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June 17, 2013 Our Ref. No. 1755-2013

Ministry of Environment
West Coast Region, Environmental Protection Division
2080A Labieux Road
Nanaimo, BC V9T 6J9

Attention: Kirsten White
Senior Environmental Protection Officer

Re: **Amendment to the *West Coast Landfill Design, Operations & Closure Report (dated January 2012)***

Dear Ms. White:

This letter has been prepared to address minor changes to the proposed fill plan outlined in the above mentioned report. This amendment is the result of discussions during a site visit on November 15, 2013 with Melanie Mamoser of Ministry of Environment (MoE), the Alberni-Clayoquot Regional District (ACRD), landfill operator Berry & Vale Contracting and engineering consultant McGill & Associates Engineering Ltd. The following amendments have been approved by both the ACRD and landfill operator.

Amendment Rationale

As observed at the West Coast Landfill (WCL), the western edge of the current landfill footprint has not been properly compacted, covered, capped or sloped. The western face exceeds the recommended slope of 3 horizontal to 1 vertical in most of the locations. It has a shallow layer of cover material, with exposed refuse observed throughout. Also, considerable vegetation has grown on this face as it cannot be safely accessed by machinery to conduct maintenance. The cover material that does exist is permeable and readily allows infiltration of rainfall, therefore promoting leachate generation.

The WCL site receives high annual precipitation volumes, making leachate collection and disposal challenging. A leachate excursion was observed along the western leachate collection ditch over the past few years. In 2012, inspection and maintenance of the ditch in the suspected area was completed. The resulting impact of the ditch maintenance is unknown and will likely not be realized until a full year of sampling data has been collected. To further improve the situation, the amount of leachate entering the west leachate collection ditch can be reduced by properly capping the western landfill slope, making this a new priority.

Amendment

The objective of the new plan will be to seal the western slope of the landfill. This will reduce leachate generation by capping exposed surfaces and establishing stable slopes and sealing them against precipitation.

The amendment is to properly cover, cap and slope the western face of the landfill prior to commencing with filling individual cells A through D. As the work proceeds, filling will be completed in this area and a 15m wide road will be constructed along the slope to provide long term access to the future cells. While the western face will slope towards the western leachate collector ditch, the top surface of the landfill will continue to be sloped towards the east collection system. The amended fill area is shown on attached Figure 1, while the original filling plan, showing cells A to D is also attached and labelled Figure 5. After the work to the western face is complete, filling will continue as outlined in the filling plan provided in the January 2012 *West Coast Landfill Design, Operations & Closure Report*.

It is expected that this amendment to the filling plan will:

- Provide better slope stability to the western landfill face by creating proper slopes;
- Create a less permeable capped surface on the western portion to reduce rainfall infiltration and reduce leachate generation to the western leachate collection ditch;
- Use the relatively impermeable capped surface to redirect rainfall away from the leachate collection system;
- Cover exposed solid waste preventing potential for litter and vector attraction; and,
- Allow proper landfill maintenance by having proper slopes.

Impacts of Amendment

The impacts resulting from filling the western portion of the landfill face prior to cells A to D are expected to be minimal and are discussed below.

- The work will be conducted on an area that has been previously filled with solid waste. The current footprint is not being expanded, therefore it will not be infringing on any set property buffers or impacting any surrounding land uses. The work will be completed on top of the existing landfill foundation and will not disrupt the natural clay liner located below the landfill.
- All work will be conducted within the leachate collection area. Any leachate generated in this area will be collected by the existing collection and treatment system.
- Surface water will also be collected by the leachate collection system until the slopes have been properly capped and the surface water re-directed into the surface water collection ditch.
- There is no landfill gas extraction system at this landfill. The contractor must be cautious of landfill gas pockets and have proper safety programs in place.
- Regular environmental monitoring will continue and can be used to evaluate the effectiveness of the capping. No environmental monitoring sites will be impacted.
- The amendment does not change the physical layout of the landfill closure design. The closure volume, date and estimated costs remain the same.
- The work will include uncovering solid waste. The same practices for minimizing litter and vectors will be used for placing new solid waste.

I hope this letter clarifies the reasons for amending our *West Coast Landfill Design, Operations and Closure Report*. Should you have any questions or concerns, please do not hesitate to contact us at 250-724-3400.

