CONSTRUCTION SUMMARY REPORT
VAULT DIKE

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT

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AGNICO EAGLE

EXECUTIVE SUMMARY

The construction of Vault Dike at Meadowbank was conducted from February 2013 to March 2013. Vault Dike is located across a shallow creek which connects Wally Lake and Vault Lake, at the Vault Pit area. Vault Dike is essential to allow the dewatering of Vault Lake and to isolate Vault Pit during mining activities from Wally Lake. Vault Dike is designed and constructed as a zoned rockfill dam with filter zones, an impervious upstream liner consisting of a bituminous membrane, and an upstream key trench made of aggregate mixed with bentonite. The filter zones minimize seepage and internal erosion and facilitate seepage collection.

Work carried out during construction of Vault Dike included blasting and excavation to bedrock, fill placement, membrane installation, and thermistor string installation. This construction report issued by AEM presents the general construction procedure for Vault Dike.

A monitoring program is essential to ensure the integrity of Vault Dike, including regular site visits, temperature measurement within the dike using the thermistors, monitoring of the upstream and downstream water level and detailed site inspections.

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SECTION 1.0 - INTRODUCTION

The construction of the Vault Dike at Meadowbank was conducted from February 2013 to March 2013. Vault Dike is located across a shallow creek which connects Wally Lake and Vault Lake, at the Vault Pit area approximately 8 km north of the main Meadowbank site. Vault Dike is essential to allow the dewatering of Vault Lake and to isolate Vault Pit during mining activities from Wally Lake.

Vault Dike is designed and constructed as a zoned rockfill dam with filter zones, an impervious upstream liner consisting of a bituminous membrane, and an upstream key trench made of aggregate mixed with bentonite. The filter zones minimize seepage and internal erosion and facilitate seepage collection. Vault Dike includes a key trench at the base of the upstream side filled with a 0-25 mm fill amended with bentonite surrounding the liner. Coarse and fine filter material was placed on the upstream slope as geomembrane bedding. The bulk part of the dike consists of coarse rockfill material. The embankment crest is at El. 142.4 m and the upstream toe is at approximately El. 139.4 m. The downstream toe is at approximately El. 139.6 m and the bottom of the key trench ranges from El. 135.6m to El. 142.3m, with an average height of El. 137.0m. The upstream and downstream fill slopes of the dam are 1.5H:1V.

Work carried out during construction of Vault Dike included blasting and excavation of overburden to bedrock, fill placement, membrane installation, and thermistor string installation. The design and technical specifications of Vault Dike was carried out by SNC-Lavalin Inc. (SNC) and reviewed by Agnico Eagle Mines - Engineering (AEM) and the Meadowbank Dike Review Board (MDRB). SANA was contracted to complete the construction of Vault Dike under the supervision of AEM. TCG was contracted to complete the drilling for Vault Dike under the supervision of AEM. SNC was responsible for carrying out the Quality Assurance (QA) program component of the construction for Vault Dike. Inspec-Sol was responsible for carrying out the Quality Control (QC) program under the supervision of AEM. Texel was responsible for carrying out the Quality Control (QC) program for the bituminous geomembrane installation under the supervision of AEM.

SECTION 2.0 - SCOPE

This construction summary report presents the general construction procedure for the Vault Dike conducted between February 2013 and March 2013 at Meadowbank. Work procedures and the QA/QC program for the construction are summarized in this report. A review of the design and technical specifications is presented, followed by the construction schedule and description of construction activities. The QC testing and results, and in-field design changes made during construction are then presented.

SECTION 3.0 - DESIGN AND TECHNICAL SPECIFICATIONS

The design and technical specifications were specified by SNC prior to the start of the Vault Dike construction and are described in the following section. The full design is available in the SNC report "Detailed Engineering of Vault Dike – Final Design Report". The full specifications are available in the SNC report "Construction of Vault Dike – Technical Specifications". Typical sections from the original design are available in Appendix A.

3.1 FILL MATERIALS, MEMBRANE, AND THERMISTORS

Vault Dike is a zoned rockfill dam, which includes four different zones of material. It also includes an impervious upstream membrane. The technical specifications and requirements for each zone, the geomembrane, and the thermistors are summarized below.

3.1.1 Rockfill (0-1000 mm)

- The rockfill material consists of waste clean blasted rock (0-1000 mm) from Vault quarry and is composed of NPAG (non-potentially acid generating) rock;
- No topsoil, unsuitable organic soils, peat, snow, or ice are allowed in this zone;
- Lift thickness specified: 2 000 mm maximum prior to compaction;
- Compaction: Use a loaded CAT-773 (50 tons) haul truck, final surface by 4 passes of heavy dozer or equivalent.

3.1.2 Coarse Filter (0-150 mm)

- The coarse filter material consists of waste clean blasted rock (0-150 mm) from Portage Pit and is composed of NPAG (non potentially acid generating) rock;
- No topsoil, unsuitable organic soils, peat, snow, or ice are allowed in this zone;
- Lift thickness specified: 500 mm maximum prior to compaction;
- Compaction and placement: Use an excavator for placement, and the excavator bucket for compaction;
- Must meet the gradation limits specified in the table below:

Particle Size (mm)	Percent passing by weight
200	100
152.4	86-100
76.20	35-100
25.4	5-40
12.7	0-18
4.76	0-9
2.36	0-5

3.1.3 Fine Filter (0-25 mm)

- The fine filter material consists of waste clean blasted rock (0-25 mm) from Portage Pit and is composed of NPAG (non-potentially acid generating) rock;
- No topsoil, unsuitable organic soils, peat, snow, or ice are allowed in this zone;
- Lift thickness specified: 500 mm maximum prior to compaction;

- Compaction and placement: Use an excavator for placement, and the excavator bucket for compaction;
- Must meet the gradation limits specified in the table below:

Particle Size (mm)	Percent passing by weight
25	100
19	50-100
9.5	23-68
0.425	0-20
0.075	0-15

3.1.4 0-25 mm Amended with Bentonite

- The 0-25 mm amended with bentonite material consists of the fine filter mix described above mixed with 8% (weight basis) of sodium bentonite powder;
- This material must be well mixed in an area protected from the wind, and only small stockpiles are permitted to minimize the loss of fines and excessive particle segregation;
- Lift thickness specified: The layer between the key trench floor and the membrane must have a minimum compacted thickness of 300 mm after compaction. The layer above the membrane must have a minimum compacted thickness of 500 mm after compaction;
- Compaction and placement: Use an excavator for placement, and the excavator bucket and hand operated compactor for compaction. Great care must be taken to minimize the loss of fines during placement.

3.1.5 Bituminous Geomembrane

- The bituminous geomembrane shall be Teranap 431 4M, 4.1 mm. During construction this requirement was revised, see Section 7.0 for more details;
- The rolls must be stored, handled, rolled out, placed, and welded in accordance with the supplier's specifications;
- The Contractor shall roll-out the bituminous geomembrane horizontally;
- The bituminous geomembrane shall be free of folds before it is covered with fill. Cutting and patching may be performed to meet this requirement;
- All welding and repair work shall be carried out under the supervision of an experienced and certified technician and under the supervision of QA and QC representatives;
- The Contractor shall demonstrate their ability to adequately weld seams and make patches on site under arctic winter conditions;
- No fill material shall be placed over the geomembrane prior to the QA/QC personnel's approval;
- A minimum soil cover of 500 mm must be provided to all machinery tracks over the membrane;
- Patch dimensions shall overlap all defects by at least 20 cm;
- For each roll the Contractor shall provide AEM the identification label, the ASQUAL (Assurance Quality) label, and if the roll comes in one or two pieces.

3.1.6 Thermistors

- Thermistor strings must be stored, handled, and installed with care to minimize damage;
- All thermistor strings to be installed must be ice bath tested and verified. Test data sheets must be available for each thermistor string installed;
- For each thermistor string used the following must be noted: identification number, location, and spacing between each thermistor bead;
- The thermistor string beneath the liner must be placed prior to liner installation;
- Vertical thermistor strings must be placed once the dike construction has been completed;
- The Contractor shall survey and record all bead coordinates as well as the elevation of the thermistor string beneath;
- The Contractor shall survey and recorded the top (upper) thermistor bead coordinates and elevation of each thermistor string;
- Thermistor strings must be equipped with a connector for reading;
- The Contractor shall take all the necessary precautions to ensure that the thermistor strings are not damaged during installation.

3.2 ACCESS ROAD AND FOUNDATION PREPARATION

Access road and foundation preparation for Vault Dike consists of the following:

- Construction area access from Vault Dike Road West and from Vault Dike Road East;
- Foundation surface preparation prior to fill placement.

3.2.1 Construction Area Access

- Provide permanent access roads to the construction area for construction equipment;
- Road locations are planned in the Vault Pit general site plan, and then fine-tuned in the field by the AEM Engineering team.

3.2.2 Foundation Surface Preparation

- Removal of all snow, ice, frozen overburden and boulders within the Vault Dike footprint area;
- Disposal of snow and ice in Vault Lake, and all other excavated material to the Vault Waste Dump;
- Foundation surface shall be verified, checked by survey, tested (if needed) for strength, approved by QC and AEM Engineering Representative prior to fill placement;
- All foundations shall be approved by AEM, QA, and QC representatives. This shall be done by a through field inspection and signing Foundation Approval forms;
- All approved foundations shall be surveyed by the Contractor surveyor for record keeping and use in the As-Built drawings.

3.3 FILL PLACEMENT PROCEDURE

The lift thickness for the rockfill is to be 2 000 mm maximum prior to compaction and 500 mm maximum prior to compaction for the coarse and fine filters. The lift thickness for 0-25 mm amended with bentonite between the key trench floor and the membrane must have a minimum compacted thickness of 300 mm after compaction. The lift thickness for 0-25 mm amended with bentonite above the membrane must have a minimum compacted thickness of 500 mm after compaction.

Compaction of the rockfill is to be achieved through the use of loaded 50 ton haul trucks and final fill surface compaction is performed then by 4 passes of heavy dozer or equivalent. Compaction of the other materials is to be done either by excavator shovel or hand operated compactor. Lift thickness may be adjusted in the field based on observations during fill placement as well as the equipment used for compaction.

SECTION 4.0 - CONSTRUCTION SCHEDULE

Construction of Vault Dike was carried out between February 2013 and March 2013 at Meadowbank. The final construction schedule is available in Appendix B and is summarized as follows:

- Construction of access roads to the dike footprint occurred between January 27 and February 7.
- Foundation surface preparation occurred between January 27 and February 12.
- Key trench drilling, blasting, excavation and grading occurred between February 4 and February 18.
- Fill placement and compaction of the coarse filter (0-150 mm) occurred between February 9 and March 15.
- Fill placement and compaction of the fine filter (0-25 mm) occurred between February 9 and March 15.
- Fill placement and compaction of the 0-25 mm amended with bentonite occurred between February 13 and March 13.
- Fill placement and compaction of the rockfill (0-1000 mm) occurred between March 4 and March 20.
- Bituminous geomembrane installation occurred between March 3 and March 13.
- Thermistor strings installation occurred between February 26 and April 14.

SECTION 5.0 - VAULT DIKE CONSTRUCTION ACTIVITIES

The scope of work for the construction of the Cofferdam conducted from February 2013 to March 2013 consists of activity in the following major work items:

- Construction of access roads to the dike footprint;
- Foundation surface preparation (removal and proper disposal of all snow, ice, frozen overburden and boulders);
- Key trench drilling, blasting, excavation and grading;
- Granular fill preparation, loading, placement, and compaction;

- Bituminous geomembrane storage, handling, roll-out, welding and patching;
- Thermistor strings storage, handling, installation, and monitoring.

These items are discussed in the following sections below.

The Vault Dike as-built drawings and table of quantities used in construction are available in Appendix A. Selected photographs of the work progress taken throughout the construction program, showing various aspects of the construction work, are available in Appendix C.

5.1 ACCESS ROADS

Two access roads were constructed to the dike footprint – one from Vault Dike Road West and from Vault Dike Road East. Appendix D presents a map of the general Vault Pit area with the access roads. Vault Dike Road West begins where Vault Road ends at the Vault Waste Dump, runs northeast to pass Dewatering Road A and ends at the northwest end of the dike (Station 0+000). Vault Dike Road East begins at Vault Road between the Tower Pad and the Office Pad, runs northeast to pass Dewatering Road B and Dewatering Road C and ends at the southeast end of the dike (Station 0+350). The access roads were essential to the dike construction for providing temporary and permanent access to the dike area for construction equipment. The construction of the access roads consisted of rockfill dumped by CAT-773 (50 ton) haul trucks and pushed with dozers over the tundra, with minimal foundation preparation outside of the Vault Dike footprint. Construction of access roads to the dike footprint occurred between January 27 and February 7 2013.

5.2 FOUNDATION SURFACE PREPARATION

Starting on January 27, 2013, all the snow and ice along the dike footprint including the upstream key, was removed with backhoe excavators CAT-365 and 345. The ice within the dike footprint ranged from 0.5 to 1.5m thick over a length of about 100m. The frozen overburden thickness was between 0.3 to 3.5m. All the snow and ice which did not have a lot of sediment in it was disposed in Vault Lake. Snow and ice with high amounts of sediment was brought to the Vault Waste Dump using 50 ton haul trucks.

Starting on February 1, 2013 all of the frozen overburden and boulders along the dike footprint were removed with backhoe excavators CAT-365 and 345. The frozen overburden was excavated until reaching dense till. Foundation surface preparation was completed on February 12.

The foundation preparation consisted of the following key work steps:

- Excavate all the snow, ice, frozen overburden and boulders in the dike footprint with backhoe excavators going from Station 0+000 to station 0+350;
- Removal until reach of suitable foundation consisting of stiff dense till, free of all snow, ice, organic material, boulders, deleterious materials or any other material deemed objectionable by AEM/QC/QA representatives;
- Visual inspection of the foundation surface of stiff dense till and acceptance of the foundation was done by AEM/QC/QA representatives prior to fill placement.

The approved foundation area was surveyed by the Contractor. Approval foundation forms for all approved areas were filled out and signed by AEM/QC/QA, and can be found in Appendix E2.

A working platform was established in the dike footprint area once the foundation surface had been prepared and approved. It consisted of a rockfill pad extending the entire length of the dike and the width of the dike footprint. The working platform crest elevation was at 141.0m. It had a strip of foundation exposed along where Vault Dike's centerline would be, so that drilling and blasting could proceed more easily. Compaction of the rockfill in the construction platform was conducted by placing and compacting rockfill with the dozer, then using the vibratory roller.

5.3 KEY TRENCH DRILLING, BLASTING, EXCAVATION AND GRADING

Starting on February 4, 2013, the key trench blast holes were drilled using a Tamrock drill from TCG. The blast patterns were designed by AEM, with the Tamrock operator checking hole depth and spacing, and noting where bedrock was reached to ensure the drilled holes were drilled to the proper depth. Drilling started at the northwest end of the dike key trench, and proceeded to the southeast end of the dike key trench.

Once each pattern was finished being drilled it was then blasted. The first blast occurred on February 7, 2013, and was followed by three more blasts for a total of four blasts for the key trench. All of the blasts are listed below with the blast pattern name, the dates and times the blasts occurred, the number of holes blasted and drilled in that pattern, and the peak particle velocity (PPV) of that blast:

- Blast 5137KT001-1 on February 7, 2013 at 00:45, 99 holes, max. PPV of 6.92 mm/s
- Blast 5137KT001-2 on February 9, 2013 at 21:00, 182 holes, max. PPV of 5.06 mm/s
- Blast 5137KT001-3 on February 12, 2013 at 18:30, 99 holes, max. PPV of 3.14 mm/s
- Blast 5137KT001-4 on February 18, 2013 at 00:45, 138 holes, PPV not measured.

The PPV was not measured for the February 18th blast because the blast monitor installed did not record the event.

After each pattern was blasted it was then excavated using backhoe excavators CAT-365 and 345. Excavated material that was not needed for dike construction was hauled to the Vault Waste Dump using 50 ton haul trucks. Blasted material such as clean rockfill was left in place if it was deemed suitable for construction. Excavation started on February 7, 2013 at the northwest end of the dike key trench, and proceeded to the southeast end of the dike key trench as the blast patterns were blasted. The key trench floor needed to be excavated to bedrock or until specified by AEM/QA/QC representatives. If the key trench floor did not get approved it would be improved with blast corrections until acceptable.

After the excavation was complete in an area, the key trench slopes and floor were graded and then checked by the surveyor to see if their dimensions matched the design drawing. Adjustments were then made until the key trench depth, width (minimum 3m), and blasted rockfill upstream slopes (must be 2H:1V or as accepted by AEM/QA/QC) met the dimensions on the drawing. The slopes were compacted using the shovel bucket. The floor of the key trench was

cleaned thoroughly using the excavator bucket lip. Special care was taken during excavation of the key trench to ensure that no till or overburden was left in the area that would be under the liner. Then that area of the key trench would be approved by AEM and the QA/QC representatives prior to fill placement. Once accepted the key trench floor was surveyed for use in the as-built drawings.

It is important to note that drilling, excavation, and grading were sometimes proceeding at the same time in different areas of the key trench.

5.4 GRANULAR FILL PREPARATION, LOADING, PLACEMENT, AND COMPACTION

Once work on the key trench was completed, the preparation, loading, placement, and compaction of the various types of granular fill began. This work begun on February 10, 2013 and started at the northwest end of the dike key trench, and proceeded to the southeast end of the dike key trench. All of the granular fill (except for the 0-25 mm amended with bentonite) had been prepared before the project began and had been stockpiled on the Dam Pad west of the dike beside Vault Dike Road West. It was determined through QC testing that the various types of granular fill supplied met the specifications outlined above in Section 3.1.1 to Section 3.14. QC testing results are described in Section 6 and available in Appendix E1.

The granular fill was loaded into 50 ton haul trucks by a CAT-980 loader at the Dam Pad, and was then hauled down to the dike area. The 0-25 mm material amended with bentonite was removed with one of the backhoe excavators (CAT-365 or 345) and placed over the last lift of material.

All preparation, loading, placement, and compaction procedures were done to minimize segregation as much as possible. Lift thickness was adjusted in the field based on observations during fill placement as well as the equipment used for compaction. Every lift was inspected, tested and accepted by AEM, QA, and QC representatives prior to the next fill placement. The sub-sections below describe the specific preparation, placement, and compaction procedure details for each type of granular fill.

4.4.1. Rockfill (0-1000 mm)

Following the excavation of the blasted key trench, rockfill has to be added to build or adjust the upstream slope of the trench. It was prepared to comply with the specifications listed in Section 3.1.1 for the rockfill. The majority of the rockfill came from Vault Quarry, however some rockfill produced during the blasting of the key trench was used to build the upstream key trench slope. Rockfill was placed in lifts no greater than 2 000 prior to compaction. As the blasts produced an uneven and often close to vertical slope to accommodate the liner filters, the 2H:1V slope had to be created from rockfill. The existing working platform was adapted with more rockfill to create the proper slope for the liner and filters. It was achieved by dumping the material on the platform and placing it with the excavator. Compaction was achieved using the excavator bucket.

4.4.2. Coarse Filter (0-150 mm)

This was the first material to be placed once the key trench slope was complete. Placement of this material began on February 9, 2013 and was completed March 15, 2013. It was prepared to comply with the specifications listed in Section 3.1.2 for the coarse filter.

For placement an excavator was used, and to compact the material the excavator bucket was used. The coarse filter was placed in a layer 500 mm thick (after compaction) directly on the upstream slope of the key trench.

4.4.3. Fine Filter (0-25 mm)

This was the second material to be placed once the key trench was excavated. Placement of this material along the upstream slope of the key trench began on February 9, 2013 and was completed March 15, 2013. It was prepared to comply with the specifications listed in Section 3.1.3 for the fine filter.

For placement an excavator was used, and to compact the material the excavator bucket was used. The fine filter was placed in a layer 500 mm thick (after compaction) over the coarse filter layer on the slope of the key trench. The surface was reworked before geomembrane placement to provide proper subgrade conditions.

4.4.4. 0-25 mm Amended with Bentonite

This was the third material to be placed in the key trench. Placement of this material began on February 13, 2013 and was completed March 13, 2013. It was prepared only in very small batches right before it was needed in order to minimize the loss of fines and excessive particle segregation, as well as to comply with the specifications listed in Section 3.1.4 for the 0-25 mm amended with bentonite.

Before mixing the material to use in the key trench, a test was conducted to ensure the preparation procedure would minimize the loss of fines and excessive particle segregation. Based on these tests a final procedure was made to mix the 0-25 mm with bentonite. In order to get the mixture to have a minimum of 8% by weight of bentonite, the procedure to mix was to create a pad of 0-25mm, 7 m wide by 7 m long by 0.5 m thick. This represents an approximate volume of 24.5m^3 for an approximate total mass of 0-25mm of 49,000kg. Three bags of bentonite were added to the material on the pad. This represents an approximate total mass of bentonite of 3,900kg. The mixing was done in an area with walls of seacans to protect from the wind. The mixing was done very gently with an excavator under the supervision of at least the QC representative. Any prepared batches were covered by tarps when not in use. In order to accelerate the above mentioned procedure, a new improved mixing method was implemented later during the construction. Buckets full of 0-25 mm material were dumped in the mixing area (with a CAT 980 loader) in an alcove shape, then bentonite bags were opened in the middle of the pile and everything was gently mixed with an excavator.

For placement an excavator was used, and to compact the material the excavator bucket was used as well as the vibratory roller compactor and the vibratory plate compactor. Placement of

this material only occurred at times when the wind speed was acceptably low as judged by the QA/QC/AEM representatives. The 0-25 mm amended with bentonite was placed in a layer 300 mm thick (after compaction) directly on the bedrock floor of the key trench, and above the bituminous membrane within the key trench.

5.5 BITUMINOUS GEOMEMBRANE STORAGE, HANDLING, ROLL-OUT, WELDING AND PATCHING CONTROL

Placement, welding, and patching of the bituminous geomembrane began on March 3, 2013 and was completed March 13, 2013. It was prepared to comply with the specifications listed in Section 3.1.5 for the bituminous geomembrane. The membrane was installed in the key trench and along the slope after the placement and compaction of the coarse filter, the fine filter, and the 0-25 mm amended with bentonite placed at the bottom of the key trench.

Preparation for installation of the membrane started on February 26, 2013 and consisted of the following steps:

- Cleaning all snow and ice from the slope and key trench using the excavator and workers with hand shovels;
- Smoothing and recompacting the subgrade in the slope and key trench using the excavator and workers manual compactor;
- Warming the rolls of membrane in a heated seacan at approximately 10 degrees Celsius. This was done to make the membrane more pliable for placement, and to restore the round shape of the membrane rolls so they would unroll easier;
- Getting the subgrade slope and key trench subgrade approved by AEM, QA, QC and QC liner representatives.

Installation of the membrane began on February 28, 2013. All of the preparation steps listed above had been completed for the area where the first section of membrane was to be placed. Placement of the Teranap membrane began by rolling out the membrane horizontally along the slope as specified in the design. However, the membrane developed a huge crack during placement, and smaller cracks propagated in the membrane even under small pressures such as a worker walking over the membrane. The Teranap membrane was then removed from the trench.

After testing the Teranap membrane with simple field tests it was determined that the Teranap membrane did not meet the manufacturer's flexibility minimum temperature of -26 degrees Celsius. The Teranap was not judged suitable for winter placement by the QA/AEM representatives. The Teranap membrane would not meet its specified purpose of being flexible and watertight so it was decided as much of the dike would be constructed with Coletanche membrane as possible. This decision was made by AEM and the designer SNC. This liner design modification is described in Section 7.0. Only 4 rolls of Coletanche membrane were available onsite; however, this would not be enough for the entire dike. Teranap membrane was used in an area judged less critical above El. 139.5m.

On March 3, 2013 the slope and key trench were cleaned, smoothed, recompacted, and approved in order to prepare the area again for membrane installation. One roll of Coletanche

membrane was then placed horizontally, patched and welded. Placement, patching and welding was closely supervised by the liner QC during membrane installation. Air tests were then performed on the membrane seams and patches. After QC testing and placement approval by QC/QA/AEM representatives the membrane would be carefully covered with the bentonite mix and compacted to protect the membrane from wind and snow. The procedure described in this paragraph was repeated for all membrane used on the dike. On March 13, 2013 the only Teranap membrane used on the dike was installed from Station 191 until Station 303 above El. 139.5m. This completed the liner installation for the entire dike.

At some points during installation, it was decided that the membrane would be placed vertically instead of horizontally in order to maximize the use of Coletanche membrane and minimize the use of Teranap membrane. This was also judged easier for deployment of the membrane. This decision was made by AEM, QA, QC and QC liner representatives, and is discussed in Section 7.0 of this report.

Membrane installation was halted in windy conditions at the liner QC representative's recommendations. No welding of membrane would proceed if snow was blowing or falling into the melted bitumen.

5.6 COMPLETION OF THE KEY TRENCH AND SLOPES

Once the bituminous geomembrane installation was completed, the following steps were taken in order to complete the construction of the key trench according to the technical specifications provided by SNC.

5.6.1 0-25mm amended with bentonite

After the membrane was placed on top of the first layer of 0-25 mm amended with bentonite, another 500 mm minimum thick (after compaction) layer was added on the membrane. It was compacted using the excavator bucket and the vibratory plate (for the part at the bottom of the slope) or the vibratory roller (for the rest of the key trench). Compaction tests were done as described in Section 6.0.

5.6.2 Fine Filter (0-25 mm)

The entire slope over the bituminous geomembrane liner was then covered with a layer 500mm thick after compaction of 0-25mm material that was compacted with the excavator bucket. Care was taken not to damage the liner during placement and compaction.

5.6.3 Coarse filter (0-150 mm)

A layer 500 mm thick after compaction of coarse filter (0-150mm) was then added over the fine filter and compacted with the excavator bucket.

5.7 MAIN ROCKFILL (0-1000 MM)

This was the final material to be placed once the key trench liner and filters were completed. Placement of this material began on March 4th, 2013 and was completed March 20th, 2013. Rockfill was used as embankment fill for the main shell structure of the dike, as well as for the safety berms on the crest, constructed on March 21st, 2013.

For placement rockfill was dumped from the 50 ton haul trucks and spread with the D8 dozer. The maximum allowable lift thickness was 2000 mm before compaction. Compaction was achieved mostly through the traffic of 50 ton haul trucks, and the vibratory roller compactor was used as well.

5.8 THERMISTOR STRINGS STORAGE, HANDLING, INSTALLATION, AND MONITORING

Installation of the thermistor strings began on February 26, 2013 and was completed April 14, 2013. Installation of the thermistors was completed by AEM with assistance from the Contractor /TCG and complied with the specifications described above in Section 3.1.6.

The thermistors installed during the geotechnical investigations in November 2012 and January 2013 (TH1, TH2, and TH4) were removed by AEM when they got in the way of construction activities. TH3 had been installed on the downstream side of the dike during the geotechnical investigations but was able to be kept throughout the dike construction. TH3 was installed in the deepest channel downstream of the dike.

TH5 was installed inclined under the liner on February 26, 2013. On March 13, 2013 a protective 0-20mm shell was built around TH5 to prevent it from getting damaged during the thermal cap building process. TH6, TH7, and TH8 were installed after construction was complete using a Rockmaster drill between April 12, 2013 and April 14, 2013. T6 was installed upstream of the dike in the deepest channel upstream of the liner. TH7 was installed east of the deepest channel in the unthawed till zone found during construction. TH8 was installed upstream of the dike in the deepest channel outside of the key trench.

The locations of the five thermistors at Vault Dike are shown on the as-built drawings in plan view in Appendix A.

SECTION 6.0 - QC TESTING AND RESULTS

6.1 FOUNDATION APPROVAL

Foundation areas were inspected and approved prior to initiating fill placement. Inspection requirements for foundation areas included ensuring the following:

- Complete and adequate clearing, stripping and grubbing;
- Complete and adequate foundation excavation and removal of unsuitable foundation materials;
- Complete and adequate preparation and treatment of the foundation surface.

The entire approved area surface was surveyed. Daily approval forms including each approved area were done and filed by QA/QC/AEM representatives. Approval foundation forms for all approved areas can be found in Appendix E2.

6.2 FILL PLACEMENT APPROVAL

Fill placement areas were inspected and approved after the completion of fill placement and compaction. Inspection requirements for fill placement included ensuring the following:

- Gradation of placed fill complies with the technical specifications for the material in Section 3.0;
- Complete and adequate placement in regard to segregation and lift thicknesses;
- Complete and adequate compaction;
- The fill is free of ice and snow;
- Fill type placed in appropriate location as per the technical construction drawings.

6.2.1 Coarse Filter (0-150 mm)

Coarse filter material was placed in two layers on the upstream side of the dam. The coarse filter was placed in two layers surrounding the fine filter material. The upstream slope of coarse filter material was spread and compacted as described above in Section 4.4.2.

A total of five (5) coarse filter control samples were collected during the construction period to determine the suitability of the materials for use in the work. Samples were collected from the stockpile at the dike construction pad, the upstream slope of the dike, in the key trench, and at the Contractor crusher stock pile. Grain size analysis testing was completed on all five samples. The results of the coarse filter tests are available in Appendix E1. The results of the QC testing demonstrate that the material tested met the technical requirements because it was well graded according to the material specifications listed above.

6.2.2 Fine Filter (0-25 mm)

Fine filter material was placed in two layers on the upstream side of the dam. The fine filter was placed in two layers surrounding the bituminuous liner. The upstream slope of fine filter material was spread and compacted as described above in Section 4.4.3.

A total of eight (8) fine filter control samples were collected during the construction period to determine the suitability of the materials for use in the work. Samples were collected from the stockpile at the dike construction pad, the upstream slope of the dike, and in the key trench. Grain size analysis testing was completed on all eight samples. The results of the fine filter tests are available in Appendix E1. The results of the QC testing demonstrate that the material tested met the technical requirements because it was well graded according to the material specifications listed above.

6.2.3 0-25 mm Amended with Bentonite

The 0-25 mm amended with bentonite was placed in one layer directly on the bedrock floor of the key trench. The layer of 0-25 mm amended with bentonite was spread and compacted as described above in Section 4.4.4.

A total of one (1) 0-25 mm amended with bentonite control sample was collected during the construction period to determine the suitability of the materials for use in the work. Other samples were collected to be tested at a later date or in the laboratory in Quebec. Samples were collected from the material placed in the key trench. Grain size analysis testing was completed on one sample, and permeability testing was completed in Quebec on another sample. The results of the 0-25 mm amended with bentonite tests are available in Appendix E1. The results of the QC testing demonstrate that the material tested met the technical requirements because it was well graded according to the material specifications listed above.

Inspec-sol representatives conducted 15 moisture content and field density tests on the 0-25 mm amended with bentonite using a nuclear densometer (Troxler Surface Moisture-Density Guage) during construction. The tests were completed on an ongoing basis to ensure that the material placed continually met the requirements of the Technical Specifications. The results of the 0-25 mm amended with bentonite compaction testing are available in Appendix E1, Table 1 and are summarized below. Prior to placing any 0-25 mm amended with bentonite two test pads were created on the dam pad outside of the dike footprint. These test pads were made of the 0-25 mm amended with bentonite and were compacted using the vibratory roller. After each pass of the vibratory roller the compaction was checked using the nuclear densometer. This method was used to establish how many passes would need to be done for proper compaction.

The measured field dry density is compared to the standard proctor maximum dry density (SPMDD) obtained to determine the percent compaction. The maximum dry density for this material was determined to be 1835 kg/m^3. The measured field dry density ranged from 1856 kg/m³ to 2643 kg/m³ with a median value of 2015.5 kg/ m³. The percent compaction ranged from 101.1% to 144.0%, with a median value of 110.0%. The field moisture content ranged from 4.1% to 5.7%, with a median value of 4.6%. After permeability testing the hydraulic conductivity for this material at 20°C was determined to be 3.5E-05 cm/sec, and its water content after the permeability testing was 22.8%. The results of the QC testing demonstrate that the material tested met the technical requirements for compaction and permeability.

6.3 BITUMINOUS GEOMEMBRANE APPROVAL

Prior to geomembrane placement the geomembrane subgrade was inspected and approved. The approved area surface was surveyed, and checked to ensure it respected all quotes and lines in the design. Daily approval forms including each approved area were completed by AEM, SNC, and Inspec-Sol. All daily approval forms were filed by AEM and can be found in Appendix E2.

Geomembrane areas were inspected and approved after the completion of geomembrane installation. Inspection requirements for geomembrane installation included ensuring the following:

- The geomembrane has no cracks or rips and is smooth and flat;
- The welding and patches are done properly;
- The geomembrane QC tests are done on all liner panels and the geomembrane passes all the tests.

The approved area surface was surveyed, and checked to ensure it respected all quotes and lines in the design. Daily approval forms including each approved area were completed by AEM, SNC, Inspec-Sol, and Texel representatives (Texel only filled out geomembrane approval forms). All daily approval forms were filed by AEM and can be found in Appendix E2. The QC report from the geomembrane installer Texel presenting the QC testing performed on the geomembrane is available in Appendix E3.

6.4 ROCKFILL (0-1000 MM)

The compaction for the rockfill material included 50 ton traffic compaction or vibratory roller over a maximum 2000 mm lift (prior to compaction), depending on the field conditions. Compaction of the rockfill material was observed and documented in the daily reports. No tests were required for the rockfill.

The field observations of the rockfill material confirmed that a dense, well graded and well compacted fill was constructed on Vault Dike.

6.5 SITE INSPECTION AND PROCEDURE REVIEW

AEM and SNC representatives routinely conducted visual observation of the work procedures during the construction of Vault Dike. Review of the work procedures was done on a daily basis and corrections were made if needed. A daily survey was conducted by Sana with the review of SNC and AEM representatives for daily progress and to ensure that limits and grades were followed correctly during the construction. Photographs of the work progress were taken throughout the construction program and selected construction photos are available in Appendix C. Daily reports for each work shift were issued and filed by AEM and SNC representatives. QC testing procedures and results from Inspec-Sol and Texel were reviewed on a regular basis by AEM and SNC.

SECTION 7.0 - FIELD CHANGES AND ADJUSTMENTS DURING CONSTRUCTION

Field changes and adjustments to the design were implemented by AEM in accordance with the designer SNC during construction of the dike to take advantage of existing site conditions and to optimize construction activities.

7.1 WORKING PLATFORM ENLARGEMENT ON WALLY LAKE SIDE

The working platform on the Wally Lake side was built larger than on the original design drawing. This enlargement was aimed to facilitate the excavation of the key trench with heavy equipment. The foundation of the platform was prepared and cleaned as specified in the technical specifications.

7.2 KEY TRENCH DEPTH

Due to blasting, some areas of the key trench are deeper than presented on the design drawing. Also due to adjustments made due to blasting, the upstream slope of the key trench presents in some areas an incline slightly steeper reaching approximately 1.75H:1V instead of 2H:1V as

shown on the design drawing. This slope did not cause any problems during fill placement or geomembrane installation.

7.3 TILL IN KEY TRENCH

An area of frozen till located within the key trench from station 147 to station 149 was left in the key trench. In this area, the bedrock was not reached during excavation as the area was not blasted properly. The area was excavated as much as possible with the excavator and dozer. However, the till that was left in place could not be removed by the excavator and dozer. The thickness of the frozen till layer that was left in place was between 0.3 to 1.5m thick and the till layer was free of ice. The till was left exposed as long as possible to let it freeze. Then the frozen till was covered with 2m of rockfill. Thermistors were installed in this area for detailed thermal monitoring.

7.4 TYPE OF LINER (TERANAP VERSUS COLETANCHE)

The Teranap liner was intended to be used for the Vault Dike construction. However, due to the unexpected behavior of the membrane during placement in cold conditions, the Teranap was not placed in the Vault Dike.

The Teranap 431 Bituminous Geomembrane was planned to be used in the Vault Dike. Teranap was offered as an equivalent product to Coletanche and was supposed to present the same characteristics. Coletanche was previously used at Meadowbank for other structures.

While unrolling the first roll of Teranap 431 onto the slope it was noted that the membrane was very wavy and somewhat brittle. The membrane was previously heated in a sea can with an air blowing heating system. No heat was blowing directly on the membrane. The temperature in the sea can was between approximately 7 to 10 degrees Celsius. Once the membrane was placed over the subgrade, a large crack through the bitumen rapidly formed at the spot on the membrane which was located at the corner of the slope and the horizontal key trench surface. The outside temperature on February 28th was -36 degrees Celsius, which is under the low temperature flexibility limit of the Teranap (-26 degrees Celsius - listed in Siplast's specifications for this product).

After these observations, testing on the Teranap 431 membrane was conducted. Tests done outside between -23 and -19 degrees Celsius proved that the membrane was not suitable for installation in cold conditions at Meadowbank. Major cracks through the bitumen occurred when rolling over the membrane with a pickup truck at -23 degrees Celsius. The material was later pickup truck tested at -19 degrees Celsius and cracks still appeared in the material, though they were smaller. Similar testing with a pickup truck was done on the Coletanche ES3 membrane in 2010 and also while testing the Teranap on March 1st 2013. The Coletanche developed really small cracks only superficially on the bitumen cover.

As a result of being unable to install the Teranap in our winter conditions, Coletanche ES3/ES2 still available on site from 2009-2010 was used instead of the Teranap on Vault Dike. The installation of the Coletanche during cold conditions went well and no problems such as cracking occurred. Because of the limited quantity of Coletanche available on site, it was not possible to

install only Coletanche at Vault Dike. Teranap was installed with the Coletanche in areas judged less critical by SNC and AEM, specifically at the crest section above El.139.5 m.

Teranap was installed horizontally from station 191 to station 298. The liner covers from approximately El. 139.5 m up to El. 141.0 m. All other liner used on Vault Dike was the Coletanche liner.

7.5 HORIZONTAL AND VERTICAL GEOMEMBRANE PLACEMENT

To ease the placement of the membrane in the irregular bottom of the key trench and also to minimize the loss of membrane, the geomembrane was placed vertically instead of horizontally as shown on the design drawing.

The geomembrane was placed horizontally from station 113 to station 298 from approximately El. 139.5 m up to El. 141.0 m. The geomembrane was also placed horizontally from station 120 to station 190 from the bottom of the key trench up to El. 139.5 m. For the rest of the liner placement the geomembrane was placed vertically. The QC report from the geomembrane installer Texel found in Appendix E3 shows the layout of the geomembrane panels.

SECTION 8.0 - OPERATION AND MONITORING

Vault Dike is essential to allow the dewatering of Vault Lake and to isolate Vault Pit during mining activities from Wally Lake. Therefore, the water level upstream of Vault Dike needs to be closely monitored and kept to an adequate level to preserve the integrity of the dike and to allow safe mining operations within Vault Pit.

