CONSTRUCTION SUMMARY REPORT:
Madrid North CWP Sump 1

AGNICO EAGLE
HOPE BAY

Type “A” Water Licence 2AM-DOH1335
Hope Bay Phase 2 Project
Agnico Eagle Mines Ltd.
June 6, 2022

Prepared For:

Nunavut Water Board

Ali Shaikh, Technical Advisor

Prepared By:

Agnico Eagle Mines

Hope Bay Mine

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1. INTRODUCTION

On March 24, 2022, Agnico Eagle Mines Ltd. ("**Agnico**") provided a 'Notice of Modification' to the Nunavut Water Board ("**NWB**") regarding the planned installation of a shallow groundwater interceptor sump (Sump 1) in the Madrid North Contact Water Pond area (Figure 1). The notification was submitted in compliance with Part G, Item 1 of Water Licence 2AM-DOH1335. On May 18, 2022, the NWB acknowledged the 'Notice of Modification' as satisfying Licence requirements.

The construction of Sump 1 was completed on May 24, 2022. This Construction Summary Report ("**CSR**") is being provided to the NWB within ninety (90) day of completion, as required under Part D Item 11 of Water Licence 2AM-DOH1335. The CSR documents field decisions, supporting data and mitigation measures employed as a result of the installation of Sump 1, as required under Schedule D, Item 2 of the NWB Water Licence 2AM-DOH1335.

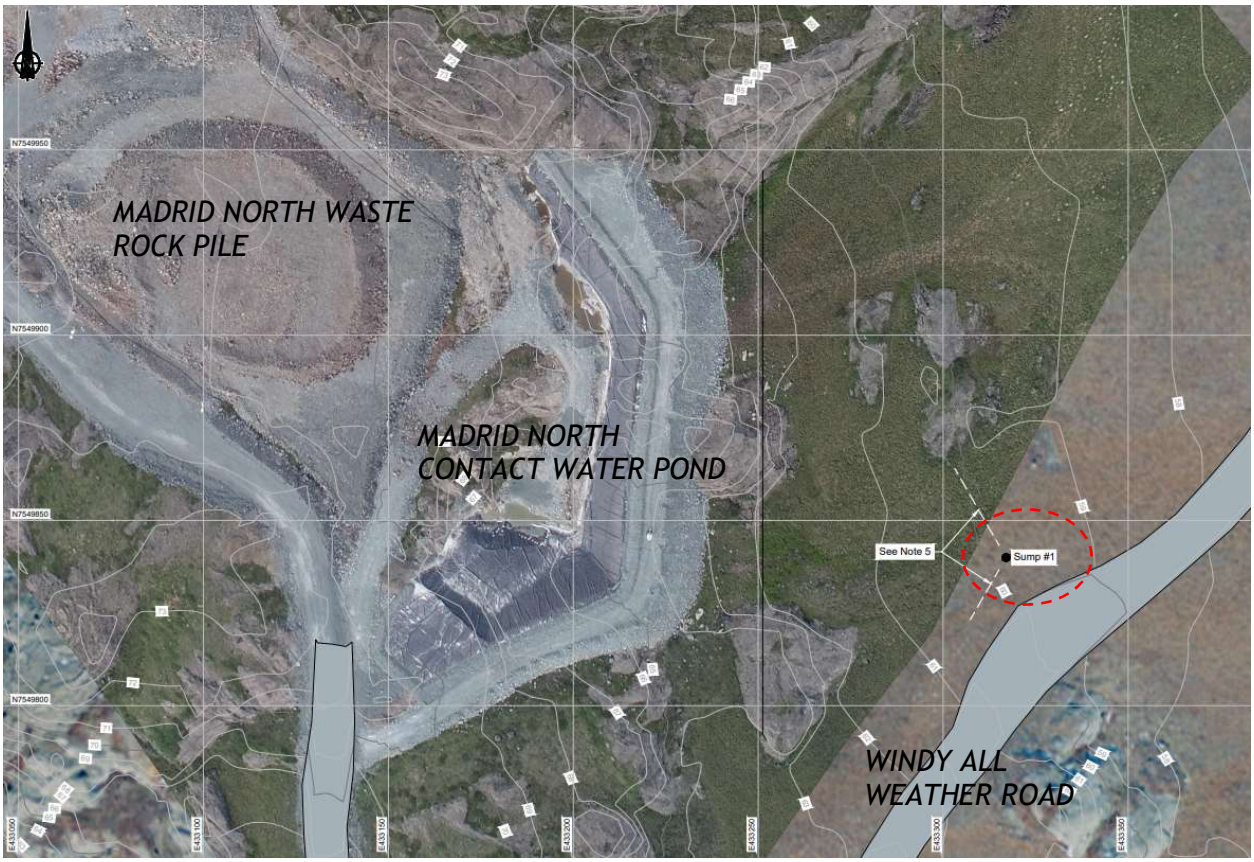

Figure 1. Location of Sump 1

2. WATER LICENSE CONDITIONS

The following sections are aligned with the CSR requirements as per Schedule D, Item 2 of Water Licence 2AM-DOH1335.

2.1. SCHEDULE D PART 2A – FINAL DESIGN AND CONSTRUCTION DRAWINGS

Issued for Construction Sump 1 Design Drawings were submitted to NWB on March 24, 2022, as part of the notification prior to commencement of work, as required under Water License 2AM – DOH1335 Part G Item 1. The Issued for Construction Sump 1 Design Drawings are provided in Appendix A.

2.2. SCHEDULE D PART 2E – GEOCHEMICAL ANALYSIS OF WASTE ROCKS AND FILLS

Crushed material sourced from Quarry 2 was used as bedding material to backfill the void space between the tundra and the sump. Quarry material is determined to be geochemically stable (non-acid generating or metal leaching) as per the Hope Bay Project Quarry Management (March 2022). The exact location and quantity used are documented in the as-built drawings (Appendix B).

Table 1. Material Source to Destination Table

Source	Destination
Quarry 2	Sump Bedding Material
Quarry 2	Non-acid Generating Run of Quarry (ROQ) Material

2.3. SCHEDULE D PART 2F – PHOTOGRAPHIC RECORDS

Photographic records, before, during, and after construction are provided below. A brief narrative for each photograph is included describing the activity being performed.

Photo 1 – Pad constructed with non-acid generating ROQ for equipment access from Windy Road to the sump location

Photo 2 – Excavation completed, and rigid installation installed to the base of the excavation. Excavation side slopes were carefully cut to the required dimensions with an excavator equipped with a ditching bucket.

Photo 3 – Sump and non-woven geotextile installed. Backfill with bedding material in progress. The liner bedding material was placed in lifts.

Photo 4 – Backfill with bedding material is complete.

Photo 5 – Sump installation complete. Lid placed on top of sump to remove hazard to humans and wildlife. Coconut matting placed over bedding material.

2.4. SCHEDULE D PART 2G – AS-BUILT DRAWINGS

Certified as-built drawings stamped by the responsible Professional Engineer are provided in Appendix B.

2.5. SCHEDULE D PART 2H – FIELD DECISIONS AND DESIGN CHANGES

In general, Sump 1 was built to the design requirements as confirmed by the as-built drawings. Deviations from the design were completed to adapt the design to encountered field and operational conditions.

Hand excavation techniques were considered for this installation as advised by design engineer (DE), although they were not practical in this application, due to permafrost. An excavator equipped with a ditching bucket was used to carefully cut the overburden to the required dimensions, and eliminate the chances of over-excavation.

2.6. SCHEDULE D PART 2I – MITIGATION MEASURES

The following mitigation measures were implemented during construction to minimise harm to the environment:

- A pad was constructed with non-acid generating ROQ for equipment access from Windy Road to the sump location to avoid damage to the tundra.
- All excavated overburden from the construction area was removed and disposed of on the overburden stockpile.
- Coconut matting was installed over the bedding material following the completion of backfill to prevent the migration of material from the work site.

The effectiveness of the mitigation measures is discussed in Section 2.7.

2.7. SCHEDULE D PART 2J – MONITORING ACTIVITIES

Visual monitoring of the construction area was conducted prior to, during, and upon completion of the construction activity. The equipment pad and excavation method were effective and no damage to the tundra was observed. Monitoring will continue to be undertaken in compliance with Part D of the Water Licence.

Visual monitoring will be conducted during the summer months to determine if the sump is performing as per its design and if any adverse impacts to the tundra can be observed.

2.8. SCHEDULE D PART 2K – BLAST VIBRATION MONITORING

Blasting was not required as part of the Sump 1 installation.

2.9. SCHEDULE D PART 2L - MONITORING EROSION PROTECTION MEASURES

Erosion protection is discussed in Section 2.6.

2.10. SCHEDULE D PART 2M – MONITORING OF WATER USE FROM DUST SUPPRESION

Dust suppression was not required as part of the Sump 1 installation.

2.11. SCHEDULE D PART 2N – MONITORING OF CONTRACTOR'S GROUND IMPACTS

Prior to commencing construction activities, safety and environmental hazards were identified and adequate controls were in place to mitigate risk to workers and the environment. As part of this a step-by-step activity sequence was prepared prior to commencing work. The critical items identified to monitor for ground impacts are listed in Table 2:

Table 2. Critical Items to Monitor Contractor's Impact

Item	Critical Items Actions
1. Prevent damage to tundra in the area	• Construction of a rockfill pad for equipment access to work area
2. Prevent over-excavation of sump	• Use the appropriate equipment for the excavation (trenching bucket) • Excavation to be done by qualified operator

Monitoring of the construction area was conducted throughout the construction activity. No impacts to the tundra were observed.

2.12. SCHEDULE D PART 2P – SUMMARY OF QUARRY ROCK SEEPAGE

The area surrounding Sump 1 will be included in the 2022 seepage survey. If seepage is observed the results will be included in the 2022 Waste Rock, Quarry and Tailings Monitoring Report, Doris and Madrid North Mines.

REFERENCES

Agnico Eagle Mines Ltd., 2022. Hope Bay Project Quarry Management Plan. March 2022.

APPENDIX A
Issued for Construction Design Drawings

Engineering Drawings for the Madrid Contact Water Pond Sump #1

Hope Bay, Nunavut, Canada

Active Drawing Status

Drawing Number	Drawing Title	Issue	Date	Revision
MCWP-Sump-100	General Arrangements	Issued for Construction	2022/03/22	0
MCWP-Sump-200	Typical Sump Details	Issued for Construction	2022/03/22	0

AGNICO EAGLE

REGISTERED PROFESSIONAL ENGINEERS
J.B. KURYLO
LICENSEE
NT/NU
22/03/24

srk consulting

LEGEND

- ● Proposed Sump Location

NOTES

1. Contours are shown at 1.0 m intervals.
2. All units are in meters unless otherwise specified.
3. Approximate sump location is as follows: Sump #1: 433317mE, 7549840mN.
4. Sump center location shall be field fit to locate it at the local low point where flowing water has been observed. Further refinement of the final location may be required based on field conditions.
5. Based on field observations of surface flow paths, some small scale redirection of flow may be required to best direct flow towards the installed sump location. This small scale redirection may results either from careful compression of the top tundra matt or using fill material cross-cutting the topography.

