337847
Dissolved Silicon (Si)	ug/L	1360	1370	1000	6337847
Dissolved Silver (Ag)	ug/L	<0.20	<0.20	0.20	6337847
Dissolved Strontium (Sr)	ug/L	20800	20600	10	6337847
Dissolved Thallium (Tl)	ug/L	0.10	0.10	0.10	6337847
Dissolved Tin (Sn)	ug/L	<50	<50	50	6337847
Dissolved Titanium (Ti)	ug/L	<50	<50	50	6337847
Dissolved Uranium (U)	ug/L	4.8	4.8	1.0	6337847
Dissolved Vanadium (V)	ug/L	<50	<50	50	6337847
Dissolved Zinc (Zn)	ug/L	<50	<50	50	6337847
Dissolved Zirconium (Zr)	ug/L	<1.0	<1.0	1.0	6337847
Dissolved Calcium (Ca)	mg/L	856	866	0.50	6337846
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KTH941	KTH942		
Sampling Date		2019/09/09 06:00	2019/09/09 06:00		
COC Number		N/A	N/A		
	UNITS	MEL-26	MEL-26 DUP	RDL	QC Batch
Dissolved Magnesium (Mg)	mg/L	454	457	0.50	6337846
Dissolved Potassium (K)	mg/L	139	139	0.50	6337846
Dissolved Sodium (Na)	mg/L	3530	3570	0.50	6337846
Dissolved Sulphur (S)	mg/L	320	323	30	6337846
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KTH941	KTH942		
Sampling Date		2019/09/09 06:00	2019/09/09 06:00		
COC Number		N/A	N/A		
	UNITS	MEL-26	MEL-26 DUP	RDL	QC Batch
Metals					
Total Aluminum (Al)	ug/L	310	307	30	6337844
Total Antimony (Sb)	ug/L	<5.0	<5.0	5.0	6337844
Total Arsenic (As)	ug/L	10.7	10.8	1.0	6337844
Total Barium (Ba)	ug/L	182	192	10	6337844
Total Beryllium (Be)	ug/L	<1.0	<1.0	1.0	6337844
Total Bismuth (Bi)	ug/L	<10	<10	10	6337844
Total Boron (B)	ug/L	584	607	500	6337844
Total Cadmium (Cd)	ug/L	0.13	0.13	0.10	6337844
Total Chromium (Cr)	ug/L	<10	<10	10	6337844
Total Cobalt (Co)	ug/L	4.0	4.1	2.0	6337844
Total Copper (Cu)	ug/L	<5.0	<5.0	5.0	6337844
Total Iron (Fe)	ug/L	<100	<100	100	6337844
Total Lead (Pb)	ug/L	2.2	2.2	2.0	6337844
Total Lithium (Li)	ug/L	415	436	20	6337844
Total Manganese (Mn)	ug/L	46	47	10	6337844
Total Molybdenum (Mo)	ug/L	14	14	10	6337844
Total Nickel (Ni)	ug/L	22	22	10	6337844
Total Selenium (Se)	ug/L	<1.0	<1.0	1.0	6337844
Total Silicon (Si)	ug/L	1320	1410	1000	6337844
Total Silver (Ag)	ug/L	<0.20	<0.20	0.20	6337844
Total Strontium (Sr)	ug/L	20100	21100	10	6337844
Total Thallium (Tl)	ug/L	0.10	0.11	0.10	6337844
Total Tin (Sn)	ug/L	<50	<50	50	6337844
Total Titanium (Ti)	ug/L	<50	<50	50	6337844
Total Uranium (U)	ug/L	4.7	4.9	1.0	6337844
Total Vanadium (V)	ug/L	<50	<50	50	6337844
Total Zinc (Zn)	ug/L	<50	<50	50	6337844
Total Zirconium (Zr)	ug/L	<1.0	<1.0	1.0	6337844
Total Calcium (Ca)	ug/L	832000	856000	500	6337843
Total Magnesium (Mg)	ug/L	441000	457000	500	6337843
Total Potassium (K)	ug/L	136000	142000	500	6337843
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KTH941	KTH942		
Sampling Date		2019/09/09 06:00	2019/09/09 06:00		
COC Number		N/A	N/A		
	UNITS	MEL-26	MEL-26 DUP	RDL	QC Batch
Total Sodium (Na)	ug/L	3380000	3530000	500	6337843
Total Sulphur (S)	ug/L	308000	324000	30000	6337843
Calculated Parameters					
Total Hardness (CaCO3)	ug/L	3890000	4020000	500	6337842
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

RESULTS OF ANALYSES OF WATER

BV Labs ID		KTH941			KTH941			KTH942		
Sampling Date		2019/09/09 06:00			2019/09/09 06:00			2019/09/09 06:00		
COC Number		N/A			N/A			N/A		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch	MEL-26 DUP	RDL	QC Batch

Calculated Parameters

Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	64	1.0	6328442				63	1.0	6328442
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6328442				<1.0	1.0	6328442

Inorganics

Total Ammonia-N	mg/L	6.0	0.050	6336357				5.7	0.050	6329171
Conductivity	umho/cm	23000	1.0	6329193				23000	1.0	6329193
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	6335522	<1.0	1.0	6335522	<1.0	1.0	6335522
Total Dissolved Solids	mg/L	15300	20	6329710				14900	20	6329710
Total Kjeldahl Nitrogen (TKN)	mg/L	16	2.0	6328648				16	2.0	6328648
Dissolved Organic Carbon	mg/L	18	0.50	6328740	18	0.50	6328740	18	0.50	6328740
Total Organic Carbon (TOC)	mg/L	19	0.50	6329207	19	0.50	6329207	19	0.50	6329207
Orthophosphate (P)	mg/L	0.017	0.010	6329603				0.018	0.010	6329603
Dissolved Oxygen	mg/L	10.2		6329337				9.85		6329337
pH	pH	7.44		6329194				7.44		6329194
Total Phosphorus	mg/L	0.071	0.020	6328611				0.082	0.020	6328611
Reactive Silica (SiO ₂)	mg/L	8.0	0.050	6335535	7.6	0.050	6335535	12 (2)	0.10	6335535
Total Suspended Solids	mg/L	11	1	6328304				11	1	6328304
Dissolved Sulphate (SO ₄)	mg/L	820	5.0	6329601				820	5.0	6329601
Total Cyanide (CN)	mg/L	0.0072	0.0050	6328646				0.0074	0.0050	6328646
Turbidity	NTU	0.3	0.1	6328434				0.3	0.1	6328434
WAD Cyanide (Free)	mg/L	0.0022	0.0010	6328655				0.0023	0.0010	6328655
Alkalinity (Total as CaCO ₃)	mg/L	64	1.0	6329140				63	1.0	6329140
Dissolved Chloride (Cl ⁻)	mg/L	8500	80	6329596				8000	80	6329596
Nitrite (N)	mg/L	<0.010	0.010	6329313				<0.010	0.010	6329313
Nitrate (N)	mg/L	48.7	0.50	6329313				48.5	0.50	6329313
Nitrate + Nitrite (N)	mg/L	48.7	0.50	6329313				48.5	0.50	6329313

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

(1) See general comments for notes regarding CNFREE-W

(2) Detection limits raised due to dilution to bring analyte within the calibrated range.



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

RESULTS OF ANALYSES OF WATER

BV Labs ID		KTH941			KTH941			KTH942		
Sampling Date		2019/09/09 06:00			2019/09/09 06:00			2019/09/09 06:00		
COC Number		N/A			N/A			N/A		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch	MEL-26 DUP	RDL	QC Batch

RADIONUCLIDE

Radium-226	Bq/L	0.13	0.0050	6331710				0.10	0.0050	6331710
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

BV Labs ID		KTH942		
Sampling Date		2019/09/09 06:00		
COC Number		N/A		
	UNITS	MEL-26 DUP Lab-Dup	RDL	QC Batch

Inorganics

Total Ammonia-N	mg/L	5.7	0.050	6329171
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KTH941	KTH942			KTH942		
Sampling Date		2019/09/09 06:00	2019/09/09 06:00			2019/09/09 06:00		
COC Number		N/A	N/A			N/A		
	UNITS	MEL-26	MEL-26 DUP	RDL	QC Batch	MEL-26 DUP Lab-Dup	RDL	QC Batch
Metals								
Mercury (Hg)	mg/L	<0.00001	<0.00001	0.00001	6328544	<0.00001	0.00001	6328544
Dissolved Mercury (Hg)	mg/L	<0.00001	<0.00001	0.00001	6328553			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate								



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

TEST SUMMARY

BV Labs ID: KTH941
Sample ID: MEL-26
Matrix: Water

Collected: 2019/09/09
Shipped:
Received: 2019/09/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6329140	N/A	2019/09/13	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6328442	N/A	2019/09/16	Automated Statchk
Chloride by Automated Colourimetry	KONE	6329596	N/A	2019/09/13	Deonarine Ramnarine
Conductivity	AT	6329193	N/A	2019/09/13	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6328655	N/A	2019/09/12	Gnana Thomas
Total Cyanide	SKAL/CN	6328646	2019/09/12	2019/09/12	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6328740	N/A	2019/09/13	Mandeep Kaur
Dissolved Oxygen	DO	6329337	2019/09/12	2019/09/12	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6328553	2019/09/12	2019/09/12	Medhat Nasr
Mercury (low level)	CV/AA	6328544	2019/09/12	2019/09/12	Medhat Nasr
Cyanide (Free)	SPEC	6335522	2019/09/16	2019/09/16	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6337842	N/A	2019/09/16	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6337845	N/A	2019/09/16	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6337846	N/A	2019/09/16	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6337847	N/A	2019/09/16	Adnan Dzebic
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6337843	2019/09/16	2019/09/16	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6337844	2019/09/16	2019/09/16	Vanessa Chan
Silica (Reactive)	KONE	6335535	N/A	2019/09/15	Serena Tian
Total Ammonia-N	LACH/NH ₄	6336357	N/A	2019/09/17	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6329313	N/A	2019/09/16	Chandra Nandlal
pH	AT	6329194	2019/09/12	2019/09/13	Surinder Rai
Orthophosphate	KONE	6329603	N/A	2019/09/13	Alina Dobreanu
Radium-226 Low Level	AS	6331710	N/A	2019/09/17	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6329601	N/A	2019/09/13	Alina Dobreanu
Total Dissolved Solids	BAL	6329710	2019/09/12	2019/09/13	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6328648	2019/09/12	2019/09/17	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6329207	N/A	2019/09/12	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6328611	2019/09/12	2019/09/12	Shivani Shivani
Low Level Total Suspended Solids	BAL	6328304	2019/09/12	2019/09/12	Massarat Jan
Turbidity	AT	6328434	N/A	2019/09/12	Kazzandra Adeva

BV Labs ID: KTH941 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/09/09
Shipped:
Received: 2019/09/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6328740	N/A	2019/09/13	Mandeep Kaur
Cyanide (Free)	SPEC	6335522	2019/09/16	2019/09/16	Taylor Mullings
Silica (Reactive)	KONE	6335535	N/A	2019/09/15	Serena Tian
Total Organic Carbon (TOC)	TOCV/NDIR	6329207	N/A	2019/09/12	Mandeep Kaur



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

TEST SUMMARY

BV Labs ID: KTH942
Sample ID: MEL-26 DUP
Matrix: Water

Collected: 2019/09/09
Shipped:
Received: 2019/09/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6329140	N/A	2019/09/13	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6328442	N/A	2019/09/16	Automated Statchk
Chloride by Automated Colourimetry	KONE	6329596	N/A	2019/09/13	Deonarine Ramnarine
Conductivity	AT	6329193	N/A	2019/09/13	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6328655	N/A	2019/09/12	Gnana Thomas
Total Cyanide	SKAL/CN	6328646	2019/09/12	2019/09/12	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6328740	N/A	2019/09/13	Mandeep Kaur
Dissolved Oxygen	DO	6329337	2019/09/12	2019/09/12	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6328553	2019/09/12	2019/09/12	Medhat Nasr
Mercury (low level)	CV/AA	6328544	2019/09/12	2019/09/12	Medhat Nasr
Cyanide (Free)	SPEC	6335522	2019/09/16	2019/09/16	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6337842	N/A	2019/09/16	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6337845	N/A	2019/09/16	Report Automation Engine
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6337846	N/A	2019/09/16	Report Automation Engine
Elements by CRC ICPMS (dissolved)	ICP/MS	6337847	N/A	2019/09/16	Adnan Dzebic
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6337843	2019/09/16	2019/09/16	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6337844	2019/09/16	2019/09/16	Vanessa Chan
Silica (Reactive)	KONE	6335535	N/A	2019/09/15	Serena Tian
Total Ammonia-N	LACH/NH ₄	6329171	N/A	2019/09/17	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6329313	N/A	2019/09/16	Chandra Nandlal
pH	AT	6329194	2019/09/12	2019/09/13	Surinder Rai
Orthophosphate	KONE	6329603	N/A	2019/09/13	Alina Dobreanu
Radium-226 Low Level	AS	6331710	N/A	2019/09/17	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6329601	N/A	2019/09/13	Alina Dobreanu
Total Dissolved Solids	BAL	6329710	2019/09/12	2019/09/13	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6328648	2019/09/12	2019/09/17	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6329207	N/A	2019/09/13	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6328611	2019/09/12	2019/09/12	Shivani Shivani
Low Level Total Suspended Solids	BAL	6328304	2019/09/12	2019/09/12	Massarat Jan
Turbidity	AT	6328434	N/A	2019/09/12	Kazzandra Adeva

BV Labs ID: KTH942 Dup
Sample ID: MEL-26 DUP
Matrix: Water

Collected: 2019/09/09
Shipped:
Received: 2019/09/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (low level)	CV/AA	6328544	2019/09/12	2019/09/12	Medhat Nasr
Total Ammonia-N	LACH/NH ₄	6329171	N/A	2019/09/17	Mazin Wakai



GENERAL COMMENTS

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

Package 1	3.3°C
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Sample KTH941 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

Sample was analyzed past method specified hold time for Cyanide (Free). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Sample KTH942 [MEL-26 DUP] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

Sample was analyzed past method specified hold time for Cyanide (Free). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KTH941 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

Sample KTH942 [MEL-26 DUP] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KTH941 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Sample KTH942 [MEL-26 DUP] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.



