

LEGEND

TOPOGRAPHIC CONTOUR

1 IDENTIFICATION AND DIRECTION OF PHOTOGRAPHY TAKEN DURING THE ANNUAL INSPECTION OF 2017

NOTE

GRID REFERENCE: NAD 83, UTM ZONE 14.

REFERENCE

DRAWING BASE PROVIDED BY AEM LTD., MEADOWBANK
DIVISION IN "MBK Site map updated JULY 2014.dwg"
DATED JULY 8, 2014.

A scale bar and map scale indicator. The scale bar is marked at 0, 12.5, and 25. Below the scale bar, the text '1:750' is written. To the right of the scale bar, the word 'METRES' is written.

CLIENT



AGNICO EAGLE

CONSULTANT



Golder
Associates

YYYY-MM-DD

PREPARED M. Habersetzer

DESIGN S. Betnesky

REVIEW M. Habersetzer

APPROVED Y. Boulianne

PROJECT

2017 ANNUAL GEOTECHNICAL INSPECTION
MEADOWBANK GOLD MINE, NUNAVUT

TITLE

PROJECT N

BUJASE

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FIGURE



APPENDIX A4 RECORD OF DAM INSPECTION

Client: AEM **By:** Yves Boulianne
Project: Meadowbank **Date:** September 8, 2017
Location: Vault Dike **Reviewed:** Yves Boulianne

GENERAL INFORMATION

Dam Type:	Rockfill embankment with filter zones, impervious upstream liner (bituminous membrane) and an upstream key trench (aggregate mixed with bentonite)		
Weather Conditions:	Overcast	Temperature:	15°C

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1. DAM CREST		217, 220, 221, 222	
1.1 Crest elevation	142.4 m		
1.2 Reservoir level	139.3 m U/S 139.5 m D/S		
Current freeboard	3.1 m		
1.3 Distance to tailings pond (if applicable)	Not applicable		
1.4 Surface cracking	No		
1.5 Unexpected settlement	No		
1.6 Lateral movement	Not apparent		
1.7 Other unusual conditions	No		
2. UPSTREAM SLOPE		221, 222	
2.1 Slope angle	Approx. 1.5H:1V		
2.2 Signs of erosion	Stable		
2.3 Signs of movement (deformation)	None observed		
2.4 Cracks	No		
2.5 Face liner condition (if applicable)	Not applicable		
2.6 Other unusual conditions	None		
3. DOWNSTREAM SLOPE		218, 219	
3.1 Slope angle	Approx. 1.5H:1V		



APPENDIX A4 RECORD OF DAM INSPECTION

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
3.2 Signs of erosion	None observed		
3.3 Signs of movement (deformation)	No		
3.4 Cracks	None observed		
3.5 Seepage or wet areas	Not apparent		
3.6 Vegetation growth	None observed		
3.7 Other unusual conditions	None		
4. DOWNSTREAM TOE AREA			
4.1 Seepage from dam	None		
4.2 Signs of erosion	Not observed		
4.3 Signs of turbidity in seepage water	No		
4.4 Discoloration/staining	No		
4.5 Outlet operating problem (if applicable)	Not applicable		
4.6 Other unusual conditions	None		
5. ABUTMENTS			
5.1 Seepage at contact zone (abutment/embankment)	None observed		
5.2 Signs of erosion	None observed		
5.3 Excessive vegetation	No		
5.4 Presence of rodent burrows	None observed		
5.5 Other unusual conditions	None		
6. RESERVOIR			
6.1 Stability of slopes	Good conditions		
6.2 Distance to nearest slide (if applicable)	None observed		
6.3 Estimate of slide volume (if applicable)	Not applicable		
6.4 Floating debris	None observed		
6.5 Other unusual conditions	None		
7. EMERGENCY SPILLWAY/ OUTLET STRUCTURE	No spillway or outlet structure exists, only dewatering pump.		
7.1 Surface condition			



