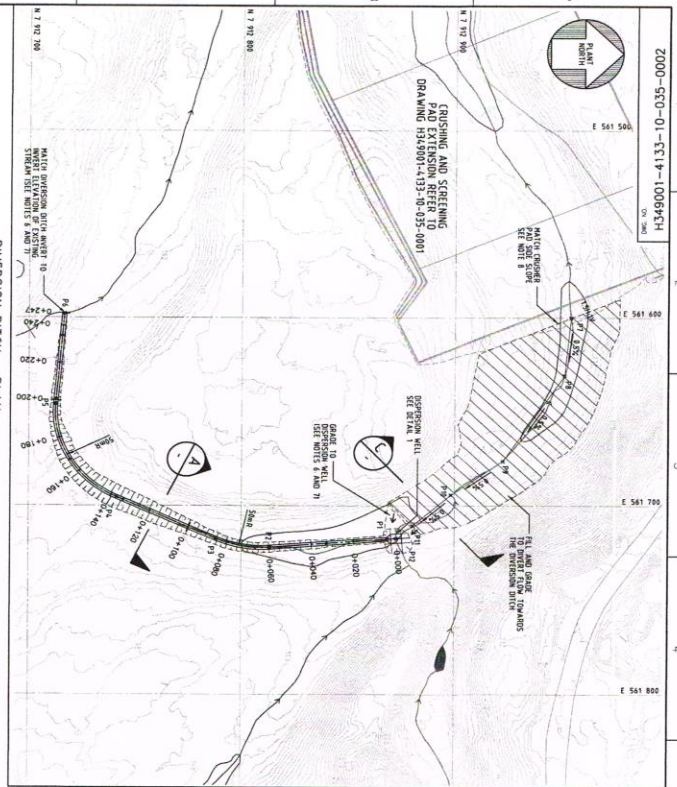
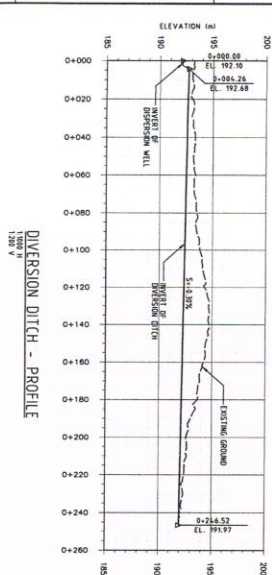


MARY RIVER DRAWINGS

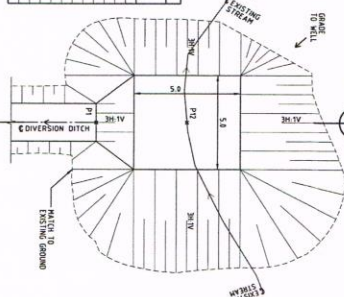


DIVERSION DITCH - PLAN



DIVERSION DITCH - PROFILE

POINT #	NORTHING	EASTING	PG. EL.	PG. EL. EXCAV.
P1	79408.52	54897.45	192.52	180.00
P2	79408.52	54897.45	192.52	180.00
P3	79408.52	54897.45	192.52	180.00
P4	79408.52	54897.45	192.52	180.00
P5	79408.52	54897.45	192.52	180.00
P6	79408.52	54897.45	192.52	180.00
P7	79408.52	54897.45	192.52	180.00
P8	79408.52	54897.45	192.52	180.00
P9	79408.52	54897.45	192.52	180.00
P10	79408.52	54897.45	192.52	180.00
P11	79408.52	54897.45	192.52	180.00
P12	79408.52	54897.45	192.52	180.00



