

March 27, 2014

Ryan Barry  
Executive Director  
Nunavut Impact Review Board  
P.O. Box 1360  
Cambridge Bay, NU X0B 0C0

Dear Ryan:

**Project No: NIRB No.: 04DN001 2013 Annual Report**

**Regarding: DYE-M, Cape Dyer DEW Line Site**

AECOM Canada Ltd. is providing the following information as per the requirements listed for the annual report. The information is being provided on behalf of Defence Construction Canada and the Department of National Defence.

***a.) Summary of activities undertaken for the year, including but not limited to the amount of contaminated soil removed from the site.***

Construction work that was completed during the 2013 construction period includes;

- The Upper Site Tier II Disposal Facility
- The Upper Site Non-Hazardous Waste Landfill
- The Lower Site Tier II Disposal Facility
- The Landfarm
- Burrow Areas
- Temporary and PCB Storage Areas
- Processing Areas
- Wastewater Treatment and Incineration
- Construction Activities: contaminated soils, landfill excavations, hazardous material work and demolition

The following is a detailed summary of the effort and activities that were undertaken by Qikiqtaaluk Logistics Inc. (the contractor) at the DYE-M, Cape Dyer DEW Line site:

Lower Site Non-Hazardous Waste Landfill

- Non-hazardous waste materials, including waste from contaminated soil excavations, debris removal and demolition activities have been placed inside the facility of Cell 2.
- One complete waste layer and one partial waste layer were placed within Cell 2 and stabilized with Type 6 intermediate cover.

- Construction of the Type 2 granular cover layer on Cell 1 of the facility was completed in 2012; additional fill and compaction of the Cell 1 perimeter berms were completed this year.
- Additional Type 2 Granular Fill was constructed on Cell 1 and the Type 2 cover layer was constructed on Cell 2. The Type 2 Granular Fill was sourced from Borrow Area 4.

#### Upper-Site Non-Hazardous Waste Landfill:

- Reshaping around the landfill perimeter.
- Removal of access ramps.
- Placement of Type 1 Granular Fill to complete closure of the landfill.

#### Lower Site Tier II Disposal Facility:

- Activities at the Tier II Disposal Facility included installation of the geomembrane cover and placement of granular cover (Type 2) on Cell 1 and 2, removing temporary access roads, reshaping of the perimeter and closure of the facility.
- Replacement Type 5 Granular Fill was added to the inside of the slope of the west berm near the northwest corner (Point C05) to account for some previously being added in 2012.

#### Upper Site Tier II Disposal Facility:

- Installation of thermistor instrumentation
- The completion of the Type 2 Granular Fill cover layer
- The removal of access ramps
- The placement of Type 1 Granular and reshaping around the perimeter to complete closure of the facility

#### Thermistors and Monitoring Wells

- Two PVC casings for the vertical Thermistors were installed during the 2013 construction season
- During the 2013 construction season, no groundwater monitoring wells were installed. Groundwater monitoring wells at the Landfarm were decommissioned as specified.

#### Landfarm

- Treatment of hydrocarbon contaminated soils and
- Monitoring berm performance

#### General

- Reshaping was completed on the West Landfill (West Lobe) area, the West Landfill (East Lobe) Drainage Swale Area, West Landfill Materials Processing Area (MPA), Lower Site POL Storage Area containment berms, Powerhouse Landfill area, W19G Containment Berm, various site access roads, Lower Site wastewater holding basins and the perimeters of the landfills.
- Regrades: Additional Type 1 Granular Fill was added at the West Landfill (West Lobe and East Lobe) in order to achieve the specified thickness. An erosion scour was identified at the West Landfill (West Lobe) during the 2012 construction season which required the placement of Type 1 granular material in the 2013 construction period.
- Concrete Foundation Regrading was conducted on the remains from the structure demolition with Type 2 Granular Fill at the Lower Site Heated Vehicle Storage, Lower Site Garage, Lower Site W19G Tank Foundation and the Upper Site Abandoned Powerhouse.

- The construction camp sewage lagoons were decommissioned at the end of the season.
- Monitoring Activities:
  - Wastewater sampling was conducted weekly at the sewage lagoon
  - Drinking water sampling was conducted weekly at the Construction Camp sources

***b.) Work plan for the following year.***

Work to be completed in 2014 includes: removal of the contractors construction camp, reshaping of the camp pad area and removal of the roadway culverts; reshaping of the soil stockpile south of the hangar; and completion of the airstrip repairs.

***c.) Update on the extent of contamination on-site and supporting documentation.***

An exhaustive site investigation was completed in 1997, 1998 and 2000 to determine all areas of contamination prior to the preparation of the specifications and drawings.

***d.) Wildlife encounters and actions/mitigation taken.***

Polar bears were identified on and around the site throughout the season; however, no mitigative actions were required other than awareness and avoidance. Other wildlife and avifauna observed include Arctic fox, Arctic hare, snow buntings, snow geese and ravens.

***e.) Summary of local hires and initiatives.***

The estimated percentage of Inuit in the workforce at DYE-M averaged 71% in 2013.

***f.) Summary of community consultations undertaken and results (if any).***

The results of the community meetings held by DCC were submitted with the Project Description submission. The contractor typically holds a project start up meeting each year prior to the start of construction; however, a copy of the presentation has not been received.

***g.) Summary of site visits by inspectors with results and follow-up actions.***

N/A

***h.) Summary of site visits with community members.***

N/A.

***i.) Site photos and updated maps.***

See attached.

***j.) Number of barges utilized.***

There were a total of four barges for the duration of the 2013 construction period. The first trip happened in early August and removed containerized regulated waste. The other three barge trips occurred in September for demobilization of equipment and camps.

***k.) Issues related to monitoring, including updates to the plan.***

To date, there have been no issues or updates to the monitoring plan.

***l.) Revisions to the abandonment and restoration plan.***

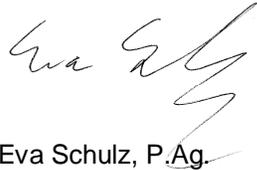
The entire project is an abandonment and restoration plan. There are currently no updates to the plan.

***m.) Summary of how it has complied with all project Terms and Conditions and how the terms and conditions are achieving their purpose.***

The Terms and Conditions supplied by NIRB are consistent with the requirements of the Project Description and Screening Report submitted by DCC, which were based on the specifications and drawings. The specifications and drawings are part of the contract package that the contractor must adhere to, and therefore, contractor compliance with the contract documents ensures compliance with the NIRB Terms and Conditions. DCC has a Contract Manager on-site for the duration of the construction season to ensure compliance with the contract.

We trust the information provided is sufficient. Please feel free to contact the undersigned if you have any questions or comments.

