

UMA Engineering Ltd.  
17007 107 Avenue  
Edmonton, Alberta T5S 1G3  
T 780.486.7000 F 780.486.7070 [www.uma.aecom.com](http://www.uma.aecom.com)

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File Name: 2977-328-00

VIA FACSIMILE: (780) 497-3842

Brad Thompson  
Public Works and Government Services Canada  
Telus Plaza North  
5<sup>th</sup> Floor, 10025 Jasper Avenue  
Edmonton, AB T5J 1S6

Dear Mr. Thompson:

**Re: Sewage Lagoon Construction**

Due to difficult ground conditions at the FOX-C DEW Line Clean-up site, the sewage lagoon cannot be constructed as designed. Factors affecting construction include a high water table, permafrost and low-strength soils.

In order to facilitate construction of the sewage lagoon, we propose the following revisions:

- relocate the lagoon to a flatter location;
- raise the floor of the lagoon such that it varies approximately 1 m on average below existing ground level, to reduce the amount of disturbance to permafrost;
- increase the height of the perimeter berms to maintain adequate storage;
- add a groundwater suppression system on the backslope of the lagoon to mitigate hydrostatic pressure and groundwater seepage in the facility;
- delete the centre berm (due to low strength soils) and revise the facility to operate as a single cell; and
- delete the HDPE liner, as the fine grained soils encountered at the lagoon location should provide adequate containment.

We feel that the above will provide a timely and economical solution to the difficult conditions encountered at the site, and will allow the facility to be reclaimed with a minimum of waste.

Please note that the sewage lagoon will be located outside of setbacks stated in the Water License and the facility will comply with all the terms and conditions of the Water License.

Enclosed are revised construction drawings showing the proposed design changes.

Please contact us should you have any questions or concerns.

Sincerely,

**UMA Engineering Ltd.**



Rudy Schmidtke, M.Sc., P.Eng.  
Regional Manager, Earth & Environmental  
[rudyschmidtke@uma.aecom.com](mailto:rudyschmidtke@uma.aecom.com)