A monitoring program is essential to ensure the integrity of Vault Dike. The monitoring program includes regular site visits after Vault Dike construction is complete, temperature measurement within the dike using the thermistors, updates on the downstream water levels after construction and during dewatering, and updates on the upstream water levels on an ongoing basis. After construction is complete and for the rest of the service life of the dike detailed site inspections of Vault Dike will be conducted and inspection reports will be issued on a regular basis by AEM. In addition, careful review and analysis will be performed regularly on the Vault Dike thermistor data.

SECTION 9.0 - SUMMARY AND CLOSURE

The construction of Vault Dike at Meadowbank was conducted from February 2013 to March 2013. Construction was completed in general accordance with the requirements of the Design and Technical Specifications elaborated by the designer SNC.

Data and observations for the Vault Dike construction program confirm that earthworks construction, including foundation preparation and fill placement for Vault Dike was completed in general compliance with the Technical Specifications and Design elaborated by SNC. During the

course of the work, five (5) field changes from the original Design were incorporated to take advantage of existing site conditions and to optimize construction activities.

A monitoring program is essential to ensure the integrity of Vault Dike, including regular site visits, temperature measurement within the dike using the thermistors, monitoring of the upstream and downstream water level and detailed site inspections.

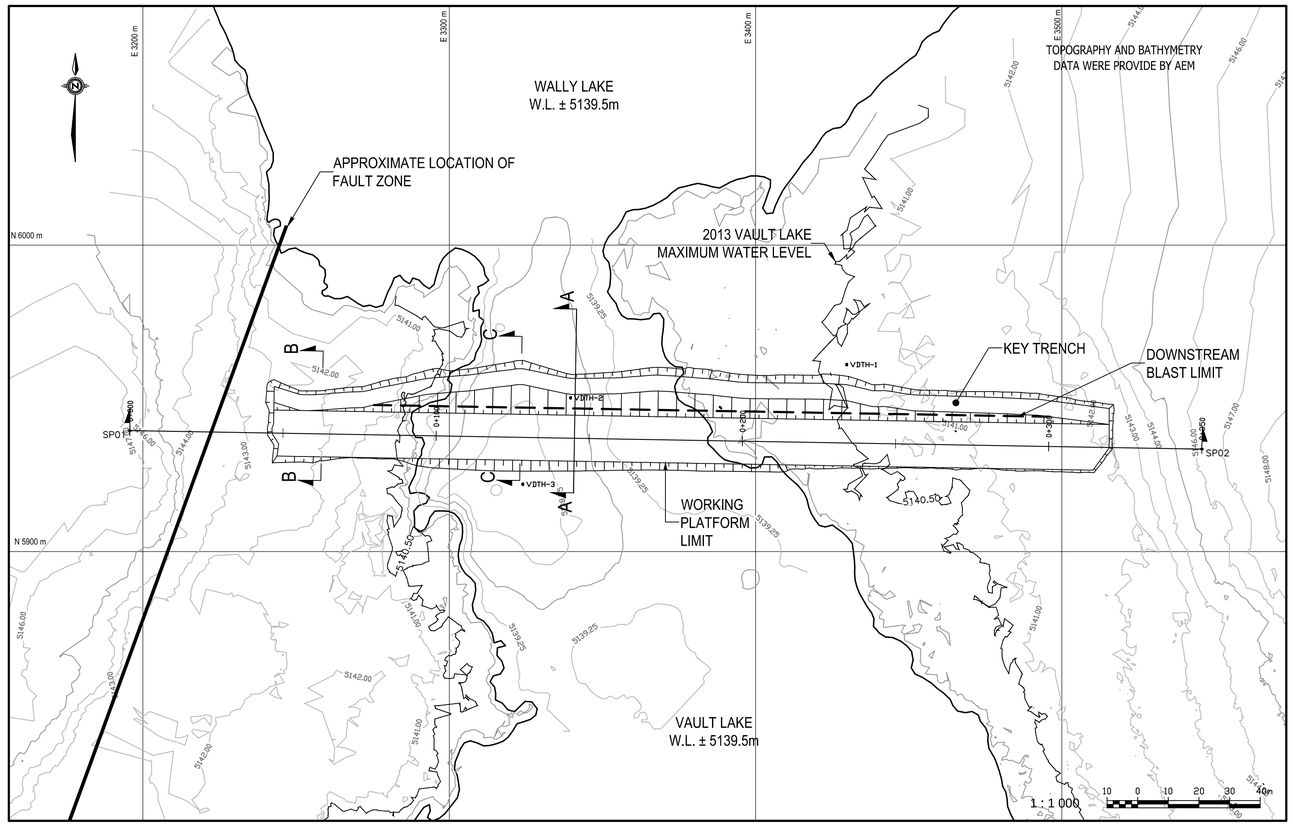
Rebecca Cameron, EIT
Agnico-Eagle Mines Limited
Meadowbank Division

Reviewed by Erika Voyer, Ing.
Agnico-Eagle Mines Limited
Meadowbank Division

For AEM Geotechnical-Dikes Engineering

APPENDIX A

Vault Dike Typical Section, As-Built Drawings and Table of Quantities



PLAN VIEW - VAULT DIKE

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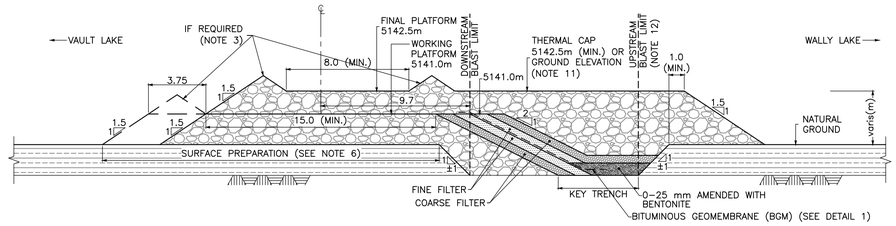

TYPICAL SECTION A-A

BEDROCK ELEVATION BELOW 5140.5m

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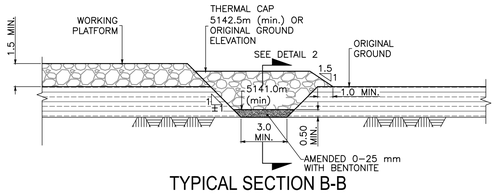


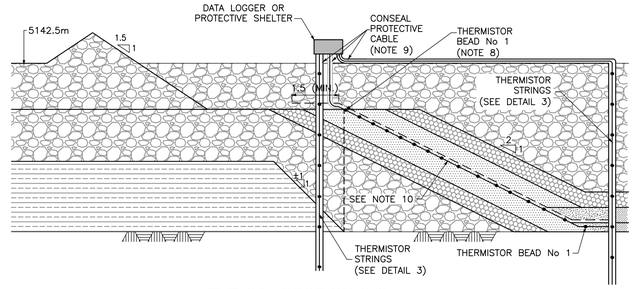
TYPICAL SECTION B-B

BEDROCK ELEVATION ABOVE 5140.5 m

SCALE 1:200

LEGEND

- ROCKFILL
- ICE RICH/POOR TILL
- COARSE FILTER (0-150 mm)
- FINE FILTER (0-25 mm)
- 0-25 mm AMENDED WITH BENTONITE
- BEDROCK



TYPICAL SECTION C-C

THERMISTOR STRINGS INSTALLATION

SCALE 1:100

NOTES:

1. ALL COORDINATES AND ELEVATIONS SHOWN RELATE TO THE MINE SYSTEM. TOPOGRAPHY AND BATHYMETRY DATA WERE PROVIDED BY AEM.
2. ALL DIMENSIONS ARE IN METERS (EXCEPT DETAIL 3)
3. SAFETY BERMS WILL BE REQUIRED IN THE VICINITY OF WATER OR IF PLATFORM IS HIGHER THAN 3.0 m. HEIGHT OF THE SAFETY BERMS WILL BE FIXED ACCORDING TO THE SIZE OF THE HAULING TRUCK USED FOR THE CONSTRUCTION AND WILL BE SPECIFIED BY AEM DURING CONSTRUCTION.
4. BLAST SHOULD REACH BEDROCK AND A MINIMUM DEPTH OF 2.0m.
5. LINER BEDDING AND COVER FILTERS MATERIALS (0-20 mm AND 0-150 mm) SHALL BE PLACED PRIOR TO ALLOW ANY VEHICLE CIRCULATION.
6. SURFACE PREPARATION INCLUDE ICE REMOVAL PRIOR THE PLACEMENT OF FILLS WITHIN THE FOOTPRINT AREA OF THE DIKE.
7. LINER SHALL BE INSTALLED HORIZONTALLY AFTER THE APPROVAL OF THE CONTRACTOR'S PLAN BY THE DESIGNER.
8. SHOWN THERMISTOR BEAD SPACING IS NOT REPRESENTATIVE.
9. SPECIAL CARE SHALL BE TAKEN DURING THE FILL PLACEMENT AROUND THE CONSEAL.
10. INCLINED THERMISTOR STRING SHALL BE BURIED INTO A FINE SAND FILL.
11. THERMAL CAP SHALL BE PLACED BEFORE THE THAW SEASON.
12. UPSTREAM BLAST LIMIT SHALL BE VALIDATED ON FIELD BASED ON BEDROCK DEPTH DURING DRILLING OPERATION.
13. NO ACCESS ROAD SHALL BE CONSTRUCTED OVER THE BITUMINOUS GEOMEMBRANE.
14. THIS DRAWING SHALL BE READ WITH THE TECHNICAL SPECIFICATION REPORT.

SETTING OUT POINTS		
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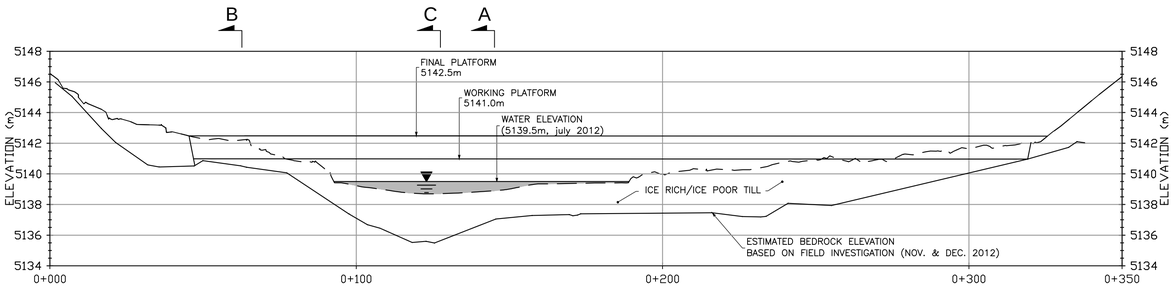
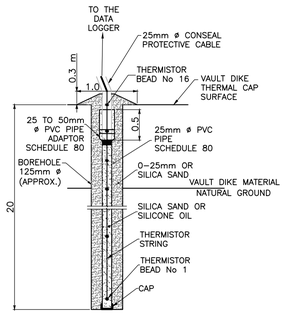
SP02	3545.69	5933.46



PROFIL OF VAULT DIKE

HORIZONTAL SCALE 1:1000

VERTICAL SCALE 1:200

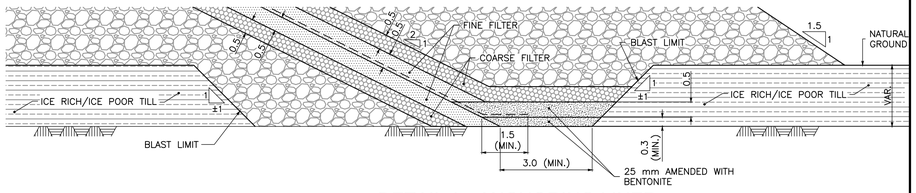


DETAIL 3

VERTICAL THERMISTOR

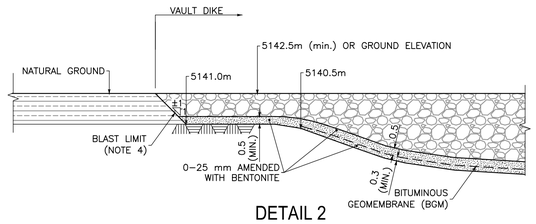
STRING INSTALLATION

SCALE 1:50



DETAIL 1 - ANCHORING LINER

SCALE 1:100



DETAIL 2

DIKE ABUTMENT ALONG THE KEY TRENCH

N.T.S.

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1	00	2013/02/01	ISSUED FOR CONSTRUCTION	

ISSUE REGISTER

No	REVISION DESCRIPTION	DATE (Y/M/D)	DESIGNED	VERIFY	APPROVED	REVISOR ENG.	OIQ No

No	REVISION DESCRIPTION	DATE (Y/M/D)	DESIGNED	VERIFY	APPROVED	REVISOR ENG.	OIQ No

THIS DRAWING IS REPRESENTATIVE OF THE ORIGINAL WORK OF THE DESIGN ENGINEER AND REVISOR ENGINEERS

REVISION REGISTER

No	REFERENCE DRAWINGS NUMBER
1	VAULT DIKE INVESTIGATION -TAMROCK - NOV. 2012.XLSX

PROFESSIONAL SEAL

ORIGINAL HAS BEEN SEALED.

SNC·LAVALIN

Sustainable Mine Development
Global Mining & Metallurgy
SNC LAVALIN INC.
5500, boul. des Galeries, bureau 200
Québec (Québec)
Canada G2K 2E2

PREPARATION	APPROVAL
DESIGNED: Y. JALBERT	PROJECT DISCIPLINE ENGINEER: G. HAILE
DRAWN: E-V. STAICU	CLIENT: AEM
CHECKED: J-F. ST-LAURENT	DATE: 2012/10/22
SCALE: AS SHOWN	

CLIENT: AGNICO-EAGLE

PROJECT: VAULT DIKE

TITLE: CONSTRUCTION OF VAULT DIKE

PROJECT No	SUBDIVISION	SUBJECT	SERIAL	REV.
610548	2020	4G | DD	0002	00

STDSLIA1HEN - FRAME A1 HORIZONTAL ENGLISH

LAST SAVE: 2013/02/01 - 1:21pm
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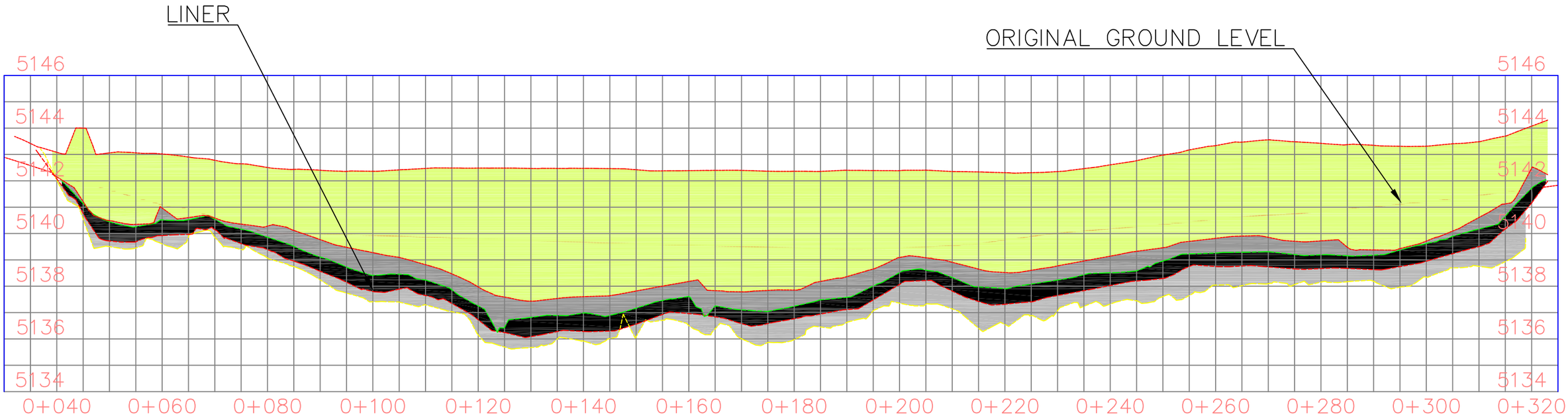
KEY TRENCH PROFILE



- FINE FILTER AMENDED WITH BENTONITE 1ST LAYER
- FINE FILTER AMENDED WITH BENTONITE 2ND LAYER
- COARSE FILTER
- ROCKFILL

TITLE	# DWG	REV	DESCRIPTION	DATE	BY

REFERENCE DRAWINGS

REVISIONS

AGNICO-EAGLE

DRAWN BY	ROBERT CLOUATRE	DATE	02-04-2013
CHECKED BY	E.V./ R.C.		03-04-2013
APPROVED BY			
PROJECT NO.			
DATE			

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
VAULT DIKE
AS BUILT
PROFILE VIEW

SCALE	FILE		
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DRAWING NO.		REVISION	SHEET
			2 / 4

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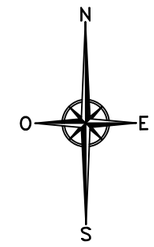
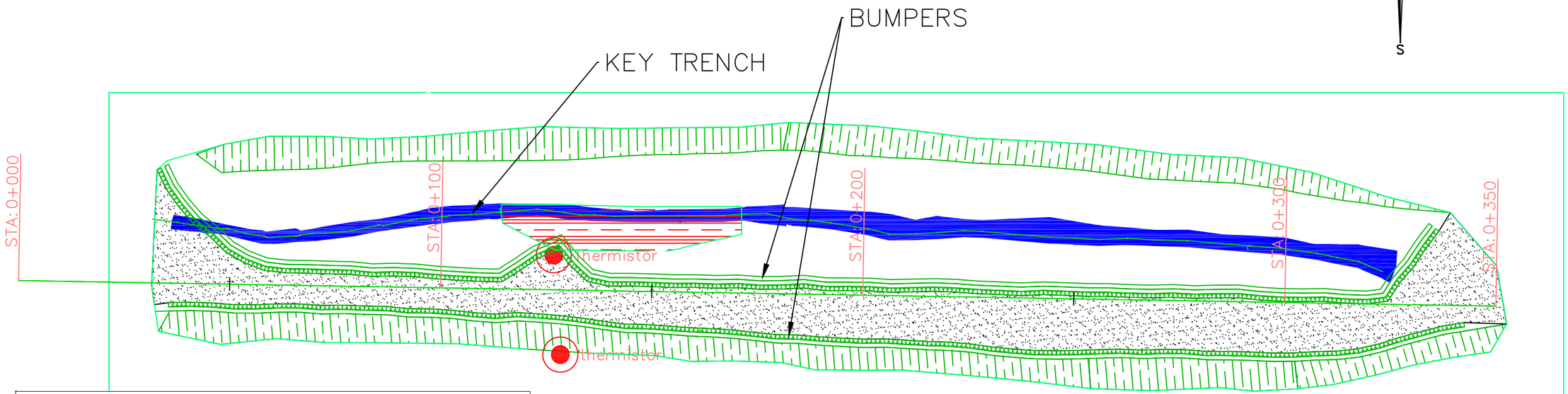
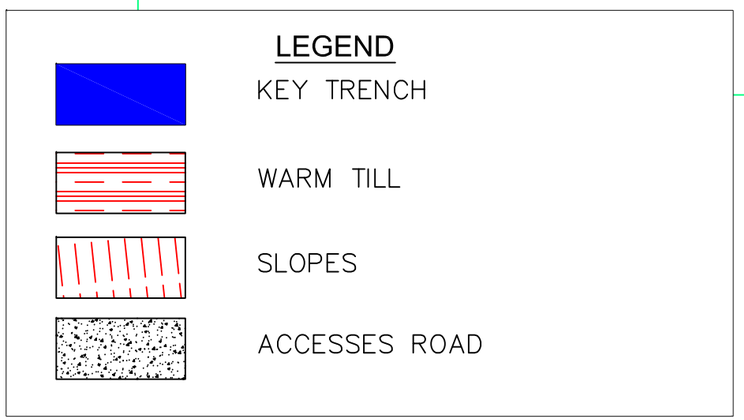
$^{1}98^{500m}$E | 98^{6} | 98^{7} | $^{1}98^{800m}$E

N 05^{900m}N

N 05^{900m}N







PLAN VIEW– VAULT DIKE

TITLE	# DWG	REV	DESCRIPTION	DATE	BY

REFERENCE DRAWINGS

REVISIONS

AGNICO-EAGLE

DRAWN BY	ROBERT CLOUATRE	DATE 02-04-2013
CHECKED BY	E.V. – R.C	02-04-2013
APPROVED BY		
PROJECT NO.		
DATE		

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
VAULT DIKE

AS BUILT

SCALE	FILE
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DRAWING NO.	REVISION	SHEET
		1 / 4

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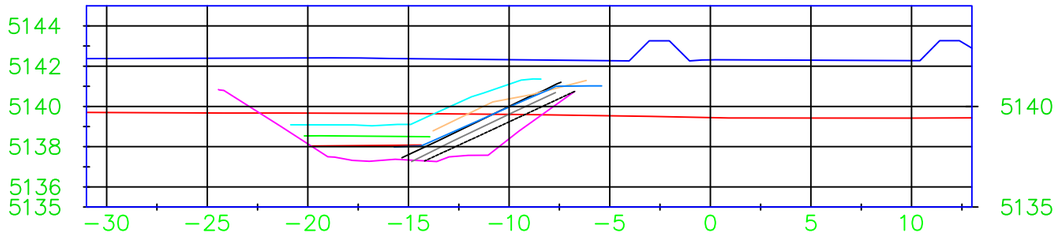

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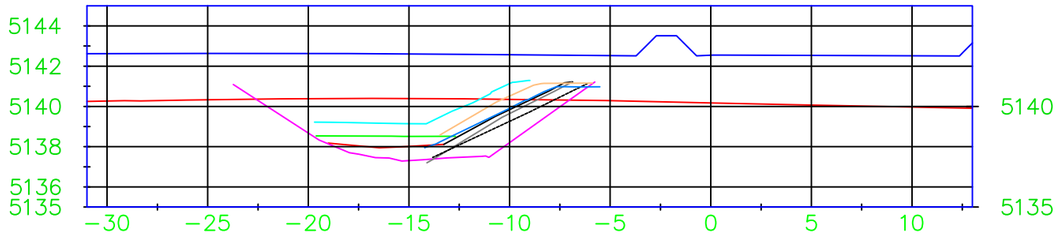

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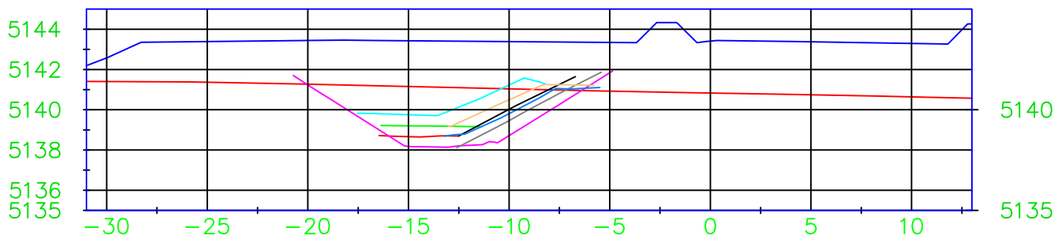

SECTION VIEWS

KEY EXCAVATION
ROCKFILL
FINE FILTER 2ND LAYER
FINE FILTER 1ST LAYER
LINER
FINE FILTER AMENDED EITH BENTONITE 1ST LAYER
0–6" 2ND LAYER
0–6"1ST LAYER
ORIGINAL GROUND
FINE FILTER AMENDEND WITH BENTONITE 2ND LAYER

AGNICO-EAGLE

DRAWN BY	ROBERT CLOUATRE	DATE 03-04-2013
CHECKED BY	E.V. / R.C.	03-04-2013
APPROVED BY		
PROJECT NO.		
DATE		

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
VAULT DIKE
AS BUILT
SECTION VIEW

SCALE	N.T.S.	FILE	.DWG
DRAWING NO.		REVISION	SHEET 4 / 4

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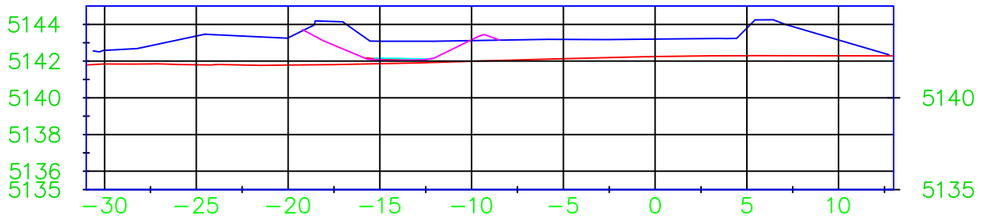

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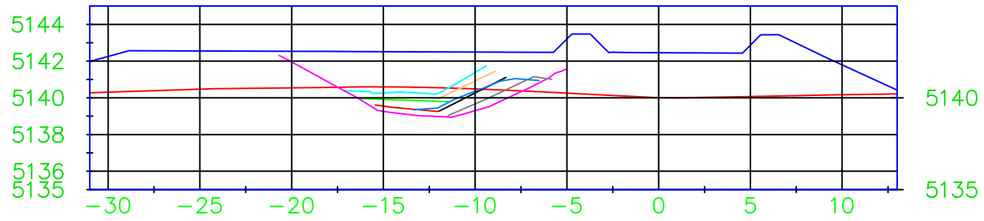

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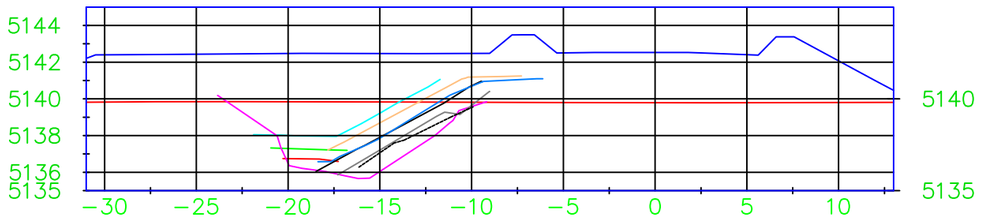

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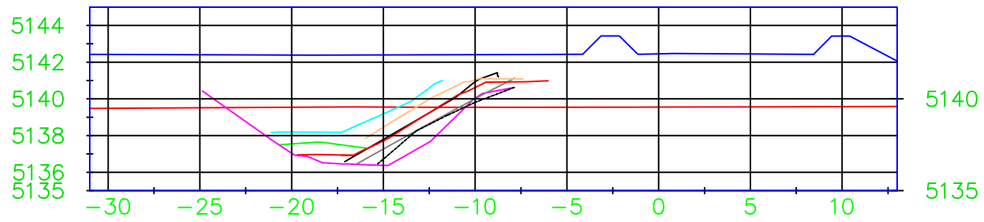


SECTION VIEWS

KEY EXCAVATION
ROCKFILL
FINE FILTER 2ND LAYER
FINE FILTER 1ST LAYER
LINER
FINE FILTER AMENDED EITH BENTONITE 1ST LAYER
0–6" 2ND LAYER
0–6"1ST LAYER
ORIGINAL GROUND
FINE FILTER AMENDEND WITH BENTONITE 2ND LAYER

AGNICO-EAGLE

DRAWN BY	ROBERT CLOUATRE	DATE	03–04–2013
CHECKED BY	E.V. – R.C.		03–04–2013
APPROVED BY			
PROJECT NO.			
DATE			

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
VAULT DIKE
AS BUILT
SECTION VIEW

SCALE	N.T.S.	FILE	.DWG
DRAWING NO.		REVISION	
SHEET	3 / 4		

X:\Vault Dike\18– As–Built Report and Drawings\As–Built Drawings\ACAD–AS BUILT VAULT DIKE FINAL.dwg, 28 Jul 2013

Table of Quantities for Vault Dike Construction

Material	Units	Total
Key trench excavation	m^3	7004.34
Rockfill on each side of the dike	m^3	8183.24
Rockfill to backfill the slope	m^3	648.15
0-6 '' first layer	m^3	767.77
0-3/4'' first layer	m^3	877.73
Bentonite first layer	m^3	482.11
Liner	m^2	1776.19
Bentonite second layer	m^3	729.62
0-3/4'' second layer	m^3	887.69
0-6'' second layer	m^3	1516.2
Final rockfill backfill	m^3	28768.05

Total rockfill used	m^3	37599.44
Total 0-6" used	m^3	2283.97
Total 0-3/4" used	m^3	1765.42
Total bentonite used	m^3	1211.73

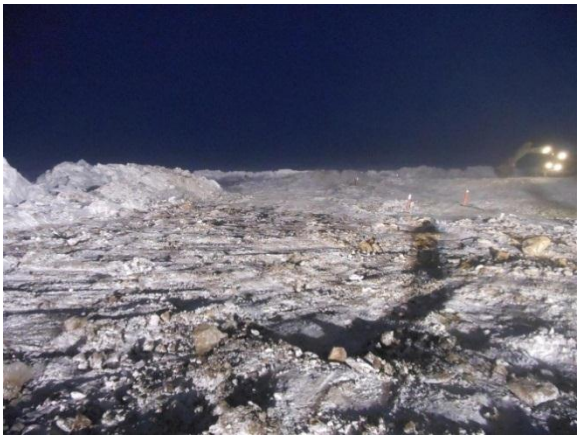
APPENDIX B
Vault Dike Construction Schedule

2013 VAULT DIKE Schedule
Meadowbank Division
Agnico-Eagle

	Vault Dike Construction Tasks	Started task on		# Days to complete task		Completed task on	JANUARY				FEBRUARY				MARCH					APRIL			
							4-Jan	11-Jan	18-Jan	25-Jan	1-Feb	8-Feb	15-Feb	22-Feb	1-Mar	8-Mar	15-Mar	22-Mar	29-Mar	5-Apr	12-Apr	19-Apr	26-Apr
VAULT DIKE	CONSTRUCT ACCESS ROADS	Date	1/27/2013	# Days	11 days	2/7/2013																	
									27			7											
	FOOT PRINT AREA SNOW/ICE REMOVAL (SURFACE PREP)	Date	1/27/2013	# Days	16 days	2/12/2013																	
									27				12										
	DRILL, BLAST, EXCAVATE AND GRADING - KEY TRENCH	Date	2/4/2013	# Days	14 days	2/18/2013																	
										4				18									
	COARSE FILTER PLACEMENT AND COMPACTION (0-150 mm)	Date	2/9/2013	# Days	34 days	3/15/2013																	
											9						15						
	FINE FILTER PLACEMENT AND COMPACTION (0-25 mm)	Date	2/9/2013	# Days	34 days	3/15/2013																	
											9						15						
	0-25 mm AMENDED WITH BENTONITE PLACEMENT AND COMPACTION	Date	2/13/2013	# Days	28 days	3/13/2013																	
											13						13						
	ROCKFILL PLACEMENT AND COMPACTION (0-1000 mm)	Date	3/4/2013	# Days	16 days	3/20/2013																	
														4				20					
	BITUMINOUS GEOMEMBRANE INSTALLATION	Date	3/3/2013	# Days	10 days	3/13/2013																	
														3			13						
	THERMISTOR STRING INSTALLATION	Date	2/26/2013	# Days	47 days	4/14/2013																	
													26									14	

APPENDIX C
Selected Vault Dike Construction Photos

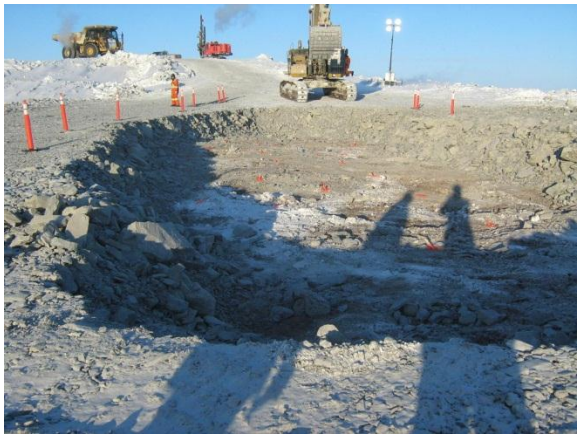
(Feb 3 2013) Foundation after preparation



(Feb 3 2013) Part of the approved foundation

(Feb 4 2013) Dumping rockfill to make working platform

(Feb 5 2013) Compaction of working platform with vibratory roller



(Feb 5 2013) Drill pattern laid out by surveyor

(Feb 5 2013) Drilling, making working platform, and foundation preparation all ongoing simultaneously

(Feb 5 2013) Rockfill placement for working platform

(Feb 5 2013) Snow, ice, overburden, and boulder removal

(Feb 5 2013) View of Vault Dike area from 0+330

(Feb 6 2013) Drilling blast pattern

(Feb 7 2013) Key trench after blasting and excavation

(Feb 7 2013) Key trench excavation

(Feb 8 2013) Floor of key trench

(Feb 10 2013) Gently mixing bentonite and fine filter

(Feb 9 2013) Key trench after blasting, excavation and grading

(Feb 9 2013) Drilling boulder to smooth out slope

(Feb 9 2013) Placement of fine filter over coarse filter on key trench slope

(Feb 9 2013) Placement of coarse filter over rockfill key trench slope

(Feb 10 2013) Ice found in till slope after blasting

(Feb 10 2013) Mixing bentonite with fine filter for compaction tests

(Feb 12 2013) Compacting fine filter and bentonite mix

(Feb 12 2013) Looking west at Vault Dike

(Feb 12 2013) Snow cleaning above fine filter and bentonite mix

(Feb 12 2013) Trench floor cleaning

(Feb 13 2013) Compacted fine filter layer

(Feb 13 2013) Complete fine filter with bentonite layer in key trench

(Feb 13 2013) Fine filter with bentonite placement

(Feb 14 2013) Rockfill slope Vault Lake side looking west

(Feb 16 2013) Bentonite and fine filter mixing

(Feb 21 2013) Bentonite and fine filter mix stockpile with cover

(Feb 24 2013) General view of Vault dike from the west end

(Feb 26 2013) Thermistor TH5 installed before geomembrane with rock crusher reject fill

(Feb 27 2013) Key trench and slope ready for geomembrane installation

(Feb 28 2013) First attempt to roll out the Teranap geomembrane

(Feb 28 2013) Geomembrane on bottom of south slope, does not lie flat and begins to crack where the slope meets the key trench floor

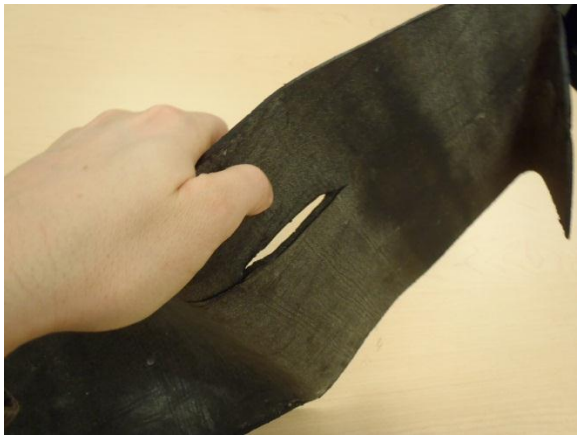
(Feb 28 2013) Cracks in geomembrane created by stepping on it

(Feb 28 2013) Line showing where the geomembrane edge should lie

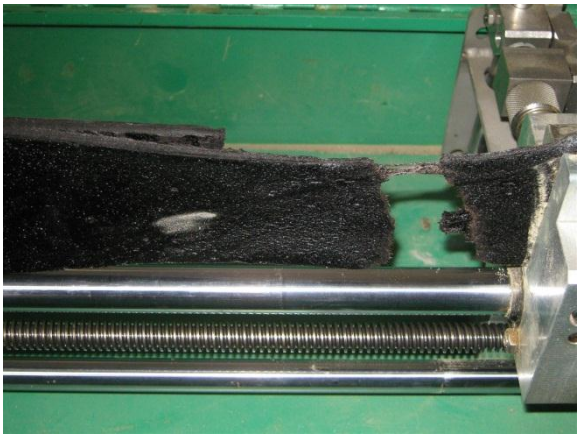
(Feb 28 2013) Ripples in Teranap geomembrane

(Mar 1 2013) Cracks in Teranap geomembrane from bending it with hands

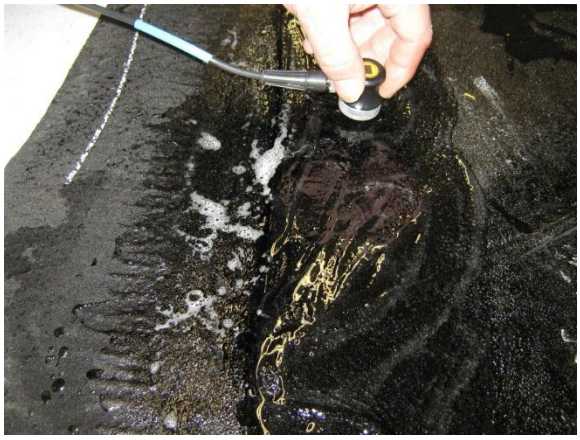
(Mar 1 2013) Rip in Teranap geomembrane from running over it with a truck



(Mar 1 2013) Rip in Teranap geomembrane



(Mar 1 2013) Stretch testing the Teranap geomembrane



(Mar 1 2013) Testing the Teranap geomembrane for permeability

(Mar 3 2013) Rolling out the Coletanche geomembrane

(Mar 3 2013) Coletanche geomembrane placement successful

(Mar 3 2013) Patch on Coletanche geomembrane

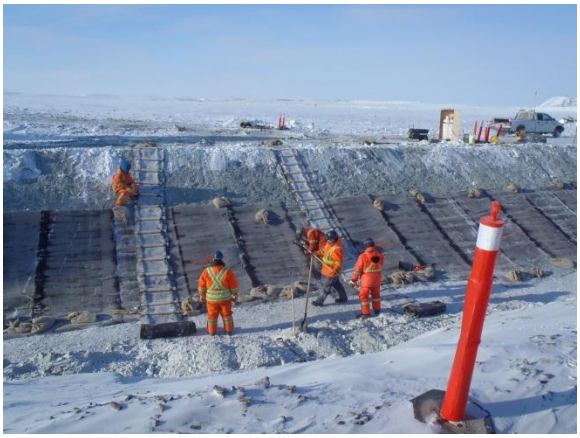
(Mar 3 2013) Welding the geomembrane

(Mar 3 2013) Compacting fine filter and bentonite layer over the geomembrane

(Mar 5 2013) Fine and coarse filters above geomembrane

(Mar 6 2013) Fine filter with bentonite placed above geomembrane and compacted

(Mar 4 2013) Horizontal geomembrane welding



(Mar 9 2013) Vertical geomembrane welding in progress

(Mar 10 2013) Vault Dike general overview during geomembrane placement

(Mar 10 2013) Vertical seams on Coletanche geomembrane

(Mar 11 2013) Fine filter placement above geomembrane

(Mar 13 2013) Coletanche and Teranap geomembrane

(Mar 14 2013) Vault Dike general overview looking east

(Mar 14 2013) Vault Dike general overview looking west

(Mar 19 2013) Placing rockfill on the top of Vault Dike

(Mar 20 2013) Adding rockfill to the top of Vault Dike

(Mar 21 2013) Vault Dike before addition of berms and thermistor installation

(Mar 26 2013) Adding berms to Vault Dike

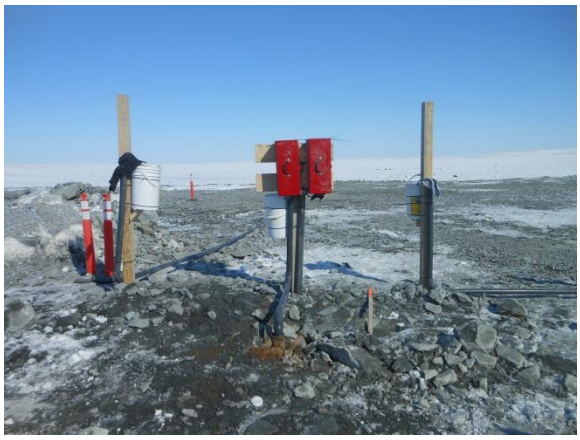
(Mar 28 2013) Downstream side of Vault Dike

(Mar 28 2013) Looking down Vault Dike from 0+080

(Mar 28 2013) Looking down Vault Dike from 0+330

(Mar 28 2013) Looking down Vault Dike from centre

(Mar 28 2013) Upstream side of Vault Dike



(Apr 14 2013) Thermistor reading stations

(Apr 14 2013) Thermistor set up

APPENDIX D
Map of Vault Pit Area

DRAWING NO.