APPENDIX A4 RECORD OF DAM INSPECTION

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
7.2 Signs of erosion			
7.3 Signs of movement (deformation)			
7.4 Cracks			
7.5 Settlement			
7.6 Presence of debris or blockage			
7.7 Closure mechanism operational			
7.8 Slope protection			
7.9 Instability of side slopes			
7.10 Other unusual conditions	No		
8. Instrumentation			
8.1 Piezometers	No		
8.2 Settlement cells	No		
8.3 Thermistors	Yes		See Section 4.0 of the report.
8.4 Settlement monuments	No		
8.5 Seismograph	No		
8.6 Inclinometer	No		
8.7 Weirs and flow monitors	No		
8.8 Data logger(s)	No		
8.9 Other			
9. DOCUMENTATION			
9.1 Operation, Maintenance and Surveillance (OMS) Plan			
9.1.1 OMS Plan exists	Yes		
9.1.2 OMS Plan reflects current dam conditions	Yes		
9.1.3 Date of last revision	March 2017		
9.2 Emergency Preparedness Plan (EPP)			
9.2.1 EPP exists	Yes		Included within OMS and ERP plan
9.2.2 EPP reflects current conditions	Yes		
9.2.3 Date of last revision	June 2017		



APPENDIX A4 RECORD OF DAM INSPECTION

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
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10. NOTES

Inspector's Signature		Date:	September 8, 2017
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<https://golderassociates.sharepoint.com/sites/16104g/preparation of deliverables/rev0/annexes inspection 2017/appendix a - dewatering dikes/a4 vault dike/a4 - vault dike inspection 2017.docx>



APPENDIX A4 VAULT DIKE PHOTOGRAPHIC LOG



Photograph A4-1 Vault Dike

Date: September 8, 2017

Photo Number: 217

Description: From the east abutment, looking northwest at the crest.



Photograph A4-2 Vault Dike

Date: September 8, 2017

Photo Number: 218

Description: From downstream, looking southeast at the downstream toe.



APPENDIX A4 VAULT DIKE PHOTOGRAPHIC LOG



Photograph A4-3 Vault Dike

Date: September 8, 2017

Photo Number: 219

Description: From downstream, looking northwest at the downstream toe.



Photograph A4-4 Vault Dike

Date: September 8, 2017

Photo Number: 220

Description: From the west abutment, looking southeast at the crest.



APPENDIX A4 VAULT DIKE PHOTOGRAPHIC LOG



Photograph A4-5 Vault Dike

Date: September 8, 2017

Photo Number: 221

Description: From the upstream side, looking southeast at the upstream slope.



Photograph A4-6 Vault Dike

Date: September 8, 2017

Photo Number: 222

Description: From the upstream side, looking northwest at the upstream slope.



