Photograph NCIS-135: From Sta. 1+860/-12 m (approx.), looking SW. Placement of a 0.5 m thick lift of fine filter in the upstream slope from El. 152 m to 154 m with an excavator from Sta. 1+830 m to 1+700 m.

Photograph NCIS-136: From Sta. 1+800/-33 m (approx.), looking SW. Placement of a 0.5 m thick lift of fine filter in the upstream slope from El. 152 m to 154 m with an excavator from Sta. 1+700 m to 1+660 m.

Photograph NCIS-137: From Sta. 1+380/+14 m (approx.), looking SW. Excavation of a 0.8 m (approx.) deep, 1 m wide shallow ditch in the tailings with an excavator from Sta. 1+300 m to 1+200 m.

Photograph NCIS-138: From Sta. 1+365/+15 m (approx.), looking SW. Excavation of a 0.8 m (approx.) deep, 1 m wide shallow ditch in the tailings and placement of a 0.3 m thick (approx.) layer of till sieving reject material on the bottom and on the slopes of the ditch from Sta. 1+200 m to 1+100 m.

REGISTERED PROFESSIONAL ENGINEER
Y. BOULIANNE
LICENSEE
2018-08-06
NT/NU

Marion Habersetzer, M.Sc.
Mine Waste Group

Yves Boulianne, P.Eng.
Associate, Senior Geotechnical Engineer

MH/YB/

https://golderassociates.sharepoint.com/sites/1897439/preparation of deliverables/weekly reports/2018-07-30 to 2018-08-02/1897439-1577-tm-rev0 da weekly report north cell 2018-07-30 to 2018-08-02.docx

PERMIT TO PRACTICE
GOLDER ASSOCIATES LTD.
Signature
Date 2018-08-06
PERMIT NUMBER: P 049
NT/NU Association of Professional Engineers and Geoscientists

QA WEEKLY REPORT

DATE April 30th 2018 **Reference No.** 1897439-1577-TM-Rev0

TO Patrice Gagnon, Pier-Éric McDonald
Agnico Eagle Mines Ltd, Meadowbank Division

CC Frédérick Bolduc, Alexandre Lavallée

FROM Marion Habersetzer **EMAIL mhabersetzer@golder.com**

QA WEEKLY REPORT FROM APRIL 23 TO 29 – TSF SOUTH CELL CONSTRUCTION

MEADOWBANK (1897439)

This document summarizes QA activities performed by Golder from 23 to 29 April 2018, inclusively, related to the construction activities of Saddle Dams 3, 4, and 5 (SD) and Central Dike at the Meadowbank mine site.

Unless otherwise specified, the construction activities use the centreline of the structures for a dike crest elevation of 150 m for reference (refer to the Drawings). The description of activities refers to the stations and offsets from the centreline (e.g., Sta. 0+500/-50 m). The “+” and “-” symbols indicate the location of the work downstream and upstream of the centreline, respectively.

1.0 GOLDER PERSONNEL ON SITE

Golder personnel on site during this reporting period is summarized in Table 1.

Table 1: Golder Personnel on Site

Name	Comments
Marion Habersetzer	QA Engineer

2.0 HEALTH AND SAFETY

H&S meetings were held with AEM and FGL/SANA during the daily construction meetings. Minutes from these meetings are recorded and stored in Golder’s on-site office. The key H&S elements for the reporting period were as follows:

- Cold weather and ice: apply caution when driving or walking on icy surfaces, wear appropriate clothing.
- The blast clearance procedures were reiterated.
- The snow banks on the north access of Central Dike were lowered to improve visibility for the haul trucks.
- Dust is an issue on the construction field; be vigilant by staying out of the dust cloud near construction activities and road circulation.

- It was reiterated that everyone on the field must have a portable radio with them and be on the correct radio channel. New workers must be informed of this as soon as they arrive.
- The season is prone to tailings dust being carried by the strong winds, due to the very dry surfaces. If this situation goes on or worsen, work methods may have to be adapted or work stopped if visibility or workers' health become of concern.
- Repeated wildlife activity (wolves, caribous, wolverine) was reported on site. Driving speed is limited for that reason.
- Coactivity on the dikes: be aware of blind spots and safe spots, keep good communication and visual contact with the operators. It is recommended to call on the radio when entering Central Dike on either side when heavy equipment is working in the area.

3.0 SUMMARY OF MAIN DISCUSSIONS IN CONSTRUCTION MEETINGS

Construction meetings were held daily during the reporting period and were attended by the QA manager. The following items were discussed:

General

- Arrival of the QA (Marion Habersetzer) and QC (Cédrick Fillon-Tremblay) personnel on site on 23 April.
- A debriefing session took place on 23 April with AEM's representative to review the planning of the construction season and the operations that had already taken place. Access ramps to Central Dike are in place and rockfill placement started on 21 April. No QA or QC personnel was on site for this placement.
- The QA engineer noted that the new LLDPE rolls are stored on trailers outside near the waste rock storage facility. There is snow and ice on some rolls but they seem in good condition. A closer inspection will be done after the snow has melted.
- It was reiterated that no vehicle can drive on the exposed geomembrane.
- The sampling and lab program was reviewed with SANA and AEM. SANA indicated that an estimated volume of 3,600 m^3 of coarse filter and 3,600 m^3 of fine filter is expected to be placed on the dikes in 2018.
- Construction is progressing ahead of schedule. However, the frozen deposition fingers on Central Dike cannot be removed prior to the planned date without risking damaging the LLDPE liner on the upstream slope.
- The QA Engineer reiterated that the stations used on foundation approval drawings should be those for the centerline at El. 150 m, consistent with what was done during construction of the north abutment of Central Dike and the Saddle Dams.

