Appendix 10A
Transportation Route Surveys

Memo

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Date	9 October 2013		
Subject	Transportation Route Surveys		

1.0 INTRODUCTION

New Gold Inc. (New Gold) has retained AMEC to conduct environmental services for the proposed Blackwater Gold Project (the Project), located approximately 110 km south of Vanderhoof, British Columbia. The proposed Project will include ore processing and gold recovery using cyanide, with an estimated cyanide consumption of approximately 0.9 to 1.0 kg/t. To supply the mine with cyanide, New Gold plans to establish a transloading facility for material required for the mining operation, including dangerous goods. This facility will allow the transfer of dry cyanide products (and liquid cyanide products later on, for contingency) from rail to trucks, and will also include temporary storage of the product.

AMEC conducted a survey of the two main sections of the route from: (i) the proposed warehouse location in Prince George to the Canfor Plateau site near Engen via Highway 16; and (ii) the Canfor Plateau location via the Kluskus Forest Service Road (FSR) and the Kluskus-Ootsa FSR to the Davidson Mainline intersection.

The proposed new mine access road is described in this memorandum, based on information available as of 31 August 2013. As the road has not been constructed, the description is limited to the proposed construction details, including stream crossings.

Figures 1 and **2** show the two main route sections included in the transportation route survey.

This memorandum summarizes the findings of the surveys completed from 16 to 18 July 2013.

2.0 CONFORMANCE WITH CYANIDE CODE

The *International Cyanide Management Code (January 2012)* (the Cyanide Code or the Code); www.cyanidecode.org; accessed 16 August 2013 is a voluntary initiative for the gold mining industry and the producers and transporters of the cyanide used in gold mining. It is intended to complement an operation's existing regulatory requirements. Compliance with the rules, regulations and laws of the applicable political jurisdiction is necessary; the Code is not intended to contravene such laws.

The Cyanide Code focuses exclusively on the safe management of cyanide that is produced, transported and used for the recovery of gold, and on mill tailings and leach solutions. The Cyanide Code was developed originally for gold mining operations, and addresses production, transport, storage, and use of cyanide and the decommissioning of cyanide facilities. It also includes requirements related to financial assurance, accident prevention, emergency response, training, public reporting, stakeholder involvement and verification procedures. Cyanide producers and transporters are subject to the applicable portions of the Cyanide Code identified in their respective Verification Protocols.

Principle 2 of the Cyanide Code requires a certified gold mining operation to demonstrate that they are protecting communities and the environment during cyanide transport. These route surveys have been prepared in alignment with the requirements of the two Standards of Practice (SOPs) under Principle 2 of the Cyanide Code:

- *SOP 2.1. Establish clear lines of responsibility for safety, security, release prevention, training and emergency response in written agreements with producers, distributors and transporters.*
- *SOP 2.2. Require that cyanide transporters implement appropriate emergency response plans and capabilities, and employ adequate measures for cyanide management.*

The *Cyanide Transportation Verification Protocol (January 2011)*; www.cyanidecode.org; accessed 16 August 2013 is a guidance document issued by the International Cyanide Management Institute to assist cyanide transporters in understanding their obligations in implementing the Code. In order to be certified to the Code, the Project must have its cyanide transported by transporters that are certified under the Code to complete a successful certification audit.

All elements of the cyanide transportation and distribution systems bringing cyanide from its point of manufacture to the Project are subject to the *Cyanide Transportation Verification Protocol (January 2011).* This includes each individual transporter involved in shipments of cyanide to the Project, interim storage sites (such as the proposed transfer facility) and any consignors transporting cyanide through contracted carriers included in a designated supply chain.

Transport Practice 1.1 of the *Cyanide Transportation Verification Protocol (January 2011)* requires that transporters select cyanide routes to minimize the potential for accidents and releases of cyanide. Although it is the responsibility of the cyanide transporter to identify the risks associated with the selected transportation route as part of its own Cyanide Code certification, these route surveys will assist the Project in demonstrating its conformance with SOPs 2.1 and 2.2 of the Code.

3.0 MUNICIPAL REQUIREMENTS FOR TRANSPORTATION OF DANGEROUS GOODS

The *City of Prince George Highways Bylaw No. 8065* regulates the use of highways within the city boundaries. Under Section 4 of *Bylaw 8065*, any person who, without a permit or written approval from the City of Prince George, operates any vehicle transporting dangerous goods on any highway on which the movement of dangerous goods is restricted by the city, commits an offence.

The *City of Prince George Transport of Dangerous Goods Bylaw No. 8192* restricts the transport of dangerous goods on certain highways in the city in order to reduce the risk to public health and safety, the natural environment, and public works. Designated dangerous goods routes are listed in Schedule A and shown in Schedule B of the bylaw. **Figure 3** shows the locations of the dangerous goods routes in Prince George.

Under Section 2 of *Bylaw 8192*, carriers of dangerous goods may depart and return to a designated dangerous goods route using the closest and most direct route possible:

- For the purpose of picking up or delivering dangerous good to a destination indicated on a bill of lading for those dangerous goods;
- For the purpose of accessing a permitted vehicle storage location; or
- To obtain emergency repairs or service to the road vehicle carrying dangerous goods at the vehicle repair shop nearest to the place where the carriers determines that such emergency repairs or service is necessary,

and provided that the carrier does not travel on residential roads in a vehicle with five (5) or more axles and a gross vehicle weight over 13,500 kg. The location of the proposed transfer facility in Prince George allows for ready access to provincial Highways 97 and 16, both of which can be used for the transportation of dangerous goods.

The *District of Vanderhoof Traffic and Highways Regulation Bylaw No. 1046* regulates the use of highways within the boundaries of the District of Vanderhoof. Under Section 4 of *Bylaw 1046*, except where otherwise directed by the Head of the Public Works Department, a Peace Officer, or a person authorized by a Peace Officer to direct traffic, no person shall:

- Unless otherwise posted with traffic control devices indicating a truck route, drive a truck with a licensed gross vehicle weight in excess of 13,700 kg upon a roadway, except municipal or utility vehicles while engaged in work upon roadways, or trucks delivering goods and materials to properties on a street or streets directly serviced by the roadway.

There do not appear to be any limitations on the transport of dangerous goods within the boundaries of the District of Vanderhoof.

4.0 PURPOSE AND SCOPE OF SURVEY

The primary purpose of this task was to complete surveys of the two legs of the route under consideration by New Gold for the transportation of cyanide to the Project.

The survey information will be used in support of the application for an environmental assessment certificate for the Project, primarily for the purposes of emergency response planning for possible accidents and malfunctions associated with the Project.

The scope of work included field validation of the proposed transportation routes identified by New Gold:

- Prince George Interior Warehousing location – Canfor Plateau location (Leg 1); and
- Canfor Plateau location via the Kluskus Forest Service Road (FSR) and the Kluskus-Ootsa FSR to the Davidson Mainline intersection (Leg 2).

5.0 SURVEY METHODOLOGY

The surveys of the selected routes consisted of driving each of the routes at posted speeds; identifying and describing the critical points such as general road conditions, water crossings, water bodies, sharp curves, inclines and declines, residential areas and other road hazards; assessment of the environmental risk of a spill event associated with each 10-km section of each route; and collection of relevant photographs.

Weather conditions were sunny with good visibility and temperatures in the mid-20°sC. Distances travelled were measured from the vehicle odometer and crosschecked with the GPS unit (Garmin 62SC) used to generate the survey track and waypoints. Cellular phone coverage was primarily with Telus or Bell near Prince George and Vanderhoof.

AMEC's route surveys are included in **Appendices 1** and **2**.

6.0 RISK ASSESSMENT METHODOLOGY

The risk assessment methodology was based on assigning: (i) a value to the likelihood that a spill of cyanide would occur on a 10 km section of the route; and (ii) a value to the consequence of a spill should it occur. Consequence included possible consequences for reputation, business, environment, damage/loss, and people.

