



**PUBLIC SERVICES AND PROCUREMENT CANADA
ENVIRONMENTAL SERVICES – WESTERN REGION**

Water License 2019 Annual Report Resolute Bay Airport Landfill, Resolute Bay, Nunavut

PSPC Project R.095508.001

Final Report

March 10, 2020

DOJV Project No. P2017-06

Executive Summary

The water licence 1BR-RBL1929 issued to Transport Canada by the Nunavut Water Board (NWB) for the remedial work at Resolute Bay Landfill stipulates in Part B, Section 1, the requirement for the submission of an annual report. This document is intended to fulfill the licensure requirements and provide the NWB with an update as to the status of the remediation program at the Resolute Bay Landfill sites.

The Resolute Bay Airport is five kilometres northwest of the Inuit hamlet of Resolute, adjacent to Resolute Bay on Cornwallis Island, Nunavut. Two historical landfills are located on the site and were previously identified along with a metal storage area as Areas of Environmental Concern (AEC) based on activities, historical and present, associated with the airport and local community. For reporting purposes the AECs are referenced as the solid waste landfill (AEC 1), historical landfill (AEC 2), and the vehicle storage area (AEC 3).

REMEDIATION PROGRAM OVERVIEW

Site remediation program took place over a two-year period from 2018 to 2019. The remedial tasks completed at the site included, but were not limited to:

- Capping of the two historical landfills with gravel materials
- Off-site disposal of hazardous materials from all AECs
- The removal of physical hazards (i.e. slope stabilization, and debris removal)
- Consolidation of non-hazardous waste and debris from all the AECs to the solid waste landfill (AEC 1)
- Borrow source development for landfill capping material
- Construction of drainage swales
- Installation of sampling wells to monitor groundwater

The hazardous materials below were consolidated and shipped off-site to an approved waste facility:

Waste Type	Quantity	Waste Type	Quantity
Metal with lead-amended paint	594 m3	Paint	40 kg
Transformers	37	Liquids from drums/ vehicles	4775 L
Batteries	2825 kg (133 batteries)	Fridges	4
Asbestos-containing materials (ACM)	1720 kg	Fire extinguisher	8

Moving forward, the remedial works will be monitored in accordance with the Water Licence.

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1.0

INTRODUCTION

Dillon Consulting Ltd. and Outcome Consultants Inc in joint venture (DOJV) were contracted by Public Services and Procurement Canada (PSPC) Environmental Services on behalf of Transport Canada (TC) to compose an annual report. This document is intended to fulfill the licensure requirements set out in Part B, Section 1 of Water License 1BR-RBL1929, which requires the submission of an annual report.

1.1

LOCATION

The Resolute Bay Airport is five kilometres northwest of the Inuit hamlet of Resolute, adjacent to Resolute Bay on Cornwallis Island, Nunavut. Two historical landfills are located on the site and were previously identified along with a metal storage area as Areas of Environmental Concern (AEC) based on activities, historical and present, associated with the airport and local community. For reporting purposes the AECs are referenced as the solid waste landfill (AEC 1), historical landfill (AEC 2), and the vehicle storage area (AEC 3). For the purposes of this report, the airport terminal building is a referenced point that represents the “Airport”. The AEC 1 landfill is approximately 2.7 km north-northwest of the Resolute Bay Airport. The AEC 2 landfill is approximately 0.3 km southwest of the Resolute Bay Airport. The Vehicle Storage Area is approximately 3.6 km northwest of the Airport located on the raised south edge of the McMaster River Valley.

1.2

REMEDIATION PROGRAM OVERVIEW

Public Services and Procurement Canada (PSPC) Western Region engaged Kudlik Construction Ltd. (Kudlik) on behalf of Transport Canada to complete the remediation work program. The Site remediation activities took place over a two-year period from 2018 to 2019. The remedial tasks completed at the site included, but were not limited to:

- Capping of the two historical landfills with gravel materials
- Off-site disposal of hazardous materials from all AECs
- The removal of physical hazards (i.e. slope stabilization, and debris removal)
- Consolidation of non-hazardous waste and debris from all the AECs to the solid waste landfill (AEC 1)
- Borrow source development for landfill capping material
- Construction of drainage swales
- Installation of sampling wells to monitor groundwater

1.3

Objectives of the Annual Report

The objective of the annual report is to highlight the following requirements set out by Part 1, Section B of the Water License:

- a) A summary report of Water use and Waste disposal activities;
- b) Quantity of Waste disposed of on on-site Waste disposal facility;
- c) Quantity of Waste backhauled to approved facility for disposal;
- d) A list of unauthorized discharges and a summary of follow-up actions taken;
- e) Any revisions to the management plans, as required by Part B, item 6, submitted in the form of an Addendum;
- f) A description of all progressive and or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations;
- g) A summary of all information requested and results of the Monitoring Program;
- h) A summary, including photographic records before, during and after any relevant construction activities or Modifications and/or major maintenance work carried out on facilities under this Licence and an outline of any work anticipated for the next year;
- i) If applicable, a description of any trenches and sumps excavated, including but not limited to the following: GPS coordinates, dimensions, depth below active layer, and secondary containment features;
- j) A summary of public consultation/participation, describing consultation with local organizations and residents of the nearby communities, if any were conducted;
- k) A summary of work done to address concerns or deficiencies listed in inspection reports and/or compliance reports prepared by an Inspector;
- l) An executive summary in English and Inuktitut of all plans, reports, or studies conducted under this Licence; and
- m) Any other details on Waste disposal requested by the Board by the 1st November of the year being reported.

2.0 Water Use and Waste Disposal Activities

2.1 Water Use

The Water License 1BR-RBL1929 issued May 13, 2019 for a 10-year period extends to May 12, 2029. The water license purpose was solely for monitoring activities and the deposit of waste. No water withdrawal was conducted during the duration of the on-site activities.

2.2 Non-Hazardous Waste Disposal Activities

Non-hazardous waste disposal activities for the remedial work included:

- Transport of non-hazardous waste from AEC-2 to AEC-1, as per the Remedial Plan.
- Transport of non-hazardous debris from AEC-3 to AEC-1, as per the Remedial Plan.

Non-hazardous waste quantities can be found in Section 3 of this document.

2.3 Hazardous Material Consolidation and Disposal Off-Site

The hazardous materials consolidated and shipped off-site included:

- Asbestos-containing materials (ACM)
- Batteries
- Fire extinguishers
- Paint
- Transformers
- Metal with lead-amended paint
- Liquids from drums and vehicles

Asbestos was collected and double-bagged for off-site disposal. Wet and dry batteries were packaged separately for shipment. Transformers were drained of fluids and tested for PCBs prior to shipment. Drums or small above ground storage tanks (ASTs) containing liquids were consolidated into appropriate waste drums at the AEC-1 Temporary Hazardous Material Storage Area (THMSA). Lead-painted equipment from AEC-3 was drained of fluids (fuel, coolant, oils, etc.) as required. Batteries were removed from vehicles, consolidated within AEC-3 THMSA, and packaged for off-site shipment. With regard to items containing lead-amended paints, the items were reduced to a size suitable for transport and placed in sea cans for off site disposal.

In 2018, a total of six (6) sea cans of hazardous material were hauled to the bay and transported south via sea lift for disposal at a licensed disposal facility, waste receiver manifests are included in Appendix B. Prior to hazardous material storage, each sea can was inspected for deficiencies.

As part of the remedial activities of the Resolute Bay Landfill Remediation Project, several streams of hazardous material waste were sorted, segregated, stockpiled and packaged including:

- Metal debris with lead amended paint;
- Transformers;
- Batteries;
- Liquids from drums, tanks, and vehicles;
- Asbestos-Containing Materials (ACM);
- Containerized Paint (paint cans);
- Fridges; and,
- Fire extinguishers.

All hazardous materials outlined above were shipped off-site within sea cans and disposed of by Qikiqtaaluk Environmental and Senaxen - AIM, licensed disposal facilities. Disposal Certificates from Qikiqtaaluk Environmental were provided and are located within Appendix B.

Hazardous waste quantities can be found in Section 3 of this document.

3.0

Quantity of Waste Disposed of On-site at Waste Disposal Facility

The following is a table highlighting the non-hazardous waste quantities based on pre-construction estimates. Volumes were field verified by measurement of rock truck loads. All material was disposed at the closed and now capped Landfill AEC 1.

Table 1: Non-Hazardous Waste Disposal Quantities

Non-Hazardous Material	Quantity
AEC 1 Landfill Slope Buried/ Surface Debris	23,000 m ³
AEC 1 Surface Debris Outside of Landfill Footprint	60 m ³
AEC 1 Surface Debris Located on Top of the Landfill	350 m ³
Surface Debris at AEC 2	300 m ³
Scattered Surface Debris North of AEC 3 Scattered Debris	20 m ³
AEC 3 Surface Debris	300 m ³

Note: AEC 1 Landfill Slope Buried/ Surface Debris – A portion of this material was repurposed for landfill sloping and not encapsulated under the designed landfill cap.

4.0 Quantity of Waste Backhauled Off-site to Approved Facility for Disposal

The majority of hazardous materials were previously identified and documented prior to remedial works in 2018. In 2018, the quantities of hazardous materials were measured in the field and verified during removal and off-site disposal to a licensed waste facility.

Table 2: Hazardous Waste Disposal Quantities

Hazardous Material	Quantity	Notes
Metal with lead amended paint	594 m ³ (pre-collapsed volume)	181 m ³ shipped off site in 2018 413 m ³ shipped off site in 2019
Transformers	37	All shipped off site in 2018
Batteries	2825 kg (133 batteries)	All shipped off site in 2018
Asbestos Containing Materials	1720 kg	All shipped off site in 2018
Containerized Paint (paint cans)	40 kg	All shipped off site in 2018
Liquids	4775 L (Total) 3175 L (oily water) 1400 L (waste oil) 200 L (epoxy resin)	2475 L shipped off site in 2018 2300 L shipped off site in 2019
Fridges	4	All shipped off site in 2018
Fire Extinguishers	8	All shipped off site in 2018
PHC Contaminated Soil	41 m ³	All shipped off site in 2019
Co-Mingled Metals and PHC Contaminated Soil	117 m ³	All shipped off site in 2019

5.0

Unauthorized Discharges

Three unauthorized discharges (spills) were identified during the remedial activities:

- Spill-1 Screener Area: 4 L of transmission oil near the screener adjacent to AEC-1
- Spill-2 Contractor Laydown Area: 20 L of oil at Contractor laydown area adjacent to AEC-1
- Spill-3 Temporary Hazardous Materials Packing Area (THMPA): 15 L of hydraulic oil near THMPA-2 (adjacent to old vehicles at AEC-2)

Soil samples were collected at spill locations to confirm remedial efforts completed by Kudlik, after the spills, were sufficient to address the spill. (Note: in total there were three (3) spill locations, see Figure 8, Appendix A). Impacted soils were placed within Quatrex bags for shipment south for off-site disposal to a licensed waste facility.

Soil samples collected at each of the spill locations indicated no remaining adverse effects. Analytical results confirmed that impacted soils had been removed appropriately by excavating the impacted soils for off-site disposal.

The soil samples collected at THMPAs, Screener Area, and Contractor Laydown area after decommissioned or removed equipment indicated that no adverse effects from the remediation activities themselves had occurred.

During the installation of each of the new monitoring wells in 2019, soil samples were collected. There were no elevated concentrations within soils at any of the new monitoring well locations. The locations of the monitoring wells installed in 2019, and the respective soil sample collected are shown in Figure 9, 10, and 11 for AEC-1, AEC-2, and AEC-3, respectively.