REFERENCES

NAD83 UTM Zone 13.
Drone imagery shown collected in August 2020, data provided by client.
Contours shown are based on pre-mining topography. Data provided by client.

0m 10 20 30 40

DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

NO.	DESCRIPTION	CHK'D	APP'D	DATE
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NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	PDL	JBK	2022/03/22
A	Issued for Review	PDL	JBK	2022/03/11

REVISIONS

PROFESSIONAL ENGINEERS STAMP

srk consulting

DESIGN:	DRAWN:	REVIEWED:
JBK	TAH	JBK
CHECKED:	APPROVED:	DATE:
PL/ NDH/ AM	JBK	2022/03/22

FILE NAME: Madrid CWP Sump - GA.dwg

AGNICO EAGLE

Hope Bay

SRK JOB NO.: 1CT022.071

Madrid CWP Sump #1

DRAWING TITLE: General Arrangement

DRAWING NO. MCWP-Sump-100

REVISION NO. 0

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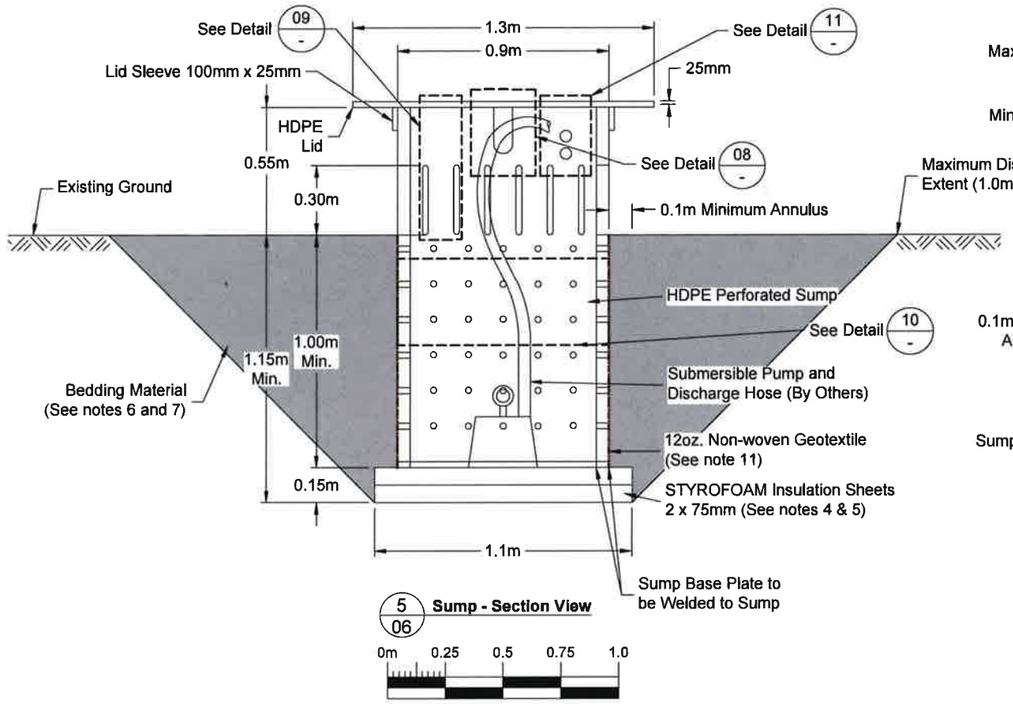
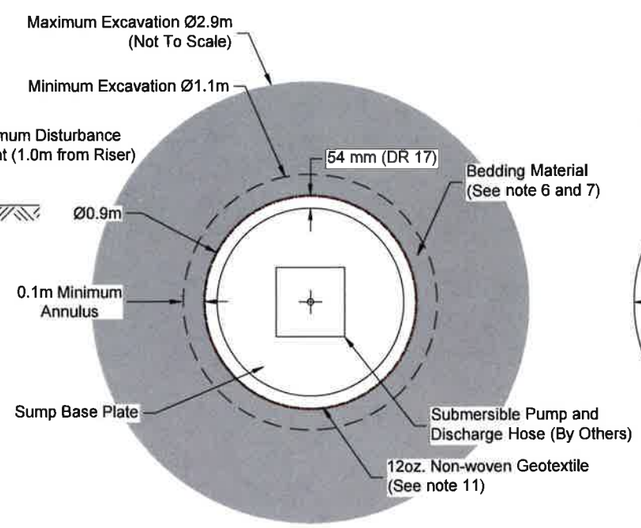
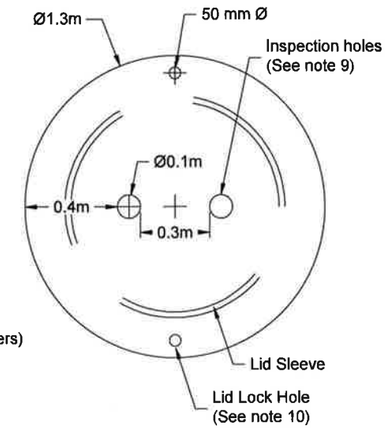