The risk value was estimated as the product of the likelihood and the consequence values (risk = likelihood x consequence) using the environmental consequences.

The likelihood, consequence, and risk scales are shown below:

Table 1: Likelihood Scale

Likelihood Score	Descriptor		Frequency
1	Almost certain	Happens often	More than 1 event per month
2	Likely	Could easily happen	More than 1 event per year
3	Possible	Could happen and has happened here or elsewhere	1 event per 1 to 10 years
4	Unlikely	Has not happened yet but could	1 event per 10 to 100 years (within a single mine life)
5	Very rare	Conceivable but only in extreme circumstances	Less than 1 event per 100 years (within the life of New Gold)

Table 2: Consequence Scale

Consequence Score	Descriptor	Reputation	Business	Environment	Damage/ Loss	People
A	Catastrophic	Major damage to reputation receiving national or international negative media OR production to cease as a result of statutory body concerns	>48 h production delay	Irreparable damage, very serious long term impairment of ecosystem	>$500K	Fatality(ies)
B	Major	Major damage to reputation receiving province wide negative media OR non-compliance with statutory requirements	>24 h<48 h production delay	Serious medium term environmental impact affecting whole ecosystem	>$100K <$500K	Permanent and total disability
C	Moderate	Moderate damage to reputation localised to the regional media OR non-compliance with statutory requirements resulting in minor fine	>12 h<24 h production delay	Moderate short term effects affecting part but not affecting whole of ecosystem	>$50K <$100K	Lost time injury (LTI)
D	Minor	Minor impact to reputation localised to community near mine OR technical divergence that may attract attention from statutory authorities	>6 h<12 h production delay	Little short term impact on biological or physical environment	>$5K <$50K	Disabling injury
E	Insignificant	No impact on stakeholders or reputation	<6 h production delay	Limited damage to minimal area of low significance or previously disturbed areas	<$5K	First Aid/Medical Treatment injury with no time lost or change of duties

Table 3: Risk Ranking

Risk Score	Descriptor	Definition
1 to 5	Extreme	Risks that have a serious negative effect that cannot be endured. Urgent management attention required to reduce likelihood and consequence.
6 to 13	High	Risks that have a major negative effect. Management attention required to reduce likelihood and consequence.
14 to 20	Medium	Risks that have a moderate negative effect tat can be managed. Management attention should be applied to reduce the likelihood and consequence. However, for those risks with a 'major impact/rare likelihood' rating a robust fallback/contingency plan may suffice, plus early warning mechanisms to detect any increase in likelihood so that appropriate management action can be taken.
21 to 25	Low	Risks that have a minor or negligible negative effect. They are unlikely to warrant specific management action as they are usually addressed through 'good housekeeping', but should be reviewed periodically to confirm that there is no change. Risks with a 'minor impact/ likely likelihood' rating may require some mitigation to reduce likelihood if this can be done cost effectively with sufficient management action to ensure the impact remains low.

The risk matrix using these values for likelihood and consequence is shown in **Figure 5**.

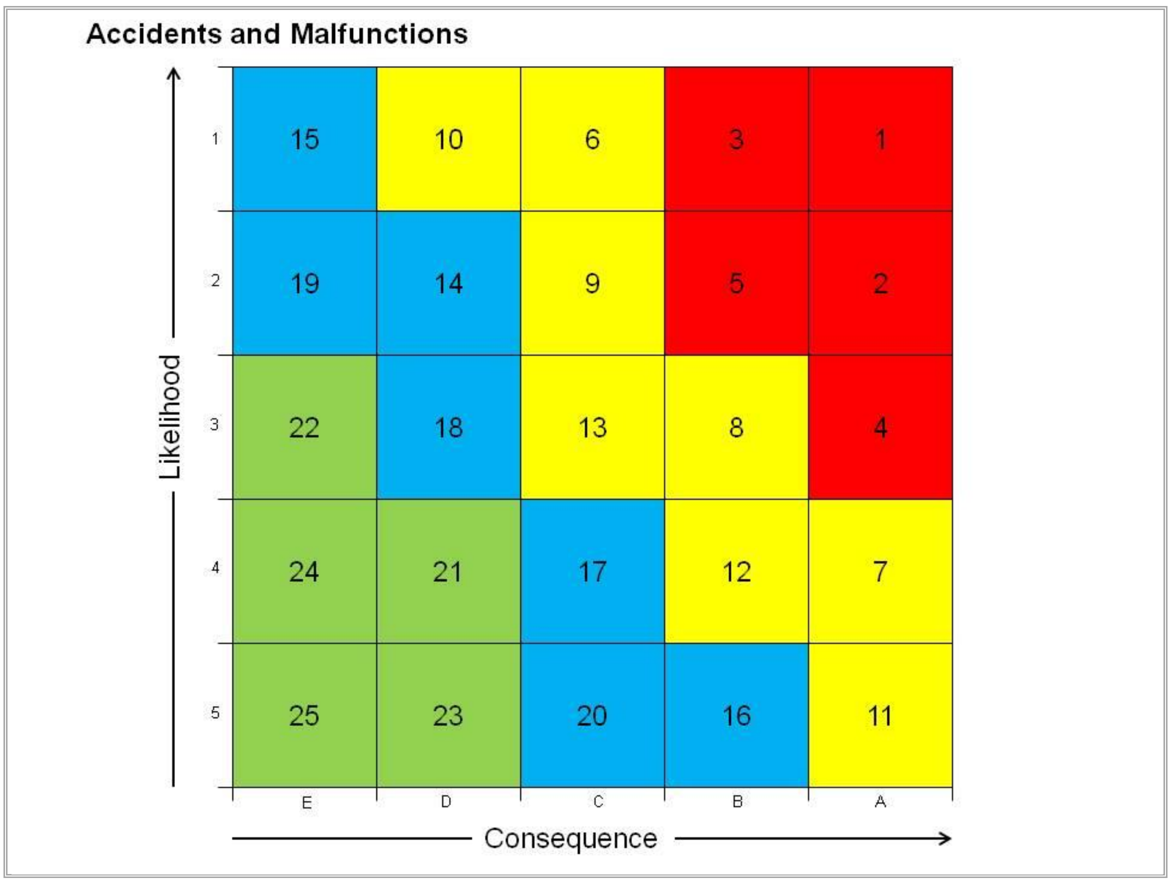


Figure 5: Risk Matrix

7.0 KEY FINDINGS

7.1 Leg 1 Prince George Interior Warehousing – Canfor Plateau

The Prince George Interior Warehousing location at 1024 Great Street is located approximately 200 m SW of Highway 97, and connects to the highway via Railway Road. Highway 97 crosses the Fraser River shortly afterwards and connects with Highway 16 approximately 8 km from the Interior Warehousing location.

Highway 16 is the British Columbia section of the Yellowhead Highway and is part of the Tarns-Canada Highway system. As such, the section of the highway from Prince George to Vanderhoof is well maintained and consists of four lane sections and two lane sections with several passing lane areas. Highway 16 has a general speed restriction of 100 km/h, although there are sections with speed limits of 80 km/h, 70 km/h and 60 km/h, depending on road conditions.

From 0 to 10 km, the highway passes through an industrial area of Prince George and across the Fraser River. There are several large intersections with Highways 97 and 16 within Prince George.

From 10 to 20 km, Highway 16 climbs Peden Hill on the way out of Prince George and there are several intersections before the highway becomes a two-lane route after a Shell gas station. The city limits are at approximately 17.2 km from the Prince George Interior Warehousing location, where the land use becomes largely agricultural/farmland.

From 20 to 30 km, the highway passes the Beaverley Volunteer Fire Rescue building and passes through some small residential areas. There are some small inclines and curves in the highway in this section. The Josephine chain up area is at approximately 26.5 km from the Prince George Interior Warehousing location. The highway crosses the Chilako River at approximately 27.5 km from the Prince George Interior Warehousing location before reaching a sharp incline and some small residential areas.

