PRELIMINARY DECOMMISSIONING & RECLAMATION PLAN

BELLEKENO MINE

KENO HILL SILVER DISTRICT

PREPARED BY:

ACCESS CONSULTING GROUP

JULY 2009

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION

1.1 PROJECT SUMMARY

Alexco is currently moving forward with the assessment and permitting required for the development of the Bellekeno Mine. However, should advanced underground exploration cease without moving to production, site decommissioning and reclamation would be undertaken as per the Bellekeno Exploration Closure Plan (March 2009). In accordance with Mining Land Use Approval LQ00240, Part 4, the Bellekeno Exploration Closure Plan was prepared to outline the decommissioning and reclamation activities associated with the Bellekeno advanced exploration program. All decommissioning and reclamation work must be completed by the Class 4 MLU Approval expiry date of June 16, 2018, provided the mine does not move to production in the meantime.

However, in all likelihood the Bellekeno Mine will move to production and this Preliminary Decommissioning & Reclamation Plan (DRP) has been developed based on this premise using the previously prepared Bellekeno Exploration Closure Plan as a template.

Upon cessation of mining at Bellekeno, Alexco will remain active on the property for many years undertaking the following activities:

- Development of the Existing State of Mine Closure Plan. Closure and reclamation planning for the entire district will be developed in accordance with the Subsidiary Agreement with Government of Canada and Government of Yukon and once approved this plan will be implemented;
- Continued care and maintenance, including water treatment, throughout the Keno Hill Silver District until the Existing State of Mine Closure Plan is assessed and permitted for implementation;
- Continued exploration throughout the extensive claim block including potential production at other past producing mine sites. Thus, while 3rd party rates will be used for closure costing purposes, closure activities at Bellekeno would in all likelihood be undertaken by Alexco personnel using Alexco equipment; and

- Continued use of the existing camp located at Flat Creek (including water use and wastewater disposal to the septic system) to support the listed activities.

Figure 1-1 shows the general project location within Yukon, while Figure 1-2 shows the location on a smaller scale proximate to Keno City. A certain amount of the footprint of the Bellekeno Mine is taking place on previously impacted terrain and watersheds. Certain procedures and environmental mitigative measures developed for the advanced exploration program have provided information to support the development of technically sound assumptions for this DRP for the Bellekeno Mine. Components of the exploration program overlap with components comprising the Bellekeno Mine.

The Bellekeno Mine consists of the following main components:

- Conventional flotation mill & supporting infrastructure: coarse ore stockpile, plant services, fuel storage area, miners' dry area, offices, trailers, road, portal, underground workings;
- Dry-stack tailings facility (DSTF);
- Bellekeno 625 waste rock storage areas (non-AML WRDA);
- Potentially-AML waste rock storage facilities;
- Bellekeno 625 water treatment facilities;
- Water treatment facility to treat mill wastewater;
- Temporary stock pile locations for mill tailings and mineralized rock;
- Haul roads (ore to Mill; waste rock; tailings to underground or DSTF) – upgