

RED MOUNTAIN GOLD MINE

PROJECT DESCRIPTION EXECUTIVE SUMMARY

SEPTEMBER 2015

SUBMITTED TO:

Canadian Environmental Assessment Agency

Suite 410, 701 West Georgia Street,
Vancouver, BC V7Y 1C6

PURSUANT TO:

British Columbia Environmental Assessment Act
and the Canadian Environmental Assessment Act 2012

SUBMITTED BY:



IDM Mining Ltd.
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EXECUTIVE SUMMARY

General Information and Contacts

IDM Mining Ltd. (IDM) is a mineral exploration and development company listed on the Toronto Stock Exchange (TSX: IDM) with a registered office in Vancouver, BC. IDM, formerly known as Revolution Resources, underwent a name change and corporate restructuring in early 2014. The company entered into an Option Agreement to acquire the Red Mountain from Seabridge Gold in May 2014. The gold and silver resources of the Red Mountain Gold Mine Project are IDM's core asset and primary focus.

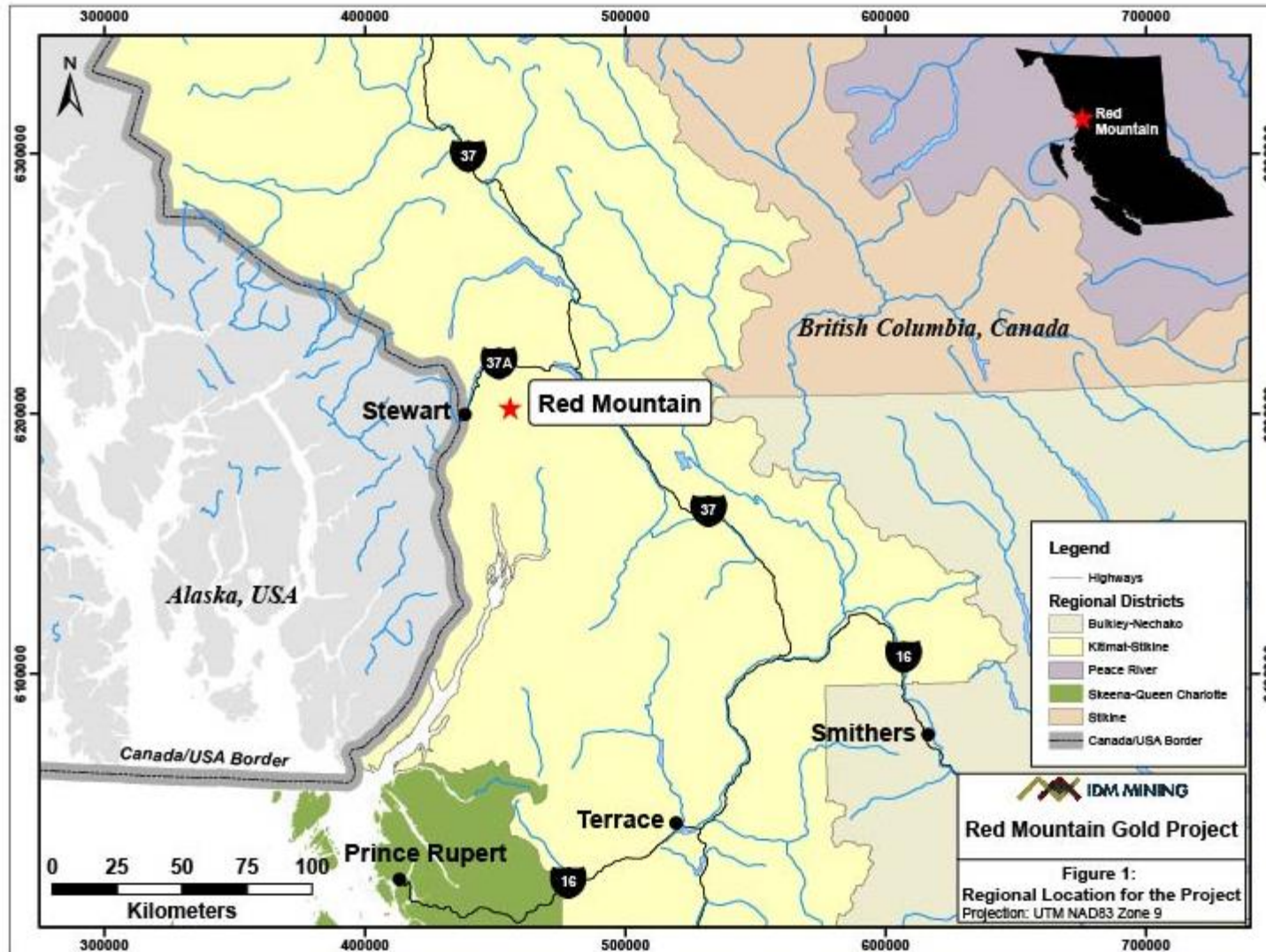
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Project Location

The Red Mountain Gold Mine Project (the "Project") is situated in north-western British Columbia, approximately 18 km east-northeast of Stewart as shown in Figure 1. The Project is located at 55°57'53"N Latitude and 129°41'28"W Longitude, adjacent to the Cambria Ice Field and the Bromley Glacier. The Project is located on provincial crown land within the Regional District of Kitimat-Stikine. No zoning designation for the Project area has been identified.

The Project represents an opportunity to develop a valuable mineral asset in an environmentally responsible manner and benefits Aboriginal Groups and stakeholders including local communities and local, provincial, and federal governments.

Figure 1: Regional Location for the Project



IDM is committed to developing the Project in a manner that is consistent with the long-term interests of future generations and the environment of the region. This document outlines IDM's conceptual plan for the development of the Project to enable the BC Environmental Assessment Office (BC EAO) and the Canadian Environmental Assessment Agency to determine whether provincial and/or federal Environmental Assessments (EAs) are required.

Regulatory Framework

The Project will have a production capacity of approximately 1,000 tonnes per day and 275,000 tonnes per year. This production capacity exceeds the criteria of 75,000 tonnes/year of mineral ore described in section 3(1) of the Reviewable Projects Regulation pursuant to the *British Columbia Environmental Assessment Act (BCEAA)* (Government of British Columbia, 2002). The Project is therefore expected to require an Environmental Assessment Certificate (EAC) pursuant to *BCEAA* as well as an operating permit under the BC *Mines Act*.

The Project also exceeds the minimum daily ore production threshold of 600 tonnes/day (tpd) identified in section 16 of the Schedule of the Regulations Designating Physical Activities of the *Canadian Environmental Assessment Act 2012 (CEAA 2012)*. The Project is therefore expected to require a decision pursuant to *CEAA 2012*.

In addition, consideration will be given to the requirements of NFA Chapter 10, section 8, as discussed in section 5.1.6.

Mineral Resources and Claims

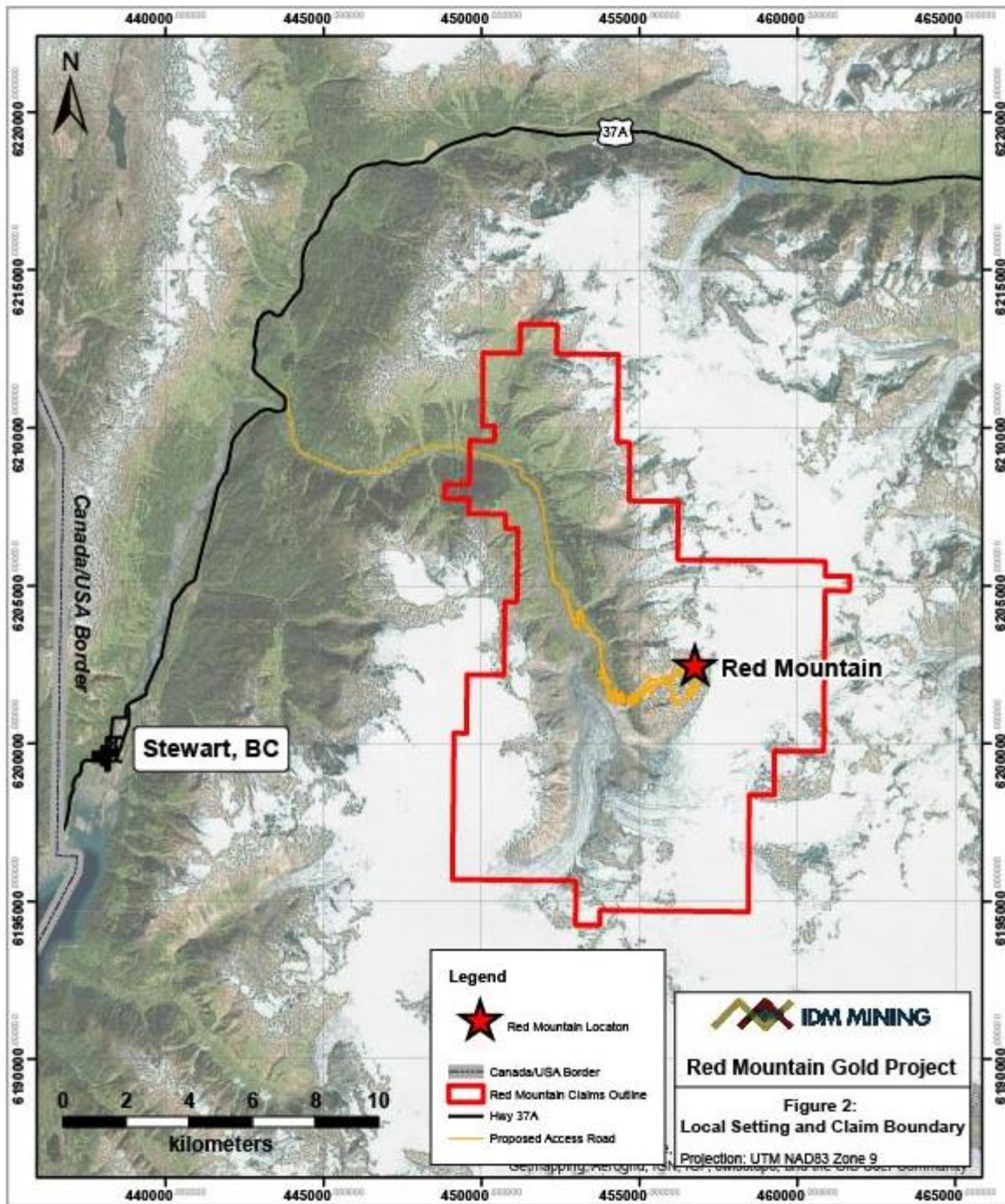
The Project is an underground gold and silver mine targeting the Marc, AV, JW and 141 Zones. The Project consists of 40 contiguous mineral claims totalling approximately 14,250 hectares. No significant risks are identified which would affect title or the right or ability to perform work on the Project. Mineable tonnages were derived from a resource model based on the accumulation of all exploration drilling information, used to generate a three-dimensional geological representation of the ore body. Total measured and indicated resources are summarized below:

Table 1: Measured, Indicated and Inferred Resources – Red Mountain Gold Mine Project

Zone	Tonnage (tonnes)	<i>In situ</i> Gold Grade (g/t)	<i>In situ</i> Silver Grade (g/t)	Contained Gold (Troy ounces)	Contained Silver (Troy ounces)
Total Measured & Indicated	1,454,300	8.15	29.57	380,900	1,382,800
Inferred	332,900	7.69	12.72	82,300	136,200

Source: JDS (2014). Resources are calculated using the 3 g/t cut-off grade.

Figure 2: Local Setting and Claim Boundary – Red Mountain Gold Mine Project



A detailed accounting of the project claims, resources and development plan is provided in a July 2014 Preliminary Economic Assessment (PEA) report that was completed by JDS Energy and Mining Ltd.

Seabridge Gold acquired the property in 2002. In May 2014, the property was optioned by Seabridge Gold to IDM Mining. IDM is the current operator of the Project. IDM intends to advance Red Mountain to commercial operations pending necessary regulatory approvals.

Project Description

The Project will have a production capacity of approximately 275,000 tonnes/year over an operational life of five to seven years.

The preliminary Project design is based on the following estimates:

- Production from underground mining and surface milling will be at a rate of 1,000 (tpd);
- The mine would operate for approximately nine months per year, stopping work during the winter months;
- The estimated life-of-mine operational period is five years based on environmental conditions and known resources with the possibility of an additional 2 years if additional mineral resources at the Project are shown to be economically recoverable; and,
- Mine site decommissioning will commence in the year after cessation of operations.

The proposed Project comprises the following infrastructure:

Off-Site Components

- 13 km of existing access road interconnecting with Highway 37A and following the Bitter Creek Valley;
- 7 km of new and/or upgraded seasonal access road between Hartley Gulch and Otter Creek, connecting the existing access in the Bitter Creek Valley to the mine site and portals;
- A 34 kV power line aligned to the first 13 of the 20 km seasonal access road, and continuing to the mine site via a new alignment not necessarily adjacent to the remaining 7 km of road that will connect to existing BC Hydro infrastructure in the Bear Creek Valley; and,
- Existing core yard in Stewart, BC.

On-Site Components

- Underground Mine Development:
 - Construction of one new portal;
 - Use of an existing portal;
 - Extension of stopes and underground workings;
- Mineral Processing Facilities, including a new 1,000 tpd mill;
- Waste Management Facilities:
 - Temporary waste rock storage area;

- New tailings management facility;
- Water Management Facilities:
 - Water supply;
 - Water diversions;
 - Contact water; and,
 - Alternate water treatment facility (if required);
- New surface warehouse and mine dry facilities;
- Concrete batch plant (construction-phase only);
- New fuel and explosives storage facilities;
- New power line and step-down facilities on-site;
- New site offices and assay lab;
- Upgraded and new on-site access;
- New on-site drainage facilities;
- New sewage and septic works; and,
- New surface maintenance shop.

All on- and off-site components will be temporary: they will be reclaimed and removed following the cessation of production. Note that the concrete batch plan will be decommissioned and reclaimed following the completion of construction. The proposed layout of the Project components is shown in Figure 3.

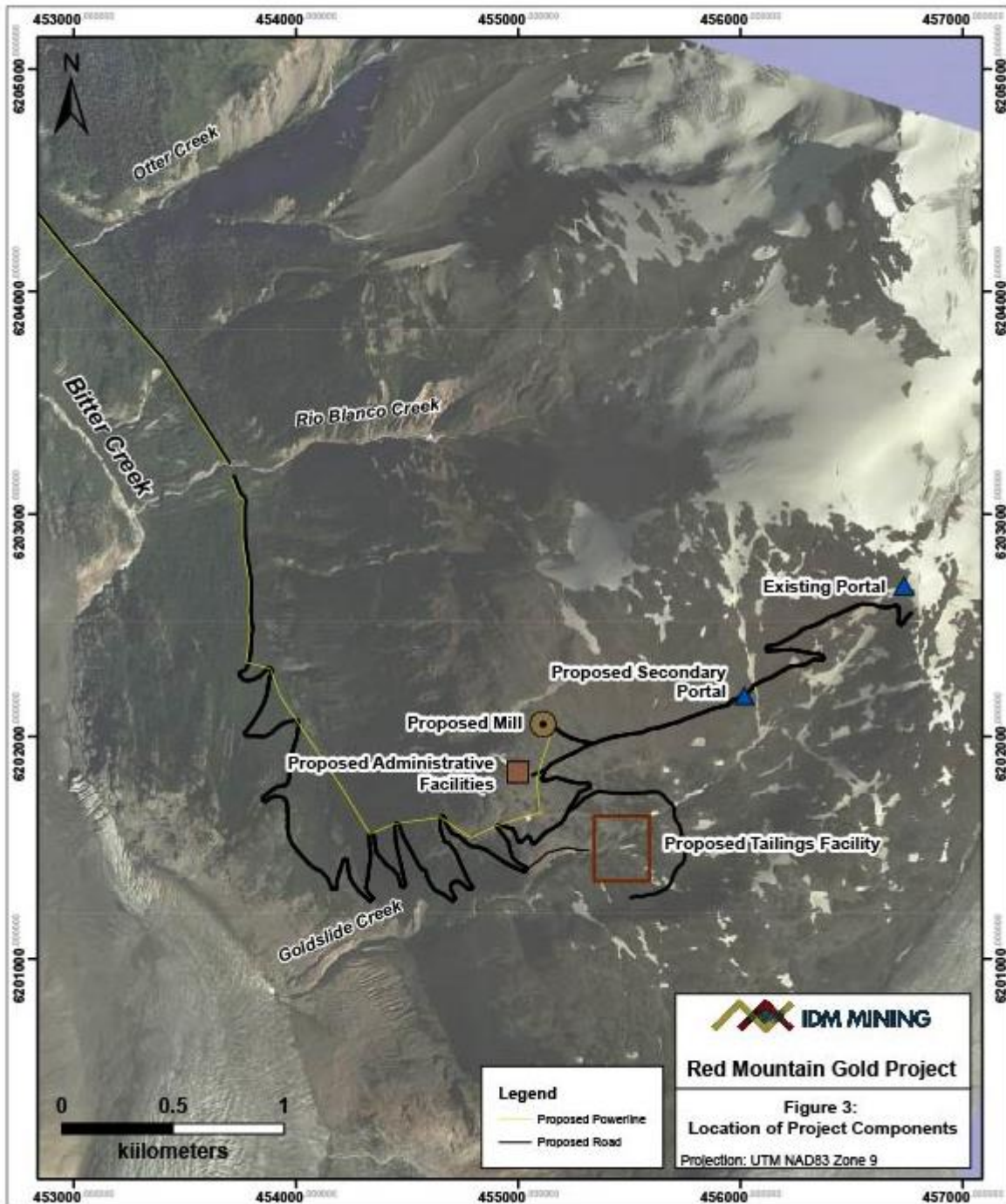
The approximate areal footprint of the on- and off-site components of the proposed mine design is summarized below:

Table 2: Approximate Footprint of On- and Off-Site Components – Red Mountain Gold Mine Project

Component	Approximate Footprint (ha)
1. Off-Site	
Road	77.72
Power Line	127.14
2. On-Site	
Mineral Processing Facilities	1.78
Administrative Facilities	0.61
Tailings Management Facility	13.69
Total	220.94

There will be no worker accommodation constructed on- or off-site. All workers will stay in existing accommodations in Stewart, BC.

