

March 31, 2010

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

Dear Phyllis:

**Project No: Water Use Licence No.: 1BR-BYR0712**

**Regarding: PIN-4, Byron Bay DEW Line Site**

AECOM Canada Ltd. is providing the attached annual report form as per Section B.1 of the above-noted water use license. The report is being submitted on behalf of Defence Construction Canada and the Department of National Defence.

In addition to the annual report form, we are providing a summary of the work completed to date at the site. There were no monitoring program samples collected and there was no water use license inspection by INAC in 2009. The following is a summary of the work completed at the site in 2009:

**Summary of Work Completed**

**Non-Hazardous Waste Landfill:** Construction of the berms was completed; however, final shaping is still required. Non-hazardous debris from the demolition of the module train and non-hazardous site debris was placed in the facility in 2009.

**Tier II Disposal Facility:** Excavation and construction of the key trench was completed.

**Landfarm:** Construction of the landfarm was completed and the facility began to receive Type B hydrocarbon impacted soils.

**Existing Landfill and Buried Debris Area Remediation:** Station Area - West Landfill, USAF Landfill, Old Construction Camp Debris Area, and Sewage Outfall Debris Area were regraded.

**Demolition:** On-going. Demolition was started on the module train and communication dishes. Efforts focused on the removal of asbestos containing materials and PCB painted materials. Power poles were also removed.

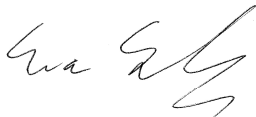
**Contaminated Soil Excavation:** On-going.

**Community Consultations:** The results of the community meetings held by DCC were submitted with the Project Description. The contractor typically holds a project start up meeting prior to each season.

**Spill Incidences:** None

We trust the information provided is sufficient. Please feel free to contact the undersigned if you require any additional information.

Sincerely,  
**AECOM Canada Ltd.**



Eva Schulz, P.Ag.  
Eva.Schulz@aecom.com

EMS.  
cc: Douglas Craig, DCC

Encl. Annual Report Form; Updated Site Figures; Selected Site Photos; Monitoring Reports

NWB Annual Report

Year being reported: 2009 ▼

License No: 1BR-BYR0712

Issued Date: July 23, 2007

Expiry Date: December 31, 2012

Project Name: PIN-4, Byron Bay DEW Line Site Clean Up

Licensee: Defence Construction Canada

Mailing Address: Constitution Square, Suite 1729  
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):

AECOM  
Design Engineering and Regulatory Support

General Background Information on the Project (\*optional):

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 (BYR-1)	
Water Quantity:	55 per day	Quantity Allowable Domestic (cu.m)
	14 per day	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

908 cu.m of sewage and greywater discharged to sewage lagoon

☐ Drill Waste☒ Greywater☒ Hazardous☒ Other:

Additional Details:

Details of the waste management were provided in the application supporting documents.

**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

N/A - not applicable 

Additional Details:

The project is an Abandonment and Restoration project.


### Progressive Reclamation Work Undertaken

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

n/a


### 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;**

Select 


Additional Details:

**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:

**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)

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**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	▼
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Additional Details: (Attached or provided below)

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

No inspection and/or compliance report issued by INAC	▼
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Additional Details: (Dates of Report, Follow-up by the Licensee)

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**Any additional comments or information for the Board to consider**

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<b>Date Submitted:</b>	March 31, 2010						
<b>Submitted/Prepared by:</b>	Eva Schulz						
<b>Contact Information:</b>	<table border="1"> <tr> <td><b>Tel:</b></td> <td>403-270-9200</td> </tr> <tr> <td><b>Fax:</b></td> <td>403-270-0399</td> </tr> <tr> <td><b>email:</b></td> <td><a href="mailto:eva.schulz@aecom.com">eva.schulz@aecom.com</a></td> </tr> </table>	<b>Tel:</b>	403-270-9200	<b>Fax:</b>	403-270-0399	<b>email:</b>	<a href="mailto:eva.schulz@aecom.com">eva.schulz@aecom.com</a>
<b>Tel:</b>	403-270-9200						
<b>Fax:</b>	403-270-0399						
<b>email:</b>	<a href="mailto:eva.schulz@aecom.com">eva.schulz@aecom.com</a>						