BV Labs Job #: B9P4257
Report Date: 2019/10/08

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6328304	Total Suspended Solids	2019/09/12					<1	mg/L	6.3	25	98	85 - 115
6328434	Turbidity	2019/09/12			97	85 - 115	<0.1	NTU	15	20		
6328544	Mercury (Hg)	2019/09/12	99	75 - 125	99	80 - 120	<0.00001	mg/L	NC	20		
6328553	Dissolved Mercury (Hg)	2019/09/12	96	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6328611	Total Phosphorus	2019/09/12	99	80 - 120	98	80 - 120	<0.020	mg/L	6.8	20	101	80 - 120
6328646	Total Cyanide (CN)	2019/09/12	98	80 - 120	98	80 - 120	<0.0050	mg/L	NC	20		
6328648	Total Kjeldahl Nitrogen (TKN)	2019/09/16	95	80 - 120	100	80 - 120	<0.10	mg/L	5.3	20	97	80 - 120
6328655	WAD Cyanide (Free)	2019/09/12	100	80 - 120	100	80 - 120	<0.0010	mg/L	NC	20		
6328740	Dissolved Organic Carbon	2019/09/13	95	80 - 120	98	80 - 120	<0.50	mg/L	0.39	20		
6329140	Alkalinity (Total as CaCO3)	2019/09/13			94	85 - 115	<1.0	mg/L	1.4	20		
6329171	Total Ammonia-N	2019/09/17	93	75 - 125	101	80 - 120	<0.050	mg/L	0.070	20		
6329193	Conductivity	2019/09/13			102	85 - 115	<1.0	umho/cm	0	25		
6329194	pH	2019/09/13			102	98 - 103			0.055	N/A		
6329207	Total Organic Carbon (TOC)	2019/09/12	94	80 - 120	97	80 - 120	<0.50	mg/L	0.27	20		
6329313	Nitrate (N)	2019/09/16	105	80 - 120	106	80 - 120	<0.10	mg/L	NC	20		
6329313	Nitrite (N)	2019/09/16	104	80 - 120	104	80 - 120	<0.010	mg/L	NC	20		
6329596	Dissolved Chloride (Cl-)	2019/09/13	NC	80 - 120	103	80 - 120	<1.0	mg/L	0.029	20		
6329601	Dissolved Sulphate (SO4)	2019/09/13	114	75 - 125	100	80 - 120	<1.0	mg/L	0.59	20		
6329603	Orthophosphate (P)	2019/09/13	107	75 - 125	98	80 - 120	<0.010	mg/L	NC	25		
6329710	Total Dissolved Solids	2019/09/13					<10	mg/L	5.1	25	102	90 - 110
6331710	Radium-226	2019/09/17			89	85 - 115	<0.0050	Bq/L	NC	N/A		
6335522	Free Cyanide (CN)	2019/09/16	93	80 - 120	95	80 - 120	<1.0	ug/L	NC	20		
6335535	Reactive Silica (SiO2)	2019/09/15	NC	80 - 120	101	80 - 120	<0.050	mg/L	5.5	20		
6336357	Total Ammonia-N	2019/09/17	101	75 - 125	100	80 - 120	<0.050	mg/L	3.8 (1)	20		
6337844	Total Aluminum (Al)	2019/09/16	99	80 - 120	100	80 - 120	<3.0	ug/L				
6337844	Total Antimony (Sb)	2019/09/16	102	80 - 120	102	80 - 120	<0.50	ug/L				
6337844	Total Arsenic (As)	2019/09/16	102	80 - 120	100	80 - 120	<0.10	ug/L				
6337844	Total Barium (Ba)	2019/09/16	98	80 - 120	100	80 - 120	<1.0	ug/L				
6337844	Total Beryllium (Be)	2019/09/16	97	80 - 120	98	80 - 120	<0.10	ug/L				
6337844	Total Bismuth (Bi)	2019/09/16	98	80 - 120	103	80 - 120	<1.0	ug/L				
6337844	Total Boron (B)	2019/09/16	95	80 - 120	98	80 - 120	<50	ug/L				



BV Labs Job #: B9P4257
Report Date: 2019/10/08

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6337844	Total Cadmium (Cd)	2019/09/16	99	80 - 120	100	80 - 120	<0.010	ug/L				
6337844	Total Chromium (Cr)	2019/09/16	95	80 - 120	97	80 - 120	<1.0	ug/L				
6337844	Total Cobalt (Co)	2019/09/16	92	80 - 120	95	80 - 120	<0.20	ug/L				
6337844	Total Copper (Cu)	2019/09/16	91	80 - 120	95	80 - 120	<0.50	ug/L				
6337844	Total Iron (Fe)	2019/09/16	98	80 - 120	102	80 - 120	<10	ug/L				
6337844	Total Lead (Pb)	2019/09/16	100	80 - 120	104	80 - 120	<0.20	ug/L				
6337844	Total Lithium (Li)	2019/09/16	95	80 - 120	97	80 - 120	<2.0	ug/L				
6337844	Total Manganese (Mn)	2019/09/16	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6337844	Total Molybdenum (Mo)	2019/09/16	105	80 - 120	102	80 - 120	<1.0	ug/L				
6337844	Total Nickel (Ni)	2019/09/16	92	80 - 120	96	80 - 120	<1.0	ug/L				
6337844	Total Selenium (Se)	2019/09/16	101	80 - 120	100	80 - 120	<0.10	ug/L				
6337844	Total Silicon (Si)	2019/09/16	NC	80 - 120	107	80 - 120	<100	ug/L				
6337844	Total Silver (Ag)	2019/09/16	97	80 - 120	100	80 - 120	<0.020	ug/L				
6337844	Total Strontium (Sr)	2019/09/16	NC	80 - 120	103	80 - 120	<1.0	ug/L				
6337844	Total Thallium (Tl)	2019/09/16	100	80 - 120	102	80 - 120	<0.010	ug/L				
6337844	Total Tin (Sn)	2019/09/16	98	80 - 120	103	80 - 120	<5.0	ug/L				
6337844	Total Titanium (Ti)	2019/09/16	99	80 - 120	100	80 - 120	<5.0	ug/L				
6337844	Total Uranium (U)	2019/09/16	103	80 - 120	104	80 - 120	<0.10	ug/L				
6337844	Total Vanadium (V)	2019/09/16	98	80 - 120	100	80 - 120	<5.0	ug/L				
6337844	Total Zinc (Zn)	2019/09/16	96	80 - 120	98	80 - 120	<5.0	ug/L				
6337844	Total Zirconium (Zr)	2019/09/16	102	80 - 120	103	80 - 120	<0.10	ug/L				
6337847	Dissolved Aluminum (Al)	2019/09/16	102	80 - 120	103	80 - 120	<3.0	ug/L				
6337847	Dissolved Antimony (Sb)	2019/09/16	103	80 - 120	103	80 - 120	<0.50	ug/L				
6337847	Dissolved Arsenic (As)	2019/09/16	106	80 - 120	102	80 - 120	<0.10	ug/L				
6337847	Dissolved Barium (Ba)	2019/09/16	101	80 - 120	101	80 - 120	<1.0	ug/L				
6337847	Dissolved Beryllium (Be)	2019/09/16	102	80 - 120	102	80 - 120	<0.10	ug/L				
6337847	Dissolved Bismuth (Bi)	2019/09/16	101	80 - 120	103	80 - 120	<1.0	ug/L				
6337847	Dissolved Boron (B)	2019/09/16	97	80 - 120	99	80 - 120	<50	ug/L				
6337847	Dissolved Cadmium (Cd)	2019/09/16	101	80 - 120	102	80 - 120	<0.010	ug/L				
6337847	Dissolved Chromium (Cr)	2019/09/16	96	80 - 120	98	80 - 120	<1.0	ug/L				
6337847	Dissolved Cobalt (Co)	2019/09/16	95	80 - 120	97	80 - 120	<0.20	ug/L				
6337847	Dissolved Copper (Cu)	2019/09/16	94	80 - 120	97	80 - 120	<0.20	ug/L				



BV Labs Job #: B9P4257
Report Date: 2019/10/08

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6337847	Dissolved Iron (Fe)	2019/09/16	NC	80 - 120	103	80 - 120	<5.0	ug/L				
6337847	Dissolved Lead (Pb)	2019/09/16	103	80 - 120	104	80 - 120	<0.20	ug/L				
6337847	Dissolved Lithium (Li)	2019/09/16	100	80 - 120	101	80 - 120	<2.0	ug/L				
6337847	Dissolved Manganese (Mn)	2019/09/16	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6337847	Dissolved Molybdenum (Mo)	2019/09/16	106	80 - 120	104	80 - 120	<1.0	ug/L				
6337847	Dissolved Nickel (Ni)	2019/09/16	95	80 - 120	98	80 - 120	<1.0	ug/L				
6337847	Dissolved Selenium (Se)	2019/09/16	108	80 - 120	102	80 - 120	<0.10	ug/L				
6337847	Dissolved Silicon (Si)	2019/09/16	NC	80 - 120	107	80 - 120	<100	ug/L				
6337847	Dissolved Silver (Ag)	2019/09/16	100	80 - 120	101	80 - 120	<0.020	ug/L				
6337847	Dissolved Strontium (Sr)	2019/09/16	NC	80 - 120	104	80 - 120	<1.0	ug/L				
6337847	Dissolved Thallium (Tl)	2019/09/16	102	80 - 120	103	80 - 120	<0.010	ug/L				
6337847	Dissolved Tin (Sn)	2019/09/16	104	80 - 120	104	80 - 120	<5.0	ug/L				
6337847	Dissolved Titanium (Ti)	2019/09/16	101	80 - 120	98	80 - 120	<5.0	ug/L				
6337847	Dissolved Uranium (U)	2019/09/16	105	80 - 120	105	80 - 120	<0.10	ug/L				
6337847	Dissolved Vanadium (V)	2019/09/16	99	80 - 120	101	80 - 120	<5.0	ug/L				
6337847	Dissolved Zinc (Zn)	2019/09/16	102	80 - 120	104	80 - 120	<5.0	ug/L				
6337847	Dissolved Zirconium (Zr)	2019/09/16	104	80 - 120	104	80 - 120	<0.10	ug/L				

N/A = Not Applicable

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

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

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

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

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

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

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

(1) Ammonia analysis was done from nutrient bottle



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

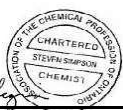
VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Harry (Peng) Liang, Senior Analyst

Rob Reinert, B.Sc., Scientific Specialist



Steven Simpson, Lab Director

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9P4257

Report Date: 2019/10/08

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
Your Project #: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/18
Report #: R5884397
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B905316

Received: 2019/09/04, 10:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/09/06	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/09/09	CAM SOP-00102	APHA 4500-CO2 D
Total Chlorine (1)	1	2019/09/05	2019/09/05	CAM SOP 00425	SM 23 4500-CL G m
Chloride by Automated Colourimetry (1)	1	N/A	2019/09/06	CAM SOP-00463	SM 23 4500-CL E m
Conductivity (1)	1	N/A	2019/09/06	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/09/05	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/09/05	2019/09/05	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/09/05	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/09/05	2019/09/05	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	1	2019/09/05	2019/09/05	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/09/05	2019/09/05	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 6)	1	N/A	2019/09/10	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/09/09	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/09/09	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/09/09	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/09/04	2019/09/10	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/09/09	2019/09/09	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/09/11	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/09/06	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 7)	1	N/A	2019/09/06	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/09/05	2019/09/06	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/09/06	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 8)	1	N/A	2019/09/16	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/09/06	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/09/05	2019/09/06	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/09/05	2019/09/09	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 9)	1	N/A	2019/09/05	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/09/05	2019/09/06	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/09/05	2019/09/05	CAM SOP-00428	SM 23 2540D m



Your P.O. #: OL-762849
Your Project #: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/18
Report #: R5884397
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9O5316

Received: 2019/09/04, 10:00

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Turbidity (1)	1	N/A	2019/09/05	CAM SOP-00417	SM 23 2130 B m
Low Level Volatile Suspended Solids (1)	1	2019/09/05	2019/09/06	CAM SOP-00428	SM 23 2540

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

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

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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

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

- (1) This test was performed by Bureau Veritas Laboratories Mississauga
- (2) This test was performed by Campo to Calgary - Offsite
- (3) This test was performed by Campo to Burnaby - Offsite
- (4) This test was performed by Bureau Veritas Laboratories Kitimat
- (5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
- (6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
- (7) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
- (8) Radium-226 results have not been corrected for blanks.
- (9) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.



Your P.O. #: OL-762849
Your Project #: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/18
Report #: R5884397
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B905316

Received: 2019/09/04, 10:00

Encryption Key

Alisha Williamson
Project Manager
18 Sep 2019 08:05:32

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

Alisha Williamson, Project Manager

Email: Alisha.Williamson@bvlabs.com

Phone# (613)274-0573

=====

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BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KRJ918		
Sampling Date		2019/09/02 06:50		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	5370	0.50	6319131
Metals				
Dissolved Aluminum (Al)	ug/L	<150	150	6324820
Dissolved Antimony (Sb)	ug/L	<25	25	6324820
Dissolved Arsenic (As)	ug/L	9.0	5.0	6324820
Dissolved Barium (Ba)	ug/L	191	50	6324820
Dissolved Beryllium (Be)	ug/L	<5.0	5.0	6324820
Dissolved Bismuth (Bi)	ug/L	<50	50	6324820
Dissolved Boron (B)	ug/L	<2500	2500	6324820
Dissolved Cadmium (Cd)	ug/L	<0.50	0.50	6324820
Dissolved Chromium (Cr)	ug/L	<50	50	6324820
Dissolved Cobalt (Co)	ug/L	<10	10	6324820
Dissolved Copper (Cu)	ug/L	<10	10	6324820
Dissolved Iron (Fe)	ug/L	<250	250	6324820
Dissolved Lead (Pb)	ug/L	<10	10	6324820
Dissolved Lithium (Li)	ug/L	539	100	6324820
Dissolved Manganese (Mn)	ug/L	<50	50	6324820
Dissolved Molybdenum (Mo)	ug/L	<50	50	6324820
Dissolved Nickel (Ni)	ug/L	<50	50	6324820
Dissolved Selenium (Se)	ug/L	<5.0	5.0	6324820
Dissolved Silicon (Si)	ug/L	<5000	5000	6324820
Dissolved Silver (Ag)	ug/L	<1.0	1.0	6324820
Dissolved Strontium (Sr)	ug/L	23500	50	6324820
Dissolved Thallium (Tl)	ug/L	<0.50	0.50	6324820
Dissolved Tin (Sn)	ug/L	<250	250	6324820
Dissolved Titanium (Ti)	ug/L	<250	250	6324820
Dissolved Uranium (U)	ug/L	<5.0	5.0	6324820
Dissolved Vanadium (V)	ug/L	<250	250	6324820
Dissolved Zinc (Zn)	ug/L	<250	250	6324820
Dissolved Zirconium (Zr)	ug/L	<5.0	5.0	6324820
Dissolved Calcium (Ca)	mg/L	967	2.5	6319132
Dissolved Magnesium (Mg)	mg/L	718	2.5	6319132
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KRJ918		
Sampling Date		2019/09/02 06:50		
	UNITS	MEL-26	RDL	QC Batch
Dissolved Potassium (K)	mg/L	188	2.5	6319132
Dissolved Sodium (Na)	mg/L	5150	2.5	6319132
Dissolved Sulphur (S)	mg/L	437	150	6319132
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B905316
Report Date: 2019/09/18

Agnico-Eagle
Client Project #: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KRJ918		
Sampling Date		2019/09/02 06:50		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	223	150	6324819
Total Antimony (Sb)	ug/L	<25	25	6324819
Total Arsenic (As)	ug/L	9.1	5.0	6324819
Total Barium (Ba)	ug/L	192	50	6324819
Total Beryllium (Be)	ug/L	<5.0	5.0	6324819
Total Bismuth (Bi)	ug/L	<50	50	6324819
Total Boron (B)	ug/L	<2500	2500	6324819
Total Cadmium (Cd)	ug/L	<0.50	0.50	6324819
Total Chromium (Cr)	ug/L	<50	50	6324819
Total Cobalt (Co)	ug/L	<10	10	6324819
Total Copper (Cu)	ug/L	<25	25	6324819
Total Iron (Fe)	ug/L	<500	500	6324819
Total Lead (Pb)	ug/L	<10	10	6324819
Total Lithium (Li)	ug/L	555	100	6324819
Total Manganese (Mn)	ug/L	<50	50	6324819
Total Molybdenum (Mo)	ug/L	<50	50	6324819
Total Nickel (Ni)	ug/L	<50	50	6324819
Total Selenium (Se)	ug/L	<5.0	5.0	6324819
Total Silicon (Si)	ug/L	<5000	5000	6324819
Total Silver (Ag)	ug/L	<1.0	1.0	6324819
Total Strontium (Sr)	ug/L	23600	50	6324819
Total Thallium (Tl)	ug/L	<0.50	0.50	6324819
Total Tin (Sn)	ug/L	<250	250	6324819
Total Titanium (Ti)	ug/L	<250	250	6324819
Total Uranium (U)	ug/L	<5.0	5.0	6324819
Total Vanadium (V)	ug/L	<250	250	6324819
Total Zinc (Zn)	ug/L	<250	250	6324819
Total Zirconium (Zr)	ug/L	<5.0	5.0	6324819
Total Calcium (Ca)	ug/L	974000	2500	6319128
Total Magnesium (Mg)	ug/L	747000	2500	6319128
Total Potassium (K)	ug/L	188000	2500	6319128
Total Sodium (Na)	ug/L	5090000	2500	6319128
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KRJ918		
Sampling Date		2019/09/02 06:50		
	UNITS	MEL-26	RDL	QC Batch
Total Sulphur (S)	ug/L	448000	150000	6319128
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	5510000	500	6319127
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

BV Labs ID		KRJ918			KRJ918		
Sampling Date		2019/09/02 06:50			2019/09/02 06:50		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	32	1.0	6313709			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6313709			
Inorganics							
Total Ammonia-N	mg/L	7.0	0.050	6316054	7.0	0.050	6316054
Total Chlorine	mg/L	9	1	6316665	9	1	6316665
Conductivity	umho/cm	30000	1.0	6316760			
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	6333734			
Total Dissolved Solids	mg/L	19500	20	6316534	19400	20	6316534
Total Kjeldahl Nitrogen (TKN)	mg/L	18	2.0	6316939			
Dissolved Organic Carbon	mg/L	16	0.50	6315226			
Total Organic Carbon (TOC)	mg/L	16	0.50	6316899			
Orthophosphate (P)	mg/L	0.011	0.010	6317705			
Dissolved Oxygen	mg/L	9.48		6317272			
pH	pH	7.14		6316764			
Total Phosphorus	mg/L	0.076	0.020	6316507			
Reactive Silica (SiO ₂)	mg/L	13 (2)	0.10	6330991			
Total Suspended Solids	mg/L	9	1	6316018			
Dissolved Sulphate (SO ₄)	mg/L	1000	5.0	6316762	990	5.0	6316762
Total Cyanide (CN)	mg/L	0.0084	0.0050	6316630	0.0077	0.0050	6316630
Turbidity	NTU	0.4	0.1	6315282			
Volatile Suspended Solids	mg/L	6	1	6316028			
WAD Cyanide (Free)	mg/L	0.0021	0.0010	6316641	0.0020	0.0010	6316641
Alkalinity (Total as CaCO ₃)	mg/L	32	1.0	6316755			
Dissolved Chloride (Cl ⁻)	mg/L	10000	100	6316753	11000	100	6316753
Nitrite (N)	mg/L	<0.010	0.010	6316749			
Nitrate (N)	mg/L	53.3	0.50	6316749			
Nitrate + Nitrite (N)	mg/L	53.3	0.50	6316749			
RADIONUCLIDE							
Radium-226	Bq/L	0.070	0.0050	6318584			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W. (2) Detection limits raised due to dilution to bring analyte within the calibrated range.							



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KRJ918			KRJ918		
Sampling Date		2019/09/02 06:50			2019/09/02 06:50		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Metals							
Mercury (Hg)	mg/L	<0.00001	0.00001	6316097			
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6316131	<0.00001	0.00001	6316131
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KRJ918

Sample ID: MEL-26

Matrix: Water

Collected: 2019/09/02

Shipped:

Received: 2019/09/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6316755	N/A	2019/09/06	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6313709	N/A	2019/09/09	Automated Statchk
Total Chlorine	SPEC	6316665	2019/09/05	2019/09/05	Kazzandra Adeva
Chloride by Automated Colourimetry	KONE	6316753	N/A	2019/09/06	Deonarine Ramnarine
Conductivity	AT	6316760	N/A	2019/09/06	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6316641	N/A	2019/09/05	Barbara Kalbasi Esfahani
Total Cyanide	SKAL/CN	6316630	2019/09/05	2019/09/05	Barbara Kalbasi Esfahani
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6315226	N/A	2019/09/05	Mandeep Kaur
Dissolved Oxygen	DO	6317272	2019/09/05	2019/09/05	Navjot Kaur Gill
Dissolved Mercury (low level)	CV/AA	6316131	2019/09/05	2019/09/05	Medhat Nasr
Mercury (low level)	CV/AA	6316097	2019/09/05	2019/09/05	Medhat Nasr
Cyanide (Free)	SPEC	6333734	2019/09/09	2019/09/09	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6319127	N/A	2019/09/10	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6319131	N/A	2019/09/09	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6319132	N/A	2019/09/09	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6324820	N/A	2019/09/09	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6319128	2019/09/10	2019/09/10	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6324819	2019/09/09	2019/09/09	Andrew An
Silica (Reactive)	KONE	6330991	N/A	2019/09/11	Serena Tian
Total Ammonia-N	LACH/NH ₄	6316054	N/A	2019/09/06	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6316749	N/A	2019/09/06	Chandra Nandlal
pH	AT	6316764	2019/09/05	2019/09/06	Surinder Rai
Orthophosphate	KONE	6317705	N/A	2019/09/06	Alina Dobreanu
Radium-226 Low Level	AS	6318584	N/A	2019/09/16	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6316762	N/A	2019/09/06	Alina Dobreanu
Total Dissolved Solids	BAL	6316534	2019/09/05	2019/09/06	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6316939	2019/09/05	2019/09/09	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6316899	N/A	2019/09/05	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6316507	2019/09/05	2019/09/06	Shivani Shivani
Low Level Total Suspended Solids	BAL	6316018	2019/09/05	2019/09/05	Nilam Borole
Turbidity	AT	6315282	N/A	2019/09/05	Kazzandra Adeva
Low Level Volatile Suspended Solids	BAL	6316028	2019/09/05	2019/09/06	Nilam Borole

BV Labs ID: KRJ918 Dup

Sample ID: MEL-26

Matrix: Water

Collected: 2019/09/02

Shipped:

Received: 2019/09/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Chlorine	SPEC	6316665	2019/09/05	2019/09/05	Kazzandra Adeva
Chloride by Automated Colourimetry	KONE	6316753	N/A	2019/09/06	Deonarine Ramnarine
Free (WAD) Cyanide	SKAL/CN	6316641	N/A	2019/09/05	Barbara Kalbasi Esfahani
Total Cyanide	SKAL/CN	6316630	2019/09/05	2019/09/05	Barbara Kalbasi Esfahani
Dissolved Mercury (low level)	CV/AA	6316131	2019/09/05	2019/09/05	Medhat Nasr
Total Ammonia-N	LACH/NH ₄	6316054	N/A	2019/09/06	Mazin Wakai
Sulphate by Automated Colourimetry	KONE	6316762	N/A	2019/09/06	Alina Dobreanu



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KRJ918 Dup

Sample ID: MEL-26

Matrix: Water

Collected: 2019/09/02

Shipped:

Received: 2019/09/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Dissolved Solids	BAL	6316534	2019/09/05	2019/09/06	Xinyue (Sarah) Hou



GENERAL COMMENTS

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

Package 1	14.3°C
-----------	--------

Sample KRJ918 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KRJ918 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KRJ918 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.



BV Labs Job #: B905316
Report Date: 2019/09/18

QUALITY ASSURANCE REPORT

Agnico-Eagle
Client Project #: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6315226	Dissolved Organic Carbon	2019/09/05	97	80 - 120	98	80 - 120	<0.50	mg/L	6.0	20		
6315282	Turbidity	2019/09/05			93	85 - 115	<0.1	NTU	17	20		
6316018	Total Suspended Solids	2019/09/05					<1	mg/L	NC	25	100	85 - 115
6316028	Volatile Suspended Solids	2019/09/06					<1	mg/L	NC	25		
6316054	Total Ammonia-N	2019/09/06	91	75 - 125	101	80 - 120	<0.050	mg/L	0.80	20		
6316097	Mercury (Hg)	2019/09/05	99	75 - 125	102	80 - 120	<0.00001	mg/L	NC	20		
6316131	Dissolved Mercury (Hg)	2019/09/05	97	75 - 125	102	80 - 120	<0.00001	mg/L	NC	20		
6316507	Total Phosphorus	2019/09/06	95	80 - 120	99	80 - 120	<0.020	mg/L	0.85	20	101	80 - 120
6316534	Total Dissolved Solids	2019/09/06					<10	mg/L	0.67	25	100	90 - 110
6316630	Total Cyanide (CN)	2019/09/05	-0.10 (1)	80 - 120	96	80 - 120	<0.0050	mg/L	8.7	20		
6316641	WAD Cyanide (Free)	2019/09/05	0.30 (1)	80 - 120	97	80 - 120	<0.0010	mg/L	4.9	20		
6316665	Total Chlorine	2019/09/05	NC	85 - 115	97	85 - 115	<0.1	mg/L	0	25		
6316749	Nitrate (N)	2019/09/06	103	80 - 120	103	80 - 120	<0.10	mg/L	NC	20		
6316749	Nitrite (N)	2019/09/06	100	80 - 120	101	80 - 120	<0.010	mg/L	NC	20		
6316753	Dissolved Chloride (Cl-)	2019/09/06	NC	80 - 120	104	80 - 120	<1.0	mg/L	3.3	20		
6316755	Alkalinity (Total as CaCO3)	2019/09/06			94	85 - 115	<1.0	mg/L	1.4	20		
6316760	Conductivity	2019/09/06			101	85 - 115	<1.0	umho/cm	0.47	25		
6316762	Dissolved Sulphate (SO4)	2019/09/06	NC	75 - 125	105	80 - 120	<1.0	mg/L	1.8	20		
6316764	pH	2019/09/06			102	98 - 103			0.41	N/A		
6316899	Total Organic Carbon (TOC)	2019/09/05	94	80 - 120	97	80 - 120	<0.50	mg/L	0.64	20		
6316939	Total Kjeldahl Nitrogen (TKN)	2019/09/06	98	80 - 120	100	80 - 120	<0.10	mg/L	0.69	20	101	80 - 120
6317705	Orthophosphate (P)	2019/09/06	100	75 - 125	101	80 - 120	<0.010	mg/L	1.2	25		
6318584	Radium-226	2019/09/16			86	85 - 115	<0.0050	Bq/L				
6324819	Total Aluminum (Al)	2019/09/09	108	80 - 120	103	80 - 120	<3.0	ug/L				
6324819	Total Antimony (Sb)	2019/09/09	102	80 - 120	104	80 - 120	<0.50	ug/L				
6324819	Total Arsenic (As)	2019/09/09	101	80 - 120	102	80 - 120	<0.10	ug/L				
6324819	Total Barium (Ba)	2019/09/09	102	80 - 120	102	80 - 120	<1.0	ug/L				
6324819	Total Beryllium (Be)	2019/09/09	99	80 - 120	102	80 - 120	<0.10	ug/L				
6324819	Total Bismuth (Bi)	2019/09/09	101	80 - 120	103	80 - 120	<1.0	ug/L				
6324819	Total Boron (B)	2019/09/09	102	80 - 120	102	80 - 120	<50	ug/L				



BV Labs Job #: B905316
Report Date: 2019/09/18

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Client Project #: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6324819	Total Cadmium (Cd)	2019/09/09	100	80 - 120	102	80 - 120	<0.010	ug/L				
6324819	Total Chromium (Cr)	2019/09/09	99	80 - 120	102	80 - 120	<1.0	ug/L				
6324819	Total Cobalt (Co)	2019/09/09	99	80 - 120	99	80 - 120	<0.20	ug/L				
6324819	Total Copper (Cu)	2019/09/09	93	80 - 120	97	80 - 120	<0.50	ug/L				
6324819	Total Iron (Fe)	2019/09/09	105	80 - 120	104	80 - 120	<10	ug/L				
6324819	Total Lead (Pb)	2019/09/09	104	80 - 120	105	80 - 120	<0.20	ug/L				
6324819	Total Lithium (Li)	2019/09/09	106	80 - 120	106	80 - 120	<2.0	ug/L				
6324819	Total Manganese (Mn)	2019/09/09	99	80 - 120	102	80 - 120	<1.0	ug/L				
6324819	Total Molybdenum (Mo)	2019/09/09	105	80 - 120	102	80 - 120	<1.0	ug/L				
6324819	Total Nickel (Ni)	2019/09/09	96	80 - 120	100	80 - 120	<1.0	ug/L				
6324819	Total Selenium (Se)	2019/09/09	101	80 - 120	101	80 - 120	<0.10	ug/L				
6324819	Total Silicon (Si)	2019/09/09	104	80 - 120	107	80 - 120	<100	ug/L				
6324819	Total Silver (Ag)	2019/09/09	98	80 - 120	101	80 - 120	<0.020	ug/L				
6324819	Total Strontium (Sr)	2019/09/09	110	80 - 120	101	80 - 120	<1.0	ug/L				
6324819	Total Thallium (Tl)	2019/09/09	104	80 - 120	103	80 - 120	<0.010	ug/L				
6324819	Total Tin (Sn)	2019/09/09	104	80 - 120	103	80 - 120	<5.0	ug/L				
6324819	Total Titanium (Ti)	2019/09/09	102	80 - 120	102	80 - 120	<5.0	ug/L				
6324819	Total Uranium (U)	2019/09/09	106	80 - 120	104	80 - 120	<0.10	ug/L				
6324819	Total Vanadium (V)	2019/09/09	99	80 - 120	99	80 - 120	<5.0	ug/L				
6324819	Total Zinc (Zn)	2019/09/09	94	80 - 120	101	80 - 120	<5.0	ug/L				
6324819	Total Zirconium (Zr)	2019/09/09	105	80 - 120	103	80 - 120	<0.10	ug/L				
6324820	Dissolved Aluminum (Al)	2019/09/09	100	80 - 120	103	80 - 120	<3.0	ug/L				
6324820	Dissolved Antimony (Sb)	2019/09/09	97	80 - 120	100	80 - 120	<0.50	ug/L				
6324820	Dissolved Arsenic (As)	2019/09/09	102	80 - 120	98	80 - 120	<0.10	ug/L				
6324820	Dissolved Barium (Ba)	2019/09/09	94	80 - 120	101	80 - 120	<1.0	ug/L				
6324820	Dissolved Beryllium (Be)	2019/09/09	99	80 - 120	99	80 - 120	<0.10	ug/L				
6324820	Dissolved Bismuth (Bi)	2019/09/09	93	80 - 120	99	80 - 120	<1.0	ug/L				
6324820	Dissolved Boron (B)	2019/09/09	100	80 - 120	99	80 - 120	<50	ug/L				
6324820	Dissolved Cadmium (Cd)	2019/09/09	97	80 - 120	99	80 - 120	<0.010	ug/L				
6324820	Dissolved Chromium (Cr)	2019/09/09	94	80 - 120	98	80 - 120	<1.0	ug/L				
6324820	Dissolved Cobalt (Co)	2019/09/09	92	80 - 120	98	80 - 120	<0.20	ug/L				