Figure 3: Location of Project Components – Red Mountain Gold Mine Project



Project Development Schedule

Following receipt of the required regulatory approvals, the Project will be developed through a 9 - 10 month construction period as follows:

Construction will begin with the construction of the proposed access road to the existing tote road to the upper portal. Furthermore, the lower portal will also be established to drive the incline, develop the main ventilation raise and central deposit pass.

The electrical power line will be completed following the road construction period. All surface infrastructures will also be completed, including:

- Underground Mine Development:
 - One new portal and an existing portal;
 - Extension of stopes and underground workings;
- Mineral Processing Facilities, including:
 - A new 1000 tpd mill;
- Waste Management Facilities:
 - Temporary waste rock storage area;
 - New tailings management facility including;
 - Tailings dam;
 - Tailings pond;
 - Tailings drainage control structures; and
 - Tailings operations;
- Water Management Facilities
 - Water Diversions
 - Water treatment facility (if required);
- New surface warehouse and mine dry facilities;
- New fuel and explosives storage facilities;
- New power line and step down facilities on-site;
- New site offices and assay lab;
- Upgraded and new on-site access;
- New sewage and septic works; and
- New surface maintenance shop.

The main activities anticipated at each stage include the following:

- Construction
 - Clearing and grading for the upgrade and construction of the access road and power line rights-of-way;
 - Construction of watercourse crossings for the access road and power line;
 - Batch plant for concrete to be used for the foundations of civil infrastructure;
 - Blasting using explosives;
 - Construction of drainage facilities for surface water;
 - Installing structures for mill, warehouse, and other surface infrastructure; and,

- Environmental monitoring.
- Operation
 - Grading and brushing as required to maintain road and power line rights-of-way;
 - Mineral processing mill;
 - TMF operation and on-going reclamation;
 - Water management facilities (water diversions and water treatment facility); and,
 - Environmental monitoring.
- Decommissioning
 - Backfilling;
 - Removal of surface structures and concrete foundations;
 - Deactivation of road and power line rights-of-way, including the removal of bridges and culverts;
 - Removal and safe disposal of all hazardous wastes;
 - Removal of all equipment and reclamation of disturbed areas as per a site-wide reclamation and closure plan; and,
 - Environmental monitoring.

Access

Access to the site is presently by helicopter from Stewart with a flight time of 10 to 15 minutes. An existing road, scheduled to be upgraded in 2016, extends for 13 km along Bitter Creek Valley from Highway 37A to between Hartley Gulch and Otter Creek. A proposed access road, for a distance of approximately 7 km, will connect the existing road to the mine site.

Mining and Mineral Processing

Underground access will be through two portals: the existing exploration decline at the primary portal (at elevation 1,650 m) and a new secondary portal (at elevation 1,860 m). The 2014 production estimates indicate that there will be approximately 521,000 tonnes of development waste rock and 1,380,000 tonnes of ore.

The mining plan consists of long-hole stoping and drift-and-fill methods, both of which require backfill. There is a net stope deficit of backfill required to fill the primary stopes and the deficit will be filled by reclaiming backfill from secondary underground stopes. The secondary stopes will be left open.

Gold and silver will be extracted by cyanidation from run-of-mine mineralized material delivered to the mill complex. The run-of-mine material will be stage crushed by a jaw and cone crusher and stored in a fine mill feed material bin. At a nominal rate of 1,000 tpd, the fine mineralized material bin will feed a conventional rod and ball mill grinding circuit followed by thickening prior to leaching. Target grind size will be 95% passing 38 microns (“P₉₅ 38µm”).

Gold and silver extraction will be accomplished in leach tanks with carbon in pulp adsorption, carbon elution, regeneration, electrowinning and refining. Tailings will be treated with SO₂ and air to destroy cyanide prior to discharge to the TMF. Initial geochemistry of the ore indicates that

this processing is feasible with respect to meeting applicable effluent quality discharge requirements, specifically *Metal Mining Effluent Regulations (MMER's)*. Further geochemical testing and analysis will be completed to establish the characteristics of the resulting process water.

Mineral processing will occur at a mill located on site. Processed doré bars will be transported from site via truck to Stewart where they will then be transported to a domestic or international refinery.

Total number of truck trips per day primarily to and from Stewart to the project site is estimated at approximately 50 – 60. These will be made up of the transportation of employees, equipment, supplies and doré bars.

Waste Management

The 2014 estimates are for 521,000 tonnes of development waste rock and 1,378,260 tonnes of tailings from mill processing of mineralized material.

The mining plan consists of long-hole stoping and drift-and-fill methods, both of which require backfill. Development waste rock will be temporarily stored on the ground surface outside the mine and reclaimed for backfill during mining operations. All future development waste and current waste from historical operations will be utilized as backfill in the mine plan. There is a net stope deficit of backfill; the deficit will be filled by reclaiming backfill from secondary underground stopes. No surface development waste storage is foreseen upon mine closure.

Solid Waste Management

Development waste rock will be temporarily stored on the ground surface outside the underground workings in the general area shown in Figure 3 and reclaimed for backfill during mining operations. No surface waste rock storage is foreseen upon mine closure. The areas used for temporary waste rock storage during operations will be rehabilitated during operations as appropriate, or at latest, upon mine closure.

Static acid base accounting (ABA) tests have indicated that the waste rock will be categorized as potentially acid-generating (PAG). On-going monitoring of waste rock from the 1994 to 1997 exploration programs indicates there is a long lag time to the onset of acidic conditions if this material is in place for greater than 16 years. Therefore, acid rock drainage is not expected to occur over the life of the mine. At closure, a hydrostatic bulkhead will be installed at the lower portal to prevent air circulation and allow the workings to flood. A hydrogeological evaluation is being initiated to estimate post-closure water levels in the mine.

Gaseous Waste Management

IDM will develop management plans for minimizing the impact of air emissions, including emissions from vehicle and equipment use, dust from road use, and emissions from the mill.

Tailings Management

Tailings management at the Red Mountain Gold Mine Project will employ the most advanced engineering and design characteristics available. The tailings are potentially acid-generating (PAG), and will require appropriate management plans to prevent or mitigate metal leaching (ML) and acid rock drainage (ARD).

Tailings will be stored in a TMF located adjacent to the processing facility. The final design of the TMF is still under consideration and study. The current design of the TMF, as included in the July 2014 PEA, is to have a tailings pond formed by a lined engineered earth dam constructed from local borrow material which will be designed to maintain saturated conditions throughout the tailings mass. An alternative, which is currently under investigation, is the use of cemented tailings surface deposition, where cement is blended into the tails prior to deposition within the TMF. The intent of adding cement is to create a solid tailings mass at surface. Testing is currently underway to explore the feasibility of cemented tails as an option, and a final determination on the TMF design will be made when cemented and other tailings deposition options have been fully examined.

The tailings pond will receive tailings and wastewater from the mill after cyanide removal. Surface runoff that would normally drain to the TMF location will be diverted around and/or beneath the TMF and will be an integral part of the TMF design.

Under the existing PEA TMF design, the tailings pond dam elevation will be constructed to allow for sufficient freeboard to allow for year-round containment of water during operations, including peak snow melt and rain events.

Water Management

Underground mining is expected to produce water that will require discharge to the surface environment. Underground development from the secondary portal will provide gravity drainage to the secondary portal. Currently, groundwater quality conforms to requirements (both water quality and protection of aquatic life) allowing discharge to the receiving (surface) environment from the primary portal. If required, groundwater can be gravity flowed to the TMF for process make-up water.

Water will be required for human consumption, on-site activities for maintaining facilities, and for the processing in the mill. This water will be brought in from Stewart.

Mill processing water will be reclaimed from the TMF through a barge-mounted reclaim system in the tailings pond. It is estimated that approximately 20,833 litres/hour (5,504 US gallons/hour) will be required for processing makeup water.

The makeup-water is to be derived from the underground mine discharge. When insufficient makeup-water is available from the underground mine, water will be drawn from the Goldslide Creek basin underflow below the tailings dam.

Diversion channels will be constructed to divert water from areas up-slope of the plant site, temporary stockpiles and tailings facility, and upstream in Goldslide Creek. The diversion channels will be sized to accommodate peak flows and the flows will be returned to Goldslide Creek at the downstream side of the tailings facility. The point at which the diverted flows return to Goldslide Creek will be designed to prevent erosion and also allow extraction of water, should additional make-up water be required for the mill.

Power Requirements

Electrical power providing approximately 4 MW to the major mill equipment will be provided via a 34kV power line aligned to the first 13 of the 20 km seasonal access road, and continuing to the mine site via a new alignment not necessarily adjacent to the remaining 7 km of road. The new alignment will be determined based on the safest and most direct route to the mine site. The power line will connect to existing BC Hydro infrastructure in the Bear Creek Valley.

