EAGLE GOLD MINE

ROAD CONSTRUCTION PLAN

Version 2020-02

APRIL 2022

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DOCUMENT CONTROL

Submission History

Version Number	Version Date	Document Description and Revisions Made
2013-01	Sept 2013	Original submission to the Department of Energy, Mines and Resources in support of an application for a Quartz Mining Licence allowing for preliminary construction activities.
2014-01	May 2014	Revisions made in support of an application to the Yukon Water Board for a Type A Water Use License for the full Construction, Operation and Closure of the Mine. Version 2014-01 was also submitted to the Department of Energy, Mines and Resources in support of an application for a Quartz Mining Licence allowing the full Construction, Operation and Closure of the Mine.
2017-01	June 2017	Revisions made to address the conditions of the Quartz Mining Licence QML-0011 and act as a "subsequent revision" for QZ14-041
2020-01	Dec 2020	Revisions based on the current status of road construction and to include the issued for construction alignment for the Run of Mine haul road.
2020-02	April 2022	Revisions to address YG comments on the 2020-01 version, and updates based on the current configuration of site roads and the status of the Mine.

Version 2020-02 of the Road Construction Plan has been revised in April 2022 to update Version 2020-01 submitted in December 2020. The table below is intended to identify modifications to the Plan and provide the rationale for such modifications.

Version 2020-02 Revisions

Section	Revision/Rationale
1.3 Scope and Objectives	▪ Updates to reflect full scope of the plan, including maintenance and decommissioning of site roads, and ongoing maintenance of the access road.
3.1 Heritage Considerations	▪ New section to describe previous archaeological and historic assessments and considerations for ongoing road development.
3.3 Site Preparation	▪ Terminology updated from Topsoil Stockpiles to Reclamation Stockpiles to be consistent with the Waste Rock and Overburden Facility Management Plan. ▪ Handing requirements for waste rock updated to include transport of material to WRSA if required. ▪ Updated to include cross reference to the Waste Rock and Overburden Facility Management Plan.
3.4.1 Haul Roads	▪ Updated to include regulation requirements for haul road design. ▪ Updated to reflect the current status of haul roads at site
3.4.2 Mine Service Road	▪ Updated to reflect current status of infrastructure and inclusion of safety berms.
3.4.4 Temporary Construction Roads and Trails	▪ Updated to reflect the differences between temporary construction road and temporary construction trail classifications.

Section	Revision/Rationale
3.4.5 Schedule and Quantities	▪ Updated based on status of road construction.
4.1 Site Roads	▪ Updated to include cross reference to Water Management Plan for further detail on storm water design criteria. ▪ Removal of reference to IFC design for RoM Road.
4.2 Access Road to Eagle Gold Mine	▪ Updated to reflect relevant permit terms from the Work Within a Right of Way Permit issued for the operation of the gatehouse by HPW.
4.2.2 Staging Areas	▪ New section added.
4.2.5 Operational Access Control	▪ Updated to reflect relevant permit terms from the Work Within a Right of Way Permit issued for the operation of the gatehouse by HPW.
4.2.6 Temporary and Permanent Access Closure	▪ Updated to be consistent with the Reclamation and Closure Plan.
5.1 Mine Site Haul and Secondary Roads	▪ Updated to describe use of construction grade waste rock as main source of borrow, other than cut-and-fill. ▪ Added cross references to Sections 6 and 7 for further information on geochemical considerations and geotechnical testing.
5.2 Access Road	▪ Updated to reflect the access road maintenance work with a Right of Way Permit.
8.4 Culvert Installation	▪ Updated to reflect current status.

TABLE OF CONTENTS

List of Tables

List of Figures

List of Acronyms and Abbreviations

%	percent
<	less than
>	greater than
AP	acid potential in kg $CaCO_3$/t equivalent
ARD	acid rock drainage
asl	above sea level
BC	British Columbia
BGC	BGC Engineering Ltd.
BH	borehole
BMP	Best Management Practice
$CaCO_3$	calcium carbonate
cm	centimeter
FNNND	First Nation of Na-Cho Nyäk Dun
g/t	grams per tonne
hr	hour
HLF	Heap leach facility
HPW	Yukon Department of Highways and Public Works
km	kilometres
km^2	square kilometres
masl	meters above sea level
m	meters
m^2	square meters
Mine	Eagle Gold Mine
ML	metal leaching
Mt	megatonnes (million tonnes)
Mt/y	megatonnes per year
Non-PAG	Non-potentially acid generating

NP .... neutralization potential in kg $CaCO_3$/t equivalent

NP/AP ....neutralization potential to acid potential ratio

PAG.. Potential Acid Generation

pH...potential of hydrogen (measure of acidity)

Project .... Eagle Gold Project

QML .... quartz mining licence

RoW ....right of way

SMR ....South McQuesten Road

TAC ....Transportation Association of Canada

VGC .... Victoria Gold (Yukon) Corp.

WRSA ....waste rock storage area

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1 INTRODUCTION

1.1 PROJECT SUMMARY

Victoria Gold (Yukon) Corp. (VGC), a directly held wholly owned subsidiary of Victoria Gold Corp., operates the Eagle Gold Mine (the Mine) in central Yukon. The Mine is located 85 km from Mayo, Yukon using existing highway and access roads. The Mine involves open pit mining at a production rate of approximately 10.8 million tonnes per year (Mt/y) ore, and gold extraction using a three-stage crushing process, heap leaching, and a carbon adsorption, desorption, and recovery system over a 10-year mine life.

1.2 MINE SCHEDULE

A summary of the Mine schedule is provided in Table 1.2-1.

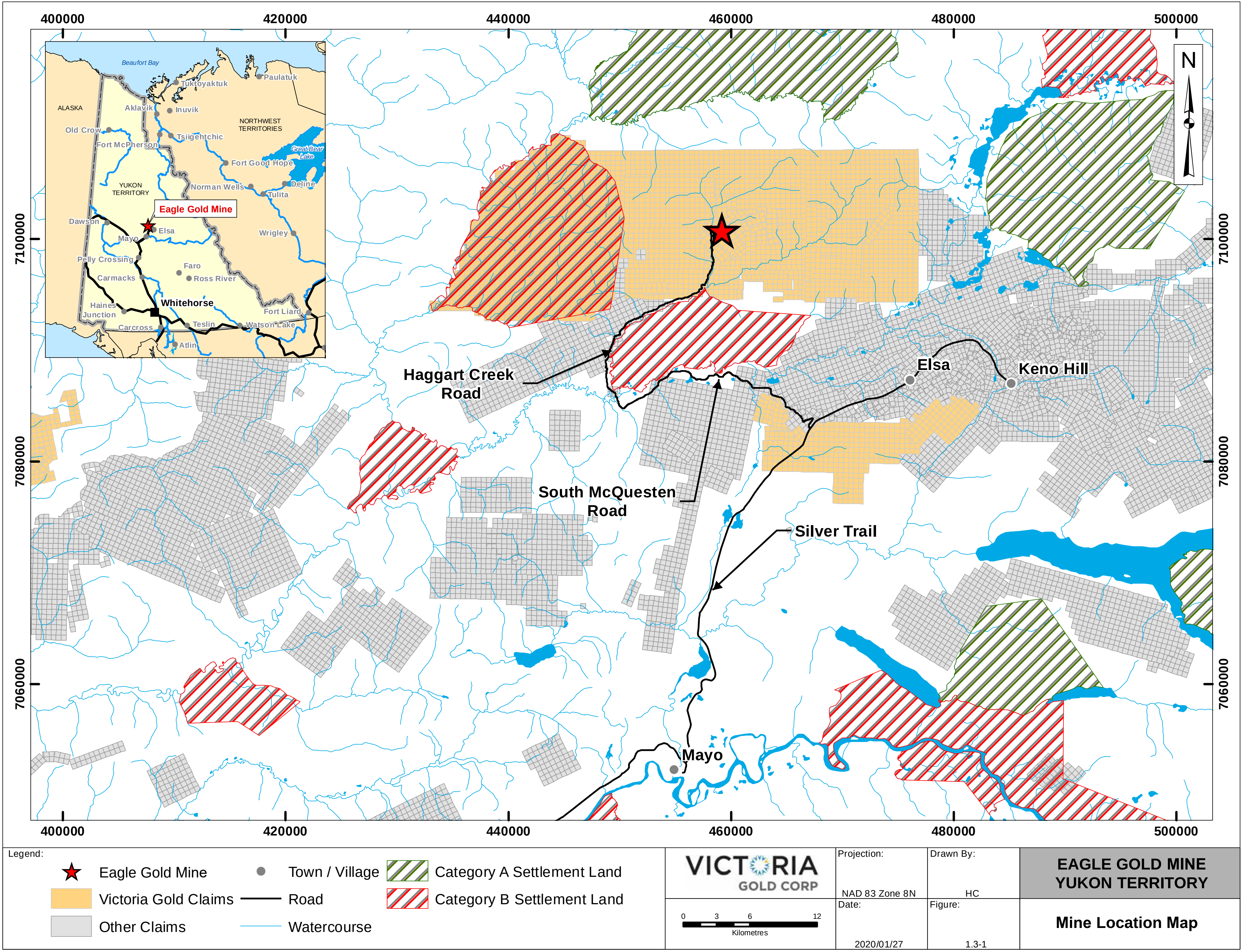
Table 1.2-1: Mine Schedule

Phase	Schedule
Construction	Q3 2017 – Q2 2019
Operations	Q3 2019 – Q1 2029
Reclamation and Closure	2029 – 2037
Post-Closure Monitoring	2037 +

1.3 SCOPE AND OBJECTIVES

This Road Construction Plan describes the design, construction, maintenance and decommissioning of site haul roads and service roads within the Mine footprint. The site is accessible by existing public roads (the South McQuesten Road and Haggart Creek Road) which receive ongoing maintenance by both VGC and the Yukon Government Department of Highways and Public Work (HPW) as needed. The scope of activities undertaken by VGC on the existing public roads is also considered in the Plan.

Figure 1.3-1 shows the location of the Eagle Gold Mine.