Central Dike

- The LLDPE liner installed on the upstream slope of Central Dike has been damaged near the deposition finger at approx. Sta. 0+650 m during snow removal operations. The amount of repairs required will be estimated when the deposition finger is removed entirely before installation of the new liner at El. 145 m.
- AEM indicated that only good quality intermediate volcanic (IV) rockfill will be used for the Central Dike raise to El. 145 m this year. The stockpiles are ready and will provide the required quantity.
- Sampling of the fine filter and coarse filter stockpiles was done on April 25 using a loader to prepare a pad. The stockpiles are made from crushed good quality Non-AG intermediate volcanic (IV) rock.
- The access ramp at the southern extremity of Central Dike will need to be lengthened to ensure a smooth slope in the ramp and the required crest width at El. 145 m. The ramp itself is located within the footprint of Saddle Dam 5 and is built with ultramafic volcanic (UM) rockfill.
- Since intermediate volcanic (IV) rockfill was placed on the south extremity of Central Dike with an excavator and haul trucks delivering the rockfill close to the ultramafic volcanic (UM) rockfill access ramp, the QA Engineer ensured that no UM rockfill was mixed with the IV rockfill while the material was taken with the bucket of the excavator.
- Central Dike needs to be widened at its south end to the footprint corresponding to El. 145 m. The foundation was approved in 2016; however, because it had since been exposed to the weather and debris for an extended period of time, the QA Engineer completed a new foundation approval before placement of rockfill.
- The QA Engineer ensured that the foundation and the existing dike slope were snow-free before placing rockfill to complete the footprint El. 145 m at the southern extremity of Central Dike.
- Because of a restrained access, completion of the 145 m footprint at the southern end of Central Dike near SD5 is done by placing and compacting the intermediate volcanic (IV) rockfill with an excavator instead of a dozer. Care is taken to limit segregation during placement.
- Following advice from the QA Engineer, some oversize boulders (>1.3 m in diameter) were removed from the slope of the dike before placement of rockfill at these elevations on the south part of Central Dike where the footprint was widened (see photograph in Section 7.0).
- The intermediate volcanic (IV) rockfill placement will be done from the south side of Central Dike once the progression of the lift from the north side had reached the instruments on the crest, in order to avoid backing up of haul trucks on a narrow crest near the instruments.
- Regarding the compaction underneath the safety berms on the downstream side of the Central Dike crest, a safety concern about driving the compactor so close to the edge was raised, given the considerable height of the downstream slope. It was thus decided with AEM that no compaction under the berms would be done this year. This point will be highlighted in the as-built report and, should Central Dike be raised to El. 150 m, this surface would be compacted once the dike is built at the El. 145 m to its final footprint.
- Profiling of the slopes of the intermediate volcanic (IV) rockfill lift on Central Dike from El. 143 to 145 m is planned to begin on 30 April.

Follow-up

- Evaluate the LLDPE liner damages on the upstream slope of Central Dike.
- Inspect the LLDPE rolls stored on trailers outside once the snow has melted.

4.0 SUMMARY OF CONSTRUCTION ACTIVITIES AND TEST RESULTS

Periodic QA inspections to monitor the construction activities and progress were performed by the QA Engineer, as summarized in the tables below.

Table 2: QA Observations for Saddle Dam 3

Activity or Area	Comments
None	

Table 3: QA Observations for Central Dike

Activity or Area	Comments
Crest	■ Placement of a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from 0+250 to 0+835 m (o.s. -28 to 3 m). The material is of good quality and is well graded. The material was placed with the excavator around the 2 instruments present on the crest of the dike. ■ Compaction of the 2 m lift (approx.) of IV rockfill at El. 145 m with a 10-tonne smooth-drum compactor with vibration (6 passes) from Sta. 0+150 to 0+280 m (o.s. -21 to 3 m).
Downstream	■ Removal of snow to expose the foundation bedrock with an excavator between approx. Sta. 40+780 and 40+805 m (o.s. 7 to 10 m). The downstream slope was cleared of snow as well. ■ Final clean-up of footprint with an excavator to reach a good quality bedrock from Sta. 40+780 to 40+805 m (o.s. -6 to 9 m). The foundation was approved. ■ Placement of IV rockfill on the north side of the south access ramp to allow access to the foundation. ■ Placement a first 1.5 m thick (approx.) lift of intermediate volcanic (IV) rockfill from approx. Sta. 40+780 to 40+805 m (o.s. -6 to 9 m). The material is of good quality and is well graded. The slope of the existing dike was scarified at the elevation of the lift to ensure a good contact with the new material. ■ Compaction of the 1.5 m lift (approx.) of IV rockfill with a 10-tonne smooth-drum compactor with vibration (8 passes) from Sta. 40+780 to 40+800 m (o.s. -6 to 9 m).