From 30 to 40 km, the highway leaves the Beaverley Fire Protection area and passes through some small residential areas.

From 40 to 50 km, the highway passes alongside a small wetland area and reaches Berman Lake at approximately 50 km from the Prince George Interior Warehousing location.

From 50 to 60 km, the highway passes Tamarack Lake, some small wetland areas/lakes and enters the Vanderhoof Forest District. There is a sharp incline and some small residences by Cluculz Lake.

From 60 to 70 km, the highway has several intersections and crosses Cluculz Creek at approximately 67.5 km from the Prince George Interior Warehousing location.

From 70 to 80 km, the highway passes two small wetland areas. There are some small inclines and declines, with long straight sections, a soft shoulder, and a two-lane section. The speed limit increases to 100 km/h.

From 80 to 90 km, there was some road construction underway and the highway crosses the Sinkut River at approximately 87.8 km from the Prince George Interior Warehousing location. There are a few small residences in this section of highway.

The town limit for Vanderhoof is approximately 99.7 km from the Prince George Interior Warehousing location; the road declines down into the town centre and intersects with Recreation Avenue and Burrard Avenue.

From 100 to 110 km, the highway crosses Stoney Creek at approximately 103.0 km from the Prince George Interior Warehousing location; leaves the Vanderhoof town limit; and passes through a small industrial area. The speed limit increases to 100 km/h and the highway passes close to a wetland area on the right hand side.

From 110 to 120 km, Highway 16 intersects with Highway 27; there is a passing lane and two-lane section. The highway leaves the Vanderhoof Fire Protection Area and passes through farmland. The highway has a narrow shoulder in this section. The highway passes Engen and some small residences; the speed limit is 100 km/h.

The turnoff to the Canfor Plateau mill via Bearhead Road is approximately 122.4 km from the Prince George Interior Warehousing location.

7.2 Leg 2 Canfor Plateau location via the Kluskus Forest Service Road (FSR) and the Kluskus-Ootsa FSR to the Davidson Mainline Intersection

From the Canfor Plateau gate, there is a right turn onto Bearhead Road. Bearhead Road passes the Canfor Plateau weigh scale then makes a sharp 90° right turn at Keith Road. Keith Road intersects the Kluskus FSR approximately 2.9 km from the Canfor Plateau location.

The Kluskus FSR is generally well maintained, with regular pullouts every 500 m or less.

From 0 to 10 km, the Kluskus FSR is quite straight with few discernable road hazards; the road surface is in good condition with no ruts or potholes. There are several water licence holders in this section.

From 10 to 20 km, the Kluskus FSR has a few small inclines and passes through farmland/rangeland. There are several water licence holders in this section.

From 20 to 30 km, the Kluskus FSR intersects the Kenney Dam Road at approximately 20.1 km from the Canfor Plateau location; there are two small wetland areas and some small inclines and curves in the road. There are several water licence holders in this section. There are a total of seven S2, S3 or S4 stream crossings in this section.

From 30 to 40 km, the Kluskus FSR passes by a small wetland area and has a few inclines on the several straight stretches of road. Two small trucks were noted in this section. There is one S2 stream crossing in this section.

From 40 to 50 km, the Kluskus FSR passes through a wetland area on the right hand side. There are several straight sections of road with some small inclines and declines in the road. A few small potholes are present in the road surface. There is one S3 stream crossing in this section.

From 50 to 60 km, the Kluskus FSR includes a large pull out area at approximately 57.0 km from the Canfor Plateau location. The Bobtail FSR intersects the Kluskus FSR at approximately 58.1 km from the Canfor Plateau location; a large culvert is present at approximately 59.1 km from the Canfor Plateau location. There are a total of five S2, S3 or S4 stream crossings in this section.

From 60 to 70 km, the Kluskus FSR includes some steep drop offs on the side of the road with a few small inclines and declines. The Kluskus FSR crosses Roy Creek at approximately 63.0 km from the Canfor Plateau location. A few small potholes are present in the road surface. There are a total of three S2, S3 or S4 stream crossings in this section.

From 70 to 80 km, the Kluskus FSR includes a few small declines with limited visibility; a right hand curve with 40 km/h signage; a sharp left hand turn; and a series of curves. The Kluskus 500 FSR intersects the Kluskus FSR at approximately 75.0 km from the Canfor Plateau location. Three small trucks were noted in this section. Big Bend Creek is located at approximately 77.0 km from the Canfor Plateau location. The road is showing early signs of failure at Big Bend Creek.

From 80 to 90 km, the Kluskus FSR passes through the Big Bend Meadow area at approximately 85.5 km from the Canfor Plateau location. The speed limit drops to 60 km/h and a few small inclines and curves are present in the long straight sections of road. Towards the end of this section, the speed limit increases to 70 km/h. There are two S2, S3 or S4 stream crossing in this section.

From 90 to 100 km, the Kluskus FSR passes through a small wetland area, there a few small declines and a few potholes in the road surface. There are four S2, S3 or S4 stream crossing in this section.

From 100 to 110 km, the Kluskus FSR includes a few small inclines and curves, with some steep declines. The Kluskus Blue FSR intersects the Kluskus FSR at approximately 101.4 km from the Canfor Plateau location. Canfor’s Kluskus Camp is located at approximately 103.6 km from the Canfor Plateau location. A small truck was noted in this section. There are two S2, S3 or S4 stream crossing in this section.

From 110 to 120 km, the Kluskus FSR passes a mining exploration camp (TTM Resources – Chu Exploration Camp) at a distance of approximately 112.3 km from the Canfor Plateau location. Generally, the road is not as well graded from the Kluskus Camp location to the Project. A large culvert/creek is present at approximately 115.0 km from the Canfor Plateau location. A grader, a water truck and three small trucks were noted in this section. The Kluskus FSR crosses Chedakuz Creek at approximately 119.3 km from the Canfor Plateau location. There are three S2, S3 or S4 stream crossing in this section.

On the section of the Kluskus FSR from 120 to 130 km, the Davison Mainline intersects the Kluskus-Ootsa FSR at approximately 125.9 km from the Canfor Plateau location.

7.3 Proposed New Mine Access Road

The proposed new mine access road will begin at approximately KM 124 of the Kluskus-Ootsa FSR and then head south to Project. The proposed road will be approximately 15 km long and will include upgraded sections of existing road along with the construction of new sections of road.

The first kilometre of road will be an upgrade to the existing Davidson Mainline; the road will then split off and head towards the Project, joining with some existing block roads as it makes its way to the Project.

The width of the right of way (RoW) will vary to accommodate cut and the fill dimensions. It will also vary where the powerline and the waterline will be located adjacent to the road. The minimum width of the RoW will be as follows:

- Permanent Access Road (PAR) only – 30 m
- PAR and waterline – 35 m; and
- PAR, waterline and powerline – 55 m.

The road width will be 10 m, with a design speed of 60 km/h. The bridge approaches will be a minimum 10 m at each end of a bridge, straight, and on grade.

Five bridges are proposed on the new mine access road. All locations are approximate until the road design is complete. Bridge lengths and descriptions are also approximate until design work is complete.

	Location	Length	Description
Bridge 1	0.49 km	18.3 m	Steel concrete composite on pre-cast spread footing
Bridge 2	5.19 km	13.0 m	Slab girder bridge on pre-cast spread footing
Bridge 3	6.72 km	18.3 m	Steel concrete composite on pre-cast spread footing
Bridge 4	10.3 km	14.0 m	Slab girder bridge on pre-cast spread footing
Bridge 5	13.8 km	12.0 m	Slab girder bridge on pre-cast spread footing

8.0 CONCLUSIONS

8.1 Leg 1 Prince George Interior Warehousing to Canfor Plateau

Based on the qualitative risk assessments completed for each 10 km section of this route, **this leg is rated as a medium risk** for the transportation of cyanide.