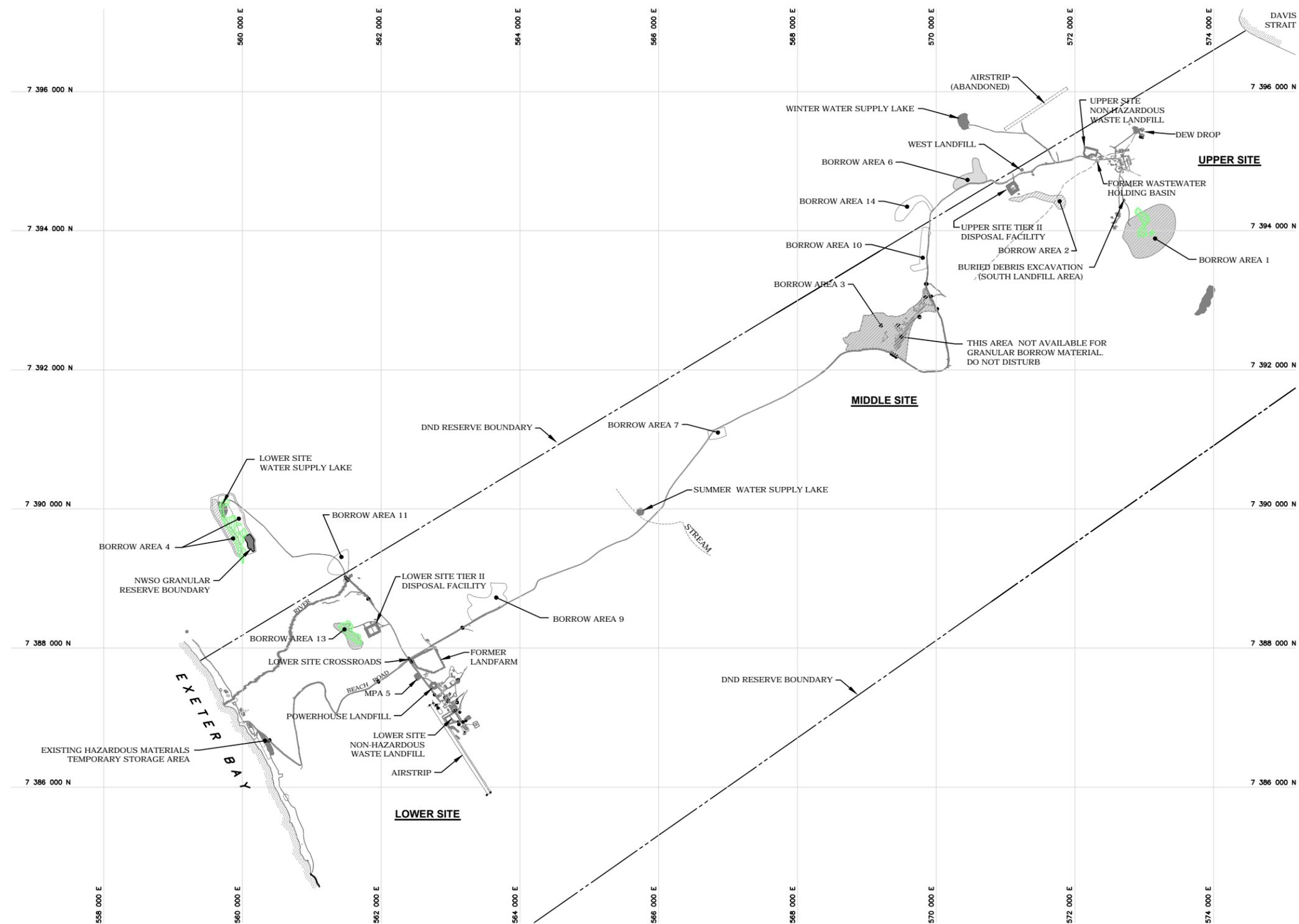
Sincerely,  
**AECOM Canada Ltd.**



Eva Schulz, P.Ag.  
Senior Environmental Scientist  
Eva.Schulz@aecom.com

EMS  
Encl. Updated Site Plans; Selected Site Photos  
cc: Tamara Van Dyck, DCC

L:\MarketSector\Earth & Water\Projects\0717 - DCLUDYE.M2013 Geotech QA Report\Winnipeg CAD Figures\10996027.011.Figure\_1.dwg [FIGURE 1] November 04, 2013 - 10:37:18 am (BY: MAHE, CHRIS)



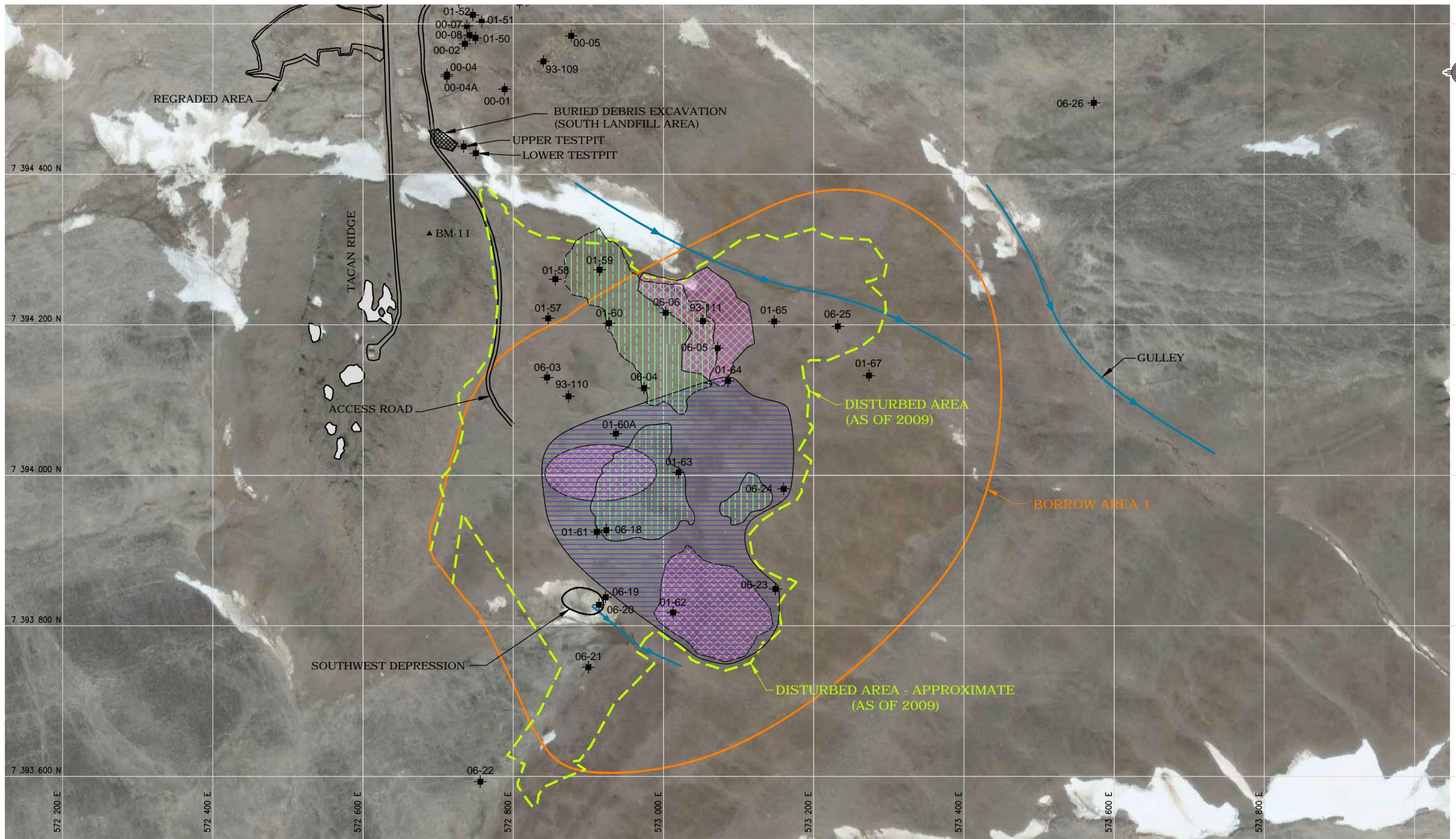
- LEGEND:**
- WORKED BORROW AREA IN 2011
  - WORKED BORROW AREA IN 2012
  - WORKED BORROW AREA IN 2013

- NOTES**
1. DRAWING NOT TO SCALE
  2. FIGURE UPDATED FROM EBA 2011 GEOTECH QA SUMMARY REPORT



DEW LINE CLEAN UP PROJECT DYE-M, CAPE DYER, NU				
GENERAL SITE PLAN BORROW SOURCES LOCATIONS				
PROJECT NO. 60263380	DWN CM	CKD DM	REV 0	<b>Figure 1</b>
OFFICE EDM	DATE October 2013			

L:\MarketSector\Earth & Water\Projects\07171\_DLC\DWG\M2013\_Geotech\_QA\_Report\Winnipeg CAD Figures\10996027.011\_Figure\_2\_3\_7\_11\_U.dwg [FIGURE 2] November 04, 2013 - 10:41:03 am (BY: MAHE, CHRIS)



**LEGEND:**

- DRAINAGE

- SPECIFIED BORROW LIMITS

- DISTURBED AREA (AS OF 2009)

- APPROXIMATE 2011 BORROW DEVELOPMENT AREA

- TESTPIT (EXCAVATION YEAR DENOTED BY FIRST TWO DIGITS OF TESTPIT ID)