**2017 ANNUAL GEOTECHNICAL INSPECTION
MEADOWBANK GOLD MINE, NUNAVUT**

APPENDIX B

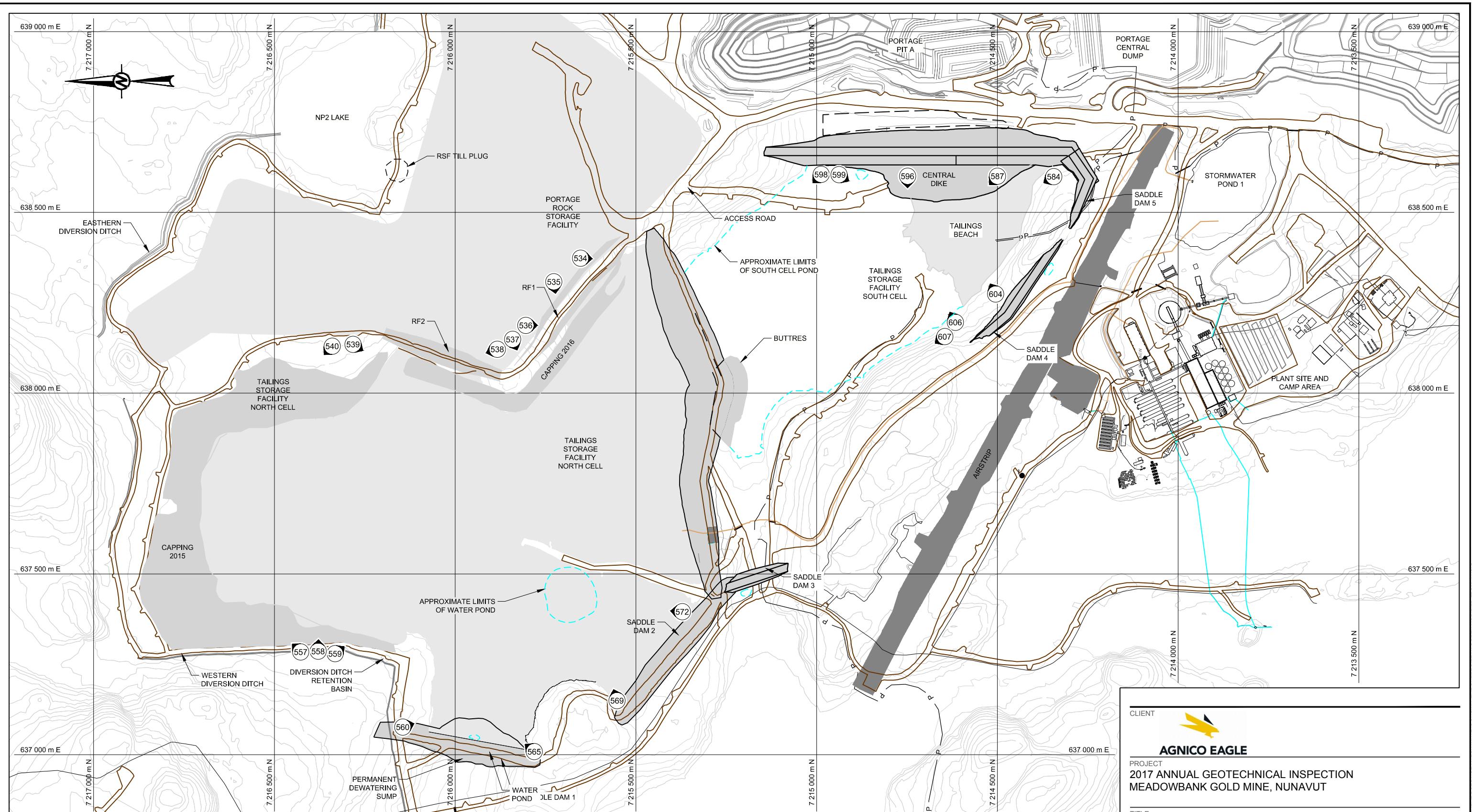
Tailings Storage Facility



2017 ANNUAL GEOTECHNICAL INSPECTION
MEADOWBANK GOLD MINE, NUNAVUT

APPENDIX B1

Tailings Facility Photographic Log



LEGEND

TOPOGRAPHIC CONTOUR

1 IDENTIFICATION AND DIRECTION OF PHOTOGRAPH TAKEN DURING THE ANNUAL INSPECTION OF 2017

NOTE

GRID REFERENCE: NAD 83, UTM ZONE 14.

REFERENCE

DRAWING BASE PROVIDED BY AEM LTD., MEADOWBANK DIVISION IN "MBK Site map updated JULY 2014.dwg" DATED JULY 8, 2014.

0 250 500
1:10 000 METRES

CONSULTANT YYYY-MM-DD 2017-12-14
PREPARED M. Habersetzer
DESIGN S. Betnesky
REVIEW M. Habersetzer
APPROVED Y. Boulianne

PROJECT No. 1784282 PHASE 5000 Rev. 0

FIGURE B1





APPENDIX B1 TSF PHOTOGRAPHIC LOG



Photograph B1-1 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 565

Description: From Saddle Dam 1 (approximately Sta. 0+410) looking northeast at the North Cell tailings pond. Adequate tailings beach against SD1.



Photograph B1-2 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 560

Description: From Saddle Dam 1 (approximately Sta. 0+070) looking south at the North Cell tailings pond. Adequate tailings beach against SD1.



APPENDIX B1 TSF PHOTOGRAPHIC LOG



Photograph B1-3 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 569

Description: From The northwestern extremity of Saddle Dam 2, looking northeast at the North Cell.