FORMAT ARCHD–LANDSCAPE

TURN LAKE

30,0
1,5 1 — 1,5 1
– 0,150m 0–50mm ROCK
– 2,0m BACKFILL
SCALE 1:500

28,0
1,5 1 — 1,5 1
– 0,150m 0–50mm ROCK
– 2,0m BACKFILL
SCALE 1:500

2,6Ha
1,5 1 — 1,5 1
– 0,150m, 0–50mm ROCK
– 2,0m BACKFILL
SCALE 1:500

1,0Ha
1,5 1 — 1,5 1
– 0,150m, 0–50mm ROCK
– 2,0m BACKFILL
SCALE 1:500

15.0
1,5 1 — 1,5 1
– 0,150m 0–50mm ROCK
– 1,0m BACKFILL
TYPICAL SECTION
DEWATERING ROAD EXTENSION & LAKES ACCESS
SCALE 1:500

15.0
1,5 1 — 1,5 1
– 0,150m, 0–50mm ROCK
– 2,0m BACKFILL
SCALE 1:500

15.0
1,5 1 — 1,5 1
– 0,150m, 0–50mm ROCK
– 2,0m BACKFILL
SCALE 1:500

10,0
1,5 1 — 1,5 1
– 0,150m 0–50mm ROCK
– 2,0m BACKFILL
SCALE 1:500

X=640 000
X=641 000
X=642 000
X=643 000
Y=7 218 000
Y=7 219 000
Y=7 220 000
Y=7 221 000
Y=7 222 000

A
B
C
D

PHASER LAKE
Mine Access to Phaser Pit
Dewatering Road to Phaser Lake
Vault Road
Marginal Pad phase 2
MARGINAL
Marginal Pad phase 1
LAYDOWN AREA
ORE PAD
ORE PAD EXTENSION
Marginal Road
Shortcut Road
Quarry Access
QUARRY
Mine Access to Vault Pit
VAULT RSF
Vault Dike Road West
SNOW STORAGE
Exploration Pad
INFRASTRUCTURE PAD
TOWER PAD
Vault Road
Vault Dike Road East - Section 1
VAULT LAKE
Dewatering Road B
Dewatering Road A
Stockpile A
Dam Pad
Extension Pad A
WTP Lake Access
Extension Pad B
Stockpile B
W.T.P. PAD
Extension Pad C
Dewatering Road C
Dike Crossing Road
Vault Dike Road East - Section 2
ELECTRICAL ROOM PAD
Stockpile C
Vault Dike Road East - Section 3
Vault Dike Road East - Section 4
DETONATOR MAGAZINE PAD
MAGAZINE ROAD
DISCHARGE ROAD
POWDER MAGAZINE PAD
WALLY LAKE

KEY PLAN

GENERAL NOTES

NOT FOR CONSTRUCTION.

This map is for information purpose.

In Blue is all the infrastructure designed and approved.

In Red is all the infrastructure in conceptual design.

In Dark Grey is all the Asbuilts.

The coordinate system in this map is in UTM, which does not have to be confused with the coordinate system used in Gemcom for the Vault Project.

TITLE	# DWG

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	BY	APP.	CLIENT

REVISIONS

AGNICO-EAGLE
MEADOWBANK DIVISION

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
Vault Project

PROJECT MASTERPLAN
NOT FOR CONSTRUCTION

DRAWN BY: G. Condoretty	DATE: 20/10/2012
CHECKED BY:	
APPROVED BY:	
SCALE:	DATE: 10/03/2013 UPDATE
DRAWING NO.:	
PROJECT NO.:	REVISION: / SHEET: 1 / 1

X:\Vault Dike\18– As–Built Report and Drawings\Appendix Files\Appendix C\Map of Vault Pit Area.dwg, 18 Jul 2013

FILE NO. .DWG

APPENDIX E
QC Results – Geotechnical Testing Records

APPENDIX E1.
Fill QC Results

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT:	AEM	**PLANCHE NO:**	
PROJET:	Vault Dike	**PROJET NO:**	Q031136 B3
		ÉCHANTILLON NO:	VD-01
		DATE:	2013-02-22

Description du matériau:	Coarse Filter	**Localisation du prélèvement:**	stockpile
Provenance (source 1ère)	Sana crusher		
Usage proposé:	remblai, key trench	**Prélevé par:**	M.L.D
		Date de prélèvement:	2013-02-07_J

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

Tamis				x mm	x mm	200.00 mm	152.4 mm	76.20 mm	25.4 mm	12.7 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	86	44	29	17	12	8	7	6	5	4.0
Résultats individuels																	
Exigences	min.			100		100	86	35	5	0	0	0					
	max.			100		100	100	100	40	18	9	5					

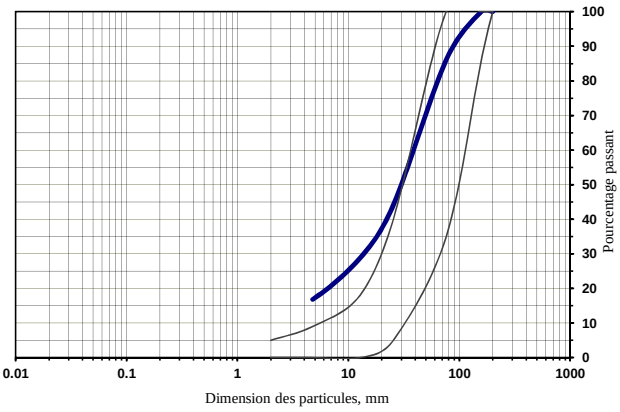
AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: 0-150: 32 Central Dyke

COURBE GRANULOMÉTRIQUE



% gravier	83.2%	Cu = #NUM!	D_{85} = 74.0	D_{15} = 3.5
% sable	12.9%	Cc = #NUM!	D_{60} = 38.5	D_{10} = #NUM!
% silt/argile	4.0%		D_{50} = 29.6	

Remarques:

Préparé par: P.B. Vérifié par:

INSPEC-SOL

ANALYSE DES SOLS ET DES GRANULATS

CLIENT:	FGL SANA/ AEM	**PLANCHE NO:**	
PROJET:	CENTRAL DIKE	**PROJET NO:**	Q031136-B3
		ÉCHANTILLON NO:	VD-01
		DATE:	8 février 2013

Description du matériau:	Coarse filter	**Localisation du prélèvement:**	Stock pile
Provenance (source 1ère):	Stock pile sana crusher		
Usage proposé:	Dike	**Prélevé par:**	M.L.D
		Date de prélèvement:	7 février 2013

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

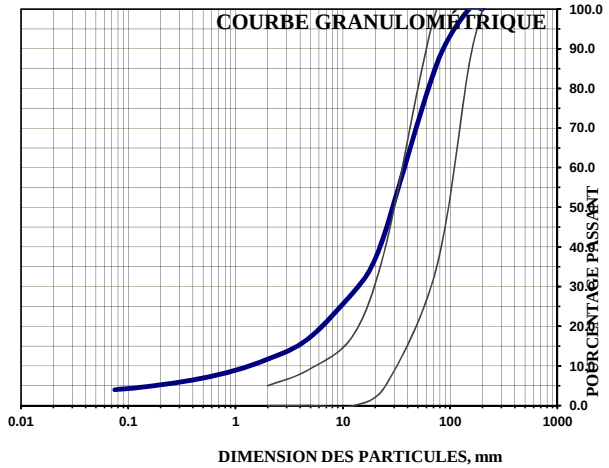
Tamis			x mm	200 mm	150 mm	75 mm	25 mm	19 mm	12.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs			100	100	100	86	**44**	36	**29**	**17**	**12**	8	7	6	5	4.0
Résultats individuels																
Exigences	min.		#N/A		100	86	35	5		0	0	0					
	max.		#N/A		100	100	100	40		18	9	5					

AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Coarse Filter: Central Dike



% gravier	83.2%	Cu = 29	D_{85} = 72.8	D_{15} = 3.5
% sable	12.9%	Cc = 4	D_{60} = 37.9	D_{10} = 1.3
% silt/argile	4.0%		D_{50} = 29.2	

Remarques: Écart(s) aux tamis suivant(s): 25, 12,5, 4,76, 2 mm

Préparé par: P.B Vérifié par:

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT:	AEM	**PLANCHE NO:**	
PROJET:	Vault Dike	**PROJET NO:**	Q031136-B3
		ÉCHANTILLON NO:	VD-02
		DATE:	2013-02-22

Description du matériau:	0-25mm / bentonite	**Localisation du prélèvement:**	0+070
Provenance (source 1ère)	Fine Filter Stockpile		
Usage proposé:	remblai, key trench	**Prélevé par:**	P.B
		Date de prélèvement:	2013-02-11_N

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

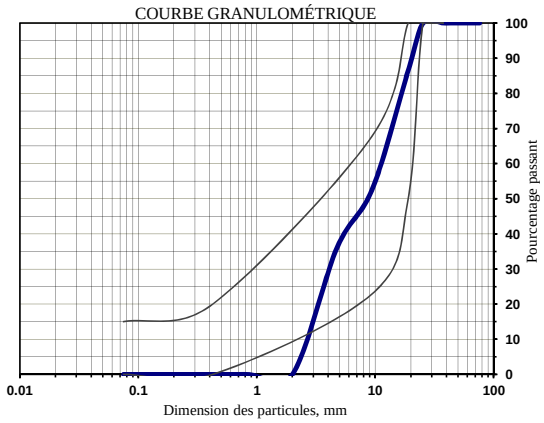
Tamis				0 mm	0 mm	150 mm	50 mm	25 mm	19 mm	9.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	100	86	53	36	#####	#####	#####	#####	#####	#####
Résultats individuels																	
Exigences	min.						100	100	50	23				0			0.0
	max.						100	100	100	68				20			15.0

AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Fine Filter: Sable et gravier



% gravier	64.0%	Cu = #DIV/0!	D_{85} = #DIV/0!	D_{15} = #DIV/0!
% sable	#DIV/0!	Cc = #DIV/0!	D_{60} = #DIV/0!	D_{10} = #DIV/0!
% silt/argile	#DIV/0!		D_{50} = #DIV/0!	

Remarques: pas de granulométrie sur le sable

Préparé par: Vérifié par:

INSPEC-SOL

ANALYSE DES SOLS ET DES GRANULATS

CLIENT:	FGL SANA/ AEM	**PLANCHE NO:**	
PROJET:	VAULT DIKE	**PROJET NO:**	Q031136-B3
		ÉCHANTILLON NO:	VD-02
		DATE:	13 février 2013

Description du matériau:	fine filter+ bentonite	**Localisation du prélèvement:**	Key trench st:0+070 CL
Provenance (source 1ère):	Stock pile sana crusher		
Usage proposé:	Dike	**Prélevé par:**	P.B
		Date de prélèvement:	11 février 2013

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

Tamis				150 mm	76.2 mm	50 mm	37.5 mm	25 mm	19 mm	12.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	100	86	64	36	#####	#####	#####	#####	#####	#####
Résultats individuels																	
Exigences	min.							100	100	50	23			0			0.0
	max.							100	100	100	68			20			15.0

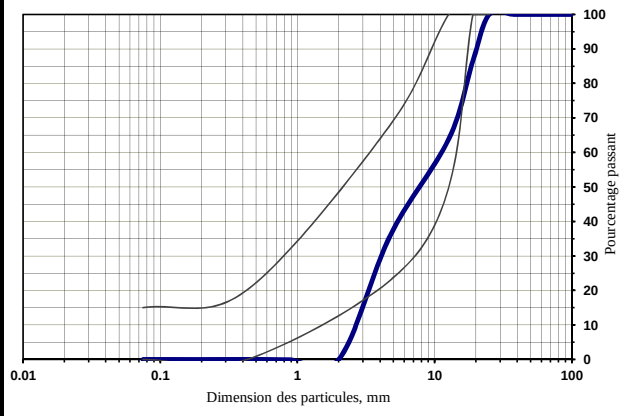
AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.
Dépassement du % de perte total			

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Fine Filter: Central Dike

COURBE GRANULOMÉTRIQUE



% gravier	64.0%	Cu = #DIV/0!	D_{85} = #DIV/0!	D_{15} = #DIV/0!
% sable	#DIV/0!	Cc = #DIV/0!	D_{60} = #DIV/0!	D_{10} = #DIV/0!
% silt/argile	#DIV/0!		D_{50} = #DIV/0!	

Remarques: #DIV/0!

Préparé par: P.B Vérifié par:

INSPEC-SOL
ENGINEERING SOLUTIONS

DETERMINATION OF PERMEABILITY OF GRANULAR SOILS
(Ministry of Transportaion, Ontario LS-709, Rev. No. 18)

CLIENT:	Agnico-Eagle Mines ltd. - Meadowbank	**LAB No.:**	WLB 276
PROJECT/ SITE:	Nunavut	**PROJECT No.:**	Q0301136-B3

Borehole No.:	N/A	Sample ID:	N/A
Depth:	N/A	Sample Date:	N/A

Type of material **0-22 mm + bentonite VD18**

Sample Parameters

Diameter, cm	15.2
Height, cm	11.4
Volume, cm^3	2069
Dry Mass, g	4150
Wet Density, g/cm^3	2.101
Dry Density, g/cm^3	2.006
Moisture, %	22.8

Water Content

Before Test , %	5.0
After Test, %	22.8

Run No.	Head 'h' (cm)	Water Flow (cm^3)	Time t (sec)	Q (cm^3/sec)	Hydrqulic Gradient (i)	K (cm/sec)	Temp of Water ^oC	Viscosity of Water	K Corrected (cm/sec)
1	65	229.4	5580	0.04	5.70	4.0E-05	23.0	0.94	3.7E-05
2	65	143.2	3600	0.04	5.70	3.8E-05	23.0	0.94	3.6E-05
3	99	3535.4	69120	0.05	8.68	3.2E-05	22.0	0.96	3.1E-05
Average									3.5E-05

Hydraulic Conductivity @ 20 ^{o} C:	***cm/sec***	***3.5E-05***

REMARKS: Ctl: 0+201 x: 3397,0 y: 5951,14 z: 5138,7
Run 3 performed after 72 hours of saturation.

PERFORMED BY:	Casey Adachi	**DATE:**	17-Apr-13
VERIFIED BY:	Michael Braverman	**DATE:**	17-Apr-13

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT:	AEM	**PLANCHE NO:**	
PROJET:	Vault Dike	**PROJET NO:**	Q031136-B3
		ÉCHANTILLON NO:	VD-03
		DATE:	2013-02-13

Description du matériau:	Fine Filter	**Localisation du prélèvement:**	0+060
Provenance (source 1ère)	Fine Filter Stockpile		
Usage proposé:	remblai slope, key trench	**Prélevé par:**	M.L.D
		Date de prélèvement:	2013-02-13-jour

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

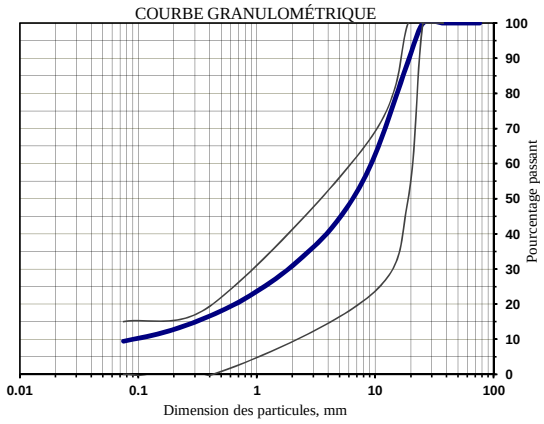
Tamis				0 mm	0 mm	150 mm	50 mm	25 mm	19 mm	9.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	100	89	61	44	31	22	17	14	12	9.4
Résultats individuels																	
Exigences	min.						100	100	50	23				0			0.0
	max.						100	100	100	68				20			15.0

AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Fine Filter: Sable et gravier



% gravier	56.4%	Cu = 102	D_{85} = 17.1	D_{15} = 0.3
% sable	34.1%	Cc = 4	D_{60} = 9.2	D_{10} = 0.1
% silt/argile	9.4%		D_{50} = 6.2	

Remarques:

Préparé par: P.B. Vérifié par:

INSPEC-SOL

ANALYSE DES SOLS ET DES GRANULATS

CLIENT:	FGL SANA/ AEM	**PLANCHE NO:**	
PROJET:	VAULT DIKE	**PROJET NO:**	Q031136-B3
		ÉCHANTILLON NO:	VD-03
		DATE:	13 février 2013

Description du matériau:	Fine filter	**Localisation du prélèvement:**	Key trench st: 0+060
Provenance (source 1ère):	Stock pile sana crusher		
Usage proposé:	dike	**Prélevé par:**	M.L.D
		Date de prélèvement:	11 février 2013

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

Tamis				150 mm	76.2 mm	50 mm	37.5 mm	25 mm	19 mm	12.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	100	**89**	71	44	31	22	17	14	12	9.4
Résultats individuels																	
Exigences	min.							100	100	50	23			0			0.0
	max.							100	100	100	68			20			15.0

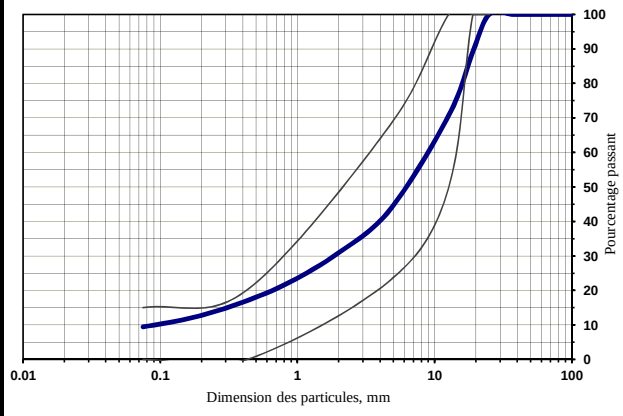
AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Fine Filter: Central Dike

COURBE GRANULOMÉTRIQUE



% gravier	56.5%	Cu = 96	D_{85} = 17.3	D_{15} = 0.3
% sable	34.1%	Cc = 4	D_{60} = 8.6	D_{10} = 0.1
% silt/argile	9.4%		D_{50} = 6.0	

Remarques: Écart(s) aux tamis suivant(s): 19 mm

Préparé par: PB Vérifié par:

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT:	AEM	**PLANCHE NO:**	
PROJET:	Vault Dike	**PROJET NO:**	Q031136-B3
		ÉCHANTILLON NO:	VD-06
		DATE:	2013-02-22

Description du matériau:	0-25mm	**Localisation du prélèvement:**	stockpile
Provenance (source 1ère)	Fine Filter Stockpile		
Usage proposé:	remblai slope, key trench	**Prélevé par:**	M.L.D
		Date de prélèvement:	2013-02-15_J

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

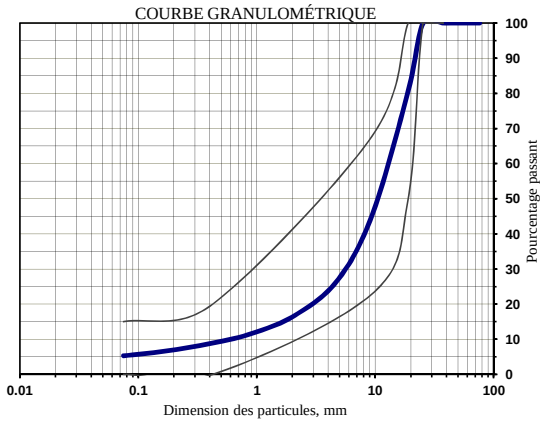
Tamis				0 mm	0 mm	150 mm	50 mm	25 mm	19 mm	9.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	100	81	46	27	16	11	9	8	6	5.3
Résultats individuels																	
Exigences	min.						100	100	50	23				0			0.0
	max.						100	100	100	68				20			15.0

AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Fine Filter: Sable et gravier



% gravier	73.4%	Cu = 22	D_{85} = 20.3	D_{15} = 1.6
% sable	21.3%	Cc = 4	D_{60} = 12.6	D_{10} = 0.6
% silt/argile	5.3%		D_{50} = 10.4	

Remarques: pas de granulométrie sur le sable

Préparé par: Vérifié par:

INSPEC-SOL

ANALYSE DES SOLS ET DES GRANULATS

CLIENT:	FGL SANA/ AEM	**PLANCHE NO:**	
PROJET:	VAULT DIKE	**PROJET NO:**	Q031136-B3
		ÉCHANTILLON NO:	VD-06
		DATE:	16 février 2013

Description du matériau:	fine filter	**Localisation du prélèvement:**	Stoke pile vault dike
Provenance (source 1ère):	Stock pile sana crusher		
Usage proposé:	DIKE	**Prélevé par:**	M.L.D
		Date de prélèvement:	15 février 2013

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

Tamis				150 mm	76.2 mm	50 mm	37.5 mm	25 mm	19 mm	12.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	100	81	58	27	16	11	9	8	6	5.3
Résultats individuels																	
Exigences	min.							100	100	50	23			0			0.0
	max.							100	100	100	68			20			15.0

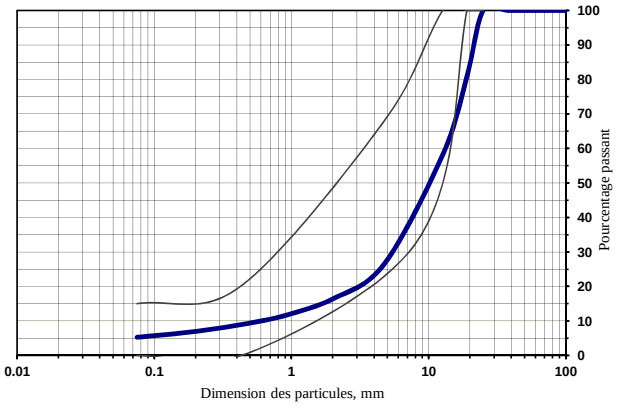
AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Fine Filter: Central Dike

COURBE GRANULOMÉTRIQUE



% gravier	73.4%	Cu = 23	D_{85} = 20.2	D_{15} = 1.6
% sable	21.3%	Cc = 4	D_{60} = 13.1	D_{10} = 0.6
% silt/argile	5.3%		D_{50} = 9.8	

Remarques: Écart(s) aux tamis suivant(s): 19 mm

Préparé par: P.B Vérifié par:

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT: AEM	**PLANCHE NO:**
	PROJET NO: Q031136 B3
PROJET: Vault Dike	**ÉCHANTILLON NO:** VD-08
	DATE: 2013-02-20

Description du matériau:	Coarse Filter	**Localisation du prélèvement:**	slope, key trench
Provenance (source 1ère)	Sana crusher		station 0+250
Usage proposé:	remblai, key trench	**Prélevé par:**	Fabien Zilli
		Date de prélèvement:	2013-02-20_Nuit

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

Tamis				x mm	x mm	200.00 mm	152.4 mm	76.20 mm	25.4 mm	12.7 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	93	50	24	15	9	6	4	3	3	2	1.8
Résultats individuels																	
Exigences	min.			100		100	86	35	5	0	0	0					
	max.			100		100	100	100	40	18	9	5					

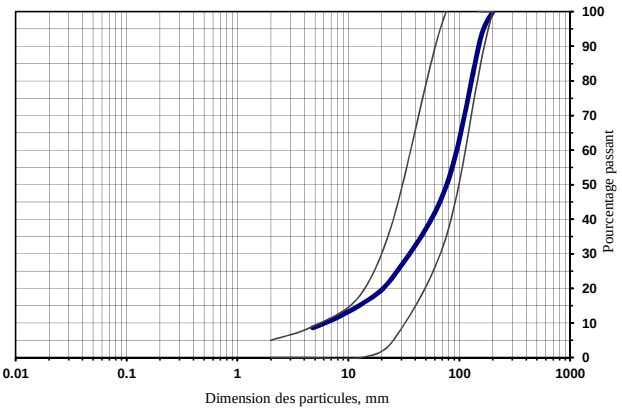
AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: 0-150: 32 Central Dyke

COURBE GRANULOMÉTRIQUE



% gravier	91.4%	Cu = #N/A	D_{85} = #N/A	D_{15} = 12.3
% sable	6.8%	Cc = #N/A	D_{60} = #N/A	D_{10} = 5.9
% silt/argile	1.8%		D_{50} = #N/A	

Remarques:

Préparé par: Maxime Côté Vérifié par:

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT:	AEM	**PLANCHE NO:**	
PROJET:	Vault Dike	**PROJET NO:**	Q031136-B3
		ÉCHANTILLON NO:	VD-10
		DATE:	2013-02-21

Description du matériau:	Fine Filter	**Localisation du prélèvement:**	0+219
Provenance (source 1ère)	Fine Filter Stockpile		
Usage proposé:	remblai slope, key trench	**Prélevé par:**	Maxime Côté
		Date de prélèvement:	2013-02-20_N

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

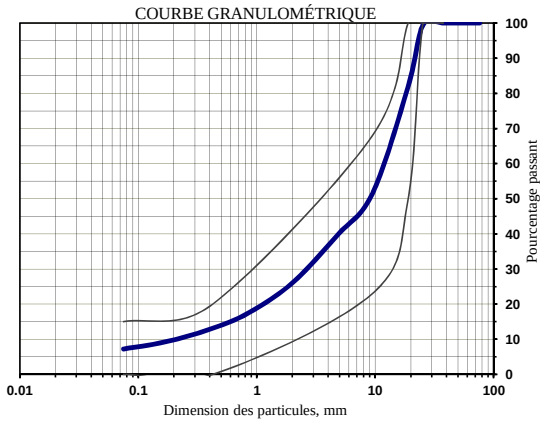
Tamis				0 mm	0 mm	150 mm	50 mm	25 mm	19 mm	9.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	100	82	52	40	26	17	13	11	9	7.2
Résultats individuels																	
Exigences	min.						100	100	50	23				0			0.0
	max.						100	100	100	68				20			15.0

AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Fine Filter: Sable et gravier



% gravier	60.5%	Cu = 56	D_{85} = 20.0	D_{15} = 0.6
% sable	32.3%	Cc = 3	D_{60} = 11.5	D_{10} = 0.2
% silt/argile	7.2%		D_{50} = 8.7	

Remarques:

Préparé par: Maixime coté

Vérifié par:

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT:	AEM	**PLANCHE NO:**	
PROJET:	Vault Dike	**PROJET NO:**	Q031136-B3
		ÉCHANTILLON NO:	VD-10
		DATE:	2013-02-21

Description du matériau:	Fine Filter	**Localisation du prélèvement:**	0+219
Provenance (source 1ère)	Fine Filter Stockpile		
Usage proposé:	remblai slope, key trench	**Prélevé par:**	Maxime Côté
		Date de prélèvement:	2013-02-20_N

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

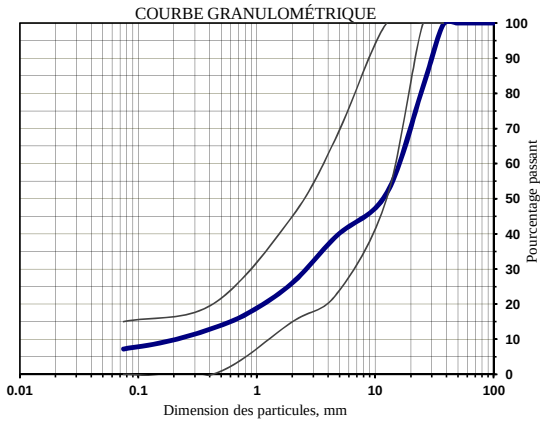
Tamis				0 mm	0 mm	150 mm	50 mm	25 mm	19 mm	12.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	100	**82**	52	40	26	17	13	11	9	7.2
Résultats individuels																	
Exigences	min.							100	100	50	23	15		0			0.0
	max.							100	100	100	68	45		20			15.0

AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Fine Filter: Sable et gravier



% gravier	60.5%	Cu = 74	D_{85} = 27.1	D_{15} = 0.6
% sable	32.3%	Cc = 2	D_{60} = 15.2	D_{10} = 0.2
% silt/argile	7.2%		D_{50} = 11.1	

Remarques:

Préparé par: Maxime Côté

Vérifié par:

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT: AEM	**PLANCHE NO:**
	PROJET NO: Q031136-B3
PROJET: Vault Dike	**ÉCHANTILLON NO:** VD-13
	DATE: 2013-02-27

Description du matériau:	Fine Filter	**Localisation du prélèvement:**	stock pile Vault Dike
Provenance (source 1ère)	Fine Filter Stockpile		
Usage proposé:	remblai slope, key trench	**Prélevé par:**	Maxime Côté
		Date de prélèvement:	2013-02-26_N

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

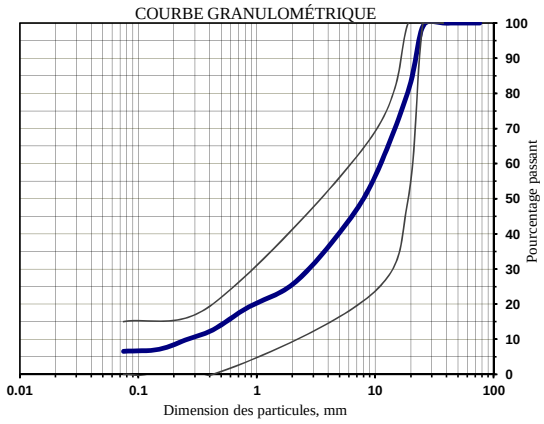
Tamis				0 mm	0 mm	150 mm	50 mm	25 mm	19 mm	9.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	99	81	55	39	26	19	13	10	7	6.6
Résultats individuels																	
Exigences	min.						100	100	50	23				0			0.0
	max.						100	100	100	68				20			15.0

AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Fine Filter: Sable et gravier



% gravier	60.6%	Cu = 42	D_{85} = 20.3	D_{15} = 0.5
% sable	32.9%	Cc = 2	D_{60} = 10.9	D_{10} = 0.3
% silt/argile	6.6%		D_{50} = 7.6	

Remarques:

Préparé par: FABIEN ZILLI

Vérifié par:

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT: AEM	**PLANCHE NO:**
	PROJET NO: Q031136-B3
PROJET: Vault Dike	**ÉCHANTILLON NO:** VD-14
	DATE: 2013-02-28

Description du matériau:	Fine Filter	**Localisation du prélèvement:**	stock pile Vault Dike
Provenance (source 1ère)	Fine Filter Stockpile		
Usage proposé:	remblai slope, key trench	**Prélevé par:**	Maxime Côté
		Date de prélèvement:	2013-02-27_N

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

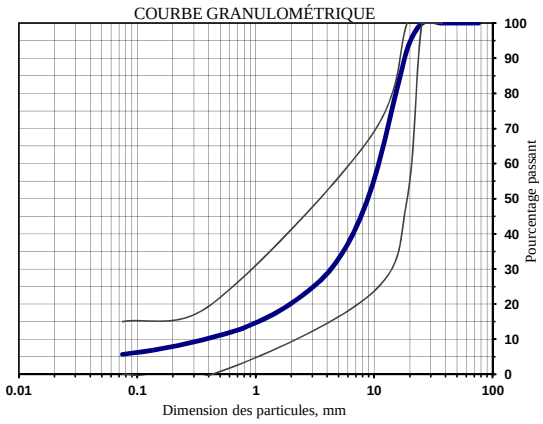
Tamis				0 mm	0 mm	150 mm	50 mm	25 mm	19 mm	9.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	100	93	53	32	20	14	11	9	7	5.7
Résultats individuels																	
Exigences	min.						100	100	50	23				0			0.0
	max.						100	100	100	68				20			15.0

AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Fine Filter: Sable et gravier



% gravier	68.1%	Cu = 29	D_{85} = 16.6	D_{15} = 1.0
% sable	26.2%	Cc = 4	D_{60} = 10.7	D_{10} = 0.4
% silt/argile	5.7%		D_{50} = 8.6	

Remarques:

Préparé par: Maixime coté

Vérifié par:

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT: AEM	**PLANCHE NO:**
	PROJET NO: Q031136-B3
PROJET: Vault Dike	**ÉCHANTILLON NO:** VD-15
	DATE: 2013-03-02

Description du matériau:	Coarse Filter	**Localisation du prélèvement:**	stockpile Sana Crusher
Provenance (source 1ère)	Sana crusher		
Usage proposé:	remblai, key trench	**Prélevé par:**	Maxime Côté
		Date de prélèvement:	2013-03-01_Nuit

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

Tamis				x mm	x mm	200.00 mm	152.4 mm	76.20 mm	25.4 mm	12.7 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	41	16	7	3	2	1	1	1	1	0.6
Résultats individuels																	
Exigences	min.			100		100	86	35	5	0	0	0					
	max.			100		100	100	100	40	18	9	5					

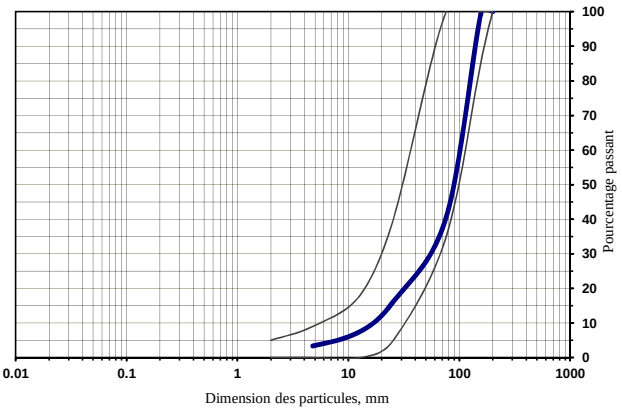
AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: 0-150: 32 Central Dyke

COURBE GRANULOMÉTRIQUE



% gravier	96.6%	Cu = #N/A	D_{85} = #N/A	D_{15} = 23.1
% sable	2.8%	Cc = #N/A	D_{60} = #N/A	D_{10} = 15.5
% silt/argile	0.6%		D_{50} = #N/A	

Remarques:

Préparé par: Maxime Côté Vérifié par:

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT:	AEM	**PLANCHE NO:**	
PROJET:	Vault Dike	**PROJET NO:**	Q031136-B3
		ÉCHANTILLON NO:	VD-16
		DATE:	5 Mars 2013

Description du matériau:	Fine Filter	**Localisation du prélèvement:**	0+177
Provenance (source 1ère)	Fine Filter Stockpile		
Usage proposé:	remblai slope, key trench	**Prélevé par:**	P.B.
		Date de prélèvement:	4 Mars 2013

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

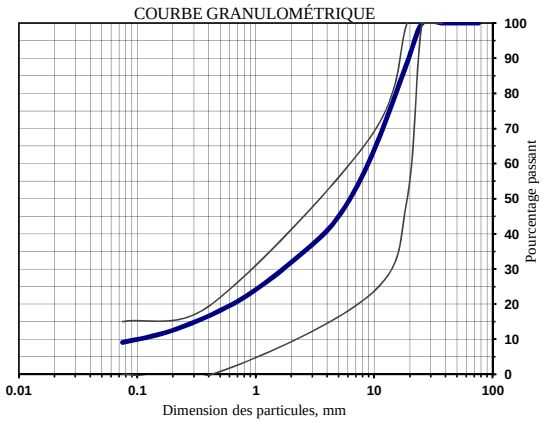
Tamis				0 mm	0 mm	150 mm	50 mm	25 mm	19 mm	9.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	100	89	62	44	32	23	17	14	11	9.1
Résultats individuels																	
Exigences	min.						100	100	50	23				0			0.0
	max.						100	100	100	68				20			15.0

AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Fine Filter: Sable et gravier



% gravier	56.1%	Cu = 88	D_{85} = 17.2	D_{15} = 0.3
% sable	34.9%	Cc = 3	D_{60} = 8.8	D_{10} = 0.1
% silt/argile	9.1%		D_{50} = 6.0	

Remarques:

Préparé par: Patrick Bourbeau

Vérifié par:

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT:	AEM	**PLANCHE NO:**	
PROJET:	Vault Dike	**PROJET NO:**	Q 031136 B3
		ÉCHANTILLON NO:	VD-17
		DATE:	7 Mars 2013

Description du matériau:	Coarse Filter	**Localisation du prélèvement:**	keytrench
Provenance (source 1ère)	Sana crusher		0+170
Usage proposé:	remblai, key trench	**Prélevé par:**	P.B.
		Date de prélèvement:	4 Mars 2013-nuit

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

Tamis				x mm	x mm	200.00 mm	152.4 mm	76.20 mm	25.4 mm	12.7 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	88	42	8	5	2	1	1	1	0	0	0.3
Résultats individuels																	
Exigences	min.			100		100	86	35	5	0	0	0					
	max.			100		100	100	100	40	18	9	5					

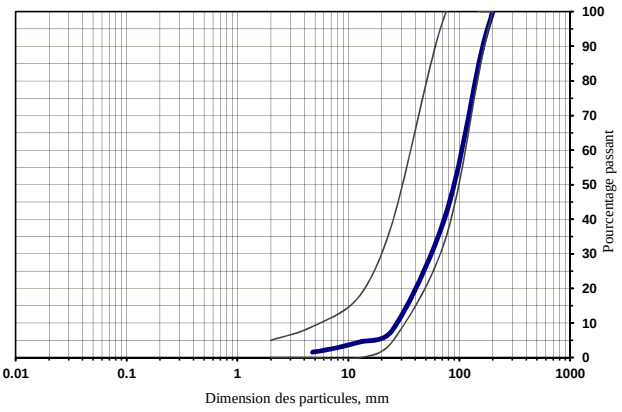
AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: 0-150: 32 Central Dyke