### GPS Coordinates for water sources utilized

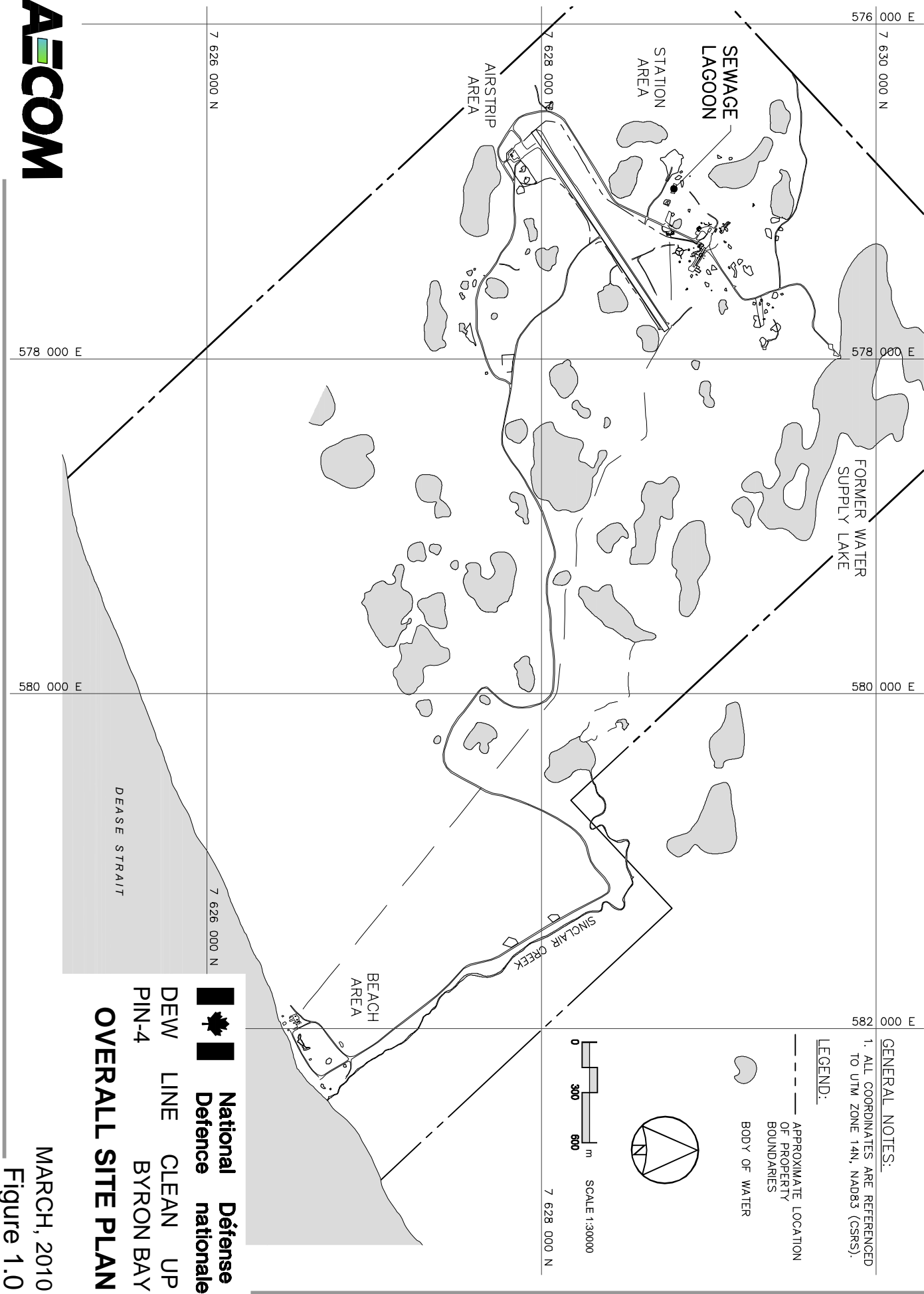
Source Description	UTM Zone 12N, NAD83	
	Northing	Easting
water supply lake	7629850	578000


### GPS Locations of areas of waste disposal

Location Description (type)	UTM Zone 12N, NAD83	
	Northing	Easting
Landfarm Berm (NO1)	7627922.1	581046.7
Landfarm Berm (NO3)	7627868.7	581139.9
Landfarm Berm (NO4)	7627772.2	581056.9
Landfarm Berm (NO6)	7627857.6	580991.2
Non-Hazardous Waste Landfill (Q01)	7628945.2	577219.4
Non-Hazardous Waste Landfill (Q02)	7628915.3	577282.7
Non-Hazardous Waste Landfill (Q03)	7628856.6	577255
Non-Hazardous Waste Landfill (Q04)	7628886.4	577191.7
Tier II Landfill (R01)	7627978.4	576372.9
Tier II Landfill (R02)	7627993.9	576456.5
Tier II Landfill (R03)	7627934.9	576467.4
Tier II Landfill (R04)	7627919.4	576383.9
Sewage Lagoon	exact coordinates to be collected in 2010	

# Attachments

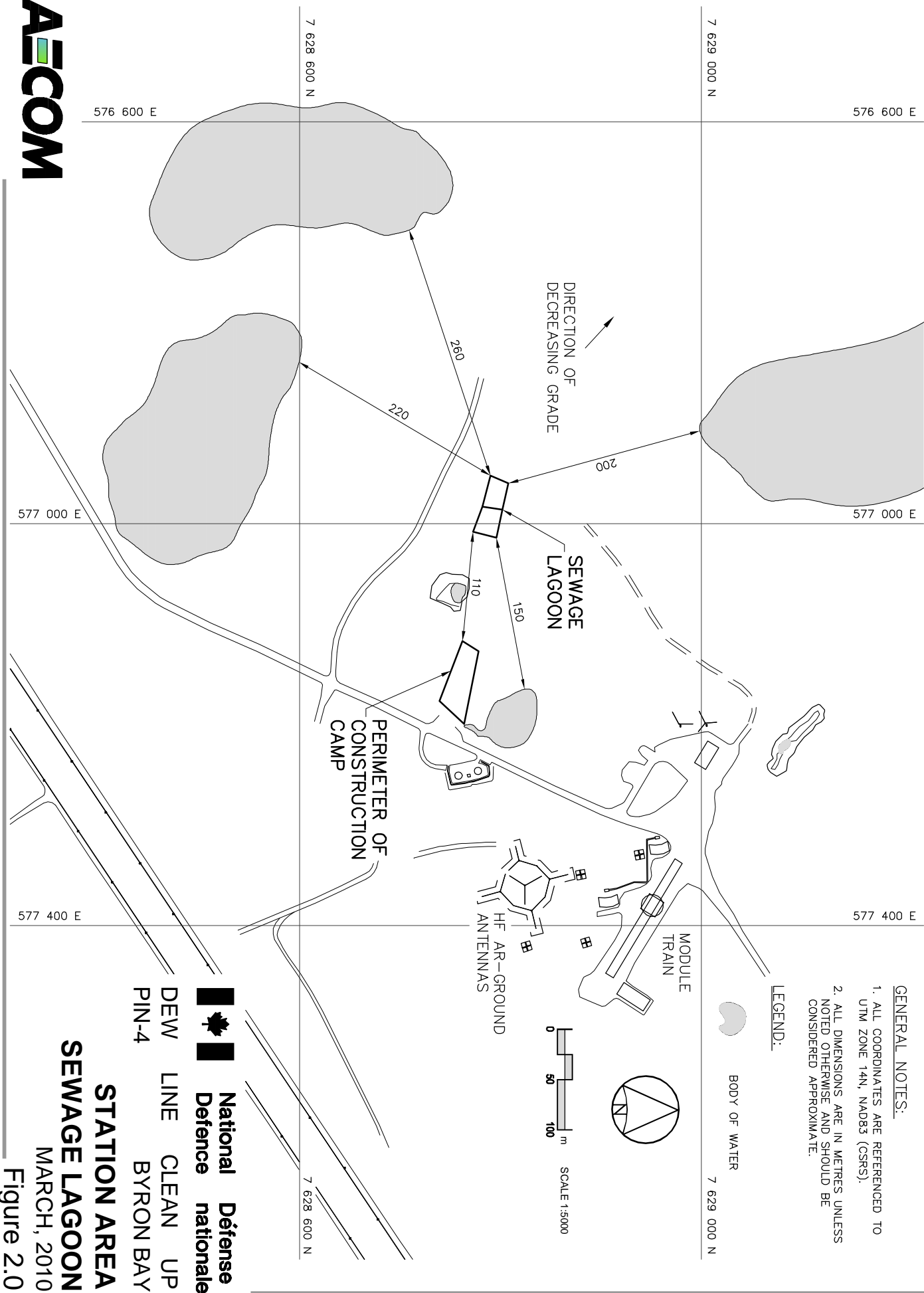
Updated Site Figures

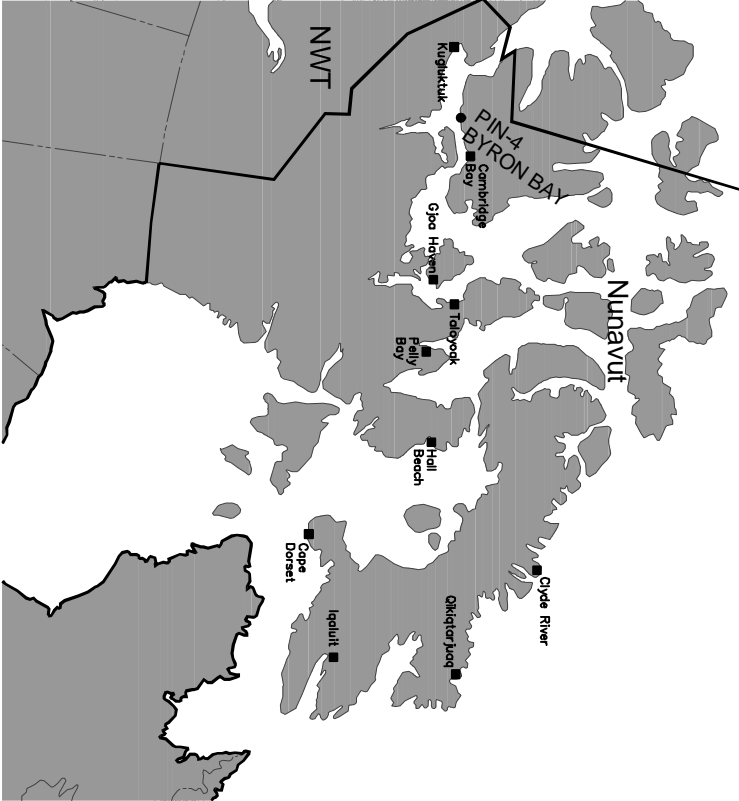
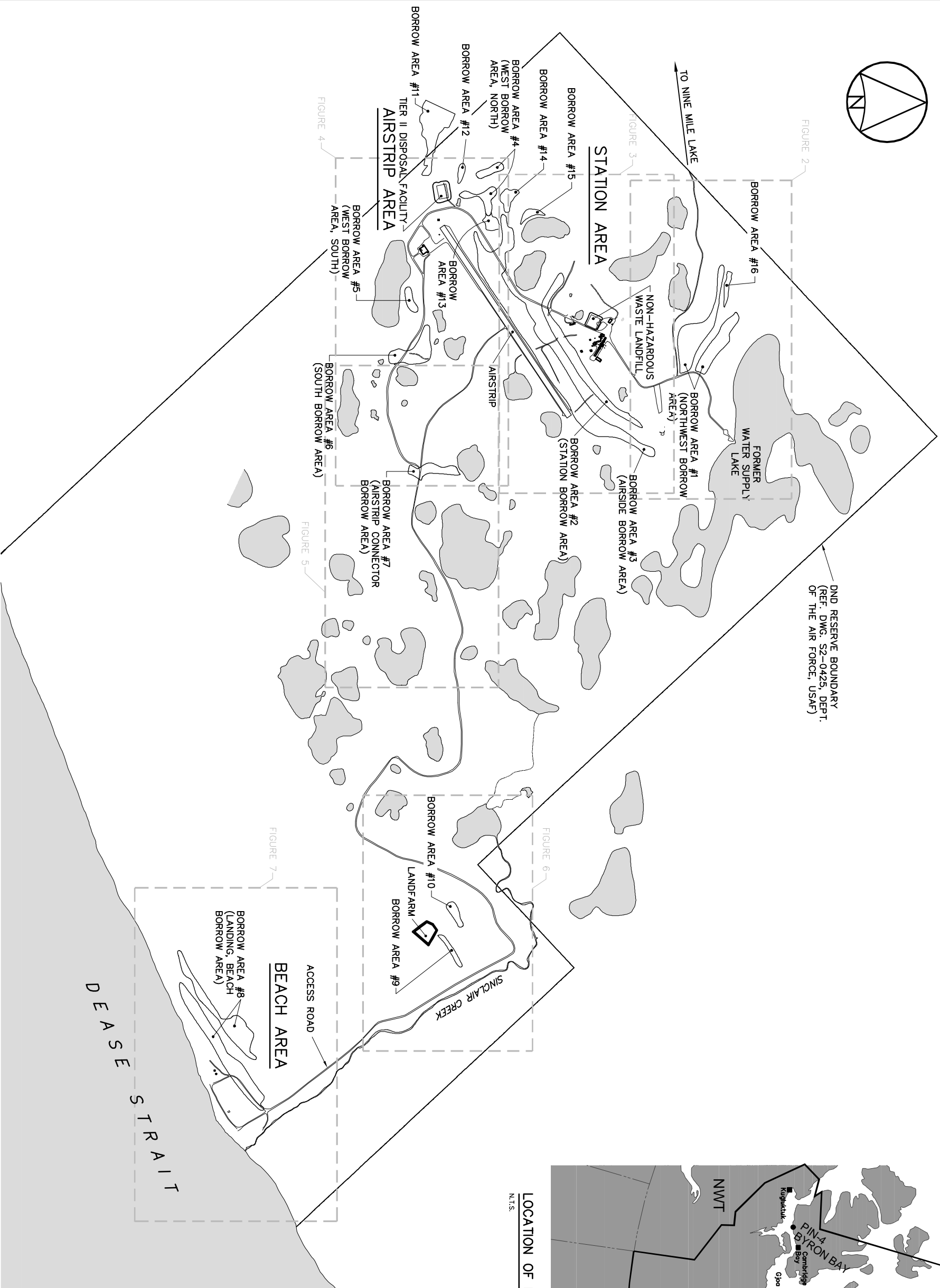
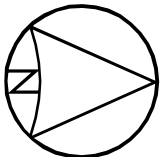


 **National Défense**  
**Defence nationale**  
DEW LINE CLEAN UP  
PIN-4 BYRON BAY  
**OVERALL SITE PLAN**

MARCH, 2010  
Figure 1.0

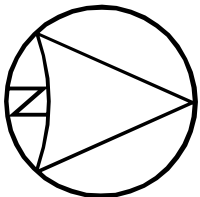






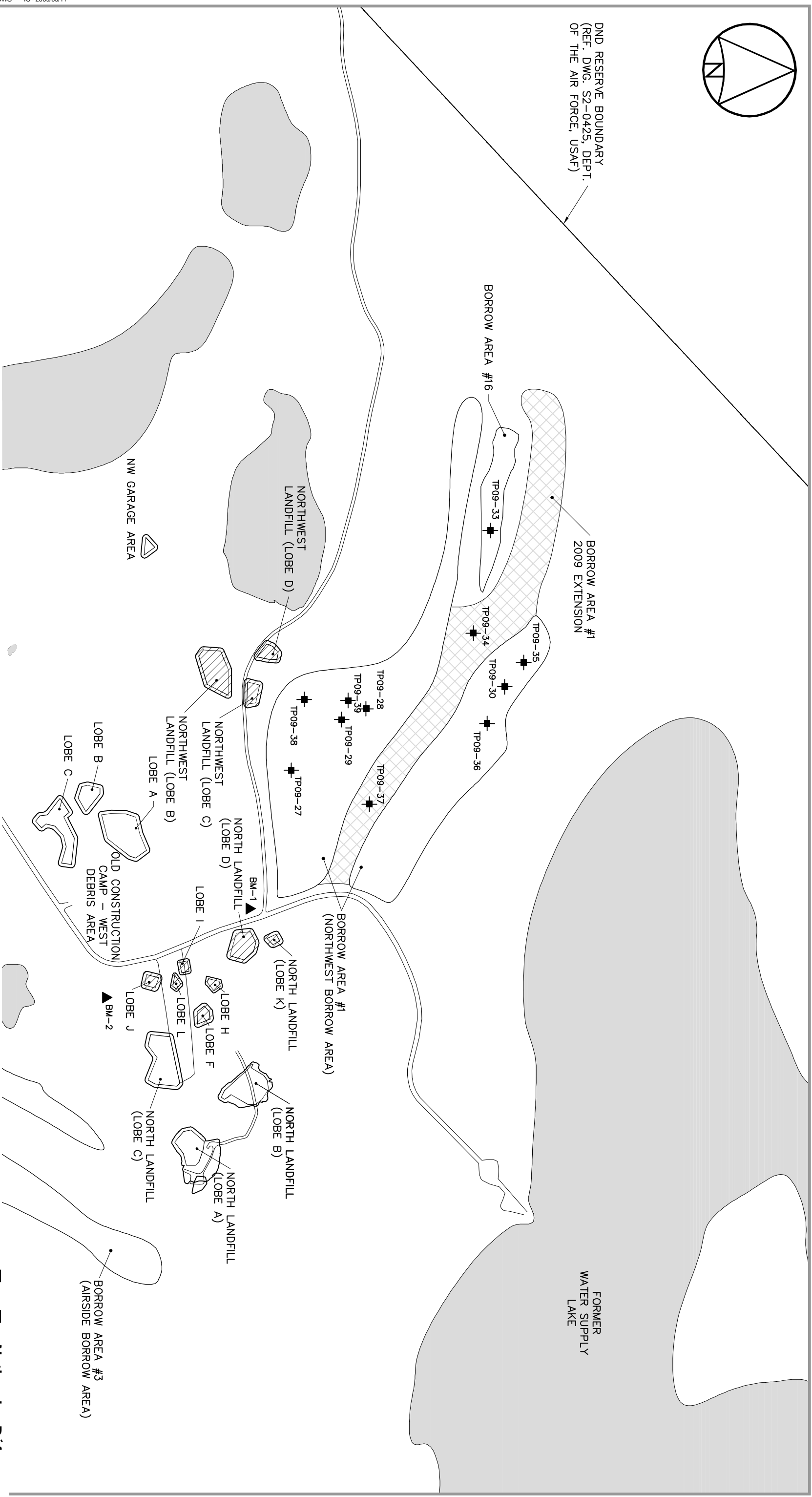
LOCATION OF BYRON BAY WITHIN NUNAVUT TERRITORY  
N.T.S.

 National Défense  
 Dew Line CLEAN UP  
PIN-4 BYRON BAY



DND RESERVE BOUNDARY  
(REF. DWG. S2-0425, DEPT.  
OF THE AIR FORCE, USAF)

FORMER  
WATER SUPPLY  
LAKE



LEGEND:

TP09-28

2009 GEOTECHNICAL QA  
TEST PIT LOCATION (APPROX.)

BM-8

## BENCHMARK LOCATION

REGRADE AREA COMPLETED IN 2009

REGRADE AREA PARTIALLY COMPLETED IN 2009

103

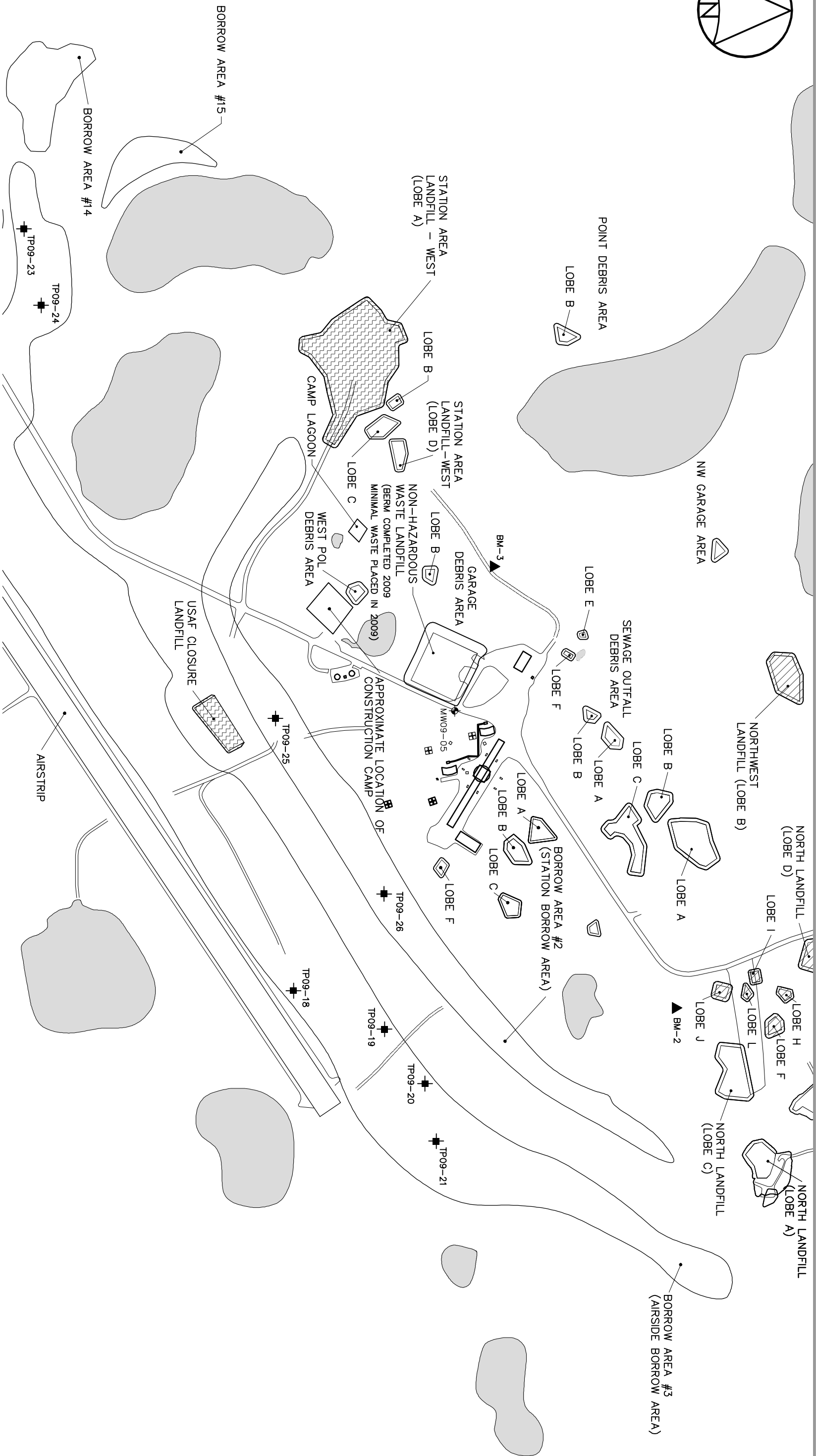
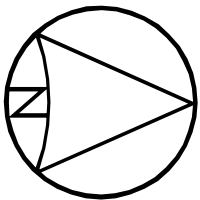
REGRADE AREA NOT COMMENCED IN 2009