Mine Reclamation, Closure, and Monitoring

As currently proposed, operations will continue for approximately five years with the possibility of an additional two years depending on several factors, including in-fill drilling success and the price of gold and silver.

The mine closure concept includes meeting provincial water quality guidelines without the need for on-going treatment. All waste rock will be backfilled and stored underground and the TMF will be closed and rehabilitated in accordance with approved best practices and consistent with the construction technique employed. The site will be returned to a safe condition and rehabilitated to minimize the intrusion of the Project on the landscape. Further test work during the feasibility stage of assessment will confirm these concepts.

All underground development rock would be placed as backfill during operations. Following closure, the underground mine will be allowed to flood and the mine portals and ventilation raises will be collapsed or blocked. The secondary portal at an elevation of 1,650 m will be hydrostatically sealed with an engineered bulkhead. The primary portal, at an elevation of 1,860 m, will be sealed to prevent surface water from entering the mine.

Infrastructure, including the access road, bridges, culverts, and the power line, will be removed and disturbed sites will be re-graded to natural slopes. The access roads will be deactivated in accordance with the *Forest Practices Code*.

The Project structures will be decommissioned and removed from the site subsequent to the cessation of mining operations. All explosives, explosive magazines, fuel, and fuel containers will also be removed from the site at closure. After removal of the process building, equipment, and foundations, a soil sampling program (intended to understand whether there is any residual contamination) will be conducted in the immediate vicinity of these structures.

Preliminary planning for site restoration activities for the TMF include placing a 1 m thick granulated cover over the TMF to provide erosion protection and to minimize infiltration. Covers will be graded to create natural drainage to reduce erosion.

The environmental monitoring program implemented during operation of the mine will provide a baseline for post-closure-monitoring. Details of this monitoring program will be determined by further studies and in consultation with regulators and the Nisga'a Nation, Nisga'a as represented by the Nisga'a Lisims Government (NLG).

Regional Setting

The Project is located in northwest British Columbia amid the Boundary Ranges of the Coast Mountains, west of the Nass Basin. Highway 37A is the only road linking the District of Stewart, the community nearest the Project area, to the BC communities of Smithers and Terrace and north toward the Yukon Territory via Bear Pass. The community of Hyder is approximately 4 km south of Stewart, in Alaska, USA. Smithers and Terrace are approximately 270 km and 240 km by road from Stewart, respectively. Four Nisga'a Nation villages (shown in Figure 4) proximal to the Project area are:

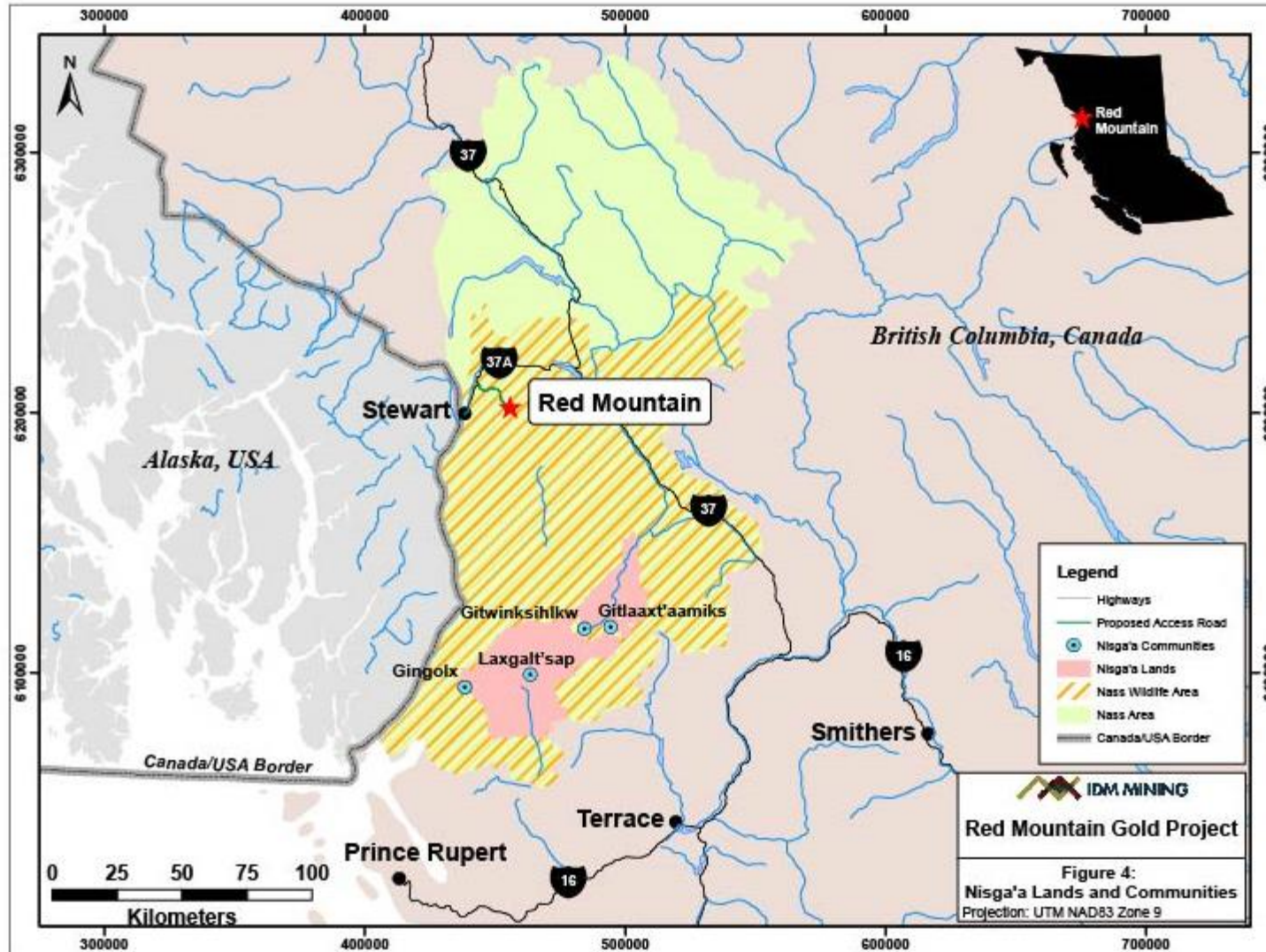
- Gitlaxt'aamiks - approximately 170 km from Stewart by road;
- Gitwinksihlkw - approximately 180 km from Stewart by road;
- Laxgalts'ap - approximately 215 km from Stewart by road; and,
- Gingolx - approximately 245 km by road from Stewart.

The Project is located approximately 12 km north along the Bear River Valley and 16 km southeast along the Bitter Creek Valley, for a total distance of 28 km northeast of Stewart. Stewart is served by a small airport and is located in the estuary at the head of the Portland Canal. The Portland Canal provides marine transport access to Stewart, which is the most northerly ice-free port in Canada. The nearest year-round residences to the Project outside of Stewart are at Meziadin Junction approximately 65 km from the site and seasonal residences are at Bell II, which is approximately 153 km from the proposed Project.

The Project is located within the Nass South Sustainable Resource Management Plan (SRMP) (currently in draft) that aims to provide a landscape-level plan to address sustainable management of land, water, and resources in the southern portion of the Nass Timber Supply Area. Although the Nass South SRMP focuses on forestry and timber resources, it does set out resource management objectives for some environmental aspects that will potentially be affected by the Project, including: water quality and hydrology, botanical forest products (i.e., mushrooms), wildlife, fish, and cultural/heritage traditional uses.

The north-western region of British Columbia is dominated by resource extraction, primarily mineral and timber resources. Consequently, economic activity, population levels, and social and community services fluctuate with the level of mining and forestry activity in this region.

Figure 4: Nisga'a Lands and Communities



There is a growing tourist industry in the Bear River Valley and Stewart area, focussed on glacier tours, wildlife viewing, and fishing.

A new mine, the Kerr-Sulphurets-Mitchell Project (KSM), operated by Seabridge Gold, has recently received approval (through an Environmental Assessment Certificate and a *Mines Act* permit) by the Government of BC to begin operations in an area 65 km northwest of Stewart. In addition, the Brucejack Mine, owned by Pretium Resources Inc., approximately 65 km northwest of Stewart, is currently in the regulatory review and approvals process. As of June 12, 2015, the public comment period on the draft Environmental Assessment Report was closed. The Canadian Environmental Assessment Agency is considering comments received in order to finalize the Environmental Assessment Report that will be submitted to the BC EAO.

There are no federal lands within the Project area nor are any expected to be affected by the Project. No federal funding is anticipated for the Project. Table 3 summarizes the distances from the proposed Project to the nearest federal lands.

