This package contains a completed Steep Slope Hazard Assessment form plus the associated 1:5,000 map. In this case, the harvest block had two different sites that each required unique operational controls. As a result, this example includes two completed assessments. In other blocks, where site characteristics are the same such that one set of operational controls will address identified hazards, the associated plan will include only one completed Steep Slope Hazard Assessment form.
### Steep Slope Hazard Assessment Tool

#### Hazard Identification and Assessment

<table>
<thead>
<tr>
<th>Code</th>
<th>Date</th>
<th>License / CP</th>
<th>Blocks</th>
<th>Site or Sub-Area</th>
<th>Licensee / Owner</th>
<th>Site Supervisor or Contractor</th>
<th>Area O = Pink X - Hatch</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SEPT 9, 2010</td>
<td>A023007/209</td>
<td>Block 2</td>
<td></td>
<td>Big Stick Timber</td>
<td>D. Nelson Inc.</td>
<td></td>
</tr>
</tbody>
</table>

#### Machine Stability Factor

<table>
<thead>
<tr>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 to 50% and Slope Length &lt;50 Metres</td>
<td>40 to 50% and Slope Length &gt;50 Metres</td>
<td>&gt;50% and Slope Length &gt;10 Metres</td>
<td>Slopes MOSTLY 35-40%</td>
</tr>
<tr>
<td>35 to 45% and Slope Length &lt;50 Metres</td>
<td>35 to 45% and Slope Length &gt;50 Metres</td>
<td>&gt;45% and Slope Length &gt;10 Metres</td>
<td></td>
</tr>
<tr>
<td>No Instability Indicators and slopes &lt;50%</td>
<td>Instability Indicators and slopes &lt;50%</td>
<td>Slopes &gt;50%</td>
<td></td>
</tr>
<tr>
<td>&lt;30% of steep slope area covered with Roughness Features</td>
<td>30 to 50% of area covered with Roughness Features</td>
<td>&gt;50% of steep slope area covered with Roughness Features</td>
<td></td>
</tr>
<tr>
<td>Well-drained (e.g., Gravel, Coarse Sand)</td>
<td>Moderately Well-Drained (Fine Sand, Silt), Indicators of sub-surface flows</td>
<td>Poorly-drained or saturated (Silt, Clay), High Water Table</td>
<td></td>
</tr>
<tr>
<td>&gt;30 cm to bedrock</td>
<td>15 to 30 cm to bedrock</td>
<td>Thin soils (less than 15 cm), or bedrock exposures</td>
<td></td>
</tr>
<tr>
<td>Open Understory, no windthrow</td>
<td>Moderate downed timber, Understory, Stumps &lt;30cm</td>
<td>Heavy Downed Timber, Understory, Stumps &gt;30cm</td>
<td>root rot areas, old stumps</td>
</tr>
<tr>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>&quot;New&quot; operator Terry see pg. 2</td>
</tr>
<tr>
<td>Less than 15 minutes</td>
<td>15 to 30 Minutes</td>
<td>More than 30 minutes</td>
<td>shade, fatigue, dehydration</td>
</tr>
</tbody>
</table>

#### Timber Height (Avg.): 28 m

#### Average Stem Diameter: 50-60 cm

#### Timber Species: Fd Hu (Cw)

#### Maximum Stem Diameter: 65 cm

### Overall Machine Stability Risk Rating: **HIGH**

3 or More "HIGH" Ratings Results in "No Go" Unless Additional Measures Are Taken (See Page 2).

#### Qualified Assessor: Jim Simms

#### Signature: [Signature Image]
CUTTING PERMIT: CP 209  BLOCK: 2  SITE OR SUB-AREA: P

TYPE OF MACHINE: □ Feller-Buncher  □ Skidder  □ Hoe-Chuck  □ Processor  □ Other: X

DESIGNATED NO GO FOR MECHANICAL OPERATIONS

Identify Designated Machines / Name Designated Operators:

TIGER CAT 1830C, QUADCO HEAD  OPERATOR = TERRY
MADILL 3800  DON & JOHN
CAT 330 D LIMIT

Indicate those Mechanical Features Prescribed to Ensure Machine Stability

- Non-Tilting Cab  [ ] Tilting Cab  [ ] Zero Tail Swing Design  [x] Extended Tracks  [ ] Telescoping Boom

Picks / Grousers (describe height & spacing):

For buncher & hoe chuck 2" picks, every 2nd pad

- Non-swivel Head  [ ] Rotating Head  [ ] Intermittent Saw  [ ] Hot Saw  [x] Shave Stumps, As Required

Head Cutting Capacity (Diameter): 24" = 60cm  Tree / Weight Handling Capacity: ALL > 5,000 kg

Allowable Stump Height: 45cm  Target Bunch / Turn Size: 100% for hoe chuck

- Chains On 4 wheels  [ ] Flotation Tires  [ ] Swing Grapple  [ ] Other Devices:

Other Mechanical Features to Ensure Stability (describe):

See also standard safe work practices & procedures for steep slope harvesting as per company manual.

