



Photograph SD3-338: From Sta. 20+610/-43 m, looking NW. Placement of a first 0.5 m thick lift of compacted sieved till over the LLDPE geomembrane on the upstream toe liner tie-in with an excavator from Sta. 20+588 m to 20+599 m.



Photograph SD3-339: From Sta. 20+600/-29 m, looking E. Compaction of a first 0.5 m thick lift of compacted sieved till on the upstream toe liner tie-in with an excavator from Sta. 20+588 m to 20+599 m.



Photograph SD3-340: From Sta. 20+750/-40 m, looking S. Compaction of the third 0.5 m thick lift of compacted sieved till on the upstream toe liner tie-in with an excavator from Sta. 20+760 m to 20+820 m.




Photograph SD3-341: From Sta. 20+600/-58 m, looking W. Placement of a first 0.5 m thick lift of fine rockfill on the upstream slope of the upstream toe liner tie-in with an excavator from Sta. 20+588 m to 20+599 m.




Photograph SD3-342: From Sta. 20+600/-57 m, looking W. View of the compaction test and view of the filling of the depression between SD2 and SD3 with low quality till up to El. 145 m

Marion Haberscher
for: Samuel Barbeau
Mine Waste Group


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

SB/MH/YB/

[https://golderassociates.sharepoint.com/sites/1897439/preparation of deliverables/weekly reports/2018-07-09 to 2018-07-15/1897439-1577-tm-rev0 qa weekly report south cell 2018-07-07 to 2018-07-15.docx](https://golderassociates.sharepoint.com/sites/1897439/preparation%20of%20deliverables/weekly%20reports/2018-07-09%20to%202018-07-15/1897439-1577-tm-rev0%20qa%20weekly%20report%20south%20cell%202018-07-07%20to%202018-07-15.docx)

PERMIT TO PRACTICE GOLDER ASSOCIATES LTD.	
Signature	
Date	2018-07-16
PERMIT NUMBER: P 049	
NT/NU Association of Professional Engineers and Geoscientists	

QA WEEKLY REPORT

DATE July 23rd 2018

1897439-1577-TM-Rev0

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

CC Frédéric Bolduc, Alexandre Lavallée

FROM Marion Habersetzer

EMAIL mhabersetzer@golder.com

QA WEEKLY REPORT FROM JULY 16TH TO JULY 22ND – TSF SOUTH CELL CONSTRUCTION MEADOWBANK (1897439)

This document summarizes QA activities performed by Golder from July 16th to June 22nd, 2018 inclusively, related to the construction activities of Saddle Dam 3 (SD3) and Central Dike (CD) 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
Samuel Barbeau	QA Manager (departure on July 16 th)
Marion Habersetzer	QA Manager (arrival on July 16 th)

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:

- Dust is still an issue on the construction field; be vigilant by staying out of the dust cloud near construction activities and road circulation. Wear a mask in the lab.
- Coactivity on the dike: be aware of blind spots and safe spots, keep good communication and visual contact with the operators.
- The rain is an issue, as the muddy and very slippery ground causes a high risk of slips and falls. Extra caution must be applied when walking or driving on wet surfaces.
- It is required to slow down when passing near workers on foot, as vehicles lift a large quantity of dust.
- The south access to Central Dike is closed due to mine activity 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

- The works at Central Dike will be done after completion of the North Cell Internal Structure at El. 152 m.

Saddle Dam 3

- AEM asked if the erosion protection cover on SD3 could be raised to El. 143.5 m rather than 144 m. As the maximum water level elevation in the deposition plan is of 143 m, the minimum freeboard between the erosion protection cover crest would be 0.5 m. Considering that the design wave as a maximum run-up of 1 m directed E/SE towards Central Dike, the waves towards SD3 are expected to be lower. The Designer accepted the modification for the elevation of the erosion protection cover from El. 144 m to 143.5 m under the following conditions:
 - AEM will make sure the water level in the south cell remains below 143 m;
 - AEM will ensure that no waves frequently strike over the erosion protection cover;
 - AEM will be disposed to add till and fine rockfill on the protection cover if required.
- Given the elevation of the upstream toe liner tie-in on the north abutment of SD3 (close to 145 m) and the very gentle slope of the upstream slope in the fault zone, the granular protection layers will only be installed up to the level of compacted sieved till placed against the upstream slope of the liner (about El. 144.5 m) in order to avoid placing large quantities to achieve El. 145 m, which would not provide a significant additional protection of the till toe liner tie-in.
- The upstream erosion protection cover will merge with the upstream toe liner tie-in of the south abutment of SD3 and the granular protection layers will be completed over the low-quality till (0-150 mm) with a 3H:1V slope.