400000
420000
440000
460000
480000
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N
Beaufort Bay
Paulatuk
Tuktoyaktuk
ALASKA
Aklavik
Inuvik
NORTHWEST TERRITORIES
Old Crow
Tsiigehtchic
Fort McPherson
Great Bear Lake
Fort Good Hope
YUKON TERRITORY
Norman Wells
Deline
Tulita
Eagle Gold Mine
Dawson
Elsa
Mayo
Wrigley
Pelly Crossing
Faro
Carmacks
Ross River
Haines Junction
Whitehorse
Fort Liard
Carcross
Teslin
Watson Lake
Atlin
Haggart Creek Road
Elsa
Keno Hill
South McQuesten Road
Silver Trail
Mayo
Legend:
Eagle Gold Mine
Town / Village
Category A Settlement Land
Victoria Gold Claims
Road
Category B Settlement Land
Other Claims
Watercourse
VICTORIA GOLD CORP
0 3 6 12
Kilometres
Projection:
NAD 83 Zone 8N
Drawn By:
HC
Date:
2020/01/27
Figure:
1.3-1
EAGLE GOLD MINE
YUKON TERRITORY
Mine Location Map

2 SITE DESCRIPTION

The Mine is located approximately 45 km north-northeast of the Village of Mayo, Yukon (by flight) and has year-round road access using an existing series of paved and gravel roads (Figure 1.3-1). The driving distance to the Mine from Mayo is 85 km. Access to the Mine from the Silver Trail Highway (Highway 11) is via the South McQuesten Road (SMR) and the Haggart Creek Road (HCR). Together, the SMR and HCR comprise a 45 km road, which is divided by the South McQuesten River. The section of the road between the Silver Trail and the South McQuesten River is referred to as the SMR (km 0 to 22.9), whereas the section of the road between the river and the Mine is referred to as the HCR (km 23 to 45). Both roads are public roads, regulated under the Yukon *Highways Act*; however, the SMR is maintained during summer only by the Yukon Government Department of Highways and Public Works (HPW), whereas the HCR is considered a "public unmaintained" road.

2.1 GENERAL ENVIRONMENTAL CONDITIONS

2.1.1 Climate

The Dublin Gulch area is characterized by a continental-type climate with moderate annual precipitation and a large temperature range. Summers are short and can be hot, while winters are long and cold with moderate snowfall. Autumn and winter temperature inversions do occur at the site, as expected in mountainous regions.

Rainstorm events can occur frequently during the summer and may contribute between 30 and 40% of the annual precipitation. Higher elevations are snow-free by mid-June. Frost may occur at any time during the summer or fall. Generally, precipitation falls as snow from November through March, with precipitation falling as a mix of rain and snow in April and October. The annual maximum snow water equivalent (SWE) value generally occurs in late-March or early-April at the Mine site. Field measurements from site show that snow density is generally lower earlier in the season, corresponding to colder temperatures, but increases through winter as the snowpack deepens, consolidates and as snow melt progresses (Lorax 2022).

2.1.2 Geomorphology

The majority of the Mine and surrounding area was un-glaciated during the last glacial period, and has not been glaciated for more than 200,000 years. The Mine area displays physiographic characteristics of the unglaciated areas of the region, with narrow, V-shaped valleys and rounded upland surfaces. The valleys are deep and narrow to the head of streams, where they rise steeply and end abruptly.

Despite the extensive time since glaciation, evidence of glacial-ice action is still visible. This historic glaciation is responsible for the formation of the tributaries of Dublin Gulch, including, from east to west, Cascallen, Bawn Boy, Olive, Ann, Stewart, Eagle, Suttles and Platinum gulches. Within these gulches, the post-glacial terrain has been modified by gravity, water, and freeze-thaw mechanics, as evidenced by the many headscarps of landslides, and observed rock and debris slides. Most of the landslides are historic, but there are a few areas of ongoing rock fall that continue to modify the terrain, particularly in the Stewart, Bawn Boy, and Olive gulches.

The topography of the Mine area is characterized by rolling hills and plateaus ranging in elevation from approximately 765 masl to a local maximum of 1,525 masl at the summit of Potato Hills, and is drained by deeply-incised creeks and canyons. The ground surface is covered by residual soil and felsenmeer. Outcrops are rare, generally less than two percent of the surface area, and are limited to ridge tops and creek walls. Discontinuous permafrost occurs on north-facing slopes.

2.1.3 Vegetation

Two ecological zones have been recognized for the Mine area: the higher elevation Subalpine zone and the lower Forested zone. The Subalpine zone occurs on the ridge tops and high plateaus above 1,225 masl. Tree cover is discontinuous or absent at this elevation. Dwarf birch, willows, ericaceous shrubs, herbs, mosses and lichens dominate the vegetation.

The forested zone includes the valley bottoms, and the slopes of the mountains below the treeline. The elevation of this zone is from the lowest point in the Mine area up to the Subalpine zone. In the valley bottoms, forests are dominated by open canopy stands of black spruce. However, white spruce is found along creeks, rivers, and the well-drained slopes. On the mid to lower slopes, continuous stands of subalpine fir occur along with minor components of white spruce, Alaska birch, trembling aspen, and black spruce. On the upper slopes, open subalpine fir stands are predominant with trees becoming smaller and more spread out with increasing elevation.

2.2 GEOLOGIC CONDITIONS

Geologic conditions at the Mine site have been strongly influenced by the geotectonic forces that produced the Eagle Gold deposit. The folding, faulting and plutonic activities have resulted in relatively weak rock mass with relatively poor mechanical properties. The latitude of the Mine has complicated matters further with frost fracturing and permafrost.

The Mine is located on the northern limb of the McQuesten Antiform and is underlain by Proterozoic to Lower Cambrian-age Hyland Group metasediments and the Dublin Gulch intrusion, a granodioritic stock. The stock has been dated at approximately 93 Ma, and is assigned to the Tombstone Plutonic Suite. The Dublin Gulch stock is comprised of four phases, the most significant of which is granodiorite.

At least four periods of faulting have been documented in the Dublin Gulch area including low-angle thrusting and bedding-plane faults and normal faults with north, northeast, northwest, and easterly trends. North-trending faults are inferred to have displaced portions of the Dublin Gulch stock and one of these is interpreted to form the eastern boundary of the Eagle Zone.

2.2.1 Overburden

Overburden soils encountered on the sloping ground at the Mine site typically consist of a veneer of organic soils overlying a blanket of colluvium, which overlies weathered bedrock.

Overburden soil conditions are distinctly different in the Dublin Gulch valley bottom from those encountered above the valley bottom in Ann Gulch and south of Dublin Gulch along the southern edge of the heap leach facility (HLF). In the uplands above the valley bottom, the upper soil unit consists of a thin horizon of organic soil, rootlets, woody debris and plant matter ranging from 0.1 to 2.7 m in thickness and averaging approximately 0.3 m. The organic cover above the valley bottom overlies colluvium ranging in thickness from 0.2 to 15.2 m, and averaging approximately 2.9 m. The colluvium consists of loose to compact angular gravel with occasional cobbles in a silt and sand matrix, derived from transported weathered metasedimentary bedrock. The colluvium may also include variable amounts of organics, which are often observed in distinct layers within the colluvium.

The overburden soils in the valley bottom have been reworked by historical placer mining activities. Placer tailings (fill) are observed from the ground surface to bedrock, with thicknesses ranging between 2.4 and 16.5 m, and an average thickness of approximately 6.6 m. The material encountered is generally a well graded, loose to dense, silty sand and gravel, ranging to sand and gravel with some silt and occasional cobbles and boulders. Loose and moist zones have been encountered within the placer tailings. There is little to no vegetative cover on the placer tailings.

Glacial till is generally only encountered on the lower flanks of the north and west-facing slopes located north and west of the open pit, above Dublin Gulch and Haggart Creek. The till is often overlain by colluvium. Placer tailings (fill) cover most of the valley bottom of Dublin Gulch and Haggart Creek. Alluvial soils are occasionally encountered along undisturbed valley-bottom areas.

2.2.2 Bedrock

Bedrock is found in the uplands above Dublin Gulch immediately below colluvium at depths ranging between 0.0 and 16.8 m below existing grade (average depth to bedrock at 3.5 m where observed). Bedrock is found in the valley bottom at depths ranging between 1.5 and 16.5 m below existing grade, with an average depth to bedrock at 6.2 m where observed.

2.2.3 Groundwater

Groundwater flow in the bedrock occurs in fractures and fault zones, while preferentially flowing through more permeable (and porous) sediments within the surficial deposits. General orientation of groundwater flow contours mimics the topography of the site as groundwater flows from the highest areas to lowest.

Across the Mine site groundwater generally is found deeper at higher elevations (i.e., generally more than six meters below ground) and shallow to artesian at lower elevations and in valley bottoms. Springs and seeps have been observed in a few locations where valley bottoms have narrowed. These are typically associated with the re-emergence of a stream from channel deposits and some of the larger springs have caused surface depressions by destabilizing the soils locally.

Groundwater recharge occurs at higher elevations throughout the Dublin Gulch-Eagle Creek drainage basin and ultimately discharges to surface water (in some cases as seeps and springs) at lower elevations in the valley or directly to surface streams, or ultimately into Haggart Creek. The main groundwater flow in conjunction with the highest groundwater elevations is expected to occur during the snowmelt in late spring (e.g., May to June) after thawing of the shallow sediment.

Groundwater levels within the lower Dublin Gulch Valley were observed to have delayed trends related to higher groundwater levels after spring freshet or rainfall events and lower groundwater levels during dry summer periods.

2.2.4 Permafrost

The Mine site is located in a region of discontinuous permafrost. Frozen ground distribution within the Mine area is controlled by factors such as soil texture, soil moisture, aspect, vegetation and snow depth. Permafrost is encountered on the plateau and in the lower valley bottoms adjacent to Haggart Creek and Dublin Gulch. In some areas, permafrost was found within the upper 50 cm of the soil profile. In many instances, however, the presence of ice was not readily detected and the presence of permafrost was inferred through evidence of cryoturbation and tilted trees. Non-frozen soils including Brunisols, minor areas of Luvisols (on fine textured till), and Gleysols (on poorly and imperfectly drained materials) were also found in the Mine area. The majority of the soil textures in the area are sandy-silt to silty-sand loam matrix with angular or tabular coarse fragments ranging from gravel to boulders.

2.2.5 Geological Hazards

The Mine site includes discontinuous permafrost, some steep slopes, and geological hazards. To address specific conditions encountered on the Mine site, a terrain suitability classification system was developed and incorporated into the design process for infrastructure. The classification system involves five stability classes ranging from stable to unstable. The areas selected for roadway development are primarily within locations classified as:

1. Stable (contains slopes 0-26% that are well drained or contains slopes <15% that are very poor to moderately-well drained, and have negligible potential for mass movement);
2. Generally Stable (contains areas of slopes 40-60% that are well drained or contains slopes 15-40% that are imperfect to moderately-well drained, and mass movement is unlikely to occur);
3. Moderately Stable (contains areas of slopes 40-60% with moderate to poor drainage or slopes 20-40% with poor drainage and/or north facing slopes where piping/water saturation may occur).
4. Potentially Unstable (contains areas where fine-textured colluvium, or weathered bedrock >70%, may apply to glaciofluvial and fine-textured colluvium and weathered bedrock regions with slopes of 50-70% typically rapid to well drained, contains areas where rockfall initiation is ongoing, may contain areas where shallow surface landslides occur, or solifluction may occur).

Each were considered in the planning, design and construction of mine site infrastructure and have been overcome by the application of standard construction practices including but not limited to:

- Avoiding areas of known unstable and potentially unstable terrain;
- Reducing geohazards using engineered solutions such as stripping or excavating unstable materials, grading to reduce slope gradients, scaling off overhanging rock, and diverting water from steep slope faces;
- Controlling drainage to direct surface and groundwater away from geohazards;
- Stabilizing, restoring, and re-vegetating slopes after construction to increase stability and minimize the rates of surface water runoff or groundwater infiltration where required;
- Reducing loads on slopes, when identified as unstable and potentially unstable;
- Preventing undercuts or overloads on dangerous slopes; and
- Removing potential debris from a site using grading or excavating procedures, or diverting water from debris by means of surface drains and/or subsurface galleries or sub-drains so that it cannot mobilize.

The mitigation measures detailed above have been, and will continue to be, applied as required to ensure road stability throughout the Mine life.

2.2.6 Hydrology

The majority of the Mine site lies within the Dublin Gulch watershed, but there are overlaps with the Eagle Creek and Haggart Creek drainage basins. Elevations in the vicinity of the Mine range from 765 masl near the confluence of Dublin Gulch and Haggart Creek, to 1,525 masl at the summit of the Potato Hills (which forms the eastern boundary of the Dublin Gulch watershed). Dublin Gulch is a tributary to Haggart Creek that flows to the South McQuesten River.

Dublin Gulch, Eagle Creek, and Haggart Creek are perennial streams. Several of the tributaries in the Mine area are intermittent streams (i.e., the stream becomes dry at sections along the watercourse where flow goes subsurface) or ephemeral streams (i.e., the stream channel has little to no groundwater storage and flow is in response to snowmelt or heavy rains).

The hydrology of the region is generally characterized by large snowmelt runoffs during the freshet in May, which quickly taper off to low summer stream flows interspersed with periodic increases in stream flow associated with intense rainfall events during July and August. The pattern of low stream flows punctuated by high stream flows associated with rainfall events continues throughout the summer to autumn when freeze up begins in October.

In larger streams, baseflows are maintained below river/creek ice throughout the winter by groundwater contributions. Smaller streams tend to dry up during the late summer or fall, as flow generally goes subsurface when the groundwater table drops to seasonally low levels. Aufeis (or overflow) ice may build in certain places of these streams if groundwater emerges from the channel during winter.

3 SITE PREPARATION CONSIDERATIONS

3.1 HERITAGE CONSIDERATIONS

An archaeological and historic assessment was conducted in 1995 for the then-proposed Dublin Gulch mine site (Greer 1995). The study included a field assessment on a large project area that encompassed the vast majority of the current Mine footprint (Figure 3.1-1). A review of existing information (prior to the assessment of the Mine pursuant to the Yukon Environmental and Socio-economic Assessment Act (YESAA)) regarding historical resources in the Mine area included a review of previous archaeological studies undertaken for the previously proposed Dublin Gulch Project, the South McQuesten Road upgrade, and other relevant studies in the area. The Yukon Heritage Branch confirmed that the scope of previous historical resources impact assessments of the area was sufficient for the current Project, and therefore no further field study was required by the regulators. However, VGC commissioned a consultant senior archaeologist, who accompanied a consultant paleontologist into the field, to conduct field observations in 2009.

During the 1995 assessment, no archaeological or historic period sites were identified; all areas favorable for precontact human occupation were deemed to have been destroyed by the extensive placer mining activity in the area, and all structures identified within the Project area were all determined to be related to mining activities over the past 50 years.

A subsequent assessment of the access road to the Mine site was conducted in 1996 for the South McQuesten and Haggart Creek roads (Greer 1996). No sites were identified along the Haggart Creek road and three sites of potential concern were located along the South McQuesten road. During activities related to the construction of the transmission line to the Mine site, an additional site was identified on the South McQuesten Road. All sites were undisturbed by activities undertaken for both the transmission line and ongoing maintenance on the HCR and SMR.

During the 2009 field visit, several structures dating over 45 years in age were observed and site information was provided to the Yukon Heritage Branch. These structures/sites constitute historic period sites and they remain intact and undisturbed by Mine and road development.

Prior to any new road construction or major road upgrades, VGC Environmental Staff work with operational staff to ensure that the VGC Heritage Resource Protection Plan is followed. For road development that occur outside the previously assessed area, the Yukon Government Heritage Resources Unit will be contacted to acquire updated information on any areas identified as high potential for heritages resources.

3.2 VEGETATION CLEARING AND GRUBBING

Site clearing for road construction is limited to those areas needed to safely construct and operate the site roadways. Before clearing, wildlife habitat features (e.g., mineral licks, dens, nest trees, snags, rocky outcrops, small ponds/seepages) are identified and evaluated to determine if they can be maintained.

Trees are cleared using best management practices and methods suitable to the terrain and timber size. The majority of timber is harvested using construction or logging equipment. Hand falling (chainsaws) may be used in specific areas (i.e., steep slopes, riparian areas).

Timber and brush cleared from the mine site is either stockpiled for later use in reclamation or burned.

Topsoil and organic matter (i.e., organic soil, rootlets, woody debris and plant matter) are stripped and stored alongside roadways, or hauled and placed in designated reclamation material storage areas (Topsoil Storage Areas).

The First Nation of Na-Cho Nyäk Dun (FNNND) expressed interest in fuel wood generated during the clearing of the access road right of way. During the period of right of way clearing along the access road and transmission line, VGC worked with their contractors to, where logistically feasible, stockpile timber deemed appropriate for fuel wood. The stockpiled timber locations were provided to FNNND citizens and the village of Mayo to support the retrieval of the material by local users. Timber stockpile locations on the access road complied with all permits and regulations that apply to VGC's construction activities.

Timber and brush not claimed for fuel wood from the access road right was managed in accordance with the Land Use Permits granted for the activity.

3.3 SITE PREPARATION

Mine roadways generally have a nominal cut-fill balance and minimal quantities of material have needed to be stripped below the fill (assuming fill placement immediately following clearing and grubbing).

Care is taken to ensure only the minimum amount of vegetative clearing and organic cover is removed to limit the amount of subgrade materials exposed to potential degradation and thaw along the proposed roadways, and to reduce the potential for soil erosion and deposition in riparian and wetland ecosystems.

Care is taken to avoid disturbing subgrade materials that will remain in place. Areas of colluvium or weathered rock subgrade that become softened during construction are removed and replaced with compacted structural fill.

Bulk earthworks for roadway construction generate several types of material that are unsuitable for immediate use, or may not be suitable for any use, thus necessitating temporary storage or permanent disposal. The development of the following materials requiring storage or disposal has been encountered and is further anticipated during any additional road construction activities:

- Topsoil – these materials are generally segregated and stored alongside roadways and in the designated reclamation material storage areas (Reclamation Stockpiles).
- Colluvium – the excavated colluvium materials may be suitable for re-use as general grading fill, provided they do not contain deleterious materials, such as organic inclusions or excess ice. If not used as general grading fill, the material will be stored either locally in small volumes or at the Reclamation Stockpiles.
- Ice-rich material – care is taken to segregate frozen materials removed during site grading activities. These materials are unsuitable for immediate re-use but may be suitable for re-use in reclamation following thawing and draining of excess water. The Frozen Material Management Plan presents methods for managing both ice-rich and non ice-rich frozen materials during construction activities at the Mine.
- Waste rock – some of the weathered rock material is unsuitable for re-use as construction fills without further processing. The unsuitable material is transported to the Reclamation Stockpile area for further handling and processing as necessary, or to the Waste Rock Storage Areas (WRSAs) if not intended to be processed for use. In general, such material consists of soft or loose rock and may include excess fines.

Material handling and storage are described further in the Waste Rock and Overburden Facility Management Plan.

3.4 SITE ROADS

There are four classifications of roads on site. They are as follows:

- Haul Roads – required for two-way CAT 785D mine haul truck traffic;
- Mine Service Road – required for one way CAT 785D mine hauls truck traffic or two-way light truck traffic;
- Auxiliary Roads – permanent site roads utilized by smaller mine vehicles for access to the site infrastructure and facilities;
- Temporary Construction Trails – temporary trails used during facility construction only, including existing trails on site that are upgraded, if needed, and used as construction trails.

3.4.1 Haul Road

A haul road is designed specifically for the large 150 t class haul trucks (Cat 785D). The haul roads are designed to be compliant with requirements of Section 15.43 of the Occupational Health and Safety Regulations:

- Travel width:
  - not less than three times the widest haulage vehicle used where dual lane traffic exists, or
  - not less than two times the widest haulage vehicle used where only single lane traffic exists, and
- Shoulder barrier or berm:
  - at least three quarters of the height of the largest tire on any vehicle hauling on road,
  - located and maintained along the edge of the haulage road wherever a drop-off greater than 3 m (10 ft.) exists, and
  - incorporating breaks that do not exceed the width of the blade of the equipment constructing and maintaining the breaks to allow for drainage and snow clearance.
- Clearly marked emergency runaway lanes or retardation barriers shall be provided and maintained at suitable locations and be capable of safely bringing a runaway vehicle to a stop, where the road grade exceeds 5%.

The current main haul road for the Mine is from the open pit to the primary crusher which then continues to the Eagle Pup WRSA and the Run of Mine (RoM) Road where it converts to a mine service road until widening is completed. The main haul road includes a 21 m running surface plus safety berms and road side ditches.

As mining operations progress, additional haul roads will be developed to support ongoing access to the active dump benches of the EP WRSA. A significant portion of roads accessing the WRSAs are and will be built within the footprint of the WSRA thus, as the buildup of the WRSA advances, the haul road will be reconfigured to suit the stacked elevation of the WRSA.

3.4.2 Mine Service Road

A mine service road is smaller than a haul road but built to accommodate at least two-way light truck traffic or one way 150 t class haul trucks (Cat 785D). There are a number of mine service roads around the mine site that provide access to the open pit, crusher locations, truck shop, substation, warehouse and camp facility and to the ADR Plant and the HLF. These roads are nominally 14 m wide and include safety berms.

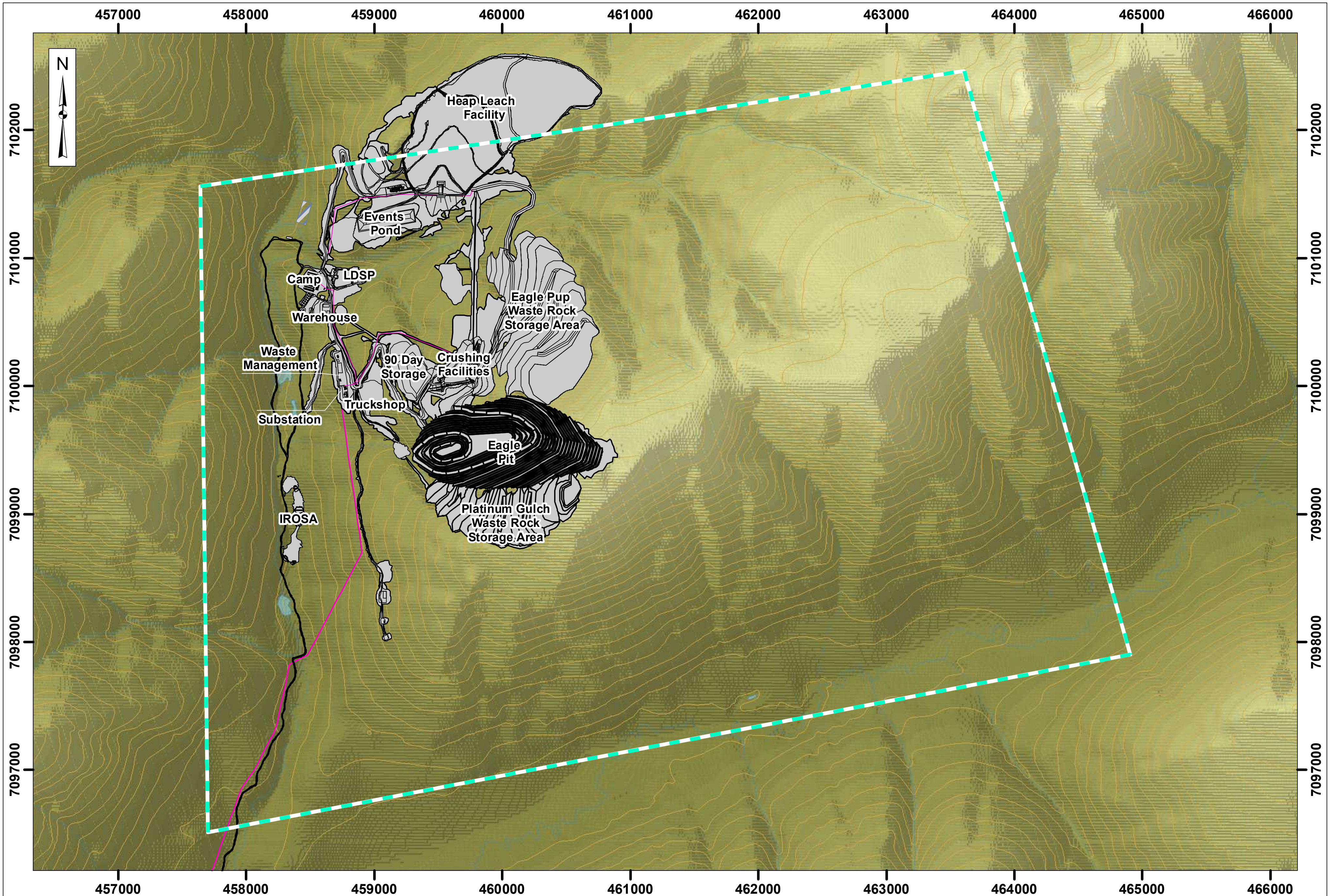
3.4.3 Auxiliary Roads

Ongoing mining operations also require a number of secondary roads, which range between 8 and 10 m in width and gravel surfaced. These are generally located as spurs off the main trunk roads or coincide with former exploration roads. Auxiliary roads include safety berms.

3.4.4 Temporary Construction Roads and Trails

Temporary construction roads and trails are required to support construction activities and are not intended for sustained use throughout the life of the Mine. Temporary construction roads are designated where movement of rock/earth is required, whereas temporary construction trails are designated where no movement of rock/earth is required. The temporary construction roads and trails range between 6 and 8 m in width and primarily only require vegetation clearing and grubbing to such an extent as to provide safe temporary passage. These also include existing trails used at site, which are upgraded by widening as required.

The location and extent of site roads are provided in Figure 3.4-1.



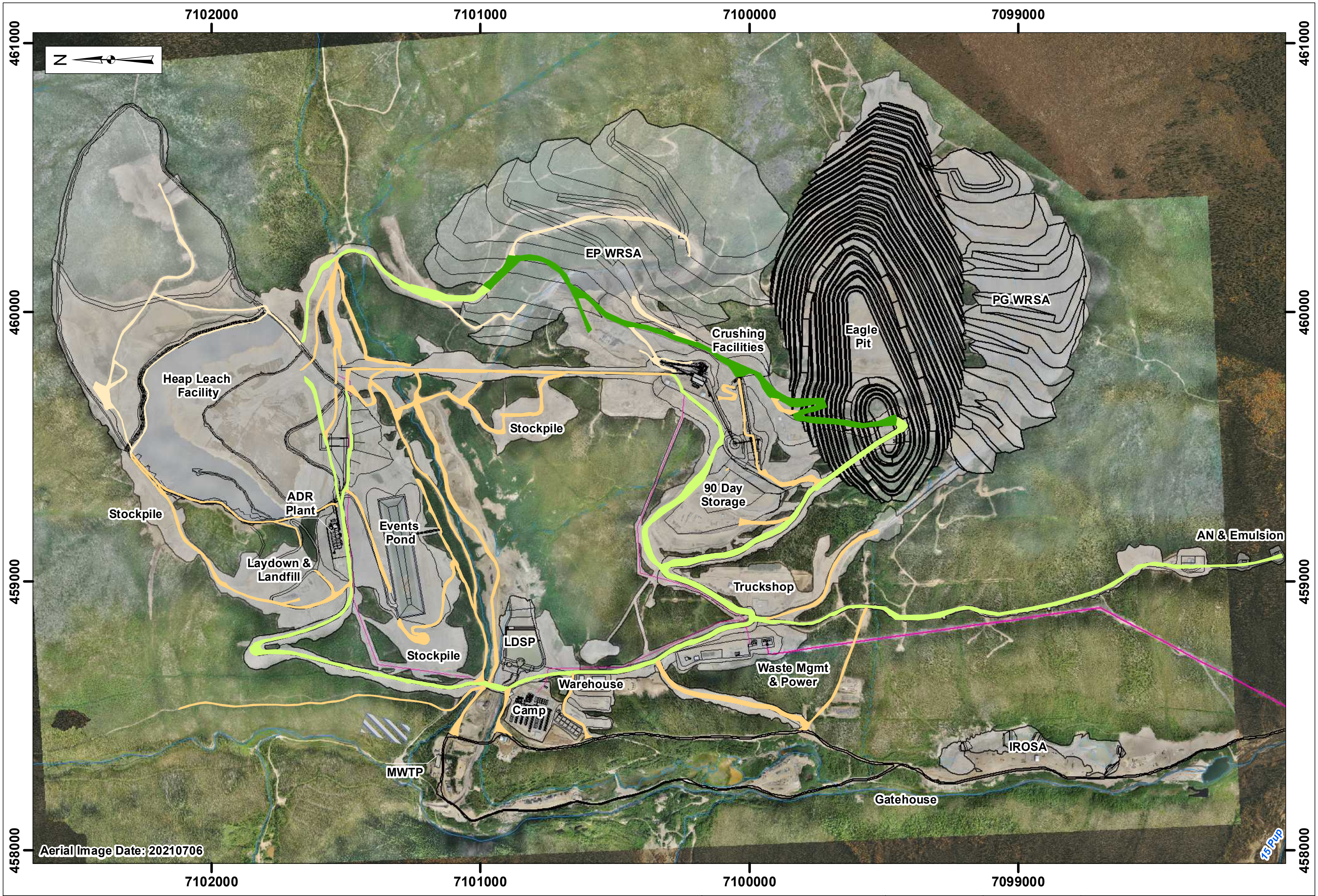
Legend:

- 1995 Study
- Facility Footprint & Disturbed
- Reserved
- Watercourse - Perennial
- Watercourse - Ephemeral
- Watercourse - Intermittent

VICTORIA GOLD CORP

0 250 500 1,000
Metres

Projection:	Drawn By:	
NAD 83 UTM Zone 8N	HC	**EAGLE GOLD MINE YUKON TERRITORY**
Date: 2022/04/15	Figure: 3.1-1	**Site General Arrangement and 1995 Study Area**



Legend:

- Haul Road
- Mine Service Road
- Auxiliary Road
- Construction Road
- Reserved Area
- Major Facility
- Site Power
- Perennial Watercourse
- Ephemeral Watercourse
- Intermittent Watercourse

VICTORIA GOLD CORP

0 125 250 500 Metres

Projection: NAD 83 UTM Zone 8N

Drawn By: HC

Date: 2022/04/16

Figure: 3.4-1

EAGLE GOLD MINE YUKON TERRITORY

Overall Site Roads

3.4.5 Schedule and Quantities

Clearing, grubbing and grading activities for the majority of the life of mine site roads have now been completed.

The total length of the existing site roads, excluding temporary construction trails but including exploration roads utilized for mine operations, is approximately 21 km. This includes the portion of the RoM haul road from the crusher area to the outside extent of the EP WRSA however the portion of the RoM Road within the EP WRSA will be realigned as waste rock stacking progresses (see Section 4.1 for further description of this road). A list of the lengths and design widths for the as built configuration of the completed roads is included in Table 3.3-1. All culverts required for the operations phase of the Mine have been installed, however, the ROM road Dublin Gulch culvert may require extension for potential ROM road upgrades in 2022.

Table 3.3-1: Current Road Inventory

Road Description	Design Road Surface Width m	Length m
Pit to Primary Crusher and EP WRSA Haul Road	21.2	1,900
Open Pit to Camp Mine Service Road	14.2	2,200
Camp to HLF Mine Service Road	14.2	2,200
RoM Mine Service Road	14.2	1,000
90 Day Stockpile Mine Service Road	14.2	930
Explosives Area Service Road	14.2	2,100
RoM Auxiliary Roads	7.8	500
Camp Bypass Auxiliary Road	7.8	600
Warehouse Auxiliary Road	7.8	300
Primary and Sec/Ter Crushers to Ore Reclaim Auxiliary Road	7.8	610
Sec/Ter Connector Auxiliary Roads	7.8	410
Overland Conveyor Auxiliary Road	7.8	1,200
Lime/Cement Auxiliary Road	7.8	540
Landfill Auxiliary Road	7.8	650
HLF West Auxiliary Road	7.8	800
North Dublin Exploration Auxiliary Road	7.8	1,350
South Dublin Exploration Auxiliary Road	7.8	1,300
Conveyor Stockpile Auxiliary Road	7.8	760
Events Pond West Stockpile Auxiliary Road	7.8	530
HLF Spillway Auxiliary Road	7.8	430
Ditch A Auxiliary Road	7.8	580
Platinum Gulch Exploration Auxiliary Road	7.8	500
TOTALS		21,390

4 ROAD DESIGN AND SPECIFICATIONS

4.1 SITE ROADS

The current scope of the Plan includes the haul, mine service and auxiliary site roads shown in Figure 3.4-1. Most of the major roads have been constructed to date. Issued for Construction typical profile drawings used to for the Mine site roads are provided in Figure 4.1-1 to Figure 4.1-3.

The RoM Road provides haul trucks access between the crushers and the HLF, and traverses through the EP WRSA and also across Stewart and Dublin Gulches

All roads are generally constructed with a maximum average road grade of 10%, with the exception of the conveyor access road.

Roadside swales are intended to have the capacity to convey the 1 in 10-year storm of 24-hour duration. As a general guideline, these swales have a minimum sustained grade of -0.5% to ensure drainage and to prevent standing water accumulation. Culverts installed (or to be installed) within exiting streams were designed to convey the peak flow generated by the 1 in 200-year storm over a 24-hour duration. Storm water design criteria are described further in the Water Management Plan.

All road construction materials have utilized and will continue to utilize local sources with cut-and-fill operations undertaken where possible to provide an economical and balanced operation. Constructed cuts and fills are sloped to provide low maintenance, and stable earthworks. Typical cut slopes range from 2.5H:1V in colluvium materials to 1.75H:1V in rock; engineered fills likely approximate 2H:1V. The slope geometries for cut slopes are summarized in Table 4.1-1.

Table 4.1-1: Permanent Cut Slope Angles

Slope Material	Suggested Cut Slope Angle [1]	Maximum Cut Slope Height	Notes
Colluvium	2.5H:1V	10 m	-
Till	2H:1V	10 m	-
Highly to completely weathered rock (excavatable)	2H:1V	10 m	-
Type 3 rock (generally excavatable)	1.5H:1V	10 m	May have to decrease to as flat as 1.75H:1V to avoid undercutting adverse geologic structure, if it is encountered
Type 2 rock (generally rippable)	1H:1V	10 m	May have to decrease to as flat as 1.75H:1V to avoid undercutting adverse geologic structure, if it is encountered
Type 1 rock (may require blasting)	0.5H:1V	10 m	May have to decrease to as flat as 1.75H:1V to avoid undercutting adverse geologic structure, if it is encountered

NOTE:
[1] Maximum cut slope angles assume the slope is < 10 m high, unsaturated, and without adverse geologic structure.

The ramp widths used for the haul roads have a 21 m running surface plus allowance for a berm, calculated for 150 t class haul trucks (Cat 785D) and designed and constructed at a maximum average gradient of 10%, with flat turning surfaces, where practical, at switchback locations to reduce road maintenance and wear to the haul trucks.

Ramp widths at the base of the pit are single carriageways and steepened to 12% to minimize overall waste stripping volumes. The ramp cross section for haul trucks is shown in Figure 4.1-2 and a typical section for site mine service access roads is shown in Figure 4.1-3. Auxiliary service road typical cross sections are shown in Figure 4.1-4

4.1.1 Road Base

The road sub-base and base requirements are governed by the quality of the subgrade. Overall road thickness is field engineered under the direction of qualified professionals and is generally approximately 1 m.

4.1.2 Road Surfacing Material

Road surfacing material consists of well-graded hard, durable, angular screened and crushed sand and gravel or rock, when required. Under the direction of a qualified professional, the road base material is used as the surface material, when it is deemed sufficient.

Where additional road construction activities are to be undertaken during periods of freezing weather, fill will not be placed upon ice rich frozen material, snow or ice.

Placement of coarse durable rock fill, which does not require water for compaction, can proceed in freezing conditions.

The design criteria for the site haul roads and access roads are provided in Table 4.1-2.

Table 4.1-2: Design Criteria for Roads

	Haul Road	Mine Service Road	Site Auxiliary Roads	Temporary Construction Roads/Trails
Travelled Surface Width	21.2 m	14.1 m	7.8 - 10 m	6 - 8 m
Design Speed	45 km/hr	45 km/hr	45 km/hr	25 km/hr
Cross fall	2%	2%	2%	4%
Max. grade	10%	10%	10%	20%
Road Base	1 m	1 m	1 m	N/A
Fill side slope	3H:1V or shallower	3H:1V or shallower	3H:1V or shallower	3H:1V or shallower

The reference specification, code or standard that has been used for design and construction of the haul roads include:

- Design of Surface Mine Haulage Roads - Bureau of Mines Information Circular 8758.
- Manual of Geometric Design Standards for Canadian Roads and Streets, Transportation Association of Canada.
- BC Supplement to TAC Geometric Design Standards manual.
- Yukon *Occupational Health and Safety Act*, Part 15 – Surface and Underground Mines or Projects
- Drainage Manual Volume 2, RTAC.
- Storm Water Planning: a guidebook for British Columbia, Ministry of Environment.

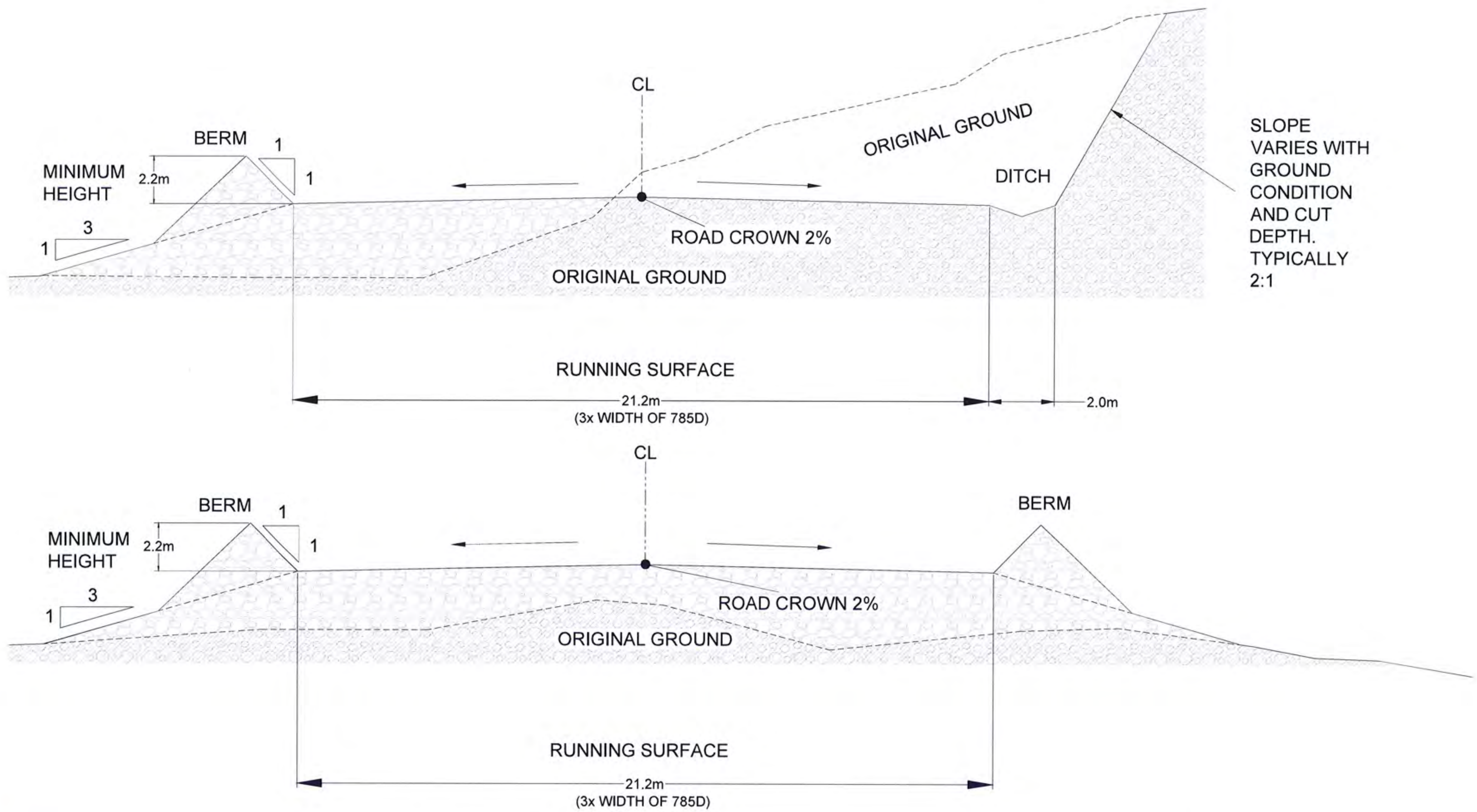


Figure 4.1-2: Haul Roads Typical Cross Sections

NOTES:

Berms may be removed where fill material is <3m in height.

Where ice rich, or ice sensitive permafrost is encountered; minimum of 1m fill shall be used to construct the road.

PROFESSIONAL ENGINEER
YUKON TERRITORY
DINO PILOTTO
May 31/17

REG. PROFESSIONAL	NO.	REVISION DESCRIPTION	DATE	REFERENCE DRAWING	NO.

StrataGold Corporation — JDS ENERGY & MINING INC.

