

REPORT

Vegetation Protection Plan

Coffee Gold Mine

Submitted By:

Goldcorp Kaminak Ltd.
3260-666 Burrard Street
Vancouver, BC V6C 2X8

July 4, 2025

REVISION TRACKING LOG

Revision Tracking Log			
Version	Date	Section Updated	Description of Update
0	November 2023	-	First submission of the Vegetation Protection Plan
1	July 2025		Minor updates by EDI
2			

TABLE OF CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS.....	IV
LIST OF SYMBOLS AND UNITS OF MEASURE.....	V
INFORMATION REQUIREMENTS FOR QUARTZ MINE LICENSE AND WATER LICENSE	V
1.0 INTRODUCTION.....	1
1.1 Project Summary.....	1
1.2 Scope and Objectives	4
1.3 Incorporation of Traditional Knowledge and Consultation Feedback	4
1.4 Synergies with Newmont Standards and Requirements and Other Project Documents	4
1.5 Roles and Responsibilities of Key Personnel	5
2.0 REGULATORY AND MANAGEMENT CONTEXT	7
2.1 Federal Government — Applicable Legislation	7
2.1.1 Yukon Environmental and Socio-economic Assessment Act.....	7
2.1.2 <i>Species at Risk Act</i> and Committee on the Status of Endangered Wildlife in Canada.....	7
2.2 Territorial Government — Applicable Legislation and Agencies	7
2.2.1 Yukon Conservation Data Centre	7
2.2.2 Yukon Invasive Species Council.....	8
2.3 First Nation Governments	8
2.4 Other Relevant Guidelines/Documents	8
3.0 VEGETATION BASELINE SUMMARY.....	9
3.1 Ecological Communities.....	10
3.2 Rare Plants	10
3.3 Invasive Plants.....	10
3.4 Trace Metals	11
3.5 Vegetation, Revegetation and Reclamation Research	11
4.0 VEGETATION PROTECTION MEASURES FRAMEWORK	12
4.1 General Vegetation Protection Measures	12
4.1.1 Vegetation Awareness Orientation	13
4.2 Invasive Species Management	13
4.2.1 Invasive Plant Surveys.....	Error! Bookmark not defined.
4.3 Construction-phase Vegetation Protection Measures	15
4.3.1 Pre-Construction Surveys: Rare Plants	16
4.4 Operation-Phase Vegetation Protection Measures	16
4.4.1 Progressive Reclamation	17
5.0 VEGETATION PROTECTION PLAN REVISIONS	19
6.0 REFERENCES.....	20

LIST OF TABLES (WITHIN TEXT)

Table 1-1	Newmont Global Standards	5
Table 1-2	Key Project Personnel	6
Table 3-1	Rank 1 Invasive Plant Species Documented during Baseline Surveys.....	11

LIST OF FIGURES (WITHIN TEXT)

Figure 1-1	Coffee Project Location and Northern Access Route	2
Figure 1-2	Mine Site General Arrangement	3

TABLES (APPENDED)

Appended Table A Mapped Ecosystems within the Project Footprint

LIST OF APPENDICES

Appendix A	Mapped Ecosystems Within the Project Footprint
Appendix B	Invasive Species Information Sheet
Appendix C	Vegetation Protection Plan – Table of Concordance

LIST OF ACRONYMS AND ABBREVIATIONS

Acronym / Abbreviation	Definition
ANPC	Alberta Native Plant Council
BEM	Broad Ecosystem Mapping
CCME	Canadian Council of Ministers of the Environment
CDC	Conservation Data Centre
CIPM	Center for Invasive Plant Management
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
EDI	Environmental Dynamics Inc
ELC	Ecological and Landscape Classification
FNNND	First Nation of Na-cho Nyäk Dun
GPS	global positioning system
HLF	Heap Leach Facility
IPCBC	Invasive Plant Council of British Columbia
LAA	Local Assessment Area (as defined in the Project Proposal Vegetation Valued Component Assessment Report)
LOM	Life of mine
NAR	Northern Access Route
Newmont	Kaminak Gold Corporation, a wholly owned subsidiary of Goldcorp Inc.
Project	Proposed Coffee Gold Mine
ROM	Run-of-mine
SARA	<i>Species at Risk Act</i>
SEMS	Sustainability Excellence Management System
SER	Sustainability and External Relations
SFN	Selkirk First Nation
TBD	To be determined
TK	Traditional Knowledge
TH	Tr'ondëk Hwëch'in
UAF	University of Alaska Fairbanks
WRFN	White River First Nation
WRSF	Waste Rock Storage Facility
YESAA	<i>Yukon Environmental and Socio-economic Assessment Act</i>
YESAB	Yukon Environmental and Socio-economic Assessment Board
YISC	Yukon Invasive Species Council
YWB	Yukon Water Board

LIST OF SYMBOLS AND UNITS OF MEASURE

Symbol / Unit of Measure	Definition
cm	centimetres
d	day
ha	hectare
km	kilometre
km ²	square kilometre
m	metre
Mt	million tonnes
t	tonne

INFORMATION REQUIREMENTS FOR QUARTZ MINE LICENSE AND WATER LICENSE

Information Requirement	Location in this Plan
Table of Concordance	Appendix B: Vegetation Protection Plan Table of Concordance
Revision Log	page i

1.0 INTRODUCTION

1.1 Project Summary

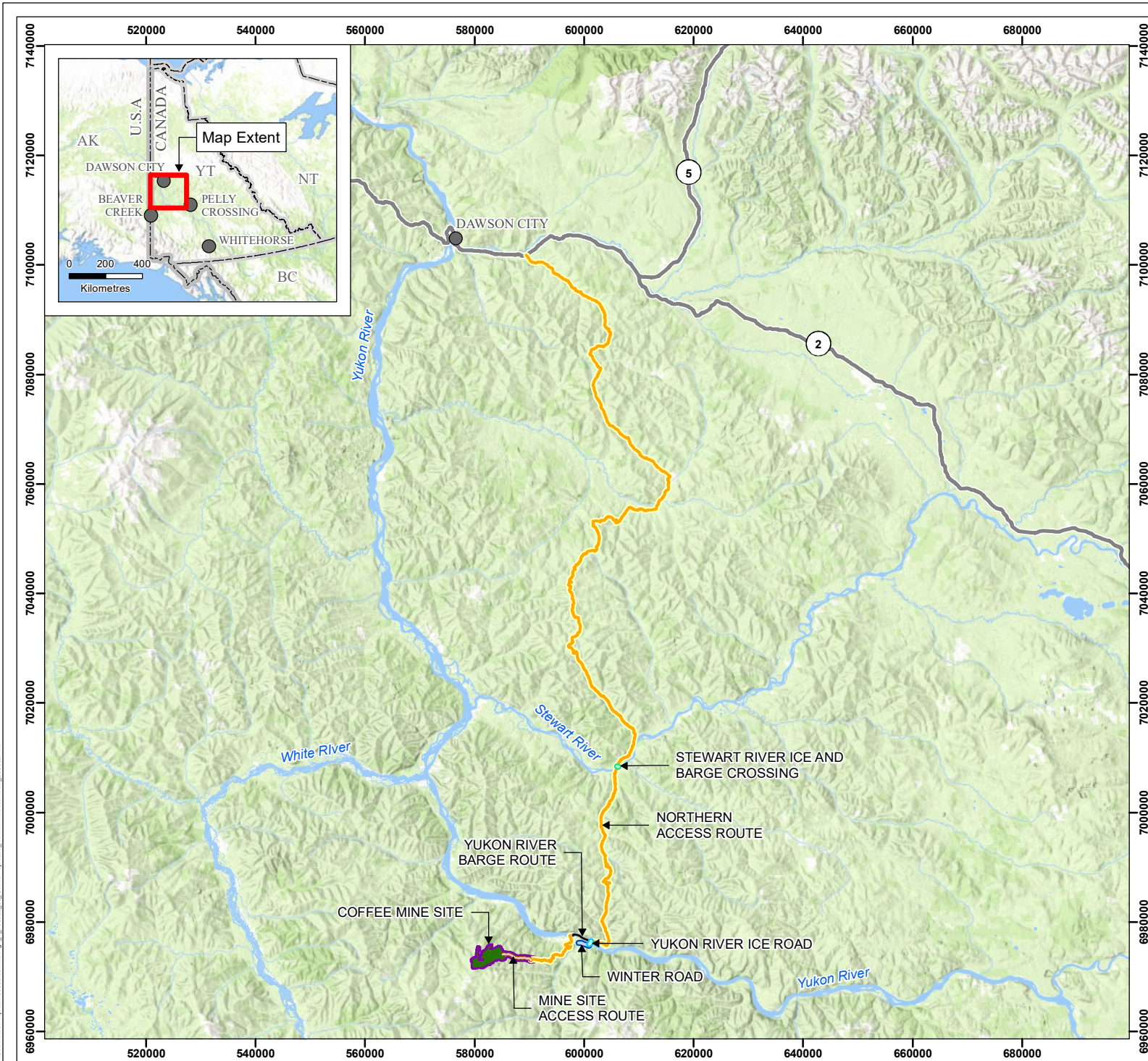
The proposed Coffee Gold Mine (the Project) is an open-pit gold mine owned by Goldcorp Kaminak Ltd., a wholly owned subsidiary of Newmont Corporation (Newmont), located on the south side of the Yukon River in the White Gold District of west-central Yukon. The Project site is approximately 130 km south of the City of Dawson, 140 km west of Pelly Crossing, 95 km north-east of Beaver Creek, and 340 km northwest of Whitehorse. The Project is located wholly within the traditional territory of Tr'ondëk Hwëch'in, partially within the traditional territory of Selkirk First Nation and First Nation of Na-cho Nyäk Dun, and partially within the asserted territory of White River First Nation. The Project contains several gold occurrences within an exploration concession covering an area of more than 600 km². The Mine Site will be accessed by road from Dawson via a 16-km stretch of Klondike Highway and 192-km all-season road, referred to as the Northern Access Route (NAR) (Figure 1-1). The NAR includes seasonal barge crossings on both the Stewart and Yukon rivers, with ice bridges and a seasonal winter road in the winter months.