- The sieved till used against the LLDPE liner on the upstream slope of SD3 as part on the granular protection of the south upstream toe liner tie-in contained many rocks larger than 50 mm, probably picked up during loading at the stockpile. Therefore, the QA and QC personnel supervised the placement of the till to ensure no large rock was placed against the line.
- The north abutment upstream toe liner tie-in only has a fine filter granular protection, since the elevation (close to El. 145 m) did not leave room to place the other layers (coarse filter and fine rockfill). This is in compliance with the design.
- Due to a field adjustment in the layers of materials placed against the upstream slope of the north upstream toe liner tie-in of Central dike at El. 143 m during the previous raise (compacted sieved till replaced by fine filter with a layer of geotextile and narrower total width of the fine filter layer towards the south), the footprint of the layers of compacted sieved till, fine filter and coarse filters were modified. In order to guarantee the thickness of the compacted sieved till layer (0.5 m), which is the first protection placed against the LLDPE liner, fine and coarse filter layers were thinned (about 0.3 m thick). The fine UM rockfill in place on the rest of the upstream toe liner tie-in did not allow for offsetting of the filters layers to keep the original thickness of 0.5 m.

Works on SD3 were completed on July 19th. Works on Central Dike were completed on July 23rd. The South Cell is now complete.

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 Central Dike

Activity or Area	Comments
Upstream toe liner tie-in – north abutment	<ul style="list-style-type: none"> ■ Placement of a 0.5 m thick layer of compacted sieved till on the upstream slope of Central Dike with an excavator from Sta. 0+147 m to 0+177 m. The material visually seemed of good quality. The layer was compacted with the bucket of the excavator. ■ Placement of a 0.5 m thick lift of fine filter on the top of the upstream toe liner tie-in and on the upstream slope with an excavator from Sta. 0+147 m to 0+177 m. The material visually seemed well graded and of good quality. The lift was compacted with a 10-tonne smooth-drum compactor with vibration (4 passes). ■ Placement of a 0.5 m thick lift of coarse filter on the top of the fine filter on the top of the upstream toe liner tie-in and on the upstream slope with an

Activity or Area	Comments
	<p>excavator from Sta. 0+147 m to 0+177 m. The material visually seemed well graded and of good quality. The lift was compacted with a 10-tonne smooth-drum compactor with vibration (4 passes).</p> <ul style="list-style-type: none"> ■ Placement of two 0.5 m thick lifts of fine UM rockfill (0-500 mm) on the top of the coarse filter on the upstream toe liner tie-in with an excavator from Sta. 0+147 m to 0+177 m. The material visually seemed well graded and of good quality. The lifts were compacted with a 10-tonne smooth-drum compactor with vibration (4 passes).

Table 3: QA Observations for Saddle Dam 3

Activity or Area	Comments
Upstream erosion protection cover	<ul style="list-style-type: none"> ■ Placement of a third 0.5 m thick lift of low quality till (0-150 mm) from El. 142.5 m to 143 m from Sta. 20+570 m to 20+590 m. The material visually seemed of good quality. The lift was compacted with a 10-tonne smooth-drum compactor with vibration (4 passes). ■ Placement of a second 0.5 m thick lift of fine rockfill (0-500 mm) upstream of the low quality till (0-150mm) from El. 142.5 m to 143 m from Sta. 20+588 m to 20+600 m. The material visually seemed well graded and of good quality. The lift was compacted with a 10-tonne smooth-drum compactor with vibration (4 passes). ■ Placement of a fourth 0.5 m thick lift of low quality till (0-150 mm) from El. 143 m to 143.5 m from Sta. 20+619 m to 20+777 m. The material visually seemed of good quality. The lift was compacted with a 10-tonne smooth-drum compactor with vibration (4 passes). ■ Placement of a third 0.5 m thick lift of fine UM rockfill (0-500 mm) upstream of the low quality till (0-150 mm) from El. 143 m to 143.5 m from Sta. 20+619 m to 20+777 m. The material visually seemed well graded and of good quality. The lift was compacted with a 10-tonne smooth-drum compactor with vibration (4 passes).
Upstream toe liner tie-in – south abutment	<ul style="list-style-type: none"> ■ Placement of a 0.5 m thick layer of compacted sieved till on the upstream slope of SD3 with an excavator from Sta. 20+777 m to 20+807 m. The