The primary transportation hazards on this route include:

- Route through City of Prince George;
- Chilako River crossing;
- Cluculz Creek crossing;
- Sinkut River crossing;
- Route through Vanderhoof; and
- Stoney Creek crossing.

8.2 Leg 2 Canfor Plateau location via the Kluskus Forest Service Road (FSR) and the Kluskus-Ootsa FSR to the Davidson Mainline Intersection

Based on the qualitative risk assessments completed for each 10 km section of this route, **this leg is rated as a medium risk** for the transportation of cyanide.

The primary transportation hazards on this route include:

- Unnamed creek/culvert at approximately 59.6 km from Canfor Plateau location;
- Roy Creek crossing;
- Big Bend Creek crossing; and
- Chedakuz Creek crossing.

8.3 Proposed New Mine Access Road

Based on the qualitative risk assessments completed for each 10 km section of this route, **this leg is rated as a medium risk** for the transportation of cyanide.

The primary transportation hazards on this route include:

- Several unnamed creek crossings.

9.0 RECOMMENDATIONS FOR HIGH RISK TRANSPORTATION SECTIONS

9.1 Minimizing the Potential for Accidents and Releases

9.1.1 Transportation Routes

Documented Standard Operating Procedures (SOPs) should be prepared to address the high risk areas in terms of any additional measures to be taken when driving in proximity to surface water bodies, crossing highways or rail lines, driving in areas next to residences, or where sharp turns exist.

Input from stakeholders, including local communities and regulatory agencies, such as Transport Canada, the BC Ministry of Transportation and Infrastructure, Environment Canada, and the Department of Fisheries and Oceans would help identify areas of concern on the proposed transportation route and to identify possible measures necessary to mitigate and manage those risks. Records of these consultations should be maintained.

Convoys or escort vehicles could be considered where road conditions are poor, or there is a potential need for emergency action.

External responders, medical facilities and local communities could be advised of their roles and mutual aid they could provide in the event of an emergency. Records of these consultations should be maintained.

9.1.2 Transport Personnel

The transporter used for cyanide movements should use only trained, qualified and licensed drivers who have been trained to perform their jobs in a manner that minimizes the potential for cyanide releases and exposures.

9.1.3 Transport Equipment

The transporter should only use equipment that is designed and maintained to operate within the loads it will be handling. The transporter should have documented procedures to verify the adequacy of the equipment for the loads being carried, including procedures to prevent overloading of the vehicles used for cyanide transport.

9.1.4 Transport Safety Program

The transporter should have procedures to ensure that the cyanide is transported in a manner that maintains the integrity of the producer’s packaging. Placards or other signage should be used to identify the shipment as cyanide.

The transporter should implement a safety program for cyanide transport that includes (where appropriate or applicable):

- Vehicle inspections prior to each shipment;
- A preventive maintenance program;
- Limitations on operator or drivers’ hours;
- Procedures to prevent loads from shifting;
- Procedures by which transportation can be modified or suspended if conditions such as severe weather or civil unrest are encountered;
- A drug abuse prevention program; and
- Retention of records documenting that the above activities have been conducted.

9.1.5 Vehicle Tracking

Transport vehicles should have means to communicate with the transport company dispatch office, the mining operation, the cyanide producer or distributor and emergency responders. Communication equipment (global positioning system (GPS), mobile phone, radio, pager, etc.) should be periodically tested to ensure it functions properly.

Any communication blackout areas along the FSR should be identified and special procedures implemented for these areas. Systems or procedures should be developed to track the progress of cyanide shipments.

The transporter should implement inventory controls and chain of custody documentation to prevent loss of cyanide during shipments. The shipping records should indicate the amount of cyanide in transit and include a Material Safety Data Sheets (MSDS).

9.2 Emergency Response Strategies

9.2.1 Emergency Response Plan

The transporter selected should develop an emergency response plan that identifies the high risk sections of the transportation routes and that is:

- Appropriate for the transportation route;
- Takes into account the physical and chemical form of the cyanide;
- Considers the method of transportation;
- Considers variable road conditions;
- Considers the design of the transport vehicles used;
- Includes descriptions of response actions; and
- Identifies the role of outside responders.

9.2.2 Training

The transporter should provide emergency response training to appropriate personnel, including descriptions of the specific emergency response duties and responsibilities of these personnel. Transport vehicle operators should receive initial and periodic refresher training in emergency response procedures, including implementation of the transportation emergency response plan.

A list of all emergency response equipment that should be available during transport or along the transportation route should be maintained. The transporter should have available the necessary emergency response and health and safety equipment, including personal protective equipment (PPE) during transport.

Documented procedures should be maintained to inspect emergency response equipment and assure its availability when required.

9.2.3 Notification and Reporting

A documented procedure should be maintained, including current contact information, for notifying the shipper, the receiver, regulatory agencies, outside response providers, medical facilities and potentially affected communities of an emergency.

Systems should be in place to ensure that internal and external emergency notification and reporting procedures are kept current.

9.2.4 Spill Remediation

Remediation procedures, such as recovery or neutralization of solutions or solids, decontamination of soils or other contaminated media and management, and disposal of spill clean-up debris should be maintained.

The procedures should prohibit the use of chemicals such as sodium hypochlorite (NaOCl), ferrous sulfate ($FeSO_4$) and hydrogen peroxide (H_2O_2) to treat cyanide that has been released into surface water.

9.2.5 Continual Improvement

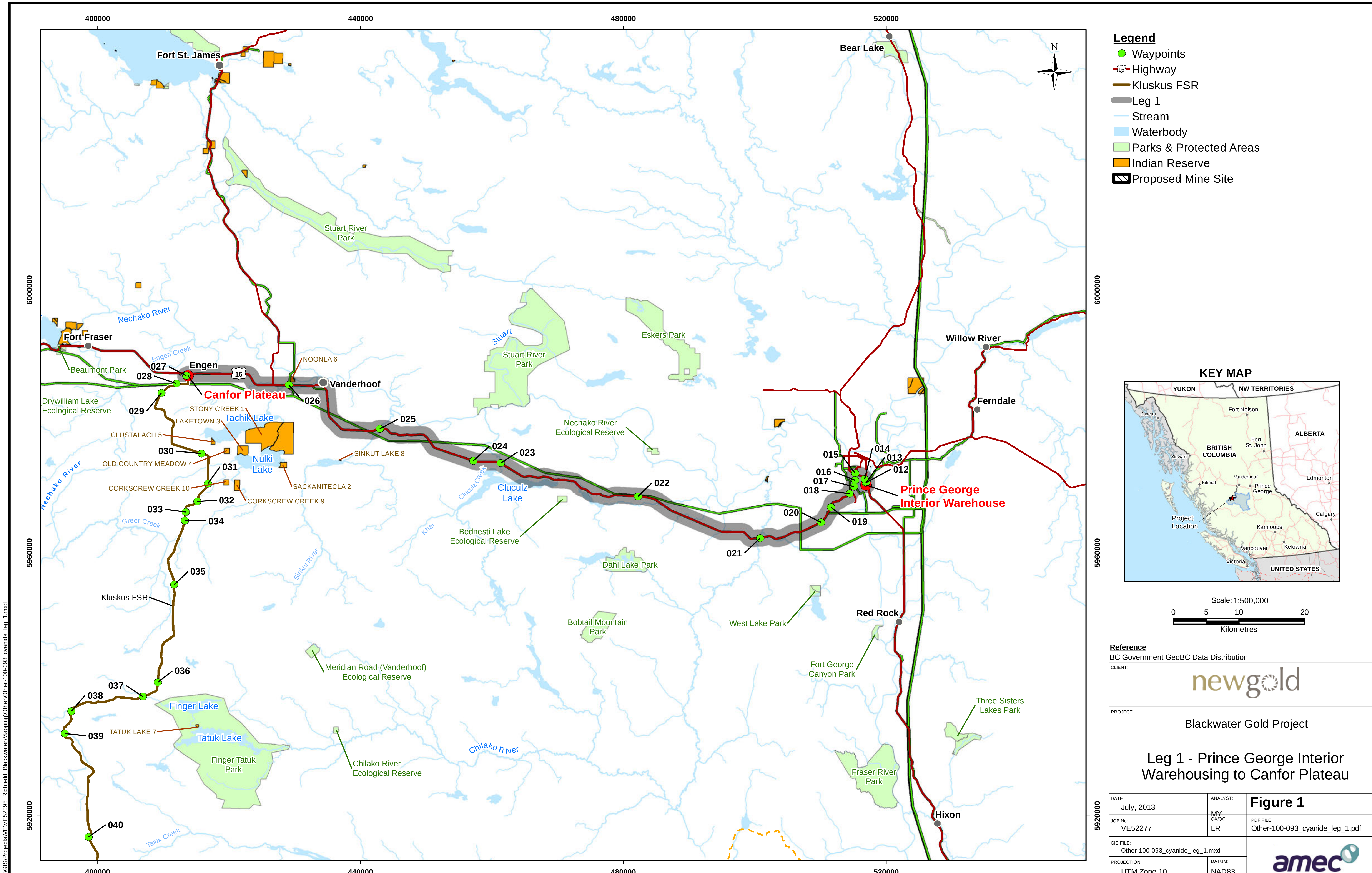
The emergency response plan should be reviewed and evaluated annually, and changes made to improve the plan, where necessary. Mock emergency drills involving a cyanide release during transportation should be completed annually.

10.0 CLOSURE

If additional information is required, please contact Andy Gillam at (O: +1 (604) 295-3454; C: +1 (604) 649-1904; e-mail: andy.gillam@amec.com).

Figure 1

Leg 1 – Prince George Interior Warehousing to Canfor Plateau



Legend
Waypoints
Highway
Kluskus FSR
Leg 1
Stream
Waterbody
Parks & Protected Areas
Indian Reserve
Proposed Mine Site
KEY MAP
YUKON
NW TERRITORIES
BRITISH COLUMBIA
ALBERTA
Fort Nelson
Fort St. John
Juneau
Stewart
Kitimat
Vanderhoof
Prince George
Edmonton
Calgary
Kamloops
Kelowna
Vancouver
Victoria
Project Location
UNITED STATES
Scale: 1:500,000
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Kilometres
Reference
BC Government GeoBC Data Distribution
CLIENT:
newgold
PROJECT:
Blackwater Gold Project
Leg 1 - Prince George Interior Warehousing to Canfor Plateau
DATE: July, 2013
ANALYST: MY
Figure 1
JOB No: VE52277
QA/QC: LR
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GIS FILE: Other-100-093_cyanide_leg_1.mxd
PROJECTION: UTM Zone 10
DATUM: NAD83
amec
400000
440000
480000
520000
6000000
5960000
5920000
Fort St. James
Bear Lake
Stuart River Park
Fort Fraser
Nechako River
Engen Creek
Engen
Beaumont Park
Drywilliam Lake Ecological Reserve
Canfor Plateau
Vanderhoof
NOONLA 6
STONY CREEK 1
LAKETOWN 3
Tachik Lake
CLUSTALACH 5
OLD COUNTRY MEADOW 4
Nulki Lake
SINKUT LAKE 8
SACKANITECLA 2
CORKSCREW CREEK 10
CORKSCREW CREEK 9
Greer Creek
Kluskus FSR
Stuart
Stuart River Park
Eskers Park
Nechako River Ecological Reserve
Cluculz Creek
Cluculz Lake
Bednesti Lake Ecological Reserve
Khai
Sinkut River
Dahl Lake Park
Bobtail Mountain Park
West Lake Park
Willow River
Ferndale
Prince George Interior Warehouse
Red Rock
Fort George Canyon Park
Meridian Road (Vanderhoof) Ecological Reserve
Finger Lake
TATUK LAKE 7
Tatuk Lake
Finger Tatuk Park
Chilako River Ecological Reserve
Chilako River
Three Sisters Lakes Park
Fraser River Park
Hixon
Taiuk Creek
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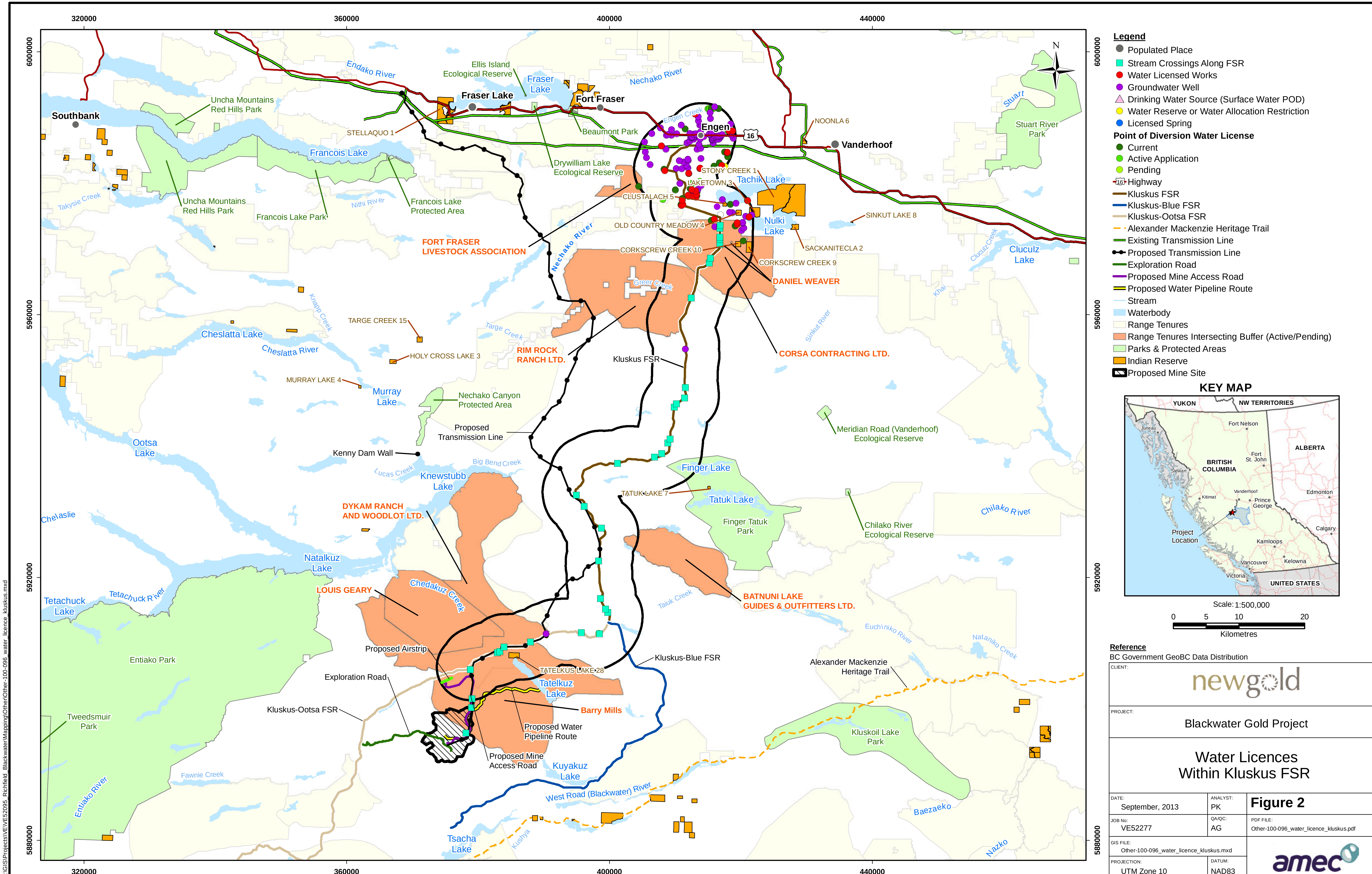
Figure 2