5.0 FOUNDATION APPROVALS

One foundation approval was carried out during the reporting period.

Table 4: Details of the Foundation Approvals

Name	Structure	Sta. and Offset	Date of Approval	Comment
FND-CD-139	Central Dike	Sta. 40+780.88 to 0+981.22 m (o.s. 2.02 to 14.16 m)	2018-04-28	Approved

6.0 SAMPLING, LABORATORY AND FIELD TESTING

Table 5 and Table 6 present the samples collected or tested by the QA and QC as well as PNG field results.

Table 5: Samples Taken by the QC

Sample ID	Date Sampled	Date Tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result
CF-01-2018	2018-04-25	2018-04-26	Coarse filter	Stockpile (SANA Crusher)	Gradation	Compliant
					Water content	1.6%
FF-01-2018	2018-04-25	2018-04-26	Fine filter	Stockpile (SANA Crusher)	Gradation	Compliant
					Water content	4.3%

Table 6: Samples Taken by the QA

Sample ID	Date Sampled	Date Tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result
CF-02-2018	2018-04-25		Coarse filter	Stockpile (SANA Crusher)		
FF-02-2018	2018-04-25		Fine filter	Stockpile (SANA Crusher)		

7.0 PHOTOGRAPHS

Photograph CD-1796: From Sta. 0+650/-28 m, looking N. Damaged geomembrane near a deposition finger on Central Dike.

Photograph CD-1797: From Sta. 0+320/-20 m, looking N. Placement of a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from 0+250 to 0+400 m (o.s. -28 to -18 m).

Photograph CD-1798: From Sta. 0+500/-15 m looking N. Placement of a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from 0+340 to 0+435 m (o.s. -28 to -18 m).

Photograph CD-1799: From Sta. 0+080/-25 m looking S. Placement of a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from 0+340 to 0+435 m (o.s. -28 to -18 m).

Photograph CD-1800: From Sta. 0+500/-14 m looking N. Placement of a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from 0+435 to 0+535m (o.s. -28 to -18 m).

Photograph CD-1801: From Sta. 0+650/-10 m looking N. Placement of a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from 0+535 to 0+625m (o.s. -28 to -18 m).

Photograph CD-1802: From Sta. 0+770/-16 m looking N. Placement of a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from approx. Sta. 0+525 to 0+710 m (o.s. -28 to -18 m).

Photograph CD-1803: From Sta. 40+750/27 m looking NE. Removal of snow to expose the foundation bedrock with an excavator between approx. Sta. 40+780 and 40+800 m (o.s. 7 to 10 m).

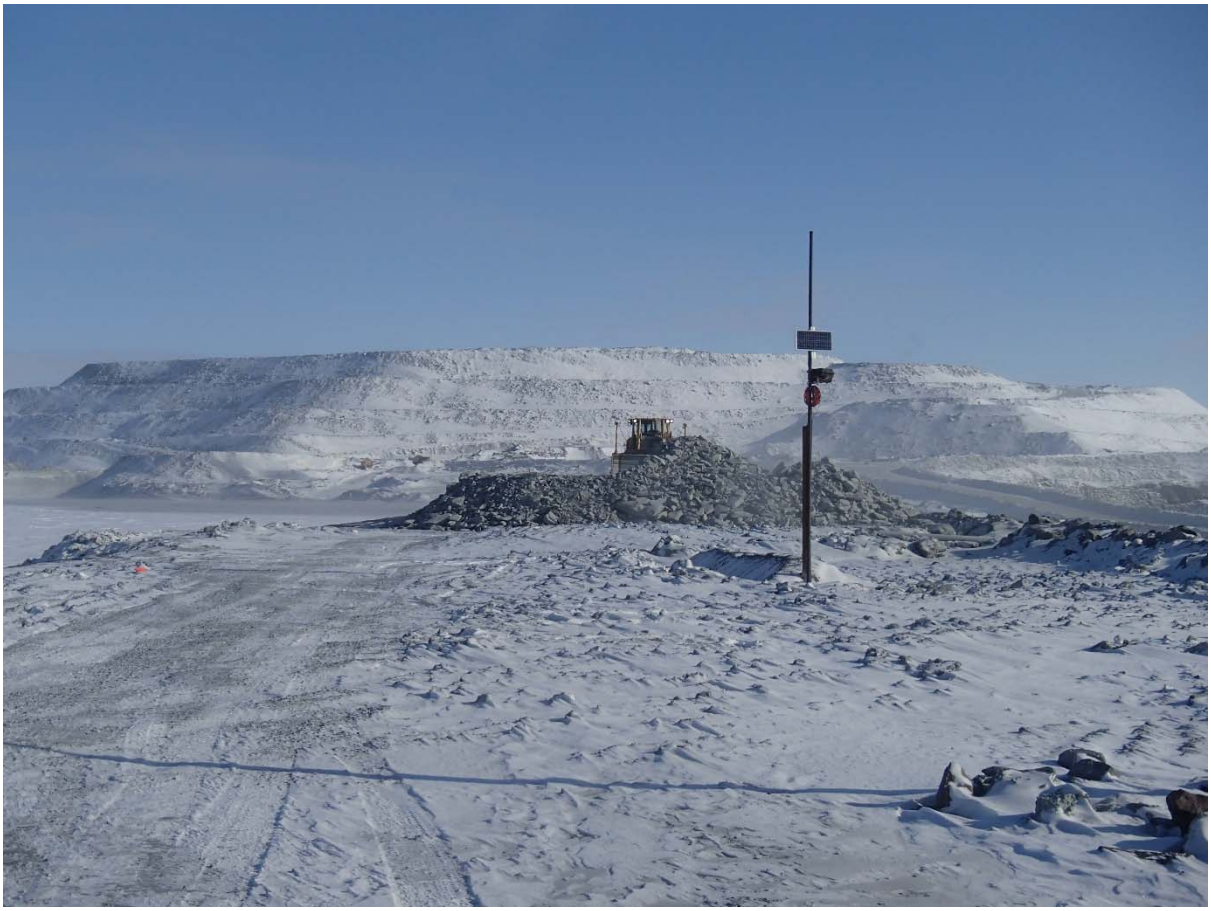
Photograph CD-1804: From Sta. 40+790/-2 m looking S. Presence of oversize boulders on the existing slope at the junction between SD5 and Central Dike.