Photograph B1-4 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 572

Description: From Saddle Dam 2 looking northwest at the North Cell tailings pond. Adequate tailings beach against SD2.



APPENDIX B1 TSF PHOTOGRAPHIC LOG



Photograph B1-5 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 557

Description: From the western diversion ditch, looking northeast toward the North Cell.



Photograph B1-6 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 558

Description: From the western diversion ditch, looking east toward the North Cell.



APPENDIX B1 TSF PHOTOGRAPHIC LOG



Photograph B1-7 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 559

Description: From the western diversion ditch, looking southeast toward the North Cell.



Photograph B1-8 Tailings Storage Facility

Date: September 12, 2017

Photo Number: 534

Description: From the RSF looking south at RF1 at the North Cell and South Cell. View of the 2016 North Cell capping.



APPENDIX B1 TSF PHOTOGRAPHIC LOG



Photograph B1-9 Tailings Storage Facility

Date: September 12, 2017

Photo Number: 535

Description: From the RSF looking west at RF1 and the North Cell toward Saddle Dam 2. View of the 2016 North Cell capping.



Photograph B1-10 Tailings Storage Facility

Date: September 12, 2017

Photo Number: 536

Description: From the RSF looking south at RF1 and the North Cell. View of the 2016 North Cell capping.



APPENDIX B1 TSF PHOTOGRAPHIC LOG



Photograph B1-11 Tailings Storage Facility

Date: September 12, 2017

Photo Number: 537

Description: From the RSF looking southwest at RF1 and the North Cell.



Photograph B1-12 Tailings Storage Facility

Date: September 12, 2017

Photo Number: 538

Description: From the RSF looking northwest at RF1 and the North Cell. View of the 2016 capping.



APPENDIX B1 TSF PHOTOGRAPHIC LOG



Photograph B1-13 Tailings Storage Facility

Date: September 12, 2017

Photo Number: 539

Description: From the RSF looking southwest at RF2 and the North Cell. View of the 2016 capping.



Photograph B1-14 Tailings Storage Facility

Date: September 12, 2017

Photo Number: 540

Description: From the RSF looking northwest at the North Cell. View of the 2015 capping.



APPENDIX B1 TSF PHOTOGRAPHIC LOG



Photograph B1-15 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 598

Description: From the northern abutment of Central Dike, looking west at the South Cell.



Photograph B1-16 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 599

Description: From the northern abutment of Central Dike, looking southwest at Central Dike and the South Cell.



APPENDIX B1 TSF PHOTOGRAPHIC LOG



Photograph B1-17 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 596

Description: From Central Dike looking west at the South Cell. A small pond with an orange colour is present in the tailings.



Photograph B1-18 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 587

Description: From Central Dike looking west at the South Cell towards Saddle Dam 5.



APPENDIX B1 TSF PHOTOGRAPHIC LOG



Photograph B1-19 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 584

Description: From Central Dike looking north at Central Dike and the South Cell.



Photograph B1-20 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 604

Description: From Saddle Dam 4 looking northeast at the South Cell towards Central Dike.



APPENDIX B1 TSF PHOTOGRAPHIC LOG



Photograph B1-21 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 606

Description: View of the bedrock on the northwestern extremity Saddle Dam 4. Important surface cracks are visible.