The Project is comprised of four open pits: Supremo, Latte, Double Double, and Kona. Waste rock is proposed to be permanently stored in the Alpha Waste Rock Storage Facility (WRSF) (Figure 1-2). The ore production rate is proposed to be up to approximately 9.0 million tonnes (Mt) per year, producing an estimated total of 67 Mt of heap leach feed over the 10-year Operation Phase. The conceptual-level estimate for waste material to be moved over the life of mine (LOM) is up to approximately 330 Mt based on an average strip ratio of 5.0:1. The ore will be crushed and transported to the Heap Leach Facility (HLF) via overland conveyor or trucks for nine months of the year. During the three coldest months of winter, run-of-mine (ROM) ore will be stockpiled in the ROM stockpile. Gold will be extracted from gold-bearing leach solution by a six tonnes per day (t/d) adsorption, desorption, recovery carbon plant with mercury retorting to produce a final gold doré product. A total of 2.6 million ounces of gold is planned to be recovered over a 10-year mine life.

The Project phases are defined as follows:

- Construction Phase: Q2 Year –3 to end of Year –1 (30 months)
- Operation Phase: Year –1 to end of Year 9 (10 years)
- Reclamation and Closure Phase: Year 10 to end of Year 21, including a 6-year Post-Mining Closure Stage and a 5-year Active Closure Stage (11 years)
- Post-Closure Phase: Year 21 onwards as determined to be required.

These phases broadly describe the activities occurring within a particular time period; however, some activities will continue from one phase to another as mine site development advances with operational activities (e.g., Open Pits, WRSF). When areas that support mine operations are no longer required, they will be progressively reclaimed. The overall Project schedule is the general expected scenario for mine construction and operation; detailed activities are subject to change depending on detailed mine planning and the timing of receipt of authorizations.



COFFEE GOLD MINE

Coffee Project Location and Northern Access Route

Legend

- Stewart River Ice and Barge Crossing
- Yukon River Barge Route
- Yukon River Ice Road
- Winter Road
- Mine Site Access Route
- Northern Access Route
- Project Area
- Project Footprint
- Highway
- Waterbody

- Notes**
1. This map is not intended to be a "stand-alone" document, but a visual aid of the information contained within the referenced Report. It is intended to be used in conjunction with the scope of services and limitations described therein.
 2. Contains information licensed under the Open Government Licence - Yukon Territory
 3. Basemap: ESRI World Topographic Map
 4. Inset Basemap: ESRI World Topographic Map

N

1:1,000,000

0 5 10 15 20 25

Kilometres

NAD 1983 UTM Zone 7N

Page Size: 8 1/2" x 11"

Figure 1.1	Date: Mar 2, 2023	Drawn by: AS	Reviewed: KP
------------	----------------------	-----------------	-----------------



Path: S:\Geomatics\Projects\103882\10\mxd\Fig_1_103882_03_CoffeeProjectLoc_NorthernAccessRoute_230302.mxd

COFFEE GOLD MINE

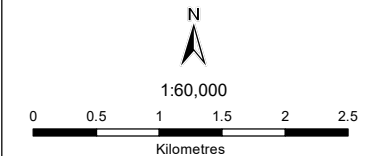
General Arrangement - Mine Site

Legend

- Double Double Pit
- Kona Pit
- Latte Pit
- Supremo Pit

Notes

1. This map is not intended to be a "stand-alone" document, but a visual aid of the information contained within the referenced Report. It is intended to be used in conjunction with the scope of services and limitations described therein.
2. Contains information licensed under the Open Government Licence - Yukon Territory
3. Inset Basemap: ESRI World Topographic Map



NAD 1983 UTM Zone 7N

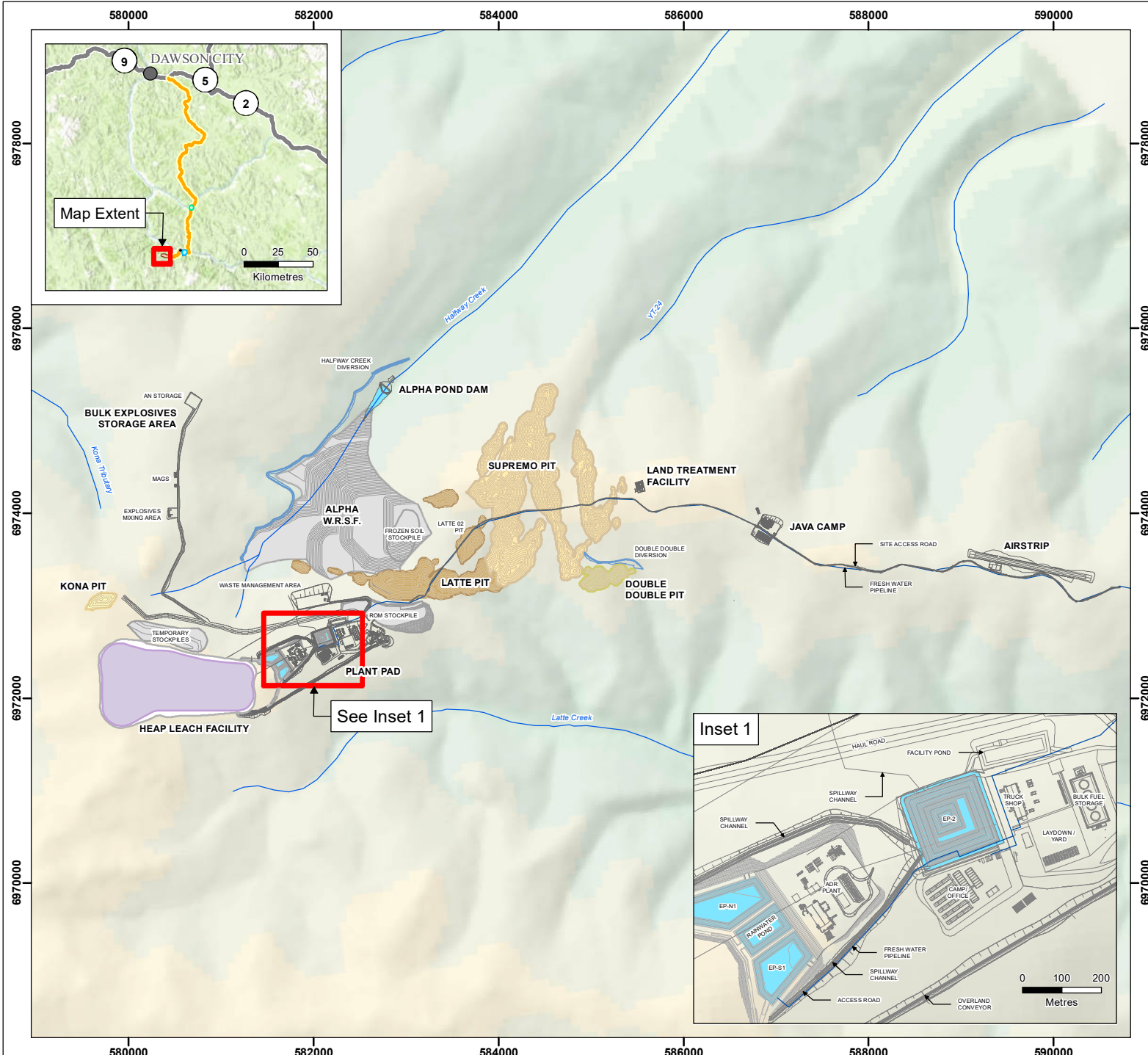
Page Size: 8 1/2" x 11"

Figure 1.2

Date:
Oct 6, 2023

Drawn by:
AS

Reviewed:
CH



Path: S:\G:\com\sc\p\project\1038\B2\1038.mxd\MP\Fig1_2_1038B2_03_GeneralArrangement_231008.mxd

1.2 Scope and Objectives

Construction, operation, and closure of the Project have the potential to negatively impact vegetation within or near the project area which may, in turn, affect other aspects of the physical environment. This Vegetation Protection Plan (the Plan) is intended to identify and demonstrate how appropriate management techniques will reduce the potential for any adverse effects on vegetation and describes the measures that will be implemented to mitigate adverse effects resulting from Project activities.

This Plan has been written to meet the guidance provided in the *Plan Requirement Guidance for Quartz Mining Projects* (YWB and EMR 2013).

This Plan is provided in conjunction with several other plans to meet the requirements for quartz mine applications for a Quartz Mining License and a Water Use Licence under the *Quartz Mining Act* and the *Waters Act*, respectively. Other applicable regulations related to vegetation management and monitoring are detailed in Section 2.0.

Commitments that were made during the YESAB screening process related to the Vegetation Protection Plan are incorporated into the plan where possible and are summarized in the Vegetation Protection Plan Table of Concordance (Appendix B). The Table of Concordance includes commitments made during the assessment process only, as there were no Decision Document conditions related to vegetation protection at the site.

1.3 Incorporation of Traditional Knowledge and Consultation Feedback

Consultation during preparation of the Project Proposal (#2017-0211) identified vegetation as a valued component that should have a range of mitigation measures implemented in order to minimize change (Goldcorp 2017). Specific concerns included habitat loss, change in vegetation health due to dust deposition, and risk of introduction and spread of invasive plant species.

First Nation engagement and consultation is ongoing, and any feedback that is received or concerns that are heard during consultation will be incorporated into this plan, where applicable.

1.4 Synergies with Newmont Standards and Requirements and Other Project Documents

As an important part of Newmont's internal governance process, Newmont has implemented Global Policies and Standards (Global Standards) that are reviewed and preliminarily approved by a Global Policies & Standards Committee. The Global Standards provides the framework and standards for Newmont sustainability management and ensures a consistency of approach for implementing these global policies across the Company.