6.0

Revisions to Management Plan

No revisions were undertaken to the Management Plans as part of this project.

7.0

A Description of Final Reclamation Work

The reclamation activities that took place during the 2018 summer season have been subdivided into the following work categories:

- a) hazardous material consolidation and shipping for off-site disposal
- b) non-hazardous waste transport and consolidation into AEC-1
- c) AEC-1 landfill slope reshaping, and
- d) AEC-1 drainage swale construction.

The reclamation activities that took place during the 2019 summer season have been subdivided into the following work categories:

- e) Regrade landfill caps at AEC-1 and AEC-2
- f) Stabilize landfill slopes at AEC-2
- g) AEC-2 hazardous material consolidation and shipping for off-site disposal
- h) Cover AEC-1 landfill top and slopes with a gravel cap
- i) Cover AEC-2 landfill top and slopes with a gravel cap
- j) Excavate and ship off-site for disposal, impacted soils from AEC-3
- k) Ship all remaining hazardous material off-site for disposal

The final reclamation work is complete. The sites are considered closed and now under a monitoring program. Refer to Figures within Appendix A for an overview of the specific work areas.

8.0

Summary of Monitoring Program

The schedule, data collection, and reporting for Operations & Maintenance and Long-Term Monitoring will work in conjunction under the Monitoring Program. The Operations and Maintenance activities will serve to observe and analyze physical parameters as necessary. The Long-Term Monitoring Plan will serve to analyze Water Quality (chemical) parameters over time. The proposed Monitoring Program schedule is that monitoring will be conducted after remediation is complete beginning in year 1. Subsequent monitoring years will be as required depending on results, with the approval of the board. Long-term monitoring is scheduled to start in 2020.

The main purpose of the proposed program is to ensure no contamination pathways are observed following the implemented designs. Additionally, it should be confirmed that adequate permafrost aggregation in the AEC 1 landfill is present, and that the function of the two landfills meet design intents in terms of stability.

As such, the Monitoring Plan focuses on 2 main parameters:

1. Water Quality – Reported as part of the Long-Term Monitoring Plan
2. Site Stability – Reported as part of the Operations and Maintenance Report

The next planned monitoring event is scheduled for summer 2020. This visit will prioritize data collection for baseline conditions following remedial works, as well as the observation of differential landfill cap settlement. Subsequent site visits for monitoring events will be scheduled as required.

For further details on the upcoming Monitoring Program, the following documents can be referenced:

- WL 1BR-RBL1929 Operations and Maintenance Manual, Resolute Bay Landfill Remediation Project.
- WL 1BR-RBL1929 Post Closure Monitoring Plan for the Resolute Bay Airport Landfills which describes future monitoring at the site (note: report also referred to as Long-Term Monitoring Plan)

9.0 Summary of Construction Activities and Future Work

The construction activities that took place that are independent of reclamation works are summarized below:

- a) Borrow source development that consisted of approximately 4,600 m³ of Type 1 and 21,500 m³ Type 2 material
- b) Screen borrow material to meet requirements for capping and swale construction

Refer to Figure 7 within Appendix A for an overview of the specific work areas.

No future work or additional construction activities are anticipated.

10.0 Description of Any Trenches and Sumps and Secondary Containment Features

No sumps or trenches including secondary containment features were undertaken as part of the remedial plan approved under the Water License 1BR-RBL1929.

11.0 Summary of Public Consultation

No community consultations were undertaken as part of this project beyond the initial public engagement and comment requests performed by the NIRB.

12.0 Summary of Work to Address Inspection or Compliance Reports

No Inspections were performed by Authorities having jurisdiction during the remedial activities. Therefore no inspection or compliance reports were issued as part of Water License 1BR-RBL1929.

13.0

Other Waste Disposal Requested by the Nunavut Water Board

No other waste disposal activities were undertaken or requested by the Board as part of Water License 1BR-RBL1929.

14.0

Long Term Monitoring Requirements

The monitoring requirements of the 1BR-RBL1929 Water License are listed below, exactly as shown in Part J: Conditions Applying to the Monitoring Program in the Water License:

1. The Licensee shall submit to the Board for approval, at least sixty (60) days prior to initiating Long-Term Monitoring for the Project, a Post-closure Monitoring Plan for the site that includes information on Long-Term Monitoring of the Waste Disposal Facilities and that addresses water quality monitoring, site stability and the need for thermal monitoring and ground water monitoring.

2. The Licensee shall maintain Monitoring Program Stations at the following locations:

Monitoring well locations and well identification numbers have been segmented by area for easier analysis

AEC 1 Monitoring Wells

TABLE 3: AEC 1 MONITORING WELL LOCATIONS

Well ID	Northing	Easting	Elevation	AEC	Description
RBL-1	8295630	441147	66.2	AEC 1	Monitoring Well installed up-gradient of the Solid Waste Landfill
RBL-2	8295551	440943	52.2	AEC 1	Monitoring Well installed down-gradient of the Solid Waste Landfill
RBL-3	8295608	440901	51.5	AEC 1	Monitoring Well installed down-gradient of the Solid Waste Landfill

Well ID numbers are as per NWB Amended Renewal Water License No. 1BR-RBL-1929. In the event there is a discharge from AEC 1, a monitoring well with the well ID RBL 4 is to be installed at the discharge point and daily discharge volumes are to be recorded as per the Water License, and have been confirmed via survey method.

The X,Y,Z coordinates are represented under UTM Zone 15N.

AEC 2 Monitoring Wells

The following monitoring wells have been installed at AEC1:

TABLE 4: AEC 2 MONITORING WELL LOCATIONS

Well ID	Northing	Easting	Elevation	AEC	Description
RBL-5	8292509	441662	53.1	AEC 2	Monitoring Well installed up-gradient of the Historic Landfill
RBL-6	8292566	441420	42.7	AEC 2	Monitoring Well installed down-gradient of the Historic Landfill
RBL-7	8292634	441384	43.2	AEC 2	Monitoring Well installed down-gradient of the Historic Landfill

Well ID numbers are as per NWB Amended Renewal Water License No. 1BR-RBL-1929. In the event there is a discharge from AEC 2, a monitoring well with the well ID RBL 8 is to be installed at the discharge point and daily discharge volumes are to be recorded as per the Water License.

The X,Y,Z coordinates are represented under UTM Zone 15N, and have been confirmed via survey method.

AEC 3 Monitoring Wells

The following monitoring wells have been installed at AEC1:

TABLE 5: AEC 3 MONITORING WELL LOCATIONS

Well ID	Northing	Easting	Elevation	AEC	Description
RBL-10	8296242	440493	43.8	AEC 3	Monitoring Well installed up-gradient of the Vehicle Storage Area (Site 1)
RBL-11	8296265	440383	41.6	AEC 3	Monitoring Well installed down-gradient of the Vehicle Storage Area (Site 1)
RBL-12	8296335	440450	42.6	AEC 3	Monitoring Well installed down-gradient of the Vehicle Storage Area (Site 1)
RBL-14	8296449	440682	55.4	AEC 3	Monitoring Well installed up-gradient of the Vehicle Storage Area (Site 2)
RBL-15	8296468	440635	52.7	AEC 3	Monitoring Well installed down-gradient of the Vehicle Storage Area (Site 2)

Well ID numbers are as per NWB Amended Renewal Water License No. 1BR-RBL-1929. In the event there is a discharge from AEC 3 – Site 1, a monitoring well with the well ID RBL 13 is to be installed at the discharge point. In the event there is a discharge from AEC 3 – Site 2, a monitoring well with the well ID RBL 16 is to be installed at the discharge point and daily discharge volumes are to be recorded as per the Water License.

The X,Y,Z coordinates are represented under UTM Zone 15N, and have been confirmed via survey method.

3. The Licensee shall measure and record, in cubic metres, the daily quantities of Effluent discharged from the Waste Disposal Facilities at Monitoring Program Stations RBL-4, RBL-8, RBL-13, RBL-16 and RBL-X.

4. The Licensee shall sample the Effluent, prior to discharge, at Monitoring Program Stations RBL-4, RBL-8, RBL-13, RBL-16 and RBL-X analyze for the following parameters:

- pH
- Total Suspended Solids (TSS)
- Nitrate – Nitrite
- Total Phenols
- Total Hardness
- Sodium
- Magnesium
- Chloride
- Total Copper
- Total Iron
- Total Mercury
- Total Zinc
- Total Aluminum
- Total Cobalt
- Polycyclic Aromatic Hydrocarbons (PAH)
- Benzene, Toluene, Ethylbenzene, Xylene (BTEX)
- Conductivity
- Ammonia Nitrogen
- Oil and Grease (visual)
- Sulphate
- Total Alkalinity
- Potassium
- Calcium
- Total Cadmium
- Total Chromium
- Total Lead
- Total Nickel
- Total Phosphorous
- Total Manganese
- Total Arsenic
- Total Petroleum Hydrocarbons (TPH)

5. The Licensee shall sample twice per year (once during spring freshet and once during mid-summer) water at Monitoring Program Stations RBL-1, RBL-2, RBL-3, RBL-5, RBL-6, RBL-7, RBL-9, RBL-10, RBL-11, RBL-12, RBL-14 and RBL-15 for the purpose of analyzing samples for the parameters listed under Part J Item 4.

6. The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where wastes associated with the project operations are deposited.

7. The Licensee shall monitor compliance with respect to Part D Item 11, by collecting a representative sample once at the beginning of discharge, upon initial release and prior to the end of discharge, from the Final Discharge Points of the Waste Disposal Facilities at Monitoring Program Stations RBL-4, RBL-8, RBL-13, RBL-16, and with respect to Part D, Item 13 at the Monitoring Stations RBL-X.

8. The Licensee shall monitor compliance with respect to Part D Items 11 and 13 by collecting a representative composite sample from the total volume to be released from the Final Discharge Points identified in Part J, Item 2 of this Licence.

9. The Licensee shall assess and record, when carrying out the project, the concentration of F1 – F4 fractions in petroleum hydrocarbon contaminated soil, according to the *CCME Canada-Wide Standard for Petroleum Hydrocarbons (PHC) in Soil*, from all sources and excavations associated with the project.

10. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Board in writing.

11. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.

12. The Licensee shall submit to the Board for review, at least sixty (60) days prior to the first release of any effluent, a Quality Assurance/Quality Control Plan that conforms to the guidance document *"Quality Assurance (QA) and Quality Control (QC) Guidelines For Use by Class "B" Licensees in Collecting Representative Water Samples in the Field and for Submission of a QAQC Plan"* INAC (1996). The Plan shall be acceptable to an accredited laboratory and include a covering letter from the accredited laboratory confirming acceptance of the Plan for analyses to be performed under the Licence.

13. The Licensee shall include in the Annual Report required under Part B, Item 1 all data, monitoring results and information required by this Part.

For further details on the upcoming Monitoring Program, the following documents can be referenced:

- WL 1BR-RBL1929 Operations and Maintenance Manual
- WL 1BR-RBL1929 Post Closure Monitoring Plan, to describe future monitoring at the site (note: report also referred to as Long-Term Monitoring Plan)

15.0

Closure

This report was prepared exclusively for the purposes, project, and site location outlined in the report. The report is based on information provided to, or obtained by Dillon-Outcome as indicated in the report, and applies solely to site conditions and the regulatory and planning frameworks existing at the time of the site supervision. Dillon-Outcome's report represents a reasonable review of available information and environmental monitoring efforts within an established work scope and schedule.