- GROUND TEMPERATURE CABLE LOCATION

- MONITORING WELL LOCATION

BM-8 ▲ - BENCHMARK

- APPROXIMATE 2012 BORROW DEVELOPMENT AREA

- APPROXIMATE 2013 BORROW DEVELOPMENT AREA

**NOTES:**

1. SATELLITE IMAGE FROM GOOGLE EARTH
2. FIGURE UPDATED FROM EBA 2011 GEOTEH QA SUMMARY REPORT



**DEW LINE CLEAN UP PROJECT  
DYE-M, CAPE DYER, NU**

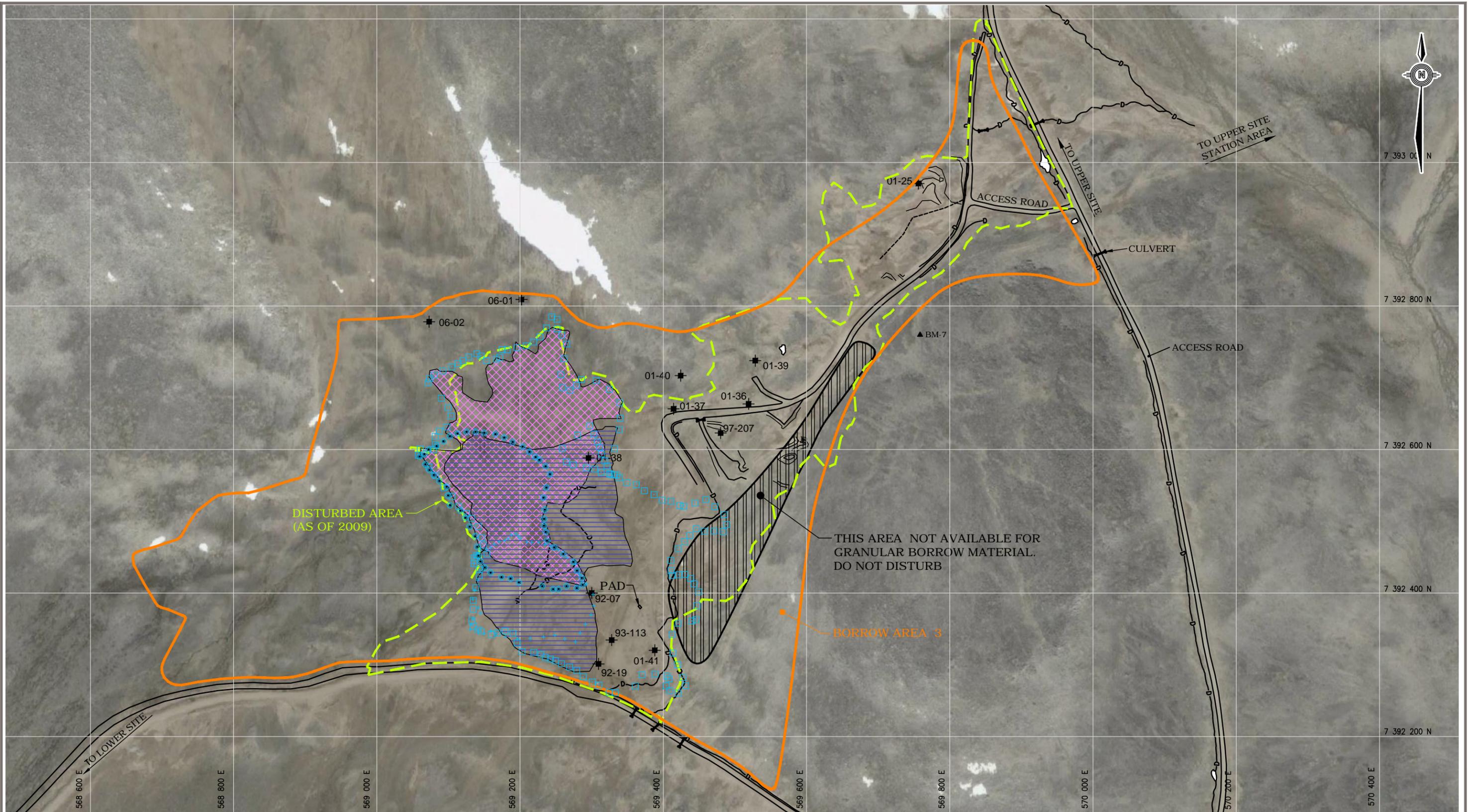
**BORROW AREA 1  
BURIED DEBRIS EXCAVATION  
(SOUTH LANDFILL AREA)**

PROJECT NO. 60263380	DWN CM	CKD DM	REV 0
OFFICE EDM	DATE October 2013		

**Figure 2**



L:\MarketSector\Earth & Water\Projects\07171 DCLUDYE.M2013 Geotech QA Report\Winnipeg CAD Figures\10996027.011.Figure\_4\_M.dwg [FIGURE 4] November 21, 2013 - 4:47:44 pm (BY: MAHE CHRIS)



DISTURBED AREA (AS OF 2009)

THIS AREA NOT AVAILABLE FOR GRANULAR BORROW MATERIAL. DO NOT DISTURB

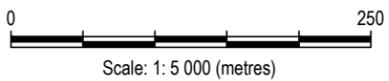
BORROW AREA 3

LEGEND:

- DRAINAGE
- SPECIFIED BORROW LIMITS
- DISTURBED AREA (AS OF 2009)
- APPROXIMATE 2011 BORROW DEVELOPMENT AREA
- TESTPIT (EXCAVATION YEAR DENOTED BY FIRST TWO DIGITS OF TESTPIT ID)
- GROUND TEMPERATURE CABLE LOCATION
- MONITORING WELL LOCATION
- BENCHMARK
- APPROXIMATE 2013 BORROW DEVELOPMENT AREA (NO DEVELOPMENT)
- APPROXIMATE 2012 BORROW DEVELOPMENT AREA

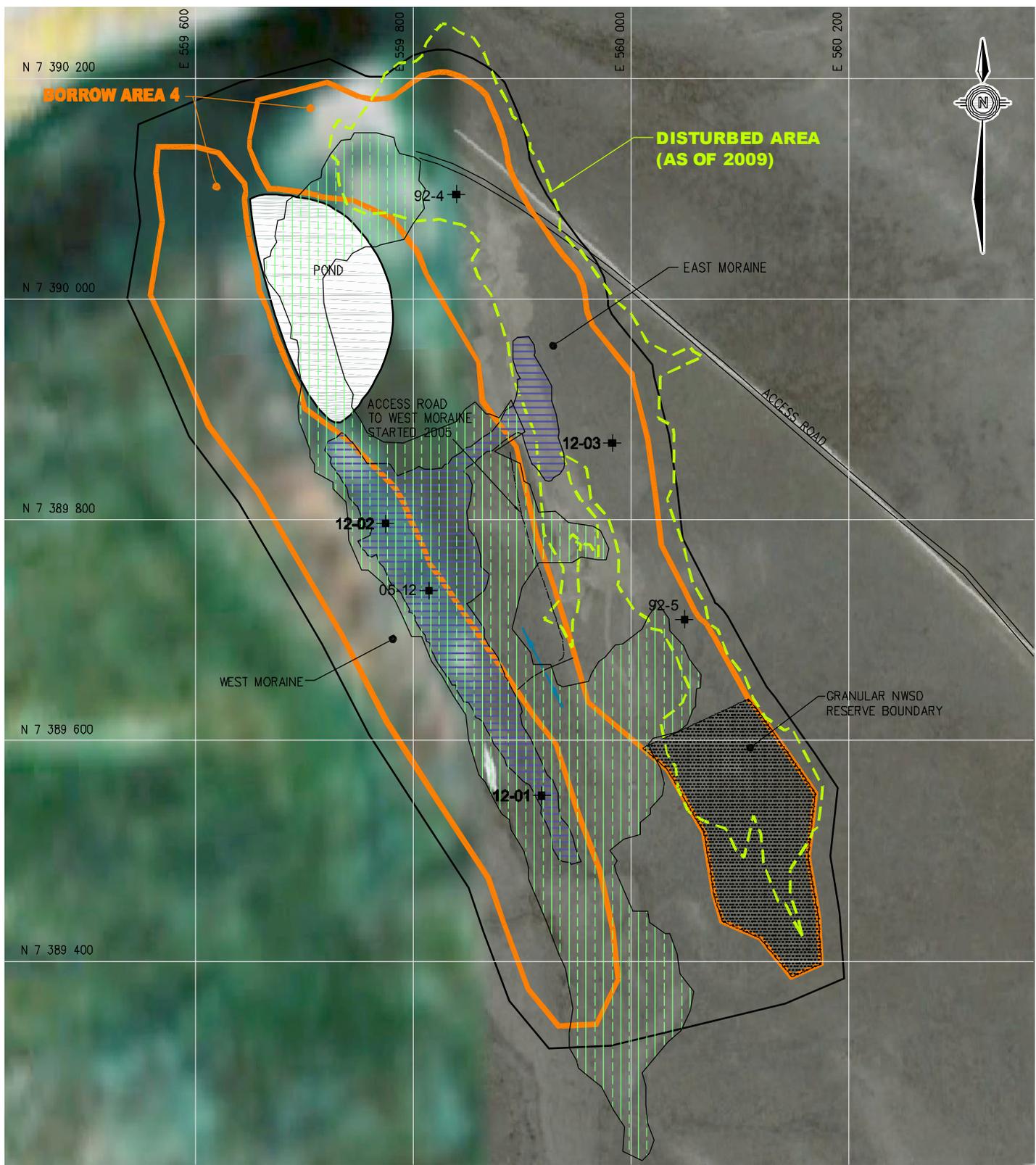
NOTES:

1. SATELLITE IMAGE FROM GOOGLE EARTH
2. FIGURE UPDATED FROM EBA 2011 GEOTEH QA SUMMARY REPORT



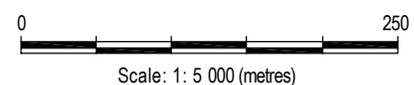
<b>DEW LINE CLEAN UP PROJECT</b>				
<b>DYE-M, CAPE DYER, NU</b>				
<b>BORROW AREA 3</b>				
PROJECT NO. 60263380	DWN CLC	CKD DM	REV 0	<b>Figure 4</b>
OFFICE EDM	DATE November 2012			

L:\MarketSectors\Earth & Water\Projects\01771 DL\CUID\YE M\2013 Geotech QA\Report\Winnipeg CAD\Figures\0595027\011\_Figure\_5.6.8.9.10.12\_L.dwg [FIGURE 5] October 30, 2013 - 4:42:45 pm (BY: MAHE, CHRIS)



**NOTES**

1. SATELLITE IMAGE FROM GOOGLE EARTH
2. FIGURE UPDATED FROM EBA 2011 GEOTEH QA SUMMARY REPORT



**LEGEND:**

	- DRAINAGE
	- SPECIFIED BORROW LIMITS
	- DISTURBED AREA (AS OF 2009)
	- TESTPIT (EXCAVATION YEAR DENOTED BY FIRST TWO DIGITS OF TESTPIT ID)
	- APPROXIMATE 2012 BORROW DEVELOPMENT AREA

**AECOM**

	- APPROXIMATE 2013 BORROW DEVELOPMENT AREA
---	--

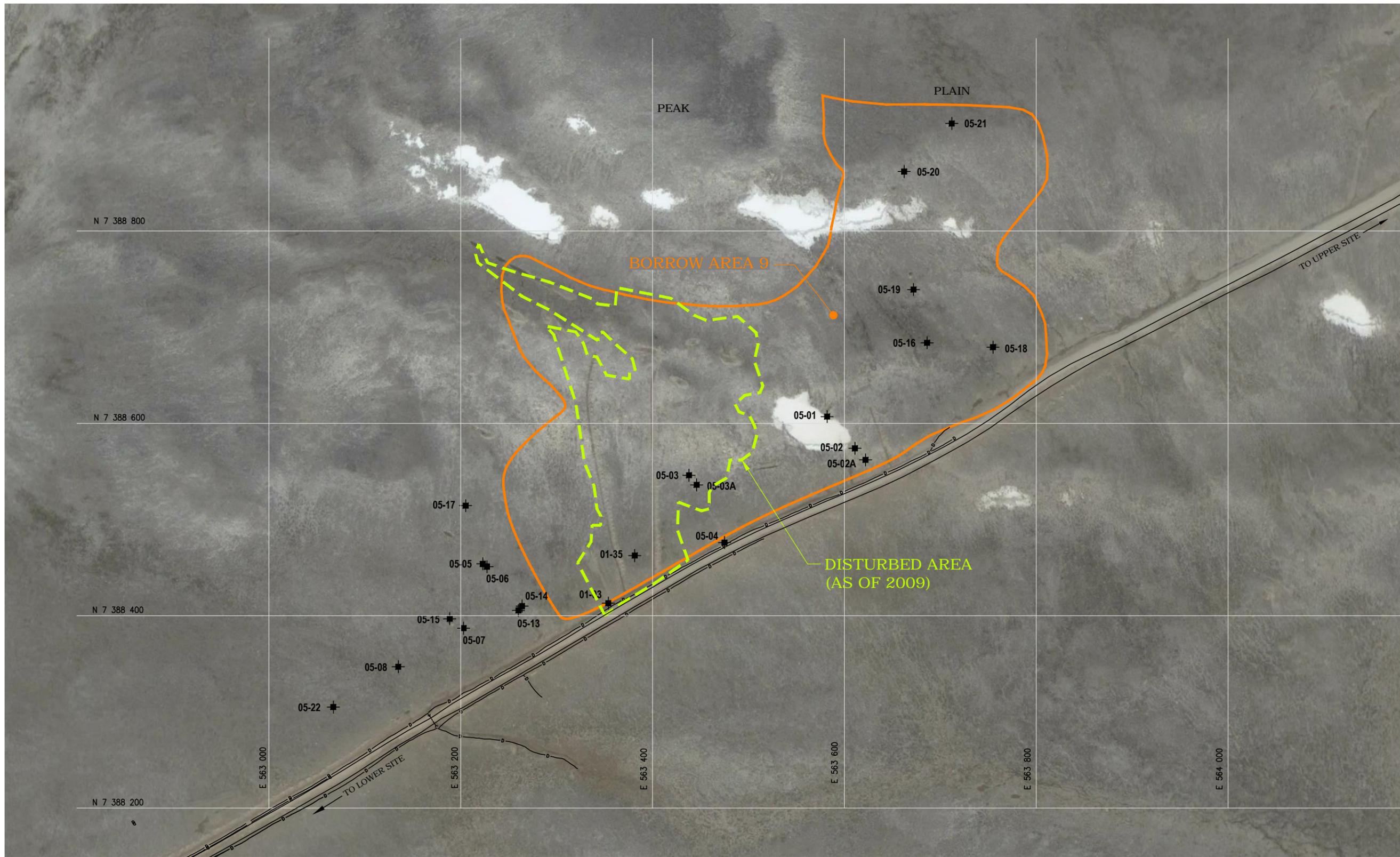
**DEW LINE CLEAN UP PROJECT  
DYE-M, CAPE DYER, NU**

**BORROW AREA 4**

PROJECT NO. 60263380	DWN CM	CKD DM	REV 0
OFFICE EDM	DATE October 2013		

**Figure 5**

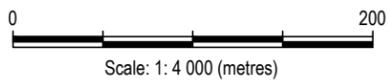
L:\MarketSector\Earth & Water\Projects\07171\_DLCUDYE.M2013\_Geotech\_QA\_Report\Wimipeg CAD Figures\10996027.011\_Figure\_5.6.8.9\_10\_12\_L.dwg [FIGURE 6] November 21, 2013 - 4:50:46 pm (BY: MAHE, CHRIS)