The Global Standards apply to all directors, officers and employees of Newmont Corporation, its subsidiaries, and any other entities that it controls. A variance request process for existing or future conditions is in place. The process provides an alternative mechanism for those instances where a Newmont site/operation cannot logistically or feasibly conform to a requirement established in a Standard due to special conditions or unique hardships. The Global Standards are intended to be fully integrated into all core business functions, and they emphasize sustainability, responsibility, and accountability at all organizational levels. The list of Global Standards is provided in **Error! Reference source not found.**

Table 1--1 Newmont Global Standards

Global Standards	
Air Emissions Management Standard	Land Acquisition and Involuntary Resettlement Standard
Biodiversity Management Standard	Local Procurement and Employment Standard
Closure and Reclamation Management Standard	People Policy
Code of Conduct	Product Stewardship Standard
Community Investment and Development Standard	Social Baseline and Impact Assessment Standard
Cultural Resource and Management Standard	Stakeholder Relationship Management Standard
Drug and Alcohol Policy (Coffee-Specific)	Tailings Storage Facility and Heap Leach Facility Environmental Standard
Hazardous Materials Management Standard	Tailings Storage Facilities Technical and Operations Standard
Health and Safety Policy	Waste Management Standard
Human Resources Standard	Waste Rock and Ore Stockpile Management Standard
Human Rights Standard	Water Management Standard
Indigenous Peoples Standard	

While this Plan can be reviewed on its own to assess specific vegetation management and monitoring actions, it should also be considered alongside the following additional management plans for a holistic understanding of the Project:

- Access Route Construction Management Plan
- Access Route Operational Management Plan
- Reclamation and Closure Plan
- Explosives Management Plan
- Emergency Response Plan
- Spill Contingency Plan
- Vegetation Monitoring Plan
- Water Management Plan
- Wildlife Protection Plan.

This Vegetation Protection Plan will be implemented together with the **Vegetation Monitoring Plan**, which provides details on vegetation monitoring and management for the Project. The two plans should be used together to protect, monitor, and manage vegetation.

1.5 Roles and Responsibilities of Key Personnel

Newmont has committed to providing the necessary human, material, and financial resources to implement and maintain the Plan. The Environment Department will be responsible for implementation of the monitoring components outlined in the Plan. Key Project personnel responsible for being familiar with the contents of this Plan are shown in Table 1--2.

Table 1--2 Key Project Personnel

Role	Responsibility
Mine General Manager	Overall responsibility for Mine Site management.
Operations Manager	Responsible for mine planning and production, mine technical monitoring, and mine regulatory compliance.
H&S Manager	Responsible for conducting regular safety site inspections and implementing the appropriate controls in a timely manner. The H&S Manager shall maintain records of all safety inspections as well as any actions taken because of these inspections throughout the life of the Project. Where safety inspections show the potential for environmental effects, the H&S Manager will work in collaboration with the Environment Department.
Sustainability and External Relations (SER) Department	Responsible for recording and addressing any complaints received from nearby land users, or other interested parties regarding vegetation-related impacts off-site. The SER department shall maintain records of all complaints received as well as any actions taken because of these complaints.
Environmental Manager	Responsible for the revegetation program and the implementation of this plan compliance.

2.0 REGULATORY AND MANAGEMENT CONTEXT

Newmont will abide by the laws and regulations relevant to the management and conservation of vegetation in the Project area. This section is provided as a general overview of relevant legislation and regional plans that govern the Coffee Gold Mine.

2.1 Federal Government — Applicable Legislation

2.1.1 Yukon Environmental and Socio-economic Assessment Act

The *Yukon Environmental and Socio-economic Assessment Act* (YESAA), SC 2003, c.7, gives authority and rules to the Yukon Environment and Socio-economic Assessment Board (YESAB) to administer the assessment process that applies to all lands within Yukon. The Board's mission is to protect the environment and social integrity of Yukon, while fostering responsible development. The YESAB information requirements and evaluation process guidelines include statements on documenting ecological communities and site quality for areas that may be disturbed as a result of development (YESAB 2005). Also listed in these guidelines is the inclusion of all proposed environmental protection, contingency, and monitoring plans including vegetation protection and monitoring.

Commitments made by Newmont during the YESAA process may be incorporated into licences and/or permits issued under territorial legislations (Section 2.2). This Plan contains all the relevant commitments made to date by Newmont regarding vegetation protection.

2.1.2 *Species at Risk Act* and Committee on the Status of Endangered Wildlife in Canada

The *Species at Risk Act* (SARA), SC 2002, c. 29, provides legal protection for plant and wildlife species in Canada and conservation of their biological diversity. The goal of SARA is to prevent plant and wildlife species in Canada from becoming extinct. This legislation provides for the recovery of species that are extirpated (no longer exist in the wild in Canada), endangered, or threatened as a result of human activity, and mandates management of species of special concern to prevent them from becoming endangered or threatened. Under SARA, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), an independent body of experts, is responsible for identifying and assessing plant and wildlife species considered at risk, which may then qualify for legal protection and recovery under SARA. Based on Project baseline studies, there are no SARA-listed or COSEWIC-assessed species at risk known to exist in the Project area; therefore, this legislation is not relevant to the Vegetation Protection Plan unless a SARA-listed species is identified during future vegetation monitoring activities.

2.2 Territorial Government — Applicable Legislation and Agencies

2.2.1 Yukon Conservation Data Centre

The Yukon Conservation Data Centre (CDC) was established to provide information on species and ecosystems at risk. All plants known to occur in the Yukon are listed with the Yukon CDC, along with their corresponding conservation ranks at the global, national, and territorial levels. The Yukon CDC maintains two types of lists: the Track List and the Watch List. The Track List includes all species of conservation concern with conservation status ranks. Information on vascular plants is actively tracked, and all known locations are mapped. The Watch List is a list of species for which there is not enough information to determine whether they are of conservation concern. The Yukon CDC actively seeks reports on known

populations of Watch List species so that in the future informed assessments can be made on their conservation status. Species on the Watch List could eventually be placed on the Track List or be removed from the Watch List as more populations are reported. No species from the territorial Watch List or Track List were found within the Mine Site area but populations of three territorial Watch-list plant species were observed along the NAR. The Watch list plant species found during plant surveys within the NAR area include: Spotted Lady's-slipper (*Cypripedium guttatum*), Small Enchanter's Nightshade (*Circea alpina* spp. *alpina*), and Dry-spike Sedge (*Carex siccata*)¹.

2.2.2 Yukon Invasive Species Council

The Yukon Invasive Species Council (YISC) is a registered non-profit society formed in December 2009 to prevent and manage the introduction and spread of invasive species in Yukon. The society is composed of representatives from municipal, territorial, federal, and First Nation governments, and from non-profit organizations, as well as farming, industry, and private citizen groups. The YISC strategic plan is to improve territory-wide guidance on invasive species management; support, develop, and complement ongoing activities in invasive species management; and protect Yukon's environment and economy by minimizing the negative impacts caused by the introduction, establishment, and spread of invasive species. Currently, YISC has approximately twenty-one invasive species on their watch-list. A full list of invasive plant species identified for the territory is published by YISC and is available on their website at: <http://www.yukoninvasives.com/>.

2.3 First Nation Governments

The Project (including the NAR) is located on Crown Land and overlaps the established traditional territories of Tr'ondëk Hwëch'in (TH), Selkirk First Nation (SFN), and First Nation of Na-cho Nyäk Dun (FNNND) and the asserted traditional territory of the White River First Nation (WRFN). TH, SFN and the FNNND are self-governing, and have land management rights on settlement lands and land-use rights within the Project area as defined in their Final Agreements and the Umbrella Final Agreement; WRFN has not yet established legislation for the management and administration of settlement lands and wildlife.

2.4 Other Relevant Guidelines/Documents

- Tr'ondëk Hwëch'in Best Practices for Heritage Resources (TH 2011)
- Environmental Code of Practice for Metal Mines (Environment Canada 2009)
- Yukon Mineral and Coal Exploration Best Management Practices and Regulatory Guide (Yukon Chamber of Mines 2010)
- Managing Weeds and Invasive Plants (Yukon Invasive Species Council 2015)
- Best Management Practices for Works Affecting Water in Yukon (Environment Yukon 2011)
- Yukon Revegetation Manual (Matheus and Omtzigt 2013)
- Yukon Mine Site Reclamation and Closure Policy (Government of Yukon 2006)
- Reclamation and Closure Planning for Quartz Mining Projects (Government of Yukon 2013).

¹ When the Vegetation Baseline Report (EDI 2017) was developed, Coffee Creek Scorpionweed (*Phacelia mollis*) was also listed on the Yukon Watch List; however, it has since been removed from the list.

3.0 VEGETATION BASELINE SUMMARY

Baseline vegetation surveys were conducted in the Project area in 2014, 2015, and 2016. Four different vegetation programs were completed, including: ecosystem mapping, rare plant surveys, exotic and invasive species surveys, and vegetation and soil trace metals sampling. The results of these surveys are presented in the Vegetation Baseline Report, along with published and unpublished scientific data, and Traditional Knowledge (TK) relevant to the Project area (EDI 2017). Data summarized below is further detailed in the Vegetation Baseline Report (EDI 2017).

The Project straddles the treeline with vegetation communities ranging from boreal forest at lower elevations to subalpine at higher elevations. Approximately 75 percent (%) of the Project footprint occurs in the Boreal High Bioclimate zone, with the remaining 25% in the Subalpine Bioclimate zone (EDI, 2017). Much of the overlap with the Subalpine zone occurs in the southern sections of the Project area around the proposed Mine Site where 60% of the proposed Mine Site footprint occurs in the Subalpine zone. The Project footprint does not extend into the Alpine Bioclimate zone.