Table 3: Proximity of Proposed Project to Federal Lands

Federal Land Area Description	Approximate Distance from Proposed Project
Gwaii Haanas National Park Reserve	380 km
Canadian Forces Base Comox	800 km
Qualicum National Wildlife Area	850 km

Archaeological and Heritage Resources

While IDM is not aware of any known archaeological or heritage resource values in the Project area, the presence of Aboriginal Groups in the Bear River basin is well documented. The extent to which Aboriginal Groups historically used the Bitter Creek Valley is less well known at this time. However, as part of baseline and environmental impact studies, IDM will undertake an Archaeological Overview Assessment (AOA) and, if necessary, an Archaeological Impact Assessment (AIA), to confirm the presences of any values, and if so, the mitigation measures required to protect those values.

Existing Environment

The Project area is at a high elevation above the tree-line and experiences snow cover for more than half the year; parts of the access road at lower elevations will have a longer snow-free period each year. Three climate stations were established close to the proposed mill site a number of years ago by previous property owners, but were subsequently discontinued. IDM re-installed a climate station in 2014. Weather conditions in the Project area vary rapidly at all times of the year. Stewart receives approximately 1,866.8 mm (73.5 in) precipitation per year, much of it as snow, and an average yearly temperature of 6.1 °C (43.0 °F).

The Project area is remote from human sources of air emissions and there has been no monitoring of air quality. The main sources of known air emissions are from human activity proximal to Stewart, traffic along Highway 37A, and exploration activity in the Bitter Creek Valley.

The noise environment of the Project area is characterized by natural background noise. No monitoring of noise has been undertaken in the Project area. Other than periodic exploration activity in the Bitter Creek watershed, the closest source of human noise is vehicular traffic along Highway 37A.

The Project site is located almost entirely within the catchment of Goldslide Creek. Goldslide Creek flows into Bitter Creek, which then flows into the Bear River. The only Project component not within the catchment of Goldslide Creek is a portion of the waste rock area from the existing exploration decline, located on the divide between the Goldslide Creek catchment and the Cambria Icefield. The area is steep, and large portions of the Bitter Creek and Bear River catchments are glaciated, strongly influencing all of the major watercourses. Sediment loads, especially in Bitter Creek, are very high during the summer. The bottom elevation and the alignment of the streams change significantly from year to year, driven by seasonal runoff patterns and fluctuating sediment loads.

Baseline information on groundwater is available from historical underground investigations and sampling of springs and seeps, monitoring of the water level in the existing flooded adit, sampling of underground water quality, and most recently, water quality sampling from a flowing exploration drill hole. The majority of water from the Project area is expected to flow into Goldslide Creek and other creeks running off the valley walls. The groundwater system is fracture-controlled and the dominant flow paths will be joint sets and possibly fault zones.

Water quality monitoring at the Marc Zone Waste Dump Seepage, which is immediately adjacent to the existing portal, indicates neutral to slightly-acidic pH conditions (i.e., typically pH 5 to 8), moderately-elevated sulphate concentrations (i.e., typically 100 to 600 mg/L), and somewhat-elevated metal concentrations (e.g., zinc ranged from 0.005 to 2.8 mg/L, with a median of 0.036 mg/L). Water quality monitoring data for the field weathering cribs indicates that both cribs continue to have neutral pH drainage, and moderately-elevated sulphate and metals concentrations. Most recent monitoring data indicated neutral pH, moderate sulphate concentrations (i.e., 161 mg/L), and metals concentrations well below provincial Water Quality Guidelines and *MMER*'s (e.g., zinc 0.013 mg/L).

The Bitter Creek drainage consists of four Biogeoclimatic Ecosystem variants: Coastal Western Hemlock Wet Maritime Subzone (CWHwm); Mountain Hemlock Moist Maritime Windward Variant (MHmm1); Mountain Hemlock Moist Maritime Parkland Variant (MHmmp); and Coastal Mountain-heather Alpine Zone Undifferentiated (CMAun).

North American and provincial databases were reviewed to identify wildlife species that potentially occur within the broader Project area. Despite the presence of a wide array of wildlife regionally which is discussed below, it should be noted that the high elevation and modest

footprint of the proposed Project, being a small underground mining operation, means the interaction between development and operational activities and wildlife at the site are expected to be very limited.

Fifty-eight species (including 2 amphibians, 45 birds and 11 mammals), were identified as a traditional use or conservation concern. Provincially-listed species include 33 blue-listed species and 12 red-listed species. In addition, 13 species are listed as identified wildlife. Species listed under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) include 13 species listed as Species of Special Concern, 7 as Threatened, and 1 as Endangered. There are 14 federally-protected species listed under Schedule 1 of the federal *Species at Risk Act* (SARA) and 1 species listed under Schedule 3 of SARA as a Species of Special Concern.

The draft Nass South Sustainable Resource Management Plan has identified Mountain Goat Ungulate Winter Ranges throughout the Bitter Creek drainage to manage important wintering habitat for the species. In addition, suitable habitat for Northern Goshawk and lower elevation ecosystem networks has been spatially identified. In consultation with NLG, a proactive wildlife monitoring plan has been developed and is being implemented by IDM during investigative activities during environmental baseline studies to provide further information regarding wildlife in the Project area.

The aquatic environment most likely to be influenced by the proposed Project includes the Bitter Creek drainage, including Bear River from the point of confluence with, and downstream of, Bitter Creek, together with those tributary watercourses crossed by the access road from Highway 37A to the proposed mine site near Goldslide Creek, as well as the power supply and distribution line from the Project area. All currently-proposed, mining-related infrastructure (e.g., waste dump, tailings storage facility) and operations will be restricted to the Goldslide Creek drainage, a tributary to Bitter Creek, located in the headwaters of the watershed.

Historical fish and fish habitat studies conducted in the Bitter Creek drainage indicate usable fish habitat is limited both in terms of quantity and quality (Rescan 1993). A potential barrier to upstream fish migration was characterized near Hartley Gulch; at the time of study, no fish were observed above this apparent obstruction. Furthermore, Dolly Varden (*Salvelinus malma*) was found to be the dominant fish species inhabiting Bitter Creek as well as the lower reaches of Roosevelt Creek (a tributary to Bitter Creek). Fish captured during the Rescan (1993) study appeared to be in good health. There is currently no historical fisheries information available for Goldslide Creek. Key fish species in the larger regional Project area include: Dolly Varden, chum salmon, coho salmon, pink salmon, and eulachon. Debris flows and floods are known to have occurred within the tributary creeks flowing into Bitter Creek resulting in washouts of the pre-existing road at the valley bottom and increased sediment supply to Bitter Creek. Similarly, flooding is common in the valley and has recently resulted in the scouring and widening of the active channel, as well as destroying the Highway 37A bridge downstream. Like all of the mountainous valleys in the area, the valley is prone to avalanches throughout the fall, winter, and spring months. Multiple avalanche tracks are visible down to the valley bottom on the main slopes and on slopes funnelling into the area drainages. The Bitter Creek Valley is a very dynamic terrain with multiple on-going slope and fluvial processes.

Environmental Studies Conducted to Date

Historical

Detailed environmental baseline studies were completed at Red Mountain from 1990 to 1997, including metal leaching/acid rock drainage (ML/ARD) characterization, baseline water quality, climate, hydrology, hydrogeology, wildlife, vegetation, and fish studies. Data up to 1994 were presented in a draft Project Development Application Report (Rescan, 1995), which was submitted for regulatory review in 1995. However, the application was later withdrawn following the acquisition of Lac Minerals by Barrick Gold and the EA was not completed. Additional environmental baseline studies are currently being conducted in support of the Project and it is anticipated that data from these earlier studies will be used where applicable and appropriate in the EA.

Current

A formal environmental baseline program was initiated in June 2014 by IDM. This work includes all aspects of the biophysical environment including water quality, climate, hydrology (surface and ground), fisheries, wildlife and terrain analysis. The second year of study will be completed in 2015 and information from this work will be used in the EA and the EA Application report to be submitted to the BC EAO in the latter part of 2015.

The fisheries and aquatic baseline program (utilizing updated regulatory standards) was initiated for the Project to provide information on drainages in the Project area, including Bitter Creek and key tributaries (e.g., Roosevelt Creek and Bear River), which may be affected by Project components and activities (e.g., power line, mine site, waste rock and tailings, effluent discharge). Results from the 2014 and 2015 summer baseline field program are currently being collected and documented.

Potential Environmental Effects

When the Project comes into production, air emissions, including hydrocarbon emissions and particulates, are anticipated from vehicle and equipment use, dust from road use and mining operations, diesel generator, waste incinerators, and the mill. The emissions would not occur during the three coldest months of the year during construction and operations due to mine shutdown.

The principal sources of noise anticipated from the Project are vehicle use on the existing roads, and the on-site access, tote roads, equipment, and from the mill. Due to mine shutdown, noise sources would cease during the three coldest months of the year during both construction and operations phases of the Project. Periodic helicopter use is anticipated during construction and operations for approximately nine months of each year in which the Project is active. It is expected that helicopter and ground vehicle use will be subject to requirements for wildlife management plans applicable to the area, established jointly by the Ministry of Environment and NLG.

Groundwater quality may be affected by ML/ARD from rocks exposed in the underground or from backfill material. Subsequent to the operational phase, the mine workings will be plugged and allowed to flood, this should reduce the potential for effects on groundwater quality from the mine discharge. Groundwater modeling will be completed to assess how the groundwater system could change from operational dewatering, the level to which the mine will flood at the end of operations, and, once flooded, the expected seepage rate out of the mine. The need for any mitigation measures will be assessed in conjunction with discharge predictions, and their impacts on receiving water quality. A groundwater monitoring plan will be developed to allow for confirmation of predictions.

Potential effects on the surface hydrology include: the construction of the TMF adjacent to the Goldslide Creek, water diversions associated with the TMF, temporary waste rock piles and the mill area, and the use and discharge of effluent from the process plant. The quantities of make-up water are small in comparison to the total flows in Goldslide creek and are negligible in comparison to the total flows in Bitter Creek and the Bear River, and are not expected to result in appreciable changes to flows in any of these water courses.

Ambient water quality studies carried out to date indicate that a number of parameters (refer to section 3.1.6.3) exceed aquatic life criteria. It is therefore expected that Site Performance Objectives will need to be developed for the Project. Water quality modelling will be completed to assess the potential effects of the mine discharge on down-gradient and downstream water quality. During operations, process water, water from the underground workings, as well as water in contact with the mill area, temporary waste rock piles, and tailings beaches will be directed to the tailings pond. It is estimated that the TMF water balance will be consumed by the mill operations with a minor net deficiency requiring surface water collection to be used intermittently for operations make-up water. Further work is required to determine a final water balance and whether intermittent discharge to the receiving environment would be required.

While the quality of water that may need to be discharged from the tailings pond is expected to meet federal (Canadian) *Metal Mining Effluent Regulations (MMER)*. If further testwork and monitoring indicates this is not the case, then water will be treated prior to discharge. For the purpose of an assessment pursuant to *BCEAA* and *CEAA 2012*, a treatment facility will be assessed as an alternate means for meeting regulatory requirements related to tailings pond effluent discharge quality.

The Project area has been studied significantly in the past with respect to terrain hazards and avalanche activity. This historical work will be added to with mapping of surficial geology and terrain to provide a description of the areas terrain, terrain hazards, soil erosion potential, fluvial systems, and fluvial hazards. The areas with known instabilities will be identified, including their proximity to proposed works, estimated magnitudes and run out, and their potential to adversely affect the Project or the environment. Avalanche areas will be identified so a management approach can be developed for the mine access and facilities area.

Some clearing of timber may be required for the construction of infrastructure, including the access road and power line rights-of-way. IDM estimates that 25 hectares of clearing will be

required over the entire Project, primarily associated with access to the mine site. IDM is committed to minimizing any disturbance or alterations to the existing environment. Terrestrial wildlife and vegetation issues associated with the Project may include: habitat alteration and fragmentation; species displacement or disturbance; and mortality. These concerns will be prevalent during both construction and operation. However, the extent of effects will be dependent on the type of activity, location, seasonal timing, frequency, and downstream effects associated with water quality. The impact assessment will evaluate the potential issues for both the general location of the proposed Project and individual components of particular infrastructure.

As a result of the minimal and limited clearing and proposed mitigation efforts, it is anticipated that there is little potential for significant effects on bird nesting and habitat in general. Despite this, direct mortality is possible although unlikely from collisions with power lines, buildings, or vehicles; removal or disruption of nests; loss of habitat due to vegetation clearing; interference from Project lighting and noise; and effects to health from the possible degradation of air and water quality. Tree clearing will be limited to the rights-of-way for the access road and power line. Tree and land clearing will be conducted within the appropriate timing windows for breeding birds or nest surveys will be completed prior to any construction to avoid adverse effects on nesting birds. The breeding requirements of other species will also be considered. No forest cover clearing will be required at the mine site as the habitat is high elevation rock and scree and is devoid of tree cover.

On-going field surveys specific to fish distribution, abundance, and diversity will confirm/update historical information. Along proposed rights-of-way, fish and fish habitat may be affected through degradation of habitat by erosion, sedimentation, and clearing of riparian vegetation via road construction and use. As well, increased access to fish habitat may lead to increased fishing pressure on local stocks; however, with the exception of Bear River, the local area is not believed to be heavily used by the Nisga'a Nation or recreational anglers. Although downstream changes to water and sediment quality are expected to be minimal or non-existent, changes in the quality of these features downstream of the Project and potential implications to fish and fish habitat as well as lower trophic levels will be assessed. Linear features (e.g., access road and power line rights-of-way) will also be evaluated in the assessment. Mitigation measures will be implemented to manage any potential effects on fish and fish habitat, as required.

The use of the access road into the Project area could expose wildlife to direct mortality due to traffic collisions. The species most vulnerable to road-kill mortality in the Project area are the small, slow-moving species such as amphibians, which are difficult for drivers to see. The access roads will be controlled to avoid the potential for increased hunting opportunities within the Project area.

Wildlife uptake of heavy metals and other contaminants through the ingestion of surface waters or dry deposition on plants may occur. However, these effects are expected to be minimal, as the receiving surface waters within the Project area are not anticipated to have elevated metals concentrations due to appropriate mitigation measures and management of the tailings. The dry

deposition of particles with elevated metals content on plants will be minimal due to limited fugitive dust events.

Potential Economic Effects

IDM will ensure that the Project provides lasting benefits to local communities while generating substantial economic and social advantages for shareholders, employees, and the broader community.

The Project is expected to provide economic benefits to the local non-Aboriginal, Aboriginal, Métis, and Nisga'a communities as a result of direct training and employment opportunities, as well as employment and business opportunities. IDM expects to provide full-time and seasonal employment for up to 105 person-years during the two-year construction phase of the Project. During the 5 to 7 mine operational phase, permanent and seasonal employment of up to 396 person-years is expected.

Additional indirect employment opportunities (such as goods and services contracts) will also increase, creating growth in the local, regional, and provincial economies. The overall economic impacts to the District of Stewart, nearby communities, and the Province of BC are expected to be beneficial. The capital cost investment estimate for the development, operation, and closure for the Project is \$97.0 million. This includes a pre-production capital investment estimate of \$76.1 million and an operating and closure capital investment estimate of \$21.2 million. The Project will also generate annual revenues associated with property tax, licensing fees, royalties, and income tax for local, provincial, and federal governments. Quantification of estimated manpower is provided in section 4.3.4.

Potential Social Effects

The workforce for both the construction and operations phases is expected to be based in Stewart. While a formal socio-economic baseline study and impact assessment will be conducted in support of the EA of the Project, initial research undertaken in 2014 indicates that Stewart has sufficient facilities and infrastructure to accommodate the potential increase in residents during construction and operation phases of the Project. Services provided by government agencies, communication and media, commercial operations, and transportation would continue to adequately serve the increased population. The power, water supply, solid waste management services, community services, and infrastructure currently available in Stewart are adequate to provide for the population increase associated with the Project. Stewart is served by elementary and secondary schools, both of which are operating below capacity.

Potential Effects on Human Health

The nearest community (Stewart) is separated from the Project area by a mountain range. The Project is not anticipated to adversely affect human health in or proximal to the Project area. Air emissions are not expected to be significant and will only involve hydrocarbon and particulate emissions from vehicles, equipment, and the mill and will be limited to approximately 9 months of the year.

The potential effects to the use of traditional resources and country foods in the Bitter Creek and lower Bear River Valleys resulting from changes in the quality of air or water during construction and operation of the Project are not expected to be significant. Potential effects will be assessed in consultation with NLG and review of the available information.

Potential Effects on Archaeological and Heritage Resources

Although no archaeological or heritage sites have been recorded in the Project area, IDM will undertake an AOA and, if necessary, an AIA to confirm whether or not any archaeological or heritage values are present and likely to be affected by the Project. Moreover, IDM will work with NLG with respect to the collection of Traditional Knowledge and Use information to further identify Aboriginal or Treaty Interests in the Project area and potential adverse effects on those Interests. Mitigation measures will be developed in consultation with NLG throughout the EA process.

Aboriginal Land Use

The Project falls within the Nass Wildlife Area as set out in the Nisga'a Final Agreement (NFA). Pursuant to the NFA, the Nisga'a Nation (Nisga'a), represented by the Nisga'a Lisims Government (NLG), has Treaty rights to the management and harvesting of fish and wildlife within the Nass Wildlife Area.

Nisga'a citizens are closely tied to the land and practice traditional and cultural activities, including seasonal resource harvesting of plants, fishing and hunting, and trapping wildlife. Key species for traditional and economic use include: salmon, eulachon, marten, mountain goat, wolverine, hoary marmot, grizzly bear, moose, western toad, and Pacific tailed frog. Other interests include: forestry tenures, commercial recreation, angling licences, and trap lines.

Sgamagunt, formerly Scamakounst Indian Reserve 19, is the nearest parcel of Category A Land, as defined in the NFA, and is held by Nisga'a as estate in fee simple. Sgamagunt is situated on the east bank of the Bear River, approximately 500 m across from Stewart, BC. Waters draining from Red Mountain flow into Bitter Creek, which in turn flows into the Bear River upstream of Sgamagunt.