	<p>material visually seemed of good quality. The layer was compacted with the bucket of the excavator.</p> <ul style="list-style-type: none"> ■ Placement of a 0.5 m thick lift of fine filter on the top of the upstream toe liner tie-in with an excavator from Sta. 20+777 m to 20+807 m. The material visually seemed well graded and of good quality. The lift was compacted with a 10-tonne smooth-drum compactor with vibration (4 passes). ■ Placement of a 0.5 m thick lift of coarse filter on the top of the fine filter on the upstream toe liner tie-in with an excavator from Sta. 20+777 m to 20+807 m. The material visually seemed well graded and of good quality. The lift was compacted with a 10-tonne smooth-drum compactor with vibration (4 passes). ■ Placement of a 1 m thick lift of fine UM rockfill (0-500 mm) on the top of the coarse filter on the upstream toe liner tie-in with an excavator from Sta. 20+777 m to 20+807 m. The material visually seemed well graded and of good quality. The lift was compacted with a 10-tonne smooth-drum compactor with vibration (4 passes).
Upstream toe liner tie-in – north abutment	<ul style="list-style-type: none"> ■ Compaction of the third 0.5 m thick lift of compacted low quality till (0-150 mm) on the upstream toe liner tie-in with an excavator from Sta. 20+569 m to 20+599 m. The material visually seemed of good quality. The lift was compacted with a 10-tonne smooth-drum compactor with vibrations (4 passes), only where no LLDPE geomembrane lies underneath the layer. The material was tested with the PNG. A reference board was made for the low quality till. The optimum number of passes was 4 passes. ■ Corrections to the layer of compacted sieved till placed against the upstream slope from Sta. 20+599 m to 20+613 m. ■ Placement of a 0.5 m thick lift of fine filter on the top of the upstream toe liner tie-in with an excavator from Sta. 20+599 m to 20+613 m. The material visually seemed well graded and of good quality. The lift was compacted with a 10-tonne smooth-drum compactor with vibration (4 passes).

Table 5Table 4 and

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

Table 4: Samples Taken by the QC

Sample ID	Date Sampled	Date Tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result
#57 (PNG)	2018-07-18	2018-07-18	Compacted low quality till (0-150 mm)	SD3 (in place) 20+594.5/-41.8 m, El. 145.1 m	Dry density	2092 (compliant)
					Water content (PNG)	7.5%
#58 (PNG)	2018-07-18	2018-07-18	Compacted low quality till (0-150 mm)	SD3 (in place) 20+600.0/-47.8 m, El. 144.6 m	Dry density	2116 (compliant)
					Water content (PNG)	7.6%
#59 (PNG)	2018-07-18	2018-07-18	Compacted low quality till (0-150 mm)	SD3 (in place) 20+607.0/-54.7 m, El. 143.9 m	Dry density	2103 (compliant)
					Water content (PNG)	5.9%

Table 5: Samples Taken by the QA

Sample ID	Date Sampled	Date Tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result

5.0 PHOTOGRAPHS



Photograph CD-1896: From Sta. 0+140/-30 m, looking S. Placement of 0.5 m thick layers of compacted sieved till and fine filter on the upstream slope of Central Dike with an excavator from Sta. 0+147 m to 0+177 m.



Photograph CD-1897: From Sta. 0+145/-30 m, looking NW. Placement of a 0.5 m thick lift of coarse filter on the top of the fine filter on the top of the upstream toe liner tie-in and on the upstream slope with an excavator from Sta. 0+147 m to 0+177 m.