The Subalpine Bioclimate Zone is found along the smooth-topped ridges of the Project area. Communities of Scrub Birch (*Betula glandulosa*), Labrador Tea (*Rhododendron groenlandicum*), Bog Blueberry (*Vaccinium uliginosum*), Lowbush Cranberry (*Vaccinium vitis-idaea*), and Crowberry (*Empetrum nigrum*) dominate gentle to moderate, mid to upper slopes across neutral and warm aspects. A sparse conifer canopy (approximately 15% cover) develops over the shrub layer near the treeline. Stunted Black Spruce (*Picea mariana*) forests with Scrub Birch, Labrador Tea, sedges, feathermosses, and peat mosses (*Sphagnum* spp.) are common on moderate, north-facing slopes that are underlain by permafrost and have imperfect to poor drainage. The widely distributed dry, shallow hillcrests throughout the Project area commonly support communities of low-growing shrubs or ground shrubs, including Mountain Avens (*Dryas* spp.), Crowberry, and Arctic White Heather (*Cassiope tetragona*).

Between the treeline and the valley bottoms of the Boreal Bioclimate Zones, the vegetation patterns reflect the discontinuous distribution of permafrost. Closed canopy pure or mixed stands of White Spruce (*Picea glauca*), Black Spruce, and Alaska Birch (*Betula neoalaskana*) occur on neutral and warm, gentle to moderate slopes. Understorey species typically include Labrador Tea, Prickly Rose (*Rosa acicularis*), Lowbush Cranberry, Tall Bluebells (*Mertensia paniculata*), Bastard Toadflax (*Geocaulon lividum*), and feathermosses. Dry, moderate to steep, south-facing slopes support Aspen forests, overlaying Common Bearberry (*Arctostaphylos uva-ursi*) and grasses. Contrastingly, stunted Black Spruce forests occur on cold, north-facing slopes with imperfect to poor drainage due to near surface permafrost. Understorey species typically include Labrador Tea, sedges, Sheathed Cottongrass (*Eriophorum vaginatum*), and Cloudberry (*Rubus chamaemorus*). Wetland habitats occur infrequently within the Project footprint but are most common along the valley bottoms of the larger creek and river valleys. Within the Mine Site area, the only wetland community is a willow-dominated riparian swamp found adjacent to creeks/drainages, of which 13 ha is located within the Project footprint.

Many of the plant species found within the region are currently or have been previously used by local First Nations as a source of food, or for medicinal and spiritual use, while others have more practical or decorative uses. Both TH and WRFN members report harvesting berries and other edible plants from the Coffee Creek area, which would have supplemented the meat and fish they also harvested from the land (TH 2012, Bates and DeRoy 2014).

3.1 Ecological Communities

Ecosystem mapping (including both Ecological and Landscape Classification (ELC) and Broad Ecosystem Mapping (BEM)) was completed for the Project. The more detailed ELC mapping was completed around the proposed Mine Site and along new sections of the proposed NAR, while BEM was completed along the proposed NAR in sections with existing roads. A Project-specific ecosystem classification system was developed based on field data and literature review. There were 47 vegetated ecosystem units and nine non-vegetated ecosystem units mapped within the Project Area (Mine Site and NAR). The area occupied by each of the vegetated and non-vegetated ecological communities is summarized in Appendix A.

3.2 Rare Plants

There were no COSEWIC or SARA-listed plant species observed during rare plants surveys conducted for the Project. Additionally, no species from the Yukon CDC Track List were located. Populations of three territorial Watch List species were found during plant surveys along the NAR and in the broader survey area. These Watch List plant species include: Spotted Lady's-slipper, Small Enchanter's Nightshade, and Dry-spike Sedge². None of the Watch List plant species were found within the proposed Mine Site area and the ecosystems in which these Watch List plant species were found were determined to be uncommon within the Mine Site footprint (<0.5 ha). As detailed in Section 2.2.1, the Watch List is a list of species for which there is not enough information to determine whether they are of conservation concern. The Yukon CDC actively seeks reports on known populations so that in the future informed assessments can be made on their conservation status.

3.3 Invasive Plants

Invasive plant surveys were completed in 2015 and 2016 along existing sections of the NAR, around the existing Coffee Exploration Camp and airstrip, and the proposed Mine Site. These surveys identified five invasive plant species with an invasiveness rank of 1 that are considered a priority for management, including: Smooth Brome (*Bromus inermis*), Narrow-leaved Hawksbeard (*Crepis tectorum*), Perennial Sow-thistle (*Sonchus arvensis* ssp. *uliginosus*), White Sweetclover (*Melilotus albus*) and Yellow Sweetclover (*Melilotus officinalis*) (Appendix B). Distribution of invasive plants varied by species, but in general, invasive plant species were much more prevalent along the northern sections of the NAR (i.e., north of the Stewart River), than the southern sections. South of the Yukon River, three species (Smooth Brome, Narrow-leaved Hawksbeard, and Perennial Sow-thistle) were found within the Coffee Property (**Error! Reference source not found.**). Rank 1 invasive species within the Coffee Property were found as individual plants, small patches, or as moderate sized patches with medium to high density. Since the discovery of these invasive plants in 2015, the Coffee Environmental Department has been working to eliminate populations within the Coffee Property³.

² When the Vegetation Baseline Report (EDI 2017) was developed, Coffee Creek Scorpionweed (*Phacelia mollis*) was also listed on the Yukon Watch List; however, it has since been removed from the list.

³ Since the completion of baseline studies, invasive plant management activities associated with the exploration program have detected both White Sweetclover and Yellow Sweetclover within the Coffee Property; the Environmental Department is working to eliminate these populations.

Table 3--1 Rank 1 Invasive Plant Species Documented during Baseline Surveys

Common Name	Scientific Name	Location	
		Northern Access Route	Coffee Property
Smooth Brome	<i>Bromus inermis</i>	✓	✓
Narrow-leaved Hawksbeard	<i>Crepis tectorum</i>	✓	✓
White Sweetclover	<i>Melilotus alba</i>	✓	--
Yellow Sweetclover	<i>Melilotus officinale</i>	✓	--
Perennial Sow-thistle	<i>Sonchus arvensis</i>	--	✓

3.4 Trace Metals

Sampling for trace metals was completed on soil, reindeer lichen (*Cladina mitis* and *Cladina rangiferina*), willow, Lowbush Cranberry, and horsetail (*Equisetum arvense*, *Equisetum pratense*, and *Equisetum sylvaticum*) within and surrounding the Mine Site footprint. The aforementioned plants were selected for trace metals analyses because of their dietary importance for wildlife and humans and their widespread availability across the site. The soil samples were compared to the Canadian Council of Ministers of the Environment (CCME) agricultural soil guidelines (note that soil samples were originally compared to CCME industrial soil guidelines in the baseline report). Arsenic was found in concentrations above CCME agricultural soil guidelines in approximately 40% of the soil samples within and around the Mine Site. All soil samples with elevated arsenic levels were collected in close proximity to the proposed Mine Site. These high background levels could be due to the fact that arsenic is associated with complex ores that are mined primarily for their copper, lead, zinc, silver, and gold content (CCME 1997), and these ores may be present at the Mine Site. One site close to the Mine Site footprint also had chromium concentrations higher than CCME guidelines. No CCME guidelines exist for vegetation with which to compare results; however, the results suggest low concentrations of all of the targeted trace metals in the vegetation samples. Other than arsenic, there were no correlations or trends between trace metal concentrations in soil or vegetation and proximity to the Mine Site.

3.5 Vegetation, Revegetation and Reclamation Research

Since 2013, several studies have been initiated to develop site-specific reclamation and revegetation protocols for the Project. Some of these studies have been conducted by Project staff and contractors, while others have been done in collaboration with the Yukon College, Yukon Research Centre, and University of Saskatchewan. Research has included studies of reclamation techniques at exploration drill sites, identification of candidate native plant species for revegetation, collection of local seed from native plant species, as well as seeding trials and greenhouse trials looking at the use of local seed and various soil amendments. Refer to the Reclamation and Closure Plan for detailed information on revegetation and reclamation research.

4.0 VEGETATION PROTECTION MEASURES FRAMEWORK

To reduce or eliminate potential Project-related effects on vegetation, Newmont has committed to a number of vegetation protection and management measures. Some of those measures are general and apply to all Project Phases, some apply to specific Project Phases, and some are temporal and only apply at certain times of year. Where appropriate, Newmont will implement vegetation protection measures prior to construction as mitigation is often most effective when applied pre-emptively rather than as reactive measures. Some mitigation actions will likely be modified through the life of the Project to adapt to changing conditions or improved knowledge about Project-related effects. General mitigation actions that are applicable to all Project Phases are described in Section 4.1 to 4.2. Mitigation actions that are specific to Construction and Operation-phase activities are discussed in Sections 4.3 and 4.4, respectively.

4.1 General Vegetation Protection Measures

The Project will have residual effects on vegetation due to long-term vegetation removal, edge effects on adjacent ecological communities (including compositional changes to potential plant species), and exposure to fugitive dust and emissions. To minimize these effects, Newmont considered several elements in the Project design, including, among others:

- The Project footprint (the area in which ground will be disturbed and Project activities will occur, may include the mine site and/or the NAR) is designed to be as small as possible; examples of considerations made to minimize the footprint include the backfill of pits and waste rock storage facility design. This will minimize vegetation loss to the Project footprint and the extent of indirect effects (e.g., dust deposition).
- The location of the Mine Site and associated infrastructure avoids many of the environmentally sensitive areas (e.g., wetlands, steep south-facing slopes) within the region.
- The use of existing roads along the proposed NAR will limit the amount of vegetation loss as a result of road construction and the associated effects of erosion and invasive plant establishment.