Leg 2 – Canfor Plateau to Davidson Mainline


Legend
Populated Place
Stream Crossings Along FSR
Water Licensed Works
Groundwater Well
Drinking Water Source (Surface Water POD)
Water Reserve or Water Allocation Restriction
Licensed Spring
Point of Diversion Water License
Current
Active Application
Pending
Highway
Kluskus FSR
Kluskus-Blue FSR
Kluskus-Ootsa FSR
Alexander Mackenzie Heritage Trail
Existing Transmission Line
Proposed Transmission Line
Exploration Road
Proposed Mine Access Road
Proposed Water Pipeline Route
Stream
Waterbody
Range Tenures
Range Tenures Intersecting Buffer (Active/Pending)
Parks & Protected Areas
Indian Reserve
Proposed Mine Site
KEY MAP
YUKON
NW TERRITORIES
Fort Nelson
ALBERTA
BRITISH COLUMBIA
Fort St. John
Vanderhoof
Prince George
Edmonton
Project Location
Calgary
Kamloops
Vancouver
Kelowna
Victoria
UNITED STATES
Scale: 1:500,000
0 5 10 20
Kilometres
Reference
BC Government GeoBC Data Distribution
CLIENT:
newgold
PROJECT:
Blackwater Gold Project
Water Licences
Within Kluskus FSR
DATE: September, 2013
ANALYST: PK
Figure 2
JOB No: VE52277
QA/QC: AG
PDF FILE: Other-100-096_water_licence_kluskus.pdf
GIS FILE: Other-100-096_water_licence_kluskus.mxd
PROJECTION: UTM Zone 10
DATUM: NAD83
amec
320000
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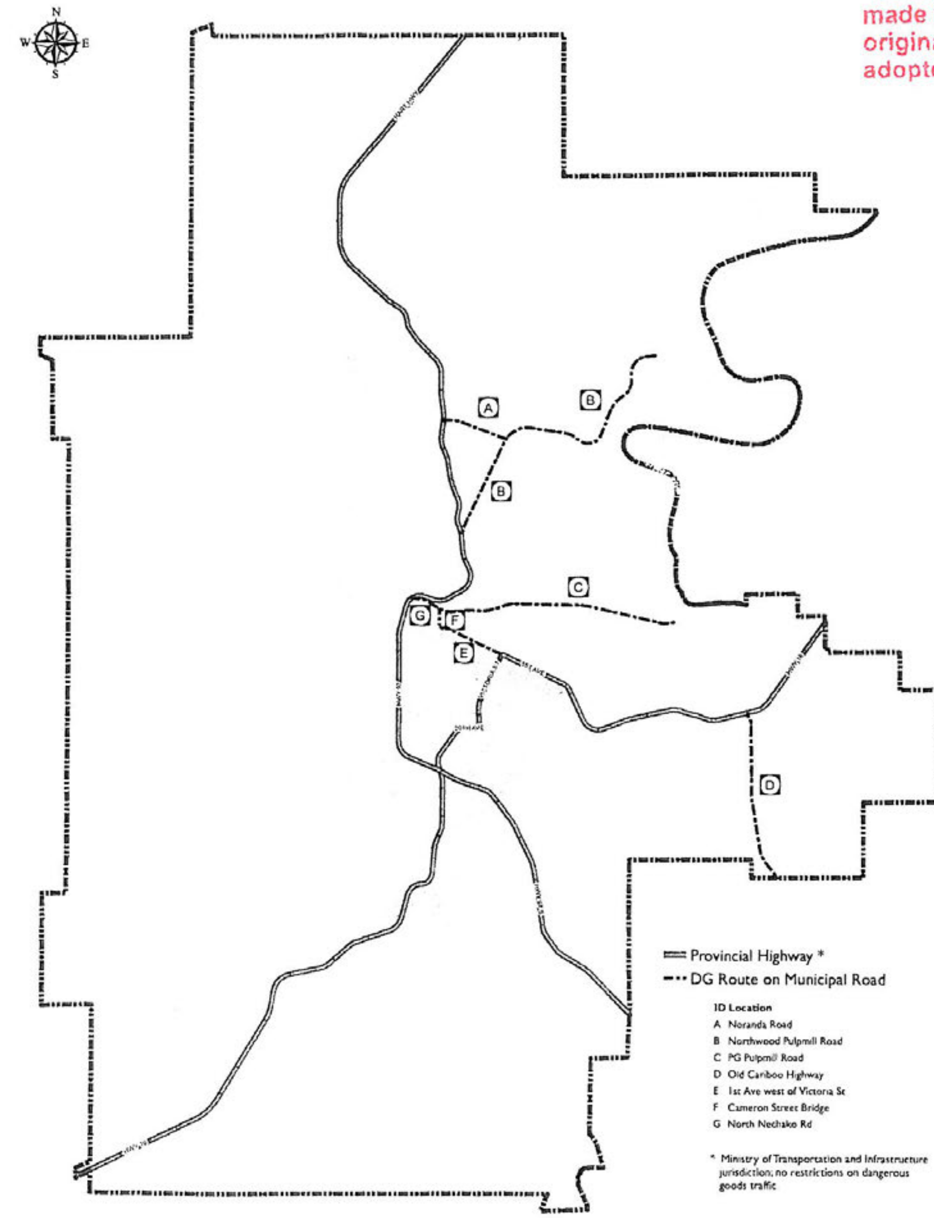
400000
440000
6000000
5960000
5920000
5880000
Southbank
Fraser Lake
Fort Fraser
Engen
Vanderhoof
Endako River
Ellis Island Ecological Reserve
Fraser Lake
Nechako River
Uncha Mountains Red Hills Park
Francois Lake
Beaumont Park
Drywilliam Lake Ecological Reserve
STELLAQUO 1
NOONLA 6
Stuart River Park
Takysie Creek
Nithi River
Uncha Mountains Red Hills Park
Francois Lake Park
Francois Lake Protected Area
STONY CREEK 1
LAKETOWN 3
Tachik Lake
CLUSTALACH 5
OLD COUNTRY MEADOW 4
Nulki Lake
SINKUT LAKE 8
SACKANITECLA 2
FORT FRASER LIVESTOCK ASSOCIATION
Nechako River
CORKSCREW CREEK 10
CORKSCREW CREEK 9
Cluculz Creek
Cluculz Lake
DANIEL WEAVER
Greer Creek
Knapp Creek
Khai
TARGE CREEK 15
Targe Creek
Sinkut River
Cheslatta Lake
Cheslatta River
HOLY CROSS LAKE 3
RIM ROCK RANCH LTD.
Kluskus FSR
CORSA CONTRACTING LTD.
MURRAY LAKE 4
Murray Lake
Nechako Canyon Protected Area
Meridian Road (Vanderhoof) Ecological Reserve
Proposed Transmission Line
Ootsa Lake
Kenny Dam Wall
Big Bend Creek
Lucas Creek
Knewstubb Lake
Finger Lake
TATUK LAKE 7
Tatuk Lake
DYKAM RANCH AND WOODLOT LTD.
Chelaslie
Finger Tatuk Park
Chilako River Ecological Reserve
Chilako River
Natalkuz Lake
LOUIS GEARY
Chedakuz Creek
Tetachuck Lake
Tetachuck River
BATNUNI LAKE GUIDES & OUTFITTERS LTD.
Taiuk Creek
Euchiniko River
Entiako Park
Proposed Airstrip
Kluskus-Blue FSR
Natanilko Creek
Exploration Road
TATELKUS LAKE 28
Alexander Mackenzie Heritage Trail
Tatelkuz Lake
Tweedsmuir Park
Kluskus-Ootsa FSR
Barry Mills
Proposed Water Pipeline Route
Kluskoil Lake Park
Proposed Mine Access Road
Kuyakuz Lake
Fawnie Creek
Entiako River
West Road (Blackwater) River
Baezaeko
Tsacha Lake
Kushya
Nazko
Y:\GIS\Projects\VE\VE52095_Richfield_Blackwater\Mapping\Other\Other-100-096_water_licence_kluskus.mxd

