

File No. 19096



Environment and Sustainable Resource Development

FORESTS ACT

BEING CHAPTER F-22 R.S.A. 2000 (the "Act")

Amendment #4 to

Director's Order 2013/01 - UAR

West Fraser Mills Ltd.
Suite 501, 858 Beatty Street
Vancouver, British Columbia
V6B 1C1

WHEREAS on October 7, 2013, the Director issued to Gordon Buchanan Enterprises Ltd. (the "Company") Director's Order 2013/01-UAR (the "Order"), which required the Company to remedy the effects of the failure of the Roads into the Block 1559 at SW22-69-13-W5M [the "Site"] under the Timber Licence;

WHEREAS on October 17, 2013, in response to a request from the Company, the Director issued Amendment #1 to the Order, which amended the completion date for the remedial work to be completed from January 31, 2014 to July 31, 2014;

WHEREAS on October 31, 2014, the Director received from the Company the Geotechnical and Slope Stability Impact Assessment and Reclamation and Revegetation Plan (the "Proposed Plan"), which plan included Appendices A-D, inclusive;

WHEREAS on March 19, 2014, the Director issued to Gordon Buchanan Enterprises Ltd. Amendment #2 to the Order, which required the implementation of some remedial, inspection and reporting measures related to the Site;

WHEREAS on April 3, 2014 Environment and Sustainable Resource Development (ESRD) received a letter from West Fraser Mills Ltd. advising that West Fraser Mills Ltd. had purchased various assets and timber disposition interests of Gordon Buchanan Enterprises Ltd., and that West Fraser Mills Ltd. would also resolve any of Gordon Buchanan Enterprises Ltd.'s non-compliances with the *Forests Act* and its related regulations;

WHEREAS the Director met with a West Fraser Mills Ltd. on April 7, 2014, at which meeting West Fraser Mills Ltd. stated its commitment to carrying out the requirements of the Order, as amended;

WHEREAS on April 11, 2014, the Director issued to West Fraser Mills Ltd. Amendment #3 to the Order, which required West Fraser Mills Ltd. To carry out the requirements of the Order, as amended;

WHEREAS on April 14, 2014, representatives from ESRD and representatives from West Fraser Mills Ltd. visited the Site;

WHEREAS the ESRD representatives observed the following two large scale, deep seated landslides, at which the depth of the failure plane is greater than a metre below grade;

WHEREAS as a result of the April 14, 2014 site visit, ESRD has concluded the following:

- The hillside was only marginally stable prior to construction of the Roads;
- The landslides were likely caused by a combination of (a) Earth moving, as required to build the logging road likely blocked the areas of natural seepage coming out of the hillside and water continued to seep into the road fill, resulting in saturation of the fill and hillside soils, causing loss of soil strength and resulting in failure of the road; and (b) The logging roads were very steeply constructed to reach the plateau level of the hillside, requiring delicate cut and fill operations. The cut portion oversteepened the natural slope above the logging road and the fill placed below the road loaded the lower portion of the hillside, triggering landslide movement of the lower portion, followed by the upper portion;
- To fully mitigate the landslides and return the hillside at the site to pre-disturbance condition would require extensive intrusive earth moving activities, and reconstruction is not a practical solution; and
- Minimizing further erosion and eliminate transportation of eroded materials to the Watercourse should be the focus of future remedial work.

WHEREAS Environment and Sustainable Resource Development (ESRD) has reviewed the Proposed Plan and found that the Proposed Plan satisfies some of the requirements of the Order, but also contains deficiencies that must be addressed before the Director can approve all of the Proposed Plan;

WHEREAS the Proposed Plan's deficiencies include, but are not limited to, the following omissions:

Geotechnical Assessment

- Identification of physiographical and geological setting of the Site;
- Characterization of the site geology, including the determination of soil, bedrock and groundwater parameters;
- Complete geodetic survey, to determine soil profile, structure, texture and soil erodibility;
- Topographic maps; and

- Depth and cause of tension cracks on the surface.