Photograph CD-1898: From Sta. 0+145/-30 m, looking W. Compaction of the 0.5 m thick lift of coarse filter on the top of the fine filter on the top of the upstream toe liner tie-in and on the upstream slope with a 10-tonne smooth-drum compactor with vibration (4 passes) from Sta. 0+147 m to 0+177 m.



Photograph CD-1899: From Sta. 0+140/-33 m, looking S. View of Central Dike at the end of the 2018 construction phase.



Photograph SD3-343: From Sta. 20+590/-40 m, looking NW. View of the depression between SD2 and SD3 backfilled with low quality till up to El. 145 m.



Photograph SD3-344: From Sta. 20+610/-43 m, looking S. Placement of a third 0.5 m thick lift of low quality till (0-150 mm) from El. 142.5 m to 143 m from Sta. 20+570 m to 20+590 m.



Photograph SD3-345: From Sta. 20+760/-42 m, looking NW. Placement of a fourth 0.5 m thick lift of low quality till (0-150 mm) from El. 143 m to 143.5 m from Sta. 20+619 m to 20+777 m.



Photograph SD3-346: From Sta. 20+760/-21 m, looking E. Placement of a third 0.5 m thick lift of fine UM rockfill (0-500 mm) upstream of the low quality till (0-150mm) from El. 143 m to 143.5 m from Sta. 20+668 m to 20+777 m.



Photograph SD3-347: From Sta. 20+640/-41 m, looking W. Placement of a third 0.5 m thick lift of fine UM rockfill (0-500 mm) upstream of the low quality till (0-150mm) from El. 143 m to 143.5 m from Sta. 20+688 m to 20+619 m.



Photograph SD3-348: From Sta. 20+760/-25 m, looking E. Placement of a 0.5 m thick layer of compacted sieved till on the upstream slope of SD3 with an excavator from Sta. 20+777 m to 20+807 m. No large rock was allowed to be placed against the LLDPE liner.



Photograph SD3-349: From Sta. 20+765/-29 m, looking SE. Compaction of the 0.5 m thick lift of fine filter on the top of the upstream toe liner tie-in with a 10-tonne smooth-drum compactor with vibration (4 passes) from Sta. 20+777 m to 20+807 m.



Photograph SD3-350: From Sta. 20+740/-24 m, looking SE. Placement of a 0.5 m thick lift of coarse filter on the top of the fine filter on the upstream toe liner tie-in with an excavator from Sta. 20+777 m to 20+807 m.



Photograph SD3-351: From Sta. 20+740/-24 m, looking SE. Compaction of the 0.5 m lift of low quality till (0-150 mm) at El. 143.5 m with a 10-tonne smooth-drum compactor with vibration (4 passes) from Sta. 20+619 m to 20+777 m.

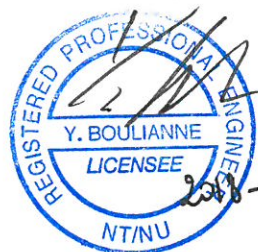


Photograph SD3-352: From Sta. 20+600/-59 m, looking SW. Corrections to the layer of compacted sieved till placed against the upstream slope from Sta. 20+599 m to 20+613 m.



Photograph SD3-353: From Sta. 20+580/-49 m, looking SW. View of SD3 at the end of the 2018 construction phase.

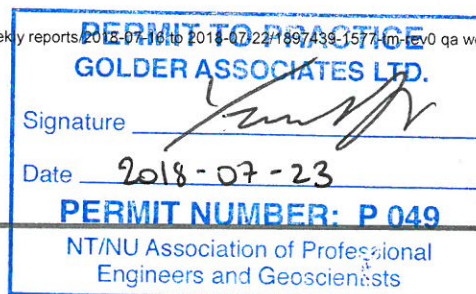
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APPENDIX E-2

QA Daily Reports

QA DAILY REPORT

DATE April 23rd 2018

1897439-1576-TM-Rev0

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

CC Frédéric Bolduc, Alexandre Lavallée

FROM Marion Habersetzer

EMAIL mhabersetzer@golder.com

QA DAILY REPORT FOR APRIL 23RD, 2018 – TSF SOUTH CELL CONSTRUCTION - MEADOWBANK (1897439)

1.0 WEATHER

- Temperature around -20°, sunny.