Additionally, a number of mitigation measures will be completed throughout the Construction, Operation, and Reclamation and Closure Phases that will reduce Project-related effects on vegetation. Newmont will conduct the following to minimize the impacts to vegetation throughout the life of the Project:

- Project activities will be restricted to the defined Project footprint. Construction and Operation-phase activities will be restricted to areas that are surveyed, approved, marked, and flagged. Sensitive areas may be fenced off and signed, where appropriate. The Environment Department will ensure that Project activities remain within the marked footprint boundary.
- Within the Project footprint, all personnel will avoid excessive and unnecessary disturbance to existing vegetation.
- Project activities will avoid environmentally sensitive areas, wherever feasible.
- Project activities will engage in measures to reduce fire hazards, including avoiding the use of overheated machinery during clearing. Wildfire danger ratings will be considered, and activities such as clearing may be curtailed when danger ratings are extreme.

4.1.1 Vegetation Awareness Orientation

Project personnel (employee and contractor) awareness programs will help to mitigate potential effects on vegetation by increasing personnel awareness of Newmont's commitment to vegetation protection in the Project area. Personnel will receive a Project-specific orientation that will include important vegetation-related information relevant to the Project. Project personnel will be expected to comply with the direction provided by mine management. Direction will be given such that due care will be taken by all personnel to avoid excessive and unnecessary disturbance to existing vegetation during all Project phases. Training components will include:

- Invasive species identification and observation protocol for Environment Department staff
- Awareness training regarding the importance of avoiding sensitive vegetation features (e.g., known rare plant occurrences and wetlands)
- Awareness of fire prevention practices and periods of increased fire potential.

4.2 Invasive Species Management

The most effective, economical, and ecologically sound approach to managing invasive species, and the risk that introduction poses to existing native vegetation, is to prevent their invasion in the first place (CIPM 2003; IPCBC 2010; UAF 2014; YISC 2015). Given the extent of the Pre-Project invasive plant species distribution, Newmont's management of invasive plant species will differ between the Mine Site and the NAR, although some mitigation measures for invasive plants will be universal across the Project area including:

- Disturbance of native vegetation and exposed soil along roadsides, trails, and waterways will be minimized:
 - To the extent possible, Project activities will avoid disturbing areas that are high-risk sites for the potential spread of invasive species (i.e., within or adjacent to existing infestations).
- Equipment bound for the Mine Site will be inspected prior to accessing the NAR to ensure it is free of visible soils, invasive plant parts and seed.
- Progressive reclamation will be initiated as soon as practical to limit soil exposure. This will include salvaging non-infested topsoil and placing it on disturbed areas (healthy topsoil contains nutrients, microorganisms and native plant propagules that promote native plant revegetation).
- If sourcing gravel to be used on-site, any new gravel sources/quarries will be inspected to ensure that the borrow source is invasive plant-free prior to bringing the gravel to site. When gravel is used from quarries that have established invasive species, it will only be used in locations that already have those same plants established. To the best of Newmont's ability, only gravel from invasive plant-free quarries will be used in areas that do not have established communities.
- Straw matting or similar tools to be used for erosion control purposes will only be used if they can be certified to be weed free.
- Revegetation protocols will target locally collected native seed sources. If additional seed is necessary, it will be limited to certified weed free seed mixes.
- Employee education and awareness training (Section 4.1.1) that includes plant identification and reporting procedures to assist in early detection of invasive species will be provided.

- The Yukon Invasive Species Council's Invasive species list (available at <https://www.yukoninvasives.com/>) will be reviewed annually to determine if additional invasive species have been added, and the presence of any unreported invasive species that are listed will be reported.

In addition to the above mitigation measures for invasive plants, within the Mine Site area, Newmont will actively manage for invasive plants. The following actions will be taken to prevent invasive species spread south of the Yukon River during all Project Phases:

- Annual invasive plant surveys will be conducted in high-risk areas within the Project footprint, such as disturbed or bare ground, roadsides, parking, and staging areas. The results of the invasive plant surveys will be used to locate any invasive plants requiring targeted removal south of the Yukon River, and to document the effectiveness of Project mitigation measures for invasive plants and if necessary, inform adjustments to mitigation practices. If new populations of invasive species are identified during monitoring south of the Yukon River, an investigation will be carried out to determine the pathway of entry, and if possible, changes will be made to reduce the possibility of further introduction. For more details on the annual invasive plant monitoring, refer to the Vegetation Monitoring Plan.
- Where rank 1 invasive species (i.e. highly invasive) are found south of the Yukon River in small or moderate patches, targeted removal will be carried out using mechanical (i.e., hand pulling or mowing) or chemical means to remove or destroy the plants. The decision to hand-pull, mow, or apply chemicals will depend on the species, size of the patch, and location of the patch (i.e., areas close to a watercourse should be hand pulled to prevent seeds dispersing through water, and chemicals from entering the water). Chemical treatment will only be considered where invasive plant patches exceed 25 individuals and are more than 30 m from a waterbody. All chemical treatment will abide by the Pesticide Regulations under the Yukon *Environment Act*, RSY 2002, c.76. If necessary, Yukon Invasive Species Council will be consulted to determine the appropriate removal actions.
- Plants will be picked or mowed during early flowering, prior to seed set whenever possible.
- All plant parts collected during picking will be bagged and incinerated.

North of the Yukon River, the NAR is not the sole responsibility of Newmont due to existing road infrastructure and public access. Newmont will focus on limiting the continued spread of invasive species along this section of road as a result of Project activities through the following mitigation actions:

- Quarry and borrow sites will be inspected for invasive species prior to use. To the extent practicable, Newmont will avoid using materials from quarry and borrow sources with an existing infestation in areas currently free of invasive species.
- To the extent possible, Project activities along the NAR will avoid disturbing areas within or adjacent to existing infestations; if work must occur in these areas, wherever possible, activities will be conducted in advance of seed development to avoid spreading seeds.
- Based on feedback provided by WRFN, Newmont has agreed to extend the annual invasive plant surveys to include the southern sections of the NAR between the Yukon and Stewart rivers. Newmont will not take responsibility for removing or managing any invasive species identified during the annual survey along this stretch of the NAR but will monitor and report on the presence

and abundance of invasive species along this stretch of road. For more details on the annual invasive plant monitoring, refer to the Vegetation Monitoring Plan.

- Newmont will consider participating in regional efforts to manage invasive species in collaboration with other road users or with regulatory agencies.

4.3 Construction-phase Vegetation Protection Measures

The majority of the predicted effects to vegetation will occur during the Construction Phase of the Project. Land clearing will have the most substantive and long-term effect on vegetation within the Project footprint. Additionally, the movement of supplies to the Mine Site from areas outside of Yukon increase the likelihood of invasive plant introduction and spread. The following measures will be implemented, where practical, to minimize the effects to vegetation during Construction, in addition to general mitigations outlined in Sections 4.1 and 4.2:

- Prior to site preparation or construction works, Project footprint boundaries and known environmentally sensitive areas (e.g., wetland habitats, south-facing grassy slopes) will be clearly defined on site plans and in the field by qualified professionals to reduce the potential for effects such as unnecessary vegetation removal.
- Vegetation clearing will be restricted to the defined Project footprint, except where hazard tree removal is required. Vegetation clearing will be undertaken in a manner that minimizes the scarring or destruction of native vegetation outside of the footprint. All vegetation, particularly trees, will be felled to the interior boundary of the footprint to protect the surrounding undisturbed vegetation.
- Prior to construction, buffer zones will be established around environmentally sensitive areas (e.g., wetland habitats, south-facing grassy slopes). Natural vegetation buffer zones of at least 100 m will be retained, wherever possible, adjacent to bodies of water and between cleared areas (Environment Canada 2009).
- Riparian vegetation will be retained wherever possible; trees or shrubs in or adjacent to watercourses will not be destroyed, removed, or cleared to an extent greater than is necessary for the performance of the work. For construction/upgrades along the NAR: in riparian areas, clearing widths will be reduced to 10 m, or 3 m beyond extent of the cut or fill slopes, whichever is greater (compared to a 30-m-wide corridor in other areas). Stream/wetland classifications will be applied to maintain minimum buffers for riparian areas to the extent feasible, however, this will not be feasible along many sections of the NAR, due to existing road alignment and terrain constraints.
- To prevent process solution (contact water) from adversely affecting adjacent vegetation, a redundant system of liners, drainage layers, leak detection, and monitoring systems will be in place for the Heap leach facility (see Heap Leach and Process Facilities Plan).

Proper clearing, grubbing, and topsoil removal will be required to meet progressive reclamation, decommissioning, and closure revegetation commitments. Newmont will conduct the following land stripping mitigations, wherever practicable, during the Construction phase:

- An overall site clearing/stripping plan will be developed prior to construction for brush and vegetation material, topsoil, and overburden stockpiles to ensure these materials are properly stored for later use. Proper segregation of topsoil and woody overburden will allow for a natural seed bank and reduce the need for imported seed mixes.

- Topsoil and overburden stockpiles will be constructed to prevent or limit erosion by wind or rainfall through:
 - Covering and/or vegetating stockpiles as soon as is practical
 - Managing stockpile configuration
 - Placing frozen soils in the appropriate stockpile areas as per the Waste Rock, Overburden, and Frozen Materials Management Plan.

Dust reduction and suppression will also be important during construction because fugitive dust can cover local vegetation and potentially affect plant function (Spatt and Miller 1981). Refer to the Air Quality and Greenhouse Gas Management Plan for specific measures to limit fugitive dust.

4.3.1 Pre-Construction Surveys: Rare Plants

As indicated in Section 4.2, no listed rare plants were identified in the Project footprint during baseline surveys. While surveys can confirm the presence of rare species, they can seldom rule out the existence of rare species (Lancaster 2000). Given the potential for rare plants, pre-clearing surveys will be conducted by qualified individuals in ecosystems that have high potential for supporting rare plants prior to disturbance. Surveys will be completed during the summer months (July to August). If vegetation clearing is scheduled during the fall, winter, or early spring then these surveys will be completed during the previous summer. If a plant species of potential conservation concern listed under *SARA*, COSEWIC or the Yukon CDC Track List is discovered during clearing, the following steps will be followed:

- If a plant species of potential conservation concern listed under *SARA*, COSEWIC or the Yukon CDC Track List is found: clearing and construction in the vicinity will stop; the Environment Department will design and implement a mitigation plan to minimize potential adverse effects (the plan will be tailored to the identified rare plant and designed on a case by case scenario); the sighting will be reported to the Yukon CDC.
- If a Yukon CDC Watch List species is found, the sighting will be reported to the Yukon CDC, and Newmont will inquire whether the conservation status has changed and whether mitigation is required. If possible, without undue changes to construction, the plant(s) will be avoided.