- Approach Steep Slopes From Below  [ ] Operations During Daylight Hours Only  [ ] Utilize Existing Benches

- Up trail, safe turn-around, Direct down-slope Skid  [ ] Construct & Use Machine Trails (identify on map)

- All-season Operations  [ ] Summer Only  [ ] Winter Only  Maximum Snow Depth:

- Communications Process (e.g., 2-way radio, cell, etc.)
  Channel 12 = bush
  Radio in each machine

- Man-check frequency (who, how often)
  Every 2 hours on the hour, supervisor = Bob

Poor Weather Shut-down conditions (Describe)

Monitor fire weather; early shift, possible closure

Available Assistance (machine, Operator)

Madill 3800 - STAN

Other Site-Specific Requirements and Notes:

* Terry has only 2 weeks experience on slopes > 35%; OK for Area 0 provided hourly radio checks, field check by Bob twice daily
  - roof rot areas - buck / cut downed debris, beware stem rot
  - oversize = 360 cm - leave for hand faller, traffic - signs, awareness

DATE:  [ ] SIGNATURE:  Don Nelson  DATE:  [ ] SIGNATURE:  John Druff

DATE:  [ ] SIGNATURE:  Jerry Smith  DATE:  [ ] SIGNATURE:  (Blank)

DATE:  [ ] SIGNATURE:  (Blank)  DATE:  [ ] SIGNATURE:  (Blank)

QUALIFIED PERSON BUILDING PLAN:

Bob Nelson  I Have Reviewed the Associated Steep Slope Hazard
Assessment and Verify Its Accuracy  Signature: Bob Nelson