BV Labs Job #: B905316
Report Date: 2019/09/18

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Client Project #: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6324820	Dissolved Copper (Cu)	2019/09/09	88	80 - 120	96	80 - 120	<0.20	ug/L				
6324820	Dissolved Iron (Fe)	2019/09/09	95	80 - 120	102	80 - 120	<5.0	ug/L				
6324820	Dissolved Lead (Pb)	2019/09/09	96	80 - 120	101	80 - 120	<0.20	ug/L				
6324820	Dissolved Lithium (Li)	2019/09/09	95	80 - 120	103	80 - 120	<2.0	ug/L				
6324820	Dissolved Manganese (Mn)	2019/09/09	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6324820	Dissolved Molybdenum (Mo)	2019/09/09	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6324820	Dissolved Nickel (Ni)	2019/09/09	91	80 - 120	98	80 - 120	<1.0	ug/L				
6324820	Dissolved Selenium (Se)	2019/09/09	103	80 - 120	97	80 - 120	<0.10	ug/L				
6324820	Dissolved Silicon (Si)	2019/09/09	NC	80 - 120	103	80 - 120	<100	ug/L				
6324820	Dissolved Silver (Ag)	2019/09/09	95	80 - 120	98	80 - 120	<0.020	ug/L				
6324820	Dissolved Strontium (Sr)	2019/09/09	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6324820	Dissolved Thallium (Tl)	2019/09/09	94	80 - 120	99	80 - 120	<0.010	ug/L				
6324820	Dissolved Tin (Sn)	2019/09/09	99	80 - 120	102	80 - 120	<5.0	ug/L				
6324820	Dissolved Titanium (Ti)	2019/09/09	100	80 - 120	98	80 - 120	<5.0	ug/L				
6324820	Dissolved Uranium (U)	2019/09/09	99	80 - 120	99	80 - 120	<0.10	ug/L				
6324820	Dissolved Vanadium (V)	2019/09/09	97	80 - 120	97	80 - 120	<5.0	ug/L				
6324820	Dissolved Zinc (Zn)	2019/09/09	97	80 - 120	100	80 - 120	<5.0	ug/L				
6324820	Dissolved Zirconium (Zr)	2019/09/09	103	80 - 120	100	80 - 120	<0.10	ug/L				
6330991	Reactive Silica (SiO2)	2019/09/11	93	80 - 120	101	80 - 120	<0.050	mg/L				
6333734	Free Cyanide (CN)	2019/09/09	96	80 - 120	95	80 - 120	<1.0	ug/L	0	20		

N/A = Not Applicable

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

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

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

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

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

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

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

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



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Brad Newman, Scientific Service Specialist

Harry (Peng) Liang, Senior Analyst

Steven Simpson, Lab Director

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BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: Campobello job# B9P4257

Attention: Alisha Williamson

BUREAU VERITAS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2019/10/04

Report #: R2791755

Version: 4 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B976449

Received: 2019/09/12, 10:55

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Chloride/Sulphate by Auto Colourimetry	2	N/A	2019/10/04	AB SOP-00020 / AB SOP-00018	SM23-4500-Cl/SO4-E m
Cyanide (Free)	2	2019/09/16	2019/09/16	CAL SOP-00266	EPA 9016d R0 m
Conductivity @25C	2	N/A	2019/10/02	AB SOP-00005	SM 23 2510 B m
Elements by ICP-Dissolved-Lab Filtered (1)	2	N/A	2019/10/04	AB SOP-00042	EPA 6010d R5 m
pH @25°C (2)	2	N/A	2019/10/04	AB SOP-00005	SM 23 4500-H+B m
Salinity by Conductivity Method	2	N/A	2019/10/03		Auto Calc
Sodium Adsorption Ratio	2	N/A	2019/10/04		Auto Calc
Silica (Reactive)	2	N/A	2019/09/15	AB SOP-00011	EPA 370.1 R1978 m
Total Dissolved Solids (Calc. from EC)	2	N/A	2019/10/04		Auto Calc

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

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

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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

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

(1) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(2) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are



Your Project #: Campobello job# B9P4257

Attention: Alisha Williamson

BUREAU VERITAS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2019/10/04

Report #: R2791755

Version: 4 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B976449

Received: 2019/09/12, 10:55

reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.

Encryption Key

Leanne Cameron
Senior Project Manager
04 Oct 2019 17:41:31

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

Customer Solutions, Western Canada Customer Experience Team

Email: customersolutionswest@bvlabs.com

Phone# (403) 291-3077

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BUREAU
VERITAS

BV Labs Job #: B976449

Report Date: 2019/10/04

BUREAU VERITAS

Client Project #: Campobello job# B9P4257

Sampler Initials: SA

SALINITY WATER (WATER)

BV Labs ID		WL9125	WL9126			WL9126	
Sampling Date		2019/08/23 14:10	2019/08/23 14:10			2019/08/23 14:10	
	UNITS	MEL-26	MEL-26 DUP	RDL	QC Batch	MEL-26 DUP Lab-Dup	QC Batch

Calculated Parameters							
Sodium Adsorption Ratio	N/A	26	26	0.10	9614118		
Total dissolved solids (calc., EC)	mg/L	22000	23000	10	9614378		
Misc. Inorganics							
pH	pH	7.39	7.30	N/A	9614595	7.43	9614595
Anions							
Dissolved Chloride (Cl)	mg/L	7400 (1)	7300 (1)	50	9614975		
Dissolved Sulphate (SO ₄)	mg/L	850 (1)	850 (1)	5.0	9614975		
Lab Filtered Elements							
Dissolved Calcium (Ca)	mg/L	860 (1)	860 (1)	3.0	9614643		
Dissolved Magnesium (Mg)	mg/L	440	440	0.20	9614643		
Dissolved Potassium (K)	mg/L	140	150	0.30	9614643		
Dissolved Sodium (Na)	mg/L	3800 (1)	3800 (1)	5.0	9614643		
RDL = Reportable Detection Limit							
Lab-Dup = Laboratory Initiated Duplicate							
N/A = Not Applicable							
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.							



BUREAU
VERITAS

BV Labs Job #: B976449

Report Date: 2019/10/04

BUREAU VERITAS

Client Project #: Campobello job# B9P4257

Sampler Initials: SA

RESULTS OF CHEMICAL ANALYSES OF WATER

BV Labs ID		WL9125			WL9125			WL9126		
Sampling Date		2019/08/23 14:10			2019/08/23 14:10			2019/08/23 14:10		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch	MEL-26 DUP	RDL	QC Batch
Calculated Parameters										
Salinity	N/A	14	2.0	9612737				15	2.0	9612737
Misc. Inorganics										
Conductivity	uS/cm	22000	2.0	9611237				23000	2.0	9611237
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	9589403	<1.0	1.0	9589403	<1.0	1.0	9589403
Reactive Silica	mg/L	8.0	0.050	9589312	7.6	0.050	9589312	12 (2)	0.10	9589312
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W (2) Detection limits raised due to dilution to bring analyte within the calibrated range.										



BUREAU
VERITAS

BV Labs Job #: B976449

Report Date: 2019/10/04

BUREAU VERITAS

Client Project #: Campobello job# B9P4257

Sampler Initials: SA

TEST SUMMARY

BV Labs ID: WL9125

Sample ID: MEL-26

Matrix: Water

Collected: 2019/08/23

Shipped:

Received: 2019/09/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9614975	N/A	2019/10/04	Zafar Iqbal
Cyanide (Free)	SPEC	9589403	2019/09/16	2019/09/16	Taylor Mullings
Conductivity @25C	COND	9611237	N/A	2019/10/02	Ilonka Kovac
Elements by ICP-Dissolved-Lab Filtered	ICPA	9614643	N/A	2019/10/04	Mary Anne Dela Cruz
pH @25°C	AT/ALK	9614595	N/A	2019/10/04	Ilonka Kovac
Salinity by Conductivity Method	CALC	9612737	N/A	2019/10/03	Ghayasuddin Khan
Sodium Adsorption Ratio	CALC	9614118	N/A	2019/10/04	Automated Statchk
Silica (Reactive)	KONE/SL	9589312	N/A	2019/09/15	Serena Tian
Total Dissolved Solids (Calc. from EC)	CALC	9614378	N/A	2019/10/04	Automated Statchk

BV Labs ID: WL9125 Dup

Sample ID: MEL-26

Matrix: Water

Collected: 2019/08/23

Shipped:

Received: 2019/09/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Cyanide (Free)	SPEC	9589403	2019/09/16	2019/09/16	Taylor Mullings
Silica (Reactive)	KONE/SL	9589312	N/A	2019/09/15	Serena Tian

BV Labs ID: WL9126

Sample ID: MEL-26 DUP

Matrix: Water

Collected: 2019/08/23

Shipped:

Received: 2019/09/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9614975	N/A	2019/10/04	Zafar Iqbal
Cyanide (Free)	SPEC	9589403	2019/09/16	2019/09/16	Taylor Mullings
Conductivity @25C	COND	9611237	N/A	2019/10/02	Ilonka Kovac
Elements by ICP-Dissolved-Lab Filtered	ICPA	9614643	N/A	2019/10/04	Mary Anne Dela Cruz
pH @25°C	AT/ALK	9614595	N/A	2019/10/04	Ilonka Kovac
Salinity by Conductivity Method	CALC	9612737	N/A	2019/10/03	Ghayasuddin Khan
Sodium Adsorption Ratio	CALC	9614118	N/A	2019/10/04	Automated Statchk
Silica (Reactive)	KONE/SL	9589312	N/A	2019/09/15	Serena Tian
Total Dissolved Solids (Calc. from EC)	CALC	9614378	N/A	2019/10/04	Automated Statchk

BV Labs ID: WL9126 Dup

Sample ID: MEL-26 DUP

Matrix: Water

Collected: 2019/08/23

Shipped:

Received: 2019/09/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH @25°C	AT/ALK	9614595	N/A	2019/10/04	Ilonka Kovac



GENERAL COMMENTS

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

Package 1	3.0°C
-----------	-------

Sample WL9125 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

Sample was analyzed past method specified hold time for Cyanide (Free). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Sample WL9126 [MEL-26 DUP] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

Sample was analyzed past method specified hold time for Cyanide (Free). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9589312	Reactive Silica	2019/09/15	NC	80 - 120	101	80 - 120	<0.050	mg/L	5.5	20
9589403	Free Cyanide (CN)	2019/09/16	93	80 - 120	95	80 - 120	<1.0	ug/L	NC	20
9611237	Conductivity	2019/10/02			97	90 - 110	<2.0	uS/cm	0.88	10
9614595	pH	2019/10/04			100	97 - 103			1.8	N/A
9614643	Dissolved Calcium (Ca)	2019/10/04	94	80 - 120	100	80 - 120	<0.30	mg/L	0.43	20
9614643	Dissolved Magnesium (Mg)	2019/10/04	93	80 - 120	101	80 - 120	<0.20	mg/L	0.097	20
9614643	Dissolved Potassium (K)	2019/10/04	95	80 - 120	99	80 - 120	<0.30	mg/L	0.011	20
9614643	Dissolved Sodium (Na)	2019/10/04	NC	80 - 120	102	80 - 120	<0.50	mg/L	1.1	20
9614975	Dissolved Chloride (Cl)	2019/10/04	NC	80 - 120	104	80 - 120	<1.0	mg/L	0.21	20
9614975	Dissolved Sulphate (SO4)	2019/10/04	NC	80 - 120	103	80 - 120	<1.0	mg/L	1.4	20

N/A = Not Applicable

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

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

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

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

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

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



BUREAU
VERITAS

BV Labs Job #: B976449
Report Date: 2019/10/04

BUREAU VERITAS
Client Project #: Campobello job# B9P4257
Sampler Initials: SA

VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

Harry (Peng) Liang, Senior Analyst

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Your P.O. #: OL-762849
 Site#: 62°48'01.99" 92°06'00.05"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/10/15
 Report #: R5921003
 Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B9R3149

Received: 2019/09/30, 10:30

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/10/01	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/10/04	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	1	N/A	2019/10/01	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2019/10/01	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/10/01	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/10/01	2019/10/01	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/10/01	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/10/01	2019/10/01	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	1	2019/10/01	2019/10/01	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/10/01	2019/10/01	CAM SOP-00453	EPA 7470 m
Chloride & Sulphate by Auto Colorimetry (2)	1	N/A	2019/10/03	AB SOP-00020 / AB SOP-00018	SM23 4500-CL/SO4-E m
Cyanide (Free) (2)	1	N/A	N/A		
Conductivity @25C (2)	1	2019/10/02	2019/10/03	AB SOP-00005	SM 23 2510 B m
Hardness Total (calculated as CaCO3) (3, 6)	1	N/A	2019/10/04	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/10/03	BBY WI-00033	Auto Calc
Elements by ICP-Dissolved-Lab Filtered (2)	1	N/A	2019/10/02	AB SOP-00042	EPA 6010d R5 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/10/03	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/10/03	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/09/30	2019/10/04	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/10/03	2019/10/03	BBY7SOP-00003/02	EPA 6020B R2 m
pH @25°C (2, 7)	1	N/A	2019/10/03	AB SOP-00005	SM 23 4500-H+B m
Sodium Adsorption Ratio (2)	1	N/A	2019/10/03		Auto Calc
Silica (Reactive) (2)	1	N/A	2019/10/03	AB SOP-00011	EPA370.1 R1978 m
Total Dissolved Solids (Calc. from EC) (2)	1	N/A	2019/10/03		Auto Calc
Total Ammonia-N (1)	1	N/A	2019/10/01	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/10/01	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/10/01	2019/10/01	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/10/01	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/10/09	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/15
Report #: R5921003
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B9R3149

Received: 2019/09/30, 10:30

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Sulphate by Automated Colourimetry (1)	1	N/A	2019/10/01	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/10/02	2019/10/03	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/10/01	2019/10/04	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/10/02	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/10/02	2019/10/02	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/10/01	2019/10/01	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/10/01	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

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

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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

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

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

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/15
Report #: R5921003
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B9R3149

Received: 2019/09/30, 10:30

- (7) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.
- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
- (9) Radium-226 results have not been corrected for blanks.
- (10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
15 Oct 2019 10:54:35

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

Alisha Williamson, Project Manager

Email: Alisha.Williamson@bvlabs.com

Phone# (613)274-0573

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9R3149

Report Date: 2019/10/15

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

SALINITY IN WATER (WATER)

BV Labs ID		KXI127		
Sampling Date		2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Sodium Adsorption Ratio	N/A	22	0.10	6368740
Total dissolved solids (calc., EC)	mg/L	22000	10	6368741
ELEMENTS				
Dissolved Calcium (Ca)	mg/L	930 (1)	3.0	6368738
Dissolved Magnesium (Mg)	mg/L	420	0.20	6368738
Dissolved Potassium (K)	mg/L	140	0.30	6368738
Dissolved Sodium (Na)	mg/L	3200 (1)	5.0	6368738
Inorganics				
Dissolved Chloride (Cl-)	mg/L	7000 (1)	50	6368736
Conductivity	uS/cm	22000	2.0	6368737
pH	pH	7.17	N/A	6368739
Dissolved Sulphate (SO4)	mg/L	830 (1)	5.0	6368736
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Detection limits raised due to dilution to bring analyte within the calibrated range.				