Photograph CD-1805: From Sta. 40+780/2 m looking NE. Final clean-up of footprint with an excavator to reach a good quality bedrock from Sta. 40+780 to 40+805 m (o.s. -6 to 9 m).

Photograph CD-1806: From Sta. 0+800/-27 m looking N. Placement a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from approx. Sta. 0+710 to 0+760 m (o.s. -28 to 3 m).

Photograph CD-1807: From Sta. 0+200/-15 m looking S. Compaction of the 2 m lift (approx.) of IV rockfill at El. 145 m with a 10-tonne smooth-drum compactor with vibration (6 passes) from Sta. 0+150 to 0+280 m (o.s. -21 to 11 m).

Photograph CD-1808: From Sta. 40+790/-14 m looking E. Placement of a 1.5 m thick (approx.) lift of intermediate volcanic (IV) rockfill from approx. Sta. 40+780 to 40+805 m (o.s. -6 to 9 m).



Photograph CD-1809: From Sta. 0+870/-16 m looking N. Placement of a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from approx. Sta. 0+760 to 0+835 m (o.s. -28 to 3 m).

Golder Associates Ltd.

REGISTERED PROFESSIONAL ENGINEER
Y. BOULIANNE
LICENSEE
2018-04-30
NT/NU

Marion Habersetzer, M.Sc.
Mine Waste Group

Yves Boulianne, P.Eng.
Associate, Senior Geotechnical Engineer

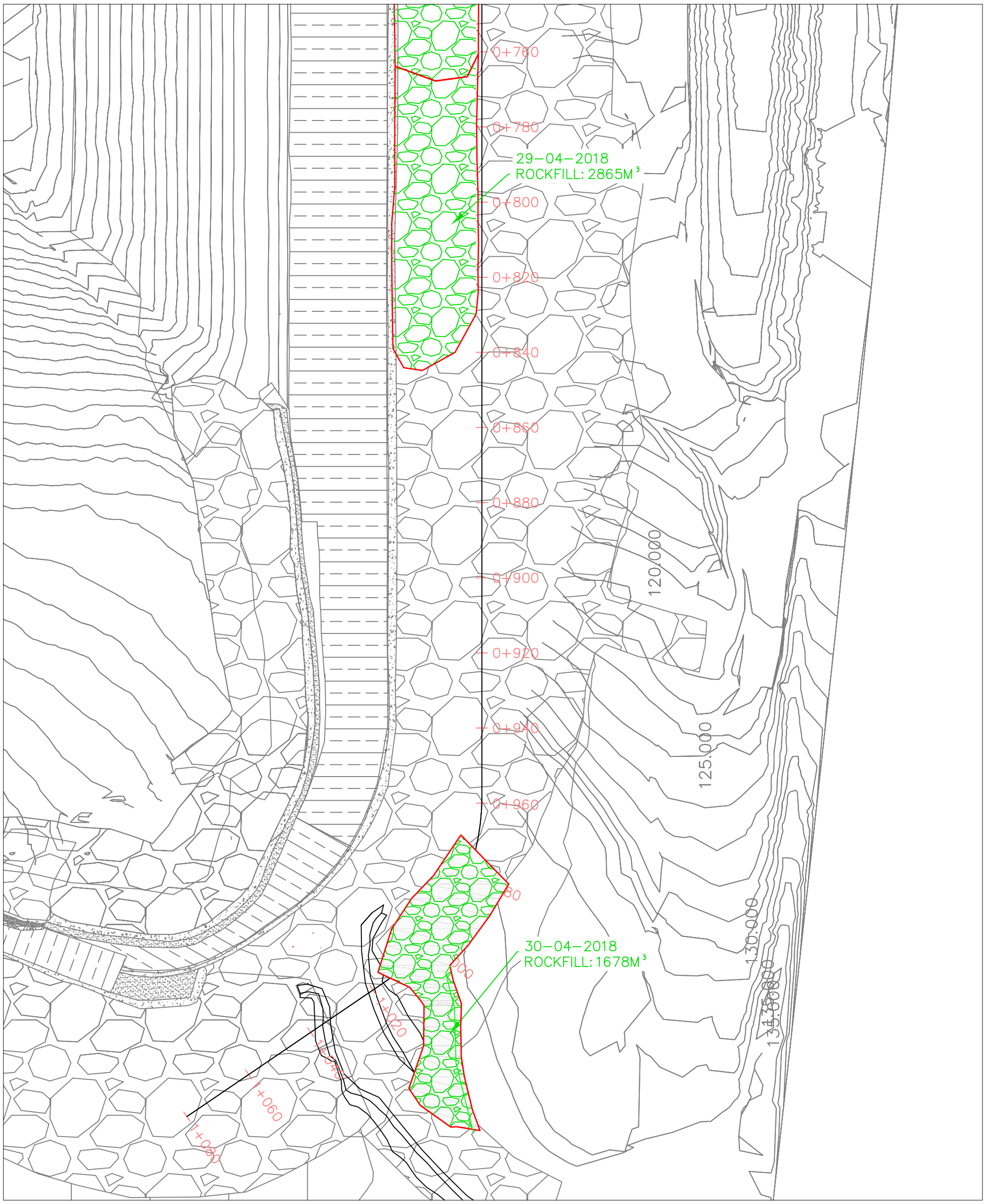
MH/YB/jlm/it

Attachments: Construction Progress Drawings from AEM as of 29 April 2018

https://golderassociates.sharepoint.com/sites/1897439/preparation of deliverables/weekly reports/2018-04-23 to 2018-04-29/1897439-1577-tm-rev0 qa weekly report 2018-04-23 to 2018-04-29.docx

PERMIT TO PRACTICE
GOLDER ASSOCIATES LTD.
Signature
Date 2018-04-30
PERMIT NUMBER: P 049
NT/NU Association of Professional Engineers and Geoscientists

DAILY PROGRESS
CENTRAL DIKE AND SD5
CONTRACT # 11-505



VOLUMETRY DETAIL

29-04-2018 - ROCKFILL : 2865m³

30-04-2018 - ROCKFILL : 1678m³

KIVALLIQ CONTRACTORS GROUP LTD

PREPARED BY : MARC-ANDRE BLACKBURN
DATE : 30-04-2018
CON-QT-011-CD_DP_300418

QA WEEKLY REPORT

DATE May 7th 2018 1897439-1577-TM-Rev0

TO Patrice Gagnon, Pier-Éric McDonald
Agnico Eagle Mines Ltd, Meadowbank Division

CC Frédérick Bolduc, Alexandre Lavallée

FROM Marion Habersetzer **EMAIL mhabersetzer@golder.com**