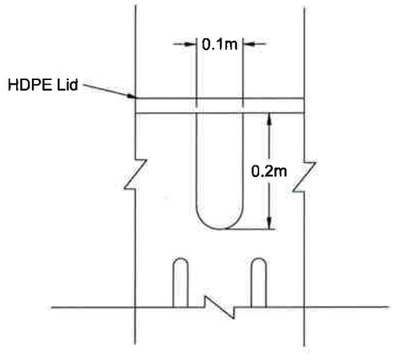
5 06 **Sump - Section View**



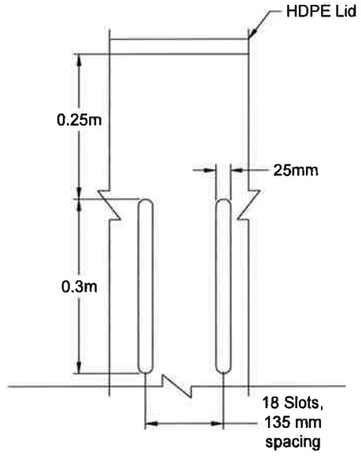
6 - **Sump - Plan View Without Lid**



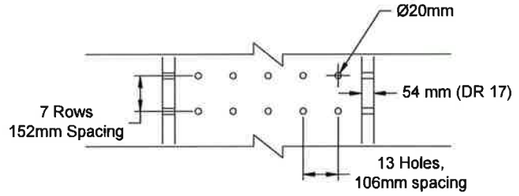
7 - **Lid - Plan View**



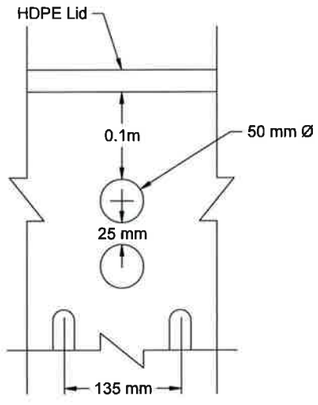
Slot Cut for Discharge Hose and Power Cables



9 - **Sump Drainage Slots**



10 - **Sump Drainage Holes**



11 - **Sump Lid Lock Detail**
Not To Scale

LEGEND

- 12oz. Non-Woven Geotextile
- Bedding Material

NOTES

1. All units in meters unless otherwise specified.
2. Construction shall be in accordance with the following Technical Specifications: Earthworks and Geotechnical Engineering. Hope Bay Project, Nunavut, Canada. Revision H - Issued for Construction.
3. The size and type of pump shall be specified by others, but no continuous or intermittent heat source shall be located within the sump.
4. The insulation sheets shall be of type STYROFOAM Highload 40 manufactured by Dow Chemical Company, or equivalent. Adjacent horizontal layers of STYROFOAM insulation shall be rotated by 90 degrees.
5. Contractor to place STYROFOAM insulation by cutting to suit.
6. Special hand excavation techniques shall be used for inserting the sump into the ground to minimize disturbance. The minimum annulus between the outside edge of the sump and the excavation is 100 mm to allow passage of the sump base. Excavation of the tundra beyond the sump footprint shall be minimized to the extent possible, submersible pumping during excavation may be required. Excavation of the tundra must be limited to the maximum slope angle which the overburden will support, and be no more than 1.0m radius beyond the sump riser. A 10 m buffer zone on the undisturbed tundra around the sump shall be established, and not tracked or wheeled construction equipment is allowed within this buffer zone.
7. Bedding material to be backfilled in thin layers (<0.3 m) and compacted by hand with crowbar or similar to ensure no bridging or large voids within backfill
8. Excavated overburden to be disposed of on existing Naartok East Overburden Stockpile. No excavated overburden to be left on tundra surrounding sump.
9. Inspection holes to be covered with wire mesh to prevent animal entry.
10. Lid to be secured to sump via lid lock holes with rope or straps (by others).
11. Geotextile to be secured to sump prior to placement in excavation.

REFERENCE DRAWINGS

DRAWING NO.	DRAWING TITLE
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REVISIONS

NO.	DESCRIPTION	CHK'D	APP'D	DATE
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0	Issued for Construction	PDL	JBK	2022/03/22
A	Issued for Review	PDL	JBK	2022/03/11

PROFESSIONAL ENGINEERS STAMP

J.B. KURYLO LICENSEE 2022/03/22 NTNU

srk consulting

DESIGN:	DRAWN:	REVIEWED:
JBK	TAH	JBK
CHECKED: PL/ NDH/ AM	APPROVED: JBK	DATE: 2022/03/22

FILE NAME: Madrid CWP Sump - Details.dwg

AGNICO EAGLE

Hope Bay

SRK JOB NO.: 1CT022.071

Madrid CWP Sump #1

DRAWING TITLE:

Typical Sump Details

DRAWING NO.: MCWP-Sump-200

REVISION NO.: 0

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APPENDIX B
As-Built Drawings

Engineering Drawings for the Madrid Contact Water Pond Sump #1

Hope Bay, Nunavut, Canada

Active Drawing Status

Drawing Number	Drawing Title	Issue	Date	Revision
MCWP-Sump-100	General Arrangements	Construction Record	2022/06/07	CR1
MCWP-Sump-200	Section A	Construction Record	2022/06/07	CR1
MCWP-Sump-201	Typical Sump Details	Construction Record	2022/06/07	CR1