This report was prepared by Dillon-Outcome for the sole benefit of our client. The material in it reflects Dillon-Outcome's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon-Outcome accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

We trust that this information is satisfactory for your requirements.

Sincerely,

DILLON-OUTCOME JOINT VENTURE



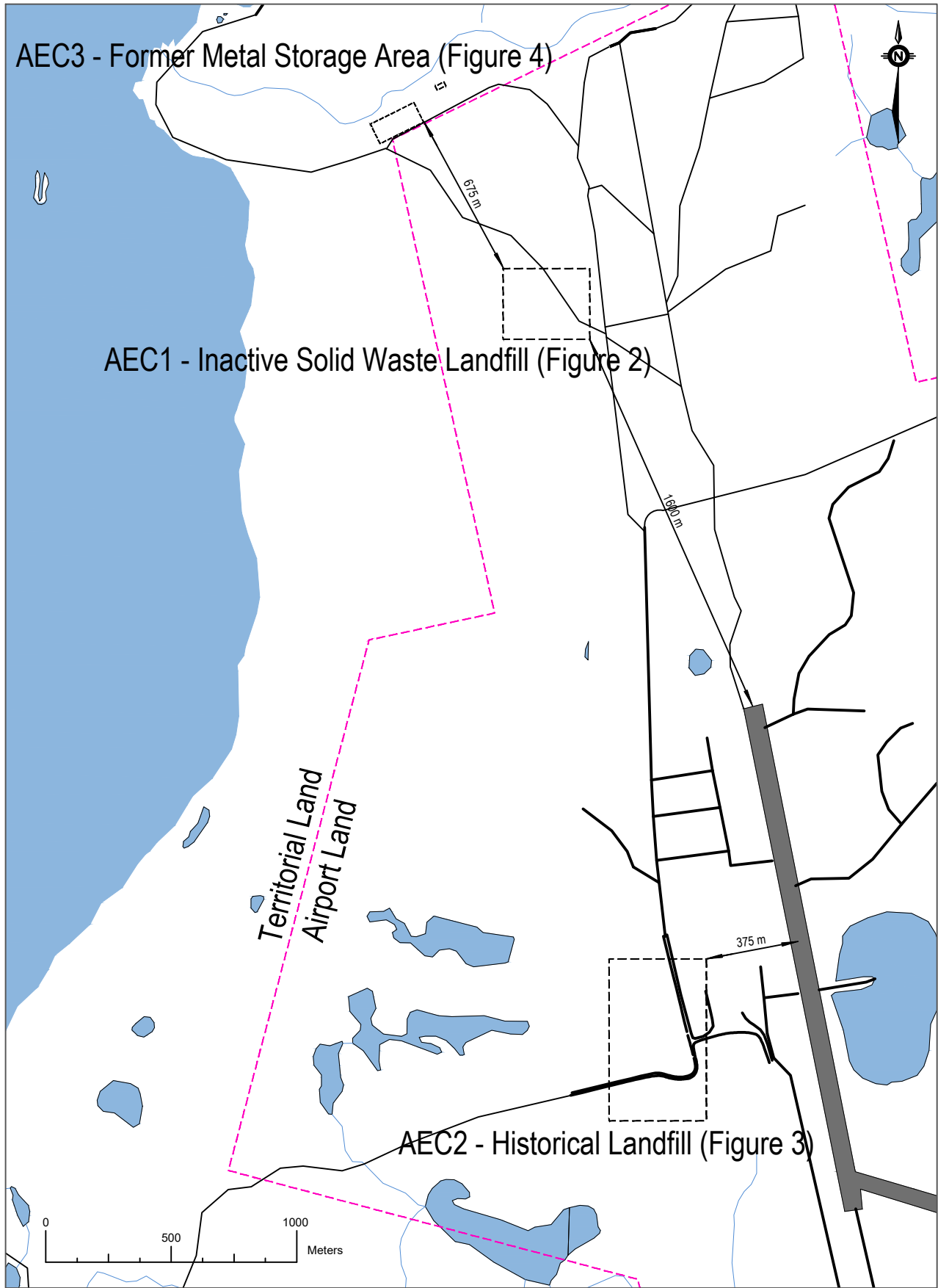
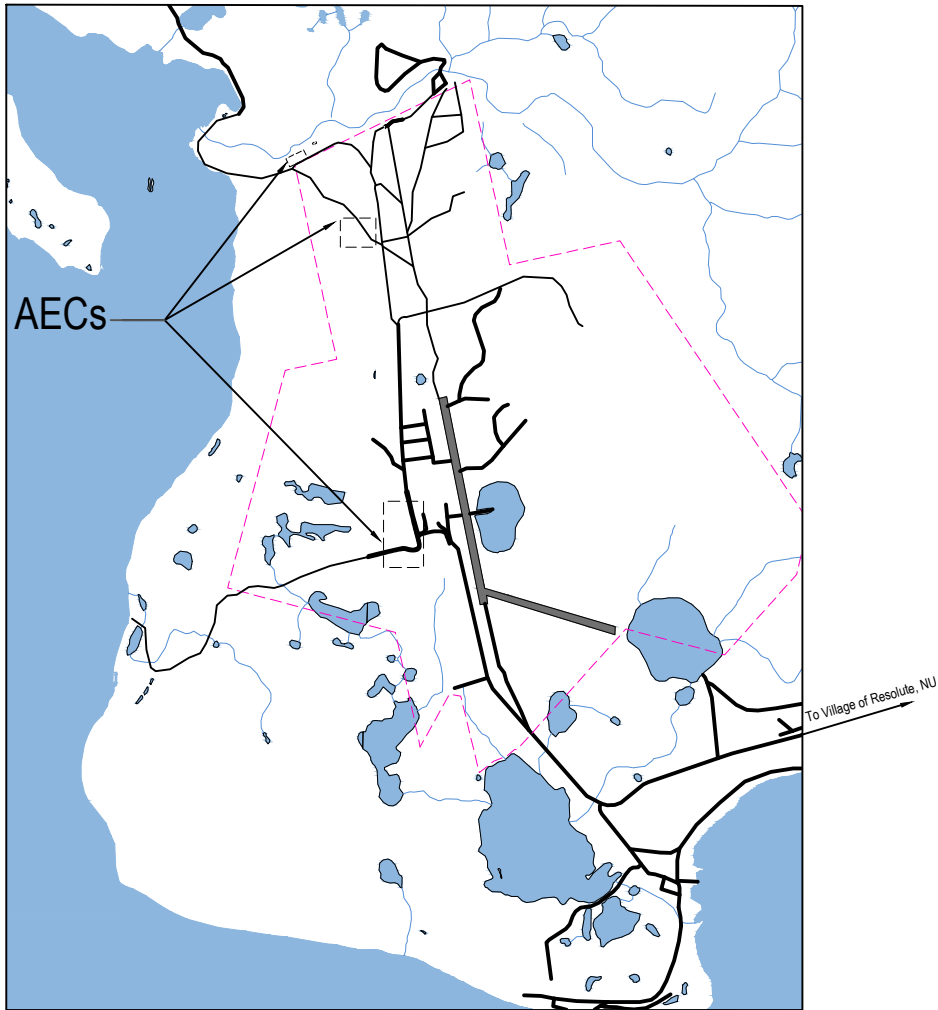
Mark Mathews, B.Eng
Junior Professional



Steve Livingstone, M.Sc., P.Geo (NAPEG)
Senior Professional

Appendix A

Figures



NOTES:
[] - Adapted from Preliminary Design prepared by
Arcadis Canada Inc. on behalf of Public Works &
Government Services Canada (March 2016)

LEGEND:
[] - Airport Property Line
[] - Area of Environmental Concern (AEC)



PROFESSIONAL SEALS

DO NOT SCALE DRAWINGS

04		
03		
02		
01		
revision		date

Do not scale drawings.
Verify all dimensions and conditions on site and immediately
notify the Departmental Representative of all discrepancies.

A	Detail No. No. du détail
B	drawing no. - where detail required dessin no. - ou détail exigé
C	drawing no. - where detailed dessin no. - ou détaillé

project title
titre du projet

RESOLUTE BAY NUNAVUT
PWGSC for TRANSPORT CANADA
REMEDIATION OF RESOLUTE
BAY AIRPORT LANDFILLS

drawing title
titre du dessin

SITE LOCATION

drawn by
dessiné par C. SADLER

designed by
conçu par J. MAUCHAN

approved by
approuvé par M. BILLOWITS

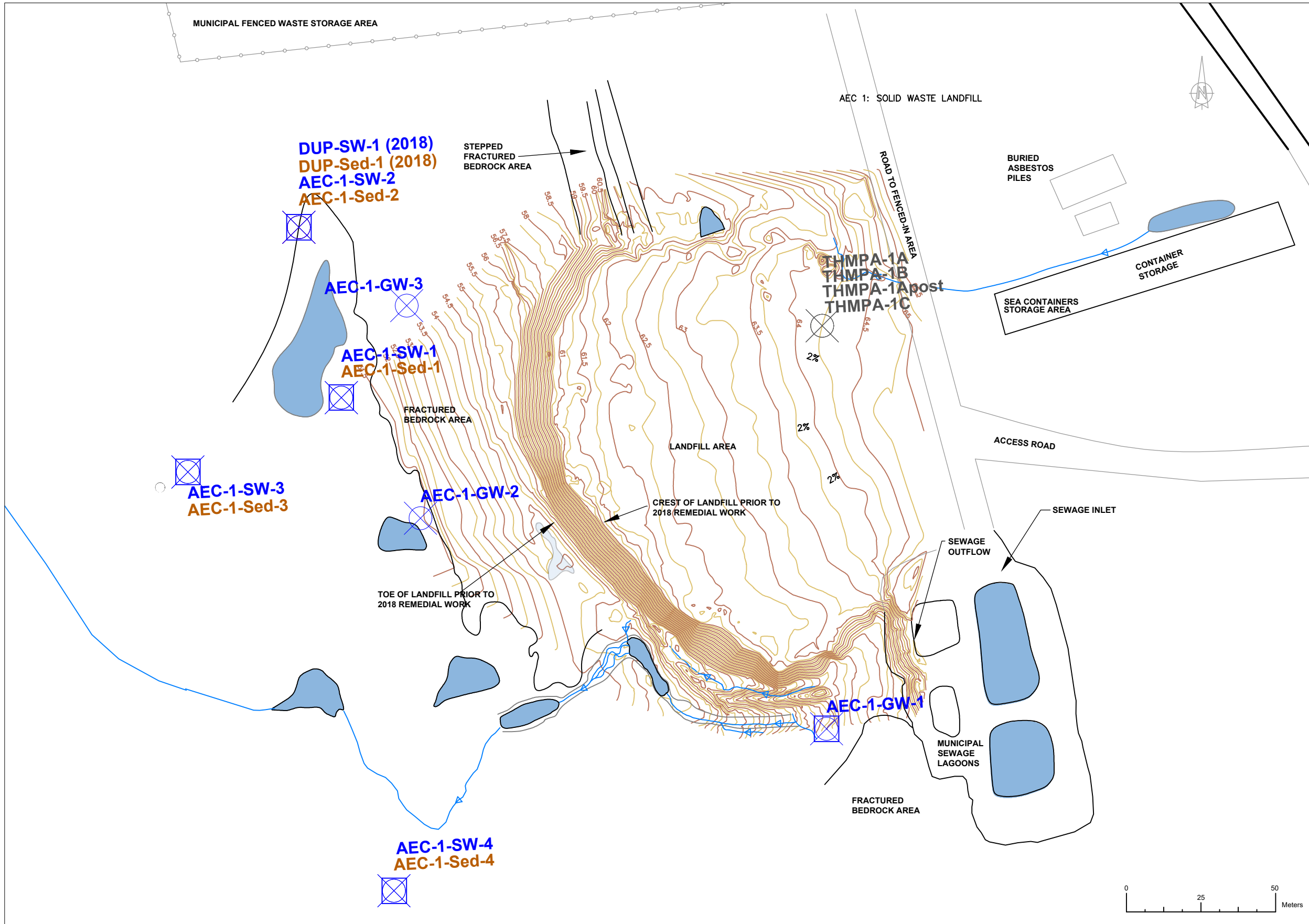
bid
offre N. ROBINSON project manager
administrateur de projets

project date
date du projet MARCH 2020

project no.
no. du projet R.095508.001

drawing no.
dessiné no. Figure 1

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 metres



NOTES:

- Adapted from Preliminary Design prepared by Arcadis Canada Inc. on behalf of Public Works & Government Services Canada (March 2016)
- Protected and maintained municipal fenced waste storage area. Kudlik Construction provided public access throughout work.
- Protected, maintained and left buried Asbestos piles As-1s
- Protected and maintained sewage lagoons. Kudlik Construction provided public access throughout work
- Buried Asbestos Piles were not disturbed during work
- (2018) and (2019) Indicate year that sample was collected.

