



City of Campbell River

Report/ Recommendation to Council

Date: March 15, 2019 File No. 16-010

Submitted by: Long Range Planning and Sustainability, Community Development

Subject: Upland Excavating Ltd. Proposed Landfill, City Peer Review

Purpose / Introduction

To provide Council with an overview of the:

1. City's third-party peer review report: *Hydrogeological Review of the Proposed Upland Landfill* (B. Lyons, Waterline Resources, 25 February 2019)
 2. Status of the Ministry of Environment and Climate Change Strategy (ENV) issuance of the draft Operational Certificate for Upland Excavating Ltd.'s application for an engineered landfill
 3. Proposed next steps in the process
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Recommended Resolutions

THAT the Long Range Planning and Sustainability Department 15 March 2019 report regarding Upland Excavating Ltd. Proposed Landfill, City Peer Review by Waterline Resources be received for information,

AND THAT the Ministry of Environment and Climate Change Strategy be requested to:

1. **advise the City (in writing) on how the concerns raised in the City peer review report will be addressed, and**
 2. **extend the 30-day comment period for the draft Operational Certificate to Upland Excavating Ltd. to ensure that the City's consultant has adequate time to review the supporting technical information.**
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Background

This report addresses two resolutions from the 19 November 2018 Council meeting:

ic 18-0245

THAT Council receive the attached draft scope of work for a Qualified Professional review of the technical information supporting Upland Excavating Ltd.'s application to the Ministry of Environment and Climate Change Strategy for an engineered landfill as recommended in the report dated November 9, 2018 from the Long Range Planning & Sustainability and Water Departments.

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ic 18-0246

THAT Council direct staff to obtain a Qualified Professional review of the technical information supporting Upland Excavating Ltd.'s application to the Ministry of Environment and Climate Change Strategy for an engineered landfill in the amount of \$20,000, with funding to come from Council Contingency in 2018.

Upland Excavating Ltd. (Upland) has applied to the Ministry of Environment and Climate Change Strategy (ENV) for an Operational Certificate under the *Environmental Management Act* to replace the existing landfill permit issued in 1992. If approved, the facility at 7295 Gold River Highway would be upgraded to an engineered, lined landfill with a leachate collection and treatment system. The facility would accept land clearing debris, inert construction and demolition waste and non-hazardous contaminated soil. Materials currently landfilled on site, including end of life creosote timbers, would be relocated to the engineered cells.

The landfill application process has been underway since 2016 and the City has submitted two sets of detailed technical review comments on the application during the public comment period. A number of Council reports have been written; the last one dated 9 November 2018 which proposed a scope of work for a Qualified Professional peer review of Upland's relevant technical information including site hydrogeology, hydrology characterizations, groundwater divide, and the risk to the City's drinking water supply and to Quinsam and Cold Creek.

Council's interest in a third-party peer review is based on concerns and possible data gaps identified by City staff and GW Solutions Inc., Dr. Gilles Wendling, P.Eng. retained by the Campbell River Environmental Committee (CREC) to review Upland's technical information.

Discussion

Overview of the City's Peer Review Report:

Hydrogeological Review of the Proposed Upland Landfill (B. Lyons, Waterline Resources, 25 February 2019) is attached as Appendix 1.

The peer review scope of work included assessment of:

1. technical documents supplied by Upland from their consultant GHD to ENV as part of their application
2. technical information supplied by Upland from their consultant to ENV in response the Ministry's request for additional information subsequent to the application
3. Upland's peer review completed by Guy Patrick
4. Campbell River Environmental Committee's peer review of ENV Tasks 7 and 8 completed by GW Solutions

In addition to reviewing the relevant documents, the City's consultant, Waterline Resources (Waterline), also conducted a site visit to the facility with Upland and City staff on 22 January 2019.

Risk to the City's Drinking Water:

Waterline assessed that the risk to the City's water supply appears to be low given that the groundwater gradient has historically been from Rico and McIvor Lakes southeast towards the landfill. Although there appears to be a hydraulic connection between the lakes and the aquifer below the landfill, the groundwater gradient is not expected to change or could be managed. Managing this risk could include ensuring that the level of Rico Lake is maintained above the water level in the infiltration ponds and gravel pit. For the gradients to reverse, causing groundwater to flow from the landfill area to the lakes, the hydraulic pressure in the landfill, infiltration ponds and/or pit area would have to be higher than the water levels in the lakes.

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Furthermore, for contamination from the landfill to reach the lakes the gradient reversal would have to be maintained long enough for contaminant migration. Waterline notes that even if water levels in the pit area build up to a level higher than the lake levels there will likely be a significant hydraulic gradient moving groundwater primarily to the southeast.

Risk to the Quinsam River including Cold Creek and the Fish Hatchery:

Waterline will assess these risks once the draft Operational Certificate and the additional supporting technical information has been issued for public comment. This information is needed to understand what data gaps of consequence still remain and if these gaps exist, how ENV will manage potential deficiencies through conditions in the draft Operational Certificate. Some of the data deficiencies and concerns currently flagged by Waterline are highlighted below.

Baseline Groundwater and Surface Water Data:

It is Waterline's opinion that insufficient baseline groundwater and surface water data, including water chemistry, has been collected by Upland's consultant to fully characterize the local and regional hydrogeological system in relation to the proposed landfill project. ENV has confirmed that Upland's consultant has collected additional groundwater information since the application was submitted in 2016; however, this information was not available in time for this review. ENV noted to staff that this information will form an additional technical document available for public review when the draft Operational Certificate for the proposed landfill is issued.