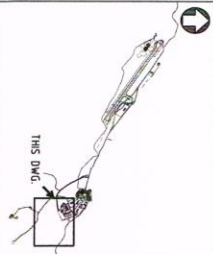
DIVERSION DITCH DETAIL

TYPICAL FILL SECTION

DIVERSION WELL SECTION

TYPICAL DIVERSION DITCH SECTION

KEY PLAN



NOTES

1. THE DIVERSION DITCH IS SHOWN IN THE ATTACHED 2000-SE0-01-ELI-10066EH.
2. THE DIVERSION DITCH IS SHOWN IN THE ATTACHED 2000-SE0-01-ELI-10066EH.
3. THE DIVERSION DITCH IS SHOWN IN THE ATTACHED 2000-SE0-01-ELI-10066EH.
4. THE DIVERSION DITCH IS SHOWN IN THE ATTACHED 2000-SE0-01-ELI-10066EH.
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16. THE DIVERSION DITCH IS SHOWN IN THE ATTACHED 2000-SE0-01-ELI-10066EH.
17. THE DIVERSION DITCH IS SHOWN IN THE ATTACHED 2000-SE0-01-ELI-10066EH.
18. THE DIVERSION DITCH IS SHOWN IN THE ATTACHED 2000-SE0-01-ELI-10066EH.
19. THE DIVERSION DITCH IS SHOWN IN THE ATTACHED 2000-SE0-01-ELI-10066EH.
20. THE DIVERSION DITCH IS SHOWN IN THE ATTACHED 2000-SE0-01-ELI-10066EH.

FOR CONSTRUCTION

Beafield

MARY RIVER PROJECT

MINE SITE
CRUSHER PAD DIVERSION DITCH
PLAN, PROFILE AND SECTIONS

DATE: 10/05/2013
DRAWN BY: J. H. HATCH
CHECKED BY: J. H. HATCH
APPROVED BY: J. H. HATCH

PROJECT NO.: 2000-SE0-01-ELI-10066EH
SHEET NO.: 1
TOTAL SHEETS: 1

DATE: 10/05/2013
DRAWN BY: J. H. HATCH
CHECKED BY: J. H. HATCH
APPROVED BY: J. H. HATCH

DATE: 10/05/2013
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APPROVED BY: J. H. HATCH



KTV PLAN

LEGEND

- ROAD
- EXISTING STRADA
- CONTINUING OF STRADA
- TOP OF SLOPE
- VALLEY SLOPE
- PROPOSED GRADE ELEVATION
- LOWER TOP ELEVATION
- LOWER RISE ELEVATION
- SUBGRADE ELEVATION
- REGION GRADE ELEVATION
- DRAINAGE SLOPE

NOTES

1. TOPOGRAHY PROVIDED BY TERESAHIYU DANALIA INC.

- COORDINATE GRID IS SHOWN IN DTM (HARD) ZONE 17 AND IS IN METERS.
- CONTIGUOUS ARE IN METERS. CONTIGUOUS INTERVAL IS 1.5 METERS.
- ALL POSINGING AND ELEVATIONS SHOWN ARE IN METERS. DENSEST INTERVAL 0.1 METERS.
- PONG MAXIMUM CAPACITY IS 422224 WITH 0.6M FREEBOARD.
- POUND MAXIMUM LEVEL (HML) 10.17 METERS.
- DO NOT COVER CANAL ON UTILITY PIPE CROSSINGS WITH FILLING. ALL UTILITY PIPE CROSSINGS SHALL BE REVEALED AND THE UTILITY PIPE CROSSING AS PER COMPANY REQUIREMENTS IN ITS DIRECTION.

†BaffinlandPAD SEDIMENTATION POND
WORKS & DRAINAGE PLAN

SCALE	DWG. NO.	REV.
1:250	H349001-4385-10-035-0001	0
OR AS NOTED		
ORIGINAL SHEET SIZE: ISO A1 (841 x 594)		

4.0 MILNE INLET

4.01 General

There are still changes taking place at Milne Inlet, even since our last inspection in July/August of this current year.

There is now a B train fuelling facility containment, designed by our office, under construction.

Since last season, the large landfarm and contaminated snow containment facility have been completed and a new hazardous waste storage containment has been constructed near the loading area. As well, sediment ponds at the shore that were under construction last season are now operational.

Since our last review, in July/August, these facilities, are all fully functional.

4.02 Hazardous Waste Storage (MP-HWB-3, and MP-HWB-4)

General Conditions

This particular structure has been constructed as a two-cell structure.

Due to an excess of hazardous waste in the two-cells, a third temporary cell had been constructed for the very short term. This temporary cell has now been decommissioned.

The bladders that had been present in the two cells during our July/August review, have now been removed.

A new hazardous waste storage facility has now been constructed near the loadout area for storing hazardous waste to be shipped out and is in full operation at this time.

Stability

There is water ponding in both cells of the original structure confirming the integrity of the liner at this time.

Our review of the area around the dykes, at the base of the slopes, showed no sign of seepage. The structure is considered stable.

Recommendations

We have no recommendations with respect to the use of these two cells at this time.

4.03 Fuel Tank Farm

General Conditions

Since both 2012 and 2013 the fuel tank farm has been expanded considerably with the addition of a number of new tanks.

At the time of our last inspection in 2014, the containment structure had been put in place for the entire tank farm and all tanks were in place, as is the case at this time.

We note that the sump placed in the containment is located at the high end of the containment. There is water ponding in the low end of the containment. Water has been pumped from the low end of the containment since our review in July/August and there is considerably less water in the containment

Stability

We have minor water ponding at the low end of the containment confirming the integrity of the liner.

Recommendations

We recommend that a sump be considered at the low point at the north end of the containment, to better facilitate the removal of water to minimize the treatment of water should a minor spill occur within the containment.

4.04 New Effluent Pond (PWSP)

General Conditions

This pond was put into operation in 2014.

The containment pond was operating at approximately thirty percent of capacity at the time of our inspection.

Stability

We noted no sign of weakness in any of the construction.

Recommendations

We have no recommendations with respect to the use of this structure having no negative comments on the construction of this structure.

4.05 Landfarm Containment

General Conditions

The landfarm containment is complete except for soil cover in the area of the sump.

The landfarm was constructed to accommodate approximately 9000 m³ of oil contaminated soil and seasonal water accumulations.

At the time of our inspection the landfarm was in operation and sorting of contaminated materials had taken place.

The landfarm had been put into operation at the time of our September review last season.

It appears as though the structure has been constructed in accordance with good construction practice for structures of this type.

Stability

The structure appears stable as constructed.

Recommendations

We recommend that the remaining dyke structure, without protective cover over it, be covered as per the design drawings. This however, is not an absolute requirement..

4.06 Contaminated Snow Containment

General Conditions

The construction of the contaminated snow containment structure is contiguous with the east end of the landfarm.

It appears as though the structure has been constructed in accordance with good construction practice for structures of this type.

The snow containment facility has a containment volume of 929 m³ based on estimates of volume provided by the owner and only a small percentage of the capacity is utilized. Hydrocarbon contaminated water was treated and discharged to the environment in the late summer by means of a portable oily water treatment plant.

The structure has been constructed with good quality control.

Stability

The structure appears stable as constructed.

Recommendations

We have no recommendations with respect to this construction at this time.

4.07 Sediment Pond East

General Conditions

The construction of this sedimentation pond for drainage from the east side of the site is complete.

The basin is shaped and the liner has been installed throughout the basin from inlet to the berms on the north side of the basin.

There has been no cover placed over the liner to this point and rip rap has not yet been placed in the outlet weir.

Our comments remain the same as in our July/August report.

Stability

We have concerns over the stability of the liner and recommend more soil ballast on the south edge and possibly tire ballast over the liner which appears subject to wind damage. This shall provide a function for used tires.

A review of the south edge of the liner shows very minor movement in the liner at the south edge probably due to wind uplift of the liner. This was forecast in our July/August report.

Recommendations

We recommend review of the use of a ballast (possibly tires) on the exposed liner at the dyke to prevent wind uplift.

4.08 Sediment Pond West

General Conditions

The construction of this sedimentation pond for drainage from the west side of the site is nearing completion except for the west end on the south side where the liner must still be “tucked” in as set out in our July/August report.

Stability

We have some concern over the stability of the liner on this pond as we have with the east pond and further recommend that used tire ballast be considered.

Recommendations

Complete construction at the south side, west end, by “tucking” the edge of the liner under the soil.

4.09 Quarry

General Conditions

The quarry was inactive at the time of our review and all blasted rock had been removed from the quarry site.

Stability

Rock faces appear stable.

Recommendations

We have no recommendations to be made with respect to the quarry.

4.10 Loading Area Contaminated Storage (Now MP-HWB-1)

General Conditions

This area has been constructed near the loading dock to facilitate assembly of hazardous materials for shipment out. It appears that all material from the temporary hazardous storage containment have now been assembled here.

The travel over the berm that had taken place over the north berm has been dealt with since our last review in July/August and this is not expected to be a future problem.

Construction appears to have taken place in accordance with standardized drawings prepared in the past.

Stability

Construction appears stable.

Recommendations

We have no recommendations with respect to this structure.

4.11 Fueling Facility Containment

General Condition

A new fueling facility for the fueling of B trains is under construction utilizing design drawings prepared by our office.


All work is proceeding well and work conforms to the design drawing which is included in this report.

The liner utilized in the construction is a one piece liner, which minimizes the possibility of failure.

4.12 Overview

Decommissioning is underway of the former structures constructed of sand and gravel and new long term structures are recently completed or under construction utilizing crushed quarried material with a projected long term serviceability.

Respectfully submitted,



Barry H. Martin, P. Eng., MRAIC



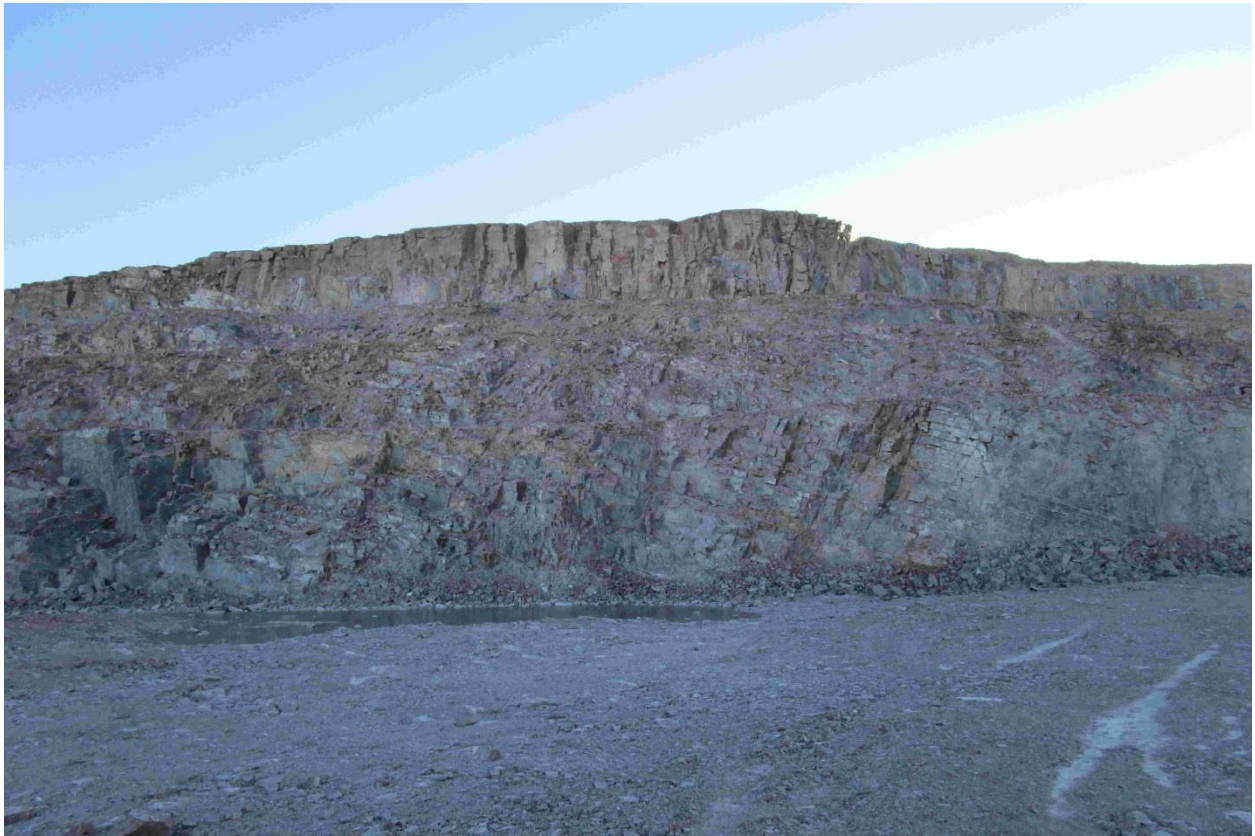
MILNE INLET PHOTOS



Contaminated Snow Containment



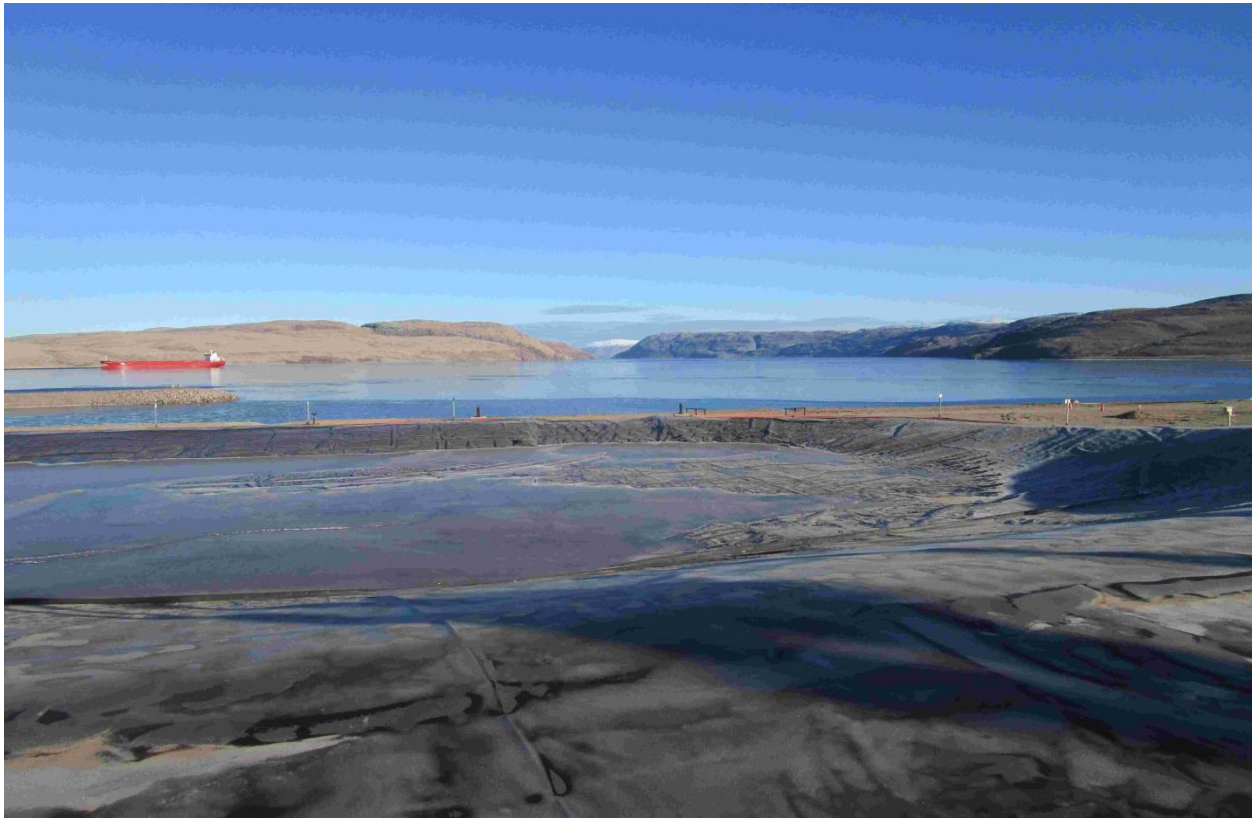
Land farm Containment



Milne Inlet Quarry



Sediment Pond West



Sediment Pond East



Indicates Movement in Anchorage at Sediment Pond East



Loading Area Containment Storage MP-HWB-1



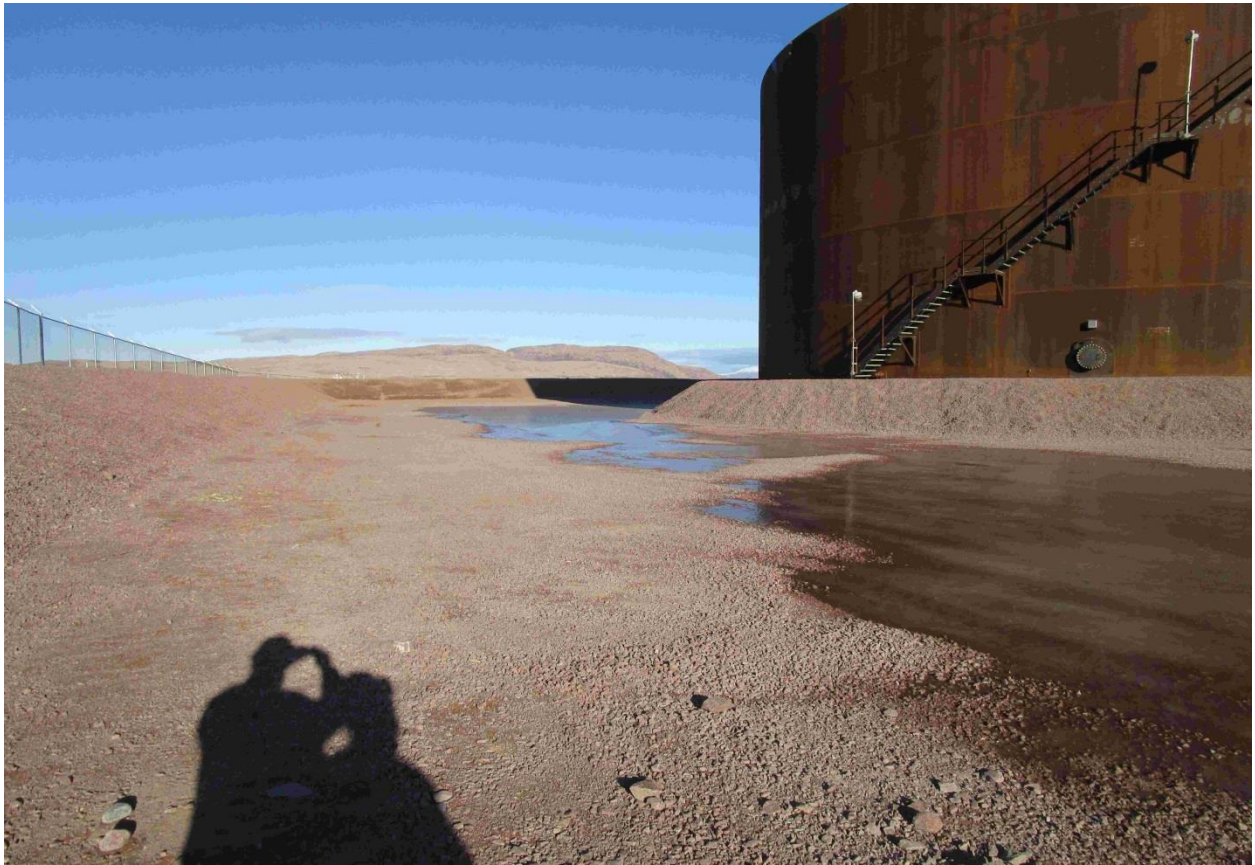
Hazardous Waste Containment MP-HWB-4



Hazardous Waste Containment MP-HWB-3



Polishing Waste Stabilization Pond



Steel Fuel Tank Containment



New fuel Dispensing Containment

MILNE INLET DRAWINGS