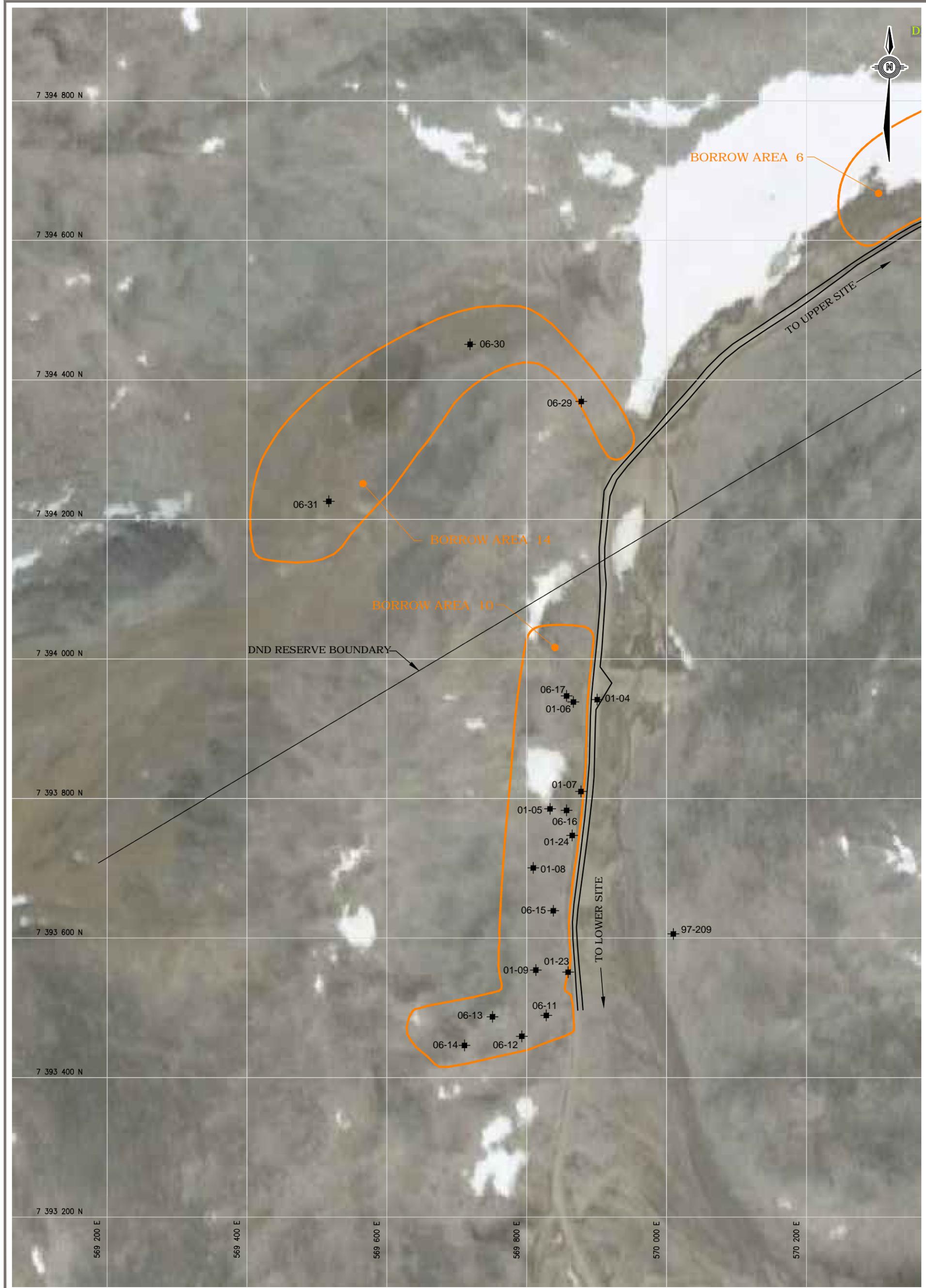
- LEGEND:**
- DRAINAGE
  - SPECIFIED BORROW LIMITS
  - DISTURBED AREA (AS OF 2009)

- TESTPIT (EXCAVATION YEAR DENOTED BY FIRST TWO DIGITS OF TESTPIT ID)
- GROUND TEMPERATURE CABLE LOCATION
- MONITORING WELL LOCATION
- BENCHMARK

- NOTES:**
1. SATELLITE IMAGE FROM GOOGLE EARTH
  2. FIGURE UPDATED FROM EBA 2011 GEOTEH QA SUMMARY REPORT



DEW LINE CLEAN UP PROJECT DYE-M, CAPE DYER, NU				
BORROW AREA 9				
PROJECT NO. 60263380	DWN CLC	CKD DM	REV 0	<b>Figure 6</b>
OFFICE EDM	DATE November 2012			



<b>LEGEND:</b> - DRAINAGE - SPECIFIED BORROW LIMITS - DISTURBED AREA (AS OF 2009) - TESTPIT (EXCAVATION YEAR DENOTED BY FIRST TWO DIGITS OF TESTPIT ID)		<b>NOTES:</b> 1. SATELLITE IMAGE FROM GOOGLE EARTH 2. FIGURE UPDATED FROM EBA 2011 GEOTEH QA SUMMARY REPORT		DEW LINE CLEAN UP PROJECT DYE-M, CAPE DYER, NU				<b>Figure 7</b>
Scale: 1: 5 000 (metres) 		<b>BORROW AREA 10 AND 14</b>		PROJECT NO. 60263380	DWN CLC	CKD DM	REV 0	
				OFFICE EDM	DATE November 2012			

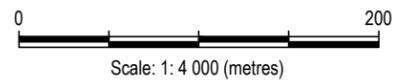
L:\MarketSector\Earth & Water\Projects\07171\_DCLUDYE\_M2013\_Geotech\_QA\_Report\Winnipeg CAD Figures\10996027.011\_Figure\_5.6.8.9\_10\_12\_L.dwg [FIGURE 8] November 21, 2013 - 4:54:28 pm (BY: MAHE, CHRIS)



- LEGEND:**
- DRAINAGE
  - SPECIFIED BORROW LIMITS
  - DISTURBED AREA (AS OF 2009)

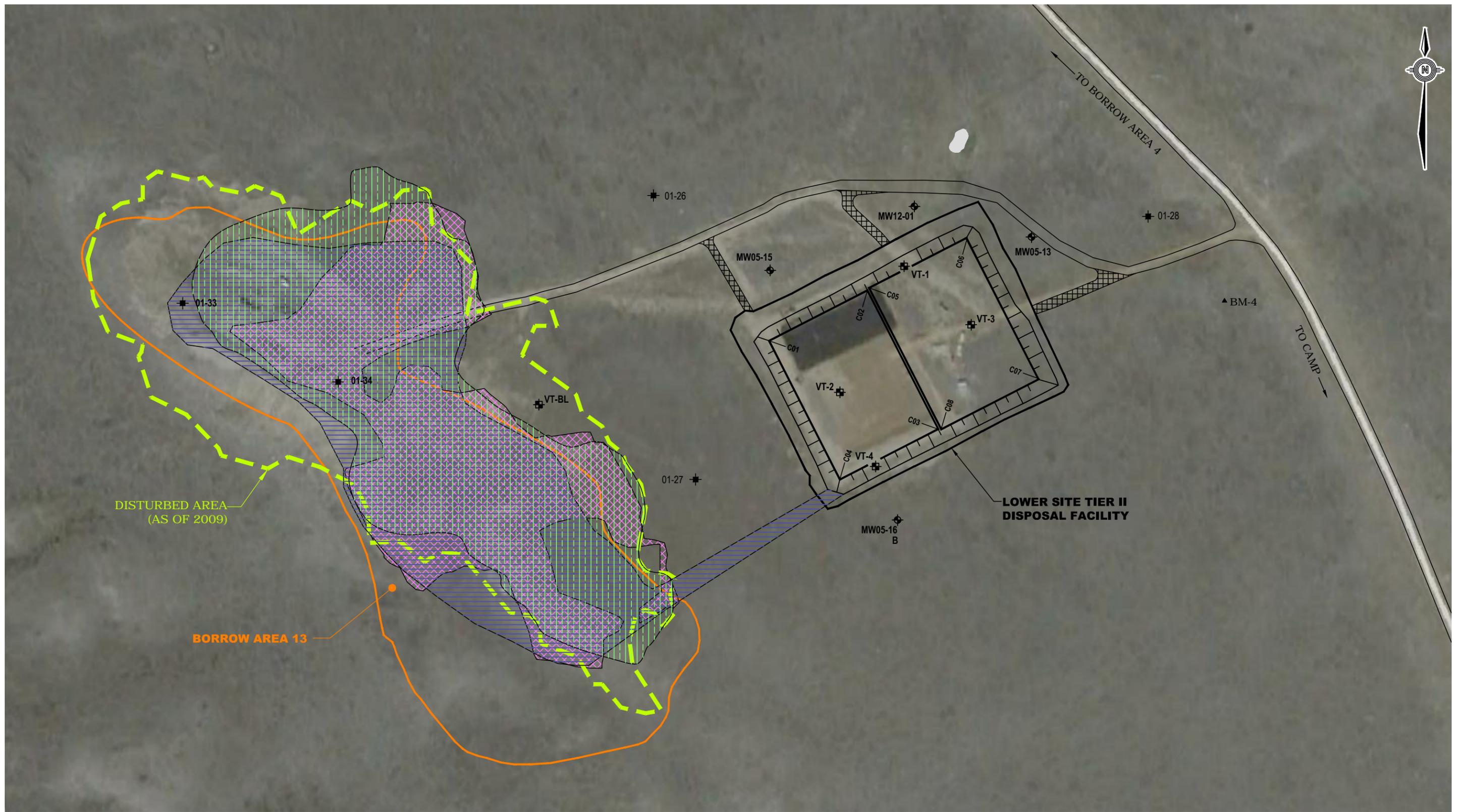
- TESTPIT (EXCAVATION YEAR DENOTED BY FIRST TWO DIGITS OF TESTPIT ID)
- GROUND TEMPERATURE CABLE LOCATION
- MONITORING WELL LOCATION
- BENCHMARK