 **National  
Defence** **Défense  
nationale**

DEW LINE CLEAN UP  
PIN-4 BYRON BAY

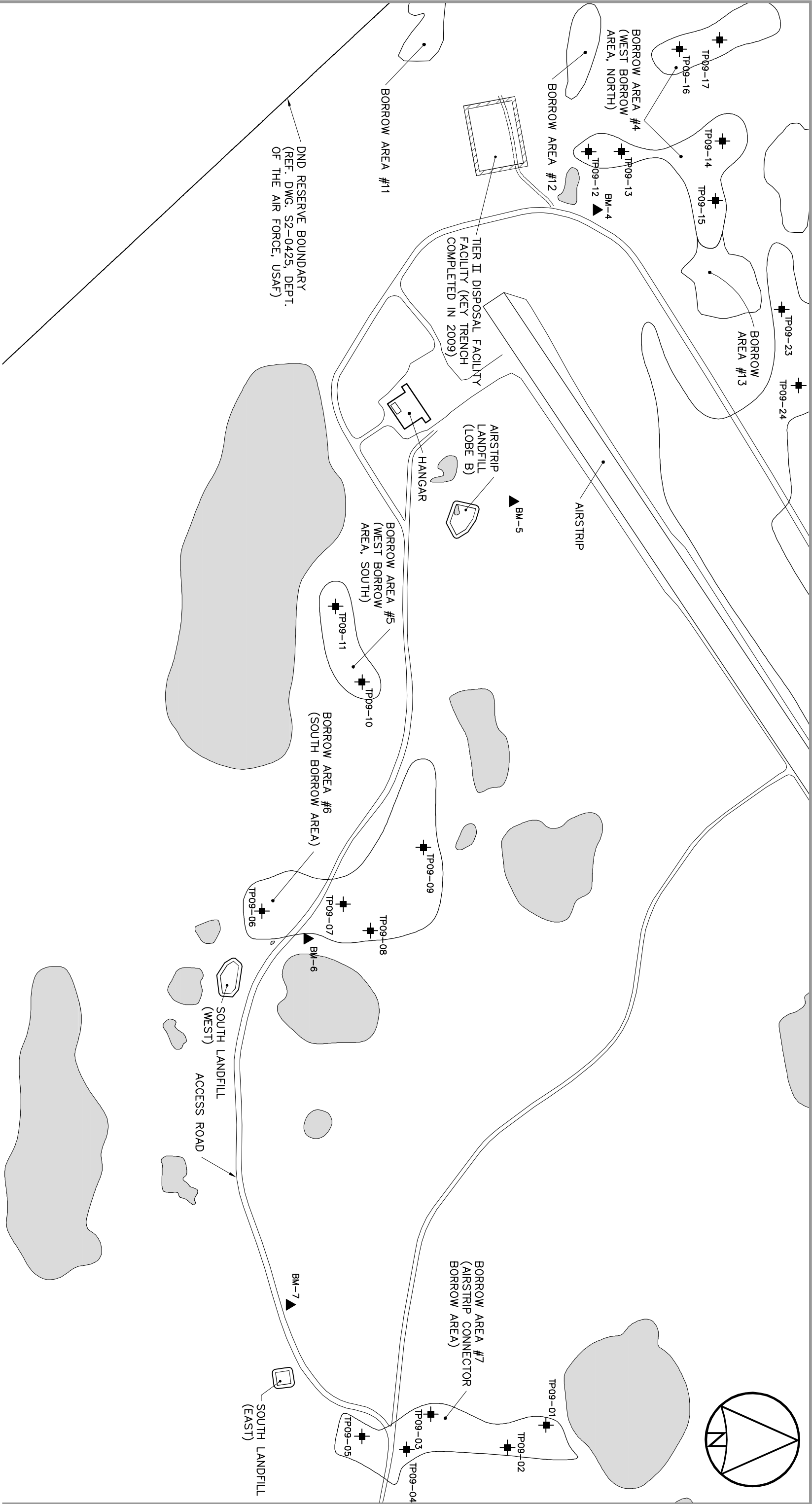
# GEOTECHNICAL QA SUMMARY REPORT

## Northwest Borrow Area



LEGEND:

- TP09-28 2009 GEOTECHNICAL QA
- TEST PIT LOCATION (APPROX.)
- MMW09-11 MONITORING WELL LOCATION
- BM-8 BENCHMARK LOCATION
- REGRADE AREA COMPLETED IN 2009
- REGRADE AREA PARTIALLY COMPLETED IN 2009
- REGRADE AREA NOT COMMENCED IN 2009



LEGEND:

- TP09-28 2009 GEOTECHNICAL QA TEST PIT LOCATION (APPROX.)
- BM-8 BENCHMARK LOCATION

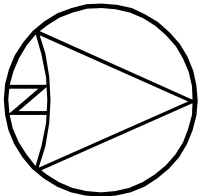
- REGRADE AREA COMPLETED IN 2009
- REGRADE AREA PARTIALLY COMPLETED IN 2009
- REGRADE AREA NOT COMMENCED IN 2009

National Défense  
Defence nationale

DEW LINE CLEAN UP  
PIN-4 BYRON BAY

GEOTECHNICAL QA SUMMARY REPORT

Airstrip Area  
Figure 4 of 7



BORROW AREA #7  
(AIRSTrip CONNECTOR BORROW AREA)  
(DEPLETED)

BM-7

TP09-01

TP09-02

TP09-03

TP09-04

TP09-05

ACCESS ROAD

LEGEND:

TP09-28



2009 GEOTECHNICAL QA  
TEST PIT LOCATION (APPROX.)

BM-8



BENCHMARK LOCATION



REGRADE AREA COMPLETED IN 2009



REGRADE AREA PARTIALLY COMPLETED IN 2009



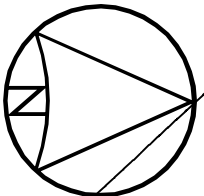
REGRADE AREA NOT COMMENCED IN 2009

 National Défense  
Defence nationale

DEW LINE CLEAN UP  
PIN-4 BYRON BAY

GEOTECHNICAL QA SUMMARY REPORT

Airstrip Connector Borrow Area



DND RESERVE BOUNDARY  
(REF. DWG. S2-0425, DEPT.  
OF THE AIR FORCE, USAF)

