### ESS Group: Water Crossing

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Easting</th>
<th>Northing</th>
<th>UTM Zone</th>
<th>Channel Width</th>
<th>Wet Width</th>
<th>Fish Habitat Class</th>
<th>Habitat Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-503</td>
<td>N3-Aqua-106</td>
<td>Unnamed Tributary into Mitisito River</td>
<td>473866</td>
<td>6048581</td>
<td>14N</td>
<td>N/A</td>
<td>N/A</td>
<td>Low</td>
<td>Marginal</td>
</tr>
</tbody>
</table>

**Potential Effects:**
- Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

**Specific Mitigation:**
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Use existing trails, roads or cut lines whenever possible as access routes
- Identify and flag buffer areas prior to start of work
- Riparian Buffers shall be a minimum of 30m in width and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements.
- No machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- No instream works or fording from April 1 - July 15

### ESS Group: Groundwater

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-503</td>
<td>N3-Aqua-200</td>
<td>Anywhere Vulnerable to contamination</td>
<td>Site: 51 to 55</td>
<td>E-475648</td>
<td>N-5050506</td>
<td>14N</td>
<td>004 m</td>
</tr>
</tbody>
</table>

**Potential Effects:**
- Potential groundwater contamination from a contingency event (e.g., spill)

**Specific Mitigation:**
- Marshalling yards will be located on upland sites where possible.
- An Emergency Preparedness and Spill Response Plan will be developed and an emergency response spill kit will be kept on-site at all times in case of fluid leaks or spills from machinery.
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions.
- Emergency response plans for sealing/grouting and pumping will be implemented as required.

### ESS Group: Permafrost

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-503</td>
<td>N3-Solls-107</td>
<td>Permafrost</td>
<td>Site: 43 to 44</td>
<td>E-475319</td>
<td>N-5040939</td>
<td>14N</td>
<td>1159 m</td>
</tr>
<tr>
<td>N2-503</td>
<td>N2-Solls-108</td>
<td>Permafrost</td>
<td>Site: 45 to 46</td>
<td>E-472774</td>
<td>N-5040237</td>
<td>14N</td>
<td>13030 m</td>
</tr>
</tbody>
</table>

**Potential Effects:**
- Melting or loss of permafrost due to disturbance of the active layer

**Specific Mitigation:**
- Carry out construction activities on frozen ground to minimize surface damage and rutting.
- Use existing trails, roads or cut lines whenever possible as access routes
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by low-disturbance methods
- Confinle vehicle traffic to established trails to the extent possible
- Implement erosion control protection before commencing construction in accordance with Erosion/Sediment Control Plan

**MAP NUMBER:** 119
**ESS Group: Water Crossing**

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Easting</th>
<th>Northing</th>
<th>UTM Zone</th>
<th>Channel Width</th>
<th>Wet Width</th>
<th>Fish Habitat Class</th>
<th>Habitat Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-503</td>
<td>N3-Aqua-107</td>
<td>Unnamed Tributary into Mitsitso River</td>
<td>470610</td>
<td>6047554</td>
<td>14N</td>
<td>2.5m</td>
<td>2.5m</td>
<td>Low</td>
<td>Marginal</td>
</tr>
</tbody>
</table>

**Potential Effects:**

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rummaging of floodplain

**Specific Mitigation:**

- Carry out construction activities on frozen ground to minimize surface damage and rutting and erosion
- Use existing trails, roads or cutlines whenever possible as access routes
- Identify and flag buffer areas prior to start of work
- Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements.
- No machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- No instream works or fording from April 1 - July 15

**ESS Group: Mammals and Habitat**

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-503</td>
<td>N3-Wild-200</td>
<td>MCWS Caribou Sensitive Area</td>
<td>Site: 32 to 34</td>
<td>E-479645</td>
<td>N-6050506</td>
<td>14N</td>
<td>22469 m</td>
</tr>
</tbody>
</table>

**Potential Effects:**

Webwood Woodland Caribou Range Sensitive Area

**Specific Mitigation:**

- For mitigation in this area refer to the "Moose and Woodland Caribou Sensitive Range Delineation and Mitigation Plans" document

**ESS Group: Permafrost**

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
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<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-503</td>
<td>N3-Spills-108</td>
<td>Permafrost</td>
<td>Site: 45 to 46</td>
<td>E-472774</td>
<td>N-6048797</td>
<td>14N</td>
<td>13030 m</td>
</tr>
</tbody>
</table>

**Potential Effects:**

Melting or loss of permafrost due to disturbance of the active layer

**Specific Mitigation:**

- Carry out construction activities on frozen ground to minimize surface damage and rutting.
- Use existing trails, roads or cutlines whenever possible as access routes
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by low-disturbance methods
- Confining vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan

**ESS Group: Groundwater**

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
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<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-503</td>
<td>N3-Aqua-200</td>
<td>Aquifers Vulnerable to contamination</td>
<td>Site: 21 to 22</td>
<td>E-479645</td>
<td>N-6050506</td>
<td>14N</td>
<td>8679 m</td>
</tr>
<tr>
<td>N3-503</td>
<td>N3-Aqua-200</td>
<td>Aquifers Vulnerable to contamination</td>
<td>Site: 31 to 33</td>
<td>E-479645</td>
<td>N-6050506</td>
<td>14N</td>
<td>20504 m</td>
</tr>
</tbody>
</table>

**Potential Effects:**

Potential groundwater contamination from a contingency event (e.g., spill)

**Specific Mitigation:**

- Marshalling yards will be located on upland sites where possible.
- An Emergency Preparedness and Spill Response Plan will be developed and an emergency response spill kit will be kept on-site at all times in case of fluid leaks or spills from machinery.
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions.
- Emergency response plans for sealing/grouting and pumping will be implemented as required.
**ESS Group: Water Crossing**

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Easting</th>
<th>Northing</th>
<th>UTM Zone</th>
<th>Channel Width</th>
<th>Wet Width</th>
<th>Fish Habitat Class</th>
<th>Habitat Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-503</td>
<td>N3-S03</td>
<td>Unnamed Tributary into Mistsho River</td>
<td>466424</td>
<td>6046234</td>
<td>14N</td>
<td>6m</td>
<td>6m</td>
<td>Low</td>
<td>Marginal</td>
</tr>
</tbody>
</table>

**Potential Effects:**
- Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

**Specific Mitigation:**
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Use existing trails, roads or cut lines whenever possible as access routes
- Identify and flag buffer areas prior to start of work
- Riparian buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MIH Veg Clearance Requirements.
- No parking zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- No stream works or fording from April 1 - July 15

**ESS Group: Mammals and Habitat**

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
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<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-503</td>
<td>N3-Wild-200</td>
<td>MCWS Caribou Sensitive Area</td>
<td>Site: 32 to 34</td>
<td>E-479645</td>
<td>E-458248</td>
<td>14N</td>
<td>22469 m</td>
</tr>
</tbody>
</table>

**Potential Effects:**
- Webowen Woodland Caribou Range Sensitive Area

**Specific Mitigation:**
- For mitigation in this area refer to the "Moose and Woodland Caribou Sensitive Range Delineation and Mitigation Plans" document

**ESS Group: Permafrost**

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
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<th>Start</th>
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<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-503</td>
<td>N3-Sptls-108</td>
<td>Permafrost</td>
<td>Site: 45 to 46</td>
<td>E-472774</td>
<td>E-460347</td>
<td>14N</td>
<td>13030 m</td>
</tr>
</tbody>
</table>

**Potential Effects:**
- Melting or loss of permafrost due to disturbance of the active layer

**Specific Mitigation:**
- Carry out construction activities on frozen ground to minimize surface damage and rutting.
- Use existing trails, roads or cut lines whenever possible as access routes
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by low-disturbance methods
- Confining vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan

**ESS Group: Groundwater**

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
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<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-503</td>
<td>N3-Aqua-200</td>
<td>Aquifers Vulnerable to contamination</td>
<td>Site: 31 to 33</td>
<td>E-479645</td>
<td>E-460122</td>
<td>14N</td>
<td>20504 m</td>
</tr>
</tbody>
</table>

**Potential Effects:**
- Potential groundwater contamination from a contingency event (e.g., spill)

**Specific Mitigation:**
- Marshalling yards will be located on upland sites where possible.
- An emergency Preparedness and Spill Response Plan will be developed and an emergency response spill kit will be kept on-site at all times in case of fluid leaks or spills from machinery.
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions.
- Emergency response plans for sealing/grouting and pumping will be implemented as required.