- NOTES:**
1. SATELLITE IMAGE FROM GOOGLE EARTH
  2. FIGURE UPDATED FROM EBA 2011 GEOTEH QA SUMMARY REPORT



DEW LINE CLEAN UP PROJECT DYE-M, CAPE DYER, NU				
BORROW AREA 11				
PROJECT NO. 60263380	DWN CLC	CKD DM	REV 0	<b>Figure 8</b>
OFFICE EDM	DATE November 2012			

L:\MarketSector\Earth & Water\Projects\0771 - DLCD\DYE.M2013 - Geotech QA Report\Winnipeg CAD Figures\10996027.011 - Figure 5.6.8.9\_10\_12\_1.dwg [FIGURE 9] October 30, 2013 - 4:38:15 pm (BY: MAHE, CHRIS)

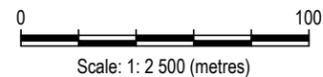


**LEGEND:**

- DRAINAGE
- SPECIFIED BORROW LIMITS
- DISTURBED AREA (AS OF 2009)
- APPROXIMATE 2011 BORROW DEVELOPMENT AREA
- TESTPIT (EXCAVATION YEAR DENOTED BY FIRST TWO DIGITS OF TESTPIT ID)
- GROUND TEMPERATURE CABLE LOCATION
- MONITORING WELL LOCATION
- BENCHMARK
- APPROXIMATE 2012 BORROW DEVELOPMENT AREA
- APPROXIMATE 2013 BORROW DEVELOPMENT AREA

**NOTES:**

1. SATELLITE IMAGE FROM GOOGLE EARTH
2. FIGURE UPDATED FROM EBA 2011 GEOTEH QA SUMMARY REPORT

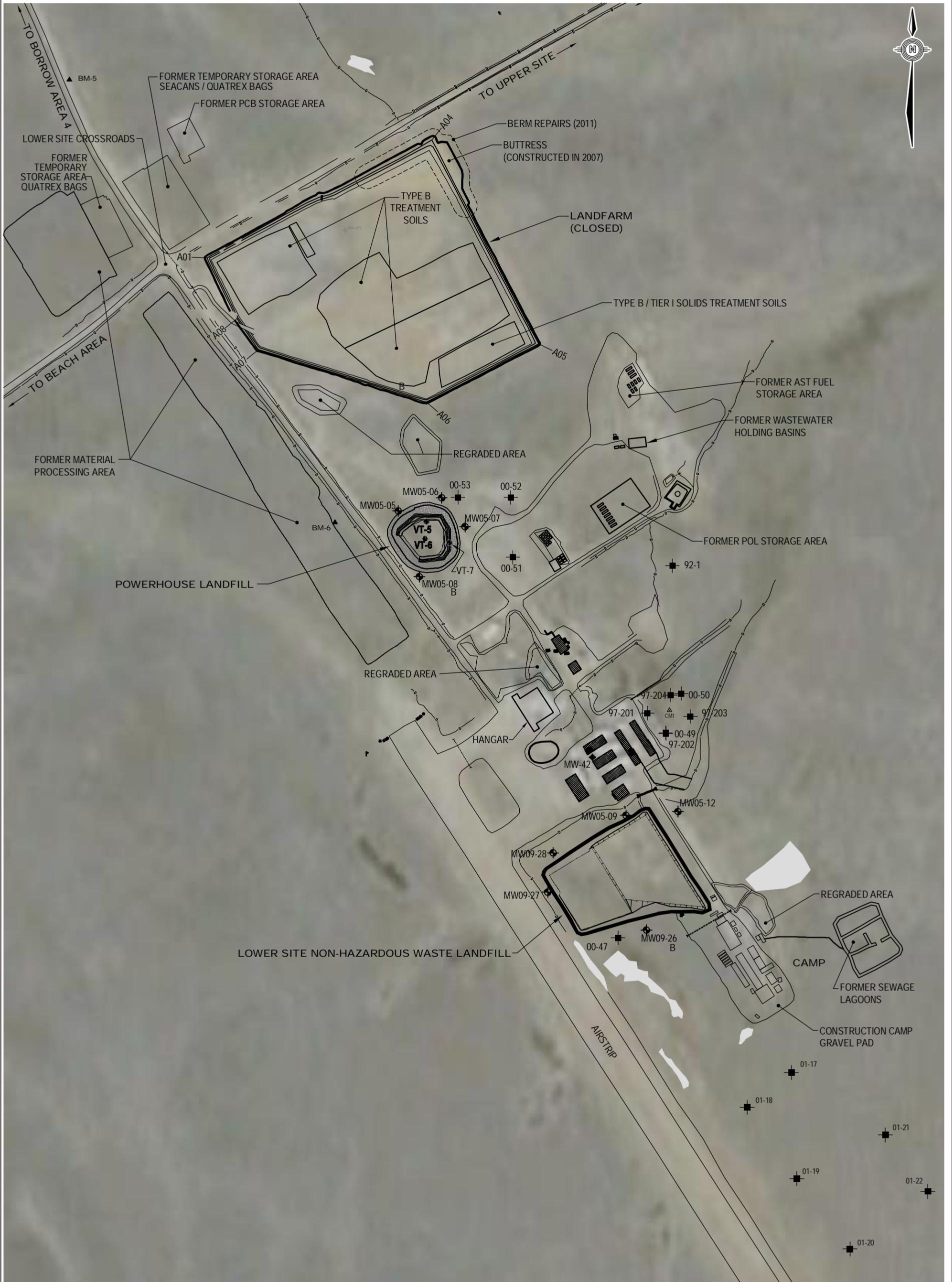


DEW LINE CLEAN UP PROJECT  
DYE-M, CAPE DYER, NU

**BORROW AREA 13**  
**LOWER SITE TIER II DISPOSAL FACILITY**

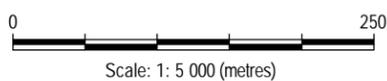
PROJECT NO. 60263380	DWN CM	CKD DM	REV 0
OFFICE EDM	DATE October 2013		