QA WEEKLY REPORT FROM APRIL 30TH TO MAY 6TH – TSF SOUTH CELL CONSTRUCTION MEADOWBANK (1897439)

This document summarizes QA activities performed by Golder from 30 April to 6 May 2018 inclusively, related to the construction activities of Saddle Dams 3, 4, and 5 (SD) and Central Dike at the Meadowbank mine site.

Unless otherwise specified, the construction activities use the centreline of the structures for a dike crest elevation of 150 m for reference (refer to the Drawings). The description of activities refers to the stations and offsets from the centreline (e.g., Sta. 0+500/-50 m). The "+" and "-" symbols indicate the location of the work downstream and upstream of the centreline, respectively.

1.0 GOLDER PERSONNEL ON SITE

Golder personnel on site during this reporting period is summarized in Table 1.

Table 1: Golder Personnel on Site

Name	Comments
Marion Habersetzer	QA Manager
Samuel Barbeau	QA Manager

Name	Comments
Marion Habersetzer	QA Manager, planned departure 7 May 2018.
Samuel Barbeau	QA Manager, arrival 30 April 2018.

2.0 HEALTH AND SAFETY

H&S meetings were held with AEM and FGL/SANA during the daily construction meetings. Minutes from these meetings are recorded and stored in Golder's on-site office. The key H&S elements for the reporting period were as follows:

- Cold weather and ice: apply caution when driving or walking on icy surfaces, wear appropriate clothing.
- Dust is still an issue on the construction field; be vigilant by staying out of the dust cloud near construction activities and road circulation.
- The fog causes a visibility issue on the roads and on the dikes. Reduce driving speed and keep safety distances between vehicles, call on the radio when entering Central Dike.
- Coactivity on the dikes: be aware of blind spots and safe spots, keep good communication and visual contact with the operators. It is recommended to call on the radio when entering Central Dike on either side when heavy equipment is working in the area.
- Tires can burst on haul trucks: keep a safe distance of 40 m away from haul trucks at all time.
- It was reiterated to verify the back-up alarm, beacon light and buggy whip on pick-up before use.