Figure 3

Dangerous Goods Routes in Prince George

Schedule "B" Prince George Dangerous Goods Routes Map



Appendix 1

Detailed Route Survey
Leg 1 – Prince George Interior Warehousing to Canfor Plateau

Leg 1: ***Prince George Warehouse-Canfor Plateau***

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
0.0	Interior Warehousing	N 597.338 E 516932				
	Railway Road, right hand turn	N 5970678 E 516883				
	Highway 97, left hand turn	N 5970733 E 516957				

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
	Fraser River	N 5971238 E 516694				 

Distance/km	Point of Interest	GPS	$Likelihood_{Spill}$	$Consequence_{Spill}$	$Risk_{Spill}$	Photograph
						
7.8	Highway 16, left hand turn	N 5972116 E 515254				
8.6	Ferry Avenue intersection					
9.5	Cowart/Vance Road intersection					
0-10 km			3	C	High	
	Peden Hill, 60 km/h limit, 4 lane highway					
11.1	Domano Blvd/Tyner intersection to UNBC					
12.8	Westgate intersection; small curves in road					

Distance/km	Point of Interest	GPS	$Likelihood_{Spill}$	$Consequence_{Spill}$	$Risk_{Spill}$	Photograph
14.9	Small lake by Shell gas station/Gauthier Road	N 5966927 E 511602				
	Road switches to 2 lanes after Shell gas station; 80 km/h limit					

Distance/km	Point of Interest	GPS	$Likelihood_{Spill}$	$Consequence_{Spill}$	$Risk_{Spill}$	Photograph
	Small incline; slight curves in road					
17.2	Prince George city limits; drop off on right hand side; small ditch on right hand side; small declines to farm land	N 5964670 E 510050				
10-20 km			3	C	High	
22.0	Gas station/parking area on right; speed limit 100 km/h					
23.4	Beaverley Volunteer Fire Rescue; steep drop off on right hand side					
	Small declines; steep drop off on right hand side; sharp right hand turn down hill; small residential area on right hand side					
26.5	Chain up area – Josephine – pull out area; sharp right turn in road					

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
27.3	Chilako River crossing	N 5962232 E 500783				 

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
	Sharp incline (8%); small, undulating hills; small residential area on right hand side; 100 km/h					
20-30 km			3	C	High	
31.5	McBride Timber Road intersection					
	Leaving Beaverley Fire Protection Area; straight open road, small inclines					
43.6	Small residences on right hand side; culvert under road; passing lane					
30-40 km			5	D	Low	
46.5	Isle Pierre Road intersection; access to Isle Pierre sawmill					
	Small wetland area	N 5968608 E 482226				
48.1	Norman Lake Road					
	Small declines and slight curves					

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
50.0	Berman Lake					 
40-50 km			4	C	Medium	
52.0	Tamarack Lake on left hand side					
	2 lane section; slight curves					

Distance/km	Point of Interest	GPS	$Likelihood_{Spill}$	$Consequence_{Spill}$	$Risk_{Spill}$	Photograph
54.5	Small wetland area					
54.8	Small lake past wetland					
55.6	Store/restaurant on left hand side; Bednesti					
57.0	Overpass					
57.6	Vanderhoof Forest District commences; drop off on right hand side					
	Small wetland area					
58.1	Lloyd Drive					
58.9	East Bay Road					
	Cluculz Lake					
	Steep incline (6%) with slight curves in road; 2 lanes; residences at Cluculz Lake and then passing lane					
50-60 km			4	C	Medium	

Distance/km	Point of Interest	GPS	$Likelihood_{Spill}$	$Consequence_{Spill}$	$Risk_{Spill}$	Photograph
60.8	Hillcrest Way intersection					
	2 lane section; slight curves; soft shoulder					
62.8	Sunny Slope Road					
63.6	Tapping Road; 100 km/h					
65.0	Guest Road intersection					
	2 lane section; rest area					
67.5	Cluculz Creek	N 5973658 E 461317				 

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
67.5-72.0	Jardine Road intersection; Young/Swanson Road intersection; 2 lane section					
60-70 km			3	B	High	
72.0	Two wetland areas	N 5974018 E 457151				
72.0-85.0	Small inclines; long straight sections; soft shoulder; small declines, 2 lane section; slight curve to right; 100 km/h					
70-80 km			4	C	Medium	
85.0	Road construction; B2 Compost location; 70 km/h					
85.0-87.8	Slight curves in road; small residences					

Distance/km	Point of Interest	GPS	$Likelihood_{Spill}$	$Consequence_{Spill}$	$Risk_{Spill}$	Photograph
87.8	Sinkut River	N 5978893 E 442916				
87.8-99.7	Carmen Hill Road; Passing lane; Shanley Road; Reeder Road; small residential areas; Blackwater Road; 70 km/h					
80-90 km			3	C	High	
99.7	Vanderhoof town limit					
99.7-103.0	Declines down to town centre; Recreation Avenue intersection; Burrard Avenue intersection					
90-100 km			3	C	High	

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
103.0	Stoney Creek	N 5985589 E 429061				
103.0-106.5	Vanderhoof city limit; industrial area; L&M Lumber/Nechako Lumber on right hand side; slight curves in road; 2 lanes; 100 km/h					
106.5	Wetland area					
106.5-122.4	Highway 27 intersection; passing lane; leaving Vanderhoof Fire Protection Area; 2 lanes; farm land; narrow shoulder; Engen; small residences					

Distance/km	Point of Interest	GPS	$Likelihood_{Spill}$	$Consequence_{Spill}$	$Risk_{Spill}$	Photograph
100-110 km			3	C	High	
110-120 km			4	D	Low	
122.4	Turn off to Canfor Plateau; entrance road to Canfor Plateau; turn right out of mill entrance to Kluskus FSR	N 5986980 E 413504				

Notes:

1. Points of Interest

- City, town or village
- Crossroad/intersection
- Rail crossing
- Roundabout
- Bridge over water body
- Bridge over road
- Bridge over railway
- Tunnel
- Viaduct above road
- Narrow road
- Bend/curve in road
- Water body alongside road
- Incline/decline >4%
- Numerous potholes
- Unpaved road
- People on road
- Traffic accumulation on road
- Sensitive environmental area/reserve/parkland
- Landslide area
- Flooded area
- Parking area
- Service area

2. Environmental Risk Scale for Points of Interest

Likelihood Scale

1 - Almost certain; happens often; more than 1 event/month

2 - Likely; could easily happen; more than 1 event per year

3 - Possible; could happen and has happened here or elsewhere

4 - Unlikely; has not happened yet but could; 1 event per 10 to 100 years (within a single mine life)

5 - Very rare; conceivable but only in extreme circumstances; less than 1 event per 100 years (within the life of New Gold)

Consequence Scale

A - Catastrophic; irreparable damage; very serious long term impairment of ecosystem

B - Major; serious medium term environmental impact affecting whole ecosystem

C - Moderate; moderate sort term effects affecting part but not affecting whole of ecosystem

D - Minor; little short term impact on biological or physical environment

E - Insignificant; limited damage to minimal area of low significance or previously disturbed areas