LEGEND:

- Major Topographic Contour
- Minor Topographic Contour
- Topographic Elevation (approx. metres above sea level)
- Surface Water Drainage Pathway
- Surface Flow Direction
- Water
- Road
- Photo Number and Location
- Buried Asbestos Piles
- Sample collected in 2018
- THMPA - Temporary Hazardous Materials Processing Area (soil Sample)
- SW - Surface Water Sample
- SED - Sediment Sample
- GW - Groundwater Sample
- DUP - Duplicate Sample
- Sample collected in 2018 and 2019
- Sample collected in 2019



PROFESSIONAL SEALS

DO NOT SCALE DRAWINGS

04		
03		
02		
01		
revision		date

Do not scale drawings.
Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

- A Detail No. No. du detail
- B drawing no. - where detail required dessin no. - ou detail exigé
- C drawing no. - where detailed dessin no. - ou détaillé

project title
titre du projet
RESOLUTE BAY NUNAVUT
PWGSC for TRANSPORT CANADA
REMEDATION OF RESOLUTE
BAY AIRPORT LANDFILLS

drawing title
titre du dessin
AEC1 Construction Monitoring Sample Locations

drawn by
dessiné par
C. SADLER

designed by
conçu par
J. MAUCHAN

approved by
approuvé par
M. BILLOWITS

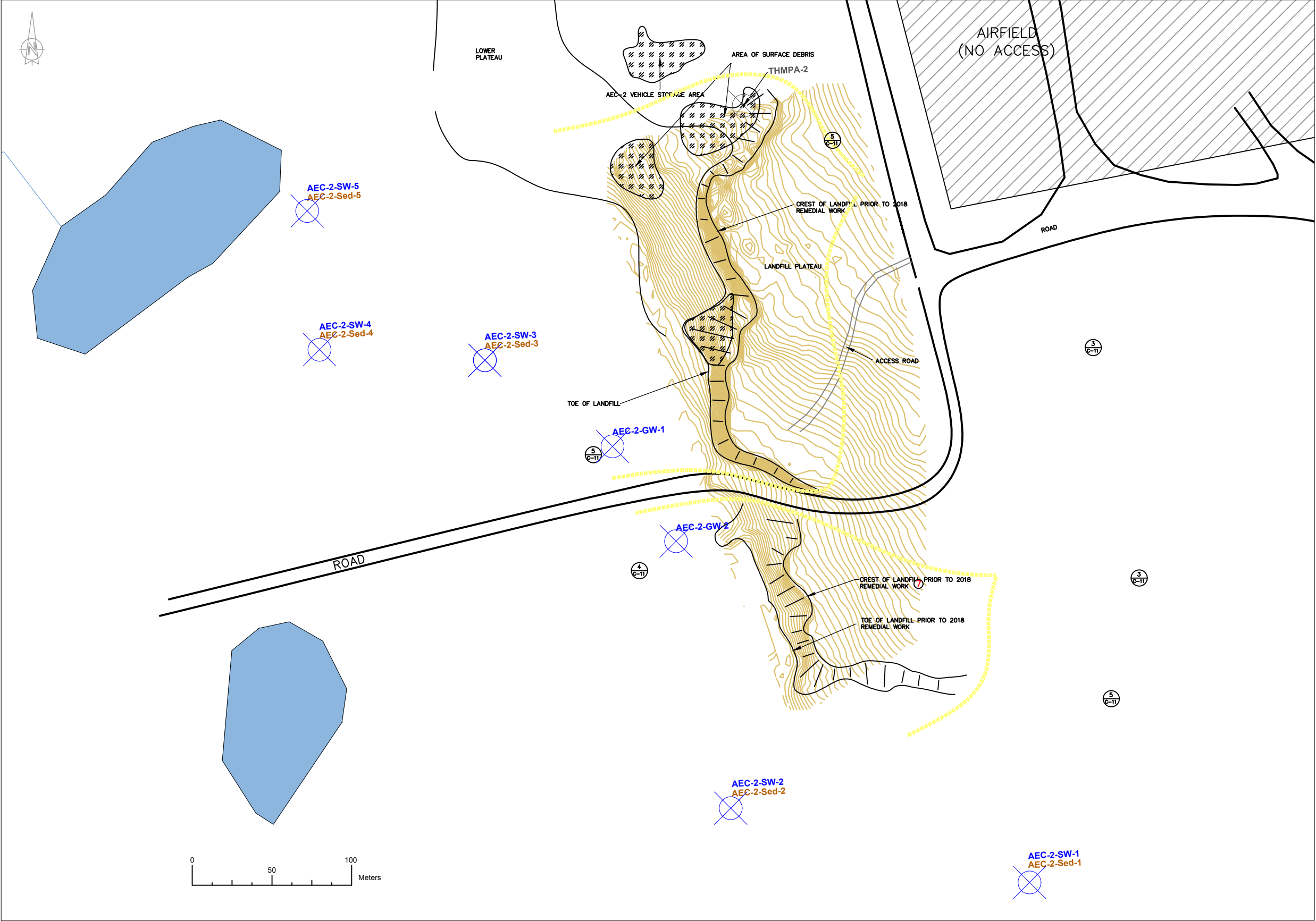
bid offre
N. ROBINSON
project manager
administrateur de projets

project date
date du projet
MARCH 2020

project no.
no. du projet
R.095508.001

drawing no.
dessiné no.
Figure 2

AEC 2 – HISTORICAL LANDFILL



Public Works and
Government Services Canada

Travaux publics et
Services gouvernementaux Canada

Notes:
[1] - Adapted from Preliminary Design prepared by Arcadis Canada Inc. on behalf of Public Works & Government Services Canada (March 2016)

LEGEND:

Major Topographic Contour

Minor Topographic Contour

Topographic Elevation (approx. metres above sea level)

Airfield

Surface Waste

Road

Embankment

Sample collected by DOJV in 2018 and 2019

THMPA - Temporary Hazardous Materials Processing Area (soil Sample)

SW - Surface Water Sample

SED - Sediment Sample

GW - Groundwater Sample

DUP - Duplicate Sample

outcome
CONSULTANTS

DILLON
CONSULTING

PROFESSIONAL SEALS

DO NOT SCALE DRAWINGS

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revision

date

Do not scale drawings.
Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

A Detail No.
No. du détail

B drawing no. - where detail required
dessin no. - ou détail exigé

C drawing no. - where detailed
dessin no. - ou détaillé

project title
titre du projet

RESOLUTE BAY
PWGSC for TRANSPORT CANADA

NUNAVUT

REMEDATION OF RESOLUTE
BAY AIRPORT LANDFILLS

drawing title
titre du dessin

AEC2 Construction Monitoring Sampling Locations

drawn by
dessiné par

C. SADLER

designed by
conç par

J. MAUCHAN

approved by
approuvé par

M. BILLOWITS

bid
offre

N. ROBINSON

project manager
administrateur de projets

project date
date du projet

MARCH 2020

project no.
no. du projet

R.095508.001

drawing no.
dessiné no.

Figure 3

EXCAVATION 1

EXCAVATION 2

EXCAVATION 4

EXCAVATION 6

EXCAVATION 3

Notes:

- Adapted from Preliminary Design prepared by Arcadis Canada Inc. on behalf of Public Works & Government Services Canada (March 2016)
- All Non-hazardous debris moved to AEC1 landfill.
- All Hazardous Materials transported off-site for disposal.

LEGEND:

- Major Topographic Contour
- Minor Topographic Contour
- Topographic Elevation (approx. metres above sea level)
- Airfield
- Surface Waste (removed)
- Road
- Embankment
- 2019 Soil Sample Below Criteria
- 2019 Soil Sample Above Criteria
- 2019 Excavation Area

THMPA - Temporary Hazardous Materials Processing Area (soil Sample)
SW - Surface Water Sample
SED - Sediment Sample
GW - Groundwater Sample
DUP - Duplicate Sample



PROFESSIONAL SEALS

DO NOT SCALE DRAWINGS

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revision		date

Do not scale drawings.
Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

- A Detail No.
No. du détail
- B drawing no. - where detail required
dessin no. - ou détail exigé
- C drawing no. - where detailed
dessin no. - ou détaillé