2.0 HEALTH AND SAFETY

- Cold weather and ice: apply caution when driving or walking on icy surfaces, wear appropriate clothing.

3.0 DISCUSSION AND DAILY CONSTRUCTION MEETING

During the daily construction meeting and during the day the following discussions were held:

- Arrival of the QA (Marion Habersetzer) and QC (Cédric Fillon-Tremblay) personnel on site.
- A debriefing session took place with AEM's representative to review the planning of the construction season and the operations that had already taken place. Access ramps to Central Dikes are in place and rockfill placement started on April 21st. No QA or QC personnel was on site during this placement.
- The LLDPE liner installed on the upstream slope of Central Dike was damaged near the deposition finger at approx. Sta. 0+650 m during snow removal operations. The amount of repairs needed will be estimated when the deposition finger is removed entirely before installation of the new liner at El. 145 m.
- The QA engineer noted that the LLDPE rolls are stored on trailers outside near the waste rock storage facility. There is snow and ice on some of the rolls but they seem in good condition. A closer inspection will be done after the snow melts.
- AEM indicated that only good quality volcanic 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.

4.0 DESCRIPTION OF CONSTRUCTION WORK PERFORMED AND QA OBSERVATIONS

The QA activities by Golder are based on periodic inspections performed by the QA Engineer in order to monitor the construction activities and progress of the structure of the South Cell of the TSF. This report must be read in conjunction with the QC Report. The following tables summarize the progress and observations made for each structure.

Table 1: QA observations for Saddle Dam 3

Activity or Area	Comments
None	

Table 2: QA Observations for Central Dike

Activity or Area	Comments
Placement of materials on the crest	<ul style="list-style-type: none"> ■ Placement a 2 m thick (approx.) lift of volcanic rockfill from El. 143 m to El. 145 m from 0+250 to 0+400 m (o.s. -28 to -18 m). The material is of good quality and is well graded.

5.0 FOUNDATION APPROVAL

No foundation approval was done during the reporting period.

Table 3: Details of the Foundation Approvals

Name	Structure	Sta. and Offset	Date of Approval	Comment

6.0 SAMPLING, LABORATORY AND FIELD TESTING

Table 4 and Table 5 present the samples collected or tested by the QA and QC as well as PNG field results.

Table 4: Samples taken by the QC

Sample ID	Date sampled	Date tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result

Table 5: Samples taken by the QA

Sample ID	Date sampled	Date tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result

7.0 PHOTOGRAPH



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 a 2 m thick (approx.) lift of volcanic rockfill from El. 143 m to El. 145 m from 0+250 to 0+400 m (o.s. -28 to -18 m).

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QA DAILY REPORT

DATE April 25th 2018

1897439-1576-TM-Rev0

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

CC Frédéric Bolduc, Alexandre Lavallée

FROM Marion Habersetzer

EMAIL mhabersetzer@golder.com

QA DAILY REPORT FOR APRIL 24TH, 2018 – TSF SOUTH CELL CONSTRUCTION - MEADOWBANK (1897439)

1.0 WEATHER

- Temperature around -20°C, sunny.

2.0 HEALTH AND SAFETY

- Cold weather and ice: apply caution when driving or walking on icy surfaces, wear appropriate clothing.
- The blast clearance procedures were reminded.
- The snow bank on the north access of Central Dike will be lowered to improve visibility for the haul trucks.

3.0 DISCUSSION AND DAILY CONSTRUCTION MEETING

During the daily construction meeting and during the day the following discussions were held:

- It was reminded that no vehicle can drive on the geomembrane.
- The sampling and lab program was reviewed with SANA and AEM. SANA indicated that an estimated volume of 3 600 m³ of coarse filter and 3 600 m³ of fine filter is expected to be placed on the dikes in 2018.

4.0 DESCRIPTION OF CONSTRUCTION WORK PERFORMED AND QA OBSERVATIONS

The QA activities by Golder are based on periodic inspections performed by the QA Engineer in order to monitor the construction activities and progress of the structure of the South Cell of the TSF. This report must be read in conjunction with the QC Report. The following tables summarize the progress and observations made for each structure.

