CONSTRUCTION SUMMARY (AS-BUILT) REPORT FOR JETTY-CP1 AND JETTY-CP5 MELIADINE PROJECT, NUNAVUT

PRESENTED TO
Agnico Eagle Mines Ltd.

OCTOBER 2017
ISSUED FOR USE
TETRA TECH PROJECT NUMBER: 28920
AGNICO EAGLE DOCUMENT NUMBER: 6515-E-132-005-132-REP-012

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EXECUTIVE SUMMARY

Tetra Tech was retained by Agnico Eagle Mines Limited (Agnico Eagle) to prepare a construction summary (as-built) report for Jetty-CP1 and Jetty-CP5 at the Meliadine Gold Project, Nunavut. Tetra Tech previously prepared the construction drawings and specifications as well as the design report of Jetty-CP1 and CP5.

Tetra Tech was not involved in the construction of Jetty-CP1 and CP5. The information presented in this report was provided by Agnico Eagle.

The construction of Jetty-CP1 and Jetty-CP5 was completed in July 2017. The construction monitoring was managed by Agnico Eagle.

This report summarizes the construction as-built information for Jetty-CP1 and Jetty-CP5.

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APPENDICES

1.0 INTRODUCTION

Agnico Eagle Mines Limited (Agnico Eagle) is developing the Meliadine Gold Project (the project). The mine is located approximately 25 km north from Rankin Inlet, and 80 km southwest from Chesterfield Inlet in the Kivalliq Region of Nunavut. Tetra Tech previously prepared the construction drawings and specifications for the jetties in December 2016. Jetty-CP1 is located in pond H17. Jetty-CP5 is located in pond A54. As part of the scope of work, Agnico Eagle asked Tetra Tech to undertake the following tasks associated with Jetty-CP1 and Jetty-CP5:

- Conduct the detailed design of Jetty-CP1 and Jetty-CP5 to produce construction drawings and specifications; and
- Prepare the design and construction summary reports for Jetty-CP1 and Jetty-CP5, in accordance with the requirements in the Type “A” Water License (No. 2AM-MEL1631).

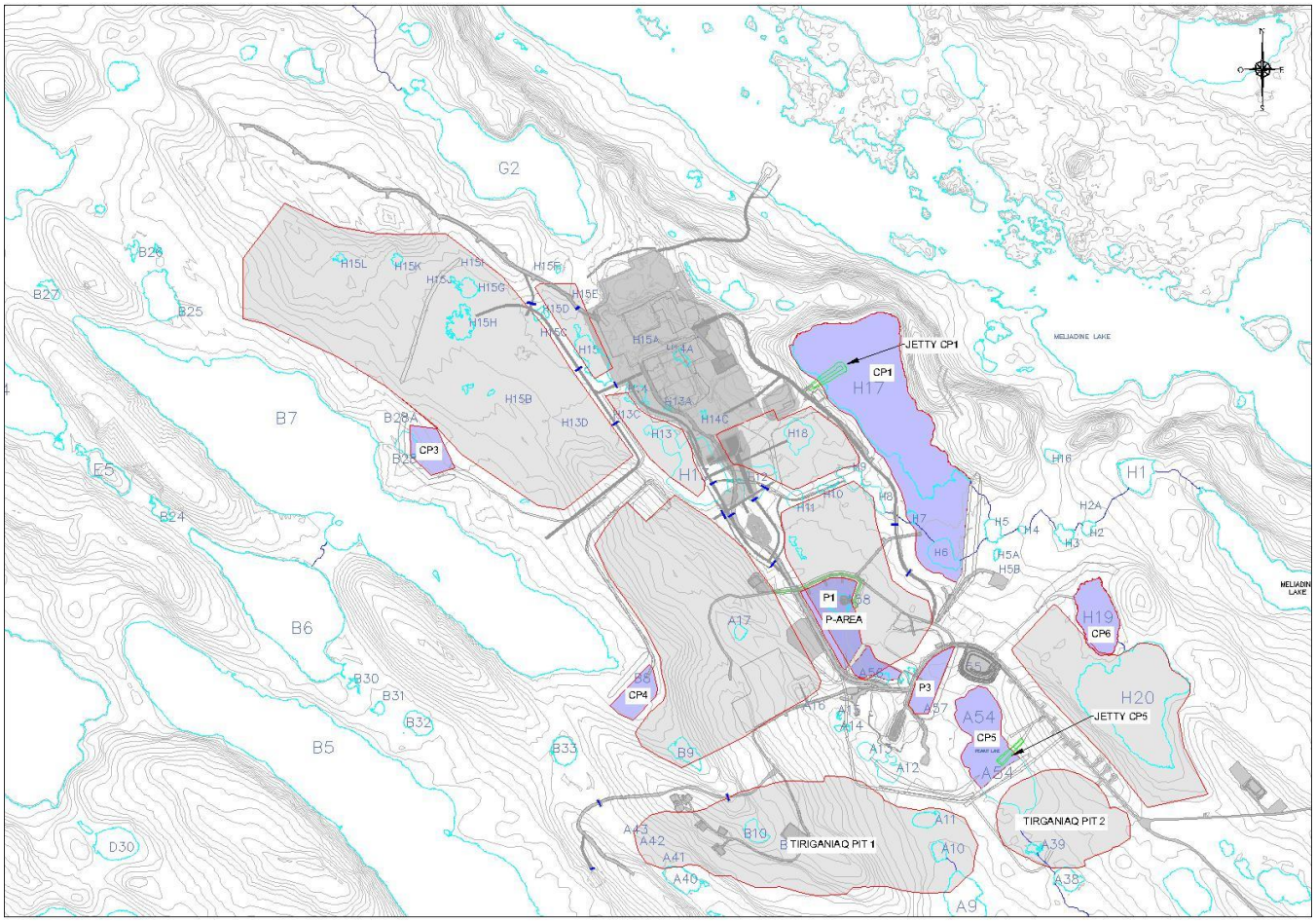
As required by the Water Licence A, this report summarizes the construction work of Jetty-CP1 and Jetty-CP5. Included in this report is:

- A summary of the characteristics of the jetties;
- Documentation on field decisions that deviate from original plans;
- As-built drawings of both jetties;
- A survey drawing conducted after the construction of Jetty-CP1 and Jetty-CP5;
- A construction summary of both jetties;
- Photographs of both jetties.

2.0 SUMMARY OF THE CONSTRUCTION

2.1 Site Location Plan

The figure below presents a site location plan for Jetty-CP1 and Jetty-CP5.



