



8 Wing Environmental Management
8 Wing Trenton
74 Polaris Avenue, Room 305
PO Box 1000 Stn Forces
Astra, ON K0K 3W0

1262-1 (AEnvO)

17 May 2011

NWB Licence: 3BC-ALT1015

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

SUBJECT: 8 WING ENVIRONMENTAL MANAGEMENT RESPONSE TO INDIAN
AND NORTHERN AFFAIRS CANADA TECHNICAL REVIEW MEMORANDUM

Dear Ms. Beaulieu,

Recent discussions between my office and Indian and Northern Affairs' Canada (INAC) Water Resources Division staff clarified the issues identified by INAC for the Operation and Maintenance Plan for 3BC-ALT1015. I sincerely appreciate the input of INAC and other stakeholders; continuing open dialogue can only serve to improve communications and resolve environmental challenges in Alert.

This letter will summarize these recent discussions:

Water Supply

Regarding the water distribution system at Canadian Forces Station (CFS) Alert, warm water is returned to Upper Dumbell Lake. The Water Return System prevents freezing and potential damage to the Station's domestic water lines. This also prevents the formation of ice that would block the lake water intake. On average, 100 cubic metres of warm water is returned to Upper Dumbell Lake per day. The estimated temperature of the water at the fresh water intake zone varies between 2° - 5° Celsius throughout the year. The estimated range of localized change in water temperature at the intake zone is 1° - 2° Celsius; the thermal stratification of the water column remains very stable and does not thermally mix throughout the lake.

Old Sewage System

The old Sewage System area has been incorporated into the recently constructed sewage terrace system. Thus, the overlapping systems are considered active vice abandoned. In future, should this area be abandoned, 8 Wing Trenton will inform the NWB and submit

an Abandonment and Restoration Plan within six months as per Part I, Item 1 of the Water Licence 3BC-ALT1015.

Sewage Treatment System Plan

As clarified during my recent discussion with INAC regional staff, the siting of the initial holding cell provides storage and retention time in the sewage terrace system; because of space constraints, the installation of a holding cell would require significant re-engineering of the entire system. The sewage outfall is located atop of a steep hillside, where the sewage flows downward along the gradient and through a series of terraces. The terraces facilitate some filtration, freeze/thaw degradation, aeration and desiccation before discharge into Dumbell Bay at the base of the terrace system.

When required, ice is removed from the sewage outfall outlet by heavy equipment, and pushed into the sewage terrace system. Frozen effluent that forms inside the terraces is not displaced, but rather left to melt.

At this time, the Air Force is currently examining a *writ large* Alert recapitalization program, which may include the installation of a Sewage Treatment System or Plant, if required.

Solid Waste Management Plan

The landfill areas are at a higher elevation than the surrounding adjacent terrain. The gradient promotes drainage of surface water runoff around vice through the site.


Materials that can be safely incinerated are disposed in an approved incinerator. Please review the enclosed Environment Canada correspondence.

Spill Plan

The regular rotation of Alert Station personnel presents many challenges. To promote the continuity of the Alert program, 8 Wing Trenton has appointed long-term local staff. Please review the attached list of 8 Wing Trenton contacts for Alert. In the event of an emergency, INAC is welcome to contact any of the names on the list; to ensure continuity, I ask that INAC contact either Mr. Andrew Tam (613-392-2811 ext. 4821) or myself (613-965-3930) directly about all water licence issues. My staff and I will ensure stakeholders receive timely responses to all enquires.

Thank you for the opportunity to review stakeholder correspondence and to provide comments. Should you have any further questions or comments, please do not hesitate to contact me.

Yours truly,

A handwritten signature in black ink, appearing to read 'Drew Craig', written over a horizontal line.

Drew Craig, BSc
Wing Environmental Officer
8 Wing Trenton Environmental Management Office

Enclosure: 3

Distribution List

Lieutenant-Colonel Sean Lewis, 8 Wing Logistics and Engineering Officer – DND, 8 Wing Trenton
Major Robert Tucker, 8 Wing Alert Management Officer – DND, 8 Wing Trenton
Major Denis Letellier, Commanding Officer – DND, CFS Alert
Scott Edwards, A4 CE Environment & Hazmat – DND, 1 Canadian Air Division
Jim Rogers, Manager of Water Resources – INAC, Nunavut Regional Office
Ian Parsons, Regional Coordinator – INAC, Nunavut Regional Office
Douglas Craig, D Air Prog 3-5 Environment – DND, Chief of the Air Staff
Andrew Tam, Assistant Environment Officer – DND, 8 Wing Trenton