The ranking of the three territorial Watch-list species observed in the study area will be reviewed annually, as part of Project's annual reporting and if any are up-listed and determined to be at risk or of conservation concern during the Project's Construction or Operation phases, a mitigation plan will be designed to minimize potential adverse effects.

4.4 Operation-Phase Vegetation Protection Measures

The Operation Phase is the longest Project Phase, with regular mining activities occurring throughout this Phase. Once the Project is operational, the following measures will be implemented to minimize the effects to vegetation, in addition to general mitigations outlined in Sections 4.1 to 4.2:

- No materials generated during the Operation Phase, whether hazardous or non-hazardous, will be dumped into vegetated areas adjacent to the Project footprint.
- Newmont will engage in progressive reclamation of Mine Site infrastructure during the Operations phase. This may also include revegetating roads which are no longer used, and areas affected during earlier activities, such as drill pads established during exploration.

Appropriate water management, dust management and erosion and sediment control will also be important to managing effects to vegetation during the Operation Phase. Relevant measures are described in the Water Management Plan, Air Quality and GHG Management Plan, and Erosion and Sediment Control Plan.

4.4.1 Progressive Reclamation

Newmont will engage in progressive reclamation of the Mine Site during the Operation Phase, to the extent feasible. This may include Mine Site infrastructure areas that are no longer used, and areas affected during earlier activities, such as drill pads established during exploration. Revegetation and reclamation protocols for the Project, for both progressive reclamation activities during Project operations and reclamation and closure activities during the Reclamation and Closure and Post-closure Phases of the Project, will follow several key principles:

- Revegetation objectives will consider both short- and long-term goals. In the short term, revegetation practices will focus on soil stability and erosion control targets, establishing initial site cover to prevent erosion and kick-start soil-building processes. In the long-term, revegetation will target species to support a self-sustaining vegetative community that is similar to the ecological communities present prior to the development of the Project and meets set biodiversity targets (refer to the Reclamation and Closure Plan).
- Revegetation will consider site-specific characteristics to determine appropriate species and reclamation techniques, both broadly throughout the Mine Site area (i.e., constraints associated with revegetating a site located in the subalpine and upper elevations of the boreal forest including the short growing season, poorly developed organic soils, etc.) and specific characteristics of individual sites (e.g., elevation, slope gradient, and slope orientation).
- Revegetation will target use of locally collected seed and native plants propagated from locally collected seed.

The following guidelines will be used for progressive revegetation during the Operations Phase:

- All areas temporarily cleared during the Construction or Operation Phases will be re-vegetated as soon as is feasible.
- Progressive reclamation activities will be consistent with the site-specific objectives for mine closure and with information learned from revegetation research programs (refer to the Reclamation and Closure Plan).
- Local topsoil and organic material salvaged and stockpiled during construction will be used in revegetation efforts. Salvaged organics and topsoil can improve the soils nutrient status and moisture retaining properties while providing natural seed.
- Surface preparation including landform contouring and mechanical surface roughening will be completed prior to revegetation where appropriate⁴.

⁴ Generally, grading, and de-compacting granular surfaces on subalpine sites is not recommended. It is often impractical and counterproductive in terms of drainage, erosion, and plant growth, because it can cause the thin layer of organics and soil to become buried deeper in the profile and bring rocky material to the surface (Matheus and Omtzigt, 2013).

- Effort will be given to maintaining thermal regimes on permafrost sites, where applicable, by recreating an insulating layer as quickly as possible (refer to the Waste Rock, Overburden, and Frozen Materials Management Plan).
- Fertilizer used will be avoided in areas where surface run-off could pollute water bodies (typically within 30 m of a waterbody).
- Revegetation work will be scheduled at appropriate times of year. Due to the short growing season, revegetation activities will occur between late May and the end of September; in most cases, seeding will be completed during spring and early summer.
- Revegetation will be conducted using locally collected seed or native plants propagated from locally collected seed. Collection of local seed will commence prior to Project construction to ensure seed availability for progressive reclamation activities.
- If sufficient volumes of locally collected seed are not available, locally collected seed will be augmented with non-agronomic seed mixes based on native species observed in the area or based on the seeding guidance outlined in the Yukon Revegetation Manual (Matheus and Omtzigt 2013). Seed mixes, if used, will be certified invasive-free.
- Any equipment brought to site for use in revegetation will be inspected prior to use, to minimize the risk of spreading invasive plants.
- Revegetation plans will include consideration of site conditions, including elevation, slope gradient, and slope orientation (e.g., north-facing slopes), and will target appropriate species for the site.
- Revegetation strategies will consider the potential for vegetation species to act as a wildlife attractant.
- Natural revegetation will be promoted in reclamation efforts to the greatest extent possible.

Newmont has been conducting research into reclamation and revegetation at the Coffee Property since 2013. This work is continuing, and research results will be incorporated into revegetation practices as warranted. Site-specific progressive reclamation survey methods will be designed as the Project develops and revegetation prescriptions and methodologies are defined. Parameters that will be measured during revegetation surveys include plant species percent cover, species composition and diversity, species survival, and vegetation structure. Long-term survey plots will be established following revegetation so that revegetation prescriptions can be monitored throughout the Project's Operation Phase and adapted as deemed necessary moving into the Reclamation and Closure and Post-closure phases. The type and number of survey plots will be developed as reclamation units are identified during Operation. Sampling intensity will be chosen with the intent of providing sufficient coverage and statistical power.

The Reclamation and Closure Plan includes information on progressive revegetation monitoring requirements (Section 2.3.1.1: Revegetation Reclamation Research). Revegetation prescriptions will be designed to be adaptive and will evolve based on early monitoring findings. If a revegetation effort has failed or new growth is very sparse, additional planting and seeding or revised techniques may be required. The revegetation goals set for each reclamation unit may differ depending on site conditions and susceptibility to erosion.

Reclamation and closure planning will continue over the life of the mine. The current Reclamation and Closure Plan was drafted to submit for mine licensing. Successive iterations of the Plan will be reviewed on a regular basis and are expected to be submitted at least every two years.

5.0 VEGETATION PROTECTION PLAN REVISIONS

This Vegetation Protection Plan will be updated and revised as required to ensure that mitigation measures are adapted from the results of the Project effects monitoring, as warranted, and incorporate best management practices that may become available during the life of the Project. The Vegetation Protection Plan updates will include consideration of management reviews, incident investigations, shared Traditional or local knowledge, new or improved scientific methods, regulatory changes, or other Project-related changes.

6.0 REFERENCES

- Alberta Native Plant Council (ANPC). 2012. ANPC Guidelines for Rare Vascular Plant Surveys in Alberta, 2012 Update. Alberta Native Plant Council, Edmonton, Alberta. Available at <http://www.anpc.ab.ca/content/resources.php>. Accessed March 2016.
- Bates, P., and S. DeRoy. 2014. White River First Nation Knowledge and Use Study. Private report prepared for Kaminak Gold Corporation by the Firelight Group, with White River First Nation.
- Canadian Council of Ministers of the Environment (CCME). 1997. A Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines: Arsenic. Canadian Council of Ministers of the Environment, Winnipeg, MB, Canada.
- Canadian Council of Ministers of the Environment (CCME). 2001. Canadian soil quality guidelines for the protection of environmental and human health: arsenic (inorganic). Canadian Council of Ministers of the Environment, Winnipeg, Manitoba.
- Center for Invasive Plant Management (CIPM). 2003. Invasive Plant Prevention Guidelines. Available at http://www.weedcenter.org/store/docs/CIPM_prevention.pdf. Accessed March 2016.
- Environment Canada. 2009. The Environmental Code of Practice for Metal Mines. Environment and Climate Change Canada. Available at <https://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=CBE3CD59-1>. Accessed March 2016.
- Environment Yukon. 2011. Best Management Practices for Works Affecting Water in Yukon. Water Resources Branch, Government of Yukon. Available at http://www.env.gov.yk.ca/publications-maps/documents/bestpractes_water.pdf. Accessed March 2016.
- Environmental Dynamics Inc (EDI). 2017. Coffee Gold Mine: Vegetation Baseline Report. Prepared for Kaminak Gold Corporation, Vancouver, BC. EDI Environmental Dynamics Inc., Whitehorse, Yukon. February 2017.
- Government of Alberta. 2008. Field scouting. Agriculture and Forestry. Available at [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/prm2365](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/prm2365). Accessed March, 2016.
- Government of Yukon. 2006. Yukon Mine Site Reclamation Policy. Energy, Mines and Resources, Government of Yukon, Whitehorse, Yukon, Canada.
- Government of Yukon. 2013. Reclamation and Closure Planning for Quartz Mining Projects: Plan Requirements and Closure Costing Guidance. Yukon Water Board and Energy, Mines and Resources, Government of Yukon. Available at http://www.emr.gov.yk.ca/mining/pdf/mml_reclamation_closure_planning_quartz_mining_projects_aug2013.pdf. Accessed April 2016.
- InterGroup Consultants Ltd. 2009. Socio-Economic Setting for the Proposed Mayo Hydro Enhancement Project (Mayo B). Submitted to Yukon Energy (February 2009).