Table 1: QA observations for Saddle Dam 3

Activity or Area	Comments
None	

Table 2: QA Observations for Central Dike

Activity or Area	Comments
Placement of materials on the crest	<ul style="list-style-type: none"> ■ Placement 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). The material is of good quality and is well graded.

5.0 FOUNDATION APPROVAL

No foundation approval was done during the reporting period.

Table 3: Details of the Foundation Approvals

Name	Structure	Sta. and Offset	Date of Approval	Comment

6.0 SAMPLING, LABORATORY AND FIELD TESTING

Table 4 and Table 5 present the samples collected or tested by the QA and QC as well as PNG field results.

Table 4: Samples taken by the QC

Sample ID	Date sampled	Date tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result

Table 5: Samples taken by the QA

Sample ID	Date sampled	Date tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result

7.0 PHOTOGRAPH



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

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QA DAILY REPORT

DATE April 26th 2018

1897439-1576-TM-Rev0

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

CC Frédéric Bolduc, Alexandre Lavallée

FROM Marion Habersetzer

EMAIL mhabersetzer@golder.com

QA DAILY REPORT FOR APRIL 25TH, 2018 – TSF SOUTH CELL CONSTRUCTION - MEADOWBANK (1897439)

1.0 WEATHER

- Temperature around -20°C, cloudy to sunny.

2.0 HEALTH AND SAFETY

- Cold weather and ice: apply caution when driving or walking on icy surfaces, wear appropriate clothing.
- Dust is an issue on the construction field; be vigilant by staying out of the dust cloud near construction activities and road circulation.
- The snow bank was cleared at the north access of Central Dike, improving the visibility.
- It was reminded that everyone on the field must have a portable radio with them and be on the correct radio channel. New workers must be informed as soon as they arrive.

3.0 DISCUSSION AND DAILY CONSTRUCTION MEETING

During the daily construction meeting and during the day the following discussions were held:

- Sampling of the fine filter and coarse filter stockpiles was done today using a loader to prepare a pad. The stockpiles are made from crushed good quality Non-PAG intermediate volcanic (IV) rock.
- All the intermediate volcanic (IV) rockfill available for construction is stored in the stockpile at the end of Central Dike. Some of the material is supposed to be moved to the south access of Central Dike to place the rockfill from the other end after the northern half is complete. However, since this second stockpile is not ready, the rockfill placement will continue from the north end for the moment.
- Compaction of the intermediate volcanic (IV) rockfill lift is planned for April 27th or 28th.

- Because of a restrained access, completion of the 145 m footprint at the south end of Central Dike near SD5 will be done by placing and compacting the intermediate volcanic (IV) rockfill with an excavator.

4.0 DESCRIPTION OF CONSTRUCTION WORK PERFORMED AND QA OBSERVATIONS

The QA activities by Golder are based on periodic inspections performed by the QA Engineer in order to monitor the construction activities and progress of the structure of the South Cell of the TSF. This report must be read in conjunction with the QC Report. The following tables summarize the progress and observations made for each structure.

Table 1: QA observations for Saddle Dam 3

Activity or Area	Comments
None	

Table 2: QA Observations for Central Dike

Activity or Area	Comments
Placement of materials on the crest	<ul style="list-style-type: none"> ■ Placement 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). The material is of good quality and is well graded.

5.0 FOUNDATION APPROVAL

No foundation approval was done during the reporting period.

Table 3: Details of the Foundation Approvals

Name	Structure	Sta. and Offset	Date of Approval	Comment

6.0 SAMPLING, LABORATORY AND FIELD TESTING

Table 4 and Table 5 present the samples collected or tested by the QA and QC as well as PNG field results.

Table 4: 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		Coarse filter	Stockpile (SANA Crusher)		
FF-01-2018	2018-04-25		Fine filter	Stockpile (SANA Crusher)		

Table 5: 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 PHOTOGRAPH



Photograph CD-1800: From Sta. 0+500/-14 m looking N. Placement 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).