**MAP NUMBER:** 121
**ESS Group: Water Crossing**

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Easting</th>
<th>Northing</th>
<th>UTM Zone</th>
<th>Channel Width</th>
<th>Wet Width</th>
<th>Fish Habitat Class</th>
<th>Habitat Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-S03</td>
<td>N3-Aqua-109</td>
<td>Unnamed Tributary into Mitsiho River</td>
<td>462134</td>
<td>6044881</td>
<td>14N</td>
<td>7m</td>
<td>7m</td>
<td>Low</td>
<td>Marginal</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

**Specific Mitigation:**
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Use existing trails, roads or cut lines whenever possible as access routes
- Identify and flag buffer areas prior to start of work
- Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- No in-stream works or fending from April 1 - July 15

**ESS Group: Permafrost**

<table>
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<tr>
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<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-S03</td>
<td>N3-Spits-108</td>
<td>Permafrost</td>
<td>Site: 45 to 46</td>
<td>E-472774 N-6043855</td>
<td>E-460347 N-6043517</td>
<td>14N</td>
<td>13030m</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Melting or loss of permafrost due to disturbance of the active layer

**Specific Mitigation:**
- Carry out construction activities on frozen ground to minimize surface damage and rutting.
- Use existing trails, roads or cut lines whenever possible as access routes
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan

**ESS Group: Mammals and Habitat**

<table>
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<tr>
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<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-S03</td>
<td>N3-Wild-200</td>
<td>Caribou Sensitive Area</td>
<td>Site: 32 to 34</td>
<td>E-479645 N-6059050</td>
<td>E-458248 N-6043635</td>
<td>14N</td>
<td>22469 m</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Wahwdwen woodland Caribou Range Sensitive Area

**Specific Mitigation:**
- For mitigation in this area refer to the "Moose and Woodland Caribou Sensitive Range Delineation and Mitigation Plans" document

**ESS Group: Groundwater**

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>N3-S03</td>
<td>N3-Aqua-200</td>
<td>Aquifers Vulnerable to contamination</td>
<td>Site: 31 to 33</td>
<td>E-479645 N-6059050</td>
<td>E-460122 N-6044246</td>
<td>14N</td>
<td>20504 m</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential groundwater contamination from a contingency event (e.g., spill)

**Specific Mitigation:**
- Marshalling yards will be located on upland sites where possible.
- An Emergency Preparedness and Spill Response Plan will be developed and an emergency response spill kit will be kept on-site at all times in case of fluid leaks or spills from machinery.
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions.
- Emergency response plans for sealing/grouting and pumping will be implemented as required.
**ESS Group:** Permafrost

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<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-S04</td>
<td>N3-Soils-109</td>
<td>Permafrost</td>
<td>Site: 47 to 48</td>
<td>E-456895</td>
<td>E-456816</td>
<td>14N</td>
<td>83m</td>
</tr>
<tr>
<td>N3-S04</td>
<td>N3-Soils-109</td>
<td>Permafrost</td>
<td>Site: 49 to 50</td>
<td>E-456727</td>
<td>E-455490</td>
<td>14N</td>
<td>1399m</td>
</tr>
</tbody>
</table>

*Potential Effects:*

Melting or loss of permafrost due to disturbance of the active layer

*Specific Mitigation:*

- Carry out construction activities on frozen ground to minimize surface damage and rutting.
- Use existing trails, roads or cut lines whenever possible as access routes
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by low-disturbance methods
- Confine vehicular traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan

**ESS Group:** Mammals and Habitat

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<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3-S03</td>
<td>N3-Wild-200</td>
<td>MCWS Caribou Sensitive Area</td>
<td>Site: 32 to 34</td>
<td>E-479645</td>
<td>E-458248</td>
<td>14N</td>
<td>22469 m</td>
</tr>
</tbody>
</table>

*Potential Effects:*

Wabowden Woodland Caribou Range Sensitive Area

*Specific Mitigation:*

- For mitigation in this area refer to the "Moose and Woodland Caribou Sensitive Kngae Uelineation and Mitigation Plans" document