project title
titre du projet

RESOLUTE BAY NUNAVUT
PWGSC for TRANSPORT CANADA

drawing title
titre du dessin

REMEDIATION OF RESOLUTE
BAY AIRPORT LANDFILLS

AEC3 EXCAVATIONS

drawn by
dessiné par

C. SADLER

designed by
conçu par

J. MAUCHAN

approved by
approuvé par

M. BILLOWITS

project manager
administrateur de projets

N. ROBINSON

project date
date du projet

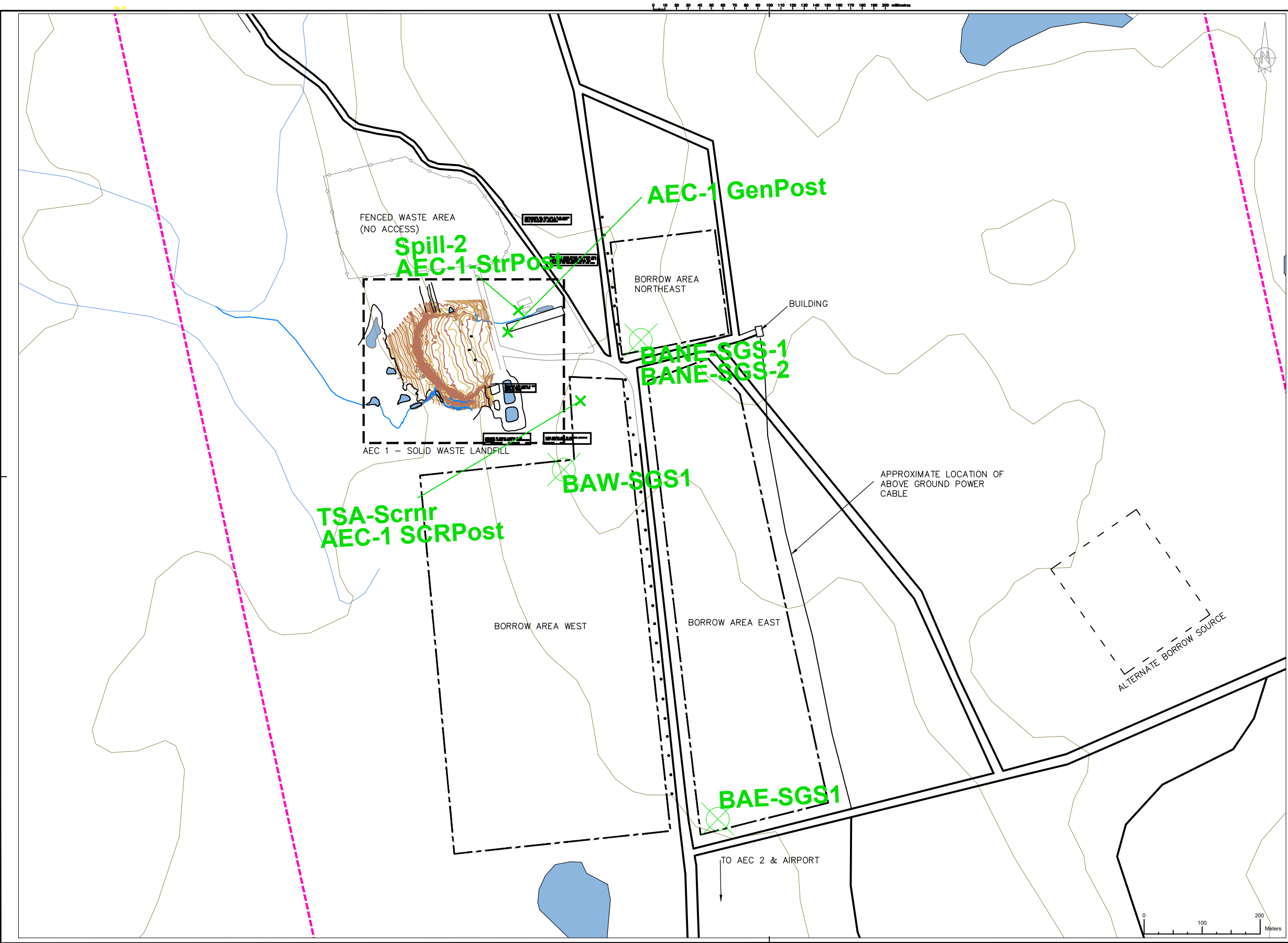
MARCH 2020

project no.
no. du projet

R.095508.001

drawing no.
dessiné no.

Figure 5



Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

NOTES:

Adapted from Preliminary Design prepared by Arcadis Canada Inc. on behalf of Public Works & Government Services Canada (March 2016)

LEGEND:

- Major Topographic Contour (Background - from NTS)
- Major Topographic Contour
- Minor Topographic Contour
- Topographic Elevation (approx. metres above sea level)
- Surface Water Drainage Pathway
- Water
- Borrow Source Area
- Property Boundary
- Area Identification
- Road
- Fenced Area
- Hydro Pole
- Sample collected in 2018
- Sample collected in 2019
- THMPA - Temporary Hazardous Materials Processing Area (soil Sample)
- SW - Surface Water Sample
- SED - Sediment Sample
- GW - Groundwater Sample
- DUP - Duplicate Sample

PROFESSIONAL SEALS

DO NOT SCALE DRAWINGS

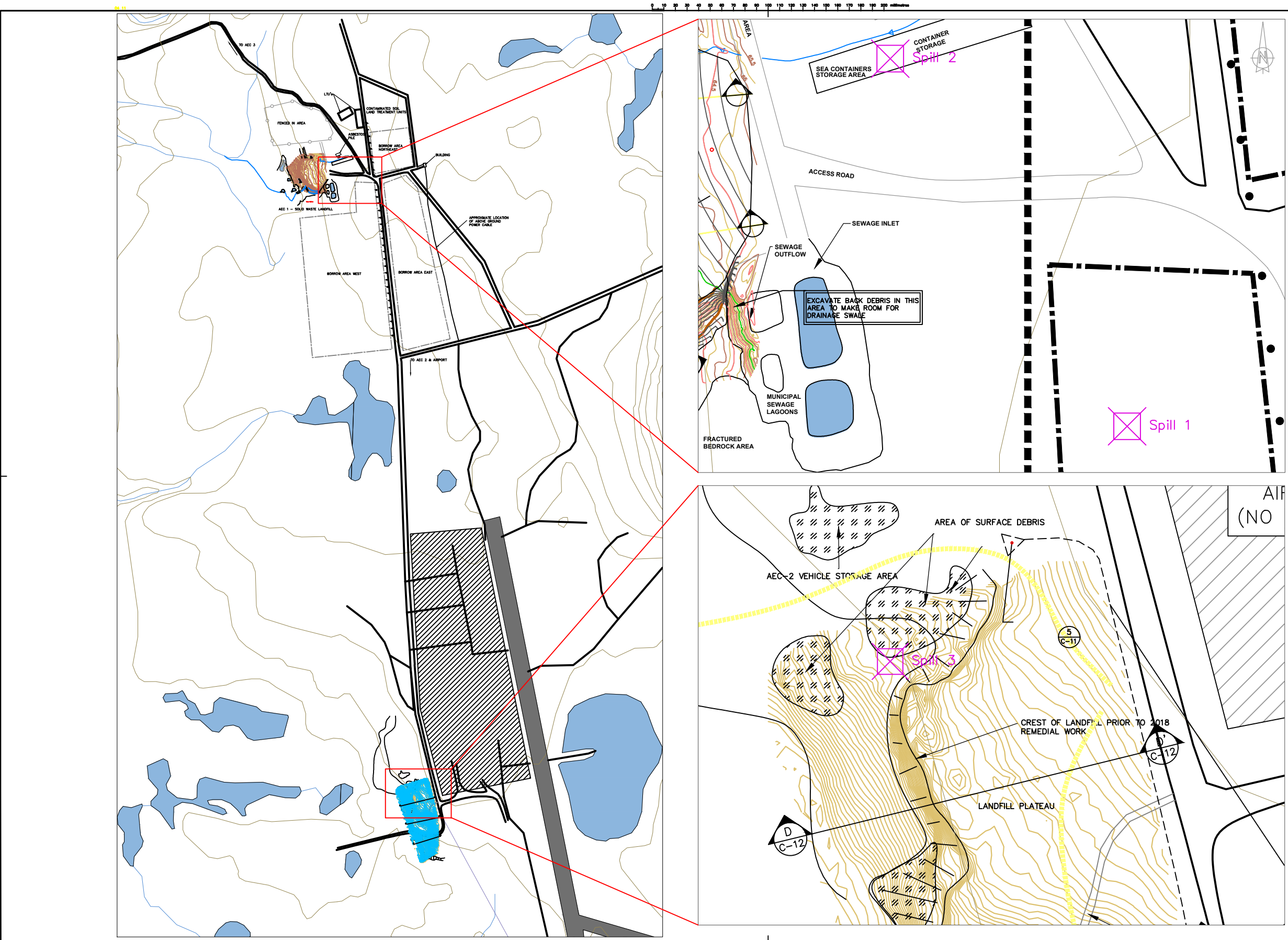
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Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

A	Detail No.
B	drawing no. - where detail required
C	drawing no. - where detailed

project title	RESOLUTE BAY	NUNAVUT
titre du projet	PWGSC for TRANSPORT CANADA	
drawing title	REMEDATION OF RESOLUTE BAY AIRPORT LANDFILLS	
titre du dessin	BORROW AREAS	

drawn by	C. SADLER	
dessiné par		
designed by	J. MAUCHAN	
conç par		
approved by	M. BILLOWITS	
approuvé par		
bid offre	N. ROBINSON	project manager
		administrateur de projets
project date	MARCH 2020	
date du projet		
project no.	R.095508.001	
no. du projet		
drawing no.	Figure 7	
dessiné no.		





Public Works and
Government Services Canada
Travaux publics et
Services gouvernementaux Canada

NOTES:

- 1 - Adapted from Preliminary Design prepared by Arcadis Canada Inc. on behalf of Public Works & Government Services Canada (March 2016)
- 2 - Spills were cleaned up by Kudlik as per their Spill Contingency Plan.
- 3 - Spill locations were sampled by DOJV

LEGEND:

- Water
- Fenced Area
- Major Topographic Contour (Background - from NTS)
- Major Topographic Contour
- Minor Topographic Contour
- Topographic Elevation (approx. metres above sea level)
- Surface Water Drainage Pathway
- Borrow Source Area
- Property Boundary
- Area Identification
- Spill Location and sample location
- Sample collected in 2018
- Sample collected in 2019
- THMPA - Temporary Hazardous Materials Processing Area (soil Sample)
- SW - Surface Water Sample
- SED - Sediment Sample
- GW - Groundwater Sample
- DUP - Duplicate Sample
- Road
- Hydro Pole



DILLON
CONSULTING



outcome
CONSULTANTS

PROFESSIONAL SEALS

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Do not scale drawings.
Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

A	Detail No.
1	No. du detail
B	drawing no. - where detail required
C	dessin no. - ou detail exige
D	drawing no. - where detailed
E	dessin no. - ou detaillé

project title	titre du projet
RESOLUTE BAY PWGSC for TRANSPORT CANADA	NUNAVUT

drawing title	titre du dessin
REMEDATION OF RESOLUTE BAY AIRPORT LANDFILLS	

drawn by	dessiné par
C. SADLER <td></td>	

designed by	conç par
J. MAUCHAN <td></td>	

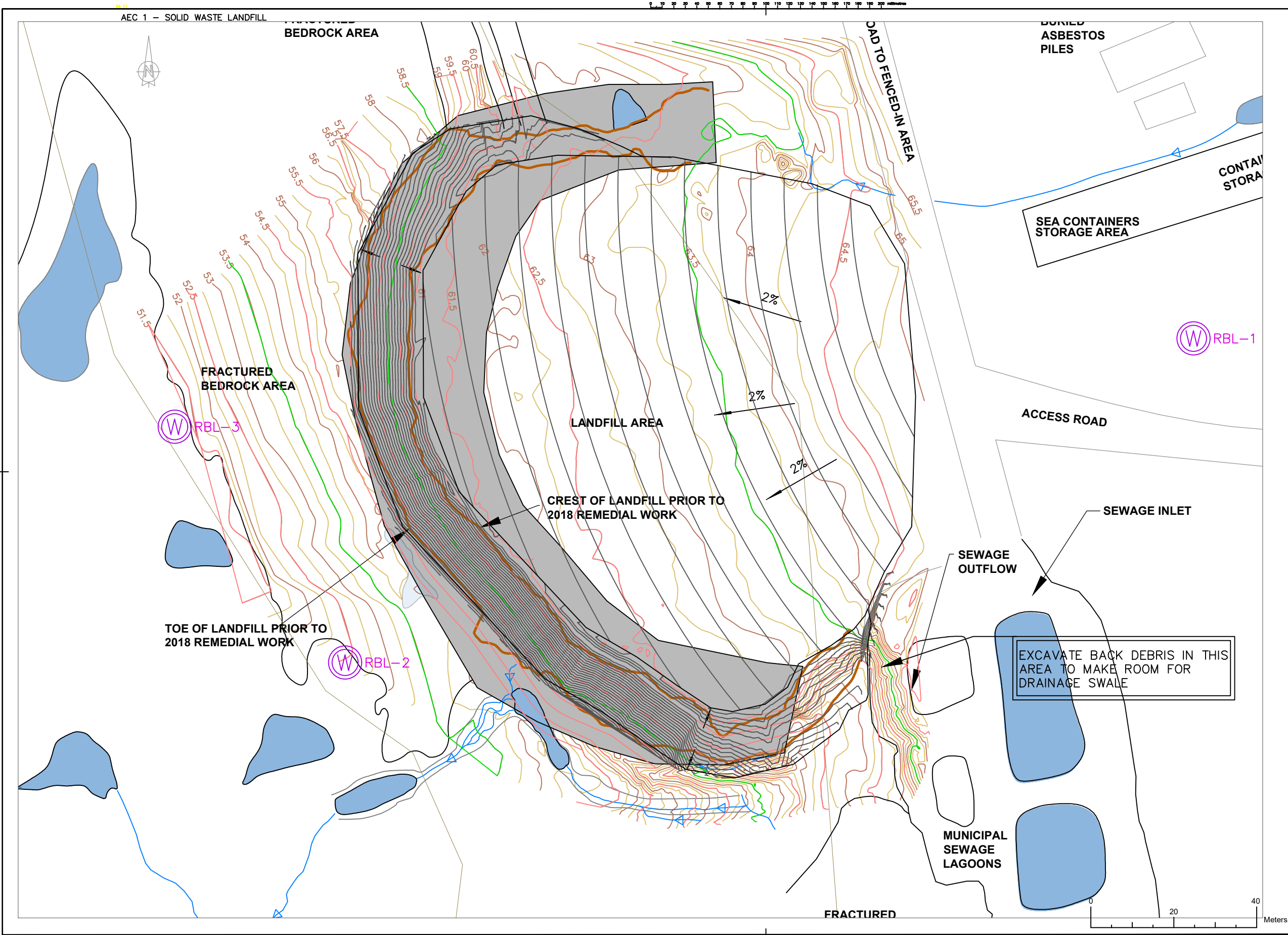
approved by	approuvé par
M. BILLOWITS <td></td>	