2.2 Construction Schedule

The construction of Jetty-CP1 and Jetty-CP5 were completed according to the following milestones:

Item	Jetty-CP1	Jetty-CP5
Site Preparation/Snow and Ice Clearing	February 5th to February 8th	February 7th to February 8th
Run of Mine Placement	February 6th to May 26th	February 11th to May 26th
30mm Minus Bedding Placement	April 29th to May 26th	April 29th to May 27th
HDPE Sump Installation	May 1st to May 3rd	May 1st to May 3rd
30mm Minus Topping Placement	June 28th to July 2nd	July 2nd to July 5th

2.3 Jetty Characteristics

The characteristics and estimated in-place quantities of the jetties are presented in the table below. For erosion control purposes, riprap was installed at the entry of the pipes.

Characteristics		
Item	**Jetty-CP1**	**Jetty-CP5**
Elevation of Jetty (m)	67.3	67.0
Length (m)	132.4	109.3
Width (avg.) (m)	11.6	11.6
Side Slope (avg.)	1V:2.3H	1V:3H

Material Quantities		
Item	**Jetty-CP1**	**Jetty-CP5**
30mm Minus, final grade (m^3)	361	284
30mm Minus, around sump pit (m^3)	90.5	57
30mm Minus, around pipes (m^3)	23.2	11
Rip-rap, at entry of pipes (m^3)	7	4
Run of Mine, 600mm Minus (m^3)	9079	2158
Total Fill Material Volume (m^3)	9560.7	2514

2.4 Drawings and Photographs

As-built drawings are presented in Appendix A.

A survey drawing conducted during the construction of Jetty-CP1 and CP5 can be found in Appendix B.

Photographs of the jetties after construction are shown in Appendix C and Appendix D.

3.0 DOCUMENTATION ON FIELD DECISIONS THAT DEVIATE FROM ORIGINAL PLANS

A construction summary was prepared for each jetty by the construction team. Their summaries are available in Appendix E.

The construction of Jetty-CP1 followed the design drawing, except for the following:

- The alignment of the jetty remained the same, while the length was decreased by 8m to coincide with the lowest point of the lake bottom (this on-site adjustment was required).
- The average side slope is 1V:2.5H while the plans specified a slope of 1V:3H

The geometry and characteristics of Jetty-CP1 were adjusted to site conditions. The table below presents the difference between the proposed work and the actual work.

Characteristics			
Item	**Proposed**	**Actual**	**Difference**
Elevation of Jetty (m)	67.3	67.3	0
Length (m)	140.6	132.4	- 8.2
Width (avg.) (m)	11	11.6	+ 0.6
Side Slope (avg.)	1V:3H	1V:2.3H	Steeper

Material Quantities			
Item	**Proposed**	**Actual**	**Difference**
30mm Minus, final grade (m^3)	325	361	+ 36
30mm Minus, around sump pit (m^3)	75	90.5	+ 15.5
30mm Minus, around pipes (m^3)	15.5	23.2	+ 7.7
Rip-rap, at entry of pipe (m^3)	4	7	+ 3
Run of Mine, 600mm Minus (m^3)	9421	9079	- 342
Total Fill Material Volume (m^3)	9840.5	9560.7	- 279.8

The construction of Jetty-CP5 followed the design drawing, except for the following:

- The alignment of the beginning of the jetty shifted by 4m, the length increased by 1.3m to 110.7m, and the jetty was rotated to the Northwest to coincide with a lower lake bed elevation and provide easy road access.

The geometry and characteristics of Jetty-CP5 were adjusted to site conditions. The table below presents the difference between the proposed work and the actual work.

Characteristics			
Item	**Proposed**	**Actual**	**Difference**
Elevation of Jetty (m)	67.0	67.0	0
Length (m)	109.3	110.7	+ 1.4
Width (avg.) (m)	11.0	11.6	+ 0.6
Side Slope (avg.)	1V:3H	1V:3H	-

Material Quantities			
Item	**Proposed**	**Actual**	**Difference**
30mm Minus, final grade (m^3)	256	284	+ 28
30mm Minus, around sump pit (m^3)	47	57	+ 10
30mm Minus, around pipes (m^3)	10	11	+ 1
Rip-rap, at entry of pipe (m^3)	4	4	0
Run of Mine, 600mm Minus (m^3)	2288	2158	- 130
Total Fill Material Volume (m^3)	2605	2514	- 91

4.0 LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of Agnico Eagle Mines Ltd. and their agents. Tetra Tech does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than Agnico Eagle Mines Ltd., or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this report is subject to the terms and conditions stated in Tetra Tech's Services Agreement.

5.0 CLOSURE

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech

PERMIT TO PRACTICE
TETRA TECH INDUSTRIES, INC.
O/A TETRA TECH
Signature
Date 2017-11-13
PERMIT NUMBER: P 1029
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
J.M.I.F. ALARIE
LICENSEE

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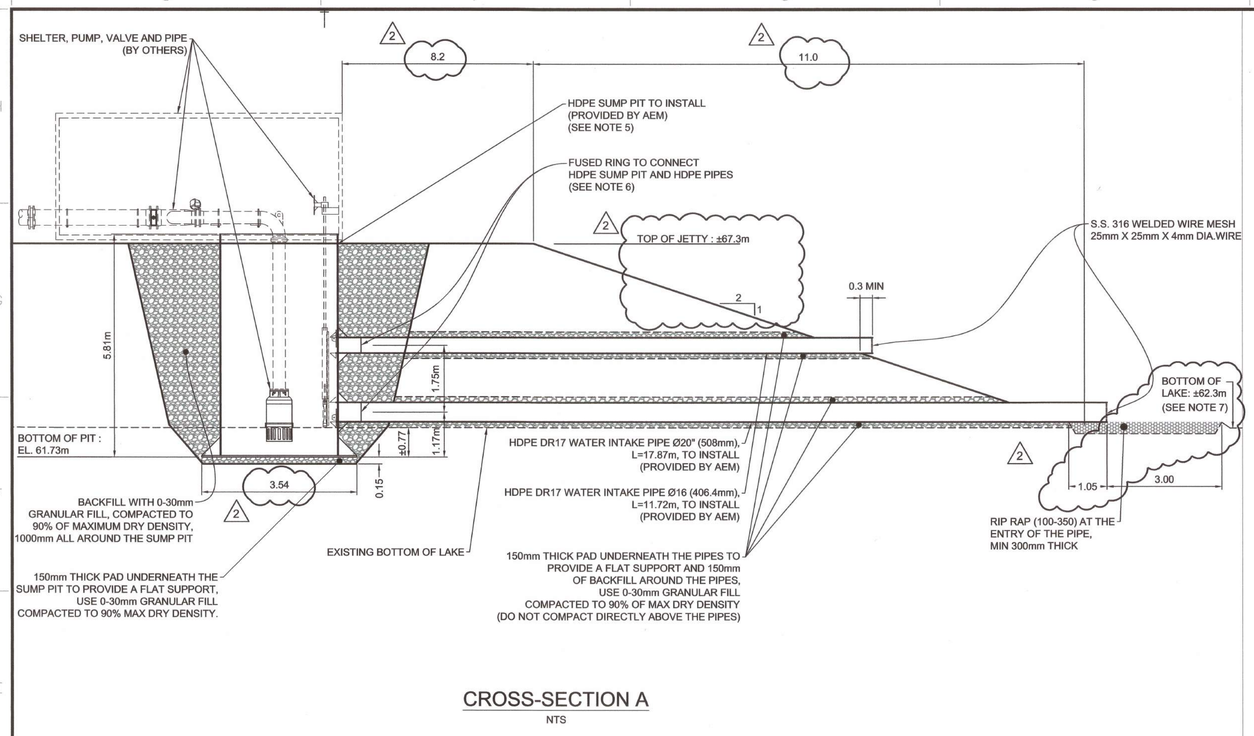
APPENDIX A