AGNICO EAGLE

REGISTERED PROFESSIONAL ENGINEER
J.B. KUMYLO
LICENSEE
2022/06/16
NUNAVUT

srk consulting

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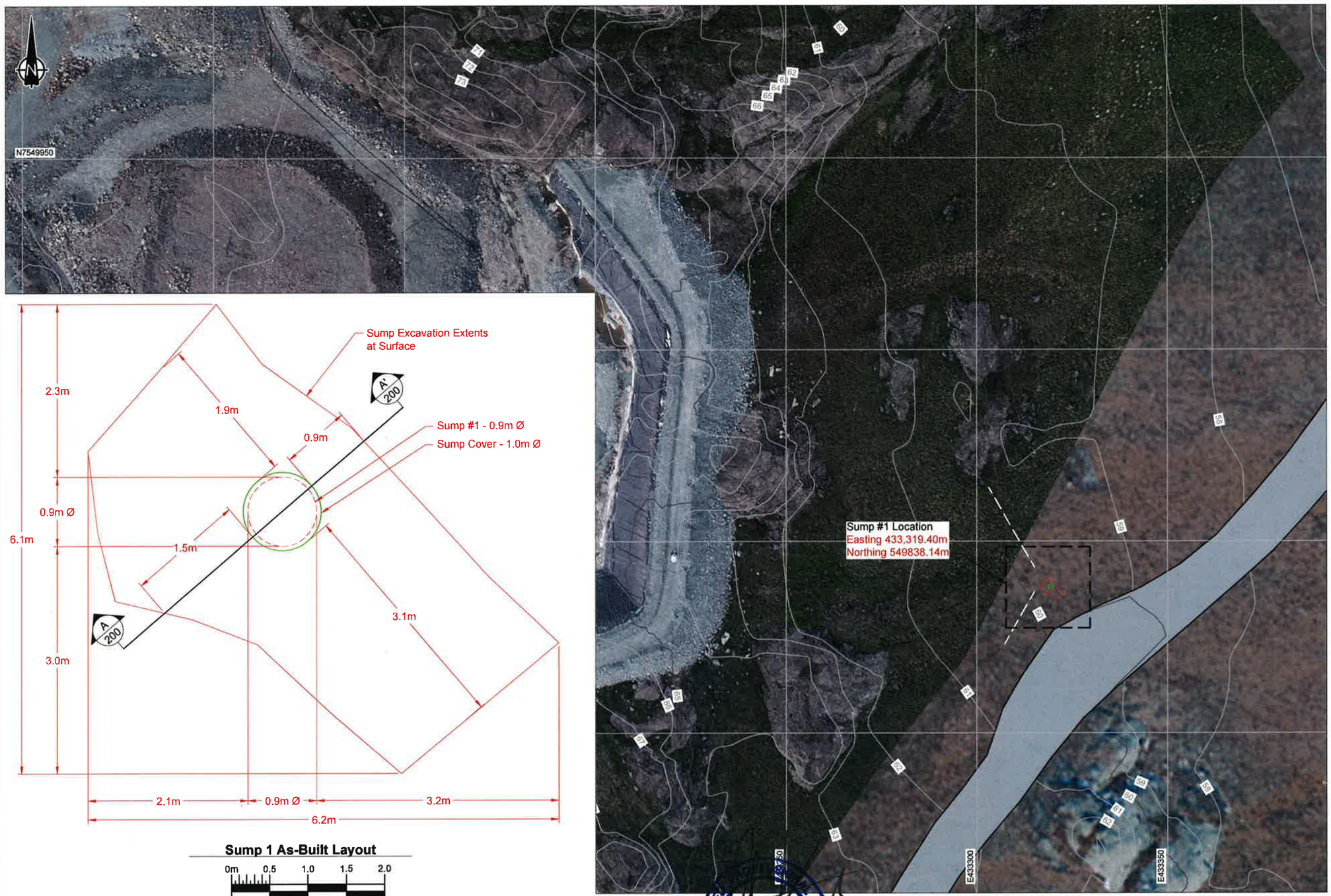

Sump 1 As-Built Layout

0m 0.5 1.0 1.5 2.0

LEGEND

As-Built Excavated Extents

As-Built Sump Lid

NOTES

1. Contours are shown at 1.0 m intervals.
2. All units are in meters unless otherwise specified.
3. Approximate sump location is as follows: Sump #1: 433317mE, 7549840mN.
4. Sump center location shall be field fit to locate it at the local low point where flowing water has been observed. Further refinement of the final location may be required based on field conditions.
5. Based on field observations of surface flow paths, some small scale redirection of flow may be required to best direct flow towards the installed sump location. This small scale redirection may results either from careful compression of the top tundra matt or using fill material cross-cutting the topography.
6. Sump 1 construction was complete in May 2022.
7. SRK was not present during construction of the sump. compilation of the as-built drawings is reliant upon the construction information and as-built survey provided from Agnico Eagle.
8. The seal and signature of the undersigned on this drawing and other drawings in this set certifies that the design information contained in these drawings accurately reflects the original design and the material design changes made during construction that were brought to the undersigned's attention. These drawings are intended to incorporate material design changes, but not necessarily all site instructions. The undersigned does not warrant or guarantee, nor accept any responsibility for, the accuracy or completeness of the as-constructed information supplied by others contained in these drawings, but does, by sealing and signing, certify that the as-constructed information, if accurate and complete, provides an as-constructed system which substantially complies in all material respects with the original design intent.