bid	offre
N. ROBINSON <td></td>	

project date	date du projet
MARCH 2020 <td></td>	

project no.	no. du projet
R.095508.001 <td></td>	

drawing no.	dessiné no.
Figure 8	



Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

Notes:

- Adapted from Preliminary Design prepared by Arcadis Canada Inc. on behalf of Public Works & Government Services Canada (March 2016)

LEGEND:

- Major Topographic Contour
- Minor Topographic Contour
- Topographic Elevation (approx. metres above sea level)
- Airfield
- Surface Waste
- Road
- Embankment
- Sample collected in 2018
- Sample collected in 2019
- Monitoring Well installed in 2019
- THMPA - Temporary Hazardous Materials Processing Area (soil Sample)
- SW - Surface Water Sample
- SED - Sediment Sample
- GW - Groundwater Sample
- DUP - Duplicate Sample

DILLON CONSULTING

outcome CONSULTANTS

PROFESSIONAL SEALS

DO NOT SCALE DRAWINGS		
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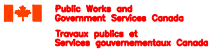
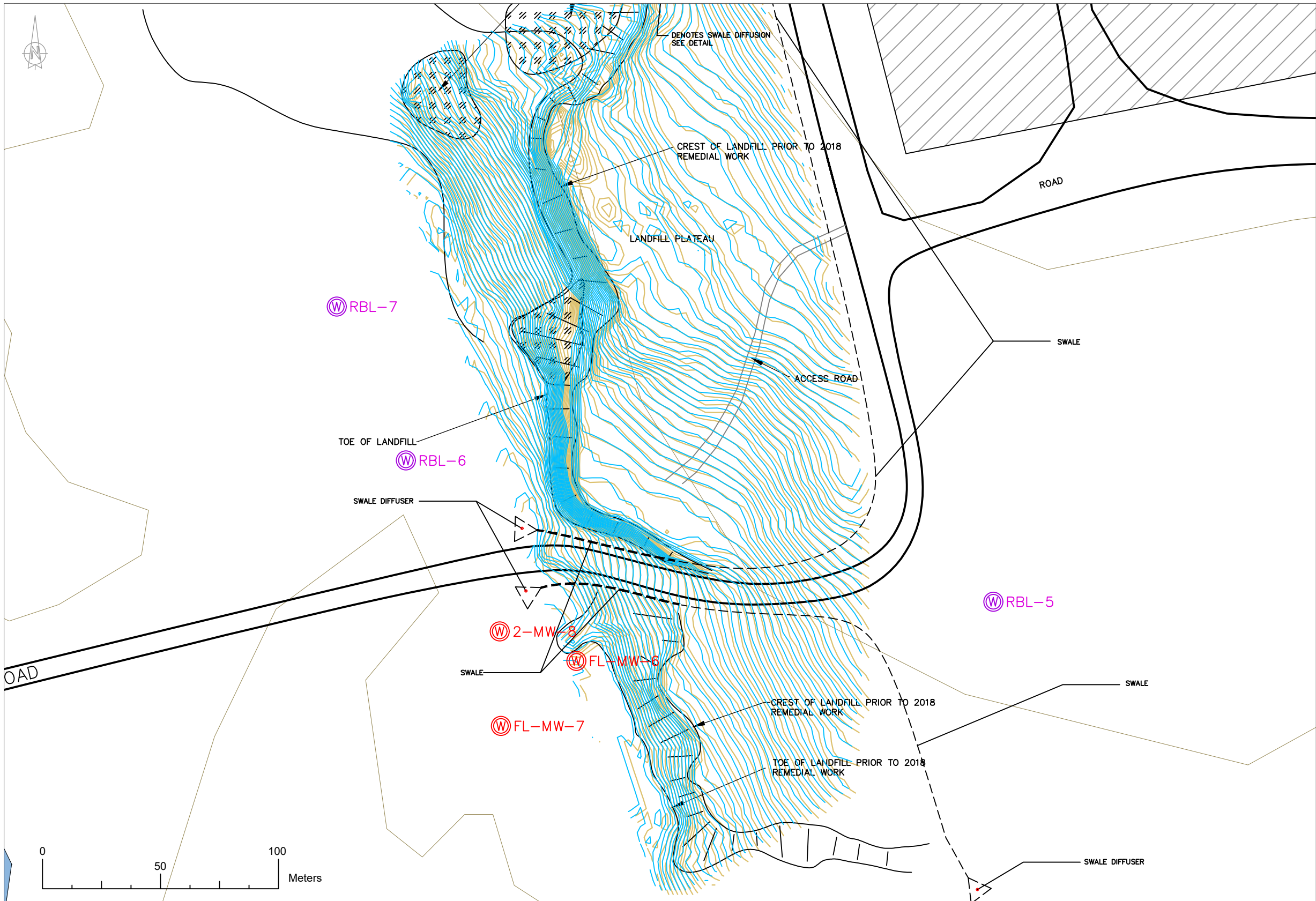
Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

A	Detail No.	No. du détail
B	drawing no. - where detail required	dessin no. - où détail exigé
C	drawing no. - where detailed	dessin no. - où détaillé

project title	RESOLUTE BAY NUNAVUT	
titre du projet	PWGSC for TRANSPORT CANADA	
drawing title	REMEDATION OF RESOLUTE BAY AIRPORT LANDFILLS	
titre du dessin	AEC1 MONITORING WELLS INSTALLED IN 2019	
drawn by	C. SADLER	
dessiné par	J. MAUCHAN	
designed by	M. BILLOWITS	
conçu par	N. ROBINSON	
approved by	project manager	
approuvé par	administrateur de projets	
project date	MARCH 2020	
date du projet	R.095508.001	
project no.	Figure 9	
no. du projet		
drawing no.		
dessiné no.		

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 metres

AEC 2 – HISTORICAL LANDFILL



Notes:
- Adapted from Preliminary Design prepared by Arcadis Canada Inc. on behalf of Public Works & Government Services Canada (March 2016)

- LEGEND:**
- Major Topographic Contour
 - Minor Topographic Contour
 - Topographic Elevation (approx. metres above sea level)
 - Airfield
 - Surface Waste
 - Road
 - Embankment
 - Sample collected in 2018
 - Sample collected in 2019
 - Monitoring Well installed in 2019
 - Existing Monitoring Well
 - THMPA – Temporary Hazardous Materials Processing Area (soil Sample)
 - SW – Surface Water Sample
 - SED – Sediment Sample
 - GW – Groundwater Sample
 - DUP – Duplicate Sample



PROFESSIONAL SEALS

DO NOT SCALE DRAWINGS

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revision		date

Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

- A Detail No. No. du detail
B drawing no. – where detail required dessin no. – ou detail exigé
C drawing no. – where detailed dessin no. – ou détaillé

project title
titre du projet
RESOLUTE BAY
PWGSC for TRANSPORT CANADA NUNAVUT

REMEDATION OF RESOLUTE BAY AIRPORT LANDFILLS

drawing title
titre du dessin
AEC2 MONITORING WELLS
INSTALLED IN 2019

drawn by
dessiné par C. SADLER

designed by
conçu par J. MAUCHAN

approved by
approuvé par M. BILLOWITS

bid offer N. ROBINSON project manager
administrateur de projets

project date
date du projet MARCH 2020

project no.
no. du projet R.095508.001

drawing no.
dessiné no. Figure 10



Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

Notes:

- Adapted from Preliminary Design prepared by Arcadis Canada Inc. on behalf of Public Works & Government Services Canada (March 2016)

LEGEND:

- Major Topographic Contour
- Minor Topographic Contour
- Topographic Elevation (approx. metres above sea level)
- Airfield
- Surface Waste
- Road
- Embankment
- Sample collected in 2018
- Sample collected in 2019
- Monitoring Well installed in 2019
- THMPA – Temporary Hazardous Materials Processing Area (soil Sample)
- SW – Surface Water Sample
- SED – Sediment Sample
- GW – Groundwater Sample
- DUP – Duplicate Sample

PROFESSIONAL SEALS

DO NOT SCALE DRAWINGS

04		
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revision		date

Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

A Detail No. No. du détail
 B drawing no. – where detail required dessin no. – où détail exigé
 C drawing no. – where detailed dessin no. – où détaillé

project title
 titre du projet
 RESOLUTE BAY NUNAVUT
PWGSC for TRANSPORT CANADA

drawing title
 titre du dessin
 REMEDIATION OF RESOLUTE BAY AIRPORT LANDFILLS

drawn by
 dessiné par C. SADLER

designed by
 conçu par J. MAUCHAN

approved by
 approuvé par M. BILLOWITS

bid offer
 N. ROBINSON project manager
 administrateur de projets

project date
 date du projet MARCH 2020

project no.
 no. du projet R.095508.001

drawing no.
 dessin no. Figure 11

Appendix B

Waste Disposal Manifests

Certificate of Transfer & Disposal

HAZARDOUS WASTE RECEIVER (NUR# 300001)

Date

2018-10-15

Certificate number

18-012

Client Information

Company name:	Kudlik Construction Ltd.
Generator no.:	
Mailing address:	1519 Federal Road Iqaluit, Nunavut X0A 0H0
Contact name:	François Bourassa
Telephone no.:	867-979-1166
Project no.:	QE18-105

Shipping Site Information

Site address:	Resolute Bay Landfill Remediation Resolute, Nunavut X0A 0V0
Contact name:	F. Bourassa
Telephone no.:	418-871-3455

Description of wastes	Quantity	Type of package	Weight (Kg)	Final Disposal Facility	Disposal Facility bill #	Notes
Lead-acid batteries	1	Quatrex bag	651.5	Covanta Environmental Solutions, Chambly, QC	48 151	
Dry batteries	1	Quatrex bag	535	Covanta Environmental Solutions, Chambly, QC	48 114	
Oily solid waste	2	Drum	154	Covanta Environmental Solutions, Chambly, QC	48 151	
Oily Water (mixed waste)	4	Drum	750	Covanta Environmental Solutions, Chambly, QC	48 151	
Oily Water (mixed waste)	3	Drum	426	Covanta Environmental Solutions, Chambly, QC	48 114	