COURBE GRANULOMÉTRIQUE



% gravier	98.4%	Cu = #N/A	D_{85} = #N/A	D_{15} = 31.6
% sable	1.3%	Cc = #N/A	D_{60} = #N/A	D_{10} = 26.9
% silt/argile	0.3%		D_{50} = #N/A	

Remarques:

Préparé par: P.B. Vérifié par:

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT:	AEM	**PLANCHE NO:**	
PROJET:	Vault Dike	**PROJET NO:**	Q031136-B3
		ÉCHANTILLON NO:	VD-20
		DATE:	2013-03-08

Description du matériau:	Fine Filter	**Localisation du prélèvement:**	0+238
Provenance (source 1ère)	Fine Filter Stockpile		
Usage proposé:	remblai slope, key trench	**Prélevé par:**	M.L.D
		Date de prélèvement:	2013-03-08-jour

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

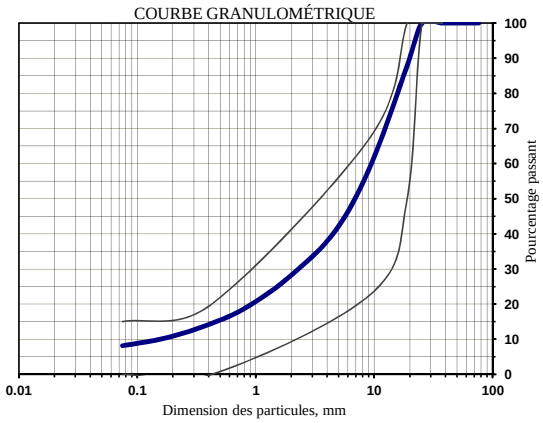
Tamis				0 mm	0 mm	150 mm	50 mm	25 mm	19 mm	9.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	100	88	60	41	28	19	14	12	10	8.1
Résultats individuels																	
Exigences	min.						100	100	50	23				0			0.0
	max.						100	100	100	68				20			15.0

AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Fine Filter: Sable et gravier



% gravier	58.9%	Cu = 61	D_{85} = 17.7	D_{15} = 0.5
% sable	33.0%	Cc = 3	D_{60} = 9.5	D_{10} = 0.2
% silt/argile	8.1%		D_{50} = 6.6	

Remarques:

Préparé par: P.B. Vérifié par:

INSPEC-SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT: AEM	**PLANCHE NO:**
	PROJET NO:
PROJET: Vault Dike	**ÉCHANTILLON NO:** VD-21
	DATE: 11 Mars 2013

Description du matériau:	Coarse Filter	**Localisation du prélèvement:**	0+282
Provenance (source 1ère)	Sana crusher		
Usage proposé:	remblai, key trench	**Prélevé par:**	P.B.
		Date de prélèvement:	9 Mars 2013-Nuit

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

Tamis				x mm	x mm	200.00 mm	152.4 mm	76.20 mm	25.4 mm	12.7 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	91	59	26	22	17	11	8	6	5	4	3.6
Résultats individuels																	
Exigences	min.			100		100	86	35	5	0	0	0					
	max.			100		100	100	100	40	18	9	5					

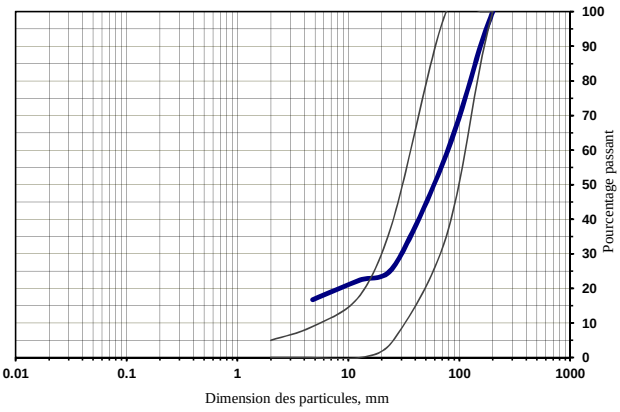
AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: 0-150: 32 Central Dyke

COURBE GRANULOMÉTRIQUE



% gravier	83.2%	Cu = #N/A	D_{85} = #N/A	D_{15} = 3.6
% sable	13.2%	Cc = #NUM!	D_{60} = #N/A	D_{10} = #NUM!
% silt/argile	3.6%		D_{50} = 56.9	

Remarques:

Préparé par: P.B. Vérifié par:

INSPEC•SOL
INGÉNIERIE ET SOLUTIONS

ANALYSE DES SOLS ET DES GRANULATS

CLIENT: AEM	**PLANCHE NO:**
	PROJET NO: Q031136-B3
PROJET: Vault Dike	**ÉCHANTILLON NO:** VD-23
	DATE: 2013-03-13

Description du matériau:	Fine Filter	**Localisation du prélèvement:**	0+154
Provenance (source 1ère)	Fine Filter Stockpile		
Usage proposé:	remblai slope, key trench	**Prélevé par:**	P.B.
		Date de prélèvement:	2013-03-12-Nuit

GRANULOMÉTRIE (% PASSANT) (LC 21-040)

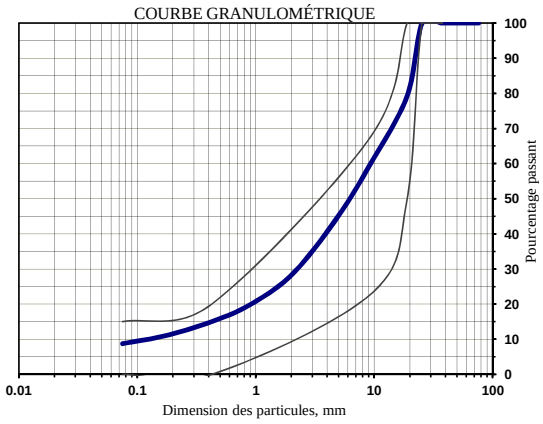
Tamis				0 mm	0 mm	150 mm	50 mm	25 mm	19 mm	9.5 mm	4.76 mm	2.00 mm	0.85 mm	0.425 mm	0.25 mm	0.15 mm	0.075 mm
Résultats cumulatifs				100	100	100	100	100	79	60	44	28	19	15	12	11	8.7
Résultats individuels																	
Exigences	min.						100	100	50	23				0			0.0
	max.						100	100	100	68				20			15.0

AUTRES ESSAIS	Résultats	Exigences min.	Exigences max.

ESSAI PROCTOR (NQ 2501-255)	Résultats
Masse volumique sèche maximale	(kg/m^3)
Humidité optimale	(%)

Proctor à 0% de pierre : kg/m3
Facteur de correction:

Fuseau granulométrique: Fine Filter: Sable et gravier



% gravier	55.9%	Cu = 76	D_{85} = 20.6	D_{15} = 0.4
% sable	35.4%	Cc = 4	D_{60} = 9.3	D_{10} = 0.1
% silt/argile	8.7%		D_{50} = 6.1	

Remarques:

Préparé par: P.B. Vérifié par:

Appendix E1, Table 1: Vault Dike Compaction Testing Results

No.	material type	localisation						executed by	date	reference board num.	value of R.B (kg/m³)	Proctor num.	value Proctor (kg/m³)	Dry density (kg/m³)	moisture (%)	% compaction (%)	compliance	
		X	Y	Z	o/s	station	note										yes	no
VD-05	0-25mm / bentonite	3416.76	5952.76	5137.10	-	0+220	under the liner	M.C	2/23/2013	1	1835	-	-	2558	4.3	139.4	X	
VD-06	0-25mm / bentonite	3428.77	5952.07	5137.85	-	0+233	under the liner	M.C	2/24/2013	1	1835	-	-	2460	5.3	134.1	X	
VD-07	0-25mm / bentonite	3457.70	5949.70	5138.60	-	0+265	under the liner	M.C	2/24/2013	1	1835	-	-	2643	4.1	144.0	X	
VD-08	0-25mm / bentonite	3496.35	5947.94	5138.93	-	0+300	under the liner	FZ	2/25/2013	1	1835	-	-	2476	4.5	134.9	X	
VD-09	0-25mm / bentonite	3323.72	5956.08	5136.73	-	0+128	over the liner	M.C	3/3/2013	1	1835	-	-	2019	4.8	110.03	X	
VD-10	0-25mm / bentonite	3348,56	5954.40	5137.38	-	0+141	over the liner	M.C	3/3/2013	1	1835	-	-	2111	4.5	115.04	X	
VD-11	0-25mm / bentonite	3353.067	5954.07	5137.48	-	0+168	over the liner	M.L.D	3/4/2013	1	1835	-	-	2086	4.53	113.67	X	
VD-12	0-25mm / bentonite	3345.082	5954.074	5136.95	-	0+175	over the liner	M.L.D	3/4/2013	1	1835	-	-	1974	5.16	107.57	X	
VD-13	0-25mm / bentonite	3390,8	5954,5	5137,9	-	0+195	over the liner	M.L.D	3/6/2013	1	1835	-	-	2006	4.82	109.31	X	
VD-14	0-25mm / bentonite	3417,2	5952,4	5137,8	-	0+222	over the liner	M.L.D	3/8/2013	1	1835	-	-	2012	4,4	109,64	X	
VD-15	0-25mm/bentonite	3445,0	5950,0	5138,8		0+248	over the liner	P.B.	3/8/2013	1	1835			1856	4.6	101.1	X	
VD-16	0-25mm/bentonite	3472.02	5948,2	5139.15		0+276	over the liner	M.L.D	3/9/2013	1	1835			2036	4.13	110.95	X	
VD-17	0-25mm/bentonite	3485.4	5948.8	5139.47		0+289	over the liner	M.L.D	3/9/2013	1	1835			1962	5.62	106.92	X	
VD-18	0-25mm/bentonite	3313.5	5956.2	5137.4		0+117	over the liner	P.B.	3/10/2013	1	1835			1928	4.9	105.1		
VD-19	0-25mm/bentonite	3281	5953.3	5139.5		0+085	over the liner	P.B.	3/10/2013	1	1835			1921	5.7	104.7		
VD-20	0-25mm/bentonite	3263	5950.2	5140.6		0+067	over the liner	P.B.	3/12/2013	1	1835			1963	4.6	107		

APPENDIX E2.
Foundation Approval Forms

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD-01 **Date:** Sunday, February 3/2013

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Rebecca Cameron Rebecca Cam
	Position:	AEM- Geotech EIT
QC Representative	Name:	N/A
	Position:	INSPEC-SOL-
QA Engineer	Name:	N/A
	Position:	SNC-
Surveyor	Name:	Robert Clouatre
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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www.snclavalin.com

APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #:

DOCUMENT #: (YYYYMMDD-01)

DATE: Sunday, February 3/2013

CLIENT: AEM

APPROBATION FOR :

- ■ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☐ Fill Placement (_____)
- ☐ Other _____

LOCATION

FROM STATION: 0+050

TO: 0+075 (WP), 0+150 (Around Key)

ELEVATION: ■ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: None

TO:

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: AEM Y	AEM N	QC Y	QC N	N/A
1. Quotes and lines respected	■	☐	☐	☐	☐
2. Free of Ice / Snow / Water	■	☐	☐	☐	☐
3. Gradation (visual)	☐	☐	☐	☐	■
4. Placement (in regards to segregations, lift thickness)	☐	☐	☐	☐	■
5. Compaction	☐	☐	☐	☐	■
6. Foundation on Bedrock					
7. As built survey completed	■	☐	☐	☐	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	N/A	
	QC REPRESENTATIVE	N/A	
	OWNER REPRESENTATIVE	Rebecca Cr	February 3/2013

X:\Vault Dike\13- Foundation Approval\FND-VD-01

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Approved Area

Station: 0+050 (Offset): 0 To Station: 0+075 (Working Platform) , 0+150 (Footprint) (Offset): 0

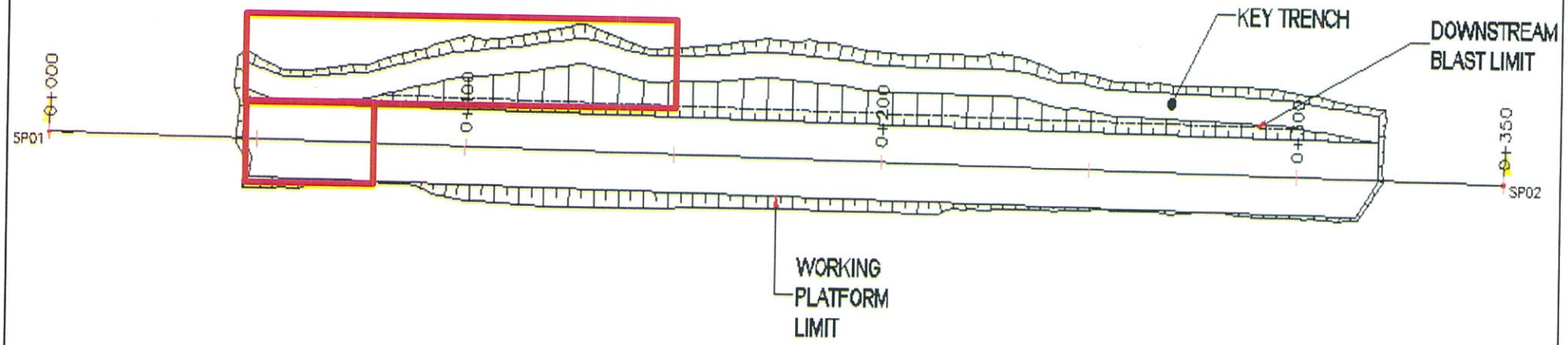

Figure 1 - Approximate approved foundation area

Date: Sunday, February 3/2013

Sketch by (Initial) : RC

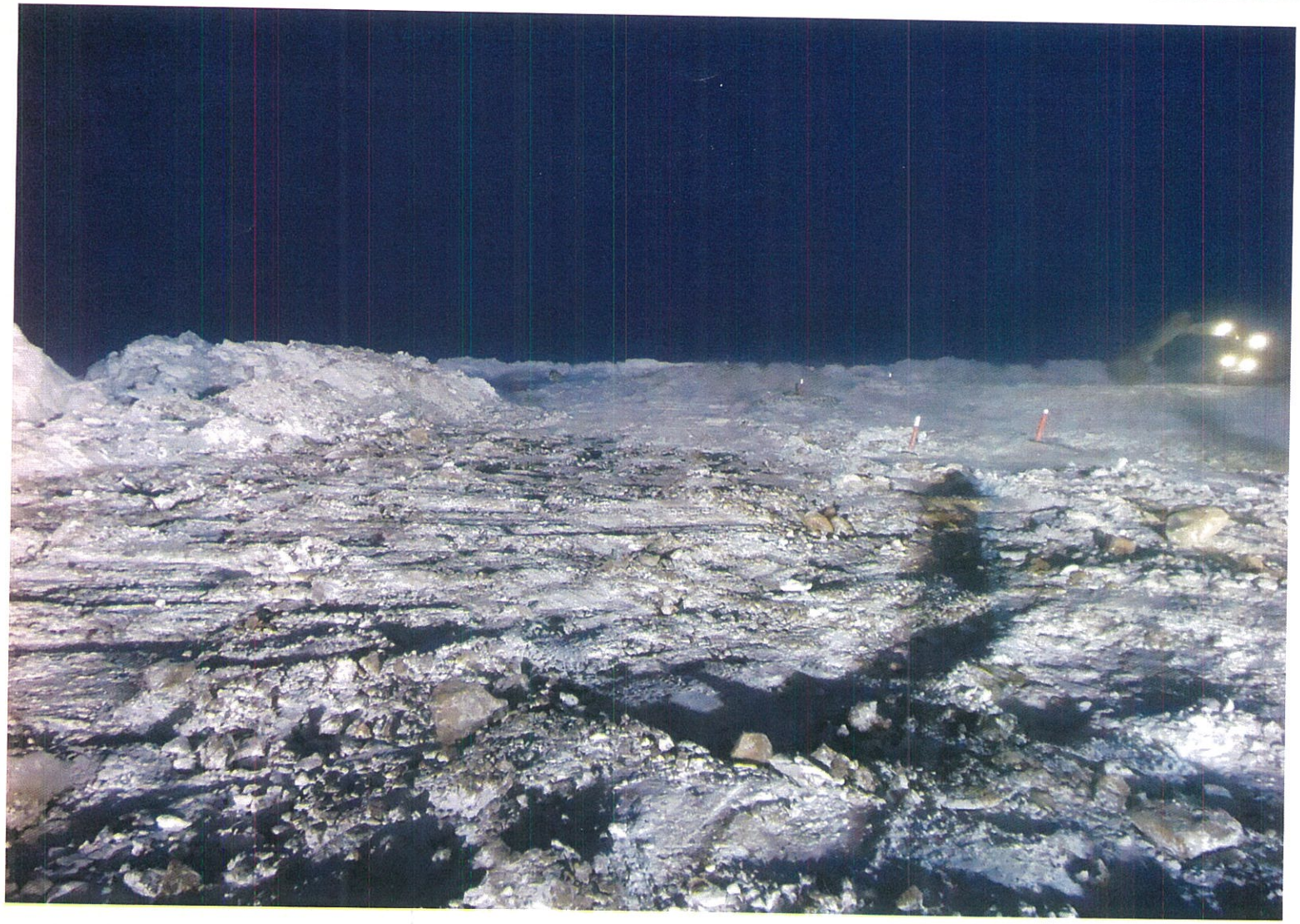

Photo 1- Approximate approved foundation area
Footprint area

Date: Sunday, February 3/2013

Photo by (Initial) : RC

Photo 1- Approximate approved foundation area
Working platform portion

Date: Sunday, February 3/2013

Photo by (Initial) : RC

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 02 **Date:** 2013-02-04

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Rebecca Cameron
	Position:	AEM- Rebecca Cameron
QC Representative	Name:	
	Position:	INSPEC-SOL- Mélissa Lapointe D.
QA Engineer	Name:	Mélissa Lapointe D.
	Position:	SNC- Jean-François St-LAURENT
Surveyor	Name:	Robert CLOUTIER
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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www.snclavalin.com

APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #:

DOCUMENT #: (YYYYMMDD-01)

DATE: Feb 4-2013

CLIENT: AEM

APPROBATION FOR :

- ☑ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☐ Fill Placement (_____)
- ☐ Other _____

LOCATION

FROM STATION: 0+075 (WP)

TO: 0+150 (WP)

ELEVATION: ☑ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: 0+050

TO: 0+075 (WP), 0+150 (Around key)

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

		VERIFICATIONS MADE BY:				
		AEM		QC		N/A
		Y	N	Y	N	
1.	Quotes and lines respected	☑	☐	☐	☐	☐
2.	Free of Ice / Snow / Water	☑	☐	☐	☐	☐
3.	Gradation (visual)	☐	☐	☐	☐	☑
4.	Placement (in regards to segregations, lift thickness)	☐	☐	☐	☐	☑
5.	Compaction	☐	☐	☐	☐	☑
6.	Foundation on Bedrock					
7.	As built survey completed	☑	☐	☐	☐	☐
8.	_____	☐	☐	☐	☐	☐
9.	_____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
		☐	☐
		☐	☐
		☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE		Feb 4/2013
	QC REPRESENTATIVE		Feb 4/2013
	OWNER REPRESENTATIVE	Robert Cox	Feb 4/2013

X:\Vault Dike\13- Foundation Approval\FND-VD-0X_template 2013

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Approved Area

Station: 0+075 (Offset): 0 To Station: 0+150 (Offset): 0

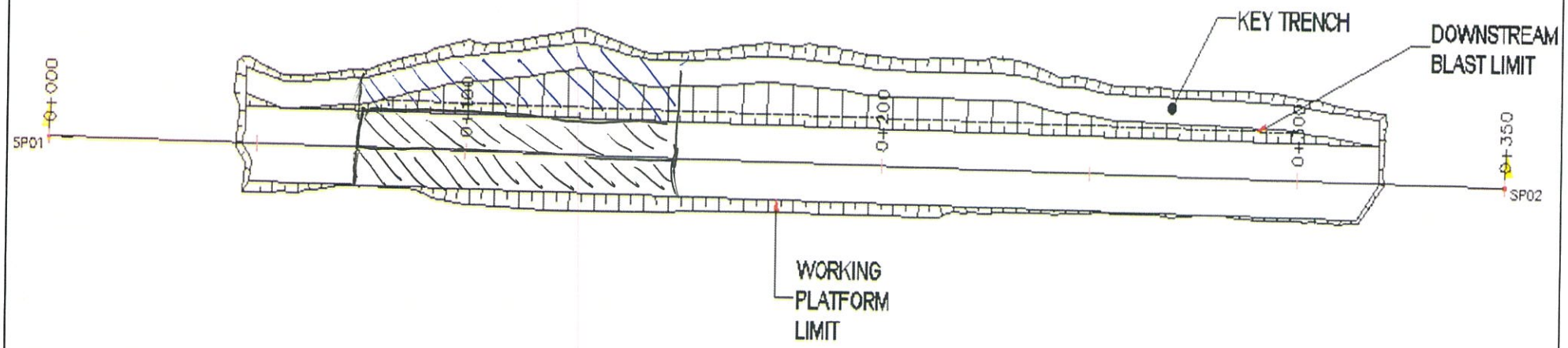

Figure 1 - Approximate approved foundation area

Date: 2013-02-4

Sketch by (Initial) : RC

Photo 1- Approximate approved foundation area

Date:2013-02-04

Photo by (Initial) : RC

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 03 **Date:** 2013-02-05

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Rebecca Cameron
	Position:	AEM- Rebecca Cameron
QC Representative	Name:	
	Position:	INSPEC-SOL-
QA Engineer	Name:	Jean-Francois St-Laurent
	Position:	SNC- Jean-Francois St-Laurent
Surveyor	Name:	Robert Cloâtre
	Position:	FGL- Robert Cloâtre

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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www.snclavalin.com

APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #:

DOCUMENT #: / (YYYYMMDD-01)

DATE: Feb 5 / 2013

CLIENT: AEM

APPROBATION FOR :

- ☑ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☐ Fill Placement (_____)
- ☐ Other _____

LOCATION

FROM STATION: 0+150 Footprint &

TO: 0+250 working platform

ELEVATION: ☑ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: 0+075 (WP)

TO: 0+150 (WP)

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: AEM Y	AEM N	QC Y	QC N	N/A
1. Quotes and lines respected	☑	☐	☐	☐	☐
2. Free of Ice / Snow / Water	☑	☐	☐	☐	☐
3. Gradation (visual)	☐	☐	☐	☐	☑
4. Placement (in regards to segregations, lift thickness)	☐	☐	☐	☐	☑
5. Compaction	☐	☐	☐	☐	☑
6. Foundation on Bedrock					
7. As built survey completed	☑	☐	☐	☐	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
		☐	☐
		☐	☐
		☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE		Feb 5/2013
	QC REPRESENTATIVE		Feb 5/2013
	OWNER REPRESENTATIVE		Feb 5/2013

Approved Area

Station: 0+150 (Offset): 0 To Station: 0+250 (Offset): 0

Footprint & Working Platform

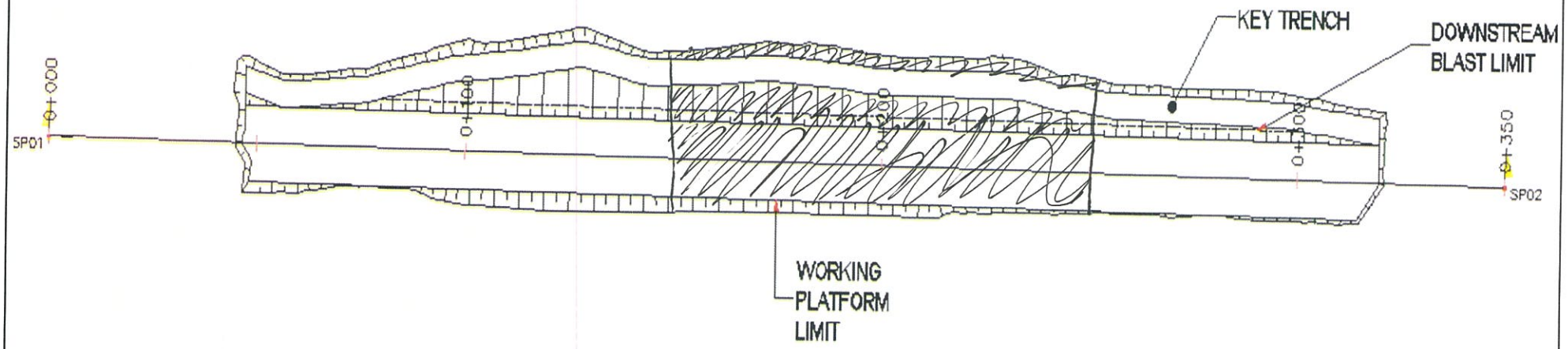

Figure 1 - Approximate approved foundation area

Date: 2013-02-05 **Sketch by (Initial) :** RC

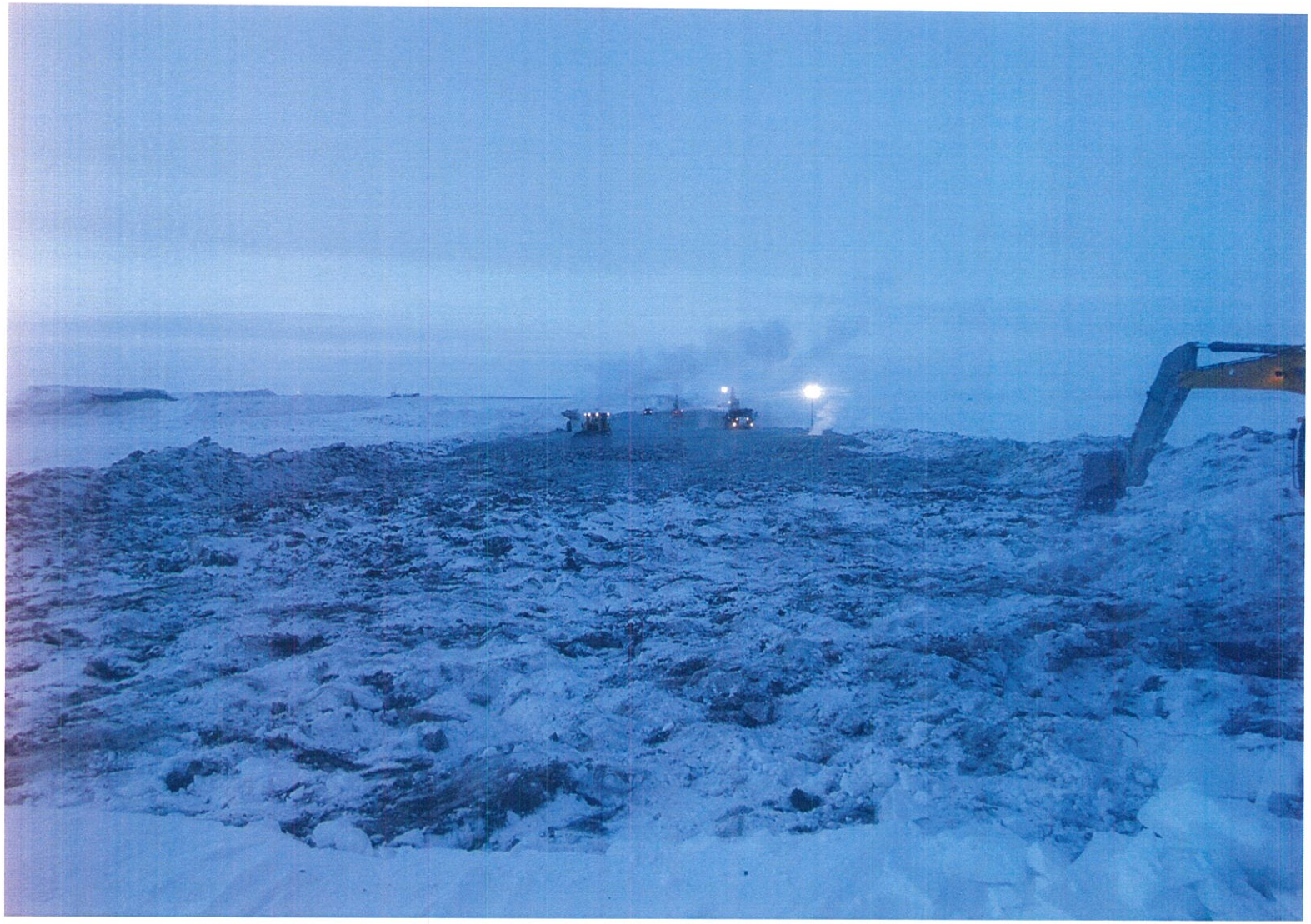

Photo 1- Approximate approved foundation area

Date:2013-02-05

Photo by (Initial) : RC

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 04 **Date:** Feb. 9, 2013

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Feb 09, 2013
	Position:	AEM- Owner. Rep. Ing-geotech.
QC Representative	Name:	Mélissa Lapointe Desbiens
	Position:	INSPEC-SOL-
QA Engineer	Name:	
	Position:	SNC-
Surveyor	Name:	Robert CLOUÂTRE
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 - Vault

DOCUMENT #: 20130209-01 (YYYYMMDD-01)

DATE: 2013-02-09

CLIENT: AEM

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☒ Foundation Approval (Key Trench)
- ☒ Fill Placement (0-150mm / 0-20mm) / 0-20mm + Bentonite
- ☐ Other _____

LOCATION

FROM STATION: 0+~~00~~ 50

TO: 0+ ~~000~~ 90

ELEVATION: ☒ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: /

TO: /

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

VERIFICATIONS MADE BY: → Not on Field

	QA		QC		N/A
	Y	N	Y	N	
1. Quotes and lines respected	☒	☐	☐	☐	☐
2. Free of Ice / Snow / Water	☒	☐	☐	☐	☐
3. Gradation (visual)	☒	☐	☐	☐	☐
4. Placement (in regards to segregations, lift thickness)	☒	☐	☐	☐	☐
5. Compaction	☒	☐	☐	☐	☐
6. Foundation on Bedrock	X				
7. As built survey completed	☒	☐	☐	☐	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
2	~~Refuse~~ Not saw until PM - 90 → should be remove tomorrow	☑	☐
3	OK	☑	☐
4	OK	☑	☐
5	OK with Bucket.	☑	☐

APPROVED BY:

	SIGNATURE	DATE
QA REPRESENTATIVE	Francois Sth	2013-02-09
QC REPRESENTATIVE		
OWNER REPRESENTATIVE		

X:\Vault Dike\13- Foundation Approval\FND-VD-0X_template 2013

Print 2/5/2013 2:02 PM

Approved ~~Area~~ Key trench ~~cut~~ bottom & Filters

Station: ~~0+005~~ 0+50 (Offset): To Station: 0+090 (Offset):

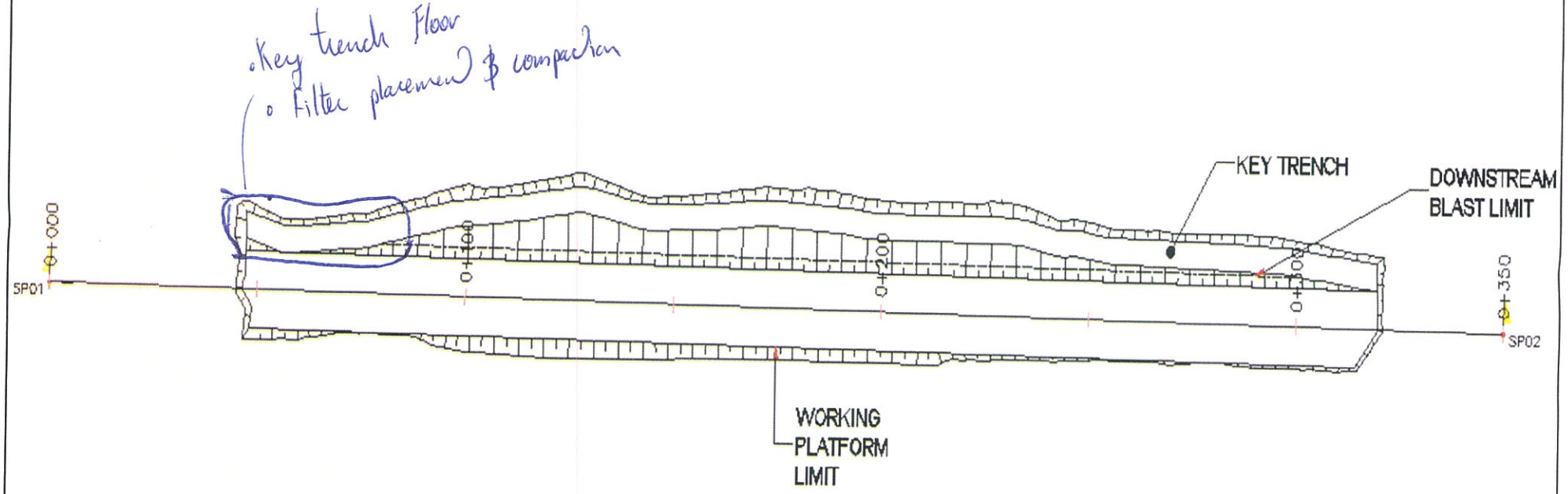

Figure 1 - Approximate approved foundation area

Date: 2013-02-09

Sketch by (Initial) : JFSHL

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 05 **Date:** 11 Feb. 2013

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	
	Position:	AEM-
QC Representative	Name:	
	Position:	INSPEC-SOL-
QA Engineer	Name:	
	Position:	SNC- ~~Concepte~~ Designer
Surveyor	Name:	Robert CLOUATRE
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611619

DATE: 11 Feb. 2013

DOCUMENT #: 20130211-01
(YYYYMMDD-01)

CLIENT:

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☒ Foundation Approval (Key Trench)
- ☒ Fill Placement (0-200mm / 0-20mm)
- ☐ Other

LOCATION

FROM STATION: 0+75 } fill placement
TO: 0+90 }

ELEVATION: ☒ VARIES
_____ m

PREVIOUS APPROVATIONS

FROM: 0+90 } foundation
TO: 0+110 }

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☑	☐	☐	☐	☐
2. Free of Ice / Snow / Water	☑	☐	☐	☐	☐
3. Gradation (visual)	☑	☐	☐	☐	☐
4. Placement (in regards to segregations, lift thickness)	☑	☐	☐	☐	☐
5. Compaction	☑	☐	☐	☐	☐
6. Foundation on Bedrock	✓				
7. As built survey completed	☑	☐	☐	☐	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	[signature]	2013-02-11
	QC REPRESENTATIVE		
	OWNER REPRESENTATIVE		

Approved Area

Station: 75 (Offset): To Station: 110 (Offset):

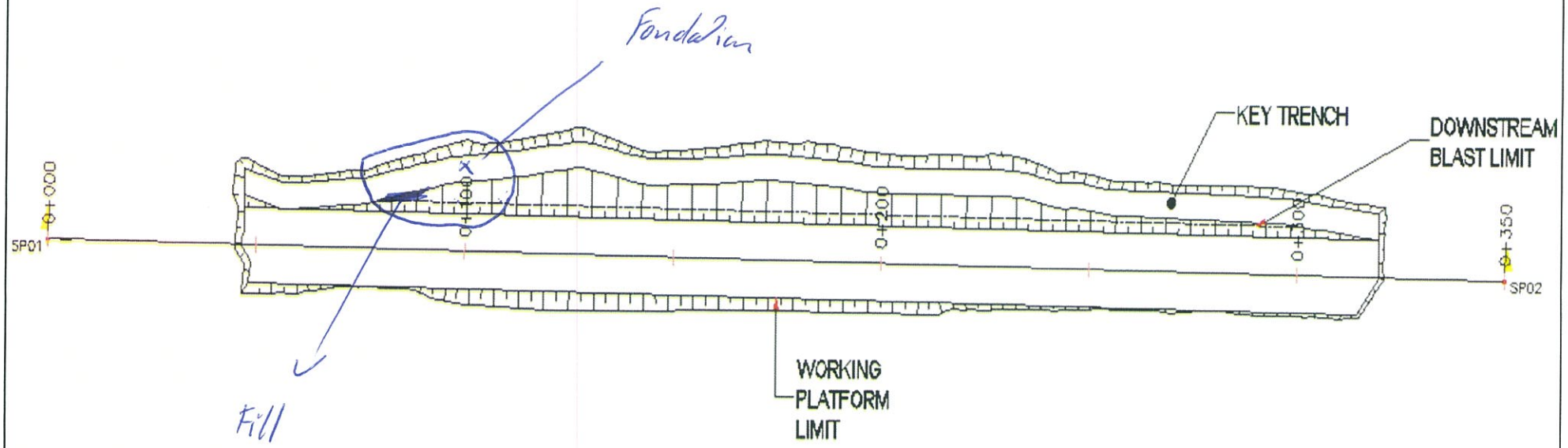

Figure 1 - Approximate approved foundation area

Date: 2013-02-11 **Sketch by (Initial) :** [illegible]

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 6 **Date:** 2013-02-12

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Thomas Lépine
	Position:	AEM- Owner Rep.
QC Representative	Name:	Mélissa Lapointe D.
	Position:	INSPEC-SOL- Mélissa Lapointe Desbiens
QA Engineer	Name:	J-FRANÇOIS ST-LAURENT
	Position:	SNC-
Surveyor	Name:	ROBERT CLOUÂTRE
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614

DOCUMENT #: 20130212-01 (YYYYMMDD-01)

DATE: 12 Fev. 2013

CLIENT: AEM

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☒ Foundation Approval (Key Trench)
- ☒ Fill Placement (0-20 mm / 0-200 mm / 0-20 mm + Bentonite)
- ☐ Other

LOCATION

FROM STATION: 110 to 120 (0-20mm & 0-200mm)

85 to 90 (0-20mm + Bentonite)

ELEVATION: ☒ VARIES

_____ m

~~PREVIOUS APPROVATIONS~~

FROM: 110

TO: 190

↳ roc & till (ie poor)

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

		VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1.	Quotes and lines respected	☒	☐	☐	☐	☐
2.	Free of Ice / Snow / Water	☒	☐	☐	☐	☐
3.	Gradation (visual)	☒	☐	☐	☐	☐
4.	Placement (in regards to segregations, lift thickness)	☒	☐	☐	☐	☐
5.	Compaction ↳ visual	☒	☐	☐	☐	☐
6.	Foundation on Bedrock					
7.	As built survey completed after discussions with SNC surveyor	X ☒	☐	☐	☐	☐
8.	_____	☐	☐	☐	☐	☐
9.	_____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	François	2013-02-12
	QC REPRESENTATIVE		
	OWNER REPRESENTATIVE		2013-02-12