3.0 SUMMARY OF MAIN DISCUSSIONS IN CONSTRUCTION MEETINGS

Construction meetings were held daily during the reporting period and were attended by the QA Manager. The following items were discussed:

General

- Arrival of the QA (Samuel Barbeau) personnel on site on 30 April.
- The procedures for bringing a portable nuclear gauge (PNG) in site for the QC program were discussed.
- The QA and QC personnel went with SANA's foreman and the AEM dike supervisor to inspect the compacted sieved till material (Type 1) stockpile at the SANA crusher site. The available quantities are less than what is required for this year's construction. In addition, the stockpile may have been mixed with other materials, as large rocks are visible. Following discussions with AEM, it was discussed that the available quantities should be used in priority in the upstream toe liner tie-ins on SD3, and that the erosion protection cover need an adjustment to replace the compacted sieved till. The retained option was to replace compacted sieved till by fine filter material (0-20 mm) mixed with 6% bentonite by mass and one layer of geotextile on the LLDPE liner.
- Following discussions with AEM, as the SD5 footprint is for elevation 150 m while the CD footprint is for elevation 145 m, the downstream curve toe was adjusted on the field to achieve a smooth transition.
- A transition zone is required for the filters thickness at the junction of Saddle Dam 5 and Central Dike, as it is 0.5 m thick on Saddle Dam 5 and 1.0 m thick on Central Dike.

Central Dike

- The QA Manager pointed out that snow has accumulated (approx. 0.5 m thick) on some parts of the crest of Central Dike at El. 143 m and should be removed before rockfill placement is continued.
- It was observed that when using the D9 bulldozer, which does not have a GPS to monitor elevation, the intermediate volcanic (IV) rockfill lift thickness was slightly in excess of 2 m (approx. 2.5 m) on Central Dike, at the junction with Saddle Dam 5. The bulldozer was replaced with the GPS-equipped D8 bulldozer used in the previous days, which ensured that the elevation of the lift was at 145m.
- Following discussions with AEM, as the SD5 footprint is for elevation 150 m while the CD footprint is for elevation 145 m, the downstream curve toe will need to be adjusted on the field to achieve a smooth transition.
- An accumulation of boulders was noticed on the first intermediate volcanic (IV) rockfill lift of the junction of Central Dike and Saddle Dam 5 at El. 143m. The QA Manager required that those boulders be scattered to ensure that no boulder nest occurs in the lift.
- The intermediate volcanic (IV) rockfill placement on Central Dike is complete.
- The QA Manager reiterated that the A.B. Gensets (model #1D008K4NACU) frost fighters used to defrost the 0,4 m (approx.) thick deposition fingers materials on the LLDPE liner must not be applied directly on the LLDPE as intense heat may damage it.

Saddle Dam 3

- The QA and QC personnel went with SANA's foreman and the AEM dike supervisor to inspect the 0-50 mm compacted sieved till material stockpile at the SANA crusher site. The available quantities are less than what is required for this year's construction. In addition, the stockpile may have been mixed with other materials, as large rocks are visible. Following discussions with AEM, it was discussed that the available quantities should be used in priority in the upstream toe liner tie-ins on SD3, and that the erosion protection cover need an adjustment to replace the compacted sieved till. Several options were discussed:
  - Sieving low quality till with an excavator to obtained 0-50 mm till (this would likely be difficult);
  - Using a rougher till (0-150 mm) and one or two layers of thick geotextile (minimum type 934 or equivalent) on the LLDPE liner to protect it;
  - Replacing compacted sieved till by fine filter material (Type 2, 0-20 mm) mixed with 6% bentonite by mass and one layer of geotextile on the LLDPE liner.
- Following discussions with AEM regarding the shortage in 0-50 mm compacted sieved till material, the selected option is to replace the compacted sieved till by fine filter material (Type 2, 0-20 mm) mixed with 6% bentonite in mass and one layer of geotextile on the LLDPE liner. It is expected that this alternative will achieve both purposes of the compacted sieved till layer, namely liner protection and additional low permeability.

Follow-up

- Evaluate the LLDPE liner damages on the upstream slope of Central Dike.
- Inspect the LLDPE rolls stored on trailers outside once the snow has melt.

4.0 SUMMARY OF CONSTRUCTION ACTIVITIES AND TEST RESULTS

Periodic QA inspections to monitor the construction activities and progress were performed by the QA Manager; these are summarized in the tables below.

Table 2: QA Observations for Saddle Dam 3

Activity or Area	Comments
None	

Table 3: QA Observations for Central Dike

Activity or Area	Comments
Crest	■ Compaction of the 2 m lift (approx.) of intermediate volcanic (IV) rockfill at El. 145 m with a 10-tonne smooth-drum compactor with vibration (6 passes) from Sta. 0+350 to 0+830 m (o.s. -19 to -7 m). ■ Placement of intermediate volcanic (IV) rockfill around the instruments at approx. Sta. 0+830 m with the excavator. ■ Placement of a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from approx. Sta. 40+740 (SD5) to 0+830 m (o.s. -28 to -11 m). The material is of good quality and is well graded.
Downstream	■ Placement the second, third, fourth and fifth 1 m thick (approx.) lifts of intermediate volcanic (IV) rockfill from approx. Sta. 0+985 to 40+780 m (o.s. -8 to 8 m) with the excavator. The material is of good quality and is well graded. The lifts were compacted with the excavator only. ■ Placement of intermediate volcanic (IV) rockfill on the existing downstream slope up to approx. El. 143 m, from approx. Sta. 0+980 to 40+780 m. The existing slope (frozen) was scarified as much as possible with the excavator beforehand. The footprint correction is now complete. ■ Placement of a 1.5 m thick (approx.) of intermediate volcanic (IV) rockfill on the access ramp at the south of Central Dike to correct the slope for rockfill placement up to El. 143 m on the crest. ■ Profiling of the downstream slope (1.5H:1V) from El. 143 to 145 m with an excavator between Sta. 0+175 m and 0+440 m and between Sta. 0+530 m and 0+745 m.