- As-Built Drawing 65-417-230-207
- As-Built Drawing 65-417-230-208

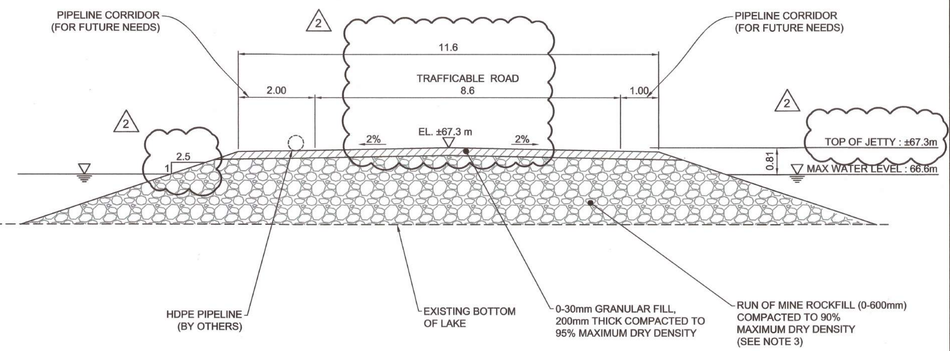
NO. DESSIN DRAWING NO. 65-417-230-207-208_R2

FORMAT ARCHD



CROSS-SECTION A

NTS



CROSS-SECTION B

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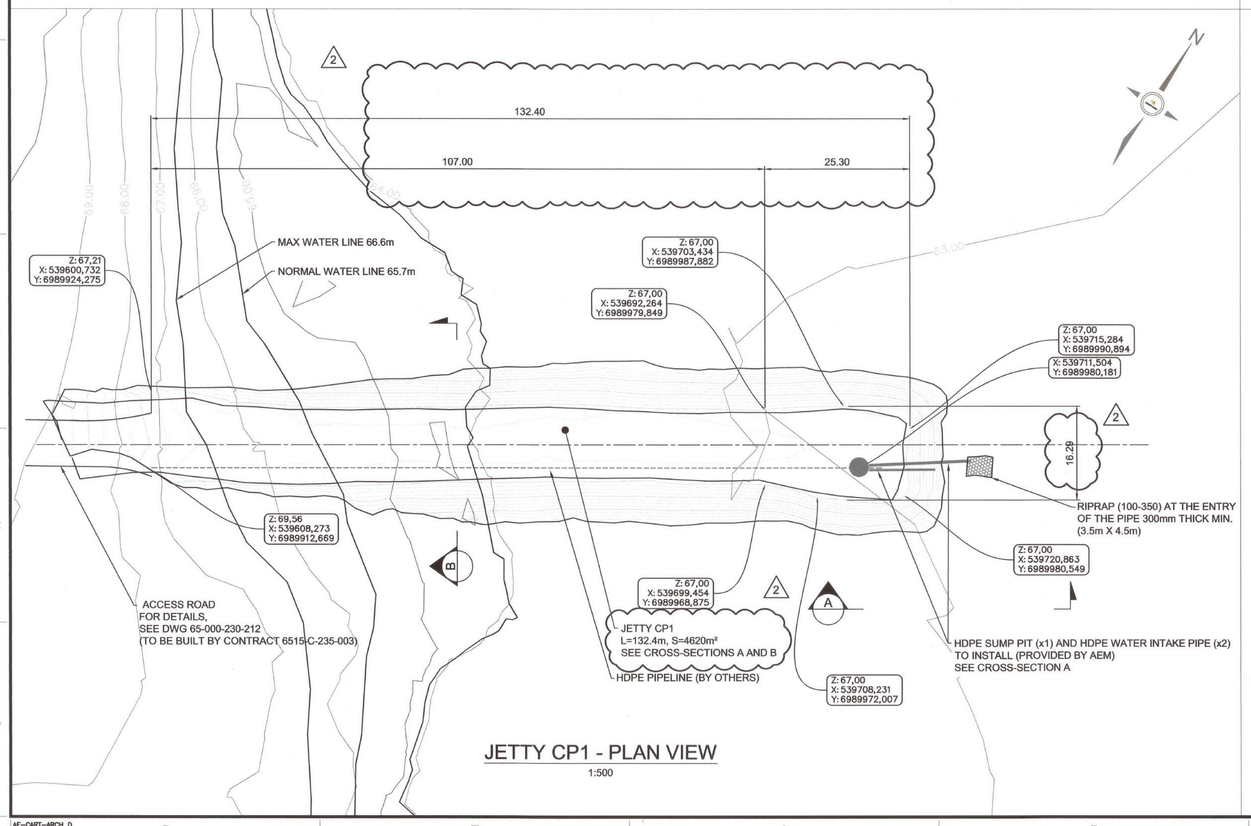
NOTES:

- SAFETY BERMS MADE OF BOULDERS OR CONCRETE BLOCKS COULD BE INSTALLED AT THE EDGE OF THE JETTY.



