

UMA Engineering Ltd.
2540 Kensington Road NW
Calgary, Alberta T2N 3S3
T 403.270.9200 F 403.270.0399 www.uma.aecom.com

March 28, 2008

File Name: CAM-3 (3.6)

Phyllis Beaulieu
Licensing Manager
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Dear Ms. Beaulieu:

Re: Water Use License 1BR-SHE0510, 2007 Annual Report

UMA Engineering Ltd. is pleased to submit this annual report as per the requirements of Part B.1 of water use license 1BR-SHE0510. The report was prepared on behalf of Defence Construction Canada and the Department of National Defence.

Water Usage

The following table provides a summary of the water usage from the Water Supply Lake and the effluent in the sewage lagoon. No water was returned to the source.

Month	Quantity of Water Extracted (cubic metres)	Quantity of Effluent (cubic metres)
June	133	106.4
July	372	297.6
August	372	297.6

Sewage Effluent Monitoring

A sewage lagoon was constructed in August 2006 to support the construction camp as per the specifications included in the water use license application. Due to the coarse-grained nature of the material available at the CAM-3 site, the effluent in the sewage lagoon infiltrated the ground and there was usually insufficient volume for sampling. Two effluent samples were collected from the camp sewage lagoon on July 20, 2007 (includes a duplicate) and submitted to RMC Analytical Services Group in Kingston, ON for analysis. The following table provides a summary of the results.

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Parameter	Units	Allowable Maximum Average Concentration	07-21978 (July 20)*	07-21979 (July 20)*
pH	pH units	6.0 to 9.0	7.17	7.71
Oil & Grease	-	None visible	None visible	None visible
Total Suspended Solids (TSS)	mg/L	180	16	11
Biological Oxygen Demand	mg/L	120	192	Not analyzed
Faecal Coliforms	CFU/dL	10,000	1,190,000	1,140,000

* GPS Coordinates for the sample location are 15482620E, 7632141N.

No discharge events were recorded in 2007. The sewage lagoon area was regraded at the end of the 2007 season as there was no effluent retained.

Summary of Completed Work in 2007

All clean up work at CAM-3 was completed in 2007, including the removal of the camp and equipment. The completed clean up work included debris removal, contaminated soil excavation, and closure of the Non Hazardous Waste Landfill, Tier II Soil Disposal Facility and Landfarm. Thermistors were installed at the Tier II Facility, including cables and dataloggers. All monitoring wells and monuments were installed as of July 1, 2006. Baseline monitoring of the landfills was completed. A summary of the work completed for each task is provided below, and selected site photographs are attached.

Demolition: Completed in 2007 along with asbestos and PCB paint removal. PCB contaminated waste containers were inspected for condition and labeling and were taken by the Hazardous Waste Transport contractor on September 20, 2007.

Landfarm: The landfarm was decommissioned in 2007, which included removal of the liner and drain lines (placed in the Non-Haz Landfill), the perimeter berms were leveled, the drainage ditch filled, the area graded for positive drainage, and decommissioning of the monitoring wells. Approximately 3,635 cubic metres of hydrocarbon-impacted soil was treated in the landfarm.

Tier II Soil Disposal Facility: The Tier II Soil Disposal Facility was completed, including installation of the liner system, and capped in 2007. Additional granular material from the original design was placed on the facility after reviewing recent climate change data. Approximately 1,009 cubic metres of Tier II soils were placed in the facility.

Non-Hazardous Waste Landfill: The Non-Hazardous Waste Landfill area completed and capped in 2007. Approximately 792 cubic metres of non-hazardous debris and Tier I soils were placed in the Landfill.

Contaminated Soil Removal: The excavation and landfilling of Tier I and II soil, and treatment of hydrocarbon-impacted soil was completed in 2007. All soils deemed contaminated with hazardous concentrations of contaminants were appropriately packaged for transport and removed from the site.

Landfill Remediation: Leveling, placement and compaction and closure of the USAF Landfill was completed in 2007, and included installation of thermistors for thermal monitoring. Additional granular material from the original design was placed on the facility after reviewing recent climate change data.

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Regrading requirements at the Station Landfill, Beach Landfill, North Warning System (NWS) Landfill, and Northeast Landfill were completed in 2007.