ROLE	NAME	DATE	SIGNATURE
DESIGNER	TSN	2017/04/20	
DRAFTER	BRANDEN FRASER	2017/05/25	BF

DATE ISSUED: 2017/05/25

PROJECT: EAGLE GOLD PROJECT

DWG TITLE: HAUL ROADS TYPICAL CROSS SECTIONS

DWG NO. VICEAG04E-CI-020

REV. 0

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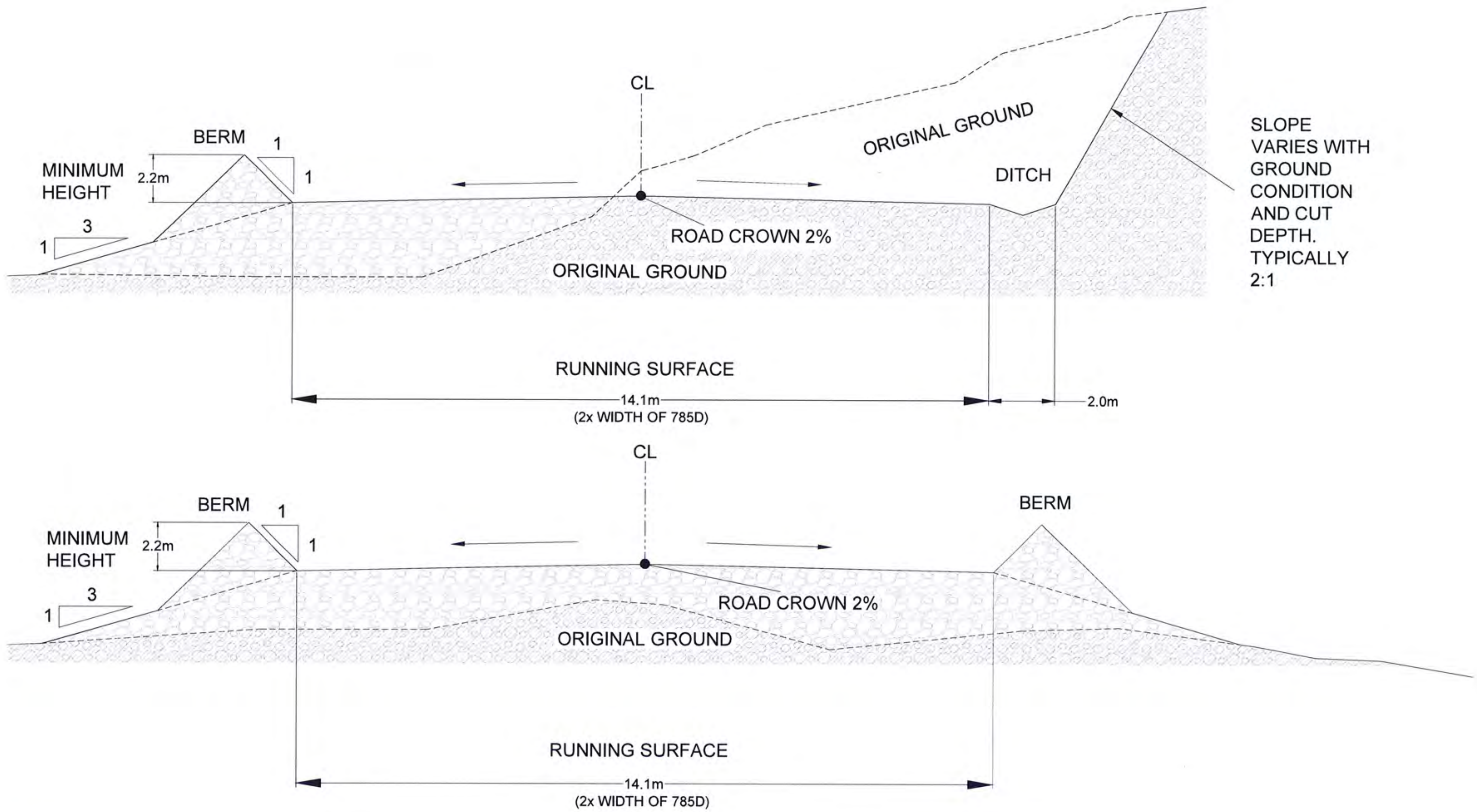

PROFESSIONAL ENGINEER
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May 31/17

Figure 4.1-3: Mine Service Road Typical Cross Sections

NOTES:

Berms may be removed where fill material is <3m in height.

Where ice rich, or ice sensitive permafrost is encountered; minimum of 1m fill shall be used to construct the road.

REG. PROFESSIONAL	NO.	REVISION DESCRIPTION	DATE	REFERENCE DRAWING	NO.

StrataGold Corporation

JDS ENERGY & MINING INC.

ROLE	NAME	DATE	SIGNATURE
DESIGNER	TSN	2017/04/20	
DRAFTER	BRANDEN FRASER	2017/05/25	BF

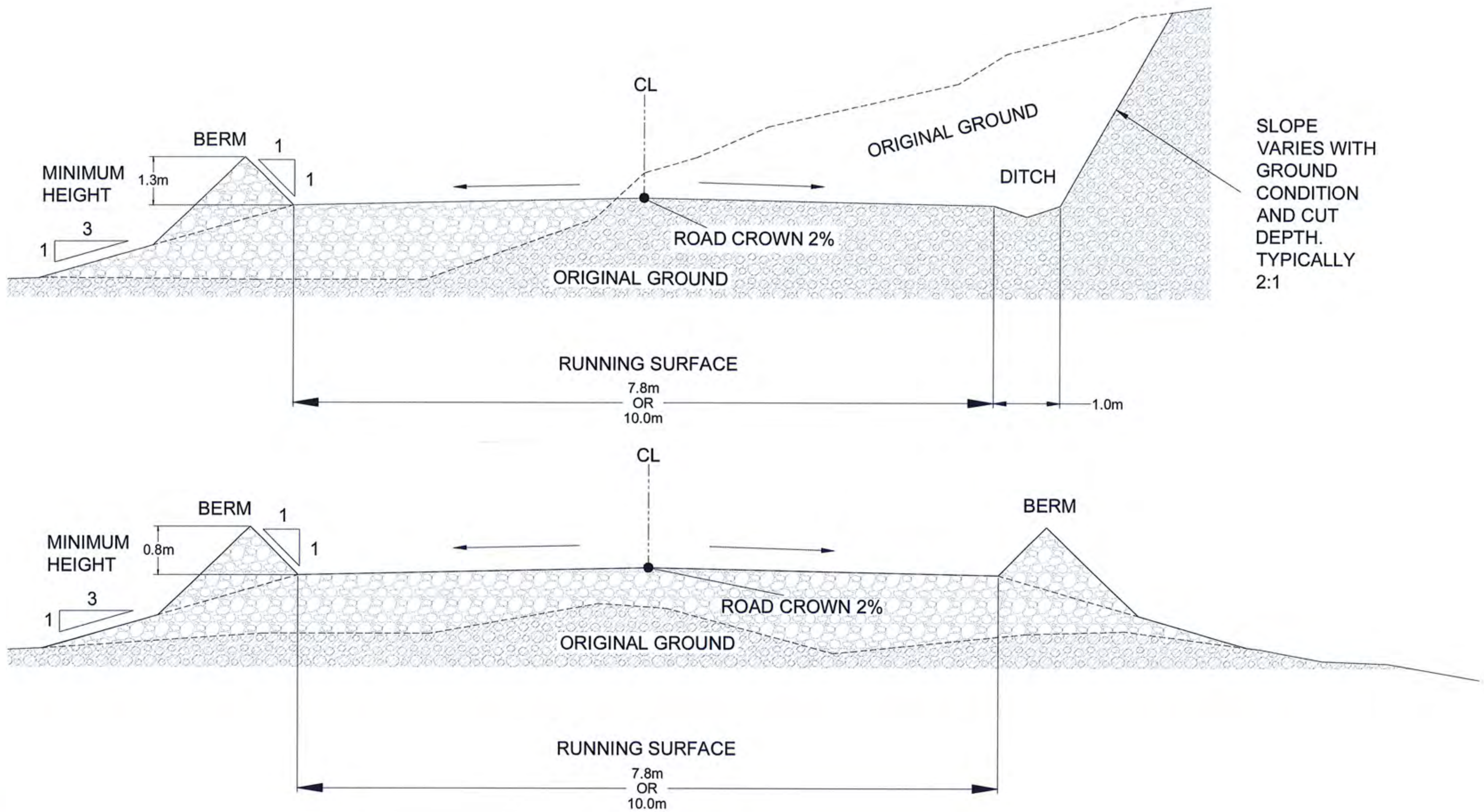
DATE ISSUED: 2017/05/25

PROJECT: EAGLE GOLD PROJECT

DWG TITLE: MINE SERVICE ROAD TYPICAL CROSS SECTIONS

DWG NO. VICEAG04E-CI-021

REV. 0



NOTES:

Berms may be removed where fill material is <3m in height.

Where ice rich, or ice sensitive permafrost is encountered; minimum of 1m fill shall be used to construct the road.

Figure 4.1-4: Auxiliary Service Road Typical Cross Sections

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StrataGold Corporation — JDS ENERGY & MINING INC.

ROLE	NAME	DATE	SIGNATURE
DESIGNER	TSN	2017/04/20	
DRAFTER	BRANDEN FRASER	2017/05/25	BF

DATE ISSUED: 2017/05/25

PROJECT: EAGLE GOLD PROJECT

DWG TITLE: AUXILIARY SERVICE ROAD TYPICAL CROSS SECTIONS

DWG NO. VICEAG04E-CI-022

REV. 0

4.2 ACCESS ROAD TO EAGLE GOLD MINE

Access to the Mine site from the Silver Trail Highway is via the existing SMR and the HCR. Together, the SMR and HCR comprise a 45 km road, which is divided by the South McQuesten River. The section of the road between the Silver Trail and the South McQuesten River is referred to as the SMR (km 0 to 22.9), whereas the section of the road between the river and the mine site is referred to as the HCR (km 23 to 45).

Both roads are public roads, regulated under the *Yukon Highways Act;* however, the SMR is maintained during summer only by the Yukon Government Department of Highways and Public Works (HPW), whereas the HCR is considered a "public unmaintained" road. Figure 1.3-1 depicts the existing alignment of the SMR and HCR.

Upgrades works on the HCR to support the construction phase of the Mine were completed by both VGC and HPW and included watercourse crossing upgrades, construction of pullouts and widening of the road driving surface in certain locations, installation of signage, and brushing to improve sight lines.

The site secondary roads tie into the HCR at the locations depicted in Figure 3.4-1. There is a gatehouse located at the site entrance, also shown on Figure 3.4-1, to ensure safe passage around the mine and restrict unauthorized users from entering the mine site.

4.2.1 Access Road Upgrading

Maintenance of the HCR is currently being completed by VGC and is undertaken in accordance with existing permits (Permit #U0206 issued by HPW).

VGC continues to implement the following to maximize road and transport safety on both the SMR and HCR:

- Work with the Department of Highways and Public Works to ensure both public and private portions of the access road are properly maintained and upgraded as required
- Enforce speed limits for all Mine vehicles
- Ensure trucking/hauling contractors have appropriate driver training, radio contact capabilities, vehicle maintenance requirements, and spill response capabilities
- Ensure all hazardous materials are transported and handled in accordance with the *Transportation of Dangerous Goods Act* and *Regulations*
- Require bulk carriers to carry two-way radios to communicate with the mine site
- Identify wildlife migration corridors and crossings along the road and provide signage in high-risk areas
- Plow wildlife crossing and escape points in the access road snow banks (i.e., 0.5m or less at regular intervals)

Watercourse Crossings

Three watercourse crossings on the site access road were identified as areas where modifications may be required. These modifications improve road safety, particularly during extreme winter conditions, by ensuring that anticipated vehicle and equipment loads required to support the Mine can safely access the site. Improvements at two of the three crossing locations have been completed.

Watercourse Crossing 1 - South McQuesten Bridge Km 23+000 - Complete

Upgrades to the South McQuesten Bridge were completed. The upgrade work included the installation of an oilfield type bridge over the existing bridge structure to accommodate Mine loads. The existing abutment structure was considered adequate for existing and anticipated traffic loads for the life of the mine. This work had no impact on the navigability of the watercourse, and did not require instream works or riparian vegetation clearing.

Watercourse Crossing 2 - Swede Creek Crossing Km 32+650 - Complete

The current crossing at Swede Creek utilizes a corrugated steel pipe (CSP) to convey the flows of Swede Creek into Haggart Creek. The works undertaken by VGC at the Swede Creek crossing (Km 32+650) included the replacement of a previously installed and undersized CSP with a new 3 m diameter, 27 m long CSP, that was selected based on hydrologic analysis. The replacement culvert was installed in a location that is considered to be more conducive to long term stability and is considered a permanent structure. The culvert has functioned well since its installation.

Watercourse Crossing 3 - Haggart Creek Crossing Km 41+750 - Under Consideration

The current crossing at Haggart Creek consists of two CSPs, which convey the flows of Haggart Creek under the road surface. The crossing is well armoured with riprap and under normal flow conditions is adequate for ongoing use. An initial hydrological analysis has indicated that the two CSPs are not sufficient to safely convey the 1:100 year flood event; however, the crossing itself would likely withstand a flood event. Vehicle crossings may be restricted during a flood event and as such, alternative options for upgrading the crossing are being investigated.

The upgrade of the Haggart Creek Crossing to include an overflow culvert constructed in the dry season was assessed under YESAB Mine Number 2010-0226. VGC is continuing to assess if an upgrade is required to support the Mine and, if upgrades are deemed necessary, approvals pursuant to the *Navigable Waters Protection Act* and *Regulations,* the *Waters Act* and *Regulations,* the *Fisheries Act,* and the *Highways Act* and *Regulations* to enable the work to take place will be sought as necessary.

4.2.2 Staging Areas

A staging area is located on SMR right after turn off from the Silver Trail Highway. This area is currently utilized as waiting area for pilot vehicles, proper configuration of radios, to allow for drivers to inspect loads prior to further travel, and/or to affix tire chains prior to proceeding down SMR as may be necessary. No materials are stored at this staging area nor at any other location along the SMR and HCR.

4.2.3 Traffic Volume

During operations, increased vehicle and truck traffic is being experienced on the SMR and HCR as anticipated. The largest vehicles re B-Train vehicles, trucks with long loads (steel members, crane components), and trucks with wide loads (truck boxes, tanks, pre-fabricated camp modules). Loads are adjusted for seasonal load restrictions.

The current estimated traffic volume during operations include:

- Crew shift changes generally occurring approximately every two weeks. Personnel travel from Mayo to the Mine site by bus. This involves approximately 100 – 120 bus roundtrips per year; and
- Total truckloads are estimated at 3,000 trucks per year (round-trips). These numbers do not account for potential seasonal load limits, which continue to dictate potential truck size and load types.

4.2.4 Maintenance Control Measures

VGC implements the following measures to control soil erosion and disturbance from ongoing road maintenance activities on the SMR and HCR:

- Minimize the extent of clearing, grubbing, and grading
- Restrict vehicle traffic in the vicinity of water courses to existing roads, and restrict crossing to existing bridges and culverts
- Flag environmentally sensitive areas before clearing and construction begins
- Re-vegetate where soil stabilization and erosion control are required
- Protect stockpiles from erosion with tarps, sumps, or berms
- Time construction activities to avoid key fish migration periods and high-risk weather and flow
- Minimize the time that in-stream works occur
- Implement a rigorous erosion and sediment control program

4.2.5 Operational Access Control

All access to the mine site is controlled by a continuously-staffed security gatehouse at km 43.0 of the HCR which ensures that public safety is maintained. The continued operation of the gatehouse is authorized by Permit # U0205 issued by HPW. Access is provided to other road users beyond the gatehouse when VGC security personal can ensure safe passage. Public vehicle access is not allowed at the mine site.

VGC communicates with regular known users of the HCR (i.e., placer mining operators and Registered Trapping Concession 81 holder) and the FNNND to ensure other road users are aware of potential hazards associated with Mine related truck movements, including any oversized loads.

4.2.6 Temporary and Permanent Access Closure

Precautionary measures will be taken to limit access during any temporary closures, including placement of barriers, traffic control signs and gates as necessary.

The HCR will remain in place at closure. The responsibility for maintaining the HCR will be fully returned to Yukon Government to allow for ongoing public access. Following closure of the HLF and site facilities, the main access road within the Mine footprint will be permanently closed and reclaimed. However, it is proposed that a single lane road will remain to provide access to the Potato Hills. The road will be left in a semi-permanent, deactivated condition, which will allow the road to remain passable and be environmentally stable.

5 BORROW SOURCES

5.1 MINE SITE HAUL AND SECONDARY ROADS

All Mine site road construction utilizes local material sources produced in association with the construction of these roads. Where possible, cut-and-fill operations are undertaken so as to provide an economical and balanced operation.

Where additional borrow material is required, several sources of borrow material have been utilized to date, including the reworked materials from the existing placer tailings in the Dublin Gulch and Haggart Creek valley bottoms. Geochemical considerations and geotechnical testing completed for the borrow sources are described further in Sections 6 and 7. For any borrow material requirements in addition to the material from cut-and-fill operations, construction grade waste rock, as well as the reworked materials from existing placer tailings, are anticipated to provide sufficient material for the mine site roads, as necessary.

Construction grade waste rock means non-acid-generating and non-metal leaching geological material, which includes surficial sediments and rock, that have an NP:AP >3:1, paste pH >5 total sulphur content of <0.3%. Geochemical testing requirements for construction grade waste rock and other materials utilized for construction activities are described in Section 6, below, and in further detail in the Environmental Monitoring, Surveillance and Adaptive Management Plan (EMSAMP).

5.2 ACCESS ROAD

Placer gravel available on placer claims held by the VGC support upgrading or maintenance of the HCR; however, should additional material be required then permission from another operator and/or a land use permit and work with a Right of Way Permit will be sought. Work within the right-of-way permits for access road maintenance are issued on annual basis, and any new sources or additional requirements for borrow will be identified in permit applications. Based on geotechnical evaluations conducted on the HCR, borrow sources have been evaluated at various locations that are utilized as necessary and in accordance with relevant permits issued by HPW and the Department of Energy, Mines and Resources (EMR) for grade improvements and for road surfacing material.

6 GEOCHEMICAL CONSIDERATIONS

VGC contracted SRK to characterize the metal leaching and acid rock drainage (ML/ARD) potential of materials that were proposed to be used as borrow sources or excavated during construction of site roads and other infrastructure. Details of the methods used to characterize borrow sources are provided in the SRK 2013 Report, *Geochemical Characterization of Proposed Excavation Areas and Borrow Sources from the Eagle Gold Project*, which is summarized here.

Samples representing the excavation and borrow areas were selected for testing from a set of samples collected from test pits and drill holes in 2011 by BGC Engineering Inc. as part of the geotechnical investigation for the Mine. Additional road and borrow samples were collected by VGC site staff in July 2012. Where possible, road sampling was completed at existing exposures to limit the disturbance of woodland environments. In all cases, the sampling objective was to determine the potential for ML/ARD in materials that may be used for construction purposes in the future.

SRK assessed the acid rock drainage (ARD) potential of the samples using the following criteria:

- Where the total sulphur content was less than 0.02% (corresponding to an acid potential (AP) of 0.6 kg $CaCO_3$ eq/t), the samples were classified as non-reactive.
- Where the total sulphur content was greater than 0.02%, and the NP/AP ratio or TIC/AP ratio was greater than 3, the samples were classified as non-potentially acid generating (non-PAG).
- Where the total sulphur content was greater than 0.02% and the NP/AP or TIC/AP ratio was between 1 and 3, the samples were classified as having an uncertain potential for ARD.
- Where the total sulphur content was greater than 0.02% and the NP/AP or TIC/AP ratio was less than 1, the samples were classified as potentially acid generating (PAG).

The total sulphur cut-off of 0.02%, used to define non-reactive samples in this classification scheme is considered highly conservative, particularly given that many of these samples were surficial material that have been exposed to air and water throughout their geological history.

Detailed sample descriptions are found in SRK (2013). Table 7.1-1 provides a summary of results according to material type and ARD classification.

Table 7.1-1: ARD Classification for Each Group of Samples

Group	Number of Samples	ARD Classification (% of Samples)						
		Non-Reactive S <0.02%	Non-PAG		Uncertain		PAG	
			NP/AP	TIC/AP	NP/AP	TIC/AP	NP/AP	TIC/AP
Site Roads	34	76%	9%	0%	12%	3%	3%	21%
Placer Tailings	19	63%	5%	16%	21%	16%	11%	5%
Excavation Areas (surficial materials)	14	57%	29%	21%	7%	21%	7%	0%
Excavation Areas (rock)	5	20%	40%	20%	20%	20%	20%	40%

In total, 72 samples were collected and analyzed for this study including 34 from the proposed site roads, 19 from placer tailings and alluvium borrow sources and 19 from potential cut and fill (excavation) areas. Most of these samples (n=66) were from surficial materials, five were from meta-sedimentary bedrock, and one was from a granodiorite outcrop.

The paste pH for the samples ranged from 4.6 to 8.6 (median values of 6.6). The samples typically had low sulphur and low NP and TIC levels. This is in contrast to the characterization work from the deposit area that states NP in the form of carbonate minerals was present in modest amounts throughout the deposit area. Based on having a sulphur content of <0.02%, 65% of samples were considered non-reactive. For the remaining samples, based on NP/AP or TIC/AP ratios, 7 to 14% were PAG, 11 to 14% had an uncertain potential for ARD, and 10 to 14% were non-PAG.

The majority of these samples represent surficial materials such as soils, weathered bedrock (colluvium), or gravels (alluvium or placer tailings). These differ from blasted rock from rock quarries or mine workings because their particle surfaces have already been exposed to air and water. Therefore, whether these remain *in situ* or are moved to a new location, they will continue to weather and oxidize at rates comparable to current weathering rates, which are quite slow.

In addition, it is likely the sulphides present in these materials were largely encapsulated within larger gravel to cobble size particles and would be unavailable for reaction. The result of moving these materials and using them for construction is not expected to result in any change relative to their current locations. In other words, while 7 to 14% of samples are PAG, and an additional 11 to 14% are classified as having an uncertain ARD potential, these materials still pose a relatively low risk for ARD potential and are considered suitable for use as construction material.