REFERENCES

NAD83 UTM Zone 13.
Drone imagery shown collected in August 2020, data provided by client.
Contours shown are based on pre-mining topography. Data provided by client.

0m 10 20 30 40

REFERENCE DRAWINGS		REVISIONS									
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PDL	JBK	2022/08/07

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AGNICO EAGLE

Hope Bay

SRK JOB NO.: CAPR001814

Madrid CWP Sump #1

DRAWING TITLE: General Arrangement

DRAWING NO.: MCWP-Sump-100

REVISION NO.: CR1

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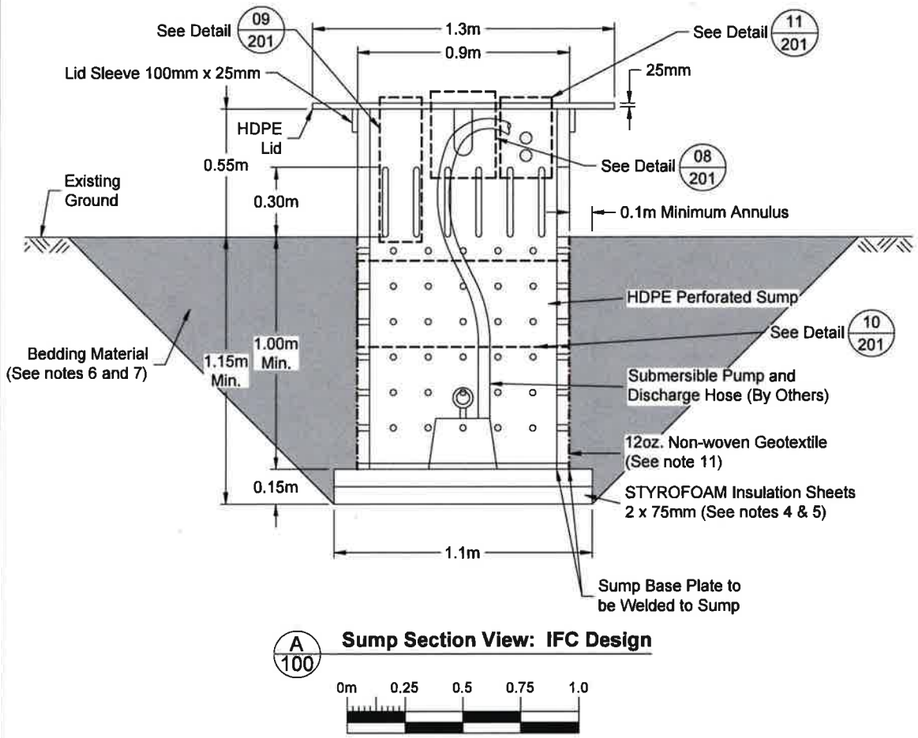

A/100 **Sump Section View: IFC Design**

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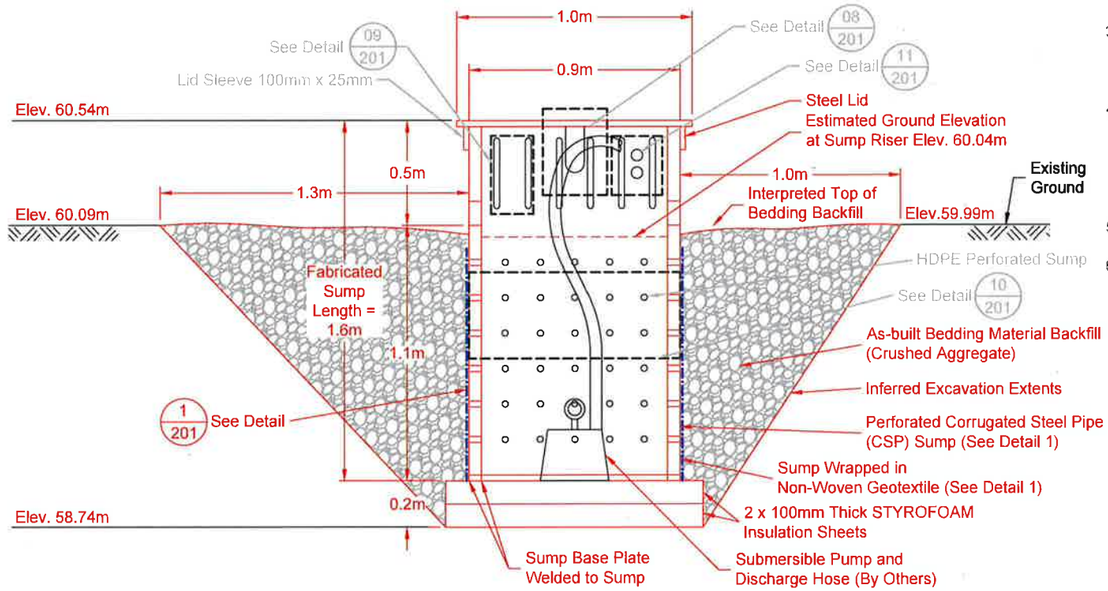

A/100 **Sump Section View: As-Built**

0m 0.25 0.5 0.75 1.0

LEGEND

- 12oz. Non-Woven Geotextile
- As-Built Non-Woven Geotextile
- Bedding Material
- As-Built Bedding Material