ATTACH COPY OF HAZARD ASSESSMENT TO STEEP SLOPE PLAN MAP
# STEEP SLOPE HAZARD ASSESSMENT TOOL

## HAZARD IDENTIFICATION AND ASSESSMENT

<table>
<thead>
<tr>
<th>DATE</th>
<th>SEPT 9, 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>LICENSE/CP</td>
<td>A023007/209</td>
</tr>
<tr>
<td>BLOCK</td>
<td>2</td>
</tr>
<tr>
<td>BLOCK/SITE</td>
<td>AREA 2</td>
</tr>
<tr>
<td>LICENSEE/OWNER</td>
<td>BIG STICK TIMBER</td>
</tr>
<tr>
<td>SITE SUPERVISOR OR CONTRACTOR</td>
<td>D. NELSON INC.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MACHINE STABILITY FACTOR</th>
<th>LOW</th>
<th>MODERATE</th>
<th>HIGH</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLOPE &amp; SLOPE LENGTH, TRACKED MACHINES</td>
<td>40 to 50% and Slope Length &lt;50 Metres</td>
<td>40 to 50% and Slope Length &gt;50 Metres</td>
<td>&gt;50% and Slope Length &gt;10 Metres</td>
<td></td>
</tr>
<tr>
<td>SLOPE &amp; SLOPE LENGTH, WHEELED MACHINES</td>
<td>35 to 45% and Slope Length &lt;50 Metres</td>
<td>35 to 45% and Slope Length &gt;50 Metres</td>
<td>&gt;45% and Slope Length &gt;10 Metres</td>
<td></td>
</tr>
<tr>
<td>TERRAIN STABILITY / CLASSIFICATION</td>
<td>No instability indicators and slopes &lt;50%</td>
<td>Instability indicators and slopes &lt;50%</td>
<td>Slopes &gt;50%</td>
<td>Mostly 30-50% coverage, but &gt;50% in 2 sites FC4, FC5</td>
</tr>
<tr>
<td>GROUND ROUGHNESS INCLUDES BOULDERS, ROCKY OUTCROPS, HUMMOCKS, DEPRESSIONS, ETC.</td>
<td>&lt;30% of steep slope area covered with Roughness Features</td>
<td>30 to 50% of area covered with Roughness Features</td>
<td>&gt;50% of steep slope area covered with Roughness Features</td>
<td></td>
</tr>
<tr>
<td>SOILS</td>
<td>Well-drained (e.g. Gravel, Coarse Sand)</td>
<td>Moderately Well-Drained (Fine Sand, Silt); Indicators of sub-surface flows</td>
<td>Poorly-drained or saturated (Silt, Clay), High Water Table</td>
<td></td>
</tr>
<tr>
<td>SOIL DEPTH</td>
<td>&gt;30 cm to bedrock</td>
<td>15 to 30 cm to bedrock</td>
<td>Thin soils (less than 15 cm), or bedrock exposures</td>
<td></td>
</tr>
<tr>
<td>PRE-EXISTING AND POST-HARVEST DEBRIS</td>
<td>Open Understory, no windthrow</td>
<td>Moderate downed timber, Understory, Stumps &lt;30cm</td>
<td>Heavy Downed Timber, Understory, Stumps &gt;30cm</td>
<td>Root Rot AREAS</td>
</tr>
<tr>
<td>DURATION OF EXPOSURE CONSIDER OPERATOR COMPETENCY, STATE OF MIND, CHANGING CONDITIONS</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>EACH SITE IS &lt;1HA BRIEF EXPOSURE Up to 30 min for FA</td>
</tr>
<tr>
<td>WORKER ISOLATION - TIME FOR ASSISTANCE TO REACH OPERATOR</td>
<td>Less than 15 minutes</td>
<td>15 to 30 Minutes</td>
<td>More than 30 minutes</td>
<td>Area near backline</td>
</tr>
<tr>
<td>HAZARDOUS ENVIRONMENTAL FACTORS (DESCRIBE)</td>
<td>Rocks / Thin Soils Esp @ Plot 47, FC4, FC5</td>
<td>OVERSIZE TIMBER - 20% STEMS &gt; 60 cm</td>
<td>Root Rot AREAS - @ EACH SITE, OUTSIDE F/L</td>
<td></td>
</tr>
</tbody>
</table>

**OTHER SITE FEATURES / FACTORS (e.g. UPSLOPE HAZARDS, DANGER TREES, BENCHES, ETC.)**

**TIMBER HEIGHT (AVG.):** 28 m

**TIMBER SPECIES:** Fd Hw (c.w.)

**AVERAGE STEM DIAMETER:** 50-60 cm

**MAXIMUM STEM DIAMETER:** 80 cm = OVERSIZE

**OVERALL MACHINE STABILITY RISK RATING:** HIGH

3 OR MORE “HIGH” RATINGS RESULTS IN “NO GO” UNLESS ADDITIONAL MEASURES ARE TAKEN (SEE PAGE 2).

**QUALIFIED ASSESSOR:** JIM SIMMS

**SIGNATURE:** [Signature Image]
STEEP SLOPE HAZARD ASSESSMENT TOOL
PRACTICES AND CONTROLS TO ELIMINATE OR MITIGATE HAZARDS

CUTTING PERMIT: 209  BLOCK: 2  SITE OR SUB-AREA: 2 = BLUE

TYPE OF MACHINE:  □ Feller-Buncher □ Skidder □ Hoe-Chuck □ Processor □ Other: X = HATCH

DESIGNATED NO GO FOR MECHANICAL OPERATIONS
Identify Designated Machines / Name Designated Operators:

TIGERCAT L830C QUADCO HEAD EXP. OPERATOR = BOB NELSON
MADILL 3800 T HUTTINS " " STAN (FIRST AID)
CAT 330 T LIMMIT (ROADSIDE) OPERATORS = DON & JOHN

Indicate those Mechanical Features Prescribed to Ensure Machine Stability
☒ Non-Tilting Cab ☐ Tilting Cab ☐ Zero Tail Swing Design ☐ Extended Tracks ☐ Telescoping Boom

Picks / Grousers (describe height & spacing):

☒ 2" PICKS EVERY 2ND PAD, OFFSET

☐ Non-swivel Head ☐ Rotating Head ☐ Intermittent Saw ☐ Hot Saw ☐ Shave Stumps, As Required

Head Cutting Capacity (Diameter): 24" x 60cm
Allowable Stump Height: 30 cm

Tree / Weight Handling Capacity: ALL > 5,000 KG

Target Bunch / Turn Size: 7.5% for hoe chuck

☐ Chains On 4 wheels ☐ Flotation Tires ☐ Swing Grapple ☐ Other Devices:

Other Mechanical Features to Ensure Stability (describe):

☐ Approach Steep Slopes From Below ☐ Operations During Daylight Hours Only ☐ Utilize Existing Benches
☐ Up trail, safe turn-around, direct down-slope Skid ☐ Construct & Use Machine Trails (identify on map)

☐ All-season Operations ☐ Summer Only ☐ Winter Only Maximum Snow Depth:

Communications Process (e.g. 2-way radio, cell, etc.):
Channel 12 = BUSH Radio in each machine
Every hour, on the hour → STAN
Back-up = Bob (supervisor)

Poor Weather Shut-down Conditions (describe):
Fire weather - monitor early, shift, poss. closure

Site-Specific Requirements & Actions

ROCK OUTCROPS - NO MACHINE TRAVEL, REACH-IN
OR LEAVE FOR HAND-FALLER; ROOT ROT AREAS - WATCH STEM DECAY
SWING TREES TO LOWER SLOPE AREA AS POSSIBLE TO REDUCE/AVOID
HOE-CHUCK TIME ON STEEP/ROCKY SLOPES, SITE APPROVED FOR ADDITIONAL
TRAILS, CHECK TO SUPERVISOR, HAND FALLER, FOR OVERSIZE

DATE: Sept 11/10  SIGNATURE: John Smith
DATE: Sept 11/10  SIGNATURE: Dan Nelson

QUALIFIED PERSON BUILDING PLAN:
BOB NELSON

I have reviewed the associated Steep Slope Hazard Assessment and verify its accuracy.

QUALIFIED PERSON BUILDING PLAN:
BOB NELSON

ATTACH COPY OF HAZARD ASSESSMENT TO STEEP SLOPE PLAN MAP
<table>
<thead>
<tr>
<th>Field Markings</th>
<th>RIBBON</th>
<th>PAINT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Boundary</td>
<td>Blue / Orange</td>
<td>Orange</td>
</tr>
<tr>
<td>Roads</td>
<td>Red / Yellow</td>
<td></td>
</tr>
<tr>
<td>Landings</td>
<td>Red / Yellow (3)</td>
<td></td>
</tr>
<tr>
<td>Treatment Unit Boundary</td>
<td>Red (treatment unit) / Blue</td>
<td></td>
</tr>
<tr>
<td>Designated Crossing</td>
<td>Pink (designated crossing)</td>
<td></td>
</tr>
<tr>
<td>W T P./Retention Management Zone</td>
<td>Glo-orange (reserve zone) / Blue</td>
<td>Blue</td>
</tr>
<tr>
<td>Machine Free (5m)</td>
<td>Pink (machine free zone)</td>
<td></td>
</tr>
<tr>
<td>Strip Lines/Cruise Lines</td>
<td>Blue</td>
<td></td>
</tr>
<tr>
<td>Designated Skid Trails</td>
<td>Blue</td>
<td></td>
</tr>
<tr>
<td>Falling Corners</td>
<td>Blazed and Tagged with 2 station markers</td>
<td>Orange</td>
</tr>
<tr>
<td>Creek/NCD</td>
<td>Pink / Blue</td>
<td></td>
</tr>
<tr>
<td>Deflection Line</td>
<td>Yellow with Black polka dot (2 at stations)</td>
<td></td>
</tr>
<tr>
<td>Station Marker (except D-Lines)</td>
<td>Yellow / Blue</td>
<td>Blue</td>
</tr>
</tbody>
</table>

**LEGEND**

- Falling Corner
- Cruise Line
- Cruise Plot
- Existing Logging Road
- Existing Trail
- Proposed Road Permit Road
- Proposed In-Block Road
- Proposed Landing
- Excavated/Bladed Trail
- Designated Skid Trail
- Skid Direction (Fav.)
- Skid Direction (Adv.)
- Deactivation: 5-Year-Plan
- Deactivation: Recontour
- Gully
- Slope Break

Legend:
- Non-fish-bearing Creek (Observe 5m Machine-Free Zone within block boundary)
- NC/Steep
- NC/Stream
- Rocky Area
- Designated Crossing
- Existing Block
- Existing W.T.P./Retention
- Proposed Block
- Clear-cut, Conventional
- W.T.P.
- Retention

- Proposed Block: Handfall required
- Existing Block: Handfall may be required