Sincerely,

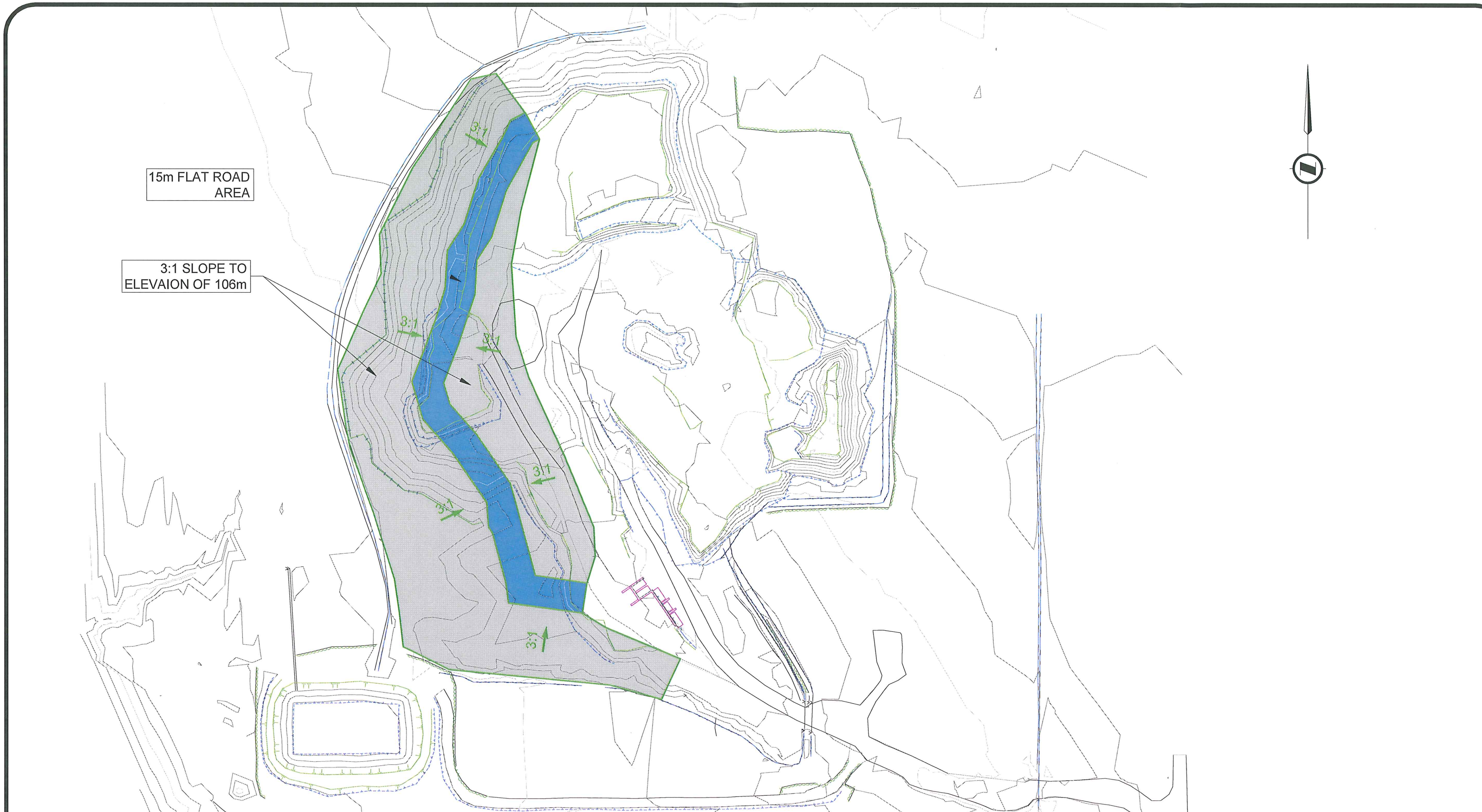
For **McGill & Associates Engineering Ltd.**

Sarah Waldriff, P.Eng. Alan McGill, P.Eng.