JETTY CP1 - PLAN VIEW

1:500

SUMMARY OF IN-PLACE QUANTITIES

Construction - Jetty CP-1

Aggregate Material	Thickness (mm)	Estimated (m^3)	Actual (m^3)
Granular fill, 0-30mm (final grade)	200	375	361
0-30mm (around sump pit)	1000	75	90.5
0-30mm (around pipes)	150	15.5	23.2
RIP RAP, 100-350mm (at the entry of the pipe)	300	4	7
ROM, 0-600mm	±2060	9421	9079
TOTAL	-	9890.5	9560.7

NOTES:

- THE GIVEN MATERIAL QUANTITIES ARE BARE-BONE, IN-PLACE QUANTITIES AFTER PLACEMENT AND COMPACTION.
- THE QUANTITIES DO NOT INCLUDE ANY EXTRAS TO COMPENSATE FOR POTENTIAL MATERIAL WASTED, MATERIAL LOSS INTO THE TUNDRA, AND ADDITIONAL MATERIAL REQUIRED DUE TO FOUNDATION SETTLEMENT DURING CONSTRUCTION.
- THE QUANTITIES INDICATED ARE AFTER COMPACTION. FOR MATERIAL PREPARATION, EXTRA QUANTITIES SHOULD BE ADDED TO CONSIDER THE BULKING FACTOR.

LEGEND

Z: 73,40 X: 539565,397 Y: 6989056,827 — FINISHED GRADE ELEVATIONS AND COORDINATES

TEL QUE CONSTRUIT AS BUILT
AGNICO EAGLE DATE : 2017-10-30

PLAN CLÉ
KEY PLAN

TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

GENERAL NOTES:

1. EXISTING GROUND DTM PROVIDED BY AEM.
2. ALL UNITS ARE IN METERS.
3. GRANULAR MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 300mm AND COMPACTED AS INDICATED. BORROW PIT OR RUN OF MINE MATERIAL SHALL BE PLACED WITH LIFTS NOT EXCEEDING 900mm AND COMPACTED TO A MIN. OF 90% OF MAXIMUM DRY DENSITY.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY SECURITY AND SLOPES OF ALL EXCAVATIONS, BACKFILL AND SHALL ABIDE BY ALL RELEVANT STANDARDS AND REGULATIONS. THE STABILITY, DEWATERING AND MAINTENANCE OF ALL EXCAVATIONS OR BACKFILL SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
5. THE SUMP PIT AND HDPE PIPES ARE PROVIDED BY AEM AND ARE STORED ON SITE (CUTTING / FUSING TO THE SPECIFIED PIPE LENGTH WILL BE NECESSARY). SPEC DRAWINGS ARE AVAILABLE AND SHALL BE CONSULTED FOR DIMENSIONS CHECKS. BLIND FLANGES ARE INSTALLED ON THE ENTRY OF THE PIPES INSIDE THE SUMP PIT.
6. THE CONNECTION BETWEEN THE SUMP PIT AND THE HDPE WATER INTAKE PIPE SHALL BE A FUSED RING. RESPECT APPLICABLE STANDARDS TO ENSURE THE QUALITY OF THE RING.
7. THE BOTTOM OF LAKE ELEVATION IS APPROXIMATE AND SHALL BE CONFIRMED ON SITE. THE FINAL ELEVATION OF THE PIPES AND SUMP PIT WILL BE DETERMINED BY THE 150mm REQUIREMENT SPACE BETWEEN THE BOTTOM OF THE LOWER PIPE AND THE LAKE BED.
8. THE CONSTRUCTION METHODOLOGY SHALL BE DEFINED BY THE CONTRACTOR. WORKS SHALL BE DONE WHEN THE WATER LEVEL IS VERY LOW AND/OR ICED. THE JETTY SHALL BE LEVELLED PROGRESSIVELY IN ORDER TO INSTALL THE SUMP PIT WITH APPROPRIATE EQUIPMENT AND MATERIAL.
9. AN AS-BUILT DRAWING SHALL BE PROVIDED AFTER CONSTRUCTION.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
GENERAL CIVIL WORKS 2016	65-000-230-212
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
2	2017-10-30	ISSUED AS-BUILT	C.M.	J.A.	
1	2016-12-01	ISSUED FOR CONSTRUCTION	D.R.	J.A.	
0	2016-09-19	ISSUED FOR CONSTRUCTION	JG.M	J.A.	
A	2016-06-23	ISSUED FOR COMMENTS	D.R.	J.A.	

REVISIONS

PERMIT TO PRACTICE TETRA TECH INDUSTRIES, INC. O/A TETRA TECH
Signature
Date 2017.11.08
PERMIT NUMBER: P 1029
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER J.M.I.F. ALARIE LICENSEE
2017.10.30

TITRE / TITLE

AGNICO-EAGLE – MELIADINE DIVISION
417 – JETTIES
230-GENERAL EARTH WORKS
JETTY CP1
PLAN / CROSS-SECTIONS

DESSINÉ PAR DRAWN BY	DANIEL ROSALES	DATE 2016-06-16
VERIFIÉ PAR CHECKED BY	SOLÈNE MOREAU	2016-06-16
APPROUVÉ PAR APPROVED BY	JOSÉE ALARIE	2016-09-08
ÉCHELLE SCALE	AS INDICATED	DATE 2016-06-16
NO. DESSIN DRAWING NO.	65-417-230-207	
NO. PROJET PROJECT NO.	6515/28920	REVISION 2
		FEUILLE / SHT 1 / 1