Certificate of Transfer & Disposal

HAZARDOUS WASTE RECEIVER (NUR# 300001)

Date

2018-10-15

Certificate number

18-012

Description of wastes	Quantity	Type of package	Weight (Kg)	Final Disposal Facility	Disposal Facility bill #	Notes
Waste oil	5	Drum	1,003.5	Covanta Environmental Solutions, Chambly, QC	48 114	
Paint	1	Crate	192	Covanta Environmental Solutions, Chambly, QC	48 151	5 fire extinguishers included in crate
Polymerized sludge	1	Drum	230	Covanta Environmental Solutions, Chambly, QC	48 114	
Transformers, empty, no PCB	1	Box	712	Covanta Environmental Solutions, Chambly, QC	48 114	1 box containing 30 units
Transformers, empty cylinders	3	Units	35	Covanta Environmental Solutions, Chambly, QC	48 114	
Metal containing lead-based paint	1	20' marine container	6,800	AIM Recycling, Laval, QC	7169958(P)	Container TCQU0000223
Metal containing lead-based paint	1	20' marine container	25,960	AIM Recycling, Laval, QC	7169976(P)	Container TCQU0000033
Metal containing lead-based paint	1	20' marine container	7,220	AIM Recycling, Laval, QC	7170402(P)	Container TCQU0000100
Metal containing lead-based paint	1	20' marine container	13,920	AIM Recycling, Laval, QC	7170431(P)	Container TCQU0000012
Metal containing lead-based paint	1	20' marine container	21,440	AIM Recycling, Laval, QC	7170783(P)	Container TCQU0000011

Certificate of Transfer & Disposal

HAZARDOUS WASTE RECEIVER (NUR# 300001)

Date
2018-10-15
Certificate number
18-012

Description of wastes	Quantity	Type of package	Weight (Kg)	Final Disposal Facility	Disposal Facility bill #	Notes
Refrigerator (domestic)	2	Units	223	Covanta Environmental Solutions, Chambly, QC	48 114	
Fire Extinguishers	5	Units	56.5	Covanta Environmental Solutions, Chambly, QC	48 151	5 units included in crate with paint
Fire Extinguishers	3	Units	32	Covanta Environmental Solutions, Chambly, QC	48 114	
Asbestos-containing materials	5	Pallets/Quatrex	1 959.5	Covanta Environmental Solutions, Chambly, QC	48 114	

This document certifies that the products listed above were received and disposed of by Qikiqtaaluk Environmental in accordance with laws in effect for the disposal and recycling of dangerous goods.



Jennifer Godin, Director

BON DE RÉCEPTION / RECEPTION BILL

No du bon de réception
Reception bill No

48 114

CLIENT : 1 496 QIKIQTAALUK ENVIRONNEMENTAL INC.

No du connaissance : 33528
Bill of lading :

Date de livraison : 2018/10/24
Delivery date :

No Pesée Weighing #	KG	Qté Qty	Format	Type de produits Type of product	MDDELCC	MOE	# fournisseur Vendor #	Réf. client Client ref.
764 149	519,50	1	quadrex	SPE2 NUNAVUT QE18-105 / Débris de démolition contenant de l				
764 150	712,00	1	unité	SPE2 NUNAVUT QE18-105 / Débris de démolition contenant de l				boite à transfo conten
764 153	230,00	1	baril	SPE2 Spécial RTMD et/ou SIMDUT				polymerized sludge B11-0.0-P
764 155	249,00	1	palette	SPE2 NUNAVUT QE18-105 / Débris de démolition contenant de l				
764 157	265,50	1	palette	SPE2 NUNAVUT QE18-105 / Débris de démolition contenant de l				
764 158	223,00	2	unité	SPE2 NUNAVUT QE18-105 / Frigo				L01-0.0-S
764 161	305,50	1	palette	SPE2 NUNAVUT QE18-105 / Débris de démolition contenant de l				
764 163	819,50	4	baril	HUG1 NUNAVUT-QE18-105 / Huile usée				A01-0.0-L
764 166	535,00	1	quadrex	BAT1 Batterie avec plomb RTMD				E15-8.0-S
764 168	620,00	1	quadrex	SPE2 NUNAVUT QE18-105 / Débris de démolition contenant de l				
764 188	184,00	1	baril	HUG1 NUNAVUT-QE18-105 / Huile usée				A01-0.0-L
764 189	426,00	3	baril	EAU1 NUNAVUT QE18-105 / Eau huileuse (mix waste)				A03-0.0-L
765 495	35,00	3	Bonbonne	MET1 NUNAVUT QE18-105 / Métal à recycler (transfo vide sans				
765 497	32,00	3	Bonbonne	SPE2 NUNAVUT QE18-105 / Extincteur				M07-2.2-G

Total : 5 156,00 24,00

Nombre de pesée :
Number of weighing : 14

BON DE RÉCEPTION / RECEPTION BILL

No du bon de réception
Reception bill No

48 151

CLIENT : 1 496 QIKIQTAAALUK ENVIRONNEMENTAL INC.

Date de livraison : 2018/10/26
Delivery date :

No du connaissance : 33567
Bill of lading :

No Pesée Weighing #	KG	Qté Qty	Format	Type de produits Type of product	MDDELCC	MOE	# fournisseur Vendor #	Réf. client Client ref.
764 817	651,50	1	quadrex	BAT1 Batterie avec plomb RTMD	E15-8.0-S			
764 818	597,50	3	baril	EAU1 NUNAVUT QE18-105 / Eau huileuse (mix waste)	A03-0.0-L			
764 844	248,50	1	quadrex	PEI2 NUNAVUT QE18-105 / Labpack peinture inflammable	B11-3.0-P			
764 845	152,50	1	baril	EAU1 NUNAVUT QE18-105 / Eau huileuse (mix waste)	A03-0.0-L			
764 847	154,00	2	baril	EQU2 NUNAVUT QE18-105 / Solide et guenille contaminés à l'hu	L03-0.0-S			

Total :	1 804,00	8,00
---------	----------	------

Nombre de pesée :

5

Number of weighing :

**AIM Recyclage Laval**

Division de la Compagnie Américaine de Fer & Métaux inc.
2185 Montee Masson
Laval H7E 4P2
Tel: 450-661-8017
Fax: 450-661-2494

**+7169958****BILLET DE PESÉE / SCALE TICKET****Réception / Receiving****Fournisseur / Supplier:** 66704

SANEXEN SERVICES
ENVIRONNEMENTAUX INC.
9935 AVENUE DE CATANIA
BUREAU 200
BROSSARD, QUEBEC
J4Z 3V4
TPS / GST: 134976687
Nom de l'acheteur / Trader name: Pascal Boilard

TVQ / PST: 1015427058

No de Billet / Ticket No.**7169958(P)**

#Camion, Chauffeur / Truck#, Driver CAMION STEPAHNE

#Conteneur / Container#

#Réf.

TCQU 0000223

#Sceau / Seal#

Route / Run

Net**644**

Date		Poids / Weights (lb)	
10/23/2018	10:11:33	Brut / Gross	50,300
10/23/2018	10:26:31	Tare	40,900
		Net	9,400

Produits et ajustements / Accepted Commodities and Adjustments

Produits / Commodities	Brut / Gross	Tare	Net avant / before	Ajustements / Adjustments	Déduction / Deduct.	Net	Contrat / Contract
NO. 1 H.M.S. O/S - (SURDIMENSIONNÉ)	7,050	0	7,050	Pneus / Tires	1,600	5,450	
TOLE	2,350	0	2,350	Terre, saleté / Dirt	1,000	1,350	
Grand total	9,400	0	9,400		2,600	6,800	

**AIM Recyclage Laval**

Division de la Compagnie Américaine de Fer & Métaux inc.
2185 Montee Masson
Laval H7E 4P2
Tel: 450-661-8017
Fax: 450-661-2494

**+7169976****BILLET DE PESÉE / SCALE TICKET****Réception / Receiving****Fournisseur / Supplier:** 66704

SANEXEN SERVICES
ENVIRONNEMENTAUX INC.
9935 AVENUE DE CATANIA
BUREAU 200
BROSSARD, QUEBEC

147 3V4
TPS / GST: 134976687 TVQ / PST: 1015427058
Nom de l'acheteur / Trader name: Pascal Boilard

No de Billet / Ticket No.**7169976(P)****#Camion, Chauffeur / Truck#, Driver** CAMION STEPHANE**#Conteneur / Container#****#Réf.**

tcqu 0000033

#Sceau / Seal#**Route / Run****Net**

644

Date		Poids / Weights (lb)	
10/23/2018	10:32:34	Brut / Gross	67,420
10/23/2018	10:56:30	Tare	40,460
		Net	26,960

Produits et ajustements / Accepted Commodities and Adjustments

Produits / Commodities	Brut / Gross	Tare	Net avant / before	Ajustements / Adjustments	Déduction / Deduct.	Net	Contrat / Contract
NO. 1 H.M.S. O/S - (SURDIMENSIONNÉ)	67,420	40,460	26,960	Terre, saleté / Dirt	1,000	25,960	
Grand total	67,420	40,460	26,960		1,000	25,960	

**AIM Recyclage Laval**

Division de la Compagnie Américaine de Fer & Métaux inc.
2185 Montee Masson
Laval H7E 4P2
Tel: 450-661-8017
Fax: 450-661-2494

**+7170402****BILLET DE PESÉE / SCALE TICKET****Réception / Receiving****Fournisseur / Supplier:** 66704

SANEXEN SERVICES
ENVIRONNEMENTAUX INC.
9935 AVENUE DE CATANIA
BUREAU 200
BROSSARD, QUEBEC

14Z 3V4
TPS / GST: 134976687 TVQ / PST: 1015427058

Nom de l'acheteur / Trader name: Pascal Boilard

No de Billet / Ticket No. 7170402(P)**#Camion, Chauffeur / Truck#, Driver TCQU 00000100****#Conteneur / Container#****#Réf.****#Sceau / Seal#****Route / Run****Net 644**

Date		Poids / Weights (lb)	
10/24/2018	10:36:45	Brut / Gross	48,640
10/24/2018	11:05:40	Tare	40,420
		Net	8,220

Produits et ajustements / Accepted Commodities and Adjustments

Produits / Commodities	Brut / Gross	Tare	Net avant / before	Ajustements / Adjustments	Déduction / Deduct.	Net	Contrat / Contract
TOLE	48,640	40,420	8,220	Terre, saleté / Dirt	1,000	7,220	
Grand total	48,640	40,420	8,220		1,000	7,220	

**AIM Recyclage Laval**

Division de la Compagnie Américaine de Fer & Métaux inc.
2185 Montee Masson
Laval H7E 4P2
Tel: 450-661-8017
Fax: 450-661-2494

**+7170431****BILLET DE PESÉE / SCALE TICKET****Réception / Receiving****Fournisseur / Supplier:** 66704

SANEXEN SERVICES
ENVIRONNEMENTAUX INC.
9935 AVENUE DE CATANIA
BUREAU 200
BROSSARD, QUEBEC
14Z 3V4

TPS / GST: 134976687 TVQ / PST: 1015427058

Nom de l'acheteur / Trader name: Pascal Boilard

No de Billet / Ticket No. **7170431(P)****#Camion, Chauffeur / Truck#, Driver** TCQU0000012**#Conteneur / Container#****#Réf.****#Sceau / Seal#****Route / Run****Net** 644

Date		Poids / Weights (lb)	
10/24/2018	11:10:43	Brut / Gross	54,740
10/24/2018	11:45:00	Tare	40,820
		Net	13,920

Produits et ajustements / Accepted Commodities and Adjustments

Produits / Commodities	Brut / Gross	Tare	Net avant / before	Ajustements / Adjustments	Déduction / Deduct.	Net	Contrat / Contract
TOLE	54,740	40,820	13,920			13,920	
Grand total	54,740	40,820	13,920			13,920	

**AIM Recyclage Laval**

Division de la Compagnie Américaine de Fer & Métaux inc.
2185 Montee Masson
Laval H7E 4P2
Tel: 450-661-8017
Fax: 450-661-2494

**+7170783****BILLET DE PESÉE / SCALE TICKET****Réception / Receiving****Fournisseur / Supplier:** 66704

SANEXEN SERVICES
ENVIRONNEMENTAUX INC.
9935 AVENUE DE CATANIA
BUREAU 200
BROSSARD, QUEBEC
14Z 3V4

TPS / GST: 134976687

TVQ / PST: 1015427058

Nom de l'acheteur / Trader name: Pascal Boilard

No de Billet / Ticket No. **7170783(P)**

#Camion, Chauffeur / Truck#, Driver TCQU 000011

#Conteneur / Container#

#Réf.