Debris Removal: Debris removal was completed in 2007. The debris was disposed of in the Non-Hazardous Waste Landfill if deemed non-hazardous, or packaged for off-site disposal if determined to be hazardous.

Community Meetings

The contractor held a community meeting prior to the start of the 2007; however, no documentation was provided.

Spill Incidences


No spill incidences were reported to the Spill Report Line at CAM-3 in 2007.

Record drawings for the project are in progress, but are not yet complete. Several site plans of the project have been included for reference.

We trust the information provided is consistent with the requirements of Water Use License #1BR-SHE0510. Please feel free to contact the undersigned if you have any questions or comments.

Sincerely,

UMA Engineering Ltd.



Eva Schulz, P.Ag.
Environmental Scientist
eva.schulz@uma.aecom.com

Encl: Site Figures, Photographs, Laboratory Reports

cc: Douglas Craig, DCC

NWB Annual Report

Year being reported: 2007 ▼

License No: 1BR-SHE0510 Issued Date: February 17, 2005
 Expiry Date: February 28, 2010

Project Name: CAM-3, Shepherd Bay DEW Line Clean Up

Licensee: Defence Construction Canada

Mailing Address: Suite 1720, Constitution Square
 350 Albert Street
 Ottawa, ON K1A 0K3

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

UMA Engineering Ltd. on behalf of Defence Construction Canada
 2540 Kensington Road NW
 Calgary, AB T2N 3S2

General Background Information on the Project (*optional):

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Licence Requirements: the licensee must provide the following information in accordance with

Part B ▼ Item 1 ▼

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s):	Water Supply lake		
Water Quantity:		Quantity Allowable Domestic (cu.m)	
		Actual Quantity Used Domestic (cu.m)	
		Quantity Allowable Drilling (cu.m)	
		Total Quantity Used Drilling (cu.m)	

Waste Management and/or Disposal

- ☒ Solid Waste Disposal
☒ Sewage
☐ Drill Waste
☒ Greywater
☐ Hazardous
☐ Other:

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Additional Details:

See attached.

A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.: (as reported to the Spill Hot-line)
 Date of Spill:
 Date of Notification to an Inspector:
 Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

Revisions to the Spill Contingency Plan

SCP submitted and approved - no revision required or proposed



Additional Details:

Revisions to the Abandonment and Restoration Plan

AR plan submitted and approved - no revision required or proposed



Additional Details:

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

See attached.

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Details attached



Additional Details:

See attached figures.

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Details attached



Additional Details:

See attached figures.

Results of any additional sampling and/or analysis that was requested by an Inspector

No additional sampling requested by an Inspector or the Board ▼

Additional Details: (date of request, analysis of results, data attached, etc)

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

No additional sampling requested by an Inspector or the Board ▼

Additional Details: (Attached or provided below)

Any responses or follow-up actions on inspection/compliance reports

No inspection and/or compliance report issued by INAC ▼

Additional Details: (Dates of Report, Follow-up by the Licensee)

Any additional comments or information for the Board to consider

Date Submitted:

March 31, 2008

Submitted/Prepared by:

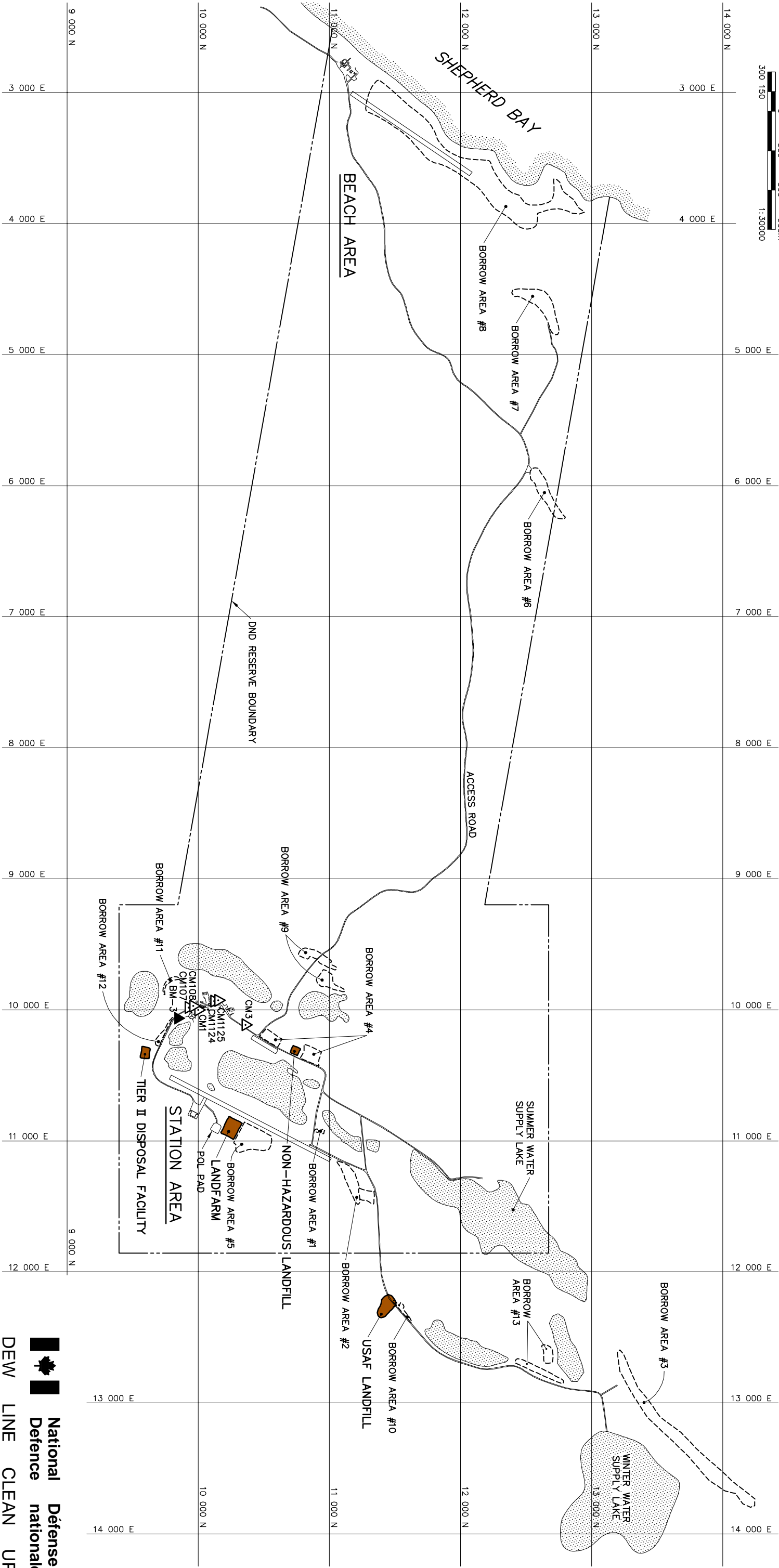
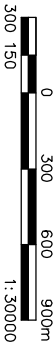
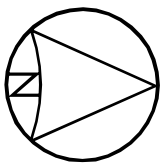
Eva Schulz

Contact Information:

Tel: 403-270-9200


Fax: 403-270-0399

email: eva.schulz@uma.aecom.com



LEGEND:

- SURVEY CONTROL MONUMENT
- PERMANENT SURVEY CONTROL MONUMENT INSTALLED
- CONSTRUCTED LANDFILL & LANDFARM FACILITY




National

Defence


Defence

nationale



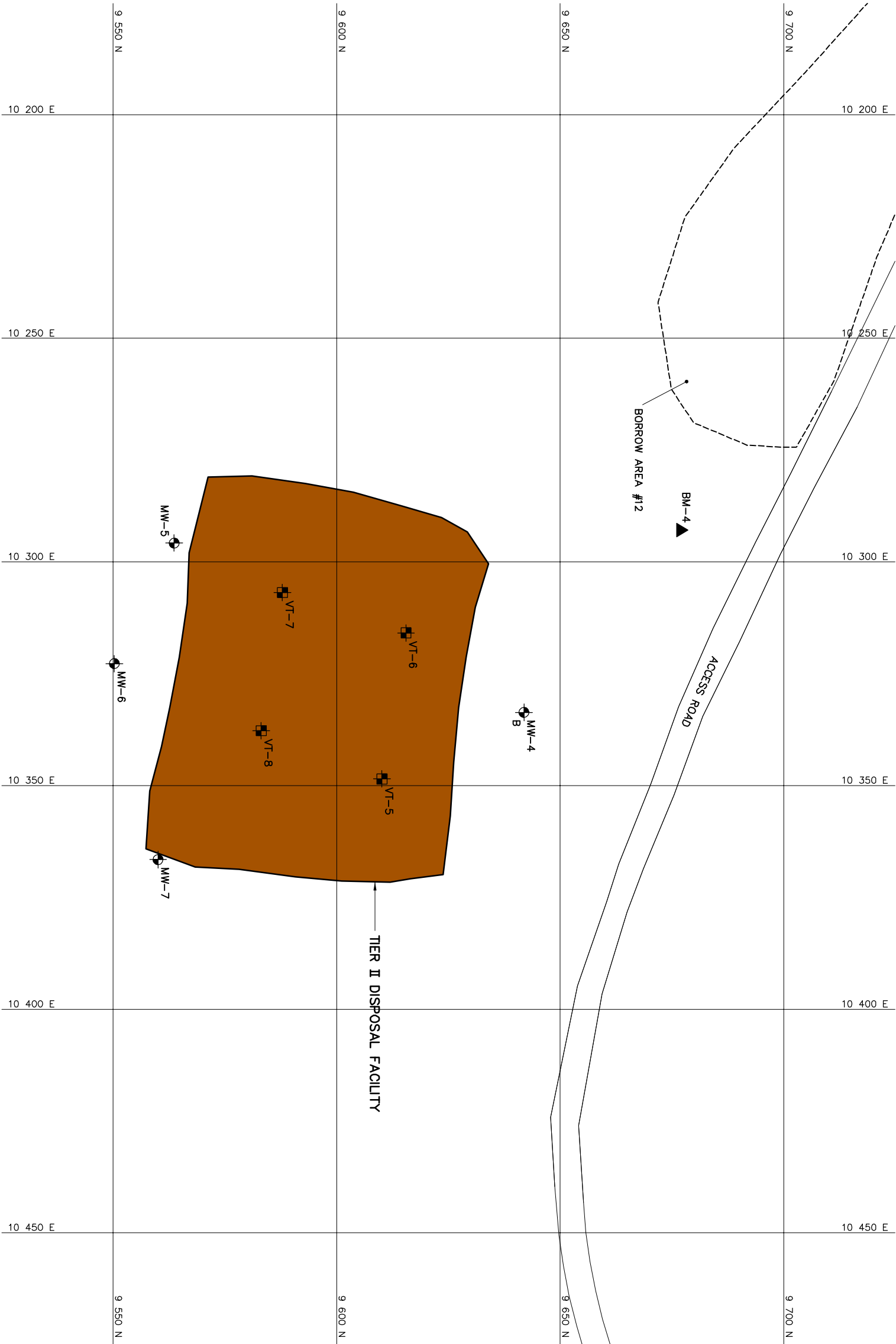
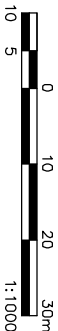
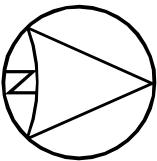
Dew Line Clean Up