QA DAILY REPORT

DATE April 27th 2018

1897439-1576-TM-Rev0

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

CC Frédéric Bolduc, Alexandre Lavallée

FROM Marion Habersetzer

EMAIL mhabersetzer@golder.com

QA DAILY REPORT FOR APRIL 26TH, 2018 – TSF SOUTH CELL CONSTRUCTION - MEADOWBANK (1897439)

1.0 WEATHER

- Temperature around -18°C, sunny.

2.0 HEALTH AND SAFETY

- 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 season is prone to tailings dust being carried by the strong winds, due to the very dry surfaces. If this situation goes on or worsens, work methods may have to be adapted or work stopped if visibility or workers' health become of concern.

3.0 DISCUSSION AND DAILY CONSTRUCTION MEETING

During the daily construction meeting and during the day the following discussions were held:

- The smooth-drum compactor is now ready. It will be brought to the north end of Central Dike and tested before compaction of the intermediate volcanic (IV) rockfill starts.
- The access ramp at the south 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.
- The bedrock will be cleared tomorrow at the south end of Central Dike, where the dike needs to be widened to the footprint corresponding to El. 145 m. The foundation was approved in 2016, however because it has since been exposed to the weather for an extended period of time, the QA Engineer will complete a new foundation approval before the construction proceeds.

- 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 April 30th.

4.0 DESCRIPTION OF CONSTRUCTION WORK PERFORMED AND QA OBSERVATIONS

The QA activities by Golder are based on periodic inspections performed by the QA Engineer in order to monitor the construction activities and progress of the structure of the South Cell of the TSF. This report must be read in conjunction with the QC Report. The following tables summarize the progress and observations made for each structure.

Table 1: QA observations for Saddle Dam 3

Activity or Area	Comments
None	

Table 2: QA Observations for Central Dike

Activity or Area	Comments
Placement of materials on the crest	■ Placement 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). The material is of good quality and is well graded.

5.0 FOUNDATION APPROVAL

No foundation approval was done during the reporting period.

Table 3: Details of the Foundation Approvals

Name	Structure	Sta. and Offset	Date of Approval	Comment

6.0 SAMPLING, LABORATORY AND FIELD TESTING

Table 4 and Table 5 present the samples collected or tested by the QA and QC as well as PNG field results.

Table 4: Samples taken by the QC

Sample ID	Date sampled	Date tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result

Table 5: Samples taken by the QA

Sample ID	Date sampled	Date tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result

7.0 PHOTOGRAPH



Photograph CD-1801: From Sta. 0+650/-10 m looking N. Placement 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).

QA DAILY REPORT

DATE April 28th 2018

1897439-1576-TM-Rev0

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

CC Frédéric Bolduc, Alexandre Lavallée

FROM Marion Habersetzer

EMAIL mhabersetzer@golder.com

QA DAILY REPORT FOR APRIL 27TH, 2018 – TSF SOUTH CELL CONSTRUCTION - MEADOWBANK (1897439)

1.0 WEATHER

- Temperature around -15°C, sunny.

2.0 HEALTH AND SAFETY

- 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.
- Blasting is planned at Vault at 12:45.
- The obligation of having a portable radio on the dikes was reminded again.
- Wildlife activity was reported on site yesterday. Driving speed is limited for that reason.

3.0 DISCUSSION AND DAILY CONSTRUCTION MEETING

During the daily construction meeting and during the day the following discussions were held:

- 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 has reached the instruments on the crest, in order to avoid backing up of haul trucks on a narrow crest near the instruments.
- The compactor is now ready and compaction of the north part of the intermediate volcanic (IV) rockfill lift on Central Dike will be done while rockfill placement is in progress on the south part.
- The QA Engineer reminded that the foundation and the existing dike slope need to be snow-free before placing rockfill to complete the footprint El. 145 m at the south extremity of Central Dike.

4.0 DESCRIPTION OF CONSTRUCTION WORK PERFORMED AND QA OBSERVATIONS

The QA activities by Golder are based on periodic inspections performed by the QA Engineer in order to monitor the construction activities and progress of the structure of the South Cell of the TSF. This report must be read in conjunction with the QC Report. The following tables summarize the progress and observations made for each structure.