Photograph B1-22 Tailings Storage Facility

Date: September 13, 2017

Photo Number: 607

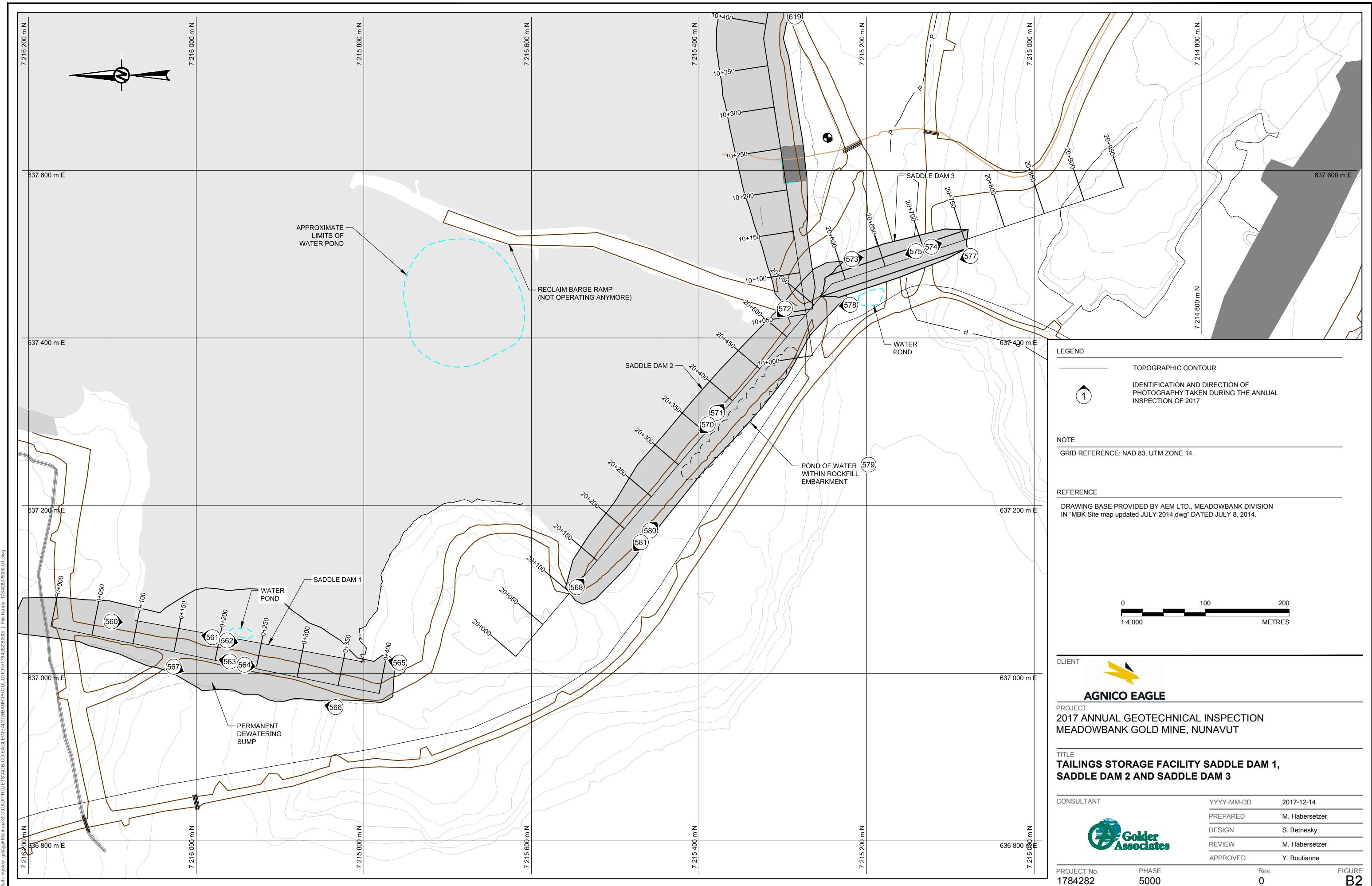
Description: From the northwestern extremity Saddle Dam 4, looking northwest at the South Cell towards Stormwater Dike.



2017 ANNUAL GEOTECHNICAL INSPECTION
MEADOWBANK GOLD MINE, NUNAVUT

APPENDIX B2

Saddle Dam 1 Photographic Log and Record of Inspection





APPENDIX B2 RECORD OF DAM INSPECTION

Client: AEM **By:** Yves Boulianne
Project: Meadowbank **Date:** September 13, 2017
Location: Saddle Dam 1 **Reviewed:** Yves Boulianne

GENERAL INFORMATION

Dam Type:	Rockfill embankment with inverted filter on base, upstream filters, a geomembrane liner tied in a toe till plug and protective cover.		
Weather Conditions:	Sunny	Temperature:	8°C