CAM-3



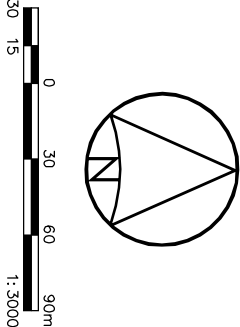
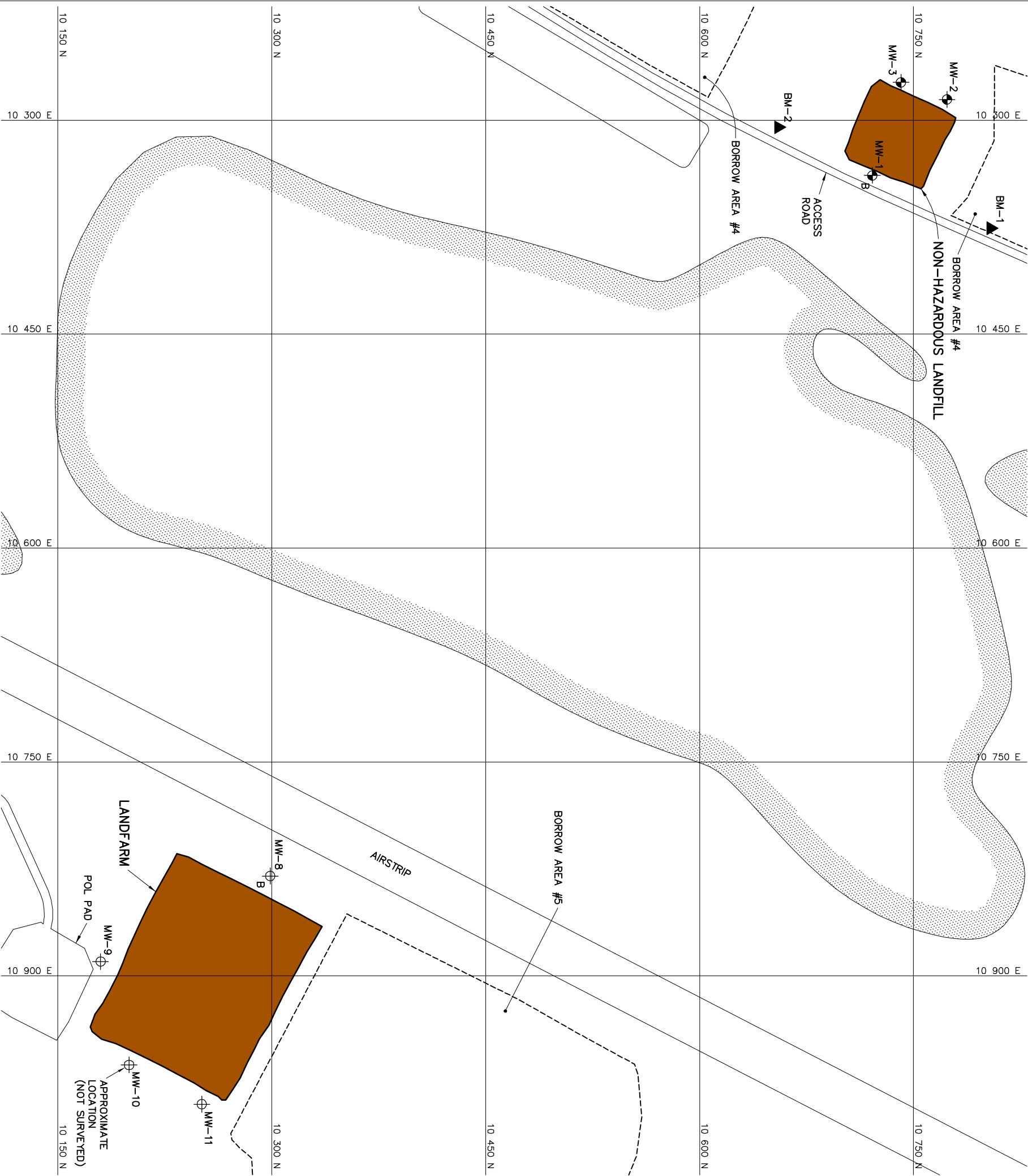
SHEPHERD BAY

