



CREC

Campbell River Environmental Committee

CREC , PO Box 20092 STN. A, Campbell River, B.C.,V9W 7Z5

August 31, 2016

Re: Upland Excavating Ltd. Application # 107689

Dear Al Leuschen,

CREC has some points we would appreciate you considering pre issuing the Draft Operational Certificate (OC) for Upland Excavating Ltd. application.

1. CREC requests that the draft OC not be issued until westward well investigation is completed. This investigation is recommended by GHD at 3.4.5 of the Final Hydrogeology and Hydrology Characterization Report. This investigation would have to be done in the rainy season from November to March. We consider this important due to:

a. At 3.1 of the Final Hydrogeology and Hydrology Characterization Report a 1985 DFO Quinsam Watershed Study is quoted regarding a bedrock ridge. This quote is then tied to an incorrect location of the Campbell River and Quinsam River Watershed boundary divide, according to the source provided (BC Water Resource Atlas) and imapbc. The watershed divide is further east than shown. Maps attached.

b. The outcropping at the south and southwest of Upland's site does not reflect a ridge on Upland's west border, traveling north of the southwest outcrop.

c. A Northwest Hardwoods Silviculture Plan shows eastward flow through gravel substrate from Mclvor Lake to Cold Creek. This report shows the importance of any eastward groundwater drainage from Upland's site to Cold Creek.

Section 3, "Cold Creek is the source of the water supply for the Quinsam fish hatchery, one of the most important hatcheries on the BC coast."

Section 4, "The critical feature around this block is the source of water for the Cold Creek and its' tributaries. This water is being pushed out of Mclvor lake by hydrostatic pressure through the gravel substrate and emerging out of the banks that surround this watershed. This feature has resulted in very high quality water for the hatchery..."

Ministry of Mines Surficial Geology, Campbell River Area shows gravel geology on Upland's western border and around the eastern border of Rico Lake. It also shows the 2 outcrops south and southwest of Upland's site.

<http://www.empr.gov.bc.ca/MINING/GEOSCIENCE/PUBLICATIONSCATALOGUE/BULLETININFORMATION/BULLETINSAFTER1940/Pages/Bulletin65.aspx>

d. 2.8 of the Final Hydrogeology and Hydrology Characterization Report gives notice of a raise of elevations from that given in the draft report. This change brings the depth of the proposed landfill (Table 2.0-Well MW3-14 at 167.6 AMSL) to a comparable (within points) to the depth of Rico Lake at approximately 168 AMSL, measured by CREC. This report states and CREC video proves that Rico Lake flows into Mclvor Lake. This poses an unacceptable risk to the City of Campbell River's drinking water.

In section 7 of Uplands TAR it states, "The final contours will extend to the same height as the surrounding topography." The surrounding rim of Upland's site is about 190 AMSL, far above the surface of Rico Lake.

Eastward flow from McIvor Lake to the aquifer under Uplands site and beyond to Cold Creek and the Quinsam River is identified. More investigation is needed regarding westward drainage from Upland's site.

2. Treatment to "Drinking Water Standards" is not assured to be met. 9.8.2 of the Draft Design Operation and Closure Plan (Draft DOC) identifies parameters that are forecast to exceed BC Contaminated Sites Regulation Criteria in untreated leachate, i.e.: Ammonia, Chloride, Phenols, Sulphate, LEPH, Arsenic, Boron, Copper, Iron, Magnesium, Manganese, Sodium and Zinc. The report also states that treatment of some of these parameters may prove ineffective, depending on waste composition and the form of the parameters in the leachate.

3. NILEX CIVIL ENVIRONMENTAL GROUP (Contact julie.plouffe@nilex.com) provided a Chemical Compatibility Chart for the 60 mil HDPE liner. VOHs and PHCs, depending on their strength, expected at the landfill are not compatible to that liner. Upland's Draft DOC provides that common contaminants in contaminated soil include metals, PAHs (polycyclic aromatic hydrocarbons) VOHs (Volatile organic compounds) and PHCs (Petroleum Hydrocarbons) and that contaminated soil is likely to increase the concentrations of these contaminants in leachate.

4. It is CREC's opinion that Upland's application is not consistent with the Comox Strathcona Solid Waste Management Plan. Uplands landfill is identified as a private DLC waste disposal facility and does not include deposit of contaminated soil or a leachate treatment facility.

5. According to the City of Campbell River's legal representative and the legal opinion of the UVic Environmental Law Centre, Upland Excavating Ltd. does not have the zoning for their proposed application.

Yours Sincerely,

Campbell River Environmental Committee,

Per,

Leona Adams, President