Approved Area

Station: 0+050@0+090 (Offset):

To Station: 0+110@0+120 (Offset):

0-20mm + bentonite compact

granular fill (0-25mm et 0-200mm)

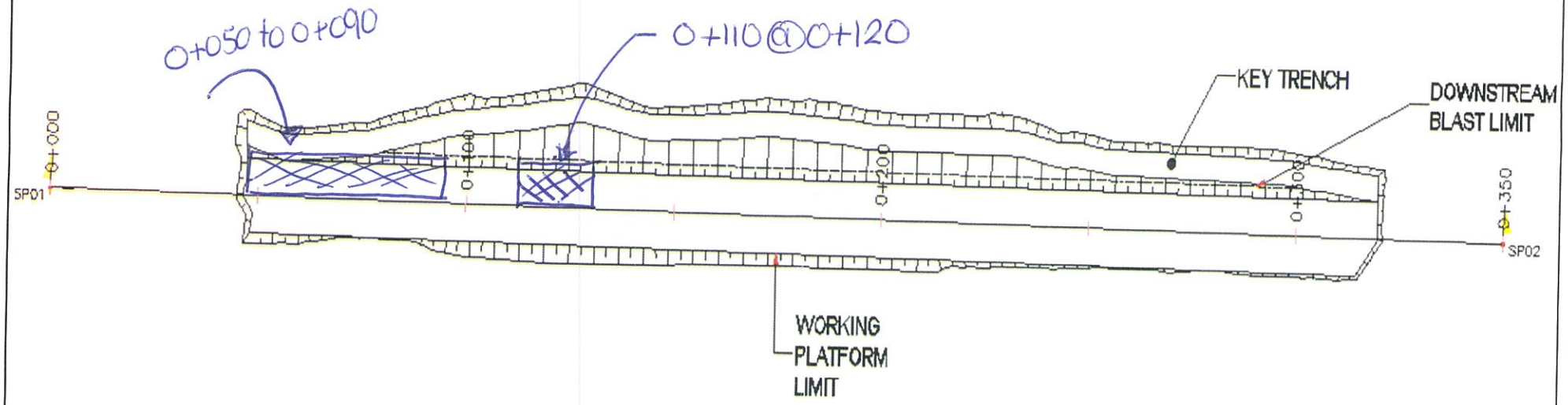

Figure 1 - Approximate approved foundation area

Date: 13-02-12

Sketch by (Initial) : mYD

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 7 **Date:** 2013-02-13

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Thierry Lépine
	Position:	AEM- Owner Rep. 14-02-2013
QC Representative	Name:	Mélissa Lapointe Desbiens
	Position:	INSPEC-SOL- Mélissa Lapointe Desbiens
QA Engineer	Name:	J-François St-Laurent
	Position:	SNC-
Surveyor	Name:	K. Clouâtre
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614

DATE: 13 Fev. 2013

DOCUMENT #: 20130213-01 (YYYYMMDD-01)

CLIENT: AEM

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☒ Foundation Approval (Key Trench)
- ☒ Fill Placement (0-20mm & 0-100mm & 0-20mm + Bendo)
- ☐ Other _____

LOCATION Fill on slope

FROM STATION: 128

TO: 165

ELEVATION: ☒ VARIES _____ m

~~PREVIOUS APPROVATIONS~~ Fill in Key trench. (0-20mm + Bendo)

FROM: 67

TO: 114

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

1. Quotes and lines respected
2. Free of Ice / Snow / Water
3. Gradation (visual)
4. Placement (in regards to segregations, lift thickness) visual. OK
5. Compaction visual (test tomorrow)
6. Foundation on Bedrock
7. As built survey completed
8. _____
9. _____

VERIFICATIONS MADE BY:

QA		QC		N/A
Y	N	Y	N	
☒	☐	☐	☐	☐
☒	☐	☐	☐	☐
☒	☐	☐	☐	☐
☒	☐	☐	☐	☐
☒	☐	☐	☐	☐
☒				
☒	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE		2013-02-13
	QC REPRESENTATIVE		2013-02-13
	OWNER REPRESENTATIVE		

Approved Area

Station: 0+128 Station (~~Offset~~): 0+165 To Station: 0+067 Station (~~Offset~~): 0+114

0-200mm and 0-20mm

Place and compact mg-20 bentonite

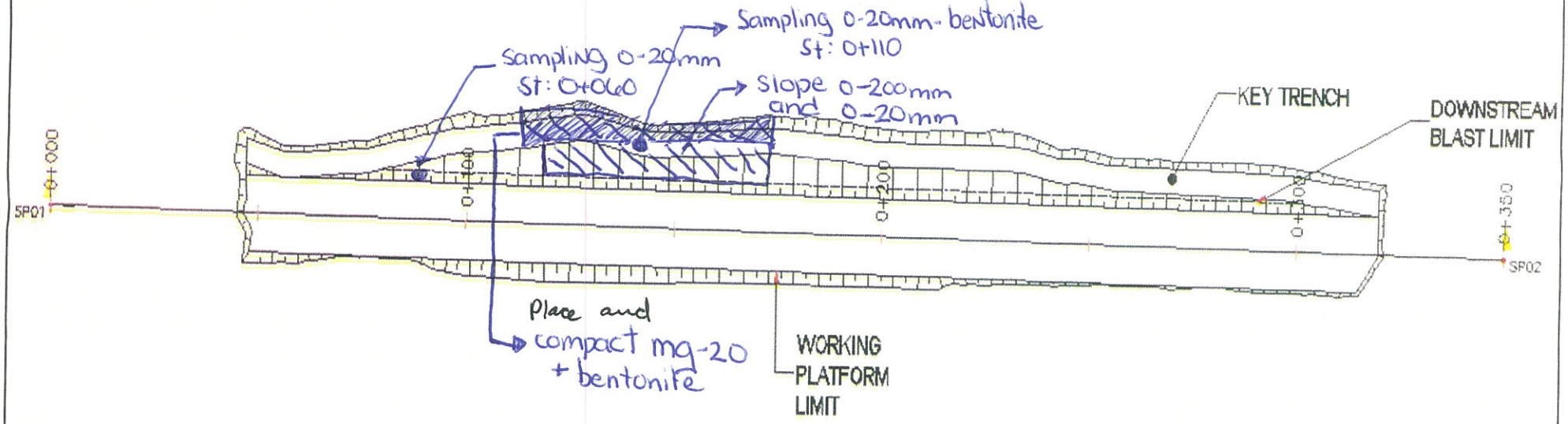

Figure 1 - Approximate approved foundation area

Date: 2013-02-13 **Sketch by (Initial) :** MJTZ

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 8 **Date:** 13-02-14

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

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The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	
	Position:	AEM-
QC Representative	Name:	Mélissa Lapointe Desbiens
	Position:	INSPEC-SOL- Mélissa Lapointe Desbiens
QA Engineer	Name:	J-FRANÇOIS ST-LAURENT
	Position:	SNC-
Surveyor	Name:	Robert Lafrance
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614

DOCUMENT #: 20130214-01 (YYYYMMDD-01)

DATE: 13-02-14

CLIENT: AEM

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☒ Foundation Approval (Key Trench)
- ☒ Fill Placement (0-1000mm & 0-200mm
- ☐ Other _____

LOCATION

FROM STATION: 165

TO: ±200

ELEVATION: ☒ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

1. Quotes and lines respected
2. Free of Ice / Snow / Water
3. Gradation (visual)
4. Placement (in regards to segregations, lift thickness)
5. Compaction
6. Foundation on Bedrock
7. As built survey completed
8. _____
9. _____

VERIFICATIONS MADE BY:

	QA		QC		N/A
	Y	N	Y	N	
1.	☑	☐	☐	☐	☐
2.	☑	☐	☐	☐	☐
3.	☑	☐	☐	☐	☐
4.	☑	☐	☐	☐	☐
5.	☑	☐	☐	☐	☐
6.	☑				
7.	☑	☐	☐	☐	☐
8.	☐	☐	☐	☐	☐
9.	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE		2013-02-14
	QC REPRESENTATIVE	Melissa Laporte Desbiens	2013-02-14
	OWNER REPRESENTATIVE		15-02-2013

Approved Area

Station: 0+165 (~~Offset~~): Station 0+200 To Station: (Offset):

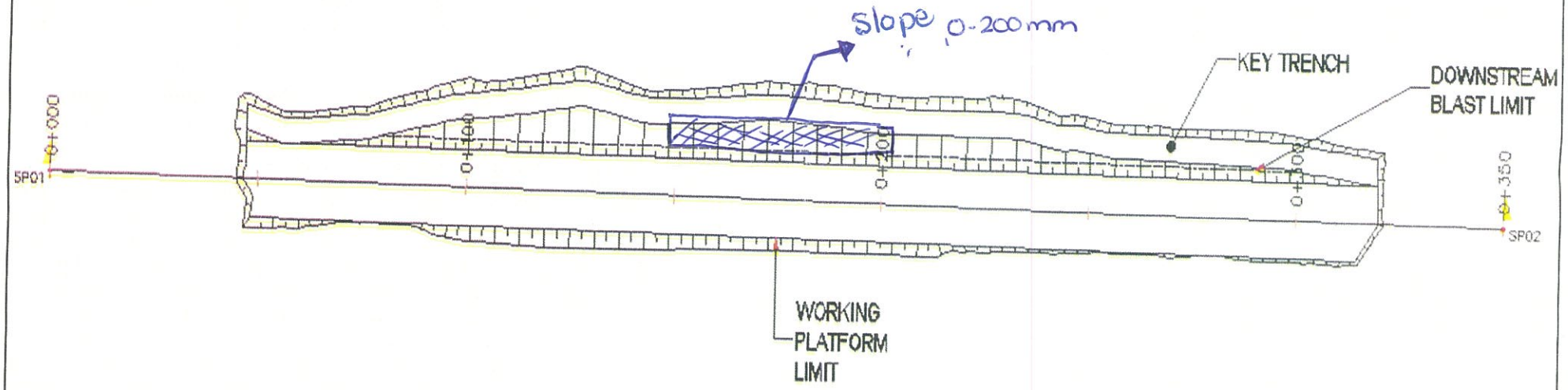

Figure 1 - Approximate approved foundation area

Date: 2013-02-15 **Sketch by (Initial) :** MfD

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 09 **Date:** 2013-02-15

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Thomas Lépine 14-02-2013
	Position:	AEM-
QC Representative	Name:	Mélissa Lapointe Desbiens
	Position:	INSPEC-SOL- Mélissa Lapointe Desbiens
QA Engineer	Name:	ST-LAURENT JEAN-FRANÇOIS
	Position:	SNC-
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614

DATE: 2013-02-15

DOCUMENT #: 20130215-01 (YYYYMMDD-01)

CLIENT: AEM

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☒ Foundation Approval (Key Trench) 185
- ☒ Fill Placement (_____)
- ☐ Other _____

LOCATION

FROM STATION: 185

TO: 200

ELEVATION: ☑ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

		VERIFICATIONS MADE BY:				
		QA		QC		N/A
		Y	N	Y	N	
1.	Quotes and lines respected	☑	☐	☐	☐	☐
2.	Free of Ice / Snow / Water	☑	☐	☐	☐	☐
3.	Gradation (visual)	☐	☐	☐	☐	☐
4.	Placement (in regards to segregations, lift thickness)	☐	☐	☐	☐	☐
5.	Compaction	☐	☐	☐	☐	☐
6.	Foundation on Bedrock	☑				
7.	As built survey completed	☑	☐	☐	☐	☐
8.	_____	☐	☐	☐	☐	☐
9.	_____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	[signature]	2013-02-15
	QC REPRESENTATIVE	Melissa Laporte D.	2013-02-15
	OWNER REPRESENTATIVE	[signature]	2013-02-17

Approved Area

Station: Station (~~Offset~~): To Station: (Offset):

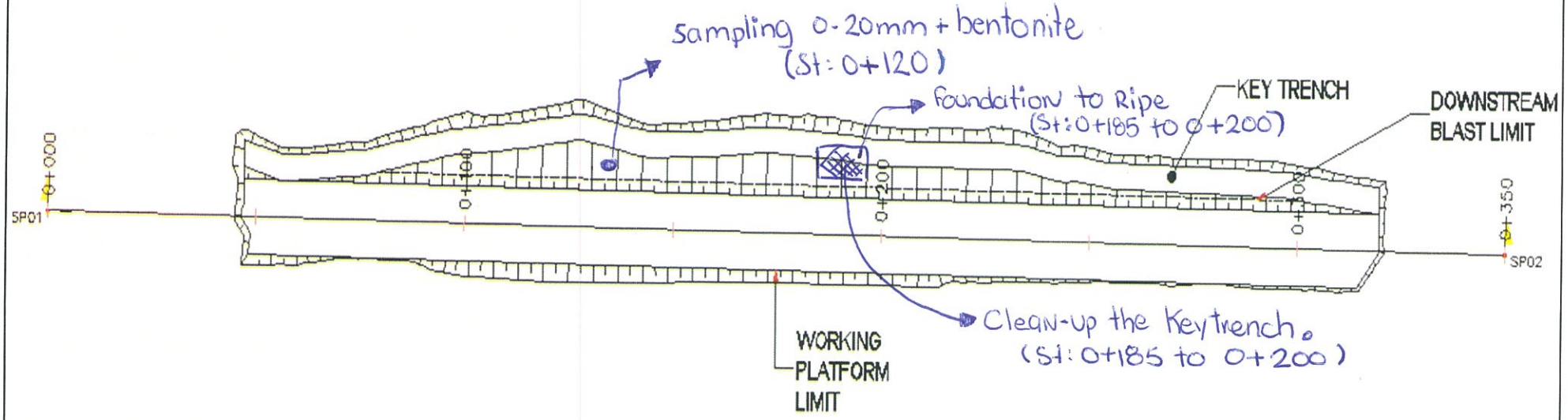

Figure 1 - Approximate approved foundation area

Date: 2013-02-15 **Sketch by (Initial) :** MLP

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 10 **Date:** 19/02/13

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Thomas Lépine 20-02-2013
	Position:	AEM- Owner Rep.
QC Representative	Name:	FABIEN ZILLI QC REP
	Position:	INSPEC-SOL-
QA Engineer	Name:	Marie-Pier Lachance-Fiard
	Position:	SNC- QA rep.
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 19/02/13

DOCUMENT #: 20130219-01 **CLIENT:** AEM

(YYYYMMDD-01)

APPROBATION FOR :

- ☑ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☐ Fill Placement (_____)
- ☐ Other _____

LOCATION

FROM STATION: 200

TO: 318

ELEVATION: ☑ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: 185

TO: 200

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☑	☐	☑	☐	☐
2. Free of Ice / Snow / Water	☑	☐	☑	☐	☐
3. Gradation (visual)	☑	☐	☑	☐	☐
4. Placement (in regards to segregations, lift thickness)	☐ NA	☐	☐ N/A	☐	☐
5. Compaction	☐ NA	☐	☐ N/A	☐	☐
6. Foundation on Bedrock	Yes ☑	☐	☑	☐	☐
7. As built survey completed	☐	☐	☐	☐	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE		19/02/13
	QC REPRESENTATIVE		19/02/13
	OWNER REPRESENTATIVE		19/02/2013

Approved Area

Station: 0+200 (Offset): To Station: (Offset):

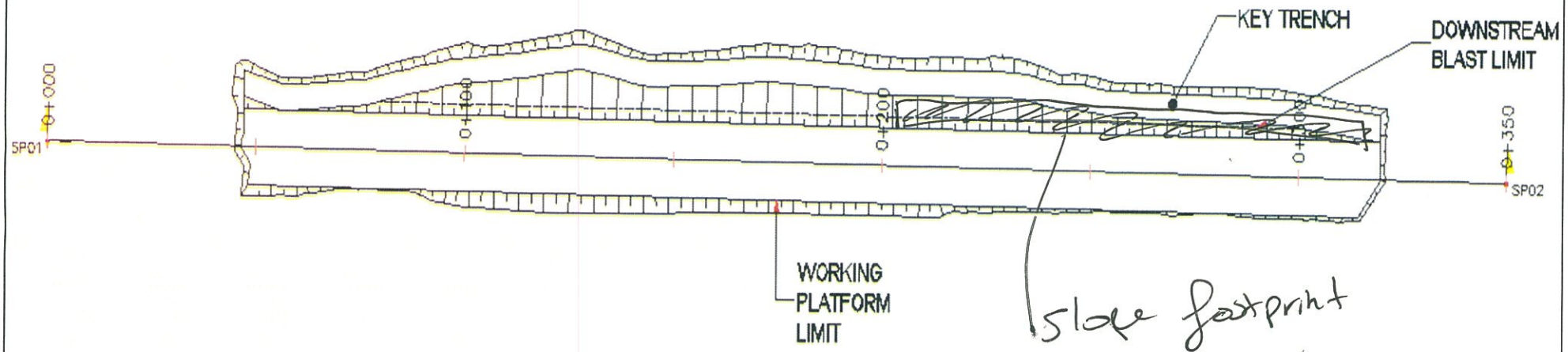

Figure 1 - Approximate approved foundation area

Date: 19/02/13 **Sketch by (Initial) :** EZ

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 17 **Date:** 20-02-13

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	21-02-2013
	Position:	AEM- Owner Rep.
QC Representative	Name:	FABIEN ZILLI REP.QC
	Position:	INSPEC-SOL-
QA Engineer	Name:	Marie-Pier Lachance-Ricard
	Position:	SNC- QA rep
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #:

DATE: 20/02/2013

DOCUMENT #:

CLIENT: AEM

(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☑ Fill Placement (0 - 1000 mm)
- ☐ Other _____

LOCATION

FROM STATION: 200

TO: 318

ELEVATION: ☑ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: 185

TO: 200

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

		VERIFICATIONS MADE BY:				
		QA		QC		N/A
		Y	N	Y	N	
1.	Quotes and lines respected	☐	☐	☐	☐	☐
2.	Free of Ice / Snow / Water	☑	☐	☑	☐	☐
3.	Gradation (visual)	☑	☐	☑	☐	☐
4.	Placement (in regards to segregations, lift thickness)	☑	☐	☑	☐	☐
5.	Compaction	☑	☐	☑	☐	☐
6.	Foundation on Bedrock	DNA	☐			✓
7.	As built survey completed	☑	☐	☑	☐	☐
8.	_____	☐ NA	☐	☐	☐	☑
9.	_____	☐ NA	☐	☐	☐	☑

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:

	SIGNATURE	DATE
QA REPRESENTATIVE		20/02/13
QC REPRESENTATIVE		20/02/2013
OWNER REPRESENTATIVE		

Approved Area

Station: (Offset): To Station: (Offset):

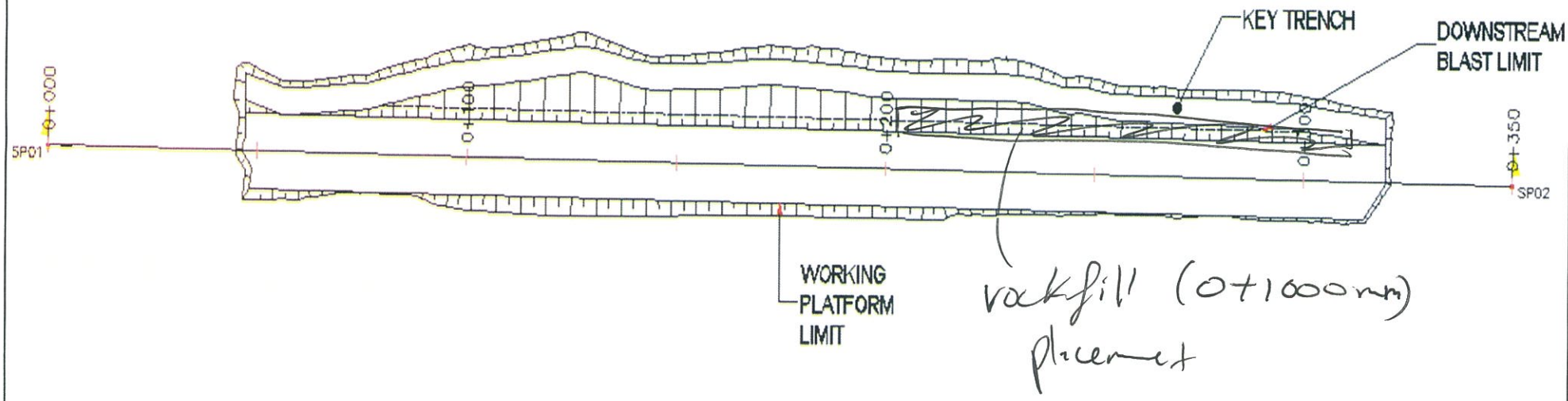

Figure 1 - Approximate approved foundation area

Date: 20-02-13 **Sketch by (Initial) :**

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 12 **Date:** 21-02-13

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Alice Cagnon
	Position:	AEM- Geotech Eng
QC Representative night	Name:	Maxime Morin Coté
	Position:	INSPEC-SOL- QC representative
QA Engineer	Name:	Marie-Pier Lachance
	Position:	SNC- QA-rep
Surveyor night	Name:	Pascal Dufour Pascal Dufour
	Position:	FGL- Surveyor

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 21-02-13

DOCUMENT #: 20130221-01 **CLIENT:** AEM

(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☑ Fill Placement (0-200)
- ☐ Other _____

LOCATION	PREVIOUS APPROVATIONS
FROM STATION: 200	FROM: 185
TO: 320	TO: 200
ELEVATION: ☐ VARIES	
_____ m	

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☐	☑	☒	☐	☐
2. Free of Ice / Snow / Water	☑	☐	☒	☐	☐
3. Gradation (visual)	☑	☐	☒	☐	☐
4. Placement (in regards to segregations, lift thickness)	☑	☐	☒	☐	☐
5. Compaction	☑	☐	☒	☐	☐
6. Foundation on Bedrock					✓
7. As built survey completed	☐	☑	☐	☐	☒
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
	N/A	☑	☐
		☐	☐
		☐	☐
		☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE		21-02-13
	QC REPRESENTATIVE		22-02-13
	OWNER REPRESENTATIVE		

Approved Area

Station: 0+200 (Offset): To Station: 0+320 (Offset):

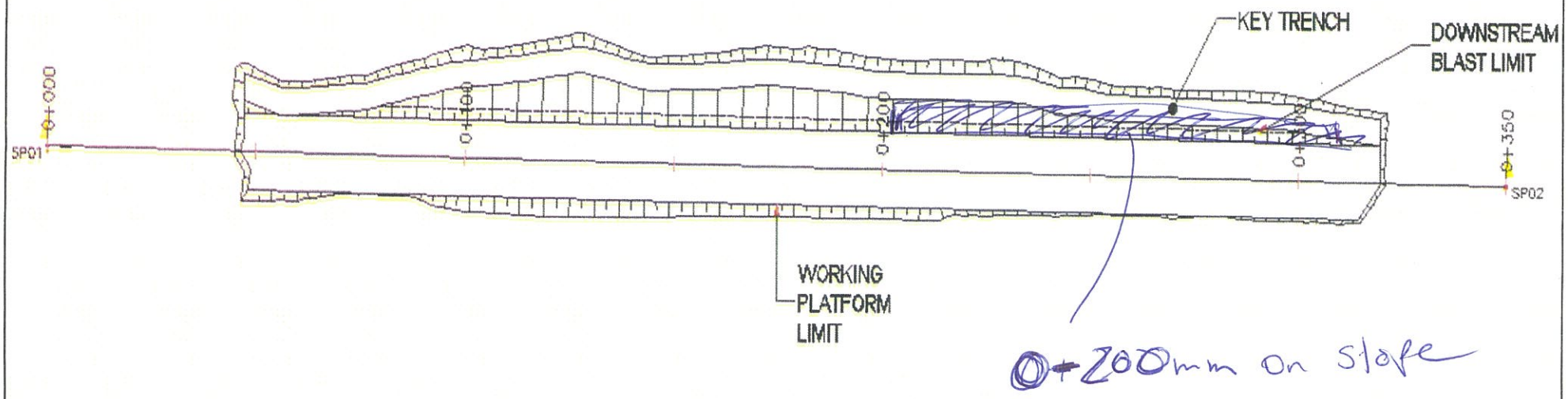

Figure 1 - Approximate approved foundation area

Date: 21-02-13 **Sketch by (Initial) :** MPR

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 13 **Date:** 21-02-13

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Patrice Gagnon
	Position:	AEM- Geotech Eng
QC Representative	Name:	FABIEN ZELL
	Position:	INSPEC-SOL- QC REP
QA Engineer	Name:	Marie Pier Lachance-Rivard
	Position:	SNC- QA rep.
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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www.snclavalin.com

APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 21-02-13

DOCUMENT #: 20130221-01 **CLIENT:** AEM
(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☑ Fill Placement (0-20mm)
- ☐ Other _____

LOCATION	PREVIOUS APPROVATIONS
FROM STATION: 0+200	FROM: 0+185
TO: 0+270	TO: 0+200
ELEVATION: ☑ VARIES	
_____ m	

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☑	☐	☑	☐	☐
2. Free of Ice / Snow / Water	☑	☐	☑	☐	☐
3. Gradation (visual)	☑	☐	☑	☐	☐
4. Placement (in regards to segregations, lift thickness)	☑	☐	☑	☐	☐
5. Compaction	☑	☐	☐	☐	☐
6. Foundation on Bedrock					☑
7. As built survey completed	☐	☐	☐	☐	☐
8. _____	☐	☐	☐	☐	☑
9. _____	☐	☐	☐	☐	☑

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE		21-02-13
	QC REPRESENTATIVE		21-02-13
	OWNER REPRESENTATIVE		

Approved Area

Station: 0+200 (Offset): To Station: 0+270 (Offset):

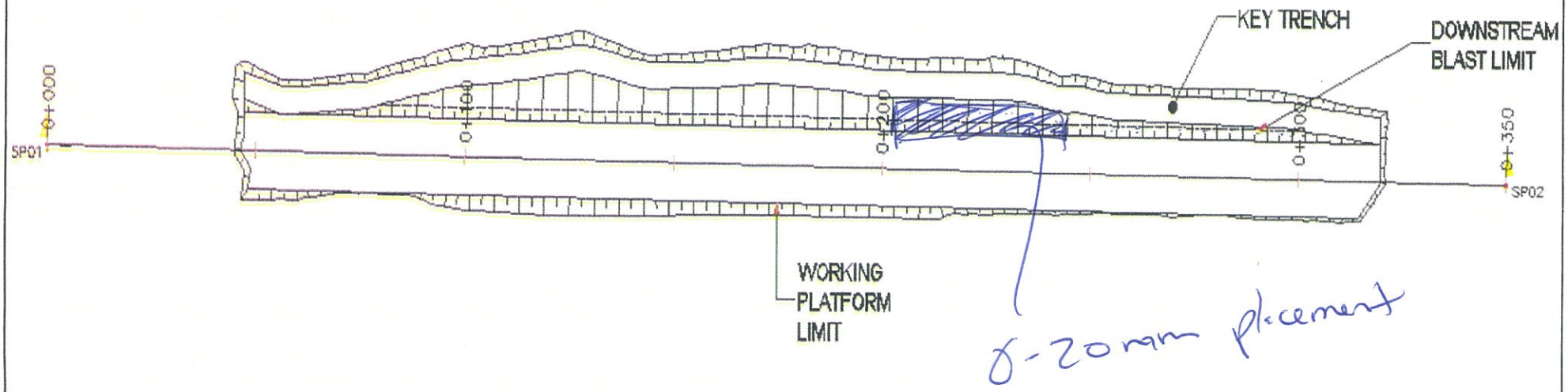

Figure 1 - Approximate approved foundation area

Date: 21/02/13 **Sketch by (Initial) :** MRR

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 14 **Date:** 22-02-13

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	PATRICE GAGNON
	Position:	AEM- Geotech Eng
QC Representative	Name:	Maxime Côté
	Position:	INSPEC-SOL- QC rep.
QA Engineer	Name:	Marie-Pier Lachance
	Position:	SNC- QA rep.
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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www.snclavalin.com

APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 22/02/13

DOCUMENT #: 20130222-01 **CLIENT:** AEM

(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☑ Fill Placement (0-20mm)
- ☐ Other _____

LOCATION

FROM STATION: 0+270

TO: 0+320

ELEVATION: ☑ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: 0+200

TO: 0+270

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☑	☑	☑	☐	☐
2. Free of Ice / Snow / Water	☑	☐	☑	☐	☐
3. Gradation (visual)	☑	☐	☑	☐	☐
4. Placement (in regards to segregations, lift thickness)	☑	☐	☑	☐	☐
5. Compaction	☐	☑	☐	☑	☐
6. Foundation on Bedrock					☑
7. As built survey completed	☐	☑	☐	☑	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE		22-02-13
	QC REPRESENTATIVE		22-02-13
	OWNER REPRESENTATIVE		

Approved Area

Station: (Offset): To Station: (Offset):

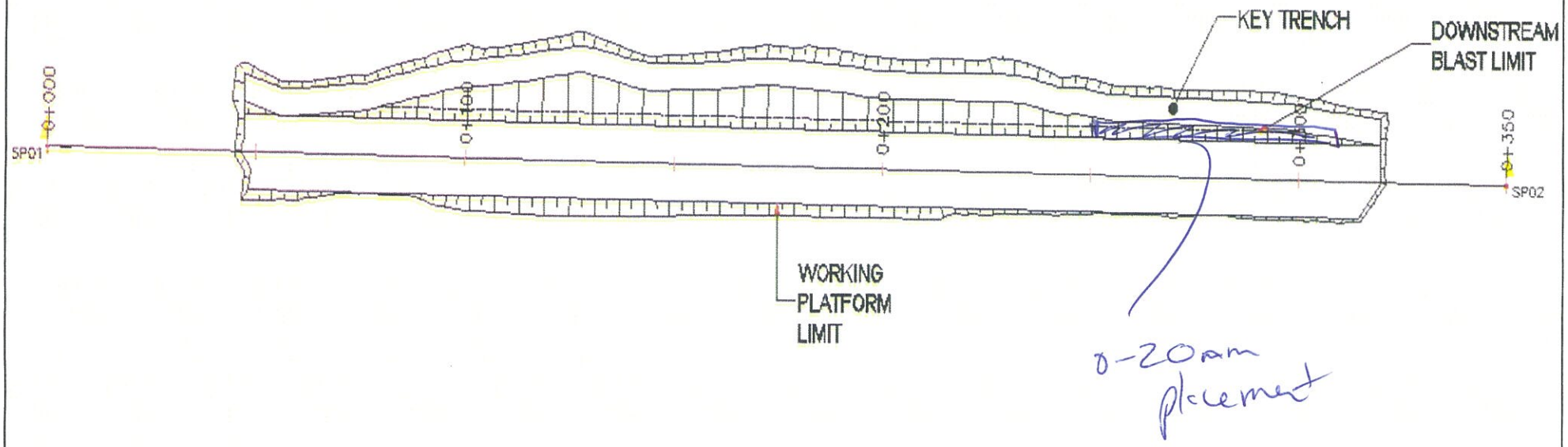

Figure 1 - Approximate approved foundation area

Date: 22-02-13 **Sketch by (Initial) :** MPLR

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 15 **Date:** 23-02-13

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Patrice Cagnon
	Position:	AEM- Geotech Eng
QC Representative	Name:	X NOT THERE
	Position:	INSPEC-SOL- X X
QA Engineer	Name:	Marie-Eve Lachance
	Position:	SNC- QA rep.
Surveyor	Name:	
	Position:	FGL- Surveyor Charles Tremblay

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 23-02-13

DOCUMENT #: 20130223-01 **CLIENT:** AEM

(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☑ Fill Placement (bento-mix)
- ☐ Other _____

LOCATION

FROM STATION: 190

TO: 210

ELEVATION: ☑ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO: 7

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☑	☐	☐	☐	☐
2. Free of Ice / Snow / Water	☑	☐	☐	☐	☐
3. Gradation (visual)	☑	☐	☐	☐	☐
4. Placement (in regards to segregations, lift thickness)	☑	☐	☐	☐	☐
5. Compaction	☑	☐	☐	☐	☐
6. Foundation on Bedrock	✓				
7. As built survey completed	☐	☐	☐	☐	☑
8. _____	☐	☐	☐	☐	☑
9. _____	☐	☐	☐	☐	☑

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	Not Here	23-02-13
	QC REPRESENTATIVE	X	X
	OWNER REPRESENTATIVE		

Approved Area

Station: 0+190 (Offset): To Station: 0+210 (Offset):

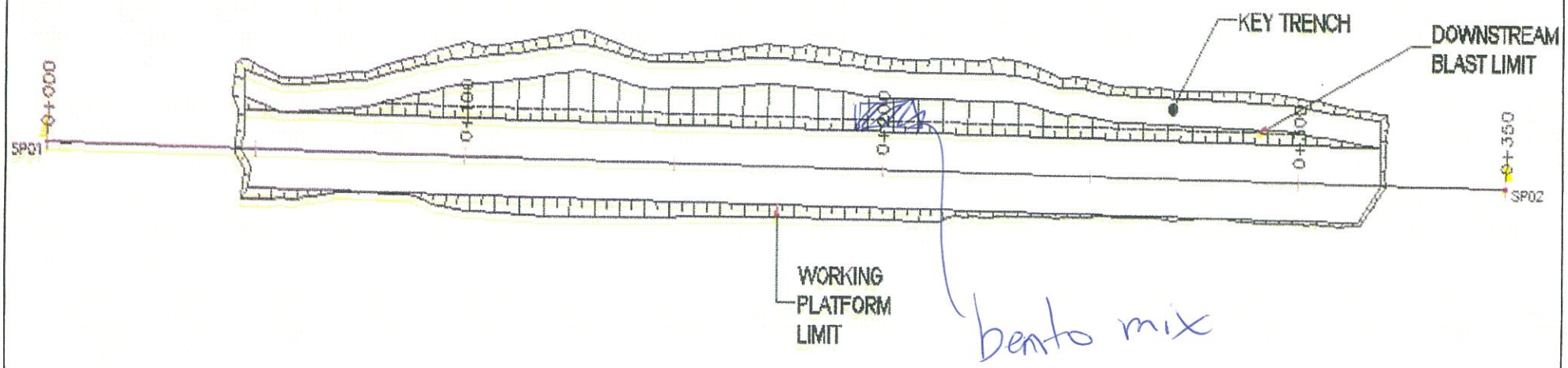

Figure 1 - Approximate approved foundation area

Date: 23-02-13 **Sketch by (Initial) :** MPR

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 16 **Date:** 23-02-13

nixA

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Patrice Cagnan
	Position:	AEM- Geotech Eng
QC Representative	Name:	FABIEN ZILLI
	Position:	INSPEC-SOL- QC REP
QA Engineer	Name:	Marie-Pier Lachance
	Position:	SNC- QA rep.
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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www.snclavalin.com

APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 DATE: 23-02-13 night

DOCUMENT #: 20130223-01 CLIENT: AEM
(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☑ Fill Placement (bento mix)
- ☐ Other _____

LOCATION

FROM STATION: 0+210

TO: 0+225

ELEVATION: ☑ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☑	☐	☑	☐	☐
2. Free of Ice / Snow / Water	☑	☐	☑	☐	☐
3. Gradation (visual)	☑	☐	☑	☐	☐
4. Placement (in regards to segregations, lift thickness)	☑	☐	☑	☐	☐
5. Compaction	☑	☐	☑	☐	☐
6. Foundation on Bedrock	✓		✓		
7. As built survey completed	☐	☑	☐	☑	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	_____	23-02-13
	QC REPRESENTATIVE	_____	23-02-13
	OWNER REPRESENTATIVE	_____	_____

Approved Area

Station: 0+210 (Offset): To Station: 0+225 (Offset):

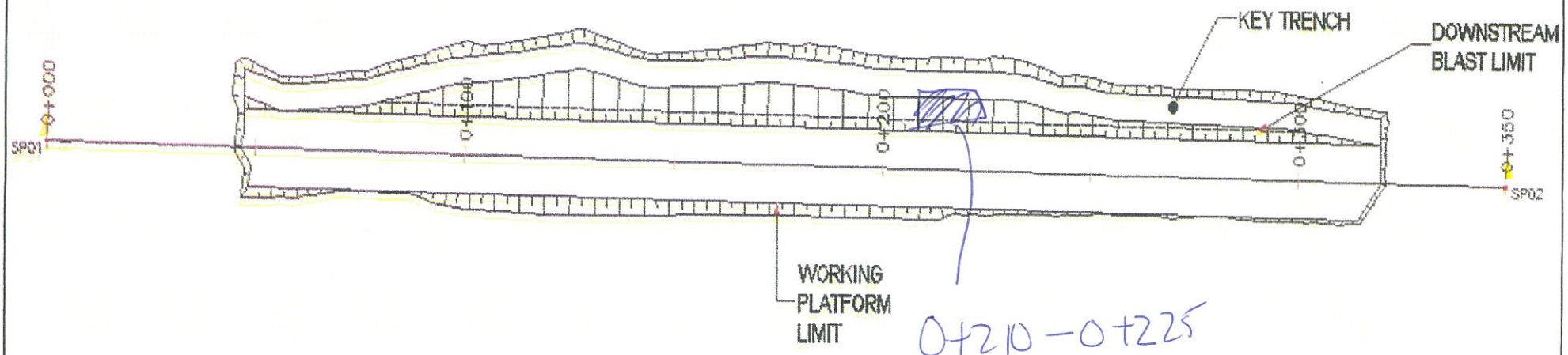

Figure 1 - Approximate approved foundation area

Date: 23-02-13 **Sketch by (Initial) :** MPRK

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 17 **Date:** 24-02-13

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Patrice Cayouette
	Position:	AEM- Geotech Eng
QC Representative	Name:	FABIEN ZILLI
	Position:	INSPEC-SOL- QC REP
QA Engineer	Name:	Marie Pier Lachance
	Position:	SNC- QA REP
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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www.snclavalin.com

APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 24-02-13

DOCUMENT #: 20130224-01 **CLIENT:** AEM
(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☑ Fill Placement (beta mix)
- ☐ Other _____

LOCATION

FROM STATION: 0+225

TO: 0+255

ELEVATION: ☑ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

		VERIFICATIONS MADE BY:				
		QA		QC		N/A
		Y	N	Y	N	
1.	Quotes and lines respected	☑	☐	☑	☐	☐
2.	Free of Ice / Snow / Water	☑	☐	☑	☐	☐
3.	Gradation (visual)	☑	☐	☑	☐	☐
4.	Placement (in regards to segregations, lift thickness)	☑	☐	☑	☐	☐
5.	Compaction	☑	☐	☑	☐	☐
6.	Foundation on Bedrock	✓		✓		
7.	As built survey completed	☑	☐	☑	☐	☐
8.	_____	☐	☐	☐	☐	☐
9.	_____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE		24-02-13
	QC REPRESENTATIVE		24-02-13
	OWNER REPRESENTATIVE		

