

November 23, 2015

EDI Project No: 15Y0146

Assessment and Abandoned Mines Branch (AAM) K-149  
Department of Energy, Mines and Resources, Yukon Government  
Room 2C Royal Center, 4114-4th Avenue  
PO 2703, Whitehorse, YT, Y1A 2C6

Attention: Erik Pit, Type II Project Manager

**RE: Mount Nansen Water Resources Investigations – Field Memo: November 16-18, 2015**

The following memo is a brief field update from EDI's November 2015 trip to Mount Nansen; sampling conducted as part of the 2015/16 Water Resources Investigations. This memo provides a record of site conditions and tasks that were completed at each hydrometric station and water quality site (see attached tables). A detailed monthly report on the data collected during the trip will be provided once the water quality lab results are received and all data has been checked for quality assurance/quality control.

<b>Trip Dates:</b>	November 16 - 18, 2015
<b>EDI Field Staff:</b>	Scott Dilling, Joel MacFabe and Danny Skookum
<b>Weather conditions during monitoring:</b>	Conditions for the three days included air temperatures from -30 to -13°C, with clear skies to light snow and calm to light wind conditions.
<b>Any changes to project scope, schedule or budget:</b>	None. All sampling and monitoring was conducted within scope. The next trip is scheduled for December 14-16, 2015, and will be the second winter season trip (open-water season ended October 15, 2015).
<b>Additional Comments:</b>	Conditions were representative of early-winter, with lower water levels than the last trip and ice and snow present at all locations. Stations and sites along Pony Creek and Back Creek were frozen to bed, as well as some sites and stations along Dome Creek (WQ-DC-DX and H/WQ-DC-D1b). Placer mining construction works have stopped on Pony Creek, upstream of the WQ-PC-U site. No water flowing over or through the embankment was observed. No pumping of water from the pond was observed. Multiple pieces of heavy equipment remain on site. Several sites/stations will likely freeze to bed by the next trip (WQ-CH-P-13-01, H/WQ-DC-B, H/WQ-DC-R).
<b>Wildlife Sightings:</b>	None.
<b>Site concerns (safety):</b>	None.



Table 1. Summary of hydrometric program tasks completed and station conditions during the November 16-18, 2015 sampling event.

## HYDROLOGY

Station	Hydrometric Measurement Type	Notes & Comments
ATM-VC5	None	Barometric logger was downloaded.
H-DC-DX+105	Salt Tracer	Salt tracer measurement was collected. Water level moderate with clear water. Channel is generally covered with thin layer of ice and snow with a few open water leads. Algae growth in channel.
H-DC-D1b	None	Channel is frozen to bed – no water present.
H-DC-B	Salt Tracer	Salt tracer measurement was collected. Water level low with moderate turbidity. Channel covered with ice up to 0.35 m thick.
H-DC-M-WP	Volumetric	Volumetric discharge measurement was made at downstream end of weir. Water level low with moderate turbidity. Weir pond covered with thin layer of ice. Logger not downloaded due to damaged cable on portable downloading device.
H-DC-R	Salt Tracer	Salt tracer measurement was completed. Low flowrate with moderate turbidity. Channel covered with ice up to 0.15 m thick.
H-VC-U	ADV	Velocity-area discharge measurement completed using an ADV. Water level low with clear water. Channel partially covered with ice and snow. Logger not downloaded due to damaged cable on portable downloading device.
H-BC	None	Channel is frozen to bed – no water present. Stilling well and logger removed from station.
H-VC-DBC	ADV	Velocity-area discharge measurement completed using an ADV. Water level low with clear water. Channel covered with ice up to 0.15 m thick, with some anchor ice present. Logger data was downloaded.
H-VC-UMN	ADV	Velocity-area discharge measurement completed using an ADV. Channel covered with a layer of thin ice. Logger not downloaded due to damaged cable on portable downloading device.
H-VC-R	ADV	Velocity-area discharge measurement completed using an ADV. Water level low, and water was clear. Ice present in channel with several open water leads. This station will remain in place until spring 2016 to collect concurrent data with H-VC-R+290. Logger data was downloaded.
H-VC-R+290	None	Logger data was downloaded. Discharge was collected at H-VC-R location upstream.
H-SEEP	Volumetric	Volumetric measurement collected in addition to reading the flow meter in the seepage pond shack. Ice buildup inside culvert. Water flows freely from pipe outlet.
H-TP	None	Water level remains low. Bottom of staff gauges covered with snow with frozen ground below. No ice in vicinity of staff gauges.
H-PC-DSP	None	Channel is frozen to bed – no water present. Placer mining activity upstream of road has stopped. No water being pumped from pond at time of station visit. Culvert outlet is full of ice.
H-PW	Volumetric	Volumetric discharge measurement was made at end of discharge pipe.



## HYDROLOGY

Station	Hydrometric Measurement Type	Notes & Comments
		Large amount of ice at pipe outlet.

Table 2. Summary of water quality program tasks completed and site conditions during the November 16-18, 2015 sampling event.

## WATER QUALITY

Site	Sampled? (Yes/No)	Notes / Explanations
WQ-SEEP	Yes	Moderate flow rate from pipe. Ice build-up inside culvert. LC50 sample collected.
WQ-TP	Yes	Low water level in pond with light turbidity. Entire pond covered with ice at least 0.1 m thick.
WQ-DC-DX	No	Frozen to substrate.
WQ-DC-DX+105	Yes	Moderate flow with light turbidity. Minimal algae growth in channel. Thin ice covering channel with many open water leads.
WQ-MS-S-08	No	No surface flow.
WQ-DC-D1b	No	Frozen to substrate.
WQ-DC-B	Yes	Low flow with moderate turbidity. Channel covered with ice up to 0.35 m thick.
WQ-DC-U	Yes	Low flow with light turbidity. Thin ice cover and deep snow.
WQ-DC-R	Yes	Low flow with light turbidity. Ice thickness greater than 0.3 m. Overflow ice conditions upstream of culvert.
WQ-CH-P-13-01	Yes	Ice layer 0.4 m thick extends to bed. Sample collected using water seeping into hole.
WQ-LW-SEEP-01	No	Seep dry; no samples collected. No evidence of recent flow.
WQ-BC	No	No surface flow. Ice layer above frozen bed.
WQ-VC-U	Yes	Low flow with clear water. Thin ice with open water leads upstream and downstream of sampling site.
WQ-VC-DBC	Yes	Low flow with clear water. Chipped through thin layer of ice to collect sample. Open water leads upstream and downstream of sampling site.
WQ-VC-UMN	Yes	Low flow with clear water. Thin ice with many open water leads.
WQ-VC-R	Yes	Low flow with clear water. Channel covered with ice and snow in vicinity of sampling location. Chipped through 0.2 m of ice to collect sample.
WQ-VC-R+150	No	This is the winter/early spring sampling location - samples collected from WQ-VC-R until ice thickness becomes prohibitive for sampling.
WQ-PW	Yes	Drinking water sample and bacteriological sample collected from pipe outlet. Large amount of ice at pipe outlet.
WQ-ADIT-SEEP	No	Seep dry; no samples collected.
WQ-PC-U	No	Frozen to substrate.
WQ-PC-D	No	Frozen to substrate.



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## WATER QUALITY

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Site	Sampled? (Yes/No)	Notes / Explanations
<b>Quality Assurance/Quality Control Samples</b>		
Field Replicate 1	Yes	Collected from WQ-VC-UMN-r
Field Replicate 2	Yes	Collected from WQ-DC-B-r
Field Blank	Yes	Sample bottles filled with deionized water supplied by ALS; samples were filtered and preserved as instructed. Collected at WQ-DC-B.
Travel Blank	Yes	Samples were provided by the lab and were transported to and from site.

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