SINGLAIR CREEK

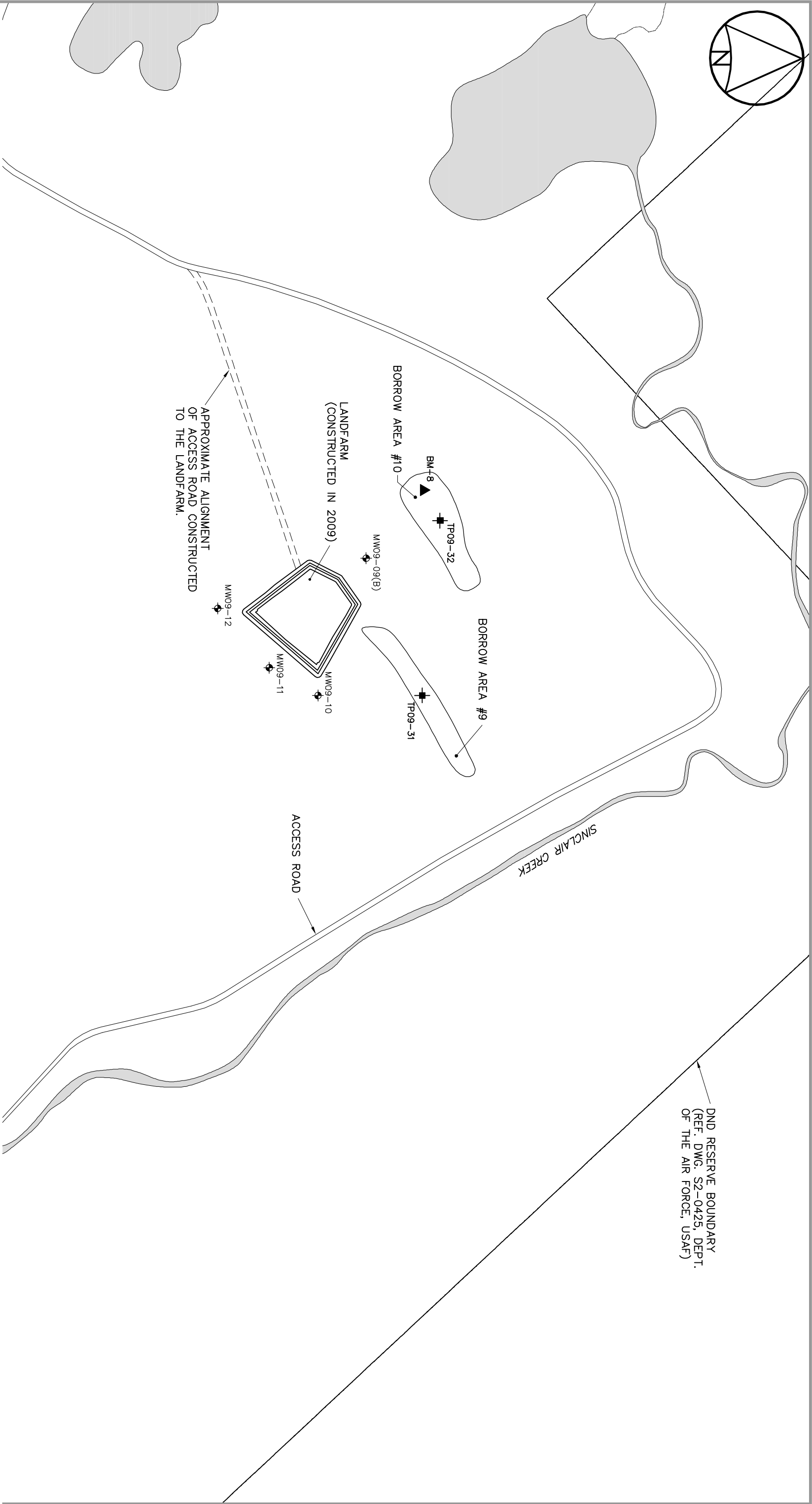
ACCESS ROAD

APPROXIMATE ALIGNMENT  
OF ACCESS ROAD CONSTRUCTED  
TO THE LANDFARM.

BORROW AREA #10

BORROW AREA #9

LANDFARM  
(CONSTRUCTED IN 2009)



LEGEND:

- TP09-28

+

2009 GEOTECHNICAL QA  
TEST PIT LOCATION (APPROX.)
- MW09-11

+

MONITORING WELL LOCATION
- BM-8

▲

BENCHMARK LOCATION
- REGRADE AREA COMPLETED IN 2009
- REGRADE AREA PARTIALLY COMPLETED IN 2009
- REGRADE AREA NOT COMMENCED IN 2009

 National Défense  
Défense nationale

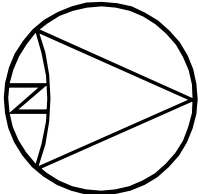
DEW LINE CLEAN UP  
PIN-4 BYRON BAY

GEOTECHNICAL QA SUMMARY REPORT

AECOM

Landfarm Area

Figure 6 of 7



ACCESS ROAD

SINCLAIR CREEK

LANDING DEBRIS  
AREA (LOBE B)

BM-10

BM-9

BORROW AREA #8  
(LANDING, BEACH  
BORROW AREA)

D E A S E   S T R A I T

LEGEND:

BM-8  
BENCHMARK LOCATION

REGRADE AREA COMPLETED IN 2009

REGRADE AREA PARTIALLY COMPLETED IN 2009

REGRADE AREA NOT COMMENCED IN 2009

 National Défense  
Defence nationale

DEW LINE CLEAN UP  
PIN-4 BYRON BAY

GEOTECHNICAL QA SUMMARY REPORT

AECOM



# Attachments

Selected Site Photos



**Photograph 1 ↑**  
Camp



**Photograph 2 ↑**  
Communication dish – being demolished



**Photograph 3 ↑**  
Debris to be placed in the Non-Hazardous Waste Landfill

# Attachments

## Monitoring Reports

Tricia Cammaart  
Environmental Sciences Group  
The Royal Military College of Canada  
PO Box 17000 Stn. Forces  
Kingston, ON K7K 7B4



Douglas Craig  
Environmental Officer  
Defence Construction Canada  
DEW Line Cleanup PMO  
350 Albert Street, Suite 1720  
Ottawa ON K1A 0K3

Tuesday, September 22, 2009

**RE: August 2009 Monthly Report for Water Use License Number: 1BR-BYRO712**

The following results of the Monitoring Program (MP) and/or Water Use License are provided by the Environmental Sciences Group to meet the requirements of the above-noted license for *PIN-4 (Byron Bay)*.