- Invasive Plant Council of British Columbia (IPCBC). 2010. Best Practices for Managing Invasive Plants on Roadsides. Available at https://www.th.gov.bc.ca/publications/eng_publications/environment/ManagingInvasivePlants.pdf. Accessed March 2016.
- Lancaster, J. 2000. Alberta Native Plant Council Guidelines for Rare Plant Surveys. Available at <http://www.anpc.ab.ca/downloads.htm>. Accessed March 2016.
- Luttmerding, H.A., D.A. Demarchi, E.C. Lea, D.V. Meidinger, and T. Vold., Editors. 1990. Describing Ecosystems in the Field. Second edition. B.C. Ministry of Environment, Lands and Parks and B.C. Ministry of Forestry. Ministry of the Environment Manual 11. Victoria, British Columbia, Canada.
- Matheus, P., and T. Omtzigt. 2013. Yukon Revegetation Manual: Practical Approaches and Methods. Available at https://www.yukoncollege.yk.ca/downloads/front_Chapter_1-17.pdf. Accessed March 2016.
- Oldham, M.J. 2007. 2006 Survey of Exotic Plants along Northwest Territories Highways. Available at http://www.enr.gov.nt.ca/sites/default/files/reports/exotic_plants_survey.pdf. Accessed August 2015.
- Popadyne, R. 2007. Finding a Medicine Tree. First Nation of No-Cho Nyak Dun, in collaboration with the Yukon Department of Education.
- Spatt, P.D., and M. Miller. 1981. Growth Conditions and Vitality of Sphagnum in a Tundra Community along the Alaska Pipeline Haul Road. *Arctic* 34: 48-54.
- Tr'ondëk Hwëch'in (TH) Heritage Department. 2011. Tr'ondëk Hwëch'in Best Practices for Heritage Resources. Available at <http://www.trondek.ca/downloads/THBestPractices.pdf>. Accessed March 2016.
- Tr'ondëk Hwëch'in (TH). 2012. Coffee Creek Traditional Knowledge Survey, Final Report (December 2012).
- University of Alaska Fairbanks (UAF). 2014. Best Management Practices: Controlling the Spread of Invasive Plants during Road Maintenance. Available at <http://aknhp.uaa.alaska.edu/big-files/AKEPIC/Publications/2014/Graziano%20et%20al.%202014%20BMPs.pdf>. Accessed March 2016.
- Yukon Chamber of Mines. 2010. Yukon Mineral and Coal Exploration Best Management Practices and Regulatory Guide. Available at <http://www.yukonminers.ca/index.php/resources/best-management-practices>. Accessed March 2016.
- Yukon Environmental and Socio-economic Assessment Board (YESAB). 2005. Proponent's Guide to Information Requirements for Executive Committee Project Proposal Submissions. Version 2005.11. Available at <http://www.yesab.ca/wp/wp-content/uploads/2013/04/Proponents-Guide-to-Info-Requirements-for-EC-Project-Submission.pdf>. Accessed December 2015.
- Yukon Invasive Species Council (YISC). 2015. Managing Weeds and Invasive Plants. Information for producers, rural property owners, hobby farmers and land developers in Yukon. Available at http://www.yukoninvasives.com/pdf_docs/Acerages_new2sm.pdf. Accessed March 2016.

Personal Communication

Bennett, B. 2016. Coordinator, Yukon Conservation and Data Centre (CDC). Whitehorse, Yukon. Phone call re required mitigation for watch-list species.

Tr'ondëk Hwëch'in (TH) Technical Working Group (TWG) meeting, April 12 and 13, 2016. Dawson, Yukon.

APPENDIX AA

Mapped Ecosystems Within the Project Footprint

Mapped Ecosystems within the Project Footprint

Mapped Feature	Code	LAA ¹ (ha)	% LAA	Project Footprint (ha)	Footprint % LAA Area
Ecological Land Classification: Boreal Subzone					
Purple Reedgrass – Lichen	20Capu	137	0.3	56	0.1
Kinnikinnick	20Aruv	142	0.3	18	0.0
Aspen – Kinnikinnick – Purple Reedgrass	21	1,201	2.4	287	0.6
Aspen – Soapberry – Purple Reedgrass	01A	360	0.7	222	0.5
Alaska Birch – Labrador Tea – Tall Bluebells – Step Moss	01W	1,321	2.7	360	0.7
Alaska Birch – White Spruce – Labrador Tea – Lowbush Cranberry – Feathermoss	01WSw	2,416	4.9	757	1.5
White spruce – Rose – Bastard Toadflax – Feathermoss	01Sw	293	0.6	167	0.3
Spruce – Labrador Tea – Lowbush Cranberry – Feathermoss	01Sw(Sb)	1,349	2.8	302	0.6
Spruce – Feathermoss (early successional sites due to fire)	01	2,437	5.0	549	1.1
Black spruce – Labrador Tea – Reindeer Lichen	30	930	1.9	140	0.3
Spruce – Birch – Lowbush Cranberry – Feathermoss	31	1,048	2.1	329	0.7
Black spruce – Scrub birch – Labrador Tea - Cloudberry	32Sb1	190	0.4	164	0.3
Black spruce – Labrador Tea – Cottongrass	32Sb2	134	0.3	21	0.0
Black spruce – Labrador Tea – Cloudberry – Sedge	32	2,028	4.1	349	0.7
Black spruce – Labrador Tea – Sedge – Brown Moss – Reindeer Lichen	33	606	1.2	164	0.3
White spruce – Horsetail	40	529	1.1	166	0.3
Balsam Poplar – Rose – Horsetail	41	349	0.7	160	0.3
Alaska Birch – Alder – Reedgrass	42	176	0.4	29	0.1
Tall shrub Balsam Poplar – Willow	43	71	0.1	13	0.0
Total Area of Boreal Ecological Communities		15,717	32.1	4,253	8.7

Mapped Feature	Code	LAA ¹ (ha)	% LAA	Project Footprint (ha)	Footprint % LAA Area
Ecological Land Classification: Subalpine Subzone					
Tors	10	1	0.0	0.0	0.0
Felsenmeer	11	1	0.0	0.0	0.0
Scrub Birch – Mountain Avens - Lichen	12	90	0.2	13	0.0
Scrub Birch – Crowberry – Lowbush Cranberry	13	190	0.4	101	0.2
Scrub Birch – Willow – Mountain Avens	14	79	0.2	9	0.0
Scrub Birch – Lowbush cranberry - Feathermoss	01	2,126	4.3	865	1.8
Scrub Birch – Sedge - Feathermoss	30	318	0.6	113	0.2
Spruce – Scrub Birch - Feathermoss	31	647	1.3	222	0.5
Black Spruce – Labrador Tea – Lowbush Cranberry – Sedge	32	473	1.0	95	0.2
Willow – Horsetail – Peatmoss	40	55	0.1	8	0.0
Total Area of Subalpine Ecological Communities		3,980	8.1	1,426	2.9
Broad Ecological Communities					
Felsenmeer	Fe	0.0	0.0	0.0	0.0
Subalpine / Alpine Shrub	Ss	74	0.2	0.0	0.0
High Elevation Sparse Coniferous Forest	Fcs	896	1.8	559	1.1
High Elevation Shrubby Riparian	HSr	0.0	0.0	0.0	0.0
Grassland	Gg	299	0.6	81	0.2
Upland / Closed Canopy Forest	UpF	19,626	40.0	7,081	14.4
Riparian Forest	RF	1,039	2.1	0.0	0.0
Stunted Coniferous Forest	Stcs	2,001	4.1	600	1.2
Low Elevation Shrubby Riparian	LSr	304	0.6	90	0.2
Total Area of Broad Ecological Communities		24,239	49.4	8,411	17.2

Mapped Feature	Code	LAA ¹ (ha)	% LAA	Project Footprint (ha)	Footprint % LAA Area
Wetland Ecological Communities					
Spruce – Willow – Labrador Tea – Sedge Fen	F1	255	0.5	94	0.2
Spruce – Red Bearberry – Brown Moss Fen	F2	65	0.1	41	0.1
Birch – Leatherleaf – Sedge Fen	F3	194	0.4	76	0.2
Willow – Horsetail Swamp	S1	206	0.4	53	0.1
Willow – Reedgrass Swamp	S2	12	0.0	2	0.0
Beaked Sedge Marsh	M1	6	0.0	4	0.0
Horsetail – Sedge Marsh	M2	1	0.0	0.0	0.0
Marsh	M	27	0.1	14	0.0
Bog	B	0.0	0.0	0.0	0.0
Fen	F	415	0.8	125	0.3
Swamp	S	11	0.0	10	0.0
Total Area of Wetland Vegetation Communities		1,192	2.4	419	0.9
Anthropogenic and Non-vegetated units					
Anthropogenic	An	56	0.1	23	0.0
Gravel bar	Gb	30	0.1	5	0.0
Placer mine	Mp / Pm	2,770	5.7	1,610	3.3
Pond	Pd	4	0.0	1	0.0
Placer mining pond	Ppd	160	0.3	54	0.1
Road surface	Rd	51	0.1	39	0.1
River	Ri	721	1.5	602	1.2
Rock	Ro	68	0.1	15	0.0
Talus	Rt	37	0.1	7	0.0
Total Area of Anthropogenic and Non-vegetated units		3,897	7.9	2,356	4.8
Total LAA Area		49,025	100	16,865	34.5

¹ LAA refers to the Local Assessment Area defined as: the proposed Project Area with a minimum 1 km radius buffer plus a little bit more around the mine site area (in general to height of land).

APPENDIX BB

Invasive Species Information Sheet

Smooth Brome (Bromus inermis)

Family: Poaceae — Grass Family

Smooth Brome has been widely introduced in North America for use in pastures and grass as hay. Its native origin is Germany, Hungary, France, and northern Asia. Across Canada, Smooth Brome is known for its invasive properties. In Yukon, its invasiveness rank is 1 (top priority). It is found along most Yukon highways, as a result of roadside seeding and erosion control, as well as old settlements located far from roads or rivers, likely due to hay production. It is known from every community in Yukon except Old Crow.