**2007 GEOTECHNICAL QUALITY ASSURANCE
OVERALL SITE PLAN/BORROW AREAS**

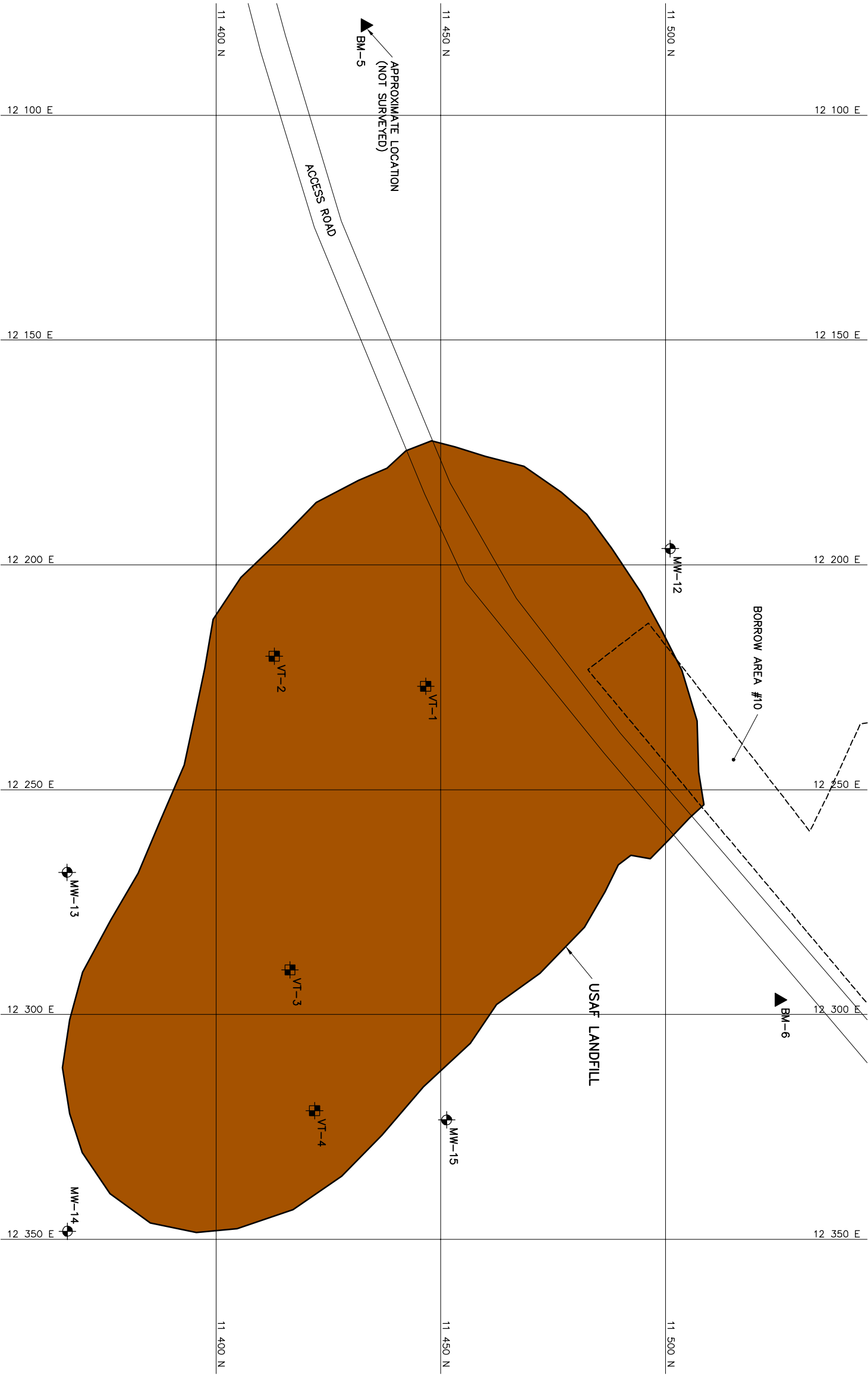
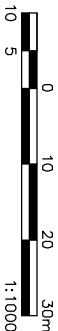
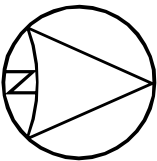


LEGEND:

- BM-4 PERMANENT SURVEY CONTROL MONUMENT INSTALLED
- VT-5 VERTICAL THERMISTOR
- MW-4 BACKGROUND GROUNDWATER MONITORING WELL
- MW-5 GROUNDWATER MONITORING WELL
- CONSTRUCTED LANDFILL



- LEGEND:**
- BM-1 ▲ PERMANENT SURVEY CONTROL MONUMENT INSTALLED
 - MW-1 ● B BACKGROUND GROUNDWATER MONITORING WELL
 - MW-2 ● B GROUNDWATER MONITORING WELL
 - MW-8 ● B BACKGROUND GROUNDWATER MONITORING WELL (DECOMMISSIONED)
 - MW-9 ⊕ B GROUNDWATER MONITORING WELL (DECOMMISSIONED)
 - CONSTRUCTED LANDFILL & LANDFARM FACILITY



LEGEND:

- BM-5 PERMANENT SURVEY CONTROL MONUMENT INSTALLED
- VT-1 VERTICAL THERMISTOR
- MW-12 GROUNDWATER MONITORING WELL
- CONSTRUCTED LANDFILL

PHOTOGRAPHIC RECORDS



Photo 1: CAM-3



Photo 2: Site monument and Crew in front of Tier II Landfill

PHOTOGRAPHIC RECORDS



Photo 3: Cam-3 Camp Site



Photo 4: Working the Landfarm

PHOTOGRAPHIC RECORDS



Photo 5: Tier II Landfill base liner installation



Photo 6: Tier II Landfill, adding base Type 5 granular fill

PHOTOGRAPHIC RECORDS



Photo 7: Tier II Landfill, compacted Tier II contaminated soil (prior to addition of liner and cap material)