1. CAMP SEWAGE LAGOON

A two cell sewage lagoon was constructed to service the PIN-4 construction camp in August 2009. The sewage lagoon was constructed a minimum of 100 meters from any body of water or drainage course.

2. SEWAGE EFFLUENT SAMPLES

There were no sewage effluent samples collected in August 2009 from the PIN-4 sewage lagoon.

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,

Tricia Cammaart  
Environmental Sciences Group

cc: Eva Schulz (UMA)  
Daniela Loock, Kat White, Shari Reed, Jennifer Joubert, Tracey Bullock (ESG)

Tricia Cammaart  
Environmental Sciences Group  
The Royal Military College of Canada  
PO Box 17000 Stn. Forces  
Kingston, ON K7K 7B4



Douglas Craig  
Environmental Officer  
Defence Construction Canada  
DEW Line Cleanup PMO  
350 Albert Street, Suite 1720  
Ottawa ON K1A 0K3

Tuesday, September 22, 2009

**RE: Analytical Results for Wastewater Samples Collected at PIN-4 in August , 2009**

The following report summarizes results of the analysis of wastewater samples as per the PIN-4 (Byron Bay) DEW Line Cleanup Project (DLCU) Specifications.

The PIN-4 specifications require that “wash water, melt water collection, rinse water resulting from the cleaning of fuel tanks and pipelines, and/or any other liquid effluent stream” meet the following guidelines prior to their discharge to land (01560.4.1):

Parameter	Maximum Allowable Concentration	Units
pH	6-9	pH units
Total arsenic (As)	0.100	mg/L
Dissolved cadmium (Cd)	0.010	mg/L
Total chromium (Cr)	0.100	mg/L
Dissolved cobalt (Co)	0.050	mg/L
Dissolved copper (Cu)	0.200	mg/L
Dissolved lead (Pb)	0.050	mg/L
Total mercury (Hg)	0.6	µg/L
Dissolved nickel (Ni)	0.200	mg/L
Total zinc (Zn)	0.5	mg/L
Oil & grease	5 mg/L and None visible	mg/L
PCBs	1.0	mg/L
Phenols	0.020	mg/L

\*Discharge to barren land, \*\*Discharge to vegetated land

*Phenols*

The wastewater samples collected by ESG at PIN-4 are not analyzed for phenols but they are analyzed for oil and grease. Research conducted by ESG<sup>1</sup> has determined that a) no federal, territorial or provincial criteria exist for the discharge of wastewater containing phenols to land at a minimum distance of 30-m from natural drainage courses b) the

<sup>1</sup> Environmental Sciences Group. *DEW Line Clean Up Project – Phenols in Wastewater*. June, 2007.

maximum concentration of phenols in DLCU wastewater to date (2.44 mg/L) is below the LC<sub>50</sub> for freshwater fish and crustaceans and below the oral and dermal LD<sub>50</sub>s for rats and rodents and c) phenols in excess of the maximum allowable concentration (MAC) have historically co-occurred with a visible oil & grease sheen and/or with an exceedance of the MAC for oil & grease. This information, and a subsequent decision to not test for phenols, has been presented to the NWB. To date, verbal agreement from the NWB has been received, but the project is awaiting written confirmation of the decision to suspend testing for phenols.

#### WASTEWATER SAMPLES

There were no wastewater samples collected at PIN-4 in August 2009.

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink that reads "Tricia Cammaart". The signature is fluid and cursive, with the first name "Tricia" and last name "Cammaart" clearly legible.

Tricia Cammaart  
Environmental Sciences Group

cc: Eva Schulz (UMA)  
Daniela Loock, Kat White, Shari Reed, Jennifer Joubert, Tracey Bullock, (ESG)

Candice Casucci  
Environmental Sciences Group  
The Royal Military College of Canada  
PO Box 17000 Stn. Forces  
Kingston, ON K7K 7B4



Douglas Craig  
Environmental Officer  
Defence Construction Canada  
DEW Line Cleanup PMO  
350 Albert Street, Suite 1720  
Ottawa ON K1A 0K3

Friday, November 6, 2009

**RE: Analytical Results for Wastewater Samples Collected at PIN-4 in September, 2009**

The following report summarizes results of the analysis of wastewater samples as per the PIN-4 (Byron Bay) DEW Line Cleanup Project (DLCU) Specifications.

The PIN-4 specifications require that “wash water, melt water collection, rinse water resulting from the cleaning of fuel tanks and pipelines, and/or any other liquid effluent stream” meet the following guidelines prior to their discharge to land (01560.4.1):

Parameter	Maximum Allowable Concentration	Units
pH	6-9	pH units
Total arsenic (As)	0.100	mg/L
Dissolved cadmium (Cd)	0.010	mg/L
Total chromium (Cr)	0.100	mg/L
Dissolved cobalt (Co)	0.050	mg/L
Dissolved copper (Cu)	0.200	mg/L
Dissolved lead (Pb)	0.050	mg/L
Total mercury (Hg)	0.6	µg/L
Dissolved nickel (Ni)	0.200	mg/L
Total zinc (Zn)	0.5	mg/L
Oil & grease	5 mg/L and None visible	mg/L
PCBs	1.0	mg/L
Phenols	0.020	mg/L

\*Discharge to barren land, \*\*Discharge to vegetated land

**WASTEWATER SAMPLES**

No wastewater samples were collected at PIN-4 in September 2009.

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Casucci".

Candice Casucci  
Environmental Sciences Group

cc: Eva Schulz (UMA)  
Daniela Loock, Kat White, Shari Reed, Jennifer Joubert, Tracey Bullock, (ESG)