Approved Area

Station: 0+225 (Offset): To Station: 0+255 (Offset):

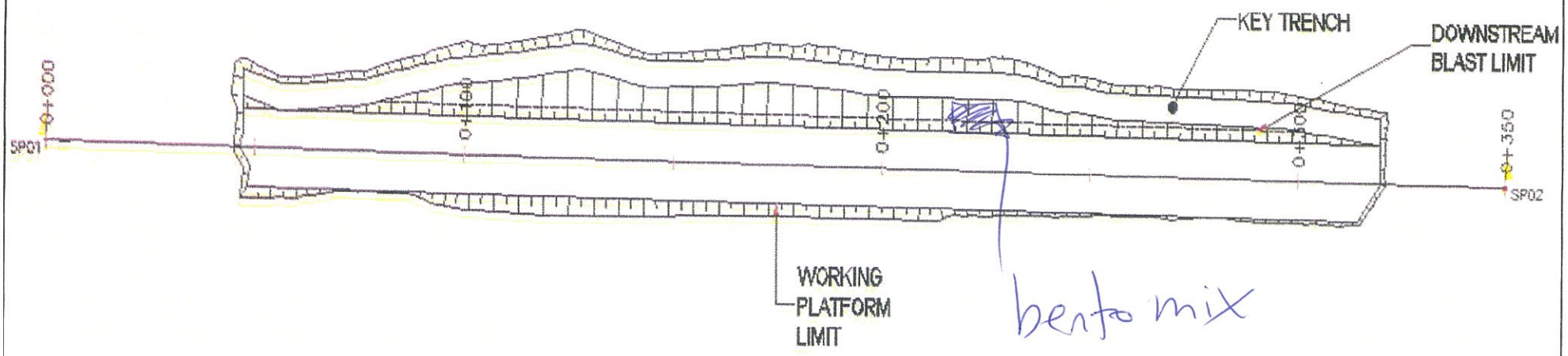

Figure 1 - Approximate approved foundation area

Date: 24-02-13 **Sketch by (Initial) :** YRK

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 18 **Date:** 24-02-13 night

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Patrice Cayer
	Position:	AEM- Geotech Eng
QC Representative	Name:	FABIEN ZILLI
	Position:	INSPEC-SOL- QC REP
QA Engineer	Name:	Marie-Eve Lachance
	Position:	SNC- QA REP
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #:

DATE:

DOCUMENT #:

CLIENT: 24-02-13 night

(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☑ Fill Placement (bench mix)
- ☐ Other _____

LOCATION

FROM STATION: 0+255

TO: 0+280

ELEVATION: ☑ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM:

TO:

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☑	☐	☑	☐	☐
2. Free of Ice / Snow / Water	☑	☐	☑	☐	☐
3. Gradation (visual)	☑	☐	☑	☐	☐
4. Placement (in regards to segregations, lift thickness)	☑	☐	☑	☐	☐
5. Compaction	☑	☐	☑	☐	☐
6. Foundation on Bedrock	✓		✓		
7. As built survey completed	☑	☐	☑	☐	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:

	SIGNATURE	DATE
QA REPRESENTATIVE		24-02-13
QC REPRESENTATIVE		24-02-13
OWNER REPRESENTATIVE		

Approved Area

Station: 0+255 (Offset): To Station: 0+280 (Offset):

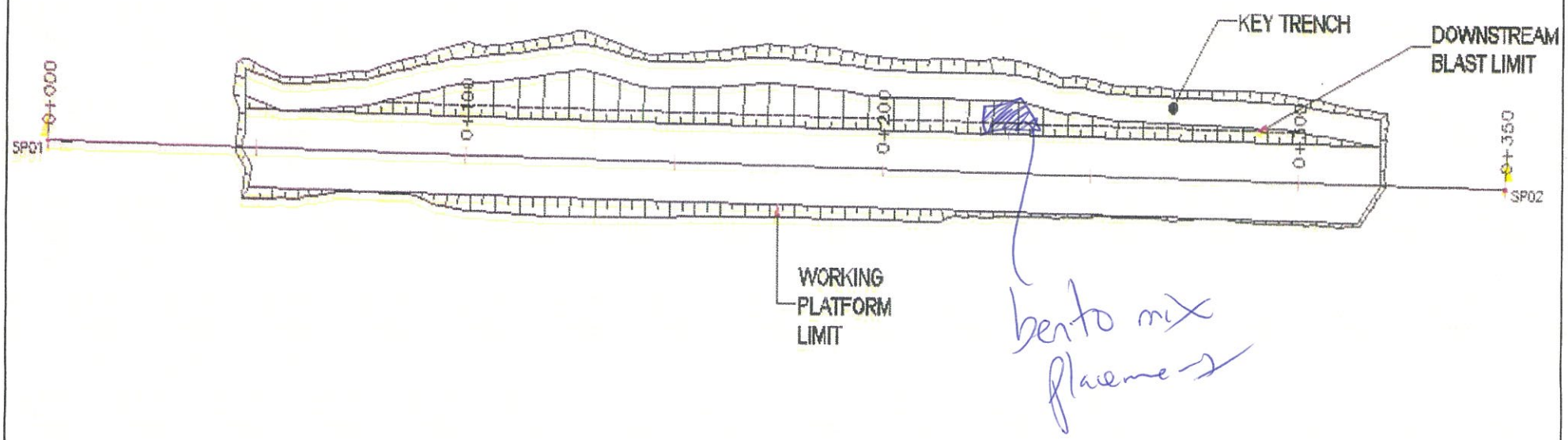

Figure 1 - Approximate approved foundation area

Date: 24-02-13 (night) **Sketch by (Initial) :** MRR

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 19 **Date:** 24-02-13

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Rebecca Cameron
	Position:	AEM- Owner rep, geotech eng
QC Representative	Name:	FABIEN ZILLI
	Position:	INSPEC-SOL- QC REP
QA Engineer	Name:	Marie-Pier Lachance
	Position:	SNC- QA-REP
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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www.snclavalin.com

APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 24-02-13

DOCUMENT #: 20130224-01 **CLIENT:** AEM
(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☑ Fill Placement (berlo mix)
- ☐ Other _____

LOCATION

FROM STATION: 0+280

TO: 0+320

ELEVATION: ☑ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☑	☐	☑	☐	☐
2. Free of Ice / Snow / Water	☑	☐	☑	☐	☐
3. Gradation (visual)	☑	☐	☑	☐	☐
4. Placement (in regards to segregations, lift thickness)	☑	☐	☑	☐	☐
5. Compaction	☑	☐	☑	☐	☐
6. Foundation on Bedrock	✓		-		
7. As built survey completed	☐	☑	☐	☐	☐
8. _____	☐	☐	☐	☐	☑
9. _____	☐	☐	☐	☐	☑

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE		24-02-13
	QC REPRESENTATIVE		24-02-13
	OWNER REPRESENTATIVE		28-02-13

Approved Area

Station: 0+280 (Offset): To Station: 0+320 (Offset):

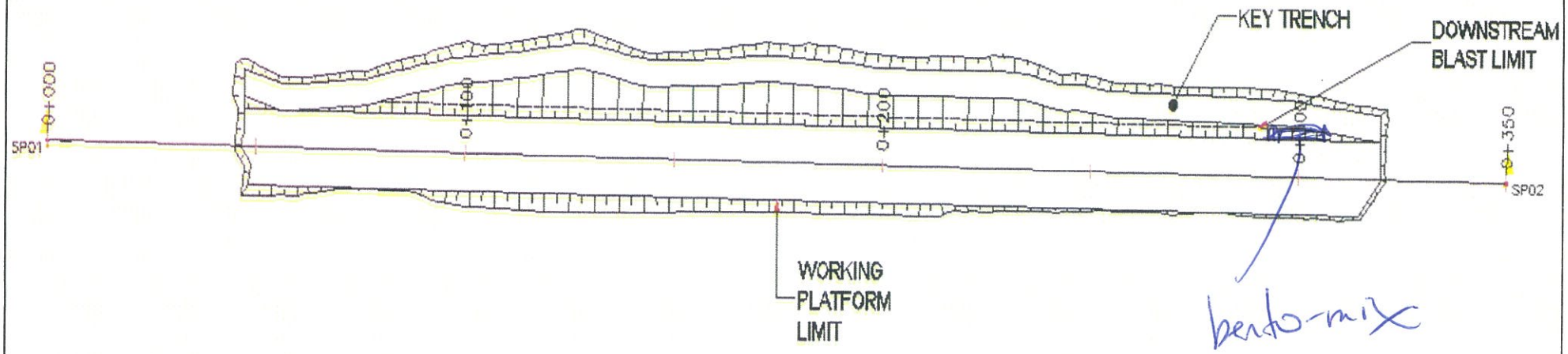

Figure 1 - Approximate approved foundation area

Date: 24-02-13 **Sketch by (Initial) :** MRR

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 20 **Date:** 25-02-13

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Rebecca Cameron
	Position:	AEM- Owner rep, geotech eng
QC Representative	Name:	FABIEN ZILL
	Position:	INSPEC-SOL- QC REC
QA Engineer	Name:	Marie-Pier Lachance
	Position:	SNC- QA-rep
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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www.snclavalin.com

APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 25-02-13

DOCUMENT #: 20130225-01 **CLIENT:** AEM

(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☑ Fill Placement (bento-mix)
- ☐ Other _____

LOCATION

FROM STATION: 0+320

TO: End of East Abutment

ELEVATION: ☑ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☑	☐	☑	☐	☐
2. Free of Ice / Snow / Water	☑	☐	☑	☐	☐
3. Gradation (visual)	☑	☐	☑	☐	☐
4. Placement (in regards to segregations, lift thickness)	☑	☐	☑	☐	☐
5. Compaction	☑	☐	☑	☐	☐
6. Foundation on Bedrock	✓		✓		
7. As built survey completed	☑	☐	☐	☐	☑
8. _____	☐	☐	☐	☐	☑
9. _____	☐	☐	☐	☐	☑

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE		25-02-13
	QC REPRESENTATIVE		25-02-13
	OWNER REPRESENTATIVE		28-02-13

Approved Area

Station: 0+320 (Offset): To Station: End of East Abutment (Offset):

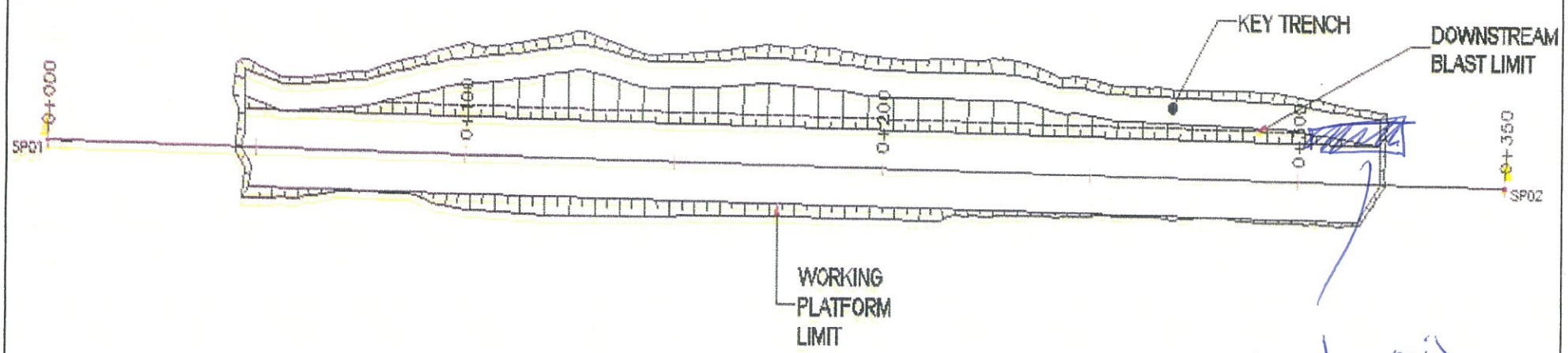

Figure 1 - Approximate approved foundation area

Date: 25-02-13 **Sketch by (Initial) :** MKR

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF ~~FOUNDATION CONDITION~~ Fill Placement - VAULT DIKE

Acceptance No.: FND-VD- 21 **Date:** 2013-03-06

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	
	Position:	AEM- Owner Rep.
QC Representative	Name:	Mélissa Lapointe Desbiens
	Position:	INSPEC-SOL- Mélissa Lapointe Desbiens
QA Engineer	Name:	J-FRANÇOIS ST-LAURENT
	Position:	SNC-
Surveyor	Name:	Robert CLOUÂTRÉ
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 DATE: 2013-03-06

DOCUMENT #: 20130306 - 01 CLIENT: HEM
(YYYYMMDD-01)

APPROBATION FOR :
- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☒ Fill Placement (0-20mm + Bentonite)
- ☐ Other _____

LOCATION

FROM STATION: 180

TO: 208

ELEVATION: ☒ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☒	☐	☐	☐	☐
2. Free of Ice / Snow / Water	☒	☐	☐	☐	☐
3. Gradation (visual)	☒	☐	☐	☐	☐
4. Placement (in regards to segregations, lift thickness)	☒	☐	☐	☐	☐
5. Compaction	☒	☐	☐	☐	☐
6. Foundation on Bedrock	—				
7. As built survey completed	☒	☐	☐	☐	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
5	Refer to Inspection report	☐	☐
		☐	☐
		☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	[signature]	2013-03-07
	QC REPRESENTATIVE		
	OWNER REPRESENTATIVE		

Approved Area

Station: 0+180 ~~(Offset)~~: To Station: 0+208 (Offset):

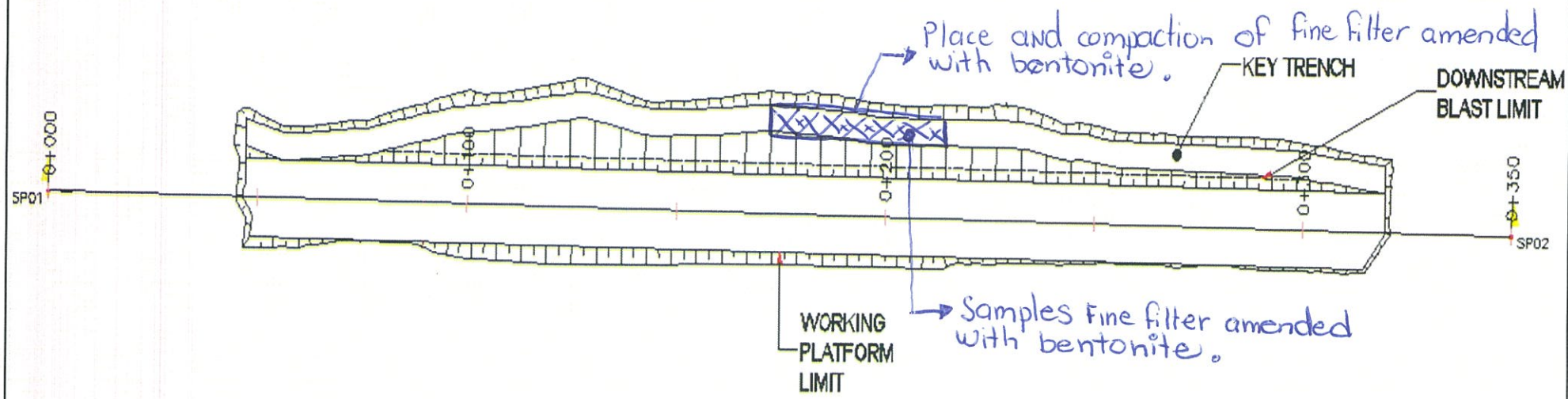

Figure 1 - Approximate approved Foundation

Date: 2013-03-06

Sketch by (Initial) : MJ

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 22 **Date:** 2013-03-08

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	
	Position:	AEM- Owner Rep.
QC Representative	Name:	Mélissa Lapointe Desbiens
	Position:	INSPEC-SOL- Mélissa Lapointe Desbiens
QA Engineer	Name:	St-LAURENT J-FRANÇOIS
	Position:	SNC-
Surveyor	Name:	R. CLOUÂTRE
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614

DOCUMENT #: 20130308-01 (YYYYMMDD-01)

DATE: 2013-03-08

CLIENT: AEM

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☒ Fill Placement (0-20mm +) Bentonite.
- ☐ Other _____

LOCATION

FROM STATION: 0+208

TO: 0+252

ELEVATION: ☒ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

		VERIFICATIONS MADE BY:				
		QA		QC		N/A
		Y	N	Y	N	
1.	Quotes and lines respected	☒	☐	☐	☐	☐
2.	Free of Ice / Snow / Water	☒	☐	☐	☐	☐
3.	Gradation (visual)	☒	☐	☐	☐	☐
4.	Placement (in regards to segregations, lift thickness)	☒	☐	☐	☐	☐
5.	Compaction	☒	☐	☐	☐	☐
6.	Foundation on Bedrock					X
7.	As built survey completed	☒	☐	☐	☐	☐
8.	_____	☐	☐	☐	☐	☐
9.	_____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	[signature]	2013-03-08
	QC REPRESENTATIVE	[signature]	2013-03-08
	OWNER REPRESENTATIVE		

Approved Area

Station: 0+208 ~~(Offset):~~ To Station: 0+252 (Offset):

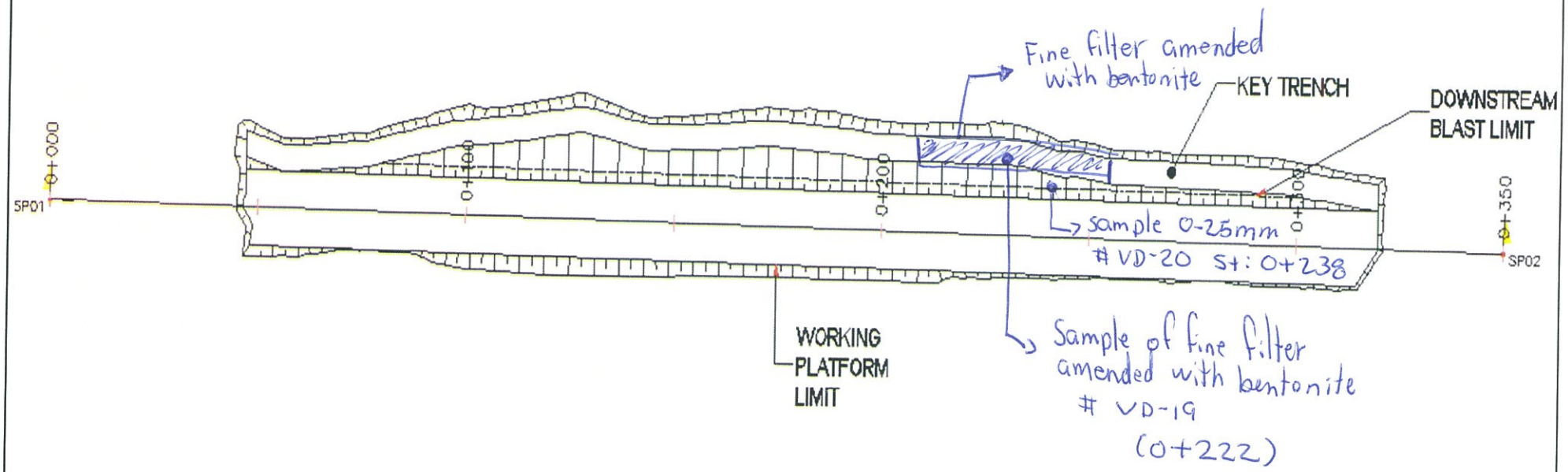

Figure 1 - Approximate approved foundation area

Date: 2013-03-08

Sketch by (Initial) : MD

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF ~~FOUNDATION CONDITION~~ Fill - VAULT DIKE

Acceptance No.: FND-VD- 23 **Date:** 2013-03-09

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	[signature]
	Position:	AEM- Owner Rep.
QC Representative	Name:	Mélissa Lapointe Desbiens
	Position:	INSPEC-SOL- [signature]
QA Engineer	Name:	J-FRANÇOIS ST-LAURENT
	Position:	SNC- [signature]
Surveyor	Name:	ROBERT CLOUÂTRE
	Position:	FGL- [signature]

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #:

DOCUMENT #: (YYYYMMDD-01)

DATE: 2013-03-09

CLIENT: AEM

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ■ Fill Placement (~~Subliner slope~~) 0-20 mm + Bentonite
- ☐ Other

LOCATION

FROM STATION: 254

TO: 303

ELEVATION: ☒ VARIES

m

PREVIOUS APPROVATIONS

FROM:

TO:

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

0-20mm + Bentonite

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☒	☐	☐	☐	☐
2. Free of Ice / Snow / Water	☒	☐	☐	☐	☐
3. Gradation (visual)	☒	☐	☐	☐	☐
4. Placement (in regards to segregations, lift thickness)	☒	☐	☐	☐	☐
5. Compaction	☒	☐	☐	☐	☐
6. Foundation on Bedrock					☒
7. As built survey completed	☒	☐	☐	☐	☐
8. ~~Slope is smooth and flat~~ Undervibe the liner	☒	☐	☐	☐	☐
9.	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
		☐	☐
		☐	☐
		☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	[signature]	13-03-09
	QC REPRESENTATIVE	[signature]	13-03-09
	OWNER REPRESENTATIVE		

Approved Area

Station: 0+254 ~~(Offset)~~: To Station: 0+303 (Offset):

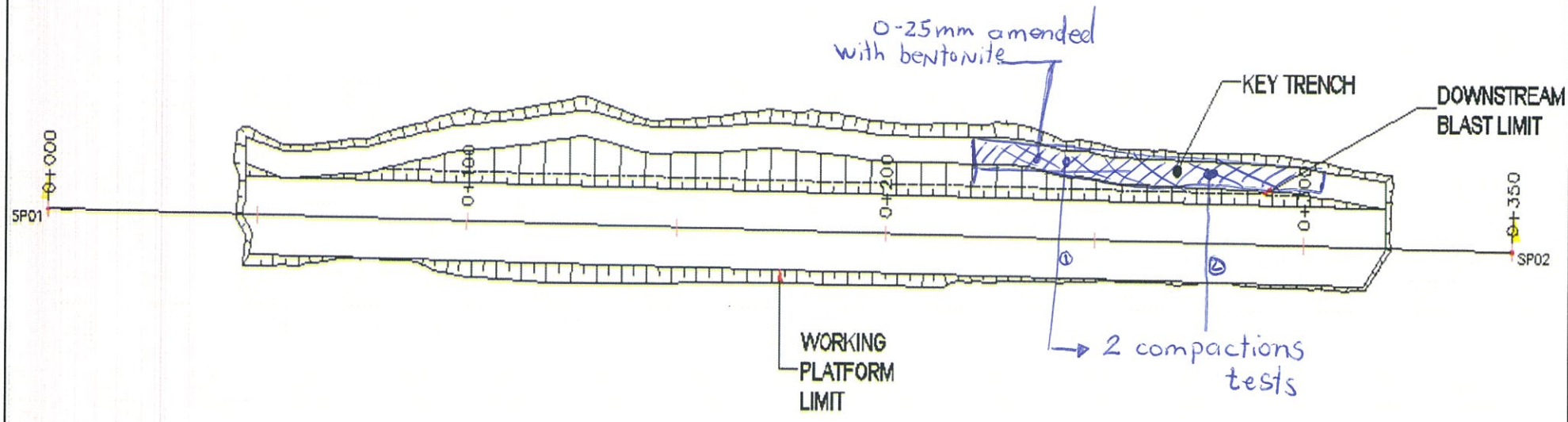

Figure 1 - Approximate approved liner area

Date: 2013-03-09

Sketch by (Initial) : MLP

FOUNDATION AND KEY TRENCH PREPARATION AND ACCEPTATION

CERTIFICATE OF ACCEPTANCE OF FOUNDATION CONDITION - VAULT DIKE

Acceptance No.: FND-VD- 24 **Date:** 2013-03-10

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program and the Owner Representative.

Topography of the approved foundation surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the foundation conditions at the time of the inspection and the condition of the foundation is required to be maintained prior to and during fill placement.

Owner Representative	Name:	
	Position:	AEM- Owner Rep.
QC Representative	Name:	Mélissa Lapointe Desbiens
	Position:	INSPEC-SOL- Mélissa Lapointe Desbiens
QA Engineer	Name:	J-FRANCOIS ST-LAURENT
	Position:	SNC-
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 13-03-10

DOCUMENT #: 20130310-01 **CLIENT:** AEM
(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ■ Fill Placement (Subliner slope) 0-20mm + Bentonite
- ☐ Other _____

LOCATION

FROM STATION: 303

TO: 322

ELEVATION: ☒ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☒	☐	☐	☐	☐
2. Free of Ice / Snow / Water	☒	☐	☐	☐	☐
3. Gradation (visual)	☒	☐	☐	☐	☐
4. Placement (in regards to segregations, lift thickness)	☒	☐	☐	☐	☐
5. Compaction	☒	☐	☐	☐	☐
6. Foundation on Bedrock					X
7. As built survey completed	☒	☐	☐	☐	☐
8. ~~Slope is smooth and flat~~	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	Francis [illegible]	13-03-10
	QC REPRESENTATIVE	Mélanie Lapointe D.	13-03-10
	OWNER REPRESENTATIVE		

Approved Area

Station: 0+303 (~~Offset~~): To Station: 0+323 (Offset):

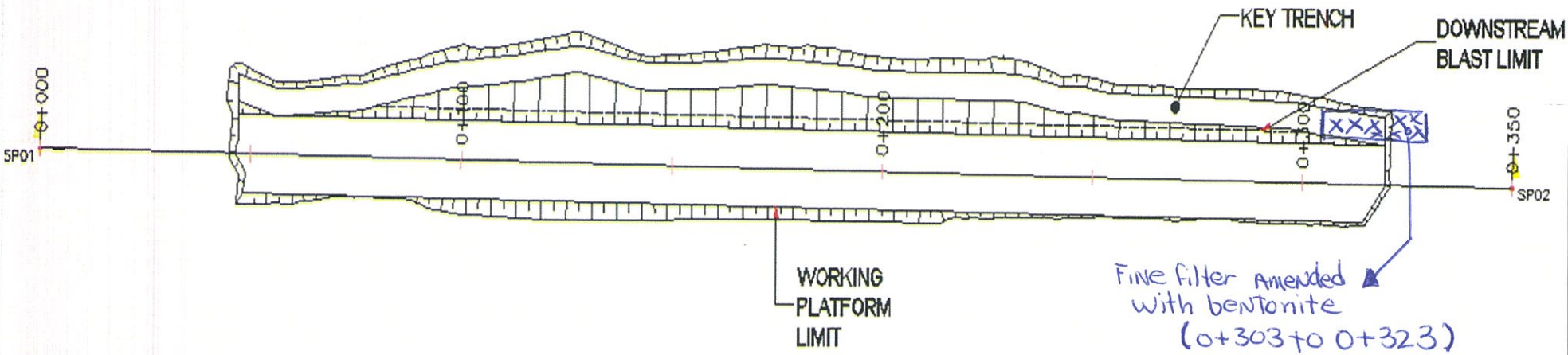

Figure 1 - Approximate approved subliner slope area

Date: 2013-03-10

Sketch by (Initial) : MD

LINER PREPARATION AND ACCEPTANCE

CERTIFICATE OF ACCEPTANCE OF LINER CONDITION - VAULT DIKE

Acceptance No.: LINER-VD-01 **Date:** 2013-03-05

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program, Liner Quality Control (Texel) and the Owner Representative.

Topography of the approved liner surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the liner conditions at the time of the inspection and the condition of the liner is required to be maintained prior to and during fill placement.

Owner Representative	Name:	
	Position:	AEM- Owner Rep.
QC Representative	Name:	INSPEC-SOL- Mélissa Lapointe Desbiens
Liner Quality Control Rep	Name:	TEXEL- See Approval from Texel
QA Engineer	Name:	St-Laurent
	Position:	SNC-
Surveyor	Name:	R. Cloutier
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: G11614 **DATE:** 2013-03-05

DOCUMENT #: 20130305 **CLIENT:** AEM
(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☐ Fill Placement (_____)
- ■ Other Liner

LOCATION

FROM STATION: 120

TO: 160

ELEVATION: ☒ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☒	☐	☐	☐	☐
2. Liner has no cracks or rips	☒	☐	☐	☐	☐
3. Liner is smooth and flat (no waves or bumps)	☐	☐	☐	☐	☒
4. Welding done properly	☒	☐	☐	☐	☐
5. As built survey completed	☒	☐	☐	☐	☐
6. Patches done?	x				
7. Liner QC tests done?	☒	☐	☐	☐	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

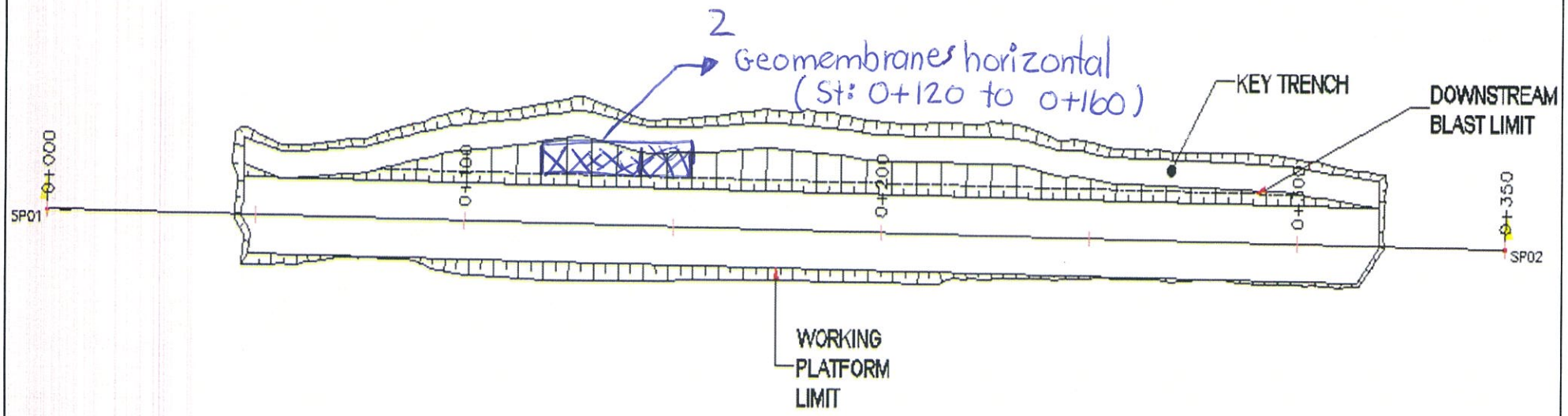
ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	François St-Onge	2013-03-05
	QC REPRESENTATIVE	Mélissa Lafrenière Dubois	2013-03-05
	OWNER REPRESENTATIVE		
	LINER QC REPRESENTATIVE		

* the bottom slope liner ~~was~~ was placed during the morning under the other crew supervision. So it is not possible for me to approve it.

Approved Area

Station: 0+120 ~~(Offset)~~: To Station: 0+160 (Offset):



* Bottom liner was installed under the other crew supervision.

← us

← other

Figure 1 - Approximate approved liner area

Date: 2013-03-05

Sketch by (Initial) : MLD

LINER PREPARATION AND ACCEPTANCE

CERTIFICATE OF ACCEPTANCE OF LINER CONDITION - VAULT DIKE

Acceptance No.: LINER-VD- 02 **Date:** 2013-03-06

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program, Liner Quality Control (Texel) and the Owner Representative.

Topography of the approved liner surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the liner conditions at the time of the inspection and the condition of the liner is required to be maintained prior to and during fill placement.

Owner Representative	Name:	
	Position:	AEM- O.R.
QC Representative	Name:	INSPEC-SOL- Melissa lapointe Desbiens
Liner Quality Control Rep	Name:	TEXEL- See Approval from texel
QA Engineer	Name:	François St-Laurent
	Position:	SNC-
Surveyor	Name:	R. CLOUÂTRE
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 2013-03-06

DOCUMENT #: 2013 03 06 - 01 **CLIENT:** AEM
(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☐ Fill Placement (_____)
- ■ Other Liner

LOCATION

FROM STATION: 160

TO: 214

ELEVATION: ☒ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☒	☐	☐	☐	☐
2. Liner has no cracks or rips	☒	☐	☐	☐	☐
3. Liner is smooth and flat (no waves or bumps)	☐	☐	☐	☐	☒
4. Welding done properly	☒	☐	☐	☐	☐
5. As built survey completed	☒	☐	☐	☐	☐
6. Patches done?	X				
7. Liner QC tests done?	☒	☐	☐	☐	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
3	Not possible to respect the specifications because liner is naturally bumpy and liner welding is not perfect	☐	☐
		☐	☐
		☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE		2013-03-07
	QC REPRESENTATIVE	Melina Lafrenière Desbiens	2013-03-06
	OWNER REPRESENTATIVE		2013-03-07
	LINER QC REPRESENTATIVE		

Approved Area

Station: 0+160 ~~(Offset):~~ To Station: 0+214 (Offset):

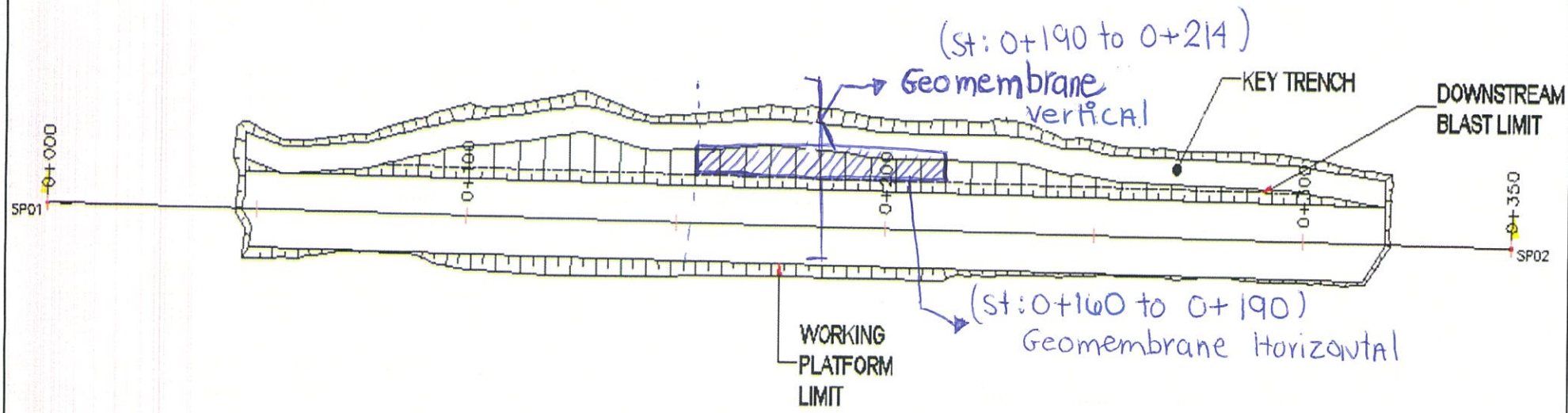

Figure 1 - Approximate approved liner area

Date: 2013-03-07

Sketch by (Initial) :

LINER PREPARATION AND ACCEPTANCE

CERTIFICATE OF ACCEPTANCE OF LINER CONDITION - VAULT DIKE

Acceptance No.: LINER-VD- 03 **Date:** 2013-03-07

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program, Liner Quality Control (Texel) and the Owner Representative.

Topography of the approved liner surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the liner conditions at the time of the inspection and the condition of the liner is required to be maintained prior to and during fill placement.

Owner Representative	Name:	[illegible]
	Position:	AEM- Owner Rep.
QC Representative	Name:	INSPEC-SOL- Mélissa Lapointe Desbiens
Liner Quality Control Rep	Name:	TEXEL- See Approval from Texel
QA Engineer	Name:	JFRANÇOIS ST-LAURENT
	Position:	SNC-
Surveyor	Name:	R. CLOUÂTRE
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 2013-03-07

DOCUMENT #: 20130307-01 **CLIENT:** AEM
(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☐ Fill Placement (_____)
- ■ Other Liner

LOCATION

FROM STATION: 214

TO: 237

ELEVATION: ☒ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

		VERIFICATIONS MADE BY:				
		QA		QC		N/A
		Y	N	Y	N	
1.	Quotes and lines respected	☒	☐	☐	☐	☐
2.	Liner has no cracks or rips	☒	☐	☐	☐	☐
3.	Liner is smooth and flat (no waves or bumps)	☐	☐	☐	☐	☒
4.	Welding done properly	☒	☐	☐	☐	☐
5.	As built survey completed	☒	☐	☐	☐	☐
6.	Patches done?	☒				
7.	Liner QC tests done?	☒	☐	☐	☐	☐
8.	_____	☐	☐	☐	☐	☐
9.	_____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
3.	As yesterday.	☐	☐
		☐	☐
		☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	François [illegible]	2013-03-07
	QC REPRESENTATIVE	Mélinya Lafrenière Desbiens	2013-03-07
	OWNER REPRESENTATIVE	[illegible]	2013-03-07
	LINER QC REPRESENTATIVE		

Approved Area

Station: 0+214 ~~(Offset)~~: To Station: 0+237 (Offset):

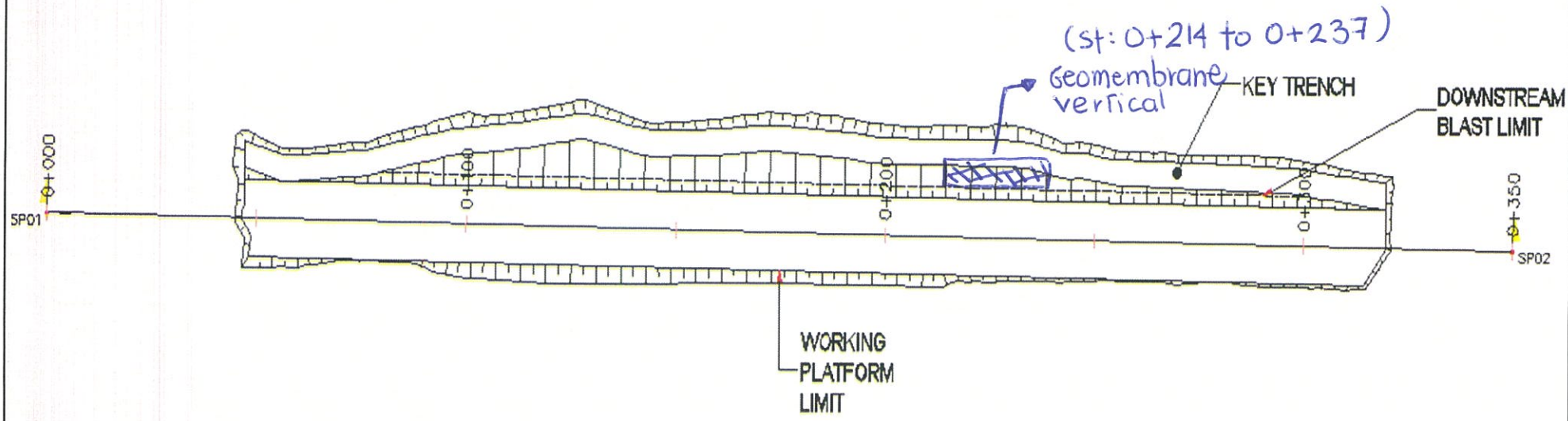

Figure 1 - Approximate approved liner area

Date: 2013-03-07 **Sketch by (Initial) :** MD

LINER PREPARATION AND ACCEPTANCE

CERTIFICATE OF ACCEPTANCE OF LINER CONDITION - VAULT DIKE

Acceptance No.: 3 **LINER-VD-** 04 **Date:** 2013-03-08

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program, Liner Quality Control (Texel) and the Owner Representative.