Remediation Plan

- Proposed remediation activities for the disturbed area outside of the shore the Watercourse, taking the above information into account;
- Construction sketches of the proposed erosion and sediment control plan, based on the information gathered through the above actions;
- Plan for construction supervision and material testing throughout the implementation of the Proposed Plan and a strategy for addressing any deviations from the Proposed Plan; and
- Air photos

WHEREAS Faye Hutchings, Compliance Manager, Upper Athabasca Region, has been designated a Director for the purposes of issuing orders under the *Forests Act* (the "Director");

WHEREAS the Director believes that an amendment to the Order to authorize necessary remedial work and require correction of Proposed Plan deficiencies is required;

THEREFORE, I, Faye Hutchings, pursuant to section 12 of the *Forests Act*, DO HEREBY ORDER:

Immediate Remedial Requirements

1. West Fraser Mills Ltd. shall immediately prevent any and all earthen material from entering
 - a. the bed; and
 - b. the shoreof the Watercourse from the Site, in respect of Gordon Buchanan Enterprises Ltd.'s and West Fraser Mills Ltd.'s activities on the Site.
2. West Fraser Mills Ltd. shall by **August 18, 2014**, install and anchor silt fences on the Site in each of the following locations:
 - a. along the entirety of the road cuts above the slide area ;
 - b. along the entirety of the toe of the hillside, above the flood fringe, and
 - c. along the entirety of the road leading way from the slide areas.
3. West Fraser Mills Ltd. shall by **August 28, 2014**, provide in writing to the Director, the identification of all of the silt fences, installed pursuant to clause 2, that are intended to function as temporary sediment ponds.

4. West Fraser Mills Ltd. shall carry out each of the Annual Inspections described in the "Long-Term Monitoring" portion of Table 1, page 6 of Appendix D of the Proposed Plan until such time as vegetation is established as determined and confirmed in writing by the Director.
5. West Fraser Mills Ltd. shall not carry out any actions required under this Amendment unless those actions are directly and continuously supervised by an independent third party qualified professional currently registered with the Association of Professional Engineers and Geoscientists of Alberta (APEGA), the Alberta Society of Professional Biologists (ASRB) or a Certified Professional Erosion and Sediment Control specialist (CPESC).
6. West Fraser Mills Ltd., and any of its agents, representatives, consultants or other parties representing the Company, shall not, in carrying out any actions required under this Amendment, come into contact with any undisturbed bed and shore of the Watercourse.
7. West Fraser Mills Ltd. shall provide the Director with 2 days' notice either by phone or email prior to commencing the work described in Clauses 1 and 2, inclusive, of this Amendment.

Revised Geotechnical Assessment

8. West Fraser Mills Ltd. shall by **September 2, 2014**, submit to the Director, for the Director's approval, a written Revised Geotechnical Assessment Report, signed by an independent third party qualified professional currently registered with the APEGA.
9. In the Revised Geotechnical Assessment Report, West Fraser Mills Ltd. shall include, at minimum, all of the following:
 - a. An updated characterization of the geotechnical properties of the subsurface of the area's immediately adjacent to the Site:
 - i. referencing the Swan Hills uplands, rather than Edmonton, and
 - ii. references to aerial photographs;
 - b. Identification of potential geohazards within the Site including, but not limited to, identification of areas within the Site that are damaged or vulnerable as a result of slope angle, alterations to drainage patterns or lack of adequate vegetation;
 - c. A topographic survey of the entire Site which shall include, but is not limited to identification and description of, each of the following:

- i. surface water and groundwater sources that could impact the Site,
 - ii. slopes on the Site,
 - iii. the Watercourse adjacent to the Site,
 - iv. escarpment on the Site,
 - v. location of tension cracks on and adjacent to the Site; and
 - vi. toe bulging on and adjacent to the Site.
- d. A vegetation survey, including descriptions of the vegetation on the Site both pre-disturbance and post-disturbance;
- e. A detailed assessment of sediment ponds including:
 - i. An assessment of the suitability of each of the existing temporary sediment ponds identified pursuant to Clause 3 to prevent erosion of and sediment migration on the Site ,
 - ii. Description of all proposed replacement location(s) for any existing temporary sediment ponds identified pursuant to Clause 3 and determined under Clause 9(e)(i) to be unsuitable for prevention of erosion and sediment migration from the Site,
 - iii. Identification of potential need for additional sediment ponds,
 - iv. Description of proposed location(s) and size of additional sediment ponds identified under Clause 9(e)(iii).
- f. A complete assessment of the soil aggregate stability index (ASI) for soil on the Site;
- g. A detailed description of all site visits conducted in the preparation of the Revised Geotechnical Assessment;