**Figure 9**



**LEGEND:**  
 - DRAINAGE  
 - TESTPIT (EXCAVATION YEAR DENOTED BY FIRST TWO DIGITS OF TESTPIT ID)  
 BM-5 ▲ - BENCHMARK

**NOTES:**  
 1. SATELLITE IMAGE FROM GOOGLE EARTH  
 2. FIGURE UPDATED FROM EBA 2011 GEOTEH QA SUMMARY REPORT



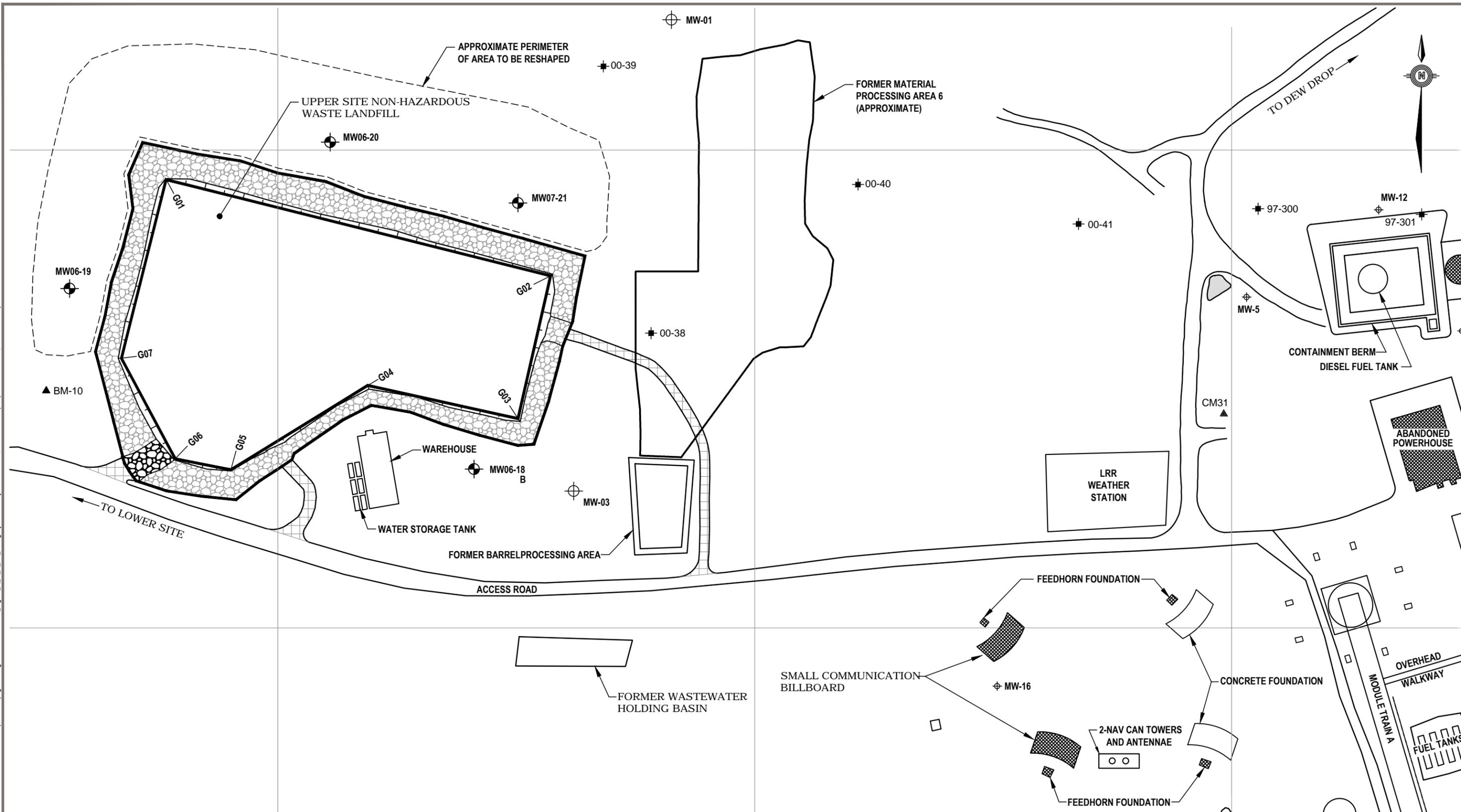
DEW LINE CLEAN UP PROJECT  
 DYE-M, CAPE DYER, NU

LANDFARM  
 LOWER SITE NON-HAZARDOUS WASTE LANDFILL

PROJECT NO. 60263380	DWN CLC	CKD DM	REV 0
OFFICE EDM	DATE November 2012		

Figure 10

L:\MarketSector\Earth & Water\Projects\07171 - DCLUDYE M2012 Geotech QC Report\Winipieg CAD Figures\10995027.011 - Figure 2\_3\_7\_11\_U.dwg [FIGURE 11] November 13, 2012 - 1:08:44 pm (BY: CLOUSTON, CASSANDRA)

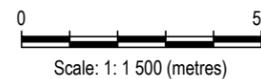


**LEGEND:**

- DRAINAGE
- TESTPIT (EXCAVATION YEAR DENOTED BY FIRST TWO DIGITS OF TESTPIT ID)
- MONITORING WELL LOCATION
- BM-10 - BENCHMARK

**NOTES**

1. FIGURE UPDATED FROM EBA 2011 GEOTEH QA SUMMARY REPORT



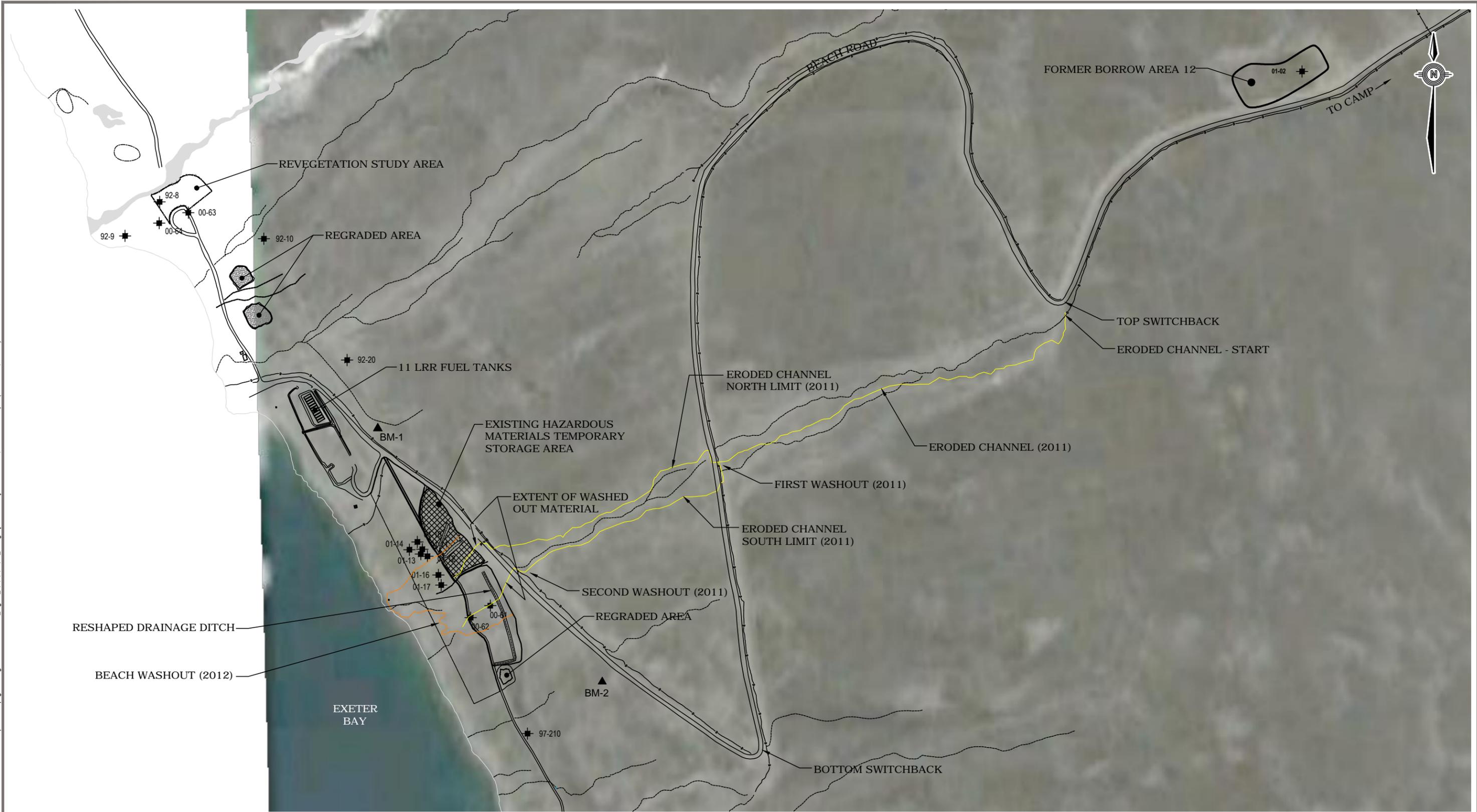
**DEW LINE CLEAN UP PROJECT  
DYE-M, CAPE DYER, NU**