Smooth Brome is a cold hardy, persistent, creeping perennial grass. Once established, it grows creeping underground rhizomes. Stems are smooth to soft or stiff-hairy, up to 1.2 m in height. Leaf blades are flat, smooth to somewhat hairy, 3 mm to 10 mm wide. Commonly, there is a W-shaped line on the upper leaf. It has ear-shaped lobes at the bases of the leaf that clasp the stem and a translucent tongue-like appendage called a ligule, 0.5-2.5 mm long. Seed heads are 7 cm to 20 cm long with spikelets that contain the grass' flowers and seeds. Spikelets are purple-tinged, and the overall shape resembles a cigar with tapered ends.

During baseline studies, Smooth Brome was found scattered along the NAR and around the Coffee exploration camp. The density distribution of Smooth Brome along the NAR was relatively low compared to other invasive plant species. At the Coffee exploration camp, it was found throughout most of the cleared areas surrounding buildings with a high-density distribution class of 8 (continuous dense occurrence of a species), likely as a result of previous agricultural use of the area. For more information, see the Vegetation Baseline Report (Coffee Project Proposal, Appendix 15-A)

Narrow-leaved Hawksbeard (Crepis tectorum)

Family: Asteraceae — Aster Family

Narrow-leaved Hawksbeard is native to Europe. Introduced as a contaminant in seed, it is now widespread across Canada and the northeastern United States. It is found along roadsides, pull outs, pastures, and disturbed, open areas. In Yukon, it occurs along all major highways and its invasiveness rank is 1 (top priority).



Narrow-leaved Hawksbeard is an annual forb from a short taproot. Stems are erect, smooth to hairy, solitary, branched, measuring 0.3 m to 1.0 m tall. It has two different types of leaves. Basal leaves are lance to oblanceolate in shape, 2 cm to 15 cm long and 0.3 cm to 4 cm wide, smooth to short-hairy with variable margins. Stem leaves clasp the stem and are mostly linear. Flowers are yellow, numerous, and concentrated at the ends of branches. Subtending the flower heads are bracts that are short woolly hairy or stiff-hairy.

During baseline surveys, Narrow-leaved Hawksbeard was found scattered along the NAR, as well as the Coffee exploration airstrip and adjacent exploration road. The presence of Narrow-leaved Hawksbeard along the NAR and at previously disturbed, open areas was high compared to other invasive plant species. Within the Coffee Property, Narrow-leaved Hawksbeard was found at six locations around the airstrip, the existing exploration access road, and the Coffee exploration camp. The distribution of Narrow-leaved Hawksbeard at these sites ranged from a single plant to a patch measuring approximately 225 m² with a density distribution class was “7 – continuous occurrence of a species with a few gaps in the distribution”. For further information, refer to the Vegetation Baseline (Coffee Project Proposal, Appendix 15-A).

White Sweetclover (Melilotus albus)

Family: Fabaceae — Pea Family

White Sweetclover has been widely introduced in North America for agricultural purposes as a forage crop and honey plant. It is considered weedy or invasive across most countries where introduced. Its native origin is Europe and Asia. In Yukon, its invasiveness rank is 1 (top priority). It is found along most major Yukon highways and also spreads along rivers. Sites where White Sweetclover is known on the Yukon River are Whitehorse, Carmacks, and Dawson; it is considered a serious problem on Alaskan waterways, including tributaries of the Yukon River.



White Sweetclover is an annual or biennial forb from a taproot that rapidly colonizes well drained, gravelly soils such as roadsides, waste areas, and river banks. Stems are erect, 0.5-2 m tall, freely branched, finely to short-hairy or glabrous. Leaves are alternate on the stem, pinnately compound in three's, oblong to elliptic in shape, 1 cm to 4 cm long, mostly smooth with fine-teeth on the margins. Flowers are sweet-scented, arranged in long spikes of 20 to 50 white, pea-like flowers. Fruit pods are egg-shaped, nodding, 3 cm to 6 mm long, smooth and net-veined. A single plant can produce up to 300,000 seeds which remain viable in the soil or in water for several years (80% survival after 30 years; YISC 2015).

During baseline surveys, White Sweetclover was found in several locations along the NAR. It was recorded from 14 transects and the density distribution class ranged from “2 - few sporadically occurring individuals” to “8 - continuous dense occurrence of a species” (Luttmerding et al. 1990). One notable patch was found on the north side of the Yukon River in a previously disturbed, open clearing directly adjacent the river. This patch was removed. Refer to the Vegetation Baseline (Coffee Project Proposal, Appendix 15-A).

Yellow Sweetclover (Melilotus officinalis)

Family: Fabaceae — Pea Family

Yellow Sweetclover has been widely introduced in North America for agricultural purposes as a forage crop and honey plant. It is considered weedy or invasive across most countries where introduced. Its native origin is Europe and Asia. In Yukon, its invasiveness rank is 1 (top priority). It is found along several major Yukon highways but is not as prevalent as White Sweetclover.



Yellow Sweetclover is very similar to White Sweetclover. It is an annual or biennial forb from a taproot that colonizes well drained, gravelly soils such as roadsides, waste areas, and river banks. Stems are erect, 0.5 m to 2 m tall, freely branched, finely to short-hairy or glabrous. Leaves are alternate on the stem, pinnately compound in threes, oblong to elliptic in shape, 1 cm to 4 cm long, and mostly smooth with fine teeth on the margins. Flowers are yellow, sweet-scented in drying, arranged in long spikes of 20 to 50 pea-like flowers. Fruit pods are egg-shaped, nodding, 3 mm to 5 mm long, smooth, and cross-ribbed. A single plant can produce up to 300,000 seeds, which remain viable in the soil or in water for several years (80% survival after 30 years; YISC 2015).

During baseline studies, Yellow Sweetclover was only found along the NAR within approximately 6 km of the North Klondike highway. The density distribution of Yellow Sweetclover was moderate where it was found (density distribution class ranged from “4 – several sporadically occurring individuals” to “6 – several well-spaced patches or clumps of a species”; Luttmerding et al. 1990). For further information, refer to the Vegetation Baseline Report (Coffee Project Proposal, Appendix 15-A).

Perennial Sow-thistle (Sonchus arvensis ssp. uliginosus)

Family: Asteraceae — Aster Family

Perennial Sow-thistle has been introduced to North America. It is native to Europe and the Caucasus region of Asia (Royer and Dickson 1999). Perennial Sow-thistle is known to be invasive and, in several states, and provinces is legally listed as noxious. In Yukon, its invasiveness rank is 1 (top priority). It is known from primarily the Whitehorse area, as well as Carmacks, Destruction Bay, Johnson’s Crossing, and the Kotaneelee gas plant. Recent reports signal a spread of this species along highway corridors in Yukon.



Perennial Sow-thistle resembles a tall dandelion more than a true thistle plant. It is a perennial forb with persistent, aggressive underground rhizomes that spread horizontally, up to 10 feet from the flowering plant. Stems are erect, branched, smooth, growing up to 2 m tall and exude a milky juice when punctured. Leaves are alternate on the stem, strongly clasping, and waxy with weakly prickly edges. Flowering heads are yellow, large 3 cm to 5 cm wide, subtended by smooth, green, waxy bracts. Fruit seeds are 2.5 mm

to 3.5 mm long, ribbed, and cross-wrinkled topped with a conspicuous pappus of white, wispy bristles that can easily be dispersed by the wind.

During baseline studies, Perennial Sow-thistle was found at only one site along the exploration airstrip at Coffee where four individual plants were found directly adjacent to the plane loading/unloading dock. All individuals were “dead-headed” meaning the top part of the plant containing the seeds was removed, bagged, and burned in the incinerator. For more information, see the Vegetation Baseline Report (Coffee Project Proposal, Appendix 15 A).

APPENDIX C

Vegetation Protection Plan – Table of Concordance

Proponent Commitment Table of Concordance - Vegetation Protection Plan

Mitigation Name	Reference	Proponent Committed Mitigation	Management Plan	Commitment Incorporated	Section Location	Notes
Vegetation Protection Plan	SIR1-11.1-R231 (YOR 2017-0211-326-2)	On the Mine Site, material stockpiles will be designed and oriented to reduce wind erosion and material drop heights will be minimized to reduce dust emissions associated with ore handling. Trace metals sampling of vegetation will be addressed in the Vegetation Protection Plan.	Air Quality and Greenhouse Gas Management Plan; Vegetation Monitoring Plan	Yes	AQ GHG Management Plan Section 5.0: Dust Control Measures Vegetation Monitoring Plan Section 4.0: Trace Metals Monitoring	
Vegetation Protection Plan	SIR4-R4 (YOR 2017-0211-4259)	Preclearing surveys for rare plants will be conducted prior to disturbance in ecological communities deemed to have high potential for supporting rare plants.	VPP	Yes	VPP Section 4.3.1: Pre-Construction Surveys: Rare Plants	
Vegetation Protection Plan	SIR6-R6-15 (YOR 2017-0211-7131)	Annual monitoring for Invasive species will be conducted in high-risk areas throughout the mine site area (i.e., the Project footprint south of the Yukon River), including potential entry points, locations with high volumes of people, vehicles and equipment, and locations with exposed or disturbed soil, including mine infrastructure, roadsides, parking and staging areas, airstrips, and camp facilities, as well as recently reclaimed areas.	VPP	Yes	VPP Section 4.2.1: Invasive Plant Surveys	
Vegetation Protection Plan	TH Proposed Conditions (March 2020) (YOR 2017-0211-3971)	<p>The Proponent shall inspect equipment bound for the Mine Site prior to accessing the NAR to ensure it is free of visible soils, invasive plant parts and seed. Equipment that fails inspection will be cleaned in accordance with protocols to be developed by the Proponent.</p> <p>The Proponent shall develop and implement methods for monitoring and managing invasive species at the Mine Site and along access routes and other areas under its care and control.</p> <p>The Proponent shall review the Yukon Invasive Species Council's Invasive species list annually to determine if additional invasive species have been added and report the presence of any unreported invasive species that are listed.</p>	VPP	Yes	VPP Section 4.2: Invasive Species Management	