BUREAU
VERITAS

BV Labs Job #: B9R3149
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KXI127		
Sampling Date		2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	4170	0.50	6370534
Metals				
Dissolved Aluminum (Al)	ug/L	111	30	6370537
Dissolved Antimony (Sb)	ug/L	<5.0	5.0	6370537
Dissolved Arsenic (As)	ug/L	5.0	1.0	6370537
Dissolved Barium (Ba)	ug/L	226	10	6370537
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	6370537
Dissolved Bismuth (Bi)	ug/L	<10	10	6370537
Dissolved Boron (B)	ug/L	803	500	6370537
Dissolved Cadmium (Cd)	ug/L	0.17	0.10	6370537
Dissolved Chromium (Cr)	ug/L	<10	10	6370537
Dissolved Cobalt (Co)	ug/L	5.5	2.0	6370537
Dissolved Copper (Cu)	ug/L	4.9	2.0	6370537
Dissolved Iron (Fe)	ug/L	<50	50	6370537
Dissolved Lead (Pb)	ug/L	2.7	2.0	6370537
Dissolved Lithium (Li)	ug/L	477	20	6370537
Dissolved Manganese (Mn)	ug/L	223	10	6370537
Dissolved Molybdenum (Mo)	ug/L	13	10	6370537
Dissolved Nickel (Ni)	ug/L	32	10	6370537
Dissolved Selenium (Se)	ug/L	1.3	1.0	6370537
Dissolved Silicon (Si)	ug/L	2600	1000	6370537
Dissolved Silver (Ag)	ug/L	<0.20	0.20	6370537
Dissolved Strontium (Sr)	ug/L	19900	10	6370537
Dissolved Thallium (Tl)	ug/L	0.12	0.10	6370537
Dissolved Tin (Sn)	ug/L	<50	50	6370537
Dissolved Titanium (Ti)	ug/L	<50	50	6370537
Dissolved Uranium (U)	ug/L	4.2	1.0	6370537
Dissolved Vanadium (V)	ug/L	<50	50	6370537
Dissolved Zinc (Zn)	ug/L	<50	50	6370537
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	6370537
Dissolved Calcium (Ca)	mg/L	986	0.50	6370535
Dissolved Magnesium (Mg)	mg/L	415	0.50	6370535
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R3149

Report Date: 2019/10/15

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KXI127		
Sampling Date		2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch
Dissolved Potassium (K)	mg/L	134	0.50	6370535
Dissolved Sodium (Na)	mg/L	3150	0.50	6370535
Dissolved Sulphur (S)	mg/L	332	30	6370535
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R3149

Report Date: 2019/10/15

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KXI127		
Sampling Date		2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	178	30	6370497
Total Antimony (Sb)	ug/L	<5.0	5.0	6370497
Total Arsenic (As)	ug/L	4.7	1.0	6370497
Total Barium (Ba)	ug/L	223	10	6370497
Total Beryllium (Be)	ug/L	<1.0	1.0	6370497
Total Bismuth (Bi)	ug/L	<10	10	6370497
Total Boron (B)	ug/L	574	500	6370497
Total Cadmium (Cd)	ug/L	0.13	0.10	6370497
Total Chromium (Cr)	ug/L	<10	10	6370497
Total Cobalt (Co)	ug/L	5.1	2.0	6370497
Total Copper (Cu)	ug/L	<5.0	5.0	6370497
Total Iron (Fe)	ug/L	<100	100	6370497
Total Lead (Pb)	ug/L	2.5	2.0	6370497
Total Lithium (Li)	ug/L	466	20	6370497
Total Manganese (Mn)	ug/L	219	10	6370497
Total Molybdenum (Mo)	ug/L	<10	10	6370497
Total Nickel (Ni)	ug/L	31	10	6370497
Total Selenium (Se)	ug/L	1.1	1.0	6370497
Total Silicon (Si)	ug/L	2630	1000	6370497
Total Silver (Ag)	ug/L	<0.20	0.20	6370497
Total Strontium (Sr)	ug/L	19800	10	6370497
Total Thallium (Tl)	ug/L	0.11	0.10	6370497
Total Tin (Sn)	ug/L	<50	50	6370497
Total Titanium (Ti)	ug/L	<50	50	6370497
Total Uranium (U)	ug/L	3.8	1.0	6370497
Total Vanadium (V)	ug/L	<50	50	6370497
Total Zinc (Zn)	ug/L	<50	50	6370497
Total Zirconium (Zr)	ug/L	<1.0	1.0	6370497
Total Calcium (Ca)	ug/L	920000	500	6370496
Total Magnesium (Mg)	ug/L	406000	500	6370496
Total Potassium (K)	ug/L	130000	500	6370496
Total Sodium (Na)	ug/L	3010000	500	6370496
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R3149
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KXI127		
Sampling Date		2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch
Total Sulphur (S)	ug/L	313000	30000	6370496
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	3970000	500	6370494
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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BV Labs Job #: B9R3149

Report Date: 2019/10/15

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

BV Labs ID		KXI127			KXI127		
Sampling Date		2019/09/26 06:00			2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	37	1.0	6359715			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6359715			
Inorganics							
Total Ammonia-N	mg/L	18	0.050	6361195			
Conductivity	umho/cm	21000	1.0	6360765			
Free Cyanide (CN)	ug/L	18 (1)	1.0	6368742			
Total Dissolved Solids	mg/L	12800	20	6366103			
Total Kjeldahl Nitrogen (TKN)	mg/L	29	5.0	6362304			
Dissolved Organic Carbon	mg/L	21	0.50	6362202			
Total Organic Carbon (TOC)	mg/L	22	0.50	6363108			
Orthophosphate (P)	mg/L	<0.010	0.010	6361234			
Dissolved Oxygen	mg/L	9.76		6362418	9.78		6362418
pH	pH	7.28		6360781			
Total Phosphorus	mg/L	0.062	0.020	6364688			
Reactive Silica (SiO ₂)	mg/L	4.5 (2)	0.50	6368743	4.8	0.50	6368743
Total Suspended Solids	mg/L	12	1	6362026			
Dissolved Sulphate (SO ₄)	mg/L	790	5.0	6358989			
Total Cyanide (CN)	mg/L	0.069	0.0050	6362288	0.065	0.0050	6362288
Turbidity	NTU	0.4	0.1	6361272			
WAD Cyanide (Free)	mg/L	0.0087	0.0010	6362290	0.0086	0.0010	6362290
Alkalinity (Total as CaCO ₃)	mg/L	37	1.0	6360764			
Dissolved Chloride (Cl ⁻)	mg/L	7100	100	6359976			
Nitrite (N)	mg/L	0.672	0.010	6362366	0.660	0.010	6362366
Nitrate (N)	mg/L	48.9	0.50	6362366	49.1	0.50	6362366
Nitrate + Nitrite (N)	mg/L	49.6	0.50	6362366	49.8	0.50	6362366
RADIONUCLIDE							
Radium-226	Bq/L	0.10	0.0050	6370167			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W (2) Detection limits raised due to matrix interference.							



BUREAU
VERITAS

BV Labs Job #: B9R3149
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Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KXI127			KXI127		
Sampling Date		2019/09/26 06:00			2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Metals							
Mercury (Hg)	mg/L	<0.00001	0.00001	6362141			
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6362152	<0.00001	0.00001	6362152
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

BV Labs Job #: B9R3149
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KXI127
Sample ID: MEL-26
Matrix: Water

Collected: 2019/09/26
Shipped:
Received: 2019/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6360764	N/A	2019/10/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6359715	N/A	2019/10/04	Automated Statchk
Chloride by Automated Colourimetry	KONE	6359976	N/A	2019/10/01	Deonarine Ramnarine
Conductivity	AT	6360765	N/A	2019/10/01	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6362290	N/A	2019/10/01	Gnana Thomas
Total Cyanide	SKAL/CN	6362288	2019/10/01	2019/10/01	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6362202	N/A	2019/10/01	Mandeep Kaur
Dissolved Oxygen	DO	6362418	2019/10/01	2019/10/01	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6362152	2019/10/01	2019/10/01	Medhat Nasr
Mercury (low level)	CV/AA	6362141	2019/10/01	2019/10/01	Medhat Nasr
Chloride & Sulphate by Auto Colorimetry	KONE	6368736	N/A	2019/10/03	Serena Tian
Cyanide (Free)	SPEC	6368742	2019/10/02	2019/10/03	Taylor Mullings
Conductivity @25C	COND	6368737	2019/10/03	2019/10/03	Ilonka Kovac
Hardness Total (calculated as CaCO3)	CALC	6370494	N/A	2019/10/04	Report Automation Engine
Hardness (calculated as CaCO3)	CALC	6370534	N/A	2019/10/03	Automated Statchk
Elements by ICP-Dissolved-Lab Filtered	ICP	6368738	N/A	2019/10/02	Ahmed Loai
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6370535	N/A	2019/10/03	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6370537	N/A	2019/10/03	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6370496	2019/10/04	2019/10/04	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6370497	2019/10/03	2019/10/03	Andrew An
pH @25°C	AT/PH	6368739	N/A	2019/10/03	Ilonka Kovac
Sodium Adsorption Ratio	CALC	6368740	N/A	2019/10/03	Automated Statchk
Silica (Reactive)	KONE	6368743	N/A	2019/10/03	Zafar Iqbal
Total Dissolved Solids (Calc. from EC)	CALC	6368741	N/A	2019/10/03	Automated Statchk
Total Ammonia-N	LACH/NH4	6361195	N/A	2019/10/01	Mazin Wakai
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6362366	N/A	2019/10/01	Chandra Nandlal
pH	AT	6360781	2019/10/01	2019/10/01	Surinder Rai
Orthophosphate	KONE	6361234	N/A	2019/10/01	Alina Doboreanu
Radium-226 Low Level	AS	6370167	N/A	2019/10/09	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6358989	N/A	2019/10/01	Deonarine Ramnarine
Total Dissolved Solids	BAL	6366103	2019/10/02	2019/10/03	Shivani Desai
Total Kjeldahl Nitrogen in Water	SKAL	6362304	2019/10/01	2019/10/04	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6363108	N/A	2019/10/02	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6364688	2019/10/02	2019/10/02	Shivani Shivani
Low Level Total Suspended Solids	BAL	6362026	2019/10/01	2019/10/01	Massarat Jan
Turbidity	AT	6361272	N/A	2019/10/01	Kazzandra Adeva

BV Labs ID: KXI127 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/09/26
Shipped:
Received: 2019/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	SKAL/CN	6362290	N/A	2019/10/01	Gnana Thomas
Total Cyanide	SKAL/CN	6362288	2019/10/01	2019/10/01	Gnana Thomas
Dissolved Oxygen	DO	6362418	2019/10/01	2019/10/01	Nusrat Naz



BUREAU
VERITAS

BV Labs Job #: B9R3149
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KXI127 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/09/26
Shipped:
Received: 2019/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Mercury (low level)	CV/AA	6362152	2019/10/01	2019/10/01	Medhat Nasr
Silica (Reactive)	KONE	6368743	N/A	2019/10/03	Zafar Iqbal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6362366	N/A	2019/10/01	Chandra Nandlal



GENERAL COMMENTS

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

Package 1	18.7°C
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Revised Report (2019/10/15): EDD attached to report.

Sample KXI127 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

The sample for dissolved metals was filtered and preserved at the lab. Values may not reflect concentrations at the time of sampling.

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KXI127 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KXI127 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.