Fractured Bedrock Characterization:

Waterline indicates that it appears that the hydraulic connection between the bedrock aquifer and the sand and gravel aquifer in the pit area have been mischaracterized. Based on the available data, it is Waterline's view that the bedrock and sand and gravel aquifer are not acting as a single hydraulic unit as described by the applicant's consultant. This matters because this information factors into the analyses that form the landfill design and influence the environmental impact assessment. Based on updated bedrock surface characterization supplied by the applicant's consultant, Waterline indicates that the surface of groundwater in the bedrock would likely be above the base of the landfill in the southwest corner of the proposed landfill and this would have implications for meeting the ENV landfill criteria.

Infiltration Capacity:

Testing for site-specific infiltration capacity should have been conducted to determine if the native soil has the capacity to infiltrate the treated leachate at the design rate. The applicant's consultant has indicated that this testing will be done during the detailed design phase; however, Waterline has recommended that these tests should have been done even at the preliminary landfill design phase. To date the hydraulic conductivity testing has largely evaluated horizontal hydraulic conductivity of the sand and gravel aquifer. Vertical infiltration is typically an order of magnitude less due to layered sedimentary deposition. Ponding observed in the pit and the distinct layering observed in the south pit wall indicate that vertical infiltration requires further investigation.

Leachate Generation and Impacts:

Rainfall from extreme storms and the resulting leachate production should be estimated and compared to the available storage in the landfill waste at various phases of operation and landfill closure to confirm that adequate storage is available. Waterline notes that modelling is currently based on monthly precipitation and this may not be adequate to address extreme storm rainfall events. This could influence strategies to address these events.

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Other Considerations:

In light of the above listed concerns, Waterline recommends that the proposed groundwater monitoring program will need to be reconsidered. The report also recommends that there should be an understanding of how the closure plan for the landfill ties into the closure of the site as a whole (the gravel pit operates under a separate Mine Permit).

Next Steps:

Staff will seek further review from Waterline Resources once the draft Operational Certificate is issued by ENV to:

1. review additional and updated technical information from Upland's consultant to support the proposed landfill
2. review the draft Operational Certificate conditions

The purpose of this ongoing review will be to assess potential risk to environmental receptors in the Quinsam and Cold Creek watersheds once the additional data has been provided, comment on the completeness of the hydrogeological characterization and the proposed environmental monitoring program.

ENV indicated (12 March 2019) that a Notice of Intent and the draft Operational Certificate will be issued shortly, and this will trigger the 30-day public comment period.

The Statutory Decision Maker from ENV, Luc Lachance, has indicated that a decision will not necessarily be made immediately after the 30-day comment period is over as all of the comments received will need to be reviewed and the most appropriate course of action determined. Although ENV has assured that this provides a little leeway time for the City's comments to come in after the 30-day period, the City's consultant will not be able to start the review until the end of April. Timing is expected to be tight and a request to ENV for a formal extension is advisable.

Options

1. THAT the Long Range Planning and Sustainability Department 15 March 2019 report regarding Upland Excavating Ltd. Proposed Landfill, City Peer Review by Waterline Resources be received for information,

AND THAT the Ministry of Environment and Climate Change Strategy be requested to:

1. advise the City (in writing) on how the concerns raised in the City peer review report will be addressed, and
2. extend the 30-day comment period for the draft Operational Certificate to Upland Excavating Ltd. to ensure that the City's consultant has adequate time to review the supporting technical information.
2. Propose additional peer review of the data from the City consultant beyond what has been outlined in this report's section on next steps.
3. Elect not to continue additional peer review of the technical information supporting the draft Operational Certificate including the certificate conditions.

Staff are recommending Option 1. The City's drinking watershed is of paramount importance as are the environmental receptors to the southeast of the proposed landfill including the Quinsam River and the fish hatchery. Given the nature of the landfill and the duration of potential risk, continued professional assessment is a worthwhile investment.

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Financial /Operational Considerations

Council approved \$20,000 which was included in the 2019 budget for the third-party hydrogeological review. Some of this funding remains but additional funding may be required depending on the amount of additional technical data that is presented with the issuance of the draft Operational Certificate. Staff will keep Council apprised of budget implications for continuing technical review. As the Upland landfill file progresses, it is expected that other professional fees, such as further legal review, will be required. Staff time for technical review is ongoing.

Should a final Operational Certificate be issued to Upland for the proposed landfill, rezoning will be required which is expected to draw significant community interest. If zoning is successful, a development permit will then be required prior to any ground disturbance associated with the construction of the upgraded landfill.

Communications

Staff will keep Council informed on:

1. Timing of the ENV issuance of a draft Operational Certificate to Upland – the City has 30 days to comment once the draft is issued
2. Continued City led third-party peer review of the technical documents including ENV feedback

Conclusion

Staff appreciate the complexity of the technical aspects of Upland's proposed engineered landfill and will continue to work with the applicant, ENV staff and stakeholders in order to feel confident that every precaution has been considered to avoid effects on the community's drinking watershed as well as the Quinsam River fish hatchery, Cold Creek and other environmental receptors. The third-party peer review of the technical information is helping with staff preparations to comment when ENV issues a draft Operational Certificate for the proposed landfill.

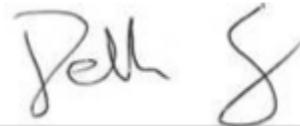
Attachments:

1. *Hydrogeological Review of the Proposed Upland Landfill* (B. Lyons, Waterline Resources, 25 February 2019).

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Assets and Operations			DH; NV; MR
Corporate and Protective Services			
Community Development			
Finance			