**UPPER SITE NON-HAZARDOUS WASTE LANDFILL  
FORMER WASTEWATER HOLDING BASIN  
SMALL BILLBOARD FOUNDATIONS**

PROJECT NO. 60263380	DWN CLC	CKD DM	REV 0
OFFICE EDM	DATE November 2012		

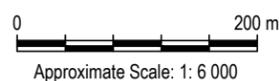
**Figure 11**

L:\MarketSector\Earth & Water\Projects\0771\_DLCUDYE.M2013\_Geotech QA\_Report\Wimipeg CAD Figures\10996027.011\_Figure\_5.6.8.9\_10\_12\_L.dwg [FIGURE 12] November 21, 2013 - 5:01:51 pm (BY: MAHE, CHRIS)



- LEGEND:**
- DRAINAGE
  - TESTPIT (EXCAVATION YEAR DENOTED BY FIRST TWO DIGITS OF TESTPIT ID)
  - GROUND TEMPERATURE CABLE LOCATION
  - BENCHMARK

- NOTES:**
1. SATELLITE IMAGE FROM GOOGLE EARTH
  2. FIGURE UPDATED FROM EBA 2011 GEOTEH QA SUMMARY REPORT



DEW LINE CLEAN UP PROJECT DYE-M, CAPE DYER, NU				
BEACH AREA EXISTING HAZARDOUS MATERIALS TEMPORARY STORAGE AREA				
PROJECT NO. 60263380	DWN CLC	CKD DM	REV 0	Figure 12
OFFICE EDM	DATE November 2012			



**Photograph 1. Landfarm – Turning Treatment Soil. June 17, 2013 (West)↑**



**Photograph 2. Borrow Area #4 – Type 5 and Type 2 Granular Production. June 22, 2013 (South)↑**



**Photograph 3. Landfarm – Spring Meltwater. June 23, 2013 (North)↑**



**Photograph 4. LS Tier II DF – Type 2 Granular Fill Placement (Cell #1). June 24, 2013 (North)↑**



**Photograph 5. Lower Site – Contaminated Soil Excavation. June 25, 2013 (West)↑**



**Photograph 6. Lower Site – Warehouse B13A Demolition. June 27, 2012 (West)↑**



**Photograph 7. LS Tier II DF – Grading Tier II Soils (Cell #2). June 27, 2013 (East)↑**



**Photograph 8. LS Tier II DF – Placing Type 2 Granular Fill (Cell #1). July 6, 2013 (West)↑**



**Photograph 9. Lower Site – Air Terminal Building Demolition. July 11, 2013 (North West)↑**



**Photograph 10. Lower Site - POL Storage area – Contaminated Soil Excavation (below liner). July 11, 2013 (East)↑**



Photograph 11. LS Powerhouse Landfill – Type 1 Granular Fill Placement. July 12, 2013 (North East)↑



Photograph 12. LS Tier II DF – Placing Type 5 Granular Fill (Cell #2). July 15, 2013 (North East) ↑



**Photograph 13. LS Tier II DF – Geomembrane Installation (Cell #2). July 17, 2013 (North East) ↑**



**Photograph 14. US Tier II DF – Reshaping Side Slopes. July 19, 2013 (South) ↑**



**Photograph 15. US Tier II DF – Type 1 Granular Fill Placement. July 21, 2013 (North)↑**



**Photograph 16. LS Tier II DF – Drilling Thermistor VT-1. July 22, 2013 (North East)↑**



**Photograph 17. LS Tier II DF – Installation of PVC Casing for VT-1. July 22, 2013 (N/A)↑**



**Photograph 18. LS Tier II DF – Installation of Casing for VT-1. July 22, 2013 (N/A)↑**



**Photograph 19. LS Tier II DF – Installation of Neoprene Boot for VT-3. July 23, 2013 (N/A)↑**



**Photograph 20. LS Tier II DF (Cell #2) – Type 5 Granular Fill Placement. July 24, 2013 (North East) ↑**



Photograph 21. US Tier II DF – Temporary Monitoring Well MW09-22A Decommissioning. July 29, 2013↑



Photograph 22. US West Landfill – Type 1 Placement at West End. August 13, 2013 (South)↑



**Photograph 23. LS Tier II DF – Typical Installation of Thermistor Cable. August 14, 2013 ↑**



**Photograph 24. LS NHWL – Landfilling Large Equipment. August 17, 2013 (North)↑**



**Photograph 25. LS Tier II DF – Track Packing Side Slopes. September 1, 2013 (East) ↑**



**Photograph 26. Landfarm – Closure of Facility. September 1, 2013 (North) ↑**



**Photograph 27. US NHWL – Completed Facility. September 2, 2013 (West) ↑**



**Photograph 28. US Tier II DF – Completed Facility. September 2, 2013 (South West) ↑**



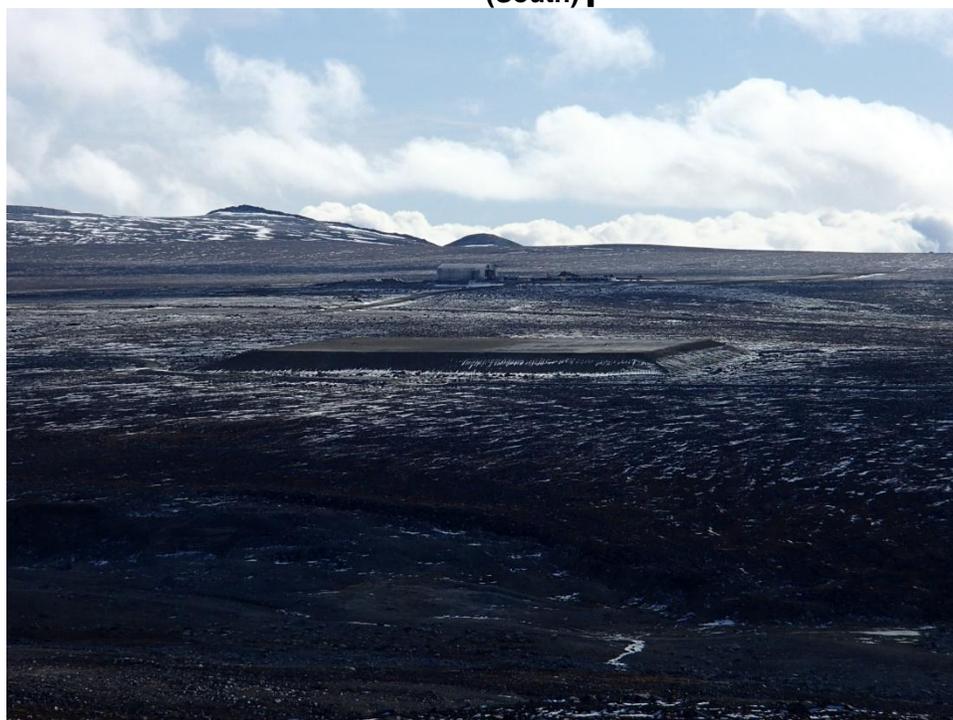
**Photograph 29. Borrow Area #3 – Borrow Area Reclamation. September 2, 2013 (North) ↑**



**Photograph 30. Beach Area – Reshaping To Fill Drainage Ditch. September 5, 2013 (South West) ↑**



**Photograph 31. LS NHWL – Construction of Type 2 Granular Cover Layer (Cell #2). September 13, 2013 (South)↑**



**Photograph 32. LS Tier II DF – Completed Facility. September 14, 2013 (South East) ↑**