Photo 8: USAF Landfill liner key trench

PHOTOGRAPHIC RECORDS

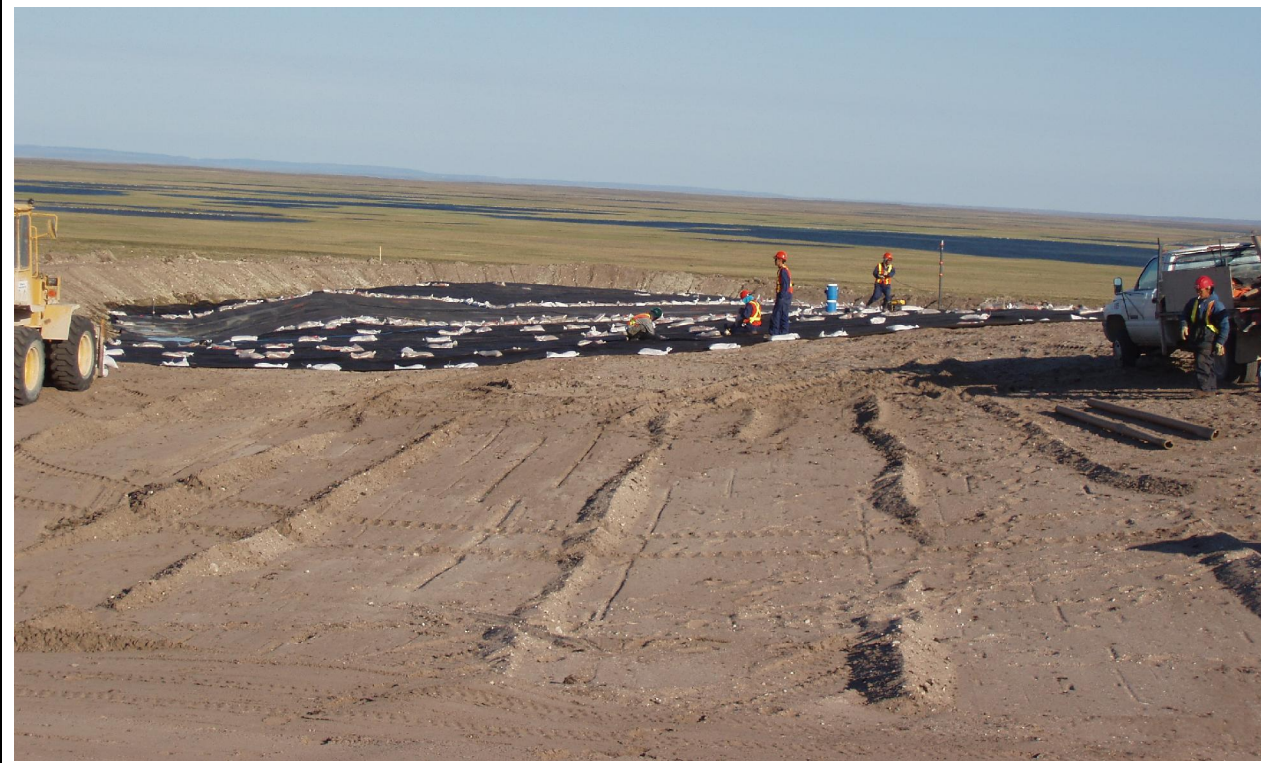


Photo 9: USAF Landfill liner installation, looking east



Photo 10: USAF Landfill, installing geomembrane, geotextile then type 5 granular fill over landfill