Attachments:

Figure 1 – WC Landfill Fill Areas
Figure 5 – Proposed Filling Plan – Cells A to D

Cc: Andy Daniel, Manager of Environmental Services
Alberni-Clayoquot Regional District



WC LANDFILL
FILL PLAN AMENDMENT
JUNE 2013

FIGURE 1

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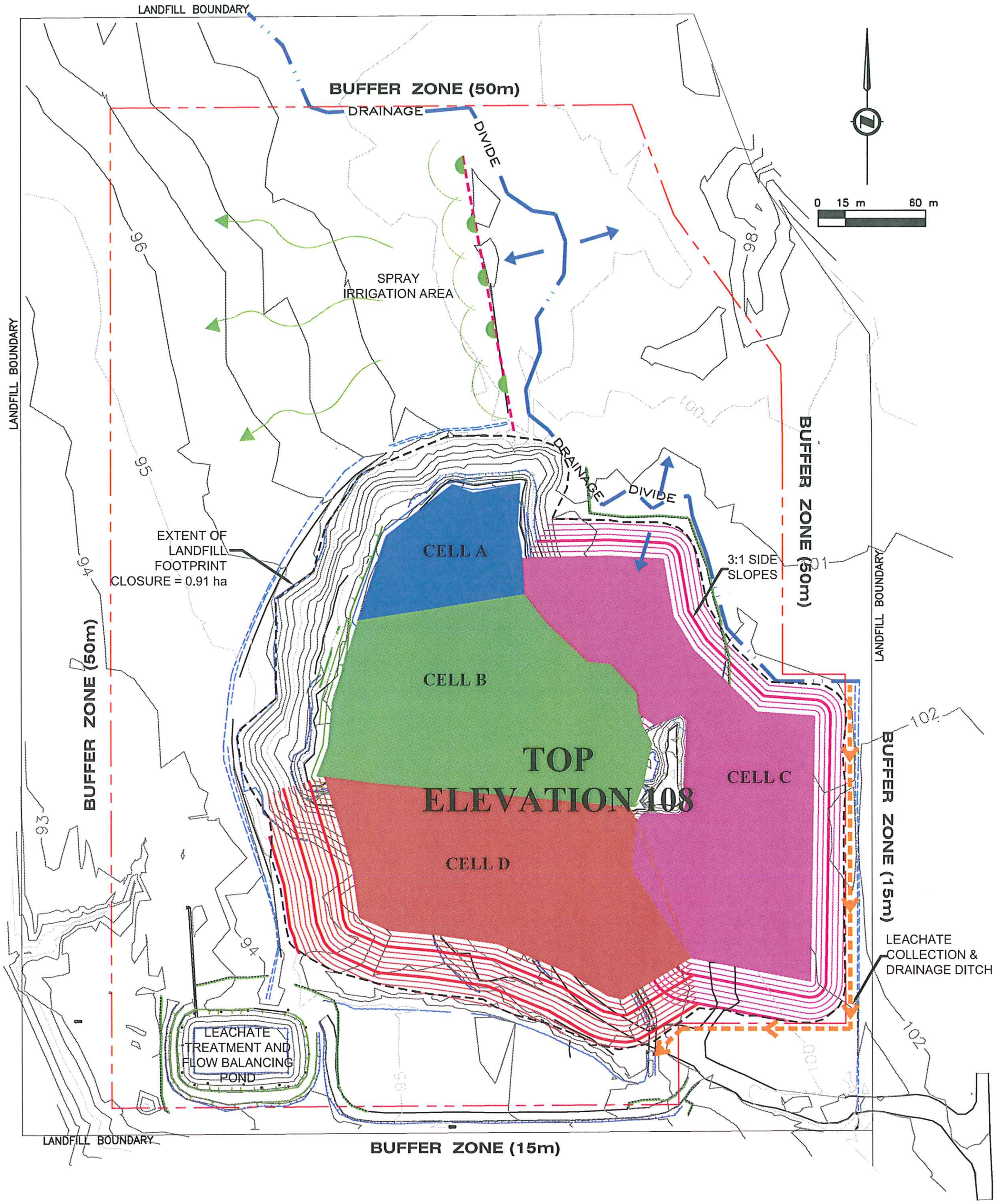

ALBERNI CLAYOQUOT REGIONAL DISTRICT

WEST COAST LANDFILL

DESIGN OPERATIONS & CLOSURE REPORT

PROPOSED FILLING PLAN - CELLS A TO D

FIGURE 5

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