Activity or Area	Comments
Upstream	■ Profiling of the upstream slope (2H:1V) from El. 143 to 145 m with an excavator between Sta. 0+175 and 40+730 m. ■ Placement of a 0.5 m thick lift of coarse filter from El. 143 m to 143.5 m with an excavator from Sta. 40+730 m to 0+ 775 m and Sta. 0+170 m to 0+460 m. The material visually seemed well graded and of good quality. ■ Placement of a 0.5 m thick lift of fine filter from El. 143 m to 143.5 m upstream of the coarse filter with an excavator from Sta. 40+730 m to 0+ 835 m and Sta. 0+170 m to 0+380 m. The material visually seemed well graded and of good quality. ■ Defrosting of the deposition finger materials with two Frost Fighters at Sta. 0+390 m.
Junction of Central Dike and Saddle Dam 5	■ Placement of two 2 m thick (approx.) lifts of intermediate volcanic (IV) rockfill from El. 141 m to El. 145 m from approx. Sta. 40+720 m to 40+750 m (o.s. -10 to +10 m). ■ Compaction of the two 2 m lifts (approx.) of intermediate volcanic (IV) rockfill at El. 143 and at El. 145 m with a 10-tonne smooth-drum compactor with vibration (6 passes) from Sta. 40+720 m to 40+750 m (o.s. -10 to +10 m).

5.0 FOUNDATION APPROVALS

No foundation approval was carried out during the reporting period.

Table 4: Details of the Foundation Approvals

Name	Structure	Sta. and Offset	Date of Approval	Comment

6.0 SAMPLING, LABORATORY AND FIELD TESTING

Table 5 and Table 6 present the samples collected or tested by the QA and QC as well as PNG field results.

Table 5: Samples Taken by the QC

Sample ID	Date Sampled	Date Tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result
CF-03-2018	2018-05-06		Coarse Filter	Sta. 0+270m, El. 143.5m		

Table 6: Samples Taken by the QA

Sample ID	Date Sampled	Date Tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result
CF-02-2018	2018-04-25	2018-05-04	Coarse filter	Stockpile (SANA Crusher)	Gradation	Compliant
					Water content	2.0 %
FF-02-2018	2018-04-25	2018-05-03	Fine filter	Stockpile (SANA Crusher)	Gradation	Compliant
					Water content	4.3 %
CF-04-2018	2018-05-06		Coarse filter	Sta. 0+980m, El. 143.5m		

7.0 PHOTOGRAPHS

Photograph CD-1810: From Sta. 0+335/-15 m looking S. Compaction of the 2 m lift (approx.) of IV rockfill at El. 145 m with a 10-tonne smooth-drum compactor with vibration (6 passes) from Sta. 0+350 to 0+540 m (o.s. -19 to -7 m).

Photograph CD-1811: From Sta. 0+985/-11 m looking SE. Placement the second, third, fourth and fifth 1 m thick (approx.) lifts of intermediate volcanic (IV) rockfill from approx. Sta. 0+985 to 40+780 m (o.s. -8 to 8 m) with the excavator.

Photograph CD-1812: From Sta. 0+985/-11 m looking SE. Placement of intermediate volcanic (IV) rockfill on the existing downstream slope up to approx. El. 140 m, from approx. Sta. 0+985 to 40+780 m.

Photograph CD-1813: From Sta. 0+980/-2, looking S. Placement of intermediate volcanic (IV) rockfill on the existing downstream slope up to approx. El. 143 m, from approx. Sta. 0+980 to 40+780 m.