NOTES

1. **All units in meters unless otherwise specified.**
2. Construction shall be in accordance with the following Technical Specifications: Earthworks and Geotechnical Engineering, Hope Bay Project, Nunavut, Canada, Revision H - Issued for Construction.
3. The size and type of pump shall be specified by others, but no continuous or intermittent heat source shall be located within the sump.
4. The insulation sheets shall be of type STYROFOAM Highload 40 manufactured by Dow Chemical Company, or equivalent. Adjacent horizontal layers of STYROFOAM insulation shall be rotated by 90 degrees.
5. Contractor to place STYROFOAM insulation by cutting to suit.
6. Special hand excavation techniques shall be used for inserting the sump into the ground to minimize disturbance. The minimum annulus between the outside edge of the sump and the excavation is 100 mm to allow passage of the sump base. Excavation of the tundra beyond the sump footprint shall be minimized to the extent possible, submersible pumping during excavation may be required. Excavation of the tundra must be limited to the maximum slope angle which the overburden will support, and be no more than 1.0m radius beyond the sump riser. A 10 m buffer zone on the undisturbed tundra around the sump shall be established, and not tracked or wheeled construction equipment is allowed within this buffer zone.
7. Bedding material to be backfilled in thin layers (<0.3 m) and compacted by hand with crowbar or similar to ensure no bridging or large voids within backfill
8. Excavated overburden to be disposed of on existing Naartok East Overburden Stockpile. No excavated overburden to be left on tundra surrounding sump.
9. Inspection holes to be covered with wire mesh to prevent animal entry.
10. Lid to be secured to sump via lid lock holes with rope or straps (by others).
11. Geotextile to be secured to sump prior to placement in excavation.
12. SRK was not present during construction of the sump. Compilation of the construction record drawings is reliant upon the construction information as as-built survey data provided from Agnico Eagle.

REFERENCE DRAWINGS			REVISIONS									
DRAWING NO.	DRAWING TITLE	NO.	DESCRIPTION	CHKD	APP'D	DATE	NO.	DESCRIPTION	CHKD	APP'D	DATE
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							A	Issued for Review	PDL	JBK	2022/03/11

PROFESSIONAL ENGINEERS STAMP

REGISTERED PROFESSIONAL ENGINEER J.B. KUFFLO LICENSEE 2022/06/07 NT/NU

srk consulting

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JBK	TAH/RMN	JBK
CHECKED:	APPROVED:	DATE:
PDL	JBK	2022/06/07

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AGNICO EAGLE

Hope Bay

SRK JOB NO.: CAPR001814

Madrid CWP Sump #1

DRAWING TITLE: Section A

DRAWING NO.: MCWP-Sump-200

REVISION NO.: CR1

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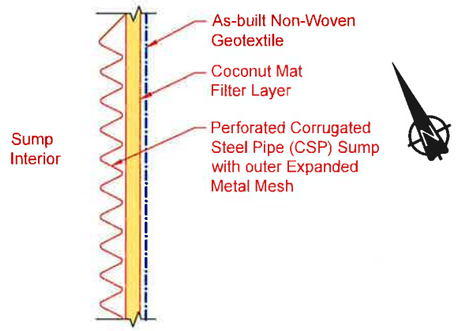

1 - **Sump Wall Profile**

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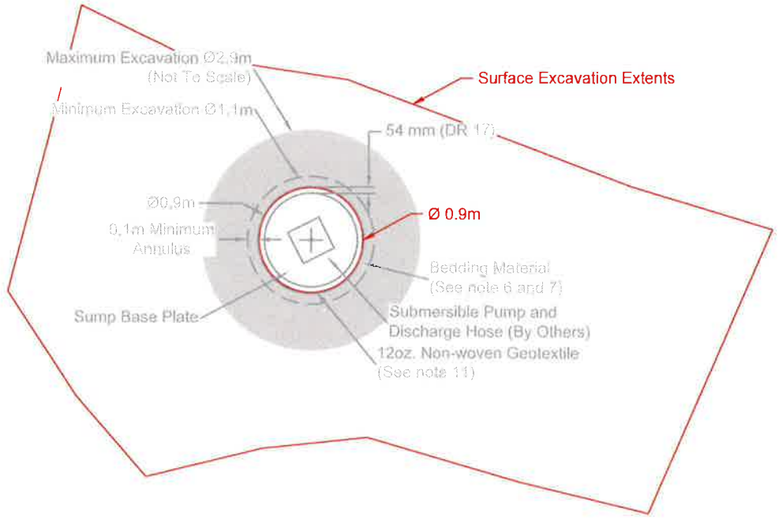
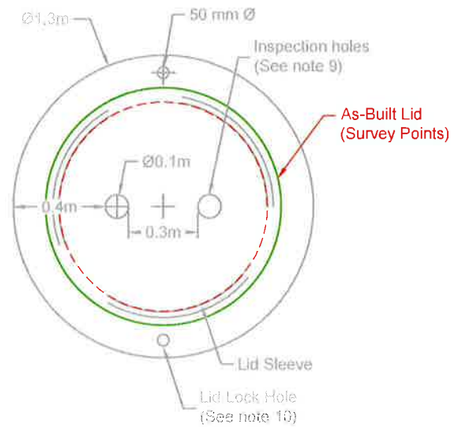


6 - **Sump - Plan View Without Lid**

0m 0.5 1.0 1.5 2.0

LEGEND

- 12oz. Non-Woven Geotextile
- Bedding Material
- As-Built Excavation Extents
- As-Built Sump Lid