BV Labs Job #: B9R3149
Report Date: 2019/10/15

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6358989	Dissolved Sulphate (SO4)	2019/10/01	NC	75 - 125	102	80 - 120	<1.0	mg/L	2.9	20		
6359976	Dissolved Chloride (Cl-)	2019/10/01	NC	80 - 120	103	80 - 120	<1.0	mg/L	1.2	20		
6360764	Alkalinity (Total as CaCO3)	2019/10/01			101	85 - 115	<1.0	mg/L	1.8	20		
6360765	Conductivity	2019/10/01			103	85 - 115	<1.0	umho/cm	0.061	25		
6360781	pH	2019/10/01			102	98 - 103			0.29	N/A		
6361195	Total Ammonia-N	2019/10/01	96	75 - 125	101	80 - 120	<0.050	mg/L	8.5	20		
6361234	Orthophosphate (P)	2019/10/01	103	75 - 125	101	80 - 120	<0.010	mg/L	NC	25		
6361272	Turbidity	2019/10/01			99	85 - 115	<0.1	NTU	2.3	20		
6362026	Total Suspended Solids	2019/10/01					<1	mg/L	0	25	96	85 - 115
6362141	Mercury (Hg)	2019/10/01	98	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6362152	Dissolved Mercury (Hg)	2019/10/01	95	75 - 125	99	80 - 120	<0.00001	mg/L	NC	20		
6362202	Dissolved Organic Carbon	2019/10/01	96	80 - 120	101	80 - 120	<0.50	mg/L	1.2	20		
6362288	Total Cyanide (CN)	2019/10/01	60 (1)	80 - 120	101	80 - 120	<0.0050	mg/L	4.6	20		
6362290	WAD Cyanide (Free)	2019/10/01	70 (1)	80 - 120	103	80 - 120	<0.0010	mg/L	1.2	20		
6362304	Total Kjeldahl Nitrogen (TKN)	2019/10/03	107	80 - 120	101	80 - 120	<0.10	mg/L	6.2	20	104	80 - 120
6362366	Nitrate (N)	2019/10/01	NC	80 - 120	98	80 - 120	<0.10	mg/L	0.46	20		
6362366	Nitrite (N)	2019/10/01	91	80 - 120	97	80 - 120	<0.010	mg/L	1.8	20		
6363108	Total Organic Carbon (TOC)	2019/10/02	93	80 - 120	100	80 - 120	<0.50	mg/L	0.10	20		
6364688	Total Phosphorus	2019/10/02	101	80 - 120	103	80 - 120	<0.020	mg/L	0.37	20	101	80 - 120
6366103	Total Dissolved Solids	2019/10/03					<10	mg/L	4.7	25	100	90 - 110
6368736	Dissolved Chloride (Cl-)	2019/10/02	NC	80 - 120	103	80 - 120	<1.0	mg/L				
6368736	Dissolved Sulphate (SO4)	2019/10/02	NC	80 - 120	101	80 - 120	<1.0	mg/L				
6368737	Conductivity	2019/10/02			99	90 - 110	<2.0	uS/cm				
6368738	Dissolved Calcium (Ca)	2019/10/02	95	80 - 120	100	80 - 120	<0.30	mg/L				
6368738	Dissolved Magnesium (Mg)	2019/10/02	94	80 - 120	102	80 - 120	<0.20	mg/L				
6368738	Dissolved Potassium (K)	2019/10/02	97	80 - 120	99	80 - 120	<0.30	mg/L				
6368738	Dissolved Sodium (Na)	2019/10/02	NC	80 - 120	101	80 - 120	<0.50	mg/L				
6368739	pH	2019/10/02			99	97 - 103						
6368742	Free Cyanide (CN)	2019/10/03	118	80 - 120	97	80 - 120	<1.0	ug/L	13	20		
6368743	Reactive Silica (SiO2)	2019/10/03	94	80 - 120	96	80 - 120	<0.050	mg/L	5.9	20		
6370167	Radium-226	2019/10/08			86	85 - 115	<0.0050	Bq/L	NC	N/A		



BV Labs Job #: B9R3149
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QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6370497	Total Aluminum (Al)	2019/10/03	104	80 - 120	104	80 - 120	<3.0	ug/L				
6370497	Total Antimony (Sb)	2019/10/03	102	80 - 120	105	80 - 120	<0.50	ug/L				
6370497	Total Arsenic (As)	2019/10/03	101	80 - 120	105	80 - 120	<0.10	ug/L				
6370497	Total Barium (Ba)	2019/10/03	NC	80 - 120	106	80 - 120	<1.0	ug/L				
6370497	Total Beryllium (Be)	2019/10/03	99	80 - 120	103	80 - 120	<0.10	ug/L				
6370497	Total Bismuth (Bi)	2019/10/03	101	80 - 120	105	80 - 120	<1.0	ug/L				
6370497	Total Boron (B)	2019/10/03	NC	80 - 120	99	80 - 120	<50	ug/L				
6370497	Total Cadmium (Cd)	2019/10/03	101	80 - 120	108	80 - 120	<0.010	ug/L				
6370497	Total Chromium (Cr)	2019/10/03	100	80 - 120	106	80 - 120	<1.0	ug/L				
6370497	Total Cobalt (Co)	2019/10/03	96	80 - 120	102	80 - 120	<0.20	ug/L				
6370497	Total Copper (Cu)	2019/10/03	98	80 - 120	104	80 - 120	<0.50	ug/L				
6370497	Total Iron (Fe)	2019/10/03	NC	80 - 120	103	80 - 120	<10	ug/L				
6370497	Total Lead (Pb)	2019/10/03	97	80 - 120	108	80 - 120	<0.20	ug/L				
6370497	Total Lithium (Li)	2019/10/03	92	80 - 120	105	80 - 120	<2.0	ug/L				
6370497	Total Manganese (Mn)	2019/10/03	NC	80 - 120	108	80 - 120	<1.0	ug/L				
6370497	Total Molybdenum (Mo)	2019/10/03	107	80 - 120	108	80 - 120	<1.0	ug/L				
6370497	Total Nickel (Ni)	2019/10/03	102	80 - 120	109	80 - 120	<1.0	ug/L				
6370497	Total Selenium (Se)	2019/10/03	103	80 - 120	106	80 - 120	<0.10	ug/L				
6370497	Total Silicon (Si)	2019/10/03	NC	80 - 120	99	80 - 120	<100	ug/L				
6370497	Total Silver (Ag)	2019/10/03	99	80 - 120	106	80 - 120	<0.020	ug/L				
6370497	Total Strontium (Sr)	2019/10/03	NC	80 - 120	101	80 - 120	<1.0	ug/L				
6370497	Total Thallium (Tl)	2019/10/03	98	80 - 120	104	80 - 120	<0.010	ug/L				
6370497	Total Tin (Sn)	2019/10/03	100	80 - 120	102	80 - 120	<5.0	ug/L				
6370497	Total Titanium (Ti)	2019/10/03	112	80 - 120	109	80 - 120	<5.0	ug/L				
6370497	Total Uranium (U)	2019/10/03	98	80 - 120	106	80 - 120	<0.10	ug/L				
6370497	Total Vanadium (V)	2019/10/03	106	80 - 120	107	80 - 120	<5.0	ug/L				
6370497	Total Zinc (Zn)	2019/10/03	108	80 - 120	109	80 - 120	<5.0	ug/L				
6370497	Total Zirconium (Zr)	2019/10/03	92	80 - 120	103	80 - 120	<0.10	ug/L				
6370537	Dissolved Aluminum (Al)	2019/10/03	97	80 - 120	99	80 - 120	<3.0	ug/L				
6370537	Dissolved Antimony (Sb)	2019/10/03	100	80 - 120	99	80 - 120	<0.50	ug/L				
6370537	Dissolved Arsenic (As)	2019/10/03	105	80 - 120	100	80 - 120	<0.10	ug/L				
6370537	Dissolved Barium (Ba)	2019/10/03	99	80 - 120	102	80 - 120	<1.0	ug/L				



BV Labs Job #: B9R3149
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QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6370537	Dissolved Beryllium (Be)	2019/10/03	99	80 - 120	100	80 - 120	<0.10	ug/L				
6370537	Dissolved Bismuth (Bi)	2019/10/03	100	80 - 120	102	80 - 120	<1.0	ug/L				
6370537	Dissolved Boron (B)	2019/10/03	100	80 - 120	103	80 - 120	<50	ug/L				
6370537	Dissolved Cadmium (Cd)	2019/10/03	99	80 - 120	100	80 - 120	<0.010	ug/L				
6370537	Dissolved Chromium (Cr)	2019/10/03	95	80 - 120	98	80 - 120	<1.0	ug/L				
6370537	Dissolved Cobalt (Co)	2019/10/03	93	80 - 120	99	80 - 120	<0.20	ug/L				
6370537	Dissolved Copper (Cu)	2019/10/03	91	80 - 120	99	80 - 120	<0.20	ug/L				
6370537	Dissolved Iron (Fe)	2019/10/03	98	80 - 120	100	80 - 120	<5.0	ug/L				
6370537	Dissolved Lead (Pb)	2019/10/03	108	80 - 120	105	80 - 120	<0.20	ug/L				
6370537	Dissolved Lithium (Li)	2019/10/03	98	80 - 120	100	80 - 120	<2.0	ug/L				
6370537	Dissolved Manganese (Mn)	2019/10/03	97	80 - 120	102	80 - 120	<1.0	ug/L				
6370537	Dissolved Molybdenum (Mo)	2019/10/03	NC	80 - 120	101	80 - 120	<1.0	ug/L				
6370537	Dissolved Nickel (Ni)	2019/10/03	93	80 - 120	102	80 - 120	<1.0	ug/L				
6370537	Dissolved Selenium (Se)	2019/10/03	102	80 - 120	101	80 - 120	<0.10	ug/L				
6370537	Dissolved Silicon (Si)	2019/10/03	104	80 - 120	94	80 - 120	<100	ug/L				
6370537	Dissolved Silver (Ag)	2019/10/03	100	80 - 120	103	80 - 120	<0.020	ug/L				
6370537	Dissolved Strontium (Sr)	2019/10/03	NC	80 - 120	97	80 - 120	<1.0	ug/L				
6370537	Dissolved Thallium (Tl)	2019/10/03	106	80 - 120	103	80 - 120	<0.010	ug/L				
6370537	Dissolved Tin (Sn)	2019/10/03	93	80 - 120	95	80 - 120	<5.0	ug/L				
6370537	Dissolved Titanium (Ti)	2019/10/03	103	80 - 120	103	80 - 120	<5.0	ug/L				
6370537	Dissolved Uranium (U)	2019/10/03	107	80 - 120	106	80 - 120	<0.10	ug/L				
6370537	Dissolved Vanadium (V)	2019/10/03	101	80 - 120	101	80 - 120	<5.0	ug/L				
6370537	Dissolved Zinc (Zn)	2019/10/03	NC	80 - 120	103	80 - 120	<5.0	ug/L				



BV Labs Job #: B9R3149
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QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6370537	Dissolved Zirconium (Zr)	2019/10/03	105	80 - 120	102	80 - 120	<0.10	ug/L				

N/A = Not Applicable

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

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

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

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

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



BUREAU
VERITAS

BV Labs Job #: B9R3149
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Brad Newman, Scientific Service Specialist

Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9R3149

Report Date: 2019/10/15

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



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A	REPORT DATE: MONTH – DAY – YEAR 09-04-2019		REPORT TIME 8:00		<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____
	OCCURRENCE DATE: MONTH – DAY – YEAR 09-02-2019		OCCURRENCE TIME 24:00			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) KVPL11D01			WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MEL1631		
	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Melvin Bay				REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE DEGREES 62 MINUTES 48 SECONDS 45			LONGITUDE DEGREES 92 MINUTES 61 SECONDS 44		
	RESPONSIBLE PARTY OR VESSEL NAME Agnico Eagle Mines Ltd.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION Meliadine, Rankin Inlet, Nunavut, X0C 0G0			
G	ANY CONTRACTOR INVOLVED KCG		CONTRACTOR ADDRESS OR OFFICE LOCATION Rankin Inlet, Nunavut			
	PRODUCT SPILLED Treated Salt Water		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 64m3		U.N. NUMBER	
H	SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
	SPILL SOURCE Water Truck		SPILL CAUSE Operator Communication Error		AREA OF CONTAMINATION IN SQUARE METRES unknown	
J	FACTORS AFFECTING SPILL OR RECOVERY N/A		DESCRIBE ANY ASSISTANCE REQUIRED None		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT None	
	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS The daily allowable limit of 800m3 of water discharge to Melvin Bay was exceeded by 64m3. Two truck were loaded at Meliadine before midnight on September 1 but were offloaded at Itivia after midnight (September 2). The operators for the contractor involved (KCG) assumed these two truck loads would count for the Sept. 1 offloading, when in fact the discharge volumes are monitored from Midnight to Midnight for any given calendar day. This extra water discharged was detected when the values for the histogram were reviewed the following afternoon Sept 3). A meeting and is being held with the contractor supervisor to establish better communication and tracking of discharge to sea truck loads so this can be prevented. An investigation and follow-up report will be issued.					
L	REPORTED TO SPILL LINE BY Sean Arruda	POSITION Env. Coordinator	EMPLOYER AEM	LOCATION CALLING FROM Meliadine	TELEPHONE 8197593555	
	ANY ALTERNATE CONTACT Terry Ternes	POSITION General Supervisor	EMPLOYER AEM	ALTERNATE CONTACT Meliadine	ALTERNATE TELEPHONE 8197593555	
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130	
	LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS		
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						

Follow Up Report: #19-364

September 2, 2019 Saline Discharge Volume Exceedance – Melvin Bay

Description of Incident:

The daily permitted limit of 800m³ of treated water discharged to Melvin Bay was exceeded by 64m³. Two trucks were loaded at Meliadine before midnight on September 1st and offloaded at the Itivia offload station (Figure 1) after midnight (September 2). The operators for the contractor involved (KCG) assumed these two truck loads would count for the September 1st offloading, when in fact the discharge volumes are monitored from Midnight to Midnight for any given calendar day. This exceedance was detected when the values for the histogram (Figure 2) were reviewed the following afternoon September 3rd. In Meliadine's NIRB agreement, the permitted limit is 800 m³/day.



Figure 1: Location of the truck offloading station of treated saline water, and the end of the pipe where discharge enter Melvin Bay.

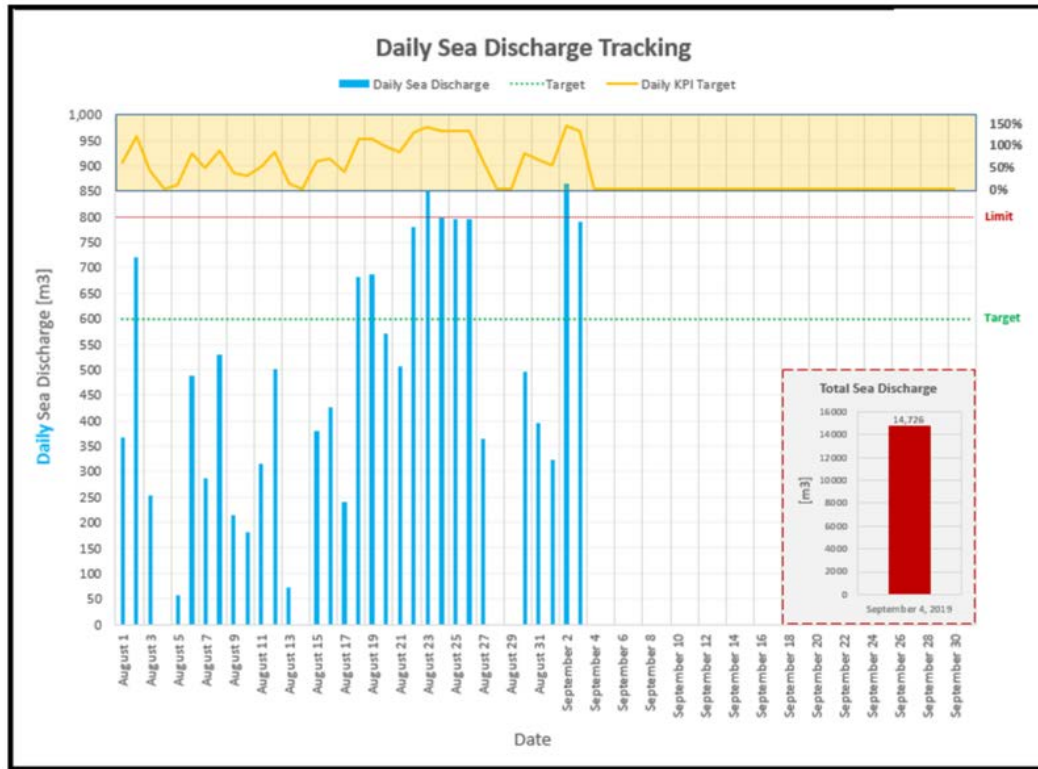


Figure 2: Daily discharge to sea volumes for September 2019. 800m³ limit exceeded on September 2.

