

**AECOM**

2540 Kensington Road NW, Calgary, AB, Canada T2N 3S3  
T 403.270.9200 F 403.270.0399 www.aecom.com

March 24, 2009

Project Number: 0171-142-01-08

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

Dear Phyllis:

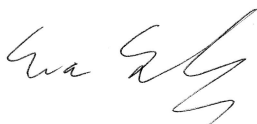
**Re: 2008 Annual Report for Water Use License 1BR-JEN0712: CAM-1, Jenny Lind Island  
DEW Line Site**

AECOM is presenting the following annual report form regarding the remediation program at the CAM-1, Jenny Lind Island DEW Line site. The information is being submitted on behalf of Defence Construction Canada and the Department of National Defence.

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

Encl. 2008 Annual Report Form, Executive Summary  
cc: Douglas Craig, DCC

## Statement of Qualifications and Limitations

© 2009 AECOM CANADA LTD. OR CLIENT (IF COPYRIGHT ASSIGNED TO CLIENT). ALL RIGHTS RESERVED. THIS DOCUMENT IS PROTECTED BY COPYRIGHT AND TRADE SECRET LAW AND MAY NOT BE REPRODUCED IN ANY MANNER, EXCEPT BY CLIENT FOR ITS OWN USE, OR WITH THE WRITTEN PERMISSION OF AECOM CANADA LTD. OR CLIENT (IF COPYRIGHT ASSIGNED TO CLIENT).

The attached Report (the "Report") has been prepared by AECOM Canada Ltd. ("Consultant") for the benefit of the client ("Client") in accordance with the agreement between Consultant and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations and conclusions contained in the Report:

- are subject to the budgetary, time, scope, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the "Limitations");
- represent Consultants' professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to Consultant which has not been independently verified;
- have not been updated since the date of issuance of the Report and their accuracy is limited to the time period and circumstances in which they were collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- were prepared for the specific purposes described in the Report and the Agreement;
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

Unless expressly stated to the contrary in the Report or the Agreement, Consultant:

- shall not be responsible for any events or circumstances that may have occurred since the date on which the Report was prepared or for any inaccuracies contained in information that was provided to Consultant;
- makes no representations whatsoever with respect to the Report or any part thereof, other than that the Report represents Consultant's professional judgement as described above, and is intended only for the specific purpose described in the Report and the Agreement;
- in the case of subsurface, environmental or geotechnical conditions, is not responsible for variability in such conditions geographically or over time.

Except as required by law or otherwise agreed by Consultant and Client, the Report:

- is to be treated as confidential;
- may not be used or relied upon by third parties.

Any use of this Report is subject to this Statement of Qualifications and Limitations. Any damages arising from improper use of the Report or parts thereof shall be borne by the party making such use.

This Statement of Qualifications and Limitations is attached to and forms part of the Report.

# **1BR-JEN0712: Executive Summary**

## **Sewage Effluent Monitoring**

A lagoon was constructed in 2008 to support the construction camp. The water use license and the monitoring plan require that samples be collected from treated sewage effluent at the point of discharge to the receiving water prior to each discharge event. There were no sewage discharge events in 2008.

## **Summary of Work Completed in 2008**

**Demolition:** Demolition of the following buildings and facilities has been completed: Four (4) station area communication dishes; radome; station POL and pumphouse; Beach POL tanks – with the exception of two tank bottoms which were kept for the storage of barrels over the winter. Demolition of the remaining structures will be completed in 2009.

**Landfarm:** Construction of the landfarm was completed in 2008 and there were eight (8) tilling events. It is anticipated that remediation of the hydrocarbon-impacted soils will be complete at the end of the 2008 season.

**Hazardous Materials:** Approximately 64 m<sup>3</sup> of CEPA level contaminated soils and 106 m<sup>3</sup> of hazardous materials have been packaged on-site for transportation to an off-site disposal facility at the completion of the program.

**Tier II Soil Disposal Facility:** Construction of the Tier II Soil Disposal Facility was completed in 2008 to the point where the facility could accept Tier II impacted soils. An intermediate fill layer was placed on the facility at the end of the 2008 season in September to winterize the facility. It is anticipated that all Tier II impacted soils will be excavated and placed within the facility in 2009 and the facility will be capped and closed.

**Non-Hazardous Waste Landfill:** Construction of the Non-Hazardous Waste Landfill was completed in 2008 to the point where the facility could accept non-hazardous debris, Tier I and Type A impacted soils. An intermediate fill layer was placed on the facility at the end of the 2008 season in September to winterize the facility. It is anticipated that all Type A and Tier I impacted soils will be excavated and all debris placed within the facility in 2009 and the facility will be capped and closed.

**Contaminated Soil Removal:** Contaminated soil removal is on-going and is expected to be completed in 2009. To date thirty-eight (38) areas of contaminated soil have been excavated and backfilled.

**Landfill Remediation:** The following landfill remediation sites were completed: the East Landing Landfill was excavated and backfilled; Northeast Landfill Lobes 1, 2 and 3 were regraded; Borrow Area North Lobes 4 and 5 were regraded; Southeast Landfill lobes 1 and 2 were regraded; Station East Landfill Lobes 1 and 2 were regraded; Main Landfill Lobes 1 and 2 were regraded; Station West Landfill was regraded; Station South Debris Area was regraded; West Landing Debris Area was regraded.