Topography of the approved liner surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the liner conditions at the time of the inspection and the condition of the liner is required to be maintained prior to and during fill placement.

Owner Representative	Name:	
	Position:	AEM- Owner Rep.
QC Representative	Name:	INSPEC-SOL- Melissa Lapointe Desbiens
Liner Quality Control Rep	Name:	TEXEL- See Approval from Texel
QA Engineer	Name:	J-Francois St-Laurent
	Position:	SNC-
Surveyor	Name:	R. CLOUÂTRE
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 DATE: 2013-03-08

DOCUMENT #: 20130308-01 CLIENT: AEM
(YYYYMMDD-01)

APPROBATION FOR :
- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☐ Fill Placement (_____)
- ■ Other Liner

LOCATION

FROM STATION: 237

TO: 258

ELEVATION: ☒ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

VERIFICATIONS MADE BY:

	QA		QC		N/A
	Y	N	Y	N	
1. Quotes and lines respected	☒	☐	☐	☐	☐
2. Liner has no cracks or rips	☒	☐	☐	☐	☐
3. Liner is smooth and flat (no waves or bumps)	☐	☐	☐	☐	☒
4. Welding done properly	☒	☐	☐	☐	☐
5. As built survey completed	☒	☐	☐	☐	☐
6. Patches done?		☒			
7. Liner QC tests done?	☒	☐	☐	☐	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	[signature]	2013-03-08
	QC REPRESENTATIVE	Mélissa Lapointe D.	2013-03-08
	OWNER REPRESENTATIVE		
	LINER QC REPRESENTATIVE		

Approved Area

Station: 0+237 To Station: 0+258 (Offset):

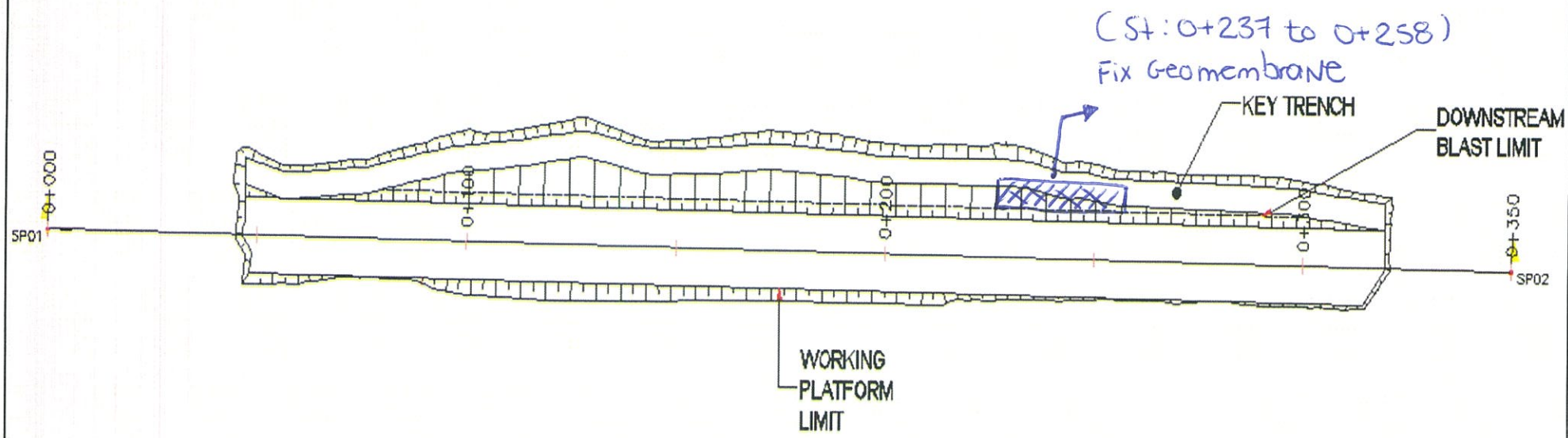

Figure 1 - Approximate approved liner area

Date: 2013-03-08

Sketch by (Initial) :

LINER PREPARATION AND ACCEPTANCE

CERTIFICATE OF ACCEPTANCE OF LINER CONDITION - VAULT DIKE

Acceptance No.: LINER-VD-05 **Date:** 2013-03-09

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program, Liner Quality Control (Texel) and the Owner Representative.

Topography of the approved liner surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the liner conditions at the time of the inspection and the condition of the liner is required to be maintained prior to and during fill placement.

Owner Representative	Name:	
	Position:	AEM- Owner Rep.
QC Representative	Name:	INSPEC-SOL- Mélissa Lapointe P.
Liner Quality Control Rep	Name:	TEXEL-
QA Engineer	Name:	FRANÇOIS ST-LAURENT
	Position:	SNC-
Surveyor	Name:	R. CLOUÂTRE
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 2013-03-09

DOCUMENT #: 20130309-01 **CLIENT:** AEM
(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☐ Fill Placement (_____)
- ■ Other Liner

LOCATION

FROM STATION: 260

TO: 312

ELEVATION: ☒ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

		VERIFICATIONS MADE BY:				
		QA		QC		N/A
		Y	N	Y	N	
1.	Quotes and lines respected	☒	☐	☐	☐	☐
2.	Liner has no cracks or rips	☒	☐	☐	☐	☐
3.	Liner is smooth and flat (no waves or bumps)	☐	☐	☐	☐	☒
4.	Welding done properly	☒	☐	☐	☐	☐
5.	As built survey completed	☒	☐	☐	☐	☐
6.	Patches done?	☒				
7.	Liner QC tests done?	☒	☐	☐	☐	☐
8.	Slope is smooth & flat	☒	☐	☐	☐	☐
9.	_____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	[signature]	13-03-09
	QC REPRESENTATIVE	Mélissa Japonte D	13-03-09
	OWNER REPRESENTATIVE		
	LINER QC REPRESENTATIVE		

Approved Area

Station: 0+258 To Station: 0+312 (Offset):

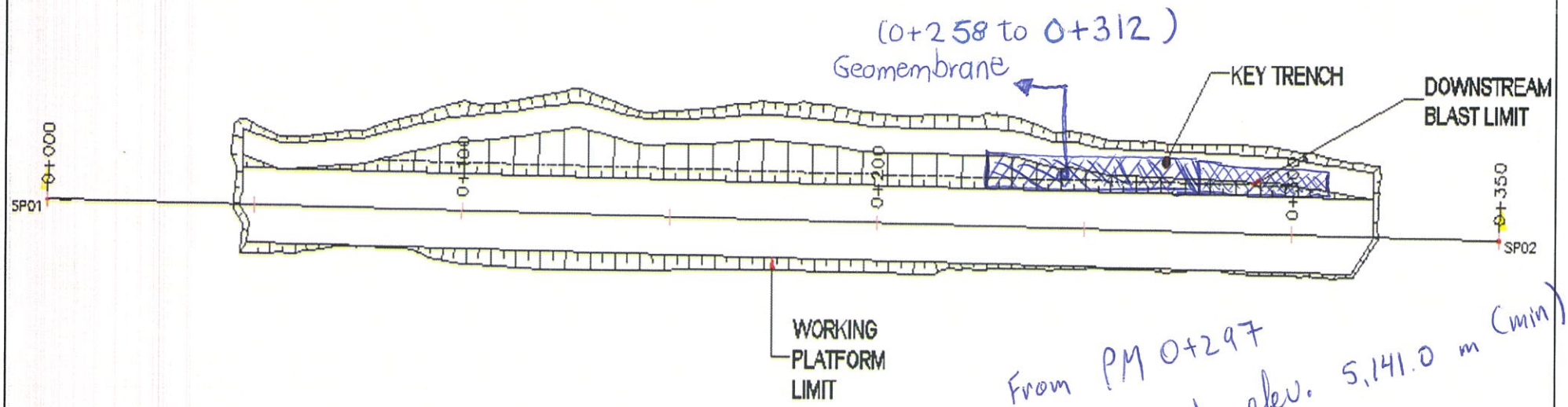

Figure 1 - Approximate approved liner area

Date: 2013-03-09

Sketch by (Initial) : MD

LINER PREPARATION AND ACCEPTANCE

CERTIFICATE OF ACCEPTANCE OF LINER CONDITION - VAULT DIKE

Acceptance No.: LINER-VD- 06 **Date:** 2013-03-10

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program, Liner Quality Control (Texel) and the Owner Representative.

Topography of the approved liner surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the liner conditions at the time of the inspection and the condition of the liner is required to be maintained prior to and during fill placement.

Owner Representative	Name:	
	Position:	AEM- Owner Rep
QC Representative	Name:	INSPEC-SOL- Mélissa Lapointe Desbiens
Liner Quality Control Rep	Name:	TEXEL-
QA Engineer	Name:	J-FRANÇOIS ST-LAURENT
	Position:	SNC-
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

SNC·LAVALIN

Sustainable Mine Development
Global Mining & Metallurgy
360, St-Jacques Street
Montreal (Quebec)
Canada H2Y 1P5

Telephone: (514) 393-1000
Fax: (514) 390-2765
www.snclavalin.com

APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 2013-03-10

DOCUMENT #: 20130310-01 **CLIENT:** AEM
(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☐ Fill Placement (_____)
- ■ Other Liner

LOCATION

FROM STATION: 0+73 to 1+13

TO: 3+12 to 3+22

ELEVATION: ☒ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☒	☐	☐	☐	☐
2. Liner has no cracks or rips	☒	☐	☐	☐	☐
3. Liner is smooth and flat (no waves or bumps)	☐	☐	☐	☐	☒
4. Welding done properly	☒	☐	☐	☐	☐
5. As built survey completed	☒	☐	☐	☐	☐
6. Patches done?	☒				
7. Liner QC tests done?	☒	☐	☐	☐	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	François SH	2013-03-10
	QC REPRESENTATIVE	Milena Lapointe Dobrieu	2013-03-10
	OWNER REPRESENTATIVE		
	LINER QC REPRESENTATIVE		

Approved Area

[Station: 0+312 to ~~(Offset)~~: 0+322] [~~To~~ Station: 0+113 to ~~(Offset)~~: 0+073]

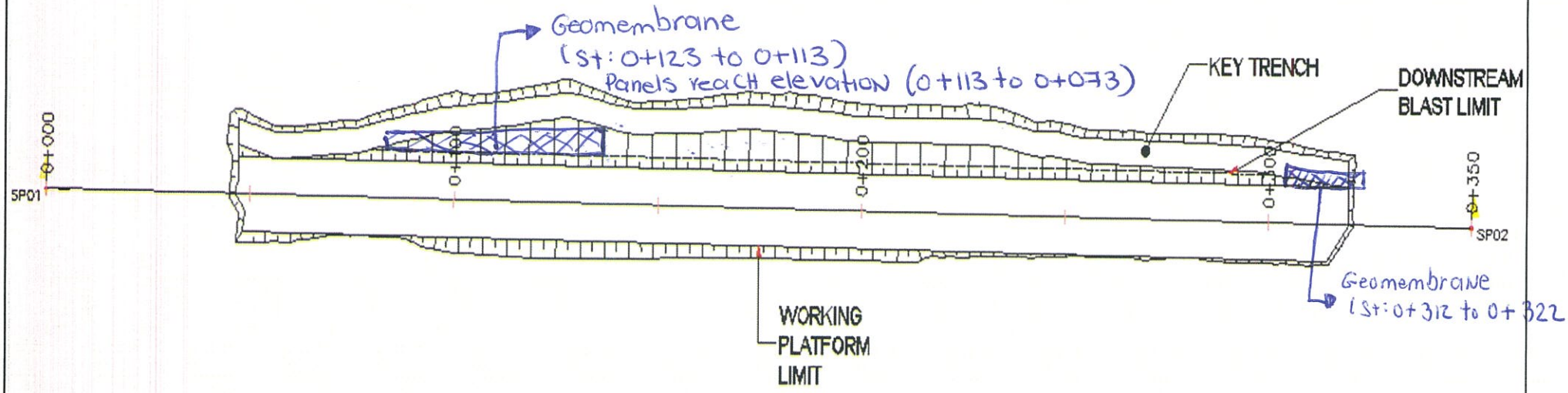

Figure 1 - Approximate approved liner area

Date: 2013-03-10

Sketch by (Initial) : MTD

LINER PREPARATION AND ACCEPTANCE

CERTIFICATE OF ACCEPTANCE OF LINER CONDITION - VAULT DIKE

Acceptance No.: LINER-VD- 07 **Date:** 2013-03-12

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program, Liner Quality Control (Texel) and the Owner Representative.

Topography of the approved liner surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the liner conditions at the time of the inspection and the condition of the liner is required to be maintained prior to and during fill placement.

Owner Representative	Name:	Telpaw
	Position:	AEM- Owner Rep
QC Representative	Name:	INSPEC-SOL- Mélissa lapointe Desbiens
Liner Quality Control Rep	Name:	TEXEL-
QA Engineer	Name:	JFRuvoil
	Position:	SNC-
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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Canada H2Y 1P5

Telephone: (514) 393-1000
Fax: (514) 390-2765
www.snclavalin.com

APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 2013-03-12

DOCUMENT #: 20130312-01 **CLIENT:** QEM
(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☐ Fill Placement (_____)
- ■ Other Liner

LOCATION

FROM STATION: 40 to 73
& 113 to 191

ELEVATION: ☒ VARIES
_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

VERIFICATIONS MADE BY:

	QA		QC		N/A
	Y	N	Y	N	
1. Quotes and lines respected	☒	☐	☐	☐	☐
2. Liner has no cracks or rips	☒	☐	☐	☐	☐
3. Liner is smooth and flat (no waves or bumps)	☐	☐	☐	☐	☒
4. Welding done properly	☒	☐	☐	☐	☐
5. As built survey completed	☒	☐	☐	☐	☐
6. Patches done?	☒				
7. Liner QC tests done?	☒	☐	☐	☐	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	[signature]	2013-03-12
	QC REPRESENTATIVE	Mélissa Lapointe Doobiew	2013-03-12
	OWNER REPRESENTATIVE		
	LINER QC REPRESENTATIVE		

Approved Area

Station: 0+073 to station: 0+040 Station: 0+113 to station: 0+191

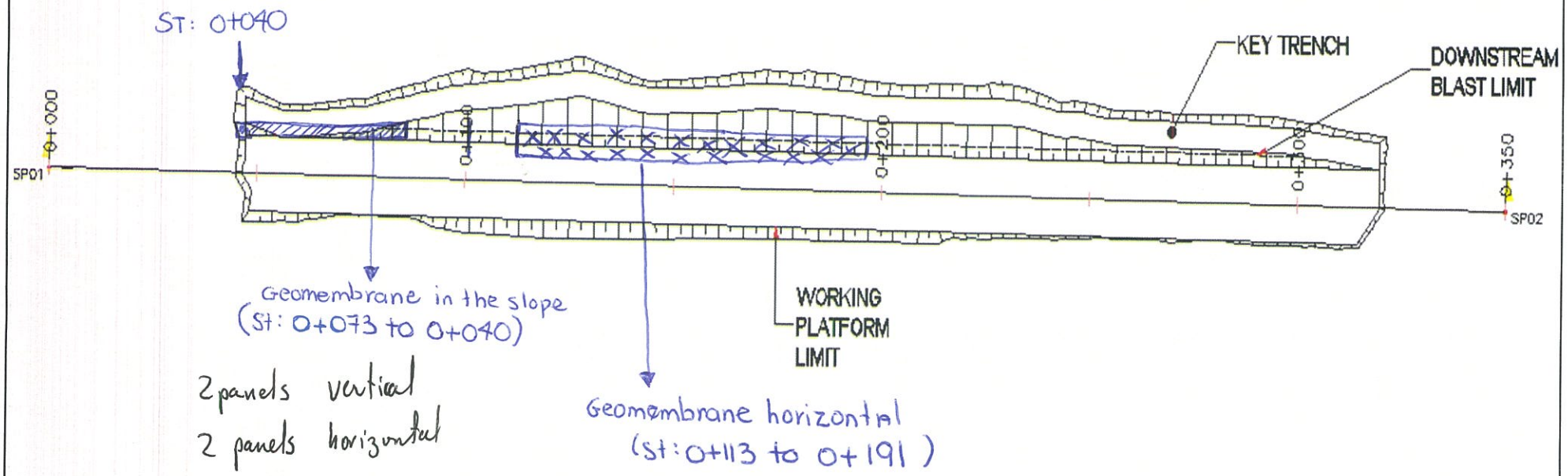

Figure 1 - Approximate approved liner area

Date: 2013-03-12

Sketch by (Initial) : MJP

LINER PREPARATION AND ACCEPTANCE

CERTIFICATE OF ACCEPTANCE OF LINER CONDITION - VAULT DIKE

Acceptance No.: LINER-VD- 08 **Date:** 2013-03-13

This Certificate of Acceptance includes the following items, reviewed and accepted by the undersigned:

1) Foundation and Key Trench Preparation and Excavation Checklist (from SNC);

2) Sketch of the approximate accepted area, incl. Station and Offset (according to Vault Dike Stations);

3) Photo of the accepted area, at the moment of the acceptance;

4) Any other relevant documentation complementary to this approval.

The area has been inspected and accepted by autorised personnel representing Quality Control (QC) Program, Quality Assurance (QA) Program, Liner Quality Control (Texel) and the Owner Representative.

Topography of the approved liner surface has been surveyed for documentation and as-built purposes, as confirmed by the undersigned surveyor.

The area is accepted as per the liner conditions at the time of the inspection and the condition of the liner is required to be maintained prior to and during fill placement.

Owner Representative	Name:	T. Lepine
	Position:	AEM-
QC Representative	Name:	INSPEC-SOL- Melissa Lapointe Desbiens
Liner Quality Control Rep	Name:	TEXEL-
QA Engineer	Name:	JFSTLAURENT
	Position:	SNC-
Surveyor	Name:	
	Position:	FGL-

NOTES: 1. Original signed certificate must be given to the Owner Representative for documentation records. 2. Survey files from the approved area must be saved in appropriate location as required by the Owner Representative. 3. Photos of approved area must be saved in appropriate location as required by the Owner Representative.

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Canada H2Y 1P5

Telephone: (514) 393-1000
Fax: (514) 390-2765
www.snclavalin.com

APPROBATION FORM

PROJECT : Construction of Vault Dike

PROJECT #: 611614 **DATE:** 2013-03-13

DOCUMENT #: 20130313-01 **CLIENT:** AEM
(YYYYMMDD-01)

APPROBATION FOR :

- ☐ Foundation Approval (Footprint)
- ☐ Foundation Approval (Key Trench)
- ☐ Fill Placement (_____)
- ■ Other Liner

LOCATION

FROM STATION: 191

TO: 298

ELEVATION: ☒ VARIES

_____ m

PREVIOUS APPROVATIONS

FROM: _____

TO: _____

RESPECT TO THE SPECIFICATIONS ACCORDING TO:

	VERIFICATIONS MADE BY: QA Y	QA N	QC Y	QC N	N/A
1. Quotes and lines respected	☒	☐	☐	☐	☐
2. Liner has no cracks or rips	☒	☐	☐	☐	☐
3. Liner is smooth and flat (no waves or bumps)	☐	☐	☐	☐	☒
4. Welding done properly	☒	☐	☐	☐	☐
5. As built survey completed	☒	☐	☐	☐	☐
6. Patches done?	☒				
7. Liner QC tests done?	☒	☐	☐	☐	☐
8. _____	☐	☐	☐	☐	☐
9. _____	☐	☐	☐	☐	☐

DETAILS (REFER TO NUMBER ABOVE)

ITEM		APPROVED BY: QA	QC
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

APPROVED BY:		SIGNATURE	DATE
	QA REPRESENTATIVE	[signature]	2013-03-13
	QC REPRESENTATIVE	Melissa Lapointe Dgabon	2013-03-13
	OWNER REPRESENTATIVE	[signature]	~ ~
	LINER QC REPRESENTATIVE	[signature]	

Approved Area

Station: 0+191 (Offset): To Station: 0+298 (Offset):

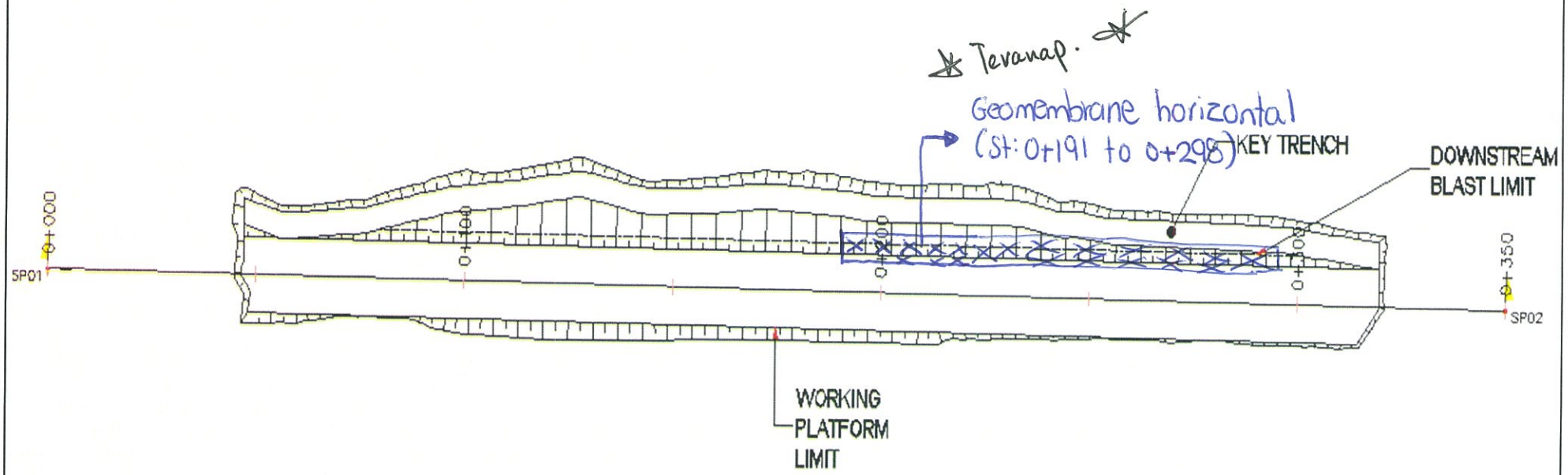

Figure 1 - Approximate approved foundation area

Date: 2013-03-13

Sketch by (Initial) :

APPENDIX E3.
Geomembrane

AGNICO-EAGLE, MEADOWBANK VAULT DIKE
ANICO-EAGLE MINE LIMITED
Baker Lake, Nunavut
Texel Geosol Project No. C12259

QUALITY CONTROL FINAL REPORT BY TEXEL GEOSOL INC.

Prepared for:

AGNICO-EAGLE MINE LIMITED

By:

April, 2013

AGNICO-EAGLE, MEADOWBANK VAULT DIKE
AGNICO-EAGLE MINE LIMITED
Baker Lake, Nunavut
Texel Geosol Project No. C12259

QUALITY CONTROL FINAL REPORT BY TEXEL GEOSOL INC.

Prepared for:

AGNICO-EAGLE MINE LIMITED
MEADOWBANK DIVISION
10 200, route de Preissac
Rouyn-Noranda, Québec
J0Y 1C0

By:

TEXEL GEOSOL INC.
2954 Laurier Boul., Bur 790
Québec, Québec
G1V 4T2

April, 2013

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LIST OF APPENDICES

- APPENDIX I - Quality control test results obtained on site by Texel Geosol Inc
- APPENDIX II - Field Memos and Communications
- APPENDIX III - Record drawing

LIST OF FIGURES

1. INTRODUCTION

The following report was prepared by Texel Geosol, for Agnico-Eagle Mine Limited.

This report contains a description as well as a certification of all work conducted by Texel Geosol, installer of the bituminous geomembrane. It also contains the record drawing of the geomembrane. All installation work conducted on the bituminous geomembrane took place between 26-February-2013 and 13-March-2013.

2. HUMAN RESOURCES

The following list identifies the key personnel involved with the physical realization of this project

TEXEL GEOSOL INC. (Geosynthetic Installer)

- Mr. François Thivierge, Construction Manager
- Mr. Jacques St-Gelais, Operation Manager
- Mr. Daniel Brousseau, Project Manager
- Mr. Lucien Perry, Site Foreman and QC inspector

AGNICO-EAGLE MINE LIMITED (General Contractor)

- Mr. Thomas Lépine, Geotechnical Engineer
- Mme. Erika Voyer. Geotechnical Engineer

SNC LAVALLIN (Quality Assurance)

- Mr. Jean-François St-Laurent, Site Inspector

3. GEOMEMBRANE INSTALLATION

This section includes a description of the work and the installation procedures used during the deployment of the bituminous geomembrane. Also, the manufacturing quality control and construction quality control procedures are detailed in this section

3.1. Description of the work

The scope of the installation was to completly cover a Vault dike with a bituminous geomembrane liner. Texel Geosol supplied and installed approximately 2826.9 sq.m. of bituminous geomembrane Coletanche (ES2 – ES3) and Teranap. All the installation, seaming and repair procedures were conducted according to the project plans and specifications, and manufacturer's recommendations.

3.2. Installation Procedures

The bituminous geomembrane rolls were deployed and installed by Texel Geosol as prescribed in the specifications. Panels were placed to minimize seams across the side slope and the tie-in seams. The panels were overlapped about 200 mm, allowing adequate welding and leaving enough material to perform shear tests on seam samples (see section 3.3.1.2 for a description of these tests).

All seams between panels were made using a manual fusion process, the fusion being obtained using a propane torch and a roll pressure of 15 kg.

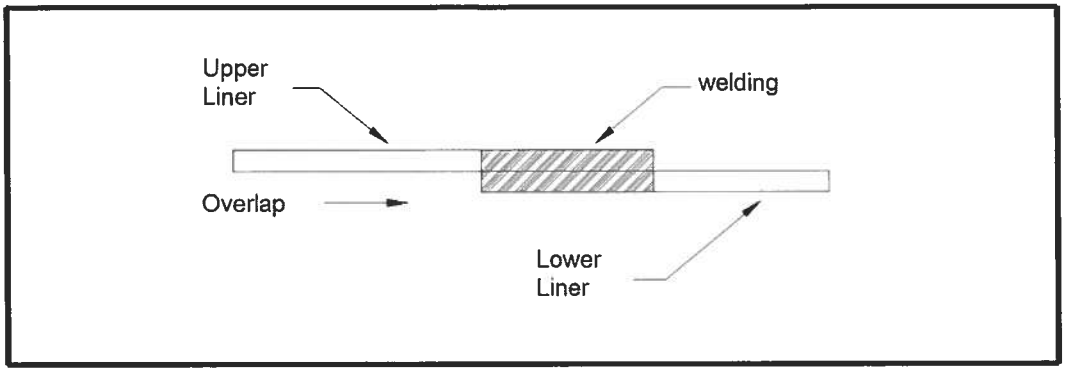


Figure 1 – Bituminous Geomembrane Weld

3.3. Quality controls

3.3.1.On-site geomembrane installation

All site welds were visually inspected and finalized by heating the ends of the overlap to create a concave angle. Also all seams have been tested with an air lance to detect any suspect area to be repaired. Also, a statistical control of seam was complete by Ultrasonic testing.

For each weld, the quality controller recorded the following information: date and dimensions of welds and the names of welders, the location of non-destructive testing and the values obtained in shear. All results of these tests are also presented in Appendix I.

3.3.1.1 On-site non-destructive testing

The seams were verified at the critical spot by non-destructive methods. These methods include the air lance test and the Ultrasonic test. Any seam that failed one of these tests was rebuilt or repaired until a satisfactory result was obtained. All the results of these tests are included in Appendix I of this report.

a) Air lance Testing

This test consists in check the sealing and quality of the weld. With an air lance of a jet of air is fed to the edge of the weld. If the weld is continuous and free of defects (air bubbles, dirt) the air will not detach the membrane. In the case of a defect, the air jet will detach the membrane. If there are any leaks, they will be located and repaired. All seams (100 % in length) was verify by the air lance method.

b) Ultrasonic test (ultrasounds)

In random spot check (150m of seam) Ultrasonic test was used. This test consist in emitting ultrasonic pulse on the surface of the upper geomembrane. The echoes of entry and exit will be detected when the welding is correctly carried out, and when it has a continuity of matter, and thus of acoustic impedance. If a defect prevents this continuity of the weld an intermediate echo will be detected. It will appear on the ecograph screen.The operator scan the geomembrane with a transducer to identify weakness areas. The surfaces must be wet for a good signal.

3.3.1.2 On-site destructive tests

Finally, a destructive testing program was applied, where seam samples taken from the installed geomembrane were tested for shear strength on a calibrated, portable tensiometer. On each sample, one shear tests were performed. All the results from these tests are included in Appendix I of this report.

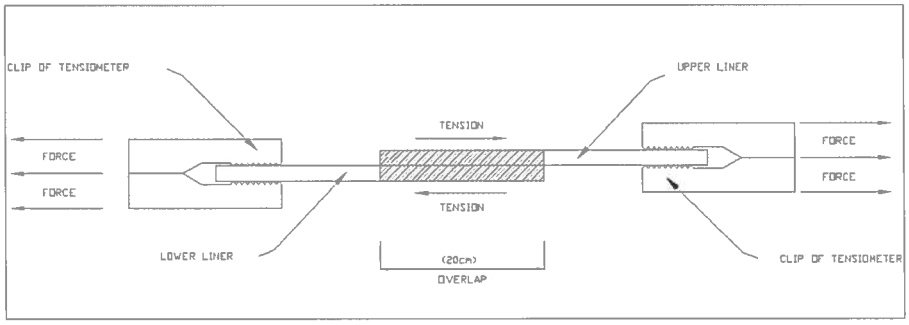


Figure 2 - Shear Test

3.4. Repair Procedures

All materials were visually inspected for blemishes, punctures and other defects or damages that may have occurred during transport or panel placement. Any defect or damage was repaired as per the procedures described in this section.

Demobilization was not authorized until Texel Geosol, Agnico-Eagle Mine Limited and SNC-Lavallin completed a last visual inspection of the installation work. Any defect revealed by any step of the Quality Control Program was repaired and verified according to the prescribed procedures:

- All punctures, holes, tears, etc., were repaired with manual process fusion patches;
- Any seam revealed as defective by the CQC or CQA Programs was entirely rebuilt through a fusion and seaming process.

All repairs were visually inspected and verified by a non-destructive testing method, as described in section 3.3.1.2.

3.5. Record Drawing

The record drawing of the geomembrane installation, showing all panels, panel identification, pipe penetrations, repairs and destructive test locations, is included in Appendix III of this report.

4. CERTIFICATION

Texel Geosol certifies having installed all geosynthetic materials according to the project plans and specifications provided by the consultant SNC-Lavallin recommendation, for Agnico-Eagle Mine Limited. All installation work conducted by Texel Geosol meets or exceeds the standards of the geosynthetic industry.

Daniel Brousseau, Eng., Project administrator
TEXEL GEOSOL INC.

05/06/2013
Date
(mm-dd-yy)

APPENDIX I

QUALITY CONTROL PROCEDURES CONDUCTED ON SITE BY TEXEL GEOSOL INC.

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: Agnico-Eagle, Meadowbank, Vault dike

QC Inspector / Inspecteur CQ: Lucien Perry

Project No. / No. de Projet: C-12259

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Ultrasons	Air Lance Lance à air	Inspection visuelle Visual inspection	Essai Destructif Destrutive test	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
1-2	03-03-13	N/A	2,5	N/A	L.P	03-13-13			X	X		Full seam	Y
1-3	03-04-13	N/A	26,5	N/A	L.P	03-04-13			X	X		Full seam	Y
3-4	03-05-13	N/A	4	N/A	L.P	03-05-13			X	X		Full seam	Y
2-4	03-05-13	N/A	39,5	N/A	L.P	03-05-13		X	X	X	X	Full seam	Y
3-5	03-05-13	N/A	4	N/A	L.P	03-05-13			X	X		Full seam	Y
1-5	03-05-13	N/A	3,5	N/A	L.P	03-05-13			X	X		Full seam	Y
5-6	03-06-13	N/A	7,83	N/A	L.P	03-06-13			X	X		Full seam	Y
6-7	03-06-13	N/A	7,83	N/A	L.P	03-06-13			X	X		Full seam	Y
7-8	03-06-13	N/A	7	N/A	L.P	03-06-13			X	X		Full seam	Y
8-9	03-06-13	N/A	6,4	N/A	L.P	03-06-13			X	X		Full seam	Y
9-10	03-06-13	N/A	6,5	N/A	L.P	03-06-13			X	X		Full seam	Y
10-11	03-07-13	N/A	6,5	N/A	L.P	03-07-13			X	X		Full seam	Y
11-12	03-07-13	N/A	6,5	N/A	L.P	03-07-13			X	X		Full seam	Y

Texel GEOSOL ADS INC.

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: Agnico-Eagle, Meadowbank, Vault dike

QC Inspector / Inspecteur CQ: Lucien Perry

Project No. / No. de Projet: C-12259

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Ultrasons	Air Lance Lance à air	Inspection visuelle Visual inspection	Essai Destructif Destrutive test	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
12-13	03-07-13	N/A	6,5	N/A	L.P	03-07-13		X	X	X	X	Full seam	Y
13-14	03-07-13	N/A	6,5	N/A	L.P	03-07-13			X	X		Full seam	Y
14-15	03-07-13	N/A	6,5	N/A	L.P	03-07-13		X	X	X		Full seam	Y
15-16	03-08-13	N/A	6,8	N/A	L.P	03-08-13			X	X		Full seam	Y
16-17	03-08-13	N/A	6,8	N/A	L.P	03-08-13			X	X		Full seam	Y
17-18	03-08-13	N/A	6,8	N/A	L.P	03-08-13			X	X		Full seam	Y
18-19	03-08-13	N/A	6,5	N/A	L.P	03-08-13			X	X		Full seam	Y
19-20	03-09-13	N/A	5,3	N/A	L.P	03-09-13			X	X		Full seam	Y
21-22	03-09-13	N/A	5,3	N/A	L.P	03-09-13			X	X		Full seam	Y
22-23	03-09-13	N/A	4,5	N/A	L.P	03-09-13			X	X		Full seam	Y
23-24	03-09-13	N/A	4,5	N/A	L.P	03-09-13			X	X		Full seam	Y
24-25	03-09-13	N/A	4,5	N/A	L.P	03-09-13			X	X		Full seam	Y
25-26	03-09-13	N/A	4,5	N/A	L.P	03-09-13			X	X		Full seam	Y

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: Agnico-Eagle, Meadowbank, Vault dike

QC Inspector / Inspecteur CQ: Lucien Perry

Project No. / No. de Projet: C-12259

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Ultrasons	Air Lance Lance à air	Inspection visuelle Visual inspection	Essai Destructif Destrutive test	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
26-27	03-09-13	N/A	4,5	N/A	L.P	03-09-13			X	X	X	Full seam	Y
27-28	03-09-13	N/A	7,9	N/A	L.P	03-09-13			X	X		Full seam	Y
28-29	03-09-13	N/A	7,9	N/A	L.P	03-09-13			X	X		Full seam	Y
29-30	03-10-13	N/A	7,9	N/A	L.P	03-10-13			X	X		Full seam	Y
30-31	03-10-13	N/A	7,5	N/A	L.P	03-10-13			X	X		Full seam	Y
2-32	03-10-13	N/A	4,8	N/A	L.P	03-10-13			X	X		Full seam	Y
4-32	03-10-13	N/A	4,8	N/A	L.P	03-10-13			X	X		Full seam	Y
32-33	03-10-13	N/A	8,2	N/A	L.P	03-10-13			X	X	X	Full seam	Y
33-34	03-10-13	N/A	10	N/A	L.P	03-10-13			X	X		Full seam	Y
34-35	03-10-13	N/A	9,7	N/A	L.P	03-10-13			X	X		Full seam	Y
35-36	03-10-13	N/A	9,6	N/A	L.P	03-10-13		X	X	X		Full seam	Y
36-37	03-10-13	N/A	9,6	N/A	L.P	03-10-13			X	X		Full seam	Y
37-38	03-10-13	N/A	9,2	N/A	L.P	03-10-13			X	X	X	Full seam	Y

Texel GEOSOL INC.

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: Agnico-Eagle, Meadowbank, Vault dike

QC Inspector / Inspecteur CQ: Lucien Perry

Project No. / No. de Projet: C-12259

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Ultrasons	Air Lance Lance à air	Inspection visuelle Visual inspection	Essai Destructif Destrutive test	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
38-39	03-10-13	N/A	7,8	N/A	L.P	03-10-13			X	X		Full seam	Y
39-40	03-10-13	N/A	7,8	N/A	L.P	03-10-13		X	X	X		Full seam	Y
40-41	03-10-13	N/A	6,1	N/A	L.P	03-10-13			X	X		Full seam	Y
41-42	03-12-13	N/A	5,8	N/A	L.P	03-12-13			X	X		Full seam	Y
42-43	03-12-13	N/A	5,2	N/A	L.P	03-12-13			X	X		Full seam	Y
43-44	03-12-13	N/A	5,2	N/A	L.P	03-12-13			X	X		Full seam	Y
44-45	03-12-13	N/A	9	N/A	L.P	03-12-13			X	X		Full seam	Y
45-46	03-12-13	N/A	8,2	N/A	L.P	03-12-13			X	X		Full seam	Y
33-349	03-12-13	N/A	5	N/A	L.P	03-12-13			X	X		Full seam	Y
34-47	03-12-13	N/A	5	N/A	L.P	03-12-13			X	X		Full seam	Y
32-47	03-12-13	N/A	5	N/A	L.P	03-12-13			X	X		Full seam	Y
4-47	03-12-13	N/A	4,1	N/A	L.P	03-12-13			X	X		Full seam	Y
47-48	03-12-13	N/A	5	N/A	L.P	03-12-13			X	X		Full seam	Y

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: Agnico-Eagle, Meadowbank, Vault dike

QC Inspector / Inspecteur CQ: Lucien Perry

Project No. / No. de Projet: C-12259

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Ultrasons	Air Lance Lance à air	Inspection visuelle Visual inspection	Essai Destructif Destrutive test	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
3-48	03-12-13	N/A	26	N/A	L.P	03-12-13			X	X		Full seam	Y
4-48	03-12-13	N/A	35	N/A	L.P	03-12-13			X	X		Full seam	Y

Texel GEOSOL ADS INC.