Spill Response & Cleanup:

This treated water was discharged at a permitted and planned discharge point, therefore no cleanup or immediate response was required. No impact to the receiving environment occurred due to the additional 52m³ of water discharged from this event.

Cause of Incident and Corrective Measures

The root cause of the discharge volume exceedance was that there a lack of communication to operators about the permitted limits of water per day. The operators assumed that since the trucks were loaded on September 1st, that water would count as being discharge September 1st. They were not aware that the discharge volumes are monitored from midnight to midnight at the discharge point, not the loading station. As a mitigation measure, Sean Arruda (Environment Coordinator) and Terry Ternes (General Supervisor) met with Alain Gauthier (KCG Supervisor) to discuss how to prevent recurrence. Alain met with his truck drivers to better explain the procedures. A manual log sheet was created and placed at the offloading station (Figure 3). When an operator arrives and begins offloading water, they must record the time, date, and truck number. No more than 22 trucks are to be offloaded during a single 24 hour period (22 truck loads equals 792 m³ water). Furthermore, next year the cutoff system is planned to be installed at the offload station. This is to be programmed to divert water from being discharged to Melvin Bay, and retain it in a holding tank, when the daily limit is reached.

Discharge to Sea: Maximum of 22 trucks per day

Date: _____

Truck Load	Time	Truck Number	Operator	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

Figure 3: Example of a similar tracking sheet now located at the Itivia discharge to sea offloading station.



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A	REPORT DATE: MONTH – DAY – YEAR 09-15-2019		REPORT TIME 09:00		<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT		REPORT NUMBER 19 - 380	
B	OCCURRENCE DATE: MONTH – DAY – YEAR 09-14-2019		OCCURRENCE TIME 12:30					
C	LAND USE PERMIT NUMBER (IF APPLICABLE) KVPL11D01			WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MEL1631				
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Meliadine Gold Project			REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN				
E	LATITUDE DEGREES 63 MINUTES 2 SECONDS 13			LONGITUDE DEGREES 92 MINUTES 13 SECONDS 33				
F	RESPONSIBLE PARTY OR VESSEL NAME Agnico Eagle Mines LTD.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION Meliadine, Rankin Inlet, Nunavut, X0C 0G0					
G	ANY CONTRACTOR INVOLVED None		CONTRACTOR ADDRESS OR OFFICE LOCATION Rankin Inlet, Nunavut					
H	PRODUCT SPILLED Process Water		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 8m3			U.N. NUMBER		
	SECOND PRODUCT SPILLED (IF APPLICABLE) None							
I	SPILL SOURCE Cyclone seperator		SPILL CAUSE Human error			AREA OF CONTAMINATION IN SQUARE METRES 12m2		
J	FACTORS AFFECTING SPILL OR RECOVERY None		DESCRIBE ANY ASSISTANCE REQUIRED None			HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT None		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS During start-up of the cyclone system, a blockage occurred preventing slurry and water from passing through the cyclone unit. The system backed up and process water overflowed to the floor of the process plant. Approximately 8m3 flowed outside the building, onto the industrial pad. The nearest natural water body (G2), 600m to the north, was not impacted. The spill occurred at 63° 2'13.63"N, 92°13'33.84"W. A follow-up report will be completed regarding this exceedance.							
L	REPORTED TO SPILL LINE BY Terry Ternes		POSITION General Supervisor		EMPLOYER AEM		LOCATION CALLING FROM Meliadine	
							TELEPHONE 8197593555	
M	ANY ALTERNATE CONTACT Dan Gorton		POSITION Env. Coordinator		EMPLOYER AEM		ALTERNATE CONTACT Meliadine	
							ALTERNATE TELEPHONE 8197593555	
REPORT LINE USE ONLY								
N	RECEIVED AT SPILL LINE BY		POSITION STATION OPERATOR		EMPLOYER		LOCATION CALLED YELLOWKNIFE, NT	
							REPORT LINE NUMBER (867) 920-8130	
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC					SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED	
AGENCY		CONTACT NAME			CONTACT TIME		REMARKS	
LEAD AGENCY								
FIRST SUPPORT AGENCY								
SECOND SUPPORT AGENCY								
THIRD SUPPORT AGENCY								

Follow Up Report: #19-380

September 15th, 2019 – Cyclone Separator Process Water Spill

The following information relates to spill 2019-380 reported by Agnico Eagle Mines Ltd. September 15th 2019, and is being provided in accordance with:

- the Nunavut Water Board License 2AM-MEL1631 Water Licence, part H, item 8c and;
- section 38(7) of the Fisheries Act.

Description of Incident

At 12:30pm, Saturday 14th September 2019, during start-up of the cyclone system in the process plant, a blockage occurred preventing slurry and process water from passing through the cyclone unit. The system backed up causing process water and slurry to overflow to the floor of the process plant. Approximately 8m³ of process water and slurry flowed outside of the building, onto the industrial pad. The majority of the slurry remained on the plant floor. The spill volume was estimate based on the area and depth of the spilled material.

The nearest natural water body (G2), 600m to the north, was not impacted. The spill occurred at 63° 2'13.63"N, 92°13'33.84"W, within the Meliadine managed water catchment.



Figure 1: Location of process water spill within Meliadine's managed catchment area.



Figure 2: Slurry overflow on Process Plant floor facing south.

Spill Response & Cleanup

Slurry, which spilled to the process plant floor, was collected for reprocessing. Slurry and contaminated material unsuitable for reprocessing has been stockpiled for disposal. The affected area was cleared with heavy equipment. Environment staff investigated the affected area and interviewed the plant manager.



Figure 3: Affected area outside of Process Plant following clean up, facing North.

Cause of Incident and Corrective Measures

A blockage on cyclone separator #1 went unnoticed by the control room operator, causing the system to overflow before the operator could stop the inflow. Slurry overflowed into the trash screen sump, which did not have capacity to contain the volume of overflow. The sump then overflowed and slurry flowed out of the building.

To prevent recurrence, operators grinding ore input have been instructed to increase the frequency of their inspections of the cyclone separators. To prevent the trash screen sump from overflowing, a hole will be drilled through the concrete wall to allow flow to migrate to the grinding sump pump.



Dan Gorton | Environmental Coordinator

dan.gorton@agnicoeagle.com | Direct 819.759.3555 x4603996 |

Agnico Eagle Mines Limited - Meliadine Mine, Suite 879 - Rankin Inlet, Nunavut, Canada X0C 0G0

agnicoeagle.com





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A	REPORT DATE: MONTH – DAY – YEAR		REPORT TIME		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____
	OCCURRENCE DATE: MONTH – DAY – YEAR		OCCURRENCE TIME			
C	LAND USE PERMIT NUMBER (IF APPLICABLE)			WATER LICENCE NUMBER (IF APPLICABLE)		
	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION				REGION <input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE			LONGITUDE		
	DEGREES	MINUTES	SECONDS	DEGREES	MINUTES	SECONDS
F	RESPONSIBLE PARTY OR VESSEL NAME		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION			
	ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
I	SPILL SOURCE		SPILL CAUSE		AREA OF CONTAMINATION IN SQUARE METRES	
	FACTORS AFFECTING SPILL OR RECOVERY		DESCRIBE ANY ASSISTANCE REQUIRED		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE	
	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE	

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLED	REPORT LINE NUMBER
		STATION OPERATOR		YELLOWKNIFE, NT	(867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					

Follow Up Report: #19-398

September 25th, 2019 – TDS Exceedance at Final Discharge Point MEL-14

The following information relates to spill 2019-398 reported by Agnico Eagle Mines Ltd. September 25th 2019, and is being provided in accordance with:

- the Nunavut Water Board License 2AM-MEL1631 Water License, part H, item 8c and;
- subsection 38(7) of the Fisheries Act
- section 31 of the Metal and Diamond Mining Effluent Regulations

Description of Incident

On September 13th, 2019, samples were taken at the MEL-14 FDP (63° 2'11.41"N, 92°12'58.95"W). Results received on September 25 2019, indicated an exceedance of NWB Water License 2AM-MEL1631, part F, item 3 criteria for Total Dissolved Solids (TDS) of 1400mg/L. The TDS of the sample was 1430mg/L. The quantity of effluent exceeding discharge criteria is estimated to be 11,131m³, based on previous probe calibration and water quality analysis.



Figure 1: Location of effluent water treatment plant and diffuser in Meliadine Lake.

Spill Response & Cleanup

Upon receipt of laboratory analysis, it was determined that the EWTP probe had been out of calibration, preventing the automatic cessation of discharge to Meliadine Lake. Review of laboratory analysis indicated TDS was the only parameter exceeding MDMER and water license requirements since previous probe calibration.

Cause of Incident and Corrective Measures

TDS is calculated based on electrical conductivity at the Effluent Water Treatment Plant. The conductivity is monitored using a fixed probe at the EWTP outflow point. When the predetermined threshold trigger level is reached, the plant automatically stops discharging to Meliadine Lake.

On the day of sampling, it was identified that the handheld probe conductivity reading was higher the EWTP probe reading. This discrepancy caused the EWTP probe to read a conductivity lower than the trigger limit, when in fact the conductivity of the effluent was greater than the trigger limit. It was determined that the discrepancy was the result of infrequent probe maintenance. The probe was cleaned and recalibrated to ensure accuracy and compliance with discharge criteria.



Dan Gorton | Environmental Coordinator

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Agnico Eagle Mines Limited - Meliadine Mine, Suite 879 - Rankin Inlet, Nunavut, Canada X0C 0G0

agnicoeagle.com





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A	REPORT DATE: MONTH – DAY – YEAR 09-29-2019	REPORT TIME 08:00	<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT		REPORT NUMBER _____
B	OCCURRENCE DATE: MONTH – DAY – YEAR 09-28-2019	OCCURRENCE TIME 11:00			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) KVPL11D01	WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MEL1631			
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Meliadine		REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES 63 MINUTES 2 SECONDS 17		LONGITUDE DEGREES 92 MINUTES 13 SECONDS 35		
F	RESPONSIBLE PARTY OR VESSEL NAME Agnico Eagle Mines Ltd.	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION Meliadine, Rankin Inlet, Nunavut, X0C 0G0			
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED Copper Sulphate	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 40L	U.N. NUMBER 3077		
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER		
I	SPILL SOURCE Storage container	SPILL CAUSE Damaged/ ripped Container	AREA OF CONTAMINATION IN SQUARE METRES 30		
J	FACTORS AFFECTING SPILL OR RECOVERY Wind	DESCRIBE ANY ASSISTANCE REQUIRED N/A	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS When unloading a sea-can containing pallets of copper sulphate, the operator noticed that one of the bags was torn. When they moved the pallet in order to patch the torn bag, approximately 40L of product spilled onto the sea-can floor and was blown outside due to the high winds. The majority of the product was contained to the sea-can, but an area of approximately 30 square meters outside was visibly contaminated. No water bodies were impacted by this spill. The closest water body was approximately 482m away. This spill is being reported as required by: - the conditions under the Nunavut Water Board Licence 2AM-MEL1631, Part H - the Government of Nunavut's, Environmental Protection Act subsection 5.1(a) A follow-up report will be issued.				
L	REPORTED TO SPILL LINE BY Sean Arruda	POSITION Env. Coordinator	EMPLOYER AEM	LOCATION CALLING FROM Meliadine	TELEPHONE 819-759-3555
M	ANY ALTERNATE CONTACT Dan Gorton	POSITION Env. Coordinator	EMPLOYER AEM	ALTERNATE CONTACT Meliadine LOCATION	ALTERNATE TELEPHONE 819-759-3555
REPORT LINE USE ONLY					
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					

Follow Up Report: #19-405 September 28th, 2019 – Copper Sulphate powder spilled

The following information relates to spill 2019-405 reported by Agnico Eagle Mines Ltd. September 29th 2019, and is being provided in accordance with:

- the Nunavut Water Board License 2AM-MEL1631 Water Licence, part H, item 8c and;
- subsection 38(7) of the Fisheries Act

Description of Incident

At 11:00a.m. on Saturday September 28th, we received a verbal report of a potential spill of an unknown blue powder outside of some sea-cans near the Mill (Figure 1-4). Further investigation revealed that this was Copper Sulphate (aka Cupric Sulfate, CuSO_4 UN3077).

An operator was unloading the sea-can containing pallets of the CuSO_4 and noticed one of the bags was torn.

The nearest natural water body (G2), 475m to the north, was not impacted. The spill occurred at 63° 2'16.83"N, 92°13'35.50"W, within the Meliadine managed water catchment.



Figure 1: Area outside the container which was contaminated.



Figure 2: Forklift operators removing the torn bag/pallet to bring inside the Mill.



Figure 3: Damaged pallet which has been patched so that no more material is released during transport.



Figure 4: View from inside the container after the pallets were removed. Most of the material was contained inside the sea-can.



Figure 5: Location of Copper Sulphate spill within Meliadine's managed catchment area.

Spill Response & Cleanup

The torn bag of CuSO_4 was patched and removed from the sea-can. The sea-can was unloaded and the pallets were brought inside the Mill. The spilled material in the sea-can was shoveled into buckets and replaced into the original bag. The material outside the sea-can was scraped up and brought to the Mill to be disposed of within the process plant. Figure 6 shows the cleaned up area where the spill had occurred.



Figure 6: Affected area after clean-up was completed.

Cause of Incident and Corrective Measures

The bag containing CuSO_4 was ripped, which likely occurred during transport. The day they were unloading this sea-can we experienced very high winds (gusting up to 80km/hr). The wind blew a significant amount of the material out of the sea-can. In these situations, the operators should try to remove as much material as they can from the pallets before removing the pallets from the container, so that it does not fall onto the ground. Inspection of each of the bags of material before handling them with the machinery should also be implemented in order to avoid removing an already damaged bag before it can be patched.