**Debris Removal:** The contractor has completed clean up of thirty-seven (37) of the surface debris areas and two (2) of the buried debris areas. Clean up of the debris areas will be completed in 2009.

## **Community Meetings**

Community meetings were held in 2006 prior to start of the clean up work. Typically, the contractor holds a community meeting prior to the start of each season.

## **Spill Incidences**

There were no spill incidences at CAM-1 in 2008.

NWB Annual Report

Year being reported: 2008 ▼

License No: 1BR-JEN0712

Issued Date: July 23, 2007

Expiry Date: Dec. 31, 2012

Project Name: CAM-1, Jenny Lind Island DEW Line Site Clean Up

Licensee: Defence Construction Canada

Mailing Address: Constitution Square, Suite 1700  
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  
Project Engineer and Regulatory Support

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

Military site clean up

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:

55 per day

Quantity Allowable Domestic (cu.m)

15 per day

Actual Quantity Used Domestic (cu.m)

n/a

Quantity Allowable Drilling (cu.m)

n/a

Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

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

Additional Details:

Details of the waste management and disposal were provided in the application.  
See attached summary for details regarding quantities in 2008.

**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

Other: (see additional details)

Additional Details:

The entire project is an abandonment and restoration plan.

### Progressive Reclamation Work Undertaken

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

### 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:

**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)

**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**

Inspection Report received by the Licensee (Date):

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

The site was inspected by an INAC Water Resources Inspector on July 30, 2008.  
The inspection report and response from DCC are attached.

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

<b>Date Submitted:</b>	March 31, 2009						
<b>Submitted/Prepared by:</b>	Eva Schulz						
<b>Contact Information:</b>	<table> <tr> <td><b>Tel:</b></td> <td>403-270-9220</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>	403-270-9220	<b>Fax:</b>	403-270-0399	<b>email:</b>	<a href="mailto:eva.schulz@aecom.com">eva.schulz@aecom.com</a>
<b>Tel:</b>	403-270-9220						
<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 14N, NAD83	
	Northing	Easting
Water Supply Lake	7618514	387849

### GPS Locations of areas of waste disposal

Location Description (type)	UTM Zone 14N, NAD83	
	Northing	Easting
Non-Hazardous Waste Landfill Berm Stn 801	7620942.9	389241.1
Non-Hazardous Waste Landfill Berm Stn 802	7620982	389281.8
Non-Hazardous Waste Landfill Berm Stn 803	7620937.1	389322.8
Non-Hazardous Waste Landfill Berm Stn 804	7620896.9	389279.7
Tier II Facility Stn 901	7620736.7	389083.4
Tier II Facility Stn 902	7620788.9	389112.9
Tier II Facility Stn 903	7620769.3	389147.7
Tier II Facility Stn 904	7620717	389118.2
Landfarm (centre)	7620350	389000
Sewage Lagoon (Corner 1)	7618832	388165
Sewage Lagoon (Corner 2)	7619049	388163
Sewage Lagoon (Corner 3)	7619050	388141
Sewage Lagoon (Corner 4)	7619020	388128



**Photograph 1:** Non-Hazardous Waste Landfill.



**Photograph 2:** Tier II Soil Disposal Facility





**Photograph 3:** Landfarm



**Photograph 4:** Sewage Lagoon



**Photograph 5:** East Landing Landfill Excavation.



**Photograph 6:** Southeast Landfill Regrade.





## INDUSTRIAL WATER USE INSPECTION REPORT

DATE: 30 July 2008 COMPANY REP.: Douglas Craig (Defence Construction Canada)  
LICENSEE: Defence Construction Canada LICENCE #: 1BR-JEN0712

### WATER SUPPLY

Source: Water Lake Quantity Used: Not found in record sheet in chlorination trailer Meter Rdg.: Meter (if present) not visible during inspection

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable

Intake Facilities \_\_\_\_\_ Storage Structures \_\_\_\_\_ Treatment Systems \_\_\_\_\_ Recycling \_\_\_\_\_  
Flow Meas. Device \_\_\_\_\_ Conveyance Lines \_\_\_\_\_ Pumping Stations \_\_\_\_\_ Modifications \_\_\_\_\_

Comments: Water is trucked from the lake to a holding tank → chlorinated → then goes into 2 tanks inside kitchen area trailer → goes thru UV (offline) and cartridge filtration; 3 potable water stations (fountains) where reverse osmosis units are used; no mercury spill available → Kitwana rep (George Rankin) had no applicable training (none produced) in regards to water treatment and maintaining the site's system.