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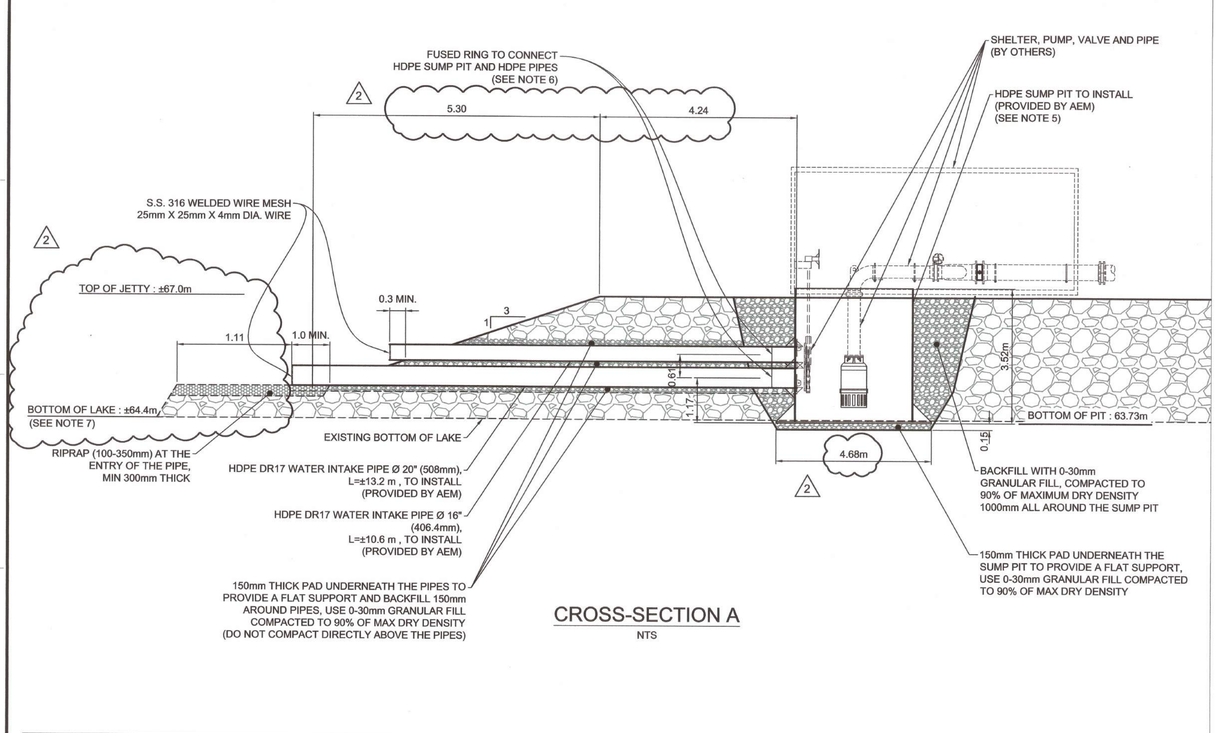
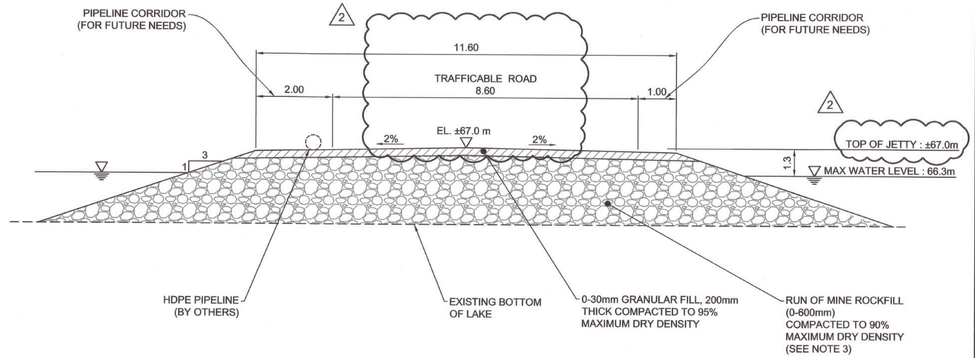


CROSS-SECTION A
NTS



CROSS-SECTION B
NTS

NOTES:

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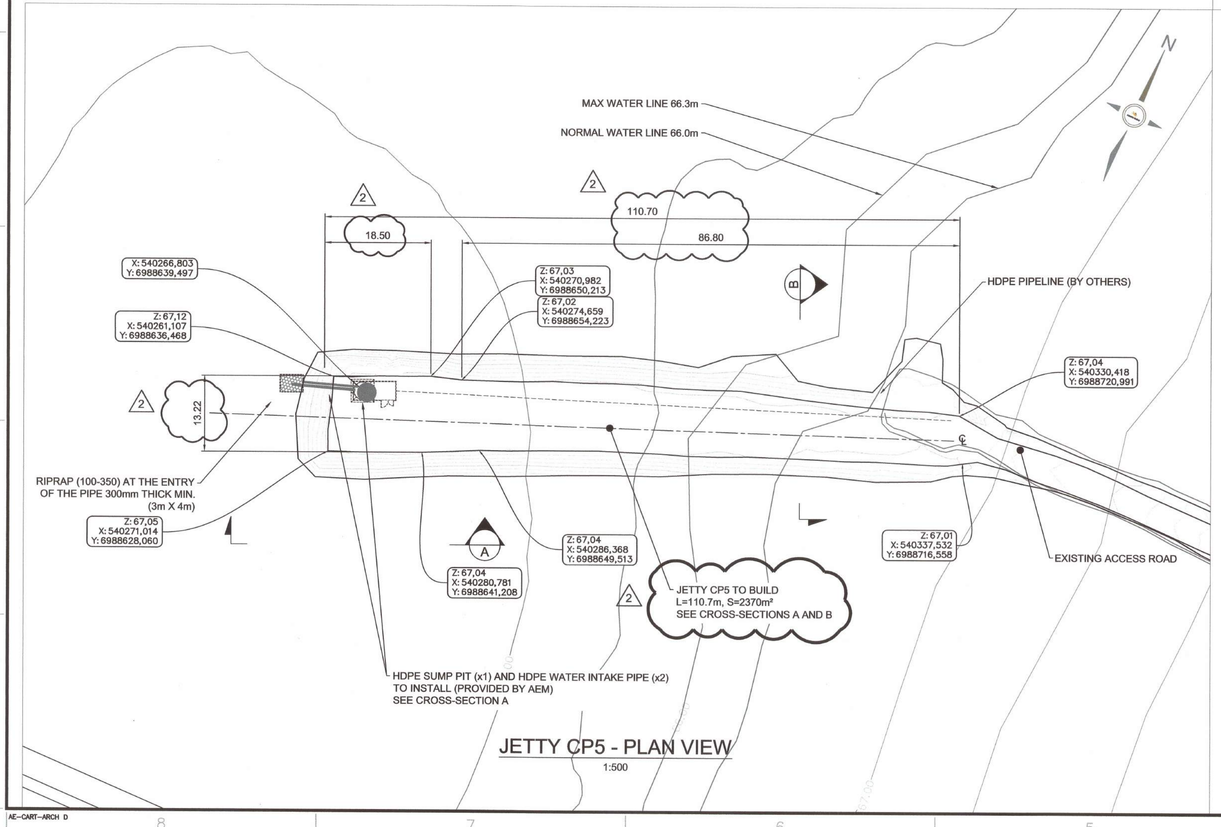

JETTY CP5 - PLAN VIEW
1:500

ESTIMATED IN-PLACE QUANTITIES
Construction - Jetty CP-5

Aggregate Material	Thickness (mm)	Estimated (m^3)	Actual (m^3)
Granular fill, 0-30mm (final grade)	200	256	284
0-30mm (around sump pit)	1000	47	57
0-30mm (around pipes)	150	10	11
RIP RAP, 100-350mm (at the entry of the pipe)	300	4	4
ROM, 0-600mm	±930	2288	2158
TOTAL	-	2605	2514

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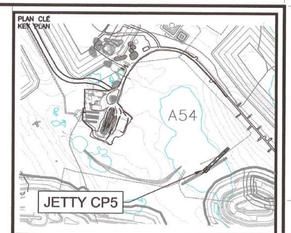
Z: 73,40 X: 539565,397 Y: 6989056,827 — FINISHED GRADE ELEVATIONS AND COORDINATES

TEL QUE CONSTRUIT AS BUILT
AGNICO EAGLE DATE : 2017-10-30

PLAN CLÉ KEY PLAN



TETRA TECH

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DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
GENERAL CIVIL WORKS 2016	65-000-230-212

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
2	2017-10-30	ISSUED AS-BUILT	C.M.	J.A.	
1	2016-12-01	ISSUED FOR CONSTRUCTION	D.R.	J.A.	
0	2016-09-19	ISSUED FOR CONSTRUCTION	JG.M	J.A	
A	2016-08-23	ISSUED FOR COMMENTS	D.R.	J.A.	