Destructive Testing
Essai Destructif

Project Name / Nom de Projet: **Murdochville-Xstrata**

Project No. / No. de Projet: **Q-11195**

QC Inspector / Inspecteur CQ: **Eric Bourdages**

Destructive Test No. No. Essai Destructif	Seam No. No. de Soudure	Date (mm/dd/yy)	Sample Location Localisation de l'échantillon	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Lab. Testing (P/F) Lab. Indép. (A/R)	Tensiometer No. No. Tensiomètre
DT-1	2-4	03-05-13	At 1m of SEOS	N/A	N/A	N/A	N/A	310	BRK	03-05-13	03-05-13	N/A	Leister-1
DT-2	12-13	03-07-13	At 1m of SEOS	N/A	N/A	N/A	N/A	336	BRK	03-07-13	03-07-13	N/A	Leister-1
DT-3	26-27	03-09-13	At 1m of SEOS	N/A	N/A	N/A	N/A	274	BRK	03-09-13	03-09-13	N/A	Leister-1
DT-4	32-33	03-10-13	At 1m of SEOS	N/A	N/A	N/A	N/A	405	BRK	03-10-13	03-11-13	N/A	Leister-1
DT-5	37-38	03-10-13	At 1m of SEOS	N/A	N/A	N/A	N/A	310	BRK	03-10-13	03-11-13	N/A	Leister-1
DT-6	6-48	03-13-13	At 1m of int. 6-7-48	N/A	N/A	N/A	N/A	238	BRK	03-13-13	03-13-13	N/A	Leister-1
DT-7	49-50	03-13-13	At 3.5m of int. 23-49-50	N/A	N/A	N/A	N/A	294	BRK	03-13-13	03-13-13	N/A	Leister-1
DT-8	6-49	03-13-13	At 1m of int. 6-48-49	N/A	N/A	N/A	N/A	250	BRK	03-13-13	03-13-13	N/A	Leister-1
UL-1	2-4	03-05-13	At 11m of 3-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TUL-01
UL-2	2-4	03-05-13	At 31m of 3-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TUL-01
UL-3	12-13	03-07-13	At 3m of South	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TUL-01
UL-4	14-15	03-08-13	At 2m of South	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TUL-01
UL-5	14-15	03-08-13	At 4m of South	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TUL-01
UL-6	35-36	03-10-13	At 5m of South	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TUL-01
UL-7	39-40	03-10-13	At 3m of South	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TUL-01
UL-8	39-40	03-10-13	At 4.5m of South	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TUL-01

Texel GEOSOL INC

Repair Report
Rapport de Réparation

Project Name / Nom de Projet: **Murdochville-Xstrata**

Project No. / No. de Projet: **Q-11195**

QC Inspector / Inspecteur CQ: **Eric Bourdages**

Repair No. No. Réparation	Type & Dimensions Type et Dimensions			Location of Repair Localisation de la Réparation				Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) Approuvé (Oui/Non)
	Patch Empiècement	Extrusion Weld or Bead Soudure Extrusion	Pipe Boot Manchon d'étanchéité	On Panel No. Sur Panneau No.	On Seam No. Sur Soudure No.	Intersection of Panels Intersection des Panneaux	Sample Location Localisation de l'échantillon			
R-1	P3			1			At 1m of 3-4 and 1.5m of 1-3	03-03-13	03-04-13	Y
R-2	P3			1			At 3m of 3-4 and 1.5m of 1-3	03-03-13	03-04-13	Y
R-3	P3			1			At 5m of 3-4 and 1.5m 0f 1-3	03-03-13	03-04-13	Y
R-4	P2			1			At 7m of 1-2 and 1.5m of 1-3	03-03-13	03-04-13	Y
R-5	P1			3			At 3m of 1-3 and 1.8m 3-5	03-04-13	03-04-13	Y
R-6	P1			3			At 3m of 1-3 and 3.9m of 3-5	03-04-13	03-04-13	Y
R-7	P1			3			At 3m de 1-3 and 5.7m of 3-5	03-04-13	03-04-13	Y
R-8	P1			3			At 3m of 1-3 and 7.9m of 3-5	03-04-13	03-04-13	Y
R-9	P1			3			At 3m of 1-3 and 9.7m of 3-5	03-04-13	03-04-13	Y
R-10	P1			3			At 3m of 1-3 and 11.8m of 3-5	03-04-13	03-04-13	Y
R-11	P1			3			At 3m of 1-3 and 13.7m of 3-5	03-04-13	03-04-13	Y
R-12	P1			3			At 3m of 1-3 and 15.4m of 3-5	03-04-13	03-04-13	Y
R-13	P1			3			At 3m of 1-3 and 17.3m of 3-5	03-04-13	03-04-13	Y
R-14	P1			3			At 3m of 1-3 and 18.9m of 3-5	03-04-13	03-04-13	Y
R-15	P1					2-3-4		03-04-13	03-04-13	Y
R-16	P1			4			At 1.8m of 3-4 and 1m of 2-4	03-05-13	03-05-13	Y
R-17	P1			4			At 3.4m of 3-4 and 1m of 2-4	03-05-13	03-05-13	Y
R-18	P1			4			At 5.1m of 3-4 and 1m of 2-4	03-05-13	03-05-13	Y
R-19	P1			4			At 6.5m of 3-4 and 1m 2-4	03-05-13	03-05-13	Y
R-20	P1				2-4		At 9m of int. 2-3-4	03-05-13	03-05-13	Y
R-21	P1			5			At 1m of South and 0.5m of of 3-5	03-05-13	03-05-13	Y
R-22	P1			5			At 4.5m of South and 0.5m of 3-5	03-05-13	03-05-13	Y

Texel GEOSOL ADS INC

Repair Report
Rapport de Réparation

Project Name / Nom de Projet: **Murdochville-Xstrata**

Project No. / No. de Projet: **Q-11195**

QC Inspector / Inspecteur CQ: **Eric Bourdages**

Repair No. / No. Réparation	Type & Dimensions / Type et Dimensions			Location of Repair / Localisation de la Réparation				Date Repaired / Date Réparée (mm/dd/yy)	Date Repair Verified / Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) / Approuvé (Oui/Non)
	Patch / Empiècement	Extrusion Weld or Bead / Soudure Extrusion	Pipe Boot / Manchon d'étanchéité	On Panel No. / Sur Panneau No.	On Seam No. / Sur Soudure No.	Intersection of Panels / Intersection des Panneaux	Sample Location / Localisation de l'échantillon			
R-23	P1			5			At 5.4m of South and 0.5m of 3-5	03-05-13	03-05-13	Y
R-24	P1			5			At 7.1m od South and 0.5m of 3-5	03-05-13	03-05-13	Y
R-25	P1			6			At 1.6m of South and 0.5m of 5-6	03-05-13	03-05-13	Y
R-26	P1			6			At 1.6m South and 0.5m of 5-6	03-05-13	03-05-13	Y
R-27	P1			28			At 1m of 28-29 and 0.8m of South	03-09-13	03-09-13	Y
R-28	P1			28			At 1m of 28-29 and 3.9m of South	03-09-13	03-09-13	Y
R-29	P1			28			At 1m of 28-29 and 4.7m of of South	03-09-13	03-09-13	Y
R-30	P1			28			At 0.8m of 27-28 and 0.8m of South	03-09-13	03-09-13	Y
R-31	P1			28			At 0.8m of 27-28 and 2.7m of South	03-10-13	03-10-13	Y
R-32	P1			28			At 1m of 27-28 and 5m of South	03-10-13	03-10-13	Y
R-33	P1			32			At 1m of South and 0.5m of 32-33	03-10-13	03-10-13	Y
R-34	P1			39			At 1m of 39-40 and 0.5m of South	03-10-13	03-10-13	Y
R-35	P1			39			At 1.5m of South and 2.5m of 39-40	03-10-13	03-10-13	Y
R-36	P1			39			At 2.5m of 39-40 and 3m of South	03-10-13	03-10-13	Y
R-37	P1			39			At 1.5m of 39-40 and 3.5m of South	03-10-13	03-10-13	Y

CHARTE/CHART : Empiècement/Patch (**P1** 0.3m à/to 0.6m; **P2** 0.6m à/to 1m; **P3** over 1m et plus), Extrusion (**E**), Embout/Pipe Boot (**B**), Cap strip (**CS**), Doublure/Reinforcement (**DB**) et/and Reconstruction

APPENDIX II

FIELD MEMOS AND COMMUNICATIONS

CERTIFICAT D'ACCEPTATION DES ASSISES
SUBGRADE ACCEPTATION CERTIFICATE

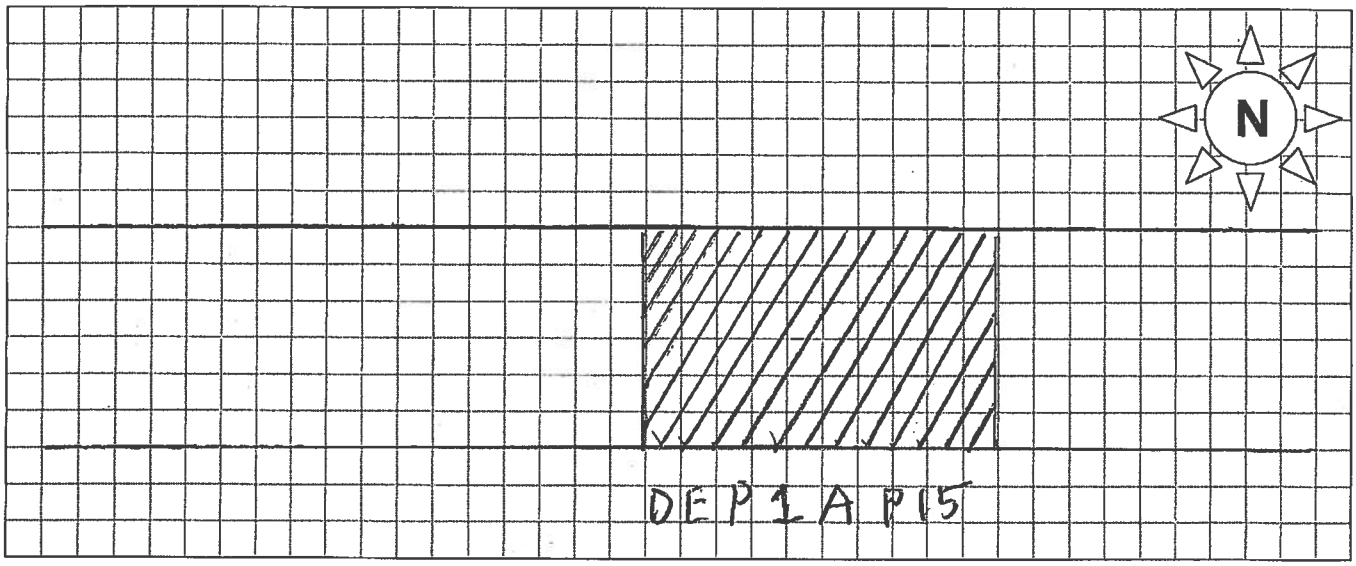
Nom du projet / Project name : VAULT DIKE – MEADOWBANK

N° du projet / Project # : C12259

Endroit / Location : AGNICO-EAGLE MEADOWBANK

CROQUIS / SKETCH

☑ ACCEPTATION PARTIELLE / PARTIAL ACCEPTATION
☐ ACCEPTATION COMPLÈTE / COMPLETE ACCEPTATION



REMARQUES / COMMENTS :

Je, soussigné et représentant officiel de Texel Géosol, accepte et juge adéquat la préparation de la surface des assises telles que localisée au croquis ci-dessus. / I, the Texel Geosol's official representative, find acceptable for deployment the surface conditions of the area described above.

Nom / Name	Signature / Signature	Titre / Title	Date / Date
LUCIEN PERRY	Lucien Perry	CONTROLEUR QUALITE	7 MARS 2013

Nom en lettres moulées / Name in square letters

Texel Geosol (BLANCHE / WHITE)	Entrepreneur / Contractor (JAUNE / YELLOW)	Propriétaire / Owner (ROSE / PINK)	Ingénieur / Engineer (OR / GOLD)
Lucien Perry		11/03/2013	11/03/2013

CERTIFICAT D'ACCEPTATION PROVISOIRE

PROVISIONAL ACCEPTATION CERTIFICATE

Nom du projet / Project name : VAULT-DIKE

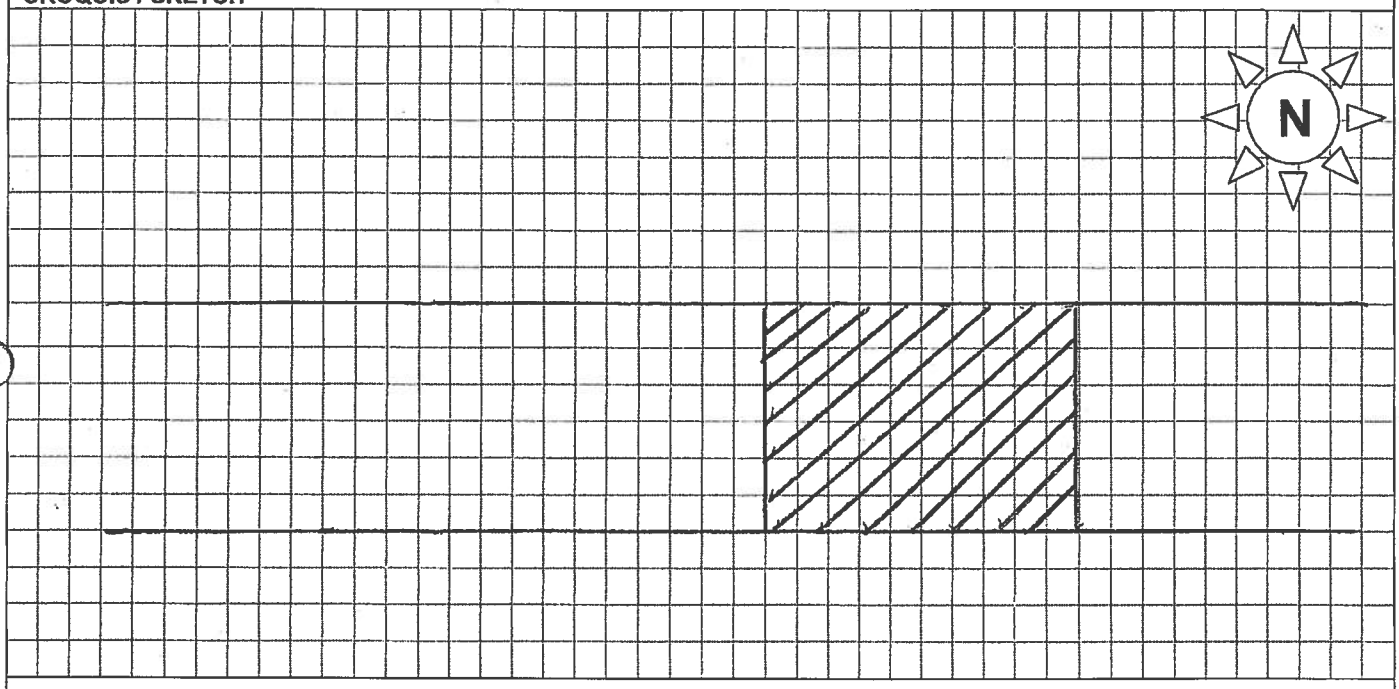
N° du projet / Project # : C122559

Endroit / Location : AGNICO-EAGLE MEADOWBANK

% des travaux exécutés / % of completion : _____

MATÉRIAU / MATERIAL	QUANTITÉ / QUANTITY	DESCRIPTION /DESCRIPTION
COLETANCHE ES 3	859 m^2	R1 A P-13
COLETANCHE ES 2	65 m^2	P-14 - P-15

CROQUIS / SKETCH



Je, soussigné, représentant dûment autorisé de (Client) : _____, accepte, par la présente, les travaux décrits ci-haut et confirme, qu'au meilleur de ma connaissance, ces travaux ont été complétés selon les spécifications, termes et conditions du contrat et qu'il n'y a pas de dommage apparent aux matériaux utilisés. Le site a été nettoyé de tous les déchets à la satisfaction de l'entrepreneur. Texel Géosol s'engage à réparer tout dommage provenant de matériaux défectueux ou d'installation défectueuse en accord avec les garanties du contrat. / I, the undersigned, duly authorized representative of (Client) : _____, do hereby take over and accept the work described above from the date hereof and confirm to the best of my knowledge the work has been completed in accordance with specifications and the terms and conditions of the contract. There is no apparent damage to the plastic lining nor any unacceptable interference within or without the surrounding works. Scrap and offcuts have been removed and the works left in a clean and tidy condition to the contractors satisfaction. Texel Geosol undertakes to rectify any damage resulting from defective materials or workmanship within compliance of contract guarantees.

Nom / Name	Signature / Signature	Titre / Title	Date / Date

Certificat accepté par le représentant de Texel Géosol. / Certificate accepted by Texel Geosol representative.

Nom en lettres moulées / Name in square letters

Texel Geosol (BLANCHE / WHITE)	Entrepreneur / Contractor (JAUNE / YELLOW)	Propriétaire / Owner (ROSE / PINK)	Ingénieur / Engineer (OR / GOLD)
LUCIEN PEARY			
		11/03/2012	11/03/2012

CERTIFICAT D'ACCEPTATION DES ASSISES
SUBGRADE ACCEPTATION CERTIFICATE

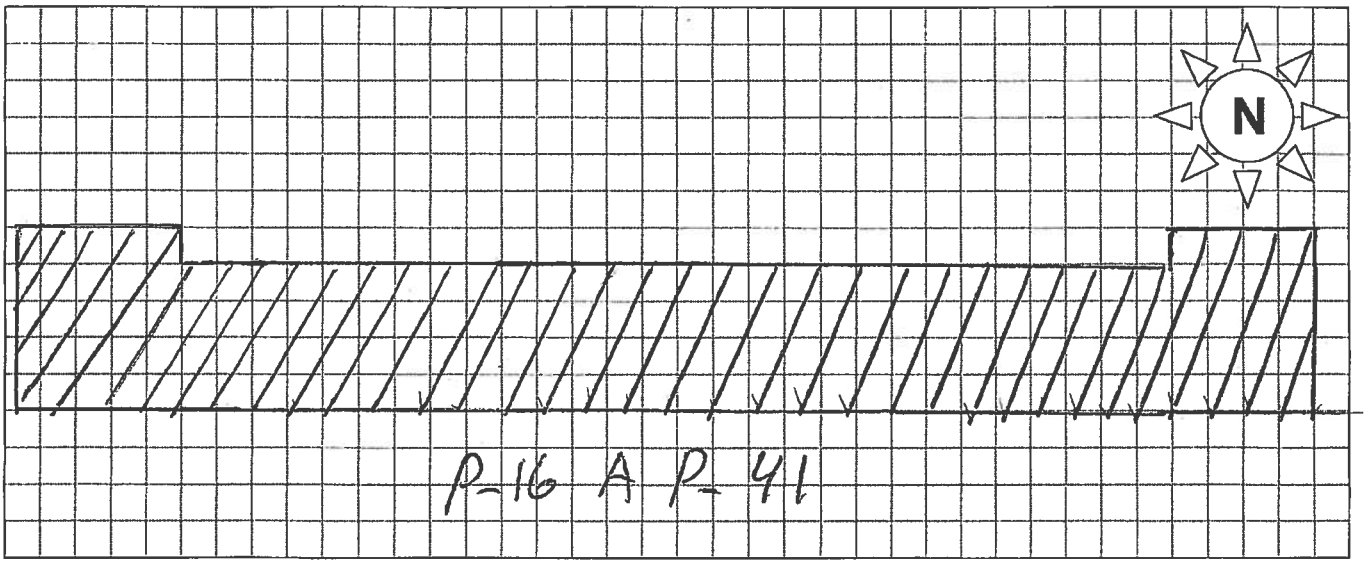
Nom du projet / Project name : VAULT DIKE

N° du projet / Project # : C12259

Endroit / Location : AGNICO EAGLE - MEADOWBANK

CROQUIS / SKETCH

☑ ACCEPTATION PARTIELLE / PARTIAL ACCEPTATION
☐ ACCEPTATION COMPLÈTE / COMPLETE ACCEPTATION



REMARQUES / COMMENTS :

Je, soussigné et représentant officiel de Texel Géosol, accepte et juge adéquat la préparation de la surface des assises telles que localisée au croquis ci-dessus. / I, the Texel Geosol's official representative, find acceptable for deployment the surface conditions of the area described above.

Nom / Name	Signature / Signature	Titre / Title	Date / Date
LUCIEN PERRY	Lucien Perry.	CONTROLEUR QUALITÉ	11 MARS 2013

Nom en lettres moulées / Name in square letters

Lucien Perry.

Texel Geosol (BLANCHE / WHITE) | Entrepreneur / Contractor (JAUNE / YELLOW) | Propriétaire / Owner (ROSE / PINK) | Ingénieur / Engineer (OR / GOLD)

11/03/2013

11/03/2013

CERTIFICAT D'ACCEPTATION PROVISOIRE

PROVISIONAL ACCEPTATION CERTIFICATE

Nom du projet / Project name : VAULT DIKE

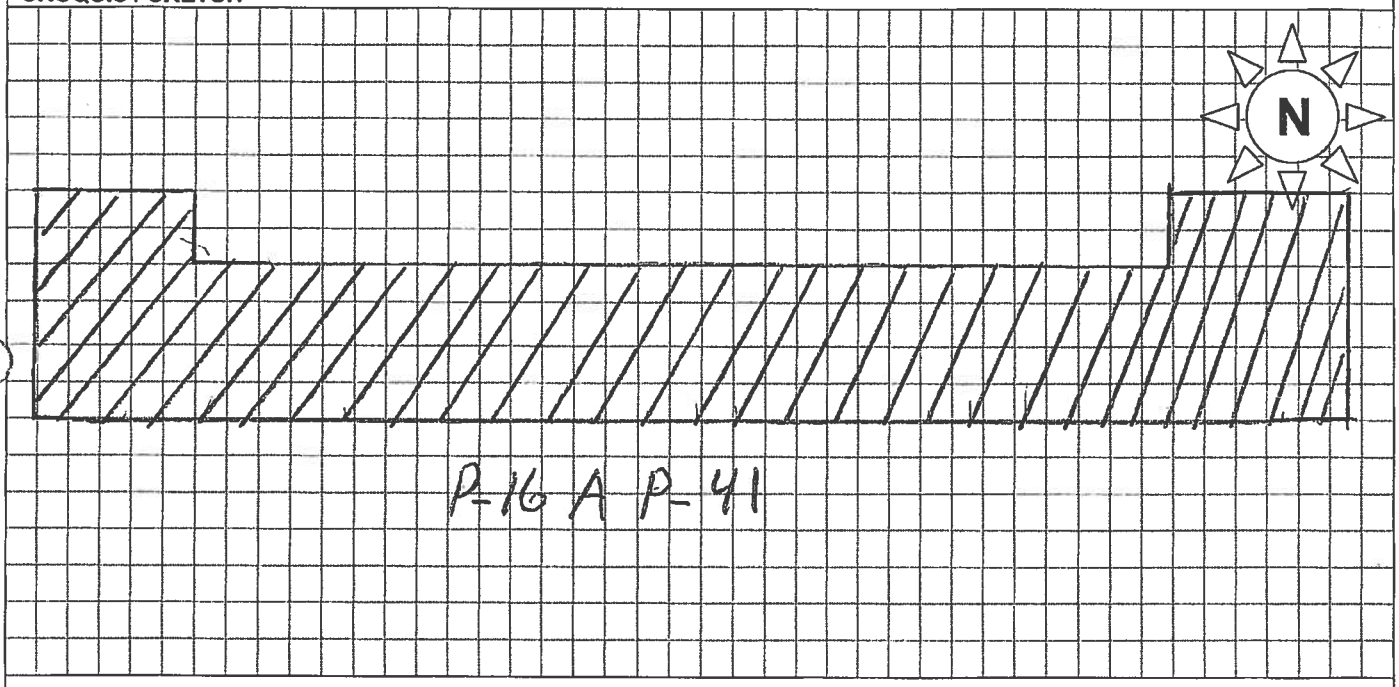
N° du projet / Project # : C12259

Endroit / Location : AGNICO-EAGLE MEADOWBANK

% des travaux exécutés / % of completion :

MATÉRIAU / MATERIAL	QUANTITÉ / QUANTITY	DESCRIPTION /DESCRIPTION
ES3	576.77 m²	P-28 A P-41
ES2	324.12 m²	P-16 A P-27

CROQUIS / SKETCH



Je, soussigné, représentant dûment autorisé de (Client) : _____ , accepte, par la présente, les travaux décrits ci-haut et confirme, qu'au meilleur de ma connaissance, ces travaux ont été complétés selon les spécifications, termes et conditions du contrat et qu'il n'y a pas de dommage apparent aux matériaux utilisés. Le site a été nettoyé de tous les déchets à la satisfaction de l'entrepreneur. Texel Géosol s'engage à réparer tout dommage provenant de matériaux défectueux ou d'installation défectueuse en accord avec les garanties du contrat. / I, the undersigned, duly authorized representative of (Client) : _____, do hereby take over and accept the work described above from the date hereof and confirm to the best of my knowledge the work has been completed in accordance with specifications and the terms and conditions of the contract. There is no apparent damage to the plastic lining nor any unacceptable interference within or without the surrounding works. Scrap and offcuts have been removed and the works left in a clean and tidy condition to the contractors satisfaction. Texel Geosol undertakes to rectify any damage resulting from defective materials or workmanship within compliance of contract guarantees.

Nom / Name	Signature / Signature	Titre / Title	Date / Date

Certificat accepté par le représentant de Texel Géosol. / Certificate accepted by Texel Geosol representative.

Nom en lettres moulées / Name in square letters

LUCIEN PERRY

11/03/2013

11/03/2013

Texel Geosol (BLANCHE / WHITE)

Entrepreneur / Contractor (JAUNE / YELLOW)

Propriétaire / Owner (ROSE / PINK)

Ingénieur / Engineer (OR / GOLD)

CERTIFICAT D'ACCEPTATION DES ASSISES
SUBGRADE ACCEPTATION CERTIFICATE

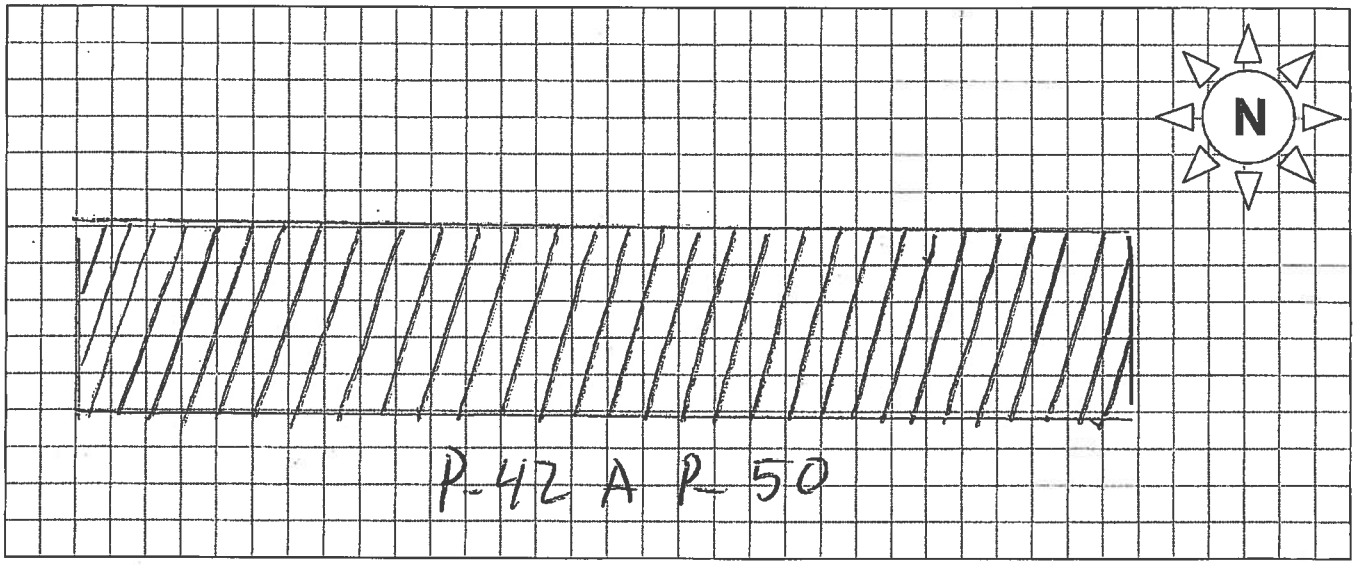
Nom du projet / Project name : VAULT - DIKE MEADOWBANK

N° du projet / Project # : C12259

Endroit / Location : AGNICO EAGLE MEADOWBANK

CROQUIS / SKETCH

☐ ACCEPTATION PARTIELLE / PARTIAL ACCEPTATION
☑ ACCEPTATION COMPLÈTE / COMPLETE ACCEPTATION



REMARQUES / COMMENTS :

Je, soussigné et représentant officiel de Texel Géosol, accepte et juge adéquat la préparation de la surface des assises telles que localisée au croquis ci-dessus. / I, the Texel Geosol's official representative, find acceptable for deployment the surface conditions of the area described above.

Nom / Name	Signature / Signature	Titre / Title	Date / Date
LUCIEN PEARY		CONTRÔLEUR QUALITÉ	14 MARS 2013

Nom en lettres moulées / Name in square letters

Texel Geosol (BLANCHE / WHITE) | Entrepreneur / Contractor (JAUNE / YELLOW) | Propriétaire / Owner (ROSE / PINK) | Ingénieur / Engineer (OR / GOLD)

CERTIFICAT D'ACCEPTATION PROVISOIRE

PROVISIONAL ACCEPTATION CERTIFICATE

Nom du projet / Project name : VAULT-DIKE

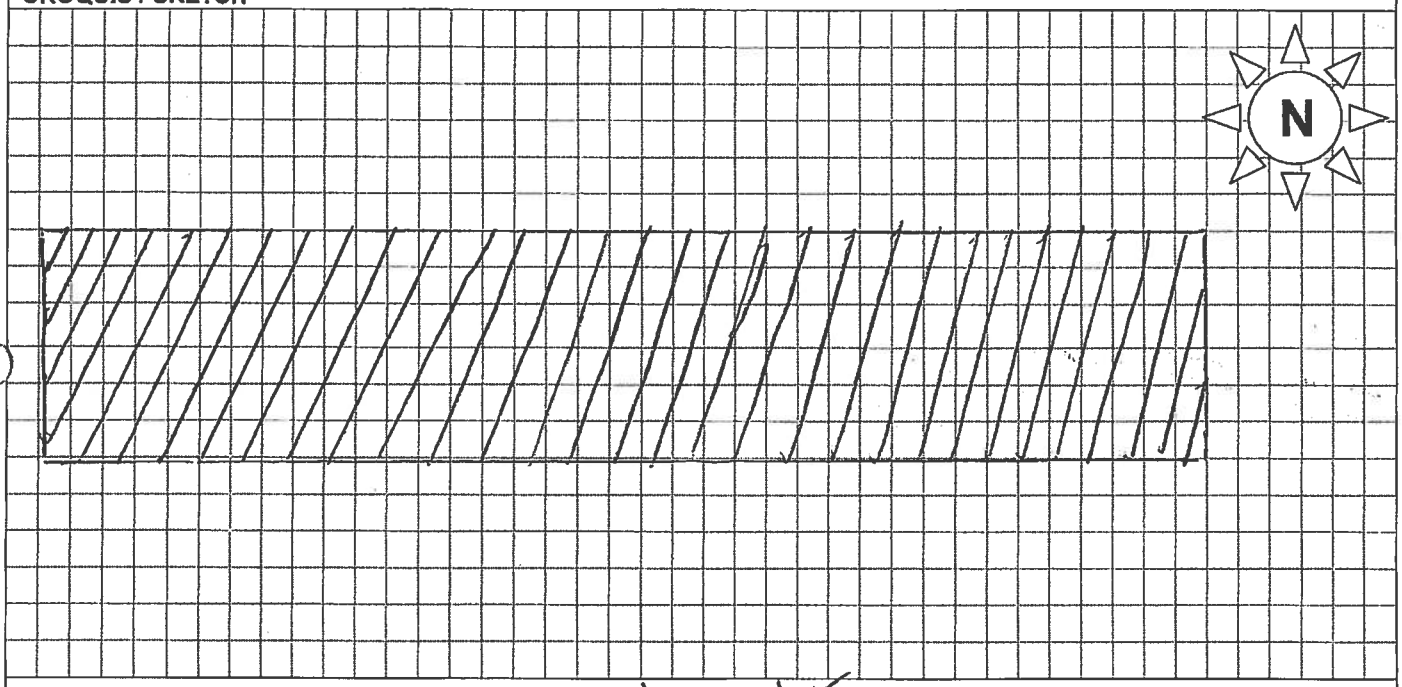
N° du projet / Project # : C12259

Endroit / Location : AGNICO-EAGLE MEADOWBANK

% des travaux exécutés / % of completion : 100%

MATÉRIAU / MATERIAL	QUANTITÉ / QUANTITY	DESCRIPTION /DESCRIPTION
COLETANCHE	1002.02 m²	P-42 A P-50

CROQUIS / SKETCH



Je, soussigné, représentant dûment autorisé de (Client) : Thomas Lépine, accepte, par la présente, les travaux décrits ci-haut et confirme, qu'au meilleur de ma connaissance, ces travaux ont été complétés selon les spécifications, termes et conditions du contrat et qu'il n'y a pas de dommage apparent aux matériaux utilisés. Le site a été nettoyé de tous les déchets à la satisfaction de l'entrepreneur. Texel Géosol s'engage à réparer tout dommage provenant de matériaux défectueux ou d'installation défectueuse en accord avec les garanties du contrat. / I, the undersigned, duly authorized representative of (Client) : Thomas Lépine, do hereby take over and accept the work described above from the date hereof and confirm to the best of my knowledge the work has been completed in accordance with specifications and the terms and conditions of the contract. There is no apparent damage to the plastic lining nor any unacceptable interference within or without the surrounding works. Scrap and offcuts have been removed and the works left in a clean and tidy condition to the contractors satisfaction. Texel Geosol undertakes to rectify any damage resulting from defective materials or workmanship within compliance of contract guarantees.

Nom / Name	Signature / Signature	Titre / Title	Date / Date
Thomas Lépine		Owners Rep.	14-03-2013

Certificat accepté par le représentant de Texel Géosol. / Certificate accepted by Texel Geosol representative.

Nom en lettres moulées / Name in square letters

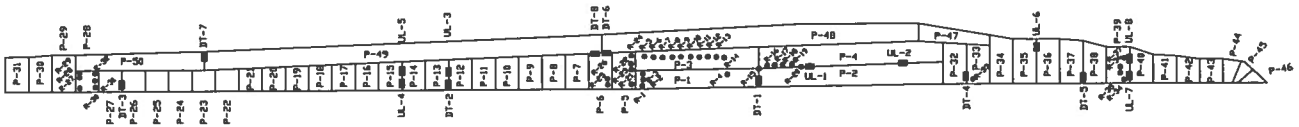
Texel Geosol (BLANCHE / WHITE)	Entrepreneur / Contractor (JAUNE / YELLOW)	Propriétaire / Owner (ROSE / PINK)	Ingénieur / Engineer (OR / GOLD)
LUCIEN PERRY		Thomas Lépine	J-FRANCOIS ST-LAURENT

QCM1-F03 Certificat d'acceptation provisoire / Provisional acceptation certificate, Révision 03

APPENDIX III

RECORD DRAWING

VAULT DIKE AS -BUILT



Panneau No. Panel No.	Rouleau No. Roll No.		Panneau No. Panel No.	Rouleau No. Roll No.		Panneau No. Panel No.	Rouleau No. Roll No.		Panneau No. Panel No.	Rouleau No. Roll No.		Panneau No. Panel No.	Rouleau No. Roll No.	
1	08-AA919	A	11	08-A1A35	G	21	N/D ES2	H	31	N/D ES3	D	41	08-AA977	G
2	08-AA919	B	12	08-A1A35	H	22	N/D ES2	I	32	N/D ES3	E	42	08-AA979	B
3	08-A1AEA	A	13	08-A1A35	I	23	N/D ES2	J	33	08-AA977	A	43	08-AA979	C
4	08-A11EA	B	14	N/D ES2	A	24	N/D ES2	K	34	08-AA977	B	44	08-AA979	D
5	08-A1A35	A	15	N/D ES2	B	25	N/D ES2	L	35	08-AA977	C	45	08-AA979	E
6	08-A1A35	B	16	N/D ES2	C	26	N/D ES2	M	36	08-AA977	D	46	08-AA979	F
7	08-A1A35	C	17	N/D ES2	D	27	N/D ES2	N	37	08-AA977	E	47	08-AA979	G
8	08-A1A35	D	18	N/D ES2	E	28	N/D ES3	A	38	08-AA977	F	48	08-AA979	A
9	08-A1A35	E	19	N/D ES2	F	29	N/D ES3	B	39	08-AA979	A	49	TERANAP	A
10	08-A1A35	F	20	N/D ES2	G	30	N/D ES3	C	40	N/D ES3	F	50	TERANAP	A

0 25 50m

ÉCHELLE: 1:1000

Légende / Legend	
⊕	Manchon tuyau/Pipe boot
●	Emplacement/Patch
▩	Destructive and Ultrasons
▩	Soudure Extrusion/Extrusion Weld
1	Panneau No./Panel No.
1-30474	Rouleau No./Roll No.

Texel
TECHNICAL SERVICES INC.
2954 boul. Laurier Iberville IV
Bur. 790, Québec, QC, Canada
G1V 4T2

AGNICO-EAGLE MINE
(AGNICO-EAGLE, MEADOWBANK, VAULT DIKE)

DESSINÉ PAR: DRAWN BY: E.B	APPROUVÉ PAR: APPROVED BY: D.B	PROJET NO: PROJECT NO: C-12258	ÉCHELLE: SCALE: 1:1000
VERIFIÉ PAR: VERIFIED BY: E.B	DATE (jj-mm-aa) DATE (dd-mm-yy) 03-04-2013	FICHIER AUTOCAD AUTOCAD FILE: C-12258asbuilt	DESSIN NO: DRAWING NO: 1/1
DESCRIPTION:	VAULT DIKE LINING As-Built		