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1. DAM CREST		560, 563, 564	
1.1 Crest elevation	150 m		Design 150 m
1.2 Reservoir level	149.5 m - tailings		
Current freeboard	0.5 m -tailings		Design 2 m water, 0.5 m tailings
1.3 Distance to tailings pond (if applicable)	>300 m		Tailings beach all along SD1
1.4 Surface cracking	None at time of inspection		
1.5 Unexpected settlement	None observed		
1.6 Lateral movement	Not apparent		
1.7 Other unusual conditions	None		
2. UPSTREAM SLOPE		560, 561,562, 565	
2.1 Slope angle	Approx. 3H:1V		Rockfill
2.2 Signs of erosion	None observed		
2.3 Signs of movement (deformation)	None observed		
2.4 Cracks	None observed		
2.5 Face liner condition (if applicable)	In good condition		
2.6 Other unusual conditions	None		
3. DOWNSTREAM SLOPE		566, 567	
3.1 Slope angle	Approx.1.2H or 1.3 H:1V variable		Rockfill
3.2 Signs of erosion	None observed		



APPENDIX B2

RECORD OF DAM INSPECTION

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
3.3 Signs of movement (deformation)	None observed		
3.4 Cracks	None observed		
3.5 Seepage or wet areas	None observed		
3.6 Vegetation growth	None observed		
3.7 Other unusual conditions	None		
4. DOWNSTREAM TOE AREA		566, 567	
4.1 Seepage from dam	Uncertain		A dewatering sump is installed downstream. Water was observed ponding in that area.
4.2 Signs of erosion	None observed		
4.3 Signs of turbidity in seepage water	Not applicable		
4.4 Discoloration/staining	No		
4.5 Outlet operating problem (if applicable)	Not applicable		
4.6 Other unusual conditions			
5. ABUTMENTS			
5.1 Seepage at contact zone (abutment/embankment)	None observed		
5.2 Signs of erosion	None observed		
5.3 Excessive vegetation	No		
5.4 Presence of rodent burrows	None observed		
5.5 Other unusual conditions	None		
6. RESERVOIR			
6.1 Stability of slopes	Stable		
6.2 Distance to nearest slide	None observed		
6.3 Estimate of slide volume (if applicable)	Not applicable		
6.4 Floating debris	None observed		
6.5 Other unusual conditions	No		A small pond of water was observed in the tailings and is not a concern.
7. EMERGENCY SPILLWAY/OUTLET STRUCTURE			
7.1 Surface condition	No spillway or outlet structure exists, only dewatering pump.		



APPENDIX B2

RECORD OF DAM INSPECTION

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
7.2 Signs of erosion			
7.3 Signs of movement (deformation)			
7.4 Cracks			
7.5 Settlement			
7.6 Presence of debris or blockage			
7.7 Closure mechanism operational			
7.8 Slope protection			
7.9 Instability of side slopes			
7.10 Other unusual conditions			
8. INSTRUMENTATION			
8.1 Piezometers	No		
8.2 Settlement cells	No		
8.3 Thermistors	Yes		See Section 4.0 of the report.
8.4 Settlement monuments	No		Construction drawings show settlement monuments to be installed on Stage 2 crest.
8.5 Seismograph	No		
8.6 Inclinometer	No		
8.7 Weirs and flow monitors	No		Per the design, a seepage collection and pump back system is built.
8.8 Data logger(s)	No		
8.9 Other			
9. DOCUMENTATION			
9.1 Operation, Maintenance and Surveillance (OMS) Plan			
9.1.1 OMS Plan exists	Yes		
9.1.2 OMS Plan reflects current dam conditions	Yes		
9.1.3 Date of last revision	March 2017		
9.2 Emergency Preparedness Plan (EPP)			
9.2.1 EPP exists	Yes		Included within the OMS and ERP plan.
9.2.2 EPP reflects current conditions	Yes		



APPENDIX B2 RECORD OF DAM INSPECTION

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
9.2.3 Date of last revision	June 2017		

10. NOTES :

Inspector's Signature		Date:	September 13, 2017
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<https://golderassociates.sharepoint.com/sites/16104g/preparation of deliverables/rev0/annexes inspection 2017/appendix b - tsf/b2 saddle dam 1/b2 - saddle dam 1 inspection 2017.docx>