The Project also overlaps with the asserted traditional territory of Skii km Lax Ha and overlaps the land used for the purpose of traditional hunting, trapping, and gathering by the Métis Nation of BC (MNBC).

Potential Effects on Aboriginal Land Use

Potential adverse effects of the Project that may affect Aboriginal and Treaty land use may include, but are not limited to, impacts on traditional harvesting, hunting, trapping, and cultural activities as a result of increased human presence and sensory disturbances associated with two years of construction and five to seven years of operational activities, and changes in access to the Project area.

In conjunction with the assessment of fish and fish habitat, the Project may affect Aboriginal Treaty, commercial, and recreational fisheries. Though significant impacts are not expected, the potential for loss of productivity and the fishery will be assessed. IDM will work with the identified Aboriginal Groups with respect to the collection of traditional knowledge and the identification of Aboriginal and Treaty rights and interests related to fisheries in the Project area and potential adverse effects on fisheries. Mitigation measures will be developed in consultation with NLG and any other identified Aboriginal Groups throughout the EA process.

Consultation with Aboriginal Groups

To date, IDM has been directed to consult only with Nisga'a, as represented by NLG. IDM will initiate engagement and consultation activities with other Aboriginal Groups, such as MNBC and/or Skii km Lax Ha, if directed to do so by regulators.

IDM's engagement and consultation process is structured to ensure meaningful and comprehensive consultation that will meet the needs of NLG pursuant to the NFA. Additionally, engagement and consultation processes will be developed, as appropriate, in the event that other potentially affected Aboriginal Groups are identified.

IDM have initiated early engagement with the NLG, who have expressed the willingness to discuss the idea of a mining operation within the Nass Wildlife Area, provided that the mining operation is developed and operated in an environmentally responsible manner that is mutually beneficial for both IDM and NLG. Engagement activities to-date include: the provision of initial Project information materials; a face-to-face meeting with NLG executive; information-sharing with NLG Lands and Resources staff; and a meeting to discuss potential Valued Components for the Project.

IDM will continue to seek meaningful and respectful engagement and consultation with NLG. The objectives of the Project's engagement program are to:

- Identify NLG's Treaty rights and interests in the Project area;
- Identify the potential effects of the Project on those Treaty rights and interests, including residual and cumulative effects;
- Comply with all applicable NLG laws, particularly as they relate to the Nass Wildlife Area;
- Ensure that the collection of feedback and concerns from the NLG are understood and considered during Project design and implementation, as appropriate;
- Ensure that issues and concerns regarding potential environmental or socio-economic effects related to the NLG are addressed, as appropriate; and,
- Engage in discussions regarding effective avoidance, mitigation, and management measures.

Pursuant to Chapter 10, sections 8(e) and 8(f), of the NFA, additional consideration will be given to the Nisga'a throughout the EA. A high level of consultation with the NLG is expected during the regulatory review and approvals processes undertaken by IDM. IDM will seek direction from

the BC EAO and Canadian Environmental Assessment Agency with respect to whether the NFA will apply and the scope of its potential application.

IDM will also work with the NLG with respect to a Nisga'a Economic, Social, and Cultural Impact Assessment to further identify potential Project effects. Mitigation measures will be developed in consultation with NLG throughout the EA process. IDM will also consult with Skii km Lax Ha and MNBC on their asserted Aboriginal rights and interests in the Project area, and the potential impacts of the proposed Project on those Aboriginal rights and interests, as directed by the federal and provincial governments.

Government Agency and Local Government Consultations

The BC EAO will establish a Working Group to participate in the pre-Application phase of the Project. Members of the Working Group will include NLG and federal, provincial, and local government representatives. IDM will attend Working Group meetings as directed by the BC EAO to provide information about the Project, present baseline study work and results, and discuss potential mitigation measures. IDM will also meet individually with government agencies, as required, during the EA process.

Consultation regarding the Project has already been initiated with the BC EAO, Ministry of Energy and Mines (MEM), Ministry of Forests, Lands, and Natural Resource Operations (MFLNRO), and the Ministry of Environment (MoE).

Public and Stakeholders Consultation

During the pre-Application phase of the Project, IDM will hold open houses in Stewart and in the Nisga'a communities of Gitlaxt'aamiks, Gitwinksihlkw, Laxgalts'ap, and Gingolx. Additionally, IDM will work with NLG to host open houses for their citizens located in the urban areas of Terrace, Prince Rupert, and Vancouver.

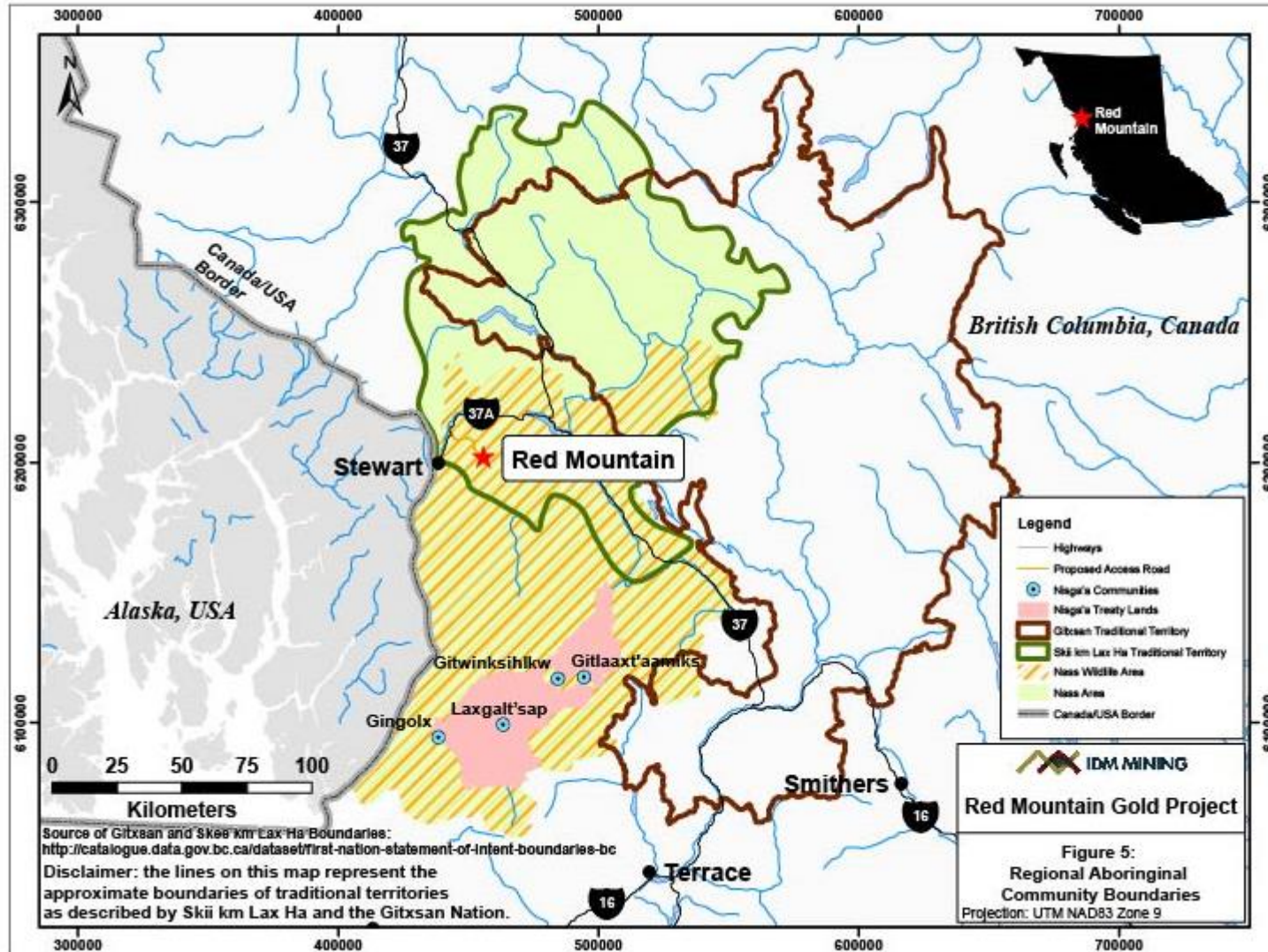
IDM will initiate consultation with tenure holders in the Project area, including economic development organizations; businesses and contractors (e.g., suppliers and service providers); and special interest groups (e.g., environmental, labour, social, health, and recreation groups), as required.

Communities near the Project area where public consultation outreach activities may occur during public comment periods will include, but not necessarily be limited to: the Regional District of Kitimat-Stikine and the District of Stewart.

Authorization, Permits, and Licenses

Provincial and federal permitting and licensing is expected to proceed concurrently with the environmental review pursuant to *BCEAA* and *CEAA 2012*. Consequently, IDM will apply for Coordinated Authorizations within the EA for all provincial and federal permits. It is anticipated that all provincial permit applications for the Project will be coordinated through the Major Projects Office of MFLNRO.

Figure 5: Regional Aboriginal Community Boundaries



Provincial Involvement, Approvals, and Authorizations

Table 4 presents the principal provincial authorizations, licences, and permits anticipated for the construction and operation of the Project.

Table 4: Anticipated Provincial Authorizations, Licences and Permits

Permits	Agency	Legislation
Environmental Assessment Certificate	BC Environmental Assessment Office	Government of BC, <i>Environmental Assessment Act</i>
Licence of Occupation	Ministry of Forests, Lands and Natural Resource Operations	Government of BC, <i>Land Act</i>
Licence to Cut	Ministry of Forests, Lands and Natural Resource Operations	Government of BC, <i>Forestry Act</i>
Road Use Permit	Ministry of Forests, Lands and Natural Resource Operations	Government of BC, <i>Forestry Act</i>
S.14 Inspection Permit	Ministry of Forests, Lands and Natural Resource Operations	Government of BC, <i>Heritage Conservation Act</i>
S.12 Site Alteration Permit	Ministry of Forests, Lands and Natural Resource Operations	Government of BC, <i>Heritage Conservation Act</i>
Burning Reference Number	Ministry of Forests, Lands and Natural Resource Operations	Government of BC, <i>Wildfire Act</i>
S.9 Approval or Authorization for Changes In and About a Stream	Ministry of Forests, Lands and Natural Resource Operations	Government of BC, <i>Water Act</i>
S.8 Authorization for Short Term Use of Water	Ministry of Forests, Lands and Natural Resource Operations	Government of BC, <i>Water Act</i>
Mining Lease	Ministry of Energy and Mines	Government of BC, <i>Mineral Tenure Act</i>
Mines Act permit	Ministry of Energy and Mines	Government of BC, <i>Mines Act</i>
Mining Right of Way Permit	Ministry of Energy and Mines	Government of BC, <i>Mining Right of Way Act</i>
Permit to operate a Food Premise	Northern Health Authority	Government of BC, <i>Public Health Act-Food Premises Regulation and DWP Act</i>
General Application for Health Approval	Northern Health Authority	Government of BC, <i>Public Health Act- Sewage Disposal Regulation</i>
Water System Operating Permit	Northern Health Authority	Government of BC, <i>Drinking Water Protection Act and Regulation</i>
Highway Access Permit/Provincial Public Highway Permit Application	Ministry of Transportation and Infrastructure	Government of BC, <i>Transportation Act, Motor Vehicle Act</i>

Permits	Agency	Legislation
Utility Permit	Ministry of Transportation and Infrastructure	Government of BC, <i>Transportation Act, Motor Vehicle Act</i>
Hazardous Waste Registration	Ministry of Environment	Government of BC, <i>Environmental Management Act- Hazardous Waste Regulation</i>
Fuel Storage Permit	Ministry of Environment	Government of BC, <i>Environmental Management Act</i>
Effluent Discharge Permit	Ministry of Environment	Government of BC, <i>Environmental Management Act</i>

Federal Involvement, Approvals, and Authorizations

No federal financial support is required or involved in the Project. Moreover, no federal lands are required or involved in the Project.

Information currently available indicates that fish and fish habitat, as defined in the federal *Fisheries Act* will not be affected by the Project.

The Project is not expected to affect marine plants, as defined in the *Fisheries Act*.

While the potential for significant effects on migratory birds is not expected (based on available information), further studies are underway to determine whether and to what extent migratory birds, as defined in the *Migratory Birds Convention Act, 1994*, could be affected. The dominant species present are ptarmigan, which are not listed in the *Act*.

The federal authorizations, licences, and permits anticipated for the Project are shown in the table below and will be addressed through the respective government agencies.

The Project exceeds the minimum daily ore production threshold of 600 tonnes/day identified in section 16 of the Schedule of the *Regulations Designating Physical Activities of CEAA 2012*. The Project is therefore, expected to require a decision pursuant to *CEAA 2012*.

Table 5: List of Anticipated Federal Permits and Authorizations

Permits	Agency	Legislation
Explosives Permit	NRCan	Government of Canada, <i>Explosives Act</i>
Decision pursuant to <i>CEAA 2012</i>	Canadian Environmental Assessment Agency	<i>CEAA 2012</i>

Potential Trans-boundary Impacts

The Project is located approximately 20 km in a straight line from the Canada-USA border within the Bear River drainage that flows into Canadian waters. Downstream drainage from the Project will travel approximately 38 kilometers before entering the Canadian waters of the Portland Canal. Surface water flow from the Project is not anticipated to be a significant portion of Bitter Creek; therefore, significant environmental impacts beyond or within the Canadian border are not anticipated. During the course of the EA, IDM intends to provide further data to support this assertion.

Based on historical data, the proposed design of the proposed Project, and the current information being collected as part of baseline environmental programs, significant environmental impacts beyond the Canadian border are not anticipated as a result of the Project, due to drainage patterns, surface water flows, and the relative volume of surface discharge to be generated by the Project. Moreover, significant impacts to economic, social, heritage, or health values are not anticipated beyond the Canadian border as no transportation, infrastructure, or service activities related to the Project will be conducted outside of BC.

Figure 6: Catchment Boundaries and Drainages

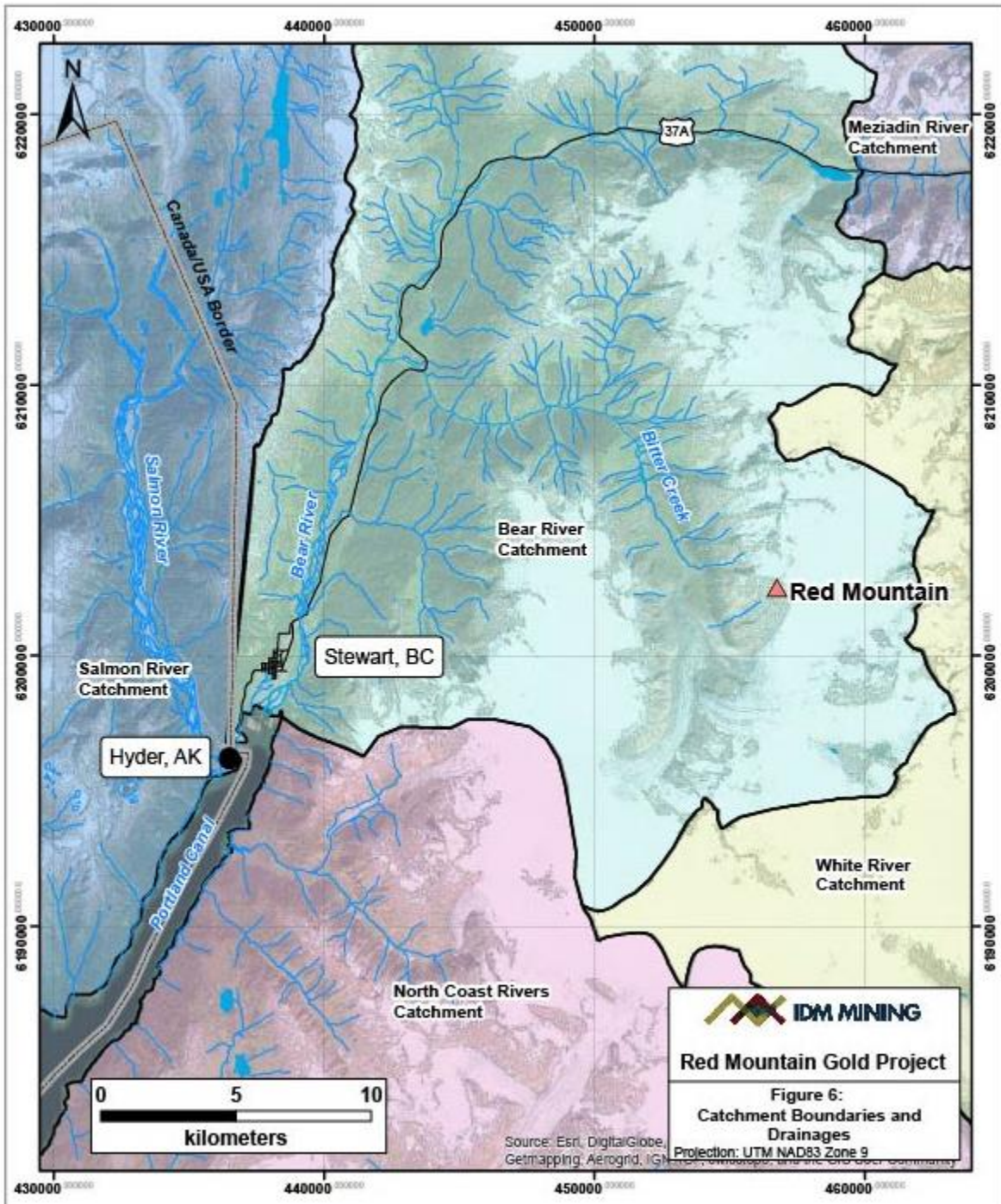


Figure 7: Catchment Boundaries Drainages Regional View