Risk = Likelihood x Consequence

Extreme Risk: Risk Score of 1 to 5

High Risk: Risk Score of 6 to 13

Moderate Risk: Risk Score of 14 to 20

Low Risk: Risk Score of 21 to 25

Appendix 2

Detailed Route Survey
Leg 2 – Canfor Plateau to Davidson Mainline Intersection

Leg 2: Canfor Plateau – Davidson Mainline Intersection

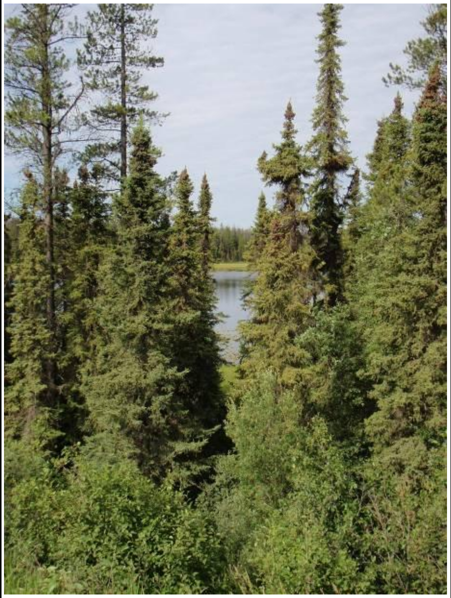
Distance/km	Point of Interest	GPS	$Likelihood_{Spill}$	$Consequence_{Spill}$	$Risk_{Spill}$	Photograph
0.0	Canfor Plateau Main Gate	N 59.86.96.3 E 41.37.60.7				
1.2	Plateau Log Scale; 90º right hand turn; small residence on corner					
2.9	T-junction to Kluskus Forest Service Road (FSR)	N 59.85.76.4 E 41.19.84.6				

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
						
9.6	Slight right turn					
0-10 km			4	C	Medium	
9.6 -20.1	Several small inclines, farmland, woodlot licence on right					
10-20 km			5	C	Medium	

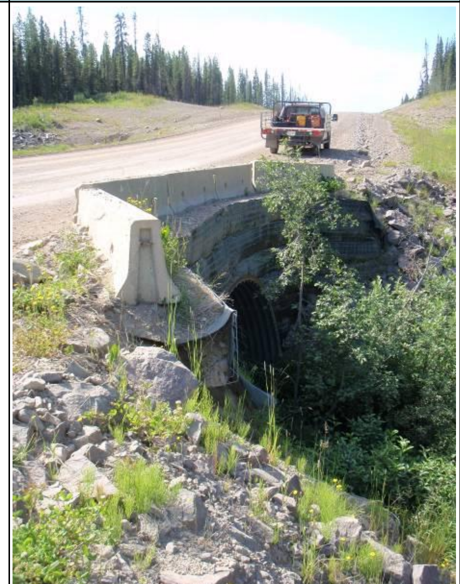
Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
20.1	Kenney Dam Road (GVW limit 7,200 kg)	N 59.75.12.2 E 41.57.88.2				 
20.1-24.0	Speed limit 70 km/h; farmland; range land; small curves; small inclines and declines					
24.0	Steep decline/straight road					

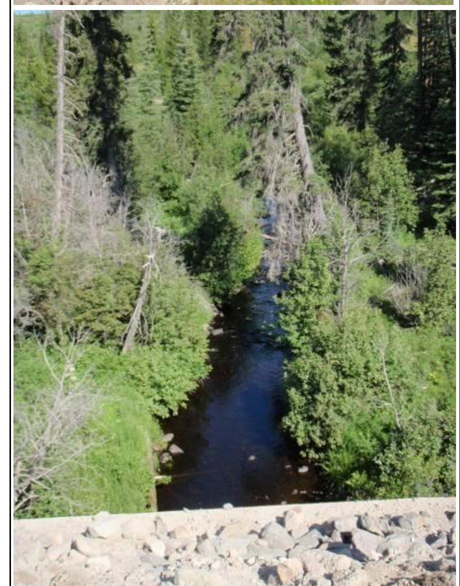
Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
25.5	Small wetland area on right hand side; straight road sections; small curves and inclines/declines	N 59.70.53.3 E 41.67.57.9				
28.0	Sharp drop off on right hand side; borrow pit on right hand side					
29.0	Small wetland area on right hand side	N 59.67.82.8 E 41.51.50.6				
30.3	Small incline; road curves to left					
20-30 km			4	C	Medium	

Distance/km	Point of Interest	GPS	$Likelihood_{Spill}$	$Consequence_{Spill}$	$Risk_{Spill}$	Photograph
31.7	Small wetland area on right hand side; straight road sections; small inclines	N 59.66.22.4 E 41.33.60.7				
33.0	Small wetland area on right hand side; small inclines; long inclines; small curves; straight road sections; 70 km/h	N 59.64.90.6 E 41.32.44.7				
33.0-43.2	Two small trucks on road/downbound; Greek Creek Falls Hiking Trail					
30-40 km			5	C	Medium	

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
43.2	Wetland area on right hand side;	N 59.55.19.2 E 41.16.38.7				
43.2-57.0	Straight sections of road; borrow pit on left hand side; borrow pit on right hand side; 70 km/h limit; small inclines/declines in road; borrow pit on left hand side; few small potholes in road surface; small curves					
40-50 km			5	C	Medium	
57.0	Large pullout; rest area					
57.0-58.5	Borrow pit on left hand side					

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
58.5	Bobtail FSR joins Kluskus FSR					 
58.5-59.6	Borrow pit on right hand side					

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
59.6	Large culvert (2 m)	N 59.40.29.2 E 40.91.40.7				
59.6-61.5	Small declines					
50-60 km			3	B	High	
61.5	Finger Lake Resort Road turnoff on left					
61.5-63.0	Small declines in road; steep drop offs on right hand side; small wetland area					

Distance/km	Point of Interest	GPS	Likelihood Spill	Consequence Spill	Risk Spill	Photograph
63.0	Roy Creek	N 59.38.13.9 E 40.68.52.1				 
63.0-75.0	Small declines in road; few small potholes					
60-70 km			3	B	High	

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
75.0	Kluskus 500 FSR	N 59.35.89.1 E 39.59.48.2				
75.0-77.0	Small truck on road/downbound; small declines with limited visibility; right hand curve with 40 km/h signage; sharp left hand turn; declines and series of curves					

Distance/km	Point of Interest	GPS	$Likelihood_{Spill}$	$Consequence_{Spill}$	$Risk_{Spill}$	Photograph
77.0	Big Bend Creek; road showing signs of early failure	N 59.32.51.6 E 39.49.44.6				 

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
						
77.0-85.5	Red Road on right hand side; two small trucks/downbound; borrow pit on left hand side; long decline; straight road					
70-80 km			3	B	High	
85.5	Big Bend Meadow					
85.5-97.3	60 km/h; small truck/upbound; small curves; small inclines; straight road sections; change to 70 km/h					
80-90 km			4	C	Medium	

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
97.3	Small wetland area	N 59.16.76.7 E 39.86.04.6				
97.3-101.4	Small declines in road; few small potholes					
90-100 km			4	C	Medium	
101.4	Kluskus Blue FSR joins on left; 60 km/h					
101.4-103.6	Steep declines in road; small curves in road					

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
103.6	Kluskus Camp/lagoon area					
103.6-112.3	Small truck/upbound; borrow pit on right hand side; small inclines; small curves					
100-110 km			4	D	Low	
112.3	Chu Project Camp (TTM Resources)	N 59.11.22.2 E 39.04.14.7				

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
115.0	Creek/culvert (2 m) at foot of small decline	N 59.10.15.3 E 38.79.03.0				
115.0-116.9	Small road washout; grader/upbound; water truck/upbound					
116.9	Small wetland	N 59.09.45.8 E 38.63.66.5				
116.9-119.3	Three small truck/upbound; road surface not well graded from Kluskus Camp at 103.6 km; small declines in road					

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
119.3	Chedakuz Creek	N 59.09.39.6 E 38.38.96.3				 

Distance/km	Point of Interest	GPS	Likelihood$_{Spill}$	Consequence$_{Spill}$	Risk$_{Spill}$	Photograph
						
110-120 km			3	C	High	
119.3-125.9	Borrow pit on both sides; small truck parked on right hand side					
125.9	Davidson Mainline					

Notes:

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- Bridge over railway
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- Narrow road
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