There were five meta-sedimentary rock samples taken from proposed excavation areas, and one granodiorite sample from one existing site road. Three of the meta-sedimentary samples and the one granodiorite sample were non-reactive or non-PAG, while two of the meta-sedimentary samples were PAG by either or both NP/AP ratios and TIC/AP ratios. Although the volumes of rock that would need to be excavated within construction areas are expected to be relatively small, these results indicate excavations within the meta-sedimentary rock unit will need to be monitored for ARD potential. Monitoring methods are described in the EMSAMP.

As discussed in the EMSAMP, geochemical monitoring for construction is undertaken to identify rock or soils that possess relatively higher proportions of sulfide, low paste pH and a low neutralization to acid generating potential, and therefore could require placement and handling practices to prevent ARD and the associated release of metals into surface waters. ABA test work is conducted on grab samples of excavated materials sourced for construction. Testing is used to confirm that rock used as construction material will have an NP/AP ratio >3, a paste pH >5 and a total sulphur content <0.3%. Materials encountered that are not within this specification will be disposed of in the WRSAs for mixing/blending with low sulphide/neutralizing materials such that geochemical "hot spots" do not develop within the WRSAs.

The geochemical monitoring of surficial materials consists of the following:

- Visual inspection of blasted rock to ensure that anomalously high concentrations of sulphide are not present.
- Grab samples representing each major excavation, with a separate bulk sample collected in each distinct geological formation encountered and/or from every 200,000 m^3 material moved.

The geochemical monitoring of bedrock materials consists of the following:

- Grab samples representing each major excavation, with a separate sample collected in each distinct geological formation encountered and/or from every 100,000 m^3 material moved. An exception is proposed for bedrock excavated from the open pit, which has been subject to extensive characterization demonstrating a low potential for ARD. Material excavated for use in construction will be sampled at a rate of one per every 250,000 m^3 of material moved.

7 GEOTECHNICAL TESTING

VGC and predecessor companies involved with development of quartz mining at Dublin Gulch have engaged in numerous and extensive site investigations, which have examined subsurface conditions at the locations of Mine site infrastructure using a variety of field and laboratory techniques. Given the presence of discontinuous permafrost in the area, close attention was given to observing and describing frozen ground in all of these investigations, including observations of excess ice where encountered. These investigations have resulted in reasonably accurate volume estimates of borrow sources and ice-rich material throughout the Mine site.

Site subsurface conditions observed at the Mine site have been described in several reports as follows:

- Report on 1995 Geotechnical Investigations for Four Potential Heap Leach Facility Site Alternatives, First Dynasty Mines, Dublin Gulch Property. (Knight Piésold, 1996a).
- Report on Feasibility Design of the Mine Waste Rock Storage Area, First Dynasty Mines, Dublin Gulch Property. (Knight Piésold, 1996b).
- Field Investigation Data Report, Dublin Gulch Project, New Millennium Mining. (Sitka Corp, 1996).
- Hydrogeological Characterization and Assessment, Dublin Gulch Project, New Millennium Mining. (GeoEnviro Engineering, 1996).
- BGC Engineering Inc. 2009. Site Facilities Geotechnical Investigation Factual Data Report. Eagle Gold Project, Victoria Gold Corporation.
- Stantec. 2011. Project Proposal for Executive Committee Review. Pursuant to the *Yukon Environmental and Socio-Economic Assessment Act*. Eagle Gold Project, Victoria Gold Corp. June 2011.
- BGC Engineering Inc. 2011a. 2010 Geotechnical Investigation for Mine Site Infrastructure, Factual Data Report. Eagle Gold Project, Victoria Gold Corporation.
- BGC Engineering Inc. 2011b. Eagle Gold – Borrow Evaluation Report, Project Memorandum, April 21, 2011; Appendix 34 in Stantec 2011. Eagle Gold Project, Victoria Gold Corporation.
- BGC Engineering Inc. 2012a. 2011 Geotechnical Investigation for Mine Site Infrastructure, Factual Data Report. Eagle Gold Project, Victoria Gold Corporation.
- BGC Engineering Inc. 2012b. 2012 Geotechnical Investigation for Mine Site Infrastructure, Factual Data Report. Eagle Gold Project, prepared for Victoria Gold Corporation, December 2012.

Site investigation programs were conducted to investigate subsurface conditions at major facility locations. These programs included a comprehensive range of laboratory testing to adequately characterize the engineering properties of the onsite materials. The findings of these programs were considered in the location and configuration of site facilities and are used to support the selection of construction materials as necessary.

8 BEST MANAGEMENT PRACTICES

A suite of mitigation measures are followed by VGC to minimize or avoid effects on the environment. Principal among these mitigation measures are those incorporated directly into the Mine design. These include; minimizing riparian clearing, conducting in-stream works during least risk periods, constructing and using sediment control basins and a large sediment control pond, and incorporating a mine water treatment plant capable of meeting water quality guidelines for aquatic life.

In addition, best management practices are implemented to manage effects and avoid adverse effects on fish habitat. Dublin Gulch is the only fish-bearing watercourse that lies within the footprint of the mine. The remaining watercourses inside the perimeter of the mine footprint are non-fish bearing.

8.1 SEDIMENT AND EROSION CONTROL

All necessary sediment and erosion control mitigation measures are in place and operational prior to road construction and maintenance.

Sediment mobilization and erosion is minimized by:

- Limiting the extent of land disturbance to the practical minimum
- Reducing water velocities across the ground, particularly on exposed surfaces and in areas where water concentrates
- Progressively rehabilitating disturbed land and constructing drainage controls to improve the stability of rehabilitated land
- Protecting natural drainages and watercourses by constructing appropriate sediment control devices such as collection and diversion ditches, sediment traps, rock energy dissipaters, and sediment basins
- Installing rock riprap, channel lining, sediment filters or other suitable measures in ditches on steep gradients, as required
- Restricting access to rehabilitated areas
- Directing all surface runoff to the appropriate water management infrastructure
- Constructing surface drainage control to intercept surface runoff
- Constructing appropriate measures (e.g., silt fences, hay bales) downslope of disturbed sites (where more permanent sediment control measures are not appropriate, or in combination with more permanent measures)
- Implementing soil bioengineering techniques to contain sediment and enable disturbed surfaces to recover

Installation of temporary erosion and sediment control features or “Best Management Practices” (BMPs) is the first step towards controlling erosion and sedimentation during construction and maintenance works. All temporary sediment and erosion control features require regular maintenance and inspection after each significant rainfall. These temporary features will be reclaimed after achieving soil and sediment stabilization

8.2 DUST CONTROL

Dust control measures for the Mine site is implemented on a case-by-case basis to ensure that mitigation measures are effectively ensuring worker health and safety and minimizing environmental effects. Best management practices and mitigation measures implemented include the following:

- Minimizing disturbances and manage all land clearings.
- Constructing haul roads with low silt content material.
- Enforcing low speed limits for all mobile mine equipment.
- Applying water as a dust suppressant using appropriate equipment (e.g., a tanker truck with spray bars) to open surfaces and heavily used roads (in the summer months). The equipment is kept on-site and used as needed to maintain moist surfaces and suppress visible dust emissions.
- Watering active roads in hot, dry conditions, unless meteorological conditions (e.g., rain, frozen surfaces, etc.) are adequate to suppress dust.
- Conducting visual inspections, as required, to identify and address potential dust emissions.
- Recording fugitive dust suppression activities daily using a water tracking logs.
- Making available the tracking log to Yukon regulatory authorities as required.

8.3 SITE ISOLATION

Prior to roadway construction taking place, VGC staff flag environmental sensitive areas and wildlife habitat features (e.g., mineral licks, dens, nest trees, snags, rocky outcrops, small ponds/seepages) to determine if they can be maintained. Construction activities adjacent to watercourses are carried out with brush mowers or chainsaws to the greatest extent possible to minimize environmental damage. In riparian areas, trees within 10 m of the ordinary high water mark will be close cut and the stumps will be left in place to ensure bank stability is retained.

8.4 CULVERT INSTALLATION

Storm water management culverts have been constructed at a number of locations to direct water beneath the roadway between road ditches and do not impact existing stream systems. During the installation of these culverts, and for any future upgrades, silt fencing or other sediment control measures are installed and properly maintained at the base of slopes for the duration of site preparation, construction, installation of riprap (if required), and revegetation to ensure sedimentation is adequately controlled.

8.5 ENVIRONMENTAL MONITORING

VGC has developed the EMSAMP in support of the Mine. The plan includes environmental monitoring objectives, work completed to date, methods for a variety of technical disciplines, action thresholds for observed changes to the Mine environment, and adaptive management approaches to respond to observed changes.

8.6 DECOMMISSIONING AND CLOSURE

All roads that will not be required for access post-closure (e.g., during monitoring activities) will be reclaimed. The site will be returned to a landscape that is comparable to surrounding areas for permanent closure at the end of the life of the mine. This will involve re-grading of the road, re-sloping the topography, scarifying disturbed areas, placement of any stockpiled stripping material and re-vegetation of the site. Soil replacement for these disturbances will be to the same depth that was originally salvaged from the disturbance site; the material will be sourced from adjacent windrows or soil stockpiles.

Culverts will be removed and associated fill material will be recontoured as appropriate to re-establish natural drainage patterns and stream flows. Priority areas for reclamation and closure will include those that could result in increased sedimentation into adjacent watercourses, altering both water quality and fish habitat.

Further details on the future decommissioning and closure of roads is provided in the Reclamation and Closure Plan.

Following closure of the HLF and site facilities, mine roads will be permanently closed and reclaimed. The one exception will be the road that provides access to the Potato Hills as this has been identified as an important area for traditional use. The road will be left in a semi-permanent, deactivated condition, which will allow the road to remain passable and be environmentally stable.

The remaining linear disturbances such as exploration roads, tote roads, trenches and drill sites will be progressively reclaimed during the life of the mine as they become available.

9 REFERENCES

Greer, S. (1995). Archaeological and Historic Sites Impact Assessment Dublin Gulch Mine Property Final Report; report prepared for Hallam Knight Piesold Ltd. on behalf of First Dynasty Mines Ltd; by Sheila Greer, Consulting Anthropologist and Archaeologist, Edmonton, AB.

Greer (1996). Archaeological and Historic Sites Impact Assessment South McQuesten Road Upgrading; report prepared for New Millennium Mining Ltd. Dublin Gulch Mine Development; by Sheila Greer, Consulting Anthropologist and Archaeologist, Edmonton, AB.

Lorax 2022; Lorax Environmental Services Ltd. Eagle Gold Climate Data Report 2021; prepared for Victoria Gold Corp., March 24, 2022.

SRK (2013). Geochemical Characterization of Proposed Excavation Areas and Borrow Sources from the Eagle Gold Project, Yukon; report prepared by SRK Consulting (Canada) Inc. for Victoria Gold Corp., May 2013.