### WASTE DISPOSAL

Tailings: Tailings Pond ☐ Natural Lake ☐ Underground ☐  
Sewage: Sewage Treat. System ☐ Tailings Pond ☐ Natural Water Body ☐  
Continuous Discharge ☒ Inter. Dischg. ☐  
Solid Waste: Open Dump ☐ Landfill ☐ Burn & Bury ☒ Underground ☐

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable N/I = Not inspected.  
Discharge Quality U Conveyance Lines N/A Disch. Meas. Dev. N/I Freeboard n/a  
Decant Structures N/A Pond Treatment U Dams, Dykes U Seepage U  
Dyke Inspections N/A Runoff Diversion N/A Erosion U Spills U

Effluent Discharge Rate: daily Samples Collected: d downhill of lagoon/incinerator area near shore  
Comments: Sewage is pumped into a septic tank which is pumped out daily into sewage "lagoon" (2 cells) \* Lagoon has no liners (just a dirt/gravel bermed area) and seepage is apparent.  
Incinerator (open stack) for burnable wastes; ashes scooped into bin for burial at a non-hazardous landfill site

### GENERAL CONDITIONS

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable  
Ore & Waste Rock Stockpiles ☒ Records & Reporting onsite - minimal Surv. Net. Prog. N/I - to follow up.  
Geotechnical Inspection ☒ Posting, Signage more required Contingency Plan N/I - to be sent  
Restoration Activities ☒ New Construction U Fuel Storage U  
Mine Water Discharge ☒ Chemical Storage U Annual Report 2007 update submitted.

Comments: Fuel storage practices - very poor; lack of secondary containment and parts of product, jerry cans scattered throughout site. Water tanks being used as fuel tanks for diesel storage → improper tanks, improper labelling, berms (some lined, some not) with standing water.

Violations of Act or Licence: Licensee given 30 days to come up with a plan to address issues observed on site during inspection, as well as to remove/replace current "fuel" storage tank with appropriate tanks.

General Comments: \_\_\_\_\_

Page 2 attached ☐ Yes ☒ No

Environmental Officer  
Licensee Representative's Title

MELISSA JOY  
Inspector's Name

[Signature]  
Licensee Representative's Signature

[Signature]  
Inspector's Signature



August 29, 2008

Melissa Joy  
Water Resources Officer  
Indian & Northern Affairs  
Kitikmeot Regional Office  
P.O. Box 278  
Kugluktuk, NU, X0B 0E0

**RE: CAM-1 Water Use Licence Inspection Report**

Ms. Joy:

I have discussed the findings of our July 30, 2008 inspection of CAM-1 with both the Site Team for CAM-1, as well as the DEW Line Cleanup Project Management Office, and offer the following as both a follow-up and action plan.

Each issue raised has been addressed, and in some instances, more information is requested.

**WATER SUPPLY**

Observations:

1. **Observation:** The quantity of water used was *"not found in record sheet in the chlorination trailer"*.

**Response:** The water use records are found in the Site Managers office. They were and are available on demand.

2. **Observation:** *Meter not visible during the inspection.*

**Response:** The quantity of water used is measured by the truckload. The volume of the trucks is known, and a count of trucks utilized to draw water from the water supply lake provides an accurate measure of water used.

3. **Observation:** No mercury spill kit available (suggested for UV bulb in UV sterilization unit).

**Response:** A mercury spill kit will be ordered or put together shortly, with the available materials on-site.

4. **Observation:** Contractor representative could not produce any applicable training records applicable to running and maintaining the water treatment system.

**Response:** The potable water is tested weekly. Any problems that may arise will be addressed immediately.

## WASTE DISPOSAL

### Observations:

1. **Observation:** The Discharge Quality, Pond Treatment, and Seepages of the sewage lagoon were found to be unacceptable.

**Response:** The berms of the lagoon will be reshaped and compacted, and the base of the cells will be compacted to better retain the effluent.

## GENERAL CONDITIONS

### Observations:

1. **Observation:** Chemical Storage was found to be unacceptable. *Note: It is assumed that the inspector is referring to a marine container that had evidence of cleaning materials that had spilled.*

**Response:** The cleaning materials in question are biodegradable. That being said, the contractor will be requested to make a greater effort to better maintain this storage area, and to clean up small spills as soon as reasonably possible.

2. **Observation:** The Fuel Storage was found to be unacceptable. *Note: The inspector is referring to the 2250-L storage tanks near and within the camp. One of these tanks is used for refueling planes, and the other for heating fuel for the camp. The inspector questioned whether these were certified fuel tanks, and there was concern regarding secondary containment. Other observations related to fuel storage included instances where secondary containment was either lacking or partially full of water.*

### **Response:**

- i. The 2250-L tanks are fuel tanks, however due to the concerns raised, they have both been removed from service. The fuel truck will now be used to fuel the plane and electric heaters have been installed in the DCC trailer.
- ii. The contractor will be requested to improve housekeeping with respect to refueling operations (including the utilization of drip pans), and make better efforts to keep secondary containment areas free of water (to the extent possible).

The Spill Contingency Plan will be scanned and provided as per your request during the inspection.

We trust the information provided is to your satisfaction. Please feel free to contact me if you require anything further.



Douglas Craig, M.Sc.  
Environmental Officer  
DEW Line Clean Up  
Defence Construction Canada  
Constitution Square, Suite 1720, 350 Albert St.,  
Ottawa, Ontario  
K1A 0K3  
Phone: (613) 998-7288  
Fax: (613) 998-0468