Table 1: QA observations for Saddle Dam 3

Activity or Area	Comments
None	

Table 2: QA Observations for Central Dike

Activity or Area	Comments
Placement of materials on the crest	<ul style="list-style-type: none"> ■ Placement a 2 m thick (approx.) lift of intermediate volcanic (IV) rockfill from El. 143 m to El. 145 m from approx. Sta. 0+625 to 0+710 m (o.s. -28 to -18 m). The material is of good quality and is well graded.
Downstream toe	<ul style="list-style-type: none"> ■ 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). The downstream slope was cleared of snow as well.

5.0 FOUNDATION APPROVAL

No foundation approval was done during the reporting period.

Table 3: Details of the Foundation Approvals

Name	Structure	Sta. and Offset	Date of Approval	Comment

6.0 SAMPLING, LABORATORY AND FIELD TESTING

Table 4 and Table 5 present the samples collected or tested by the QA and QC as well as PNG field results.

Table 4: 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 5: Samples taken by the QA

Sample ID	Date sampled	Date tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result

7.0 PHOTOGRAPH



Photograph CD-1802: From Sta. 0+770/-16 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+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).

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QA DAILY REPORT

DATE April 29th 2018

1897439-1576-TM-Rev0

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

CC Frédéric Bolduc, Alexandre Lavallée

FROM Marion Habersetzer

EMAIL mhabersetzer@golder.com

QA DAILY REPORT FOR APRIL 28TH, 2018 – TSF SOUTH CELL CONSTRUCTION - MEADOWBANK (1897439)

1.0 WEATHER

- Temperature around -10°C, cloudy and snowy.

2.0 HEALTH AND SAFETY

- 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.
- 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 equipments are working in the area.
- There is still important wildlife activity (wolves, caribous, wolverine) around Vault Road and the SANA crusher site. Reduce driving speed and avoid encounters.

3.0 DISCUSSION AND DAILY CONSTRUCTION MEETING

During the daily construction meeting and during the day the following discussions were held:

- The 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 to the LLDPE liner on the upstream slope.
- Due to snow falls, it was decided to interrupt the placement of intermediate volcanic (IV) rockfill on the crest of Central Dike and instead start the placement of rockfill on the approved foundation in order to cover it and avoid an accumulation of snow on the bedrock, which would be more difficult to clear.

- The QA Engineer indicated that some oversize boulders (>1.3m in diameter) have to be removed from the slope of the dike before placement of rockfill at these elevations on the south part of Central Dike where the footprint is being widened (see photograph below).
- Since intermediate volcanic (IV) rockfill is 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 reminded that care must be taken not to mix UM rockfill and IV rockfill while taking the material with the bucket of the excavator.
- The question of the compaction underneath the safety berms on the downstream side of the Central Dike crest was raised. There is a safety concern about driving the compactor so close to the edge, given the considerable height of the downstream slope.

4.0 DESCRIPTION OF CONSTRUCTION WORK PERFORMED AND QA OBSERVATIONS

The QA activities by Golder are based on periodic inspections performed by the QA Engineer in order to monitor the construction activities and progress of the structure of the South Cell of the TSF. This report must be read in conjunction with the QC Report. The following tables summarize the progress and observations made for each structure.

Table 1: QA observations for Saddle Dam 3

Activity or Area	Comments
None	

Table 2: QA Observations for Central Dike

Activity or Area	Comments
Placement of materials on the crest	<ul style="list-style-type: none"> ■ 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+760m (o.s. -28 to 3 m). The material is of good quality and is well graded. ■ 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).
Downstream toe	<ul style="list-style-type: none"> ■ 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.

Activity or Area	Comments
	<ul style="list-style-type: none"> ■ Placement 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). 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 2 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 APPROVAL

One foundation approval was done during the reporting period.

Table 3: Details of the Foundation Approvals

Name	Structure	Sta. and Offset	Date of Approval	Comment
FND-CD-139	Central Dike		2018-04-28	Approved

6.0 SAMPLING, LABORATORY AND FIELD TESTING

Table 4 and Table 5 present the samples collected or tested by the QA and QC as well as PNG field results.

Table 4: Samples taken by the QC

Sample ID	Date sampled	Date tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result

Table 5: Samples taken by the QA

Sample ID	Date sampled	Date tested	Fill Material Type	Location (Station/Offset Elevation)	Test	Testing Result