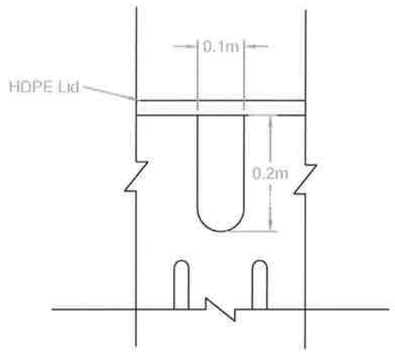


7 - **Lid - Plan View**

0m 0.25 0.5 0.75 1.0

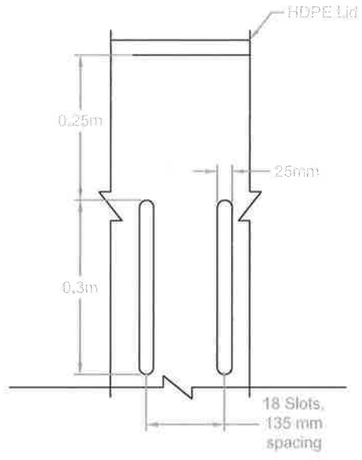
NOTES

1. **All units in meters unless otherwise specified.**
2. Construction shall be in accordance with the following Technical Specifications: Earthworks and Geotechnical Engineering, Hope Bay Project, Nunavut, Canada, Revision H - Issued for Construction.
3. The size and type of pump shall be specified by others, but no continuous or intermittent heat source shall be located within the sump.
4. The insulation sheets shall be of type STYROFOAM Highload 40 manufactured by Dow Chemical Company, or equivalent. Adjacent horizontal layers of STYROFOAM insulation shall be rotated by 90 degrees.
5. Contractor to place STYROFOAM insulation by cutting to suit.
6. Special hand excavation techniques shall be used for inserting the sump into the ground to minimize disturbance. The minimum annulus between the outside edge of the sump and the excavation is 100 mm to allow passage of the sump base. Excavation of the tundra beyond the sump footprint shall be minimized to the extent possible, submersible pumping during excavation may be required. Excavation of the tundra must be limited to the maximum slope angle which the overburden will support, and be no more than 1.0m radius beyond the sump riser. A 10 m buffer zone on the undisturbed tundra around the sump shall be established, and not tracked or wheeled construction equipment is allowed within this buffer zone.
7. Bedding material to be backfilled in thin layers (<0.3 m) and compacted by hand with crowbar or similar to ensure no bridging or large voids within backfill.
8. Excavated overburden to be disposed of on existing Naartok East Overburden Stockpile. No excavated overburden to be left on tundra surrounding sump.
9. Inspection holes to be covered with wire mesh to prevent animal entry.
10. Lid to be secured to sump via lid lock holes with rope or straps (by others).
11. Geotextile to be secured to sump prior to placement in excavation.
12. SRK was not present during construction of the sump. Compilation of the construction record drawings is reliant upon the construction information as as-built survey data provided from Agnico Eagle.
13. Sump construction slot and drainage dimensions were not available to provide as-constructed details, however based on the photos of the modified drainage design (Detail 1), the as-constructed system substantially complies in all material respects with the original design intent.



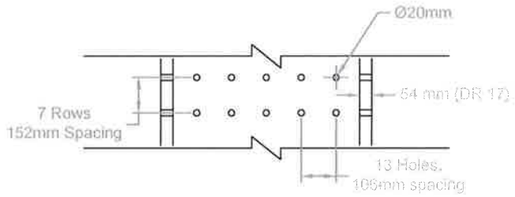
8 / 200 - **Slot Cut for Discharge Hose and Power Cables**

0m 0.1 0.2 0.3 0.4



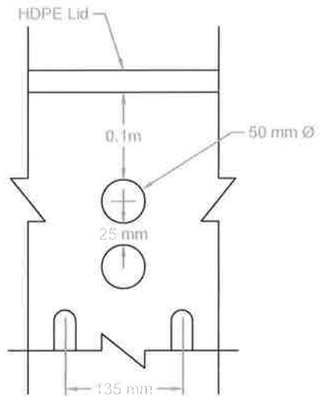
9 / 200 - **Sump Drainage Slots**

0m 0.1 0.2 0.3 0.4



10 / 200 - **Sump Drainage Holes**

0m 0.25 0.5 0.75 1.0



11 / 200 - **Sump Lid Lock Detail**
Not To Scale

						CR1	Construction Record	PDL	JBK	2022/06/07
						0	Issued for Construction	PDL	JBK	2022/03/22
--	--	--	--	--	--	A	Issued for Review	PDL	JBK	2022/03/11
DRAWING NO.	DRAWING TITLE	NO.	DESCRIPTION	CHK'D	APP'D	DATE	NO.	DESCRIPTION	CHK'D	APP'D	DATE
REFERENCE DRAWINGS		REVISIONS									

PROFESSIONAL ENGINEERS STAMP

REGISTERED PROFESSIONAL ENGINEER — A.B. KURTELO — LICENSEE — 10221061 — NTI/NU

srk consulting

DESIGN: JBK	DRAWN: TAH/RMN	REVIEWED: JBK	
CHECKED: PDL	APPROVED: JBK	DATE: 2022/06/07	
FILE NAME: Madrid CWP Sump - Details.dwg			

AGNICO EAGLE

Hope Bay

SRK JOB NO.: CAPR001814

Madrid CWP Sump #1

DRAWING TITLE:

Typical Sump Details

DRAWING NO.: MCWP-Sump-201

REVISION NO.: CR1

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