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A	REPORT DATE: MONTH – DAY – YEAR 12-10-2019		REPORT TIME 10:00		<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 19 - 480
	B	OCCURRENCE DATE: MONTH – DAY – YEAR 10-31-2019		OCCURRENCE TIME 23:59		
C		LAND USE PERMIT NUMBER (IF APPLICABLE) KVPL11D01			WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MEL1631	
	D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Melvin Bay			REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E		LATITUDE DEGREES 62 MINUTES 48 SECONDS 1			LONGITUDE DEGREES 92 MINUTES 5 SECONDS 57	
	F	RESPONSIBLE PARTY OR VESSEL NAME Agnico Eagle Mines LTD.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION Meliadine, Rankin Inlet, Nunavut, X0C 0G0		
G		ANY CONTRACTOR INVOLVED KCG		CONTRACTOR ADDRESS OR OFFICE LOCATION Rankin Inlet, Nunavut		
	H	PRODUCT SPILLED Treated saline water		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES N/A		U.N. NUMBER
I		SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES N/A		U.N. NUMBER
	J	SPILL SOURCE Truck		SPILL CAUSE TSS Exceedence		AREA OF CONTAMINATION IN SQUARE METRES unknown
K		FACTORS AFFECTING SPILL OR RECOVERY TSS		DESCRIBE ANY ASSISTANCE REQUIRED None		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT None
	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS During the discharge to sea, two regulatory samples were collected at compliance point (MEL-26) in October, 2019. The results from the samples for TSS are 14 mg/L and 17 mg/L, which are below the MDMER "Maximum authorized concentration in a grab sample". However, the discharge to sea ceased mid October following the second sample due to winter conditions. As a result of this, no additional samples were collected in October resulting in the monthly mean being above the maximum allowable value of 15 mg/L (actual measured value was 15.5 mg/L). As per MDMER 24(1)(a), Agnico Eagle notified the inspector and decided to follow up on the incident by submitting this spill report for due diligence. The discharge to sea ceased prior to the reception of the sample results so no mitigation measures were taken following the event. Spill location: Melvin Bay, Arctic Ocean 545955.56 m E, 6963638.39 m N.					
L	REPORTED TO SPILL LINE BY Terry Ternes		POSITION Env. General Superv.	EMPLOYER AEM	LOCATION CALLING FROM Meliadine	TELEPHONE 8197593555
	ANY ALTERNATE CONTACT Jessica Huza		POSITION Env. Superintendent	EMPLOYER AEM	ALTERNATE CONTACT Meliadine	ALTERNATE TELEPHONE 8197593555
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY		POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130
	LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME		CONTACT TIME	REMARKS	
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						

October 31st, 2019 TSS Monthly Mean Average Concentration Exceedance– MEL-26 Discharge Point Follow Up Report

Please find the following information as a follow-up to the spill report submitted December 11th, 2019, by Agnico Eagle Mines Ltd., Meliadine Division. This detailed report is submitted to the Inspector in compliance with the conditions under the MDMER Section 31 and section 38(7) of the Fisheries Act.

Description of Incident:

Weekly effluent samples at the MEL-26 final discharge point (Figure 1) for treated saline water were taken on October 1st and October 7th, 2019. Due to winter conditions, the discharge to sea ceased October 11th

Total Suspended Solids (TSS) results from these samples were 14 mg/L and 17 mg/L, which are below the MDMER "Maximum authorized concentration in a grab sample" but above the maximum allowable value of 15 mg/L (actual measured value was 15.5 mg/L)



Figure 1: Location of the truck offloading station of treated saline water, and the end of the pipe where discharge enters Melvin Bay.



Figure 2: Locations of SETP and SP3.

Spill Response & Cleanup:

No spill response occurred as the discharge to sea ceased prior to the reception of the second sample which triggered the monthly average exceedance. Prior to start the 2020 sea discharge, Agnico Eagle will perform an effluent characterization and an acute lethality test to ensure that the discharge criteria for deleterious substances are respected and that the discharge is not deleterious.

Table 1: Summary of responses to MDMER section 31 conditions

Condition	Response
(a) the name, description and concentration of the deleterious substance deposited;	Monthly average of 15.5 mg/L of TSS
(b) the estimated quantity of the deposit and how the estimate was achieved;	The volume discharged in October was 4164 m3 and was calculated by a flowmeter
(c) the day on which, and hour at which, the deposit occurred;	Being the monthly average concentration, the deposit occurred during the month of October
(d) the quantity of the deleterious substance that was deposited at a place other than through a final discharge point and the identification of that place, including the location by latitude and longitude and, if applicable, the civic address;	Not applicable. Discharge occurred at authorized discharge point, Mel-26.
(e) the quantity of the deleterious substance that was deposited through a final discharge point and the identification of that discharge point;	The estimated quantity of TSS for the month of October is 64.542 kg. The estimated quantity was achieved by multiplying the monthly average (15.5) by the volume discharged in October (4164 m3) divided by 1000. If only the exceeding quantity should be considered, 2.082 kg of TSS would be the exceeding quantity at the discharge point Mel-26.
(f) the name of the receiving body of water, if there is a name, and the location by latitude and longitude	MDMER FDP MEL-26, Melvin Bay, Arctic Ocean. 545955.56 m E, 6963638.39 m N.

where the deleterious substance entered the receiving body of water;	
(g) the results of the acute lethality tests conducted under subsection 31.1(1) or a statement indicating that acute lethality tests were not conducted but that notification was given under subsection 31.1(2);	Notification was given via a phone call, an e-mail and a spill report. Due to the cessation of the discharge, the acute lethality test will be performed prior the 2020 discharge
(h) the circumstances of the deposit, the measures that were taken to mitigate the effects of the deposit and, if the emergency response plan was implemented, details concerning its implementation; and	The discharge was stopped due to winter condition prior the reception of the second sample that triggered the monthly average discharge criteria
(i) the measures that were taken, or that are intended to be taken, to prevent any similar occurrence of an unauthorized deposit.	An effluent characterization and an acute lethality test will be performed prior to next year discharge. Field turbidity readings will be taken and a follow up with the TSS and Turbidity correlation table to ensure compliance



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EMAIL: spills@gov.nt.ca

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A	REPORT DATE: MONTH – DAY – YEAR		REPORT TIME		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____
	B OCCURRENCE DATE: MONTH – DAY – YEAR		B OCCURRENCE TIME			
C	LAND USE PERMIT NUMBER (IF APPLICABLE)			WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION				REGION	
					<input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE			LONGITUDE		
	DEGREES	MINUTES	SECONDS	DEGREES	MINUTES	SECONDS
F	RESPONSIBLE PARTY OR VESSEL NAME		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION			
G	ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
I	SPILL SOURCE		SPILL CAUSE		AREA OF CONTAMINATION IN SQUARE METRES	
J	FACTORS AFFECTING SPILL OR RECOVERY		DESCRIBE ANY ASSISTANCE REQUIRED		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE	
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE	

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLED	REPORT LINE NUMBER
		STATION OPERATOR		YELLOWKNIFE, NT	(867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					

Follow Up Report: #19-471

November 25, 2019 Emulsion Spill



The following information refers to spill 19-471 reported by Agnico Eagle Mines Ltd. November 26th 2019, and is being provided in accordance with:

- the Nunavut Water Board License 2AM-MEL1631 Water License, part H, item 8c

Description of Incident:

On November 25th at approximately 14:30pm, an estimated 330L of emulsion was spilled on surface near Portal 1. While transferring a full tote of emulsion from the flat rack to the boom-truck, the tote slid off of the forks of the telehandler and fell onto its side. Approximately one third of the tote spilled out onto the ground.

No water bodies were impacted by this spill. The closest natural water body is over 900m from the spill location. The coordinates of the spill are 539975.00 m E, 6988777.00 m N.



Figure 1: Location of 330L emulsion spill and proximity to water bodies.

Spill Response & Cleanup:

The operators involved used a scoop and shovels to remove the contaminated material which was placed into quatex bags. The contaminated material was sent to the emulsion plant. Emulsion suitable for salvage will be reused. Unsuitable material will be neutralized using an emulsion destruction process, and shipped as hazmat.



Figure 2: Spill location following clean-up.

Corrective Measures

Terry Ternes (Environmental General Supervisor) and Sean Arruda (Environmental Coordinator) had an initial meeting with Mathieu Hotte (Mine Supervisor), to discuss the incident. Dan Gorton (Environmental Coordinator) held a follow-up meeting with the Kevin Duchesne (Mine Lead Hand) to discuss the cause and corrective measures. The cause of the incident was human error. The trained operator used the incorrect technique to lift the emulsion tote, using the telehandler. The Lead Hand explained the need to follow the correct technique, and issued a verbal warning.



Dan Gorton | Environmental Coordinator

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A	REPORT DATE: MONTH – DAY – YEAR 12-22-2019		REPORT TIME 12:00		<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 19 - 491
	B	OCCURRENCE DATE: MONTH – DAY – YEAR 12-21-2019		OCCURRENCE TIME 14:00		
C		LAND USE PERMIT NUMBER (IF APPLICABLE) KVPL11D01			WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MEL1631	
	D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Meliadine Gold Project			REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E		LATITUDE DEGREES 63 MINUTES 1 SECONDS 34			LONGITUDE DEGREES 92 MINUTES 12 SECONDS 38	
	F	RESPONSIBLE PARTY OR VESSEL NAME Agnico Eagle Mines Ltd.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION Meliadine, Rankin Inlet, Nunavut, X0C 0G0		
G		ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION		
	H	PRODUCT SPILLED Caustic Soda (sodium hydroxide)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 25kg	U.N. NUMBER UN1823	
I		SECOND PRODUCT SPILLED (IF APPLICABLE) N/A		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES N/A	U.N. NUMBER N/A	
	J	SPILL SOURCE Bag		SPILL CAUSE Human Error		AREA OF CONTAMINATION IN SQUARE METRES 2
K		FACTORS AFFECTING SPILL OR RECOVERY N/A		DESCRIBE ANY ASSISTANCE REQUIRED N/A		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT Corrosive Substance
	L	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS				
M		<p>The Environment Department received a call that approximately 25kg of solid caustic soda had been spilled onto the ground/snow outside of the Saline Water Treatment Plant (SWTP). The material and spilled product was picked up and disposed of into an empty caustic soda container inside the plant.</p> <p>No water bodies were impacted by this spill. The closest water body is approximately 915m from the spill location.</p> <p>Pursuant to Part H, section 8c of the water license, a follow-up report will be issued after a closer investigation is completed.</p>				
	N	REPORTED TO SPILL LINE BY Sean Arruda	POSITION Env. Coordinator	EMPLOYER AEM	LOCATION CALLING FROM Meliadine	TELEPHONE 8197593555
ANY ALTERNATE CONTACT Terry Ternes		POSITION Env. Supervisor	EMPLOYER AEM	ALTERNATE CONTACT Meliadine	ALTERNATE TELEPHONE 8197593555	
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130	
	LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS		
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						

Follow Up Report: #19-491

December 21, 2019 Sodium Hydroxide Spill



The following information refers to spill 19-491 reported by Agnico Eagle Mines Ltd. December 22, 2019, and is being provided in accordance with:

- the Nunavut Water Board License 2AM-MEL1631 Water License, part H, item 8c

Description of Incident:

On December 21st the Environment Department was contacted by a worker at the Saline Water Treatment Plant informing that two bags of powdered sodium hydroxide had torn open and partially spilled to the ground. While unloading a pallet, the load shifted and the bags slid off. Each bag contains 22.68kg (50lbs).

No water bodies were impacted by this spill. The closest natural water body is over 900m from the spill location. The coordinates of the spill are 63°1'34", 92°12'38".



Figure 1: Location of powdered caustic soda spill near portal one and SWTP.



Figure 2: Two bags of Sodium Hydroxide powder spilled near portal one.

Spill Response & Cleanup:

The operators involved shoveled the contaminated snow and material into buckets and transferred it into containers already used for sodium hydroxide wastes. This material will be shipped as hazmat.

Corrective Measures:

This incident occurred due to a deviation from standard operating practices. Normally, pallets of sodium hydroxide are transported into the SWTP, by forklift, with plastic wrap intact. Due to the service door being broken, workers were transferring bags from the pallet to the SWTP by hand. Following the repair of the service door, the operator attempted to move the pallet without securing the load.

The operator's manager has reiterated the need to comply with forklift training, by inspecting and securing loads prior to transport. Normal operations have resumed and sodium hydroxide bags are now unloaded in a contained area within the SWTP building.



Dan Gorton | Environmental Coordinator

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EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR		REPORT TIME		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____
	OCCURRENCE DATE: MONTH – DAY – YEAR		OCCURRENCE TIME			
C	LAND USE PERMIT NUMBER (IF APPLICABLE)			WATER LICENCE NUMBER (IF APPLICABLE)		
	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION				REGION <input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE			LONGITUDE		
	DEGREES	MINUTES	SECONDS	DEGREES	MINUTES	SECONDS
F	RESPONSIBLE PARTY OR VESSEL NAME		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION			
	ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
I	SPILL SOURCE		SPILL CAUSE		AREA OF CONTAMINATION IN SQUARE METRES	
	FACTORS AFFECTING SPILL OR RECOVERY		DESCRIBE ANY ASSISTANCE REQUIRED		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE	
	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE	

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLED	REPORT LINE NUMBER
		STATION OPERATOR		YELLOWKNIFE, NT	(867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					

Follow Up Report: #19-494

December 31, 2019 Hydraulic Oil Spill



The following information refers to spill 19-494 reported by Agnico Eagle Mines Ltd. on December 31, and is being provided in accordance with:

- the Nunavut Water Board License 2AM-MEL1631 Water License, part H, item 8c

Description of Incident:

On December 31st at approximately 2am, Sandvik Haul Truck #17 left Portal #2 and had engaged the hydraulics to raise the box of the truck to offload ore at Ore Pad #2. When this occurred, the high-pressure hydraulic hose failed releasing the majority of the hydraulic oil contained in the oil tank, with the oil being released within a few minutes. The operator ceased operation immediately and used spill equipment to absorb as much of the material as possible. Assistance was called for and maintenance put secondary containment under the truck to catch any residual oil that was leaking out of it. The environment department was notified of the incident around 7am on January 31st and completed a preliminary investigation.

The initial investigation completed by the environment department indicated that the contaminated surface area was approximately 15m² with the spill located at 63°02'4.28"N, 92°13'12.31"W which is estimated to be approximately 780m from the closest natural water body. A drip tray was placed under the damaged hose, which collected approximately 20L of oil. Discussions with the maintenance department indicated that the size of the hydraulic tank was approximately 280L. It is estimated that approximately 200L of oil was spilled to the ground based on the hydraulic oil remaining in the tank and the oil contained in the spill tray.



Figure 1: Approximate location of 200L hydraulic oil spill.

Spill Response & Clean-up:

Spill equipment was used to absorb the oil and a drip tray was placed under the equipment to catch any remaining oil leaking from the truck. An excavator was used to remove the contaminated material. It is estimated that 2.5 m³ of material was placed in the landfarm. The clean-up was completed at 4pm on December 31st.



Figure 2: Spill and initial clean-up efforts at ore pad 2.



Figure 3: Spill location following clean up.

Corrective Measures

The hydraulic hose was inspected by the maintenance department and it was determined that there was no obvious impacts or irregularities to the hose. The hose did not show evidence of rubbing or any external factors that caused its failure. The pressure hose failed before the crimped fitting so the fitting was not a cause of the failure. The maintenance department inspects hydraulic hoses during scheduled preventative maintenance, and replaces them as required. Operators inspect equipment for leaks during pre-start inspections. The maintenance department will continue to inspect and monitor this specific component and assess alternative options in the event of recurrence.



Dan Gorton | Environmental Coordinator

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