PHOTOGRAPHIC RECORDS



Photo 11: USAF Landfill, completed with themistors installed



Photo 12: Drilling Thermistor borehole on Tier II Landfill

PHOTOGRAPHIC RECORDS



Photo 13: Installing Thermistor



Photo 14: Beach Landfill (Regrade #1) compacting cover material

PHOTOGRAPHIC RECORDS



Photo 15: Beach Landfill Rip Rap



Photo 16: NELF: Regrade #15

PHOTOGRAPHIC RECORDS



Photo 17: NWS Landfill: Regrade #20



Photo 18: Completed USAF and NWS Landfill Areas

ASU #	10581		Report ID:	Cam-3 Water-6				
Client:	ASG 16833		Date Submitted:	24-Jul-07				
			Date tested:	26-Jul-07				
Site:	CAM-3		Date:	27-Jul-07				
	07-076		Matrix:	Water				
Preliminary Report of Analysis								
Sample	Oil & Grease							
	mg/L							
07-21978	6.4							
07-21979	5.6							
Blank	<2.0							
Control	13.6							
Control Target	16.0							
Date tested:	26-Jul-07							

RMC ANALYTICAL SERVICES GROUP - GROUPE DES SERVICES ANALYTIQUES CMR

Royal Military College, PO Box 17000 Stn. Forces, Kingston, ON, K7K 7B4
(613) 541-6000 ext 6684 / Fax (613) 545-8341

Client : ESG

12 Verite Ave
Dept. of Chem. / Chem. Eng., RMC
P.O. Box 17000, Stn. Forces
Kingston, Ontario K7K 7B4
(613) 541-6000 ext 6567
Fax: (613) 541-6596

ASG Login No: 16833
Site: Cam-3
Client Login No: 07-076
Samples Received: 24-Jul-07
Date of analysis: 25-Jul-07
Method No: ASG 039
Date Reported: 27-Jul-07
Sheet: 1 of 1

RESULTS OF TOTAL SUSPENDED SOLIDS ANALYSIS

Sample I.D.	Sample Type^	Unit	Total Suspended Solids
21978	w	mg/L	16
21979*	w	mg/L	11

LABORATORY QA/QC

Duplicate ; 21979*	w ; w	mg/L	10 ; 11
Blank	Control	mg/L	< 1

^SW =Surface Water, SI = Sewage Influent SE = Sewage Effluent
* Averaged result of duplicates

The results reported here relate only to the items tested.

Prepared By: _____
Matthew Kusinski ; Analyst

Authorization: _____
Julie McDonald ; Laboratory Manager

Test Report I.D.: TSS16833r1.xls

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Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
270465

- CERTIFICATE OF ANALYSIS -

Client Sample ID: 21978

Taiga Sample ID: 009

Client Project:

Sample Type: Unknown Water

Received Date: 20-Jul-07

Sampling Date: 20-Jul-07

Sampling Time:

Location: CAM-3, Shepard Bay

Report Status: FINAL

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<u>Inorganics - Nutrients</u>						
Biological Oxygen Demand	192	2	mg/L	21-Jul-07	SM5210:B	

Report Date: Monday, July 30, 2007
Print Date: Monday, July 30, 2007

(7)



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
270465

- CERTIFICATE OF ANALYSIS -

Client Sample ID: 21978

Taiga Sample ID: 007

Client Project:
Sample Type: Unknown Water
Received Date: 20-Jul-07
Sampling Date: 20-Jul-07
Sampling Time:
Location: CAM-3, Shepard Bay
Report Status: FINAL

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
Microbiology						
Coliforms, Fecal	1190000	10000	CFU/100mL	20-Jul-07	SM9222:D	

Report Date: Monday, July 30, 2007
Print Date: Monday, July 30, 2007

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Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
270465

- CERTIFICATE OF ANALYSIS -

Client Sample ID: 21978

Taiga Sample ID: 009

Client Project:

Sample Type: Unknown Water

Received Date: 20-Jul-07

Sampling Date: 20-Jul-07

Sampling Time:

Location: CAM-3, Shepard Bay

Report Status: FINAL

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<u>Inorganics - Nutrients</u>						
Biological Oxygen Demand	192	2	mg/L	21-Jul-07	SM5210:B	

Report Date: Monday, July 30, 2007
Print Date: Monday, July 30, 2007



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
270465

- CERTIFICATE OF ANALYSIS -

Client Sample ID: 21979

Taiga Sample ID: 006

Client Project:

Sample Type: Sewage

Received Date: 20-Jul-07

Sampling Date: 20-Jul-07

Sampling Time:

Location: CAM-3, Shepard Bay

Report Status: FINAL

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<u>Microbiology</u>						
Coliforms, Fecal	1140000	10000	CFU/100mL	20-Jul-07	SM9222:D	

Report Date: Monday, July 30, 2007
Print Date: Monday, July 30, 2007