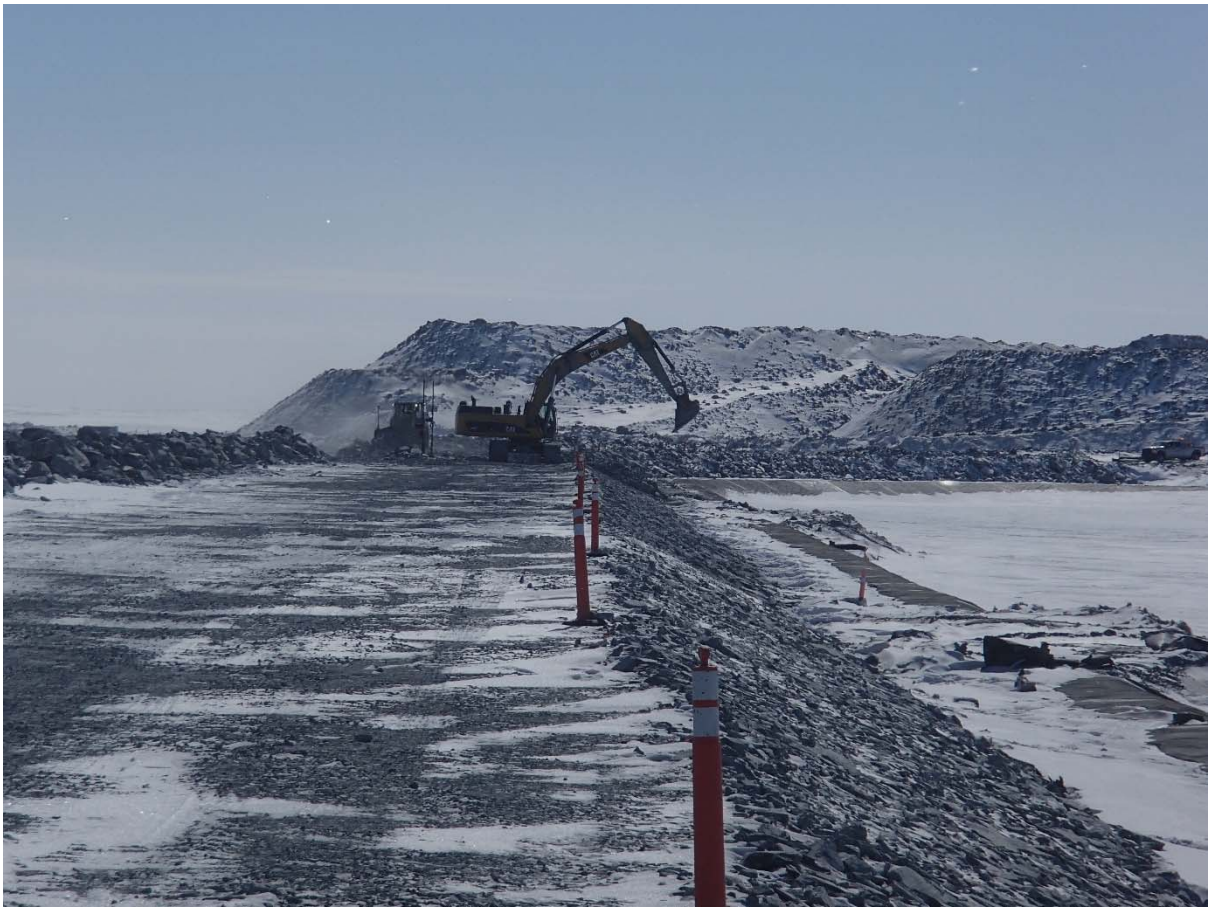
Photograph CD-1814: From Sta. 0+970/-10, looking NE. Placement of intermediate volcanic (IV) rockfill around the instruments at approx. Sta. 0+830 m with the excavator.

Photograph CD-1815: From Sta. 0+920/-25, looking S. Placement of a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from approx. Sta. 40+740 to 0+980 m (o.s. -28 to -11 m).

Photograph CD-1816: From Sta. 0+175/-27, looking S. Profiling of the upstream slope (2H:1V) from El. 143 to 145 m with an excavator between Sta. 0+175 and 0+560 m.

Photograph CD-1817: From Sta. 40+700/-10, looking NE. View of the rockfill lift thickness at the junction of Saddle Dam 5 and Central Dike, approx. 2.5 m thick.

Photograph CD-1818: From Sta. 40+770/-25, looking NE. Placement of a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from approx. Sta. 0+980 m to 0+880 m (o.s. -28 to -11 m).



Photograph CD-1819: From Sta. 0+560/-21, looking S. Profiling of the upstream slope (2H:1V) from El. 143 to 145 m with an excavator between Sta. 0+560 m and 0+830 m.

Photograph CD-1820: From Sta. 0+790/-7, looking S. Placement of a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from approx. Sta. 0+880 m to 0+830 m (o.s. -28 to -11 m).

Photograph CD-1821: From Sta. 0+175/+3, looking S. Profiling of the downstream slope (1.5H:1V) from El. 143 to 145 m with an excavator between Sta. 0+250 m and 0+330 m.

Photograph CD-1822: From Sta. 40+725/+7, looking N. Placement of two 2 m thick (approx.) lifts of intermediate volcanic (IV) rockfill from El. 141 m to El. 145 m from approx. Sta. 40+720 m to 40+750 m (o.s. -10 to +10 m) and profiling of the upstream slope (2H:1V) from El. 143 to 145 m with an excavator between Sta. 0+830 m and 0+980 m.

Photograph CD-1823: From Sta. 0+175/+8, looking NE. Compaction of the two 2 m lifts (approx.) of intermediate volcanic (IV) rockfill at El. 143 and at El. 145 m with a 10-tonne smooth-drum compactor with vibration (6 passes) from Sta. 40+720 m to 40+750 m (o.s. -10 to +10 m).

Photograph CD-1824: From Sta 40+760/-25 m, looking NE. Profiling of the upstream slope (2H:1V) from El. 143 to 145 m with an excavator between Sta. 0+830 m and 40+730 m.

Photograph CD-1825: From Sta 0+430/+9 m, looking S. Profiling of the downstream slope (1.5H:1V) from El. 143 to 145 m with an excavator between Sta. 0+330 m and 0+440 m and between Sta. 0+530 m and 0+745 m.