REVISIONS

PERMIT TO PRACTICE TETRA TECH INDUSTRIES, INC. D/A TETRA TECH
Signature
Date 2017.11.10
PERMIT NUMBER: P 1029
NTNU Association of Professional Engineers and Geoscientists

PROFESSIONAL ENGINEER J.M.I.F. ALARIE LICENSEE

2017-10-30

TITRE / TITLE
AGNICO-EAGLE - MELIADINE DIVISION
417- JETTIES
230-GENERAL EARTH WORKS
JETTY CP5
PLAN / CROSS-SECTIONS

DESSINÉ PAR DRAWN BY	DANIEL ROSALES	DATE 2016-06-16
VERIFIÉ PAR CHECKED BY	SOLÈNE MOREAU	2016-06-16
APPROUVÉ PAR APPROVED BY	JOSÉE ALARIE	2016-09-08
ÉCHELLE SCALE	AS INDICATED	DATE 2016-06-16

NO. DESSIN DRAWING NO. 65-417-230-208

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515/28920	2	1 / 1

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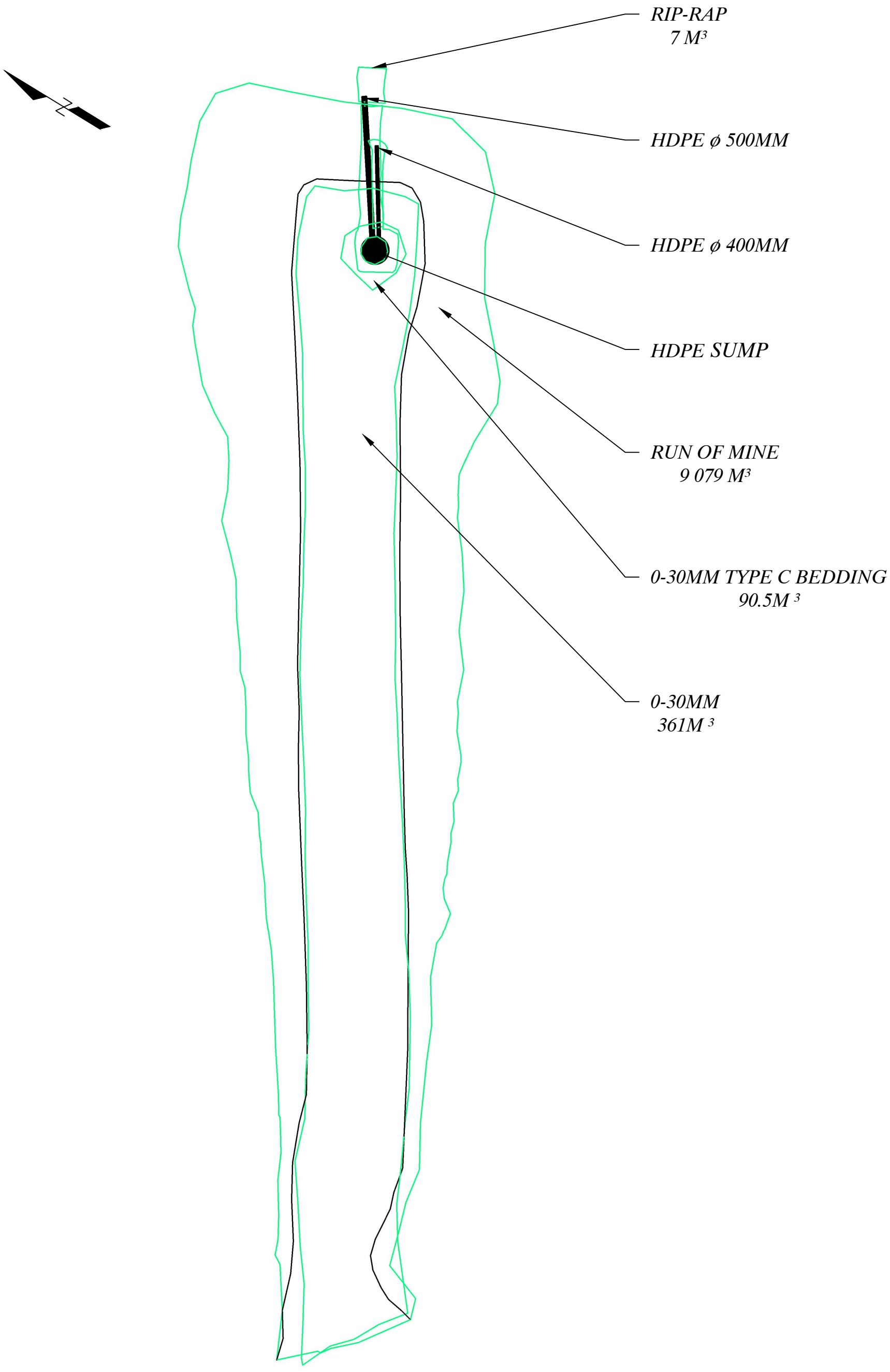
APPENDIX B

- As-Built Jetty-CP1 417-QTY-20170704
- As-Built Jetty-CP5 417-QT-20170718-02



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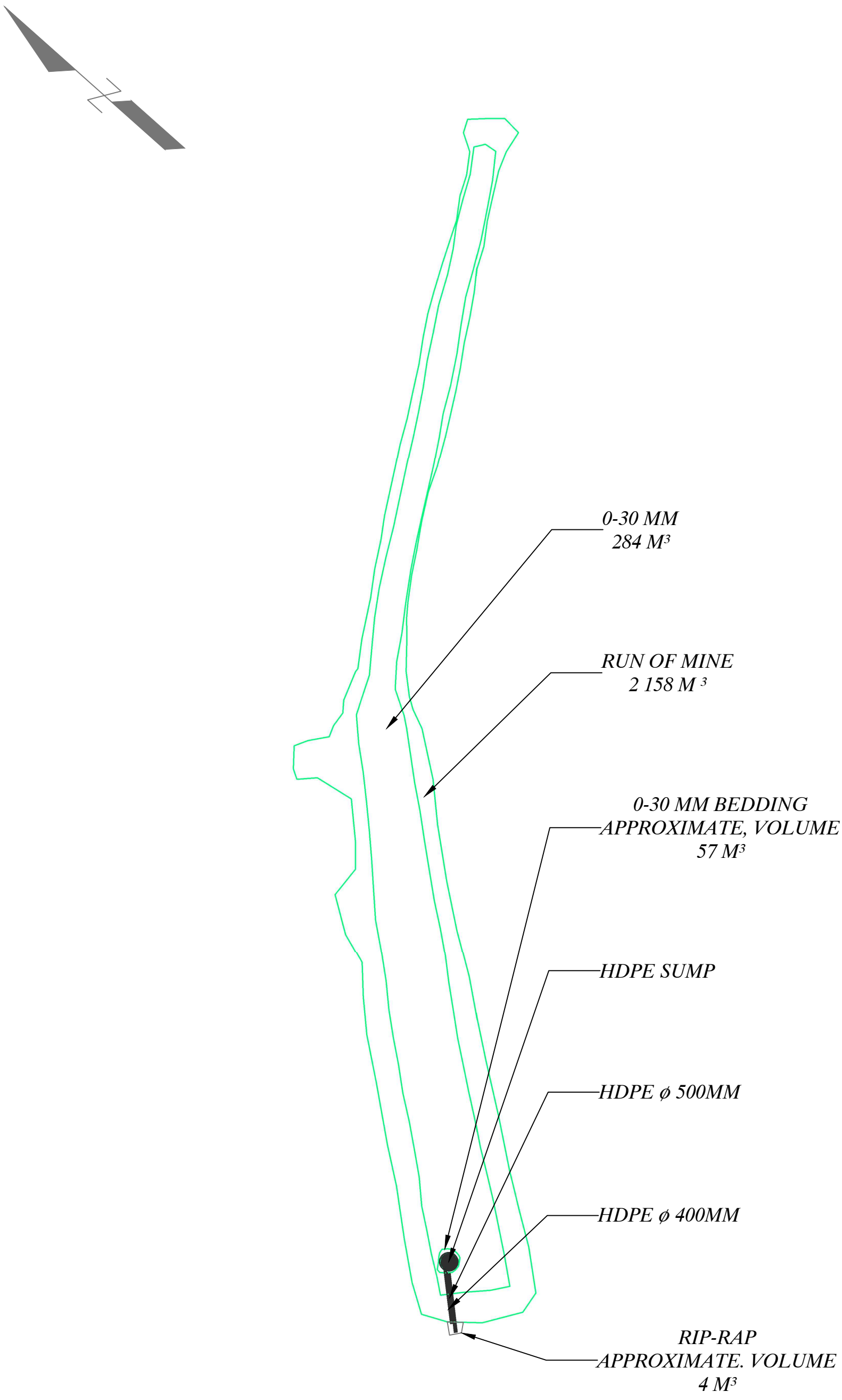
HAMELARPENTAGE

AGNICO EAGLE	WORK EXECUTION DATE : 2017-07-04	EMISSION DATE : 2017-10-22
COORD. SYSTEME: UTM15 NAD83	AS BUILT JETTY CP1	DRAWN BY: R.CLOUATRE
SCALE: 1:500	PLAN NO.: 417-QTY-20170704	APPROVED BY: Hamel arpentage



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	COORD. SYSTEME: UTM15 NAD83	AS BUILT JETTY CP5	DRAWN BY: R.CLOUATRE
	SCALE: 1:750	PLAN NO.: 417-QT-20170718-02	APPROVED BY: Hamel arpentage

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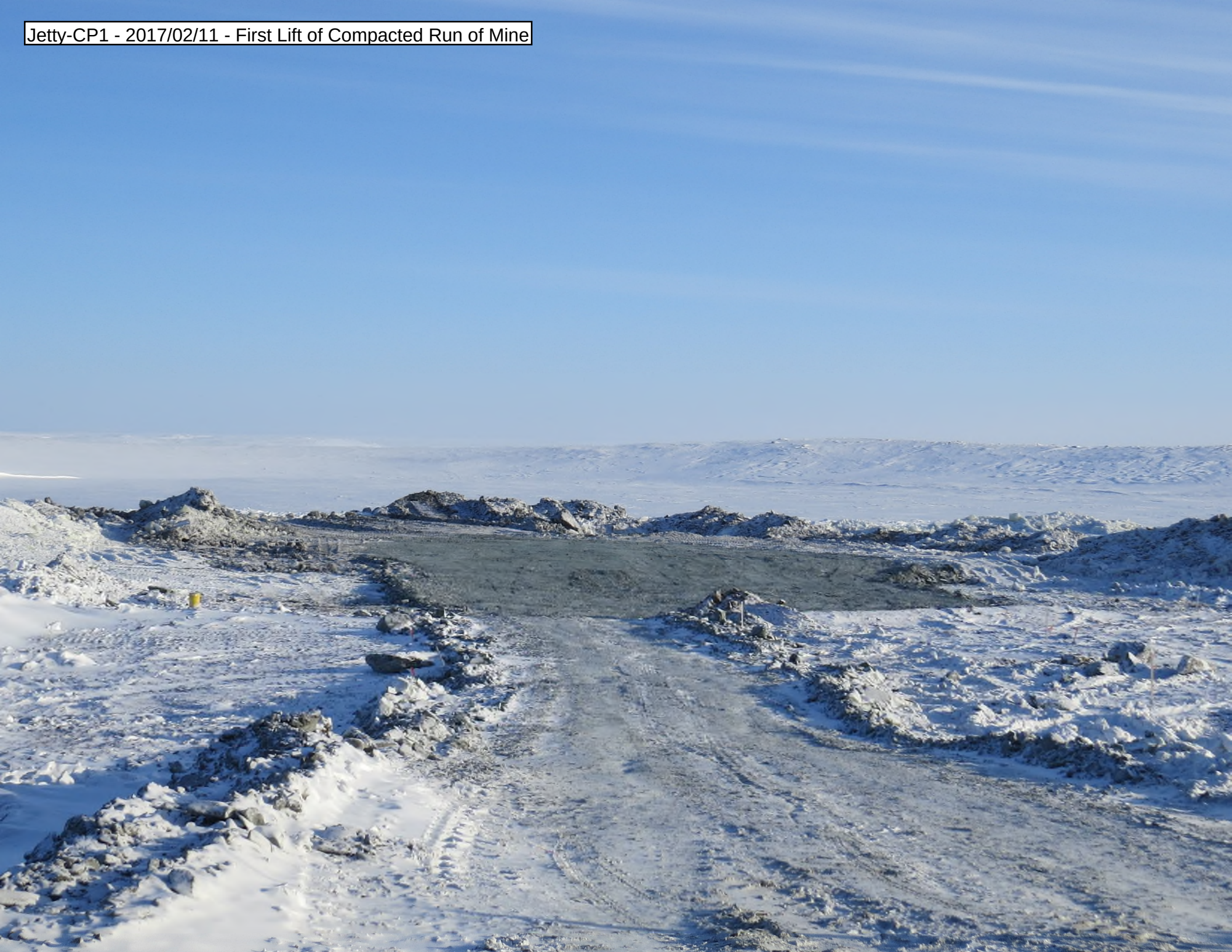
APPENDIX C