Remedial Plan

10. West Fraser Mills Ltd. shall, by **September 12, 2014** submit to the Director, for the Director's approval, a written Remedial Plan, signed by an independent third party qualified professional currently registered with the Association of Professional Engineers and Geoscientists of Alberta (APEGA) or a Certified Professional Erosion and Sediment Control specialist (CPESC).
11. In the Remedial Plan, West Fraser Mills Ltd. shall include at minimum, all of the following:
 - a. A description of all mitigation work required to prevent erosion and prevent sediment run-off from the Site;
 - b. A description of all plans for the
 - i. Installation; and

- ii. Long-term use of sediment ponds on the Site.
 - c. A plan to stabilize all of the materials on the bed and shore of the Watercourse, including but not limited to the use of all of the following:
 - i. Live planting using exclusively native species;
 - ii. Fascines; and
 - iii. Wattles; or
 - iv. Other bioengineering methods as approved in writing by the Director.
 - d. A plan to stabilize all of the materials on the area adjacent to and upland of the Watercourse to prevent erosion;
 - e. A Site Drainage Plan, including but not limited to all of the following:
 - i. Flow paths from all sources, including
 - 1. from the plateau above the Watercourse;
 - 2. entering and exiting the slide area;
 - 3. entering and exiting the sediment ponds;
 - 4. across the flood plain and shore;
 - 5. to the Watercourse
 - ii. Locations of all silt fences; and
 - iii. Locations of all drainage control structures;
 - f. A ground surface stabilization plan, including but not limited to all of the following:
 - i. Location of erosion control mats;
 - ii. Hand seeding areas, including type of seed mix proposed; and
 - iii. Mulching areas including type and source of mulching; and
 - g. A schedule of implementation for the Remedial Plan, including, a completion date of no later than **October 31, 2014**.
- 12. West Fraser Mills Ltd. shall, beginning immediately, and continuing at least once per calendar month thereafter, until notified otherwise in writing by the Director, carry out a Monthly Site Inspection.
- 13. During each Monthly Site Inspection, West Fraser Mills Ltd. shall carry out each of the following:
 - a. Assess the condition of all silt fencing;
 - b. Assess the condition of all other erosion and sedimentation prevention measures that have been implemented;
 - c. Make repairs to silt fencing and other erosion or sedimentation prevention measures;

- d. Assess the growth and condition of all vegetation that has been planted or is otherwise present on the Site
 - e. Make notes of :
 - i. All of the above; and
 - ii. Any new Site conditions that have materialized since the earlier Monthly Site Inspections.
14. West Fraser Mills Ltd. shall, no later than one week after the Monthly Site Inspection, submit to the Director, a written Monthly Site Inspection Report.
15. In each Monthly Site Inspection Report, West Fraser Mills Ltd. shall include a summary of all of the observations, activities carried out, and notes made in accordance with Clause 13 of this Amendment, since the last Monthly Site Inspection Report;
16. West Fraser Mills Ltd. shall implement the Remedial Plan in accordance with the written approval from the Director.
17. Clauses 1, 2, 3, 4, 5, and 6 of the original Director's Order 2013/01 - UAR are hereby deleted, cancelled or repealed, as the case may be.
18. Clauses 3, 4, 5 and 6 of Amendment #2 to Director's Order 2013/01 – UAR are hereby deleted, cancelled or repealed as the case may be.

DATED at the Town of Slave Lake in the Province of Alberta, this 28th day of July, 2014.

**Original Signed by: Faye Hutchings
Compliance Manager
Upper Athabasca Region**

Notwithstanding the above requirements, the Company shall obtain all necessary approvals in complying with this order.

Take notice that this order is a remedial tool only, and in no way precludes any enforcement proceedings being taken regarding this matter under this Act or any other legislation.