#Sceau / Seal#

Route / Run

Net 644

Date		Poids / Weights (lb)	
10/25/2018	10:07:58	Brut / Gross	62,780
10/25/2018	10:36:49	Tare	41,340
		Net	21,440

Produits et ajustements / Accepted Commodities and Adjustments

Produits / Commodities	Brut / Gross	Tare	Net avant / before	Ajustements / Adjustments	Déduction / Deduct.	Net	Contrat / Contract
NO. 1 H.M.S. O/S - (SURDIMENSIONNÉ)	62,780	41,340	21,440			21,440	
Grand total	62,780	41,340	21,440			21,440	

Certificate of Transfer & Disposal

HAZARDOUS WASTE RECEIVER (NUR# 300001)

Date

2020-01-16

Certificate number

19-047

Client Information

Company name:	Kudlik Construction Ltd.
Generator no.:	
Mailing address:	1519 Federal Road Iqaluit, Nunavut X0A 0H0
Contact name:	François Bourassa
Telephone no.:	867-979-1166
Project no.:	QE18-105

Shipping Site Information

Site address:	Resolute Bay Landfill Remediation Resolute, Nunavut X0A 0V0
Contact name:	F. Bourassa
Telephone no.:	418-930-0850

Description of wastes	Quantity	Type of package	Weight (Kg)	Final Disposal Facility	Notes
Contaminated Soil	183	Quatrex	261,710	Horizon Environnement, Grandes-Piles, QC	
Contaminated Soil	24	Quatrex	38,280	Horizon Environnement, Grandes-Piles, QC	
Contaminated Soil	25	Quatrex	39,190	Horizon Environnement, Grandes-Piles, QC	
Transformers, empty, not containing PCBs	4	Units		Arcelor Mittal, Contrecoeur, QC	

Certificate of Transfer & Disposal

HAZARDOUS WASTE RECEIVER (NUR# 300001)

Date

2020-01-16

Certificate number

19-047

Description of wastes	Quantity	Type of package	Volume / Weight	Final Disposal Facility	Notes
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000007-5
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000009-6
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000005-4
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000012-0
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000025-0
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000020-2
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000021-8
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000025-0
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000016-2

Certificate of Transfer & Disposal

HAZARDOUS WASTE RECEIVER (NUR# 300001)

Date

2020-01-16

Certificate number

19-047

Description of wastes	Quantity	Type of package	Volume (L)	Final Disposal Facility	Notes
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000008-0
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000004-9
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000006-0
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000014-1
Metal containing lead-based paint	1	20' marine container		Arcelor Mittal, Contrecoeur, QC	Container TCQU000015-7
Oily Water	1	Tote Tank	900	Covanta Solutions	
Mixed liquid waste	1	Tote Tank	400	Covanta Solutions	
Oil / fuel mix	1	Tote Tank	1,000	Covanta Solutions	

This document certifies that the products listed above were received and disposed of by Qikiqtaaluk Environmental in accordance with laws in effect for the disposal and recycling of dangerous goods.



Jennifer Godin, Director



HORIZON ENVIRONNEMENT INC.
120, Route 155
Grandes-Piles (Québec) G0X 1H0
Tél. : 1-800-545-7657 • (819) 538-3921
Fax : (819) 538-0889

BILLET

N° T.P.S. : 140578741 RT

N° T.V.Q. : 1017578304

114143

N° DU BILLET :

CHE-3351

N° DU CONTRAT :

402063229

BON DE COMMANDE :

2019-11-27

DATE :

16:39

HEURE ENTRÉE :

16:39

HEURE SORTIE :

Produit (001-C) SOLS CONTAMINÉS CELLULE

No Client SANEXEN-01

(C-3C) CELLULE 3C

ZONE DE DÉCHARGEMENT :

DÉTAIL DES PRIX

POIDS BRUT : 262710 Kg

TARE : 1000 Kg

POIDS NET : 261710 Kg



AUTRES SERVICES

DÉCLARATION DU TRANSPORTEUR :

Je déclare que tous les renseignements ci-dessus sont véridiques et que le contenu de ma cargaison ne contient aucune matière dangereuse tel que défini par le Règlement sur les matières dangereuses du Québec.

Nom _____

(CARACTÈRE D'IMPRIMERIE)

Signature _____

119000

COPIE DU BUREAU

CLIENT

TÉL.

GÉNÉRATEUR

TÉL.

TRANSPORTEUR

TÉL.

SANEXEN SERVICES ENVIRONNEMENTAUX INC.
9995, RUE CHÂTEAUNEUF, ENTRÉE 1, BUREAU 200
BROSSARD, QUEBEC
J4Z 3V4

KUDLIR CONSTRUCTION LTD
RESOLUTE BAY LANDFILL,
RESOLUTE BAY, NUNAVUT
X0A 0V0

TRANSPORTEUR INDÉPENDANT

NO PRÉAVIS

BON DE TRAVAIL

COURTIER

N° D'IMMATRICULATION : (L733562) TRANSPORT NALACO 1980

MANIFEST (Can) CORR CHE-3350

MANIFEST (US)

N° DE CONNAISSANCE :



HORIZON ENVIRONNEMENT INC.
120, Route 155
Grandes-Piles (Québec) G0X 1H0
Tél. : 1-800-545-7657 • (819) 538-3921
Fax : (819) 538-0889 () -

BILLET

N° T.P.S. : 140578741 RT

N° T.V.Q. : 1017578304

CLIENT

SANEXEN SERVICES ENVIRONNEMENTAUX INC.
9935, RUE CHÂTEAUNEUF, ENTRÉE 1, BUREAU 200
BROSSARD, QUEBEC
J4Z 3V4

TÉL.

GENÉRALISTE

KUDLIR CONSTRUCTION LTD
RESOLUTE BAY LANDFILL,
RESOLUTE BAY, NUNAVUT
X0A 0V0

TÉL.

TRANSPORTEUR

TRANSPORTEUR INDÉPENDANT

TÉL.

Produit (001-C) SOLS CONTAMINÉS CELLULE

No Client SANEXEN-01

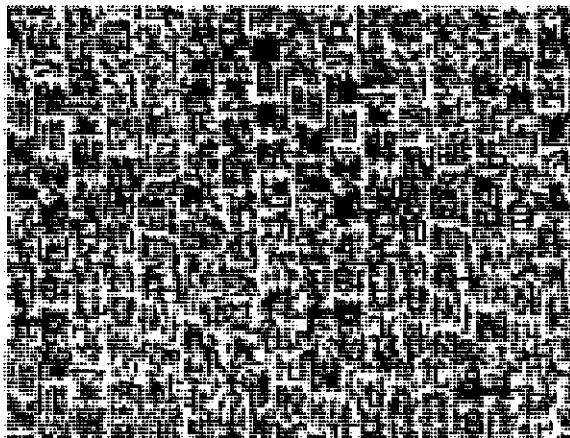
ZONE DE DÉCHARGEMENT : (C-3C) CELLULE 3C

DÉTAIL DES PRIX

POIDS BRUT : 57510 Kg

TARE : 19230 Kg

POIDS NET : 38280 Kg



AUTRES SERVICES

119371

DÉCLARATION DU TRANSPORTEUR :

Je déclare que tous les renseignements ci-dessus sont véridiques et que le contenu de ma cargaison ne contient aucune matière dangereuse tel que défini par le Règlement sur les matières dangereuses du Québec.

Nom ED DIOTTE

(CARACTÈRE D'IMPRIMERIE)

Signature [Signature]

COPIE DU BUREAU



HORIZON ENVIRONNEMENT INC
120, Route 155
Grandes-Piles (Québec) G0X 1H0
Tél. : 1-800-545-7657 • (819) 538-3921
Fax : (819) 538-0889 () -

BILLET

N° T.P.S. : 140578741 RT

N° T.V.Q. : 1017578304

CLIENT

SANEXEN SERVICES ENVIRONNEMENTAUX INC.
9935, RUE CHÂTEAUNEUF, ENTRÉE 1, BUREAU 200
BROSSARD, QUEBEC
J4Z 3V4

TÉL.

GENERATEUR

KUDLIR CONSTRUCTION LTD
RESOLUTE BAY LANDFILL,
RESOLUTE BAY, NUNAVUT
X0A 0V0

TÉL.

TRANSPORTEUR

TRANSPORTEUR INDÉPENDANT

TÉL.

N° DU BILLET : 114519

N° DU CONTRAT : CHE-3351

BON DE COMMANDE : 402063229

DATE : 2019-12-12

HEURE ENTRÉE : 08:15

HEURE SORTIE : 09:12

Produit (001-C) SOLS CONTAMINÉS CELLULE

No Client SANEXEN-01

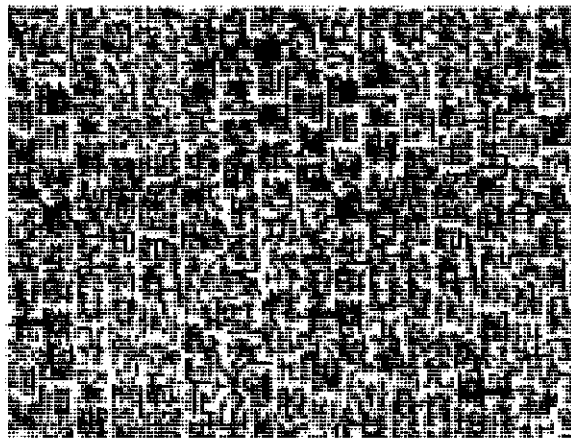
ZONE DE DÉCHARGEMENT : (C-3C) CELLULE 3C

DÉTAIL DES PRIX

POIDS BRUT : 58070 Kg

TARE : 18880 Kg

POIDS NET : 39190 Kg



AUTRES SERVICES

119376

DÉCLARATION DU TRANSPORTEUR :

Je déclare que tous les renseignements ci-dessus sont véridiques et que le contenu de ma cargaison ne contient aucune matière dangereuse tel que défini par le Règlement sur les matières dangereuses du Québec.

Nom Phil Meunier

(CARACTÈRE D'IMPRIMERIE)

Signature [Signature]

COPIE DU BUREAU