- Photographs of Jetty-CP1


Jetty-CP1 - 2017/02/11 - First Lift of Compacted Run of Mine


Jetty-CP1 - 2017/04/27 - Excavated Sump Footprint


Jetty-CP1 - 2017/05/01 - Placed HDPE Sump


Jetty-CP1 - 2017/05/04 - First Pipe Covered


Jetty-CP1 - 2017/05/04 - Second Pipe Installation


Jetty-CP1 - 2017/05/28 - Completed Run of Mine Bedding


Jetty-CP1 - 2017/07/05 - Completion

APPENDIX D

- Photographs of Jetty-CP5


Jetty-CP5 - 2017/05/01 - Placed HDPE Sump
SOLENO


Jetty-CP5 - 2017/05/04 - First Pipe Installed


Jetty-CP5 - 2017/05/06 - Second Pipe Installation


Jetty-CP5 - 2017/05/29 - Completed Run of Mine Bedding


Jetty-CP5 - 2017/07/05 - Completion

APPENDIX E

- Construction Summary – Jetty 1
- Construction Summary – Jetty 5

Construction Summary – Jetty 1

- Civil construction completed primarily by MTKSL
- Fusion completed by Semi-Blais
- Construction conducted simultaneously with D-CP1 construction (during down time at the dike)
- No formal QA/QC monitoring was conducted although Dike QA/QC did observe material placement/compaction and equipment tracking
- Average Type C gradation specifications provided
- No particle size analysis conducted on 30 mm minus crushed ROM used as bedding/topping material. However, sieves available from later productions of 30 mm minus, using the same crusher, same specifications and same feed source material

Design Deviations:

- Length of jetty was shortened 10 m from design to coincide with the lowest part of the lake bottom (RFI 170129)

1. **Site Preparation/Snow and Ice Clearing (February 5 to February 8)**

- Snow cleared from footprint of access road prior to ROM placement
- Ice/Snow pushed from Lake H17 footprint and piled around Jetty footprint (snow/ice berms)

2. **ROM Placement (February 6 to May 26)**

- Run-of-mine (ROM) from Underground Operations (600 mm minus) placed in controlled lifts (approximately 1.0 m lift heights) and compacted prior to placement of the next lift
- The first lift of ROM was placed throughout the entire jetty footprint – sump and pipe footprint were excavated/trenched through the ROM (excavation of sump/pipe footprint completed by Inukshuk)
- Side slopes were shaped to 3:1 as per RFI 170129

3. **30 mm Minus Bedding Placement (April 29 to May 26)**

- Placed in controlled lifts and compacted prior to placement of next lift
- Under sump pit and intake pipe 30 mm minus crushed ROM placed (by AEM)
- Type C (20 mm minus esker material) was substituted for a portion of the bedding material

4. **HDPE Sump Installation (May 1 to May 3)**

- Lake bottom excavated prior to placement of 30 mm minus bedding
- 200 mm minus crushed ROM placed for rip rap at end of pipe

5. **30 mm Minus Topping Placement (June 28 to July 2)**

- Topping consisted of 30 mm minus crushed ROM
- Placed in controlled lifts and compacted prior to placement of next lift

Equipment Used for Construction:

- CAT D9 Bulldozer
- CAT D8 Bulldozer
- CAT D6 Bulldozer
- CAT 330L Excavator
- CAT 345C Excavator
- CAT 336E Excavator
- CAT 320 Excavator
- CAT 980 Loader
- CAT 988 Loader
- CAT 740 articulated haul trucks
- CAT 773 haul trucks
- CAT CS56 10-ton vibratory drum compactor
- HAMM 5-ton vibratory drum compactor
- Various small hand-pushed compactors

Construction Summary – Jetty 5

- Civil construction completed primarily by MTKSL
- Fusion completed by Semi-Blais
- Construction conducted simultaneously with D-CP5 construction (during down time at the dike)
- No formal QA/QC monitoring was conducted although Dike QA/QC did observe material placement/compaction and equipment tracking
- No particle size analysis conducted on 30 mm minus crushed ROM used as bedding/topping material. However, sieves available from later productions of 30 mm minus, using the same crusher, same specifications and same feed source material

Design Deviations:

- Alignment of jetty was rotated to the northwest so that the as-built sump position is approximately 17.5 m above original design – change in alignment was to coincide with a lower lakebed elevation and to provide easy road access by using an existing berm built in 2016

1. **Site Preparation/Snow and Ice Clearing (February 7 to February 8)**

- Snow cleared from footprint of access road prior to ROM placement
- Ice/Snow pushed from Lake A54 footprint and piled around Jetty footprint (snow/ice berms)

2. **ROM Placement (February 11 to May 26)**

- Run-of-mine (ROM) from Underground Operations (600 mm minus) placed in controlled lifts (approximately 1.0 m lift heights) and compacted prior to placement of the next lift
- The first lift of ROM was placed throughout the entire jetty footprint – sump and pipe footprint were excavated/trenched through the ROM
- Side slopes were shaped to 3:1 as per RFI 170129

3. **30 mm Minus Bedding Placement (April 29 to May 27)**

- Placed in controlled lifts and compacted prior to placement of next lift

4. **HDPE Sump Installation (May 1 to May 3)**

- Sump was placed in test pit location previously excavated therefore no additional lake bottom excavated prior to placement of 30 mm minus bedding
- 200 mm minus crushed ROM placed for rip rap at end of pipe

5. **30 mm Minus Topping Placement (July 2 to July 5)**

- Topping consisted of 30 mm minus crushed ROM
- Placed in controlled lifts and compacted prior to placement of next lift

Equipment Used for Construction:

- CAT D9 Bulldozer
- CAT D8 Bulldozer
- CAT D6 Bulldozer
- CAT 330L Excavator
- CAT 345B Excavator
- CAT 336E Excavator
- CAT 980 Loader
- CAT 988 Loader
- CAT 740 articulated haul trucks
- CAT 773 haul trucks
- CAT CS56 10-ton vibratory drum compactor
- HAMM 5-ton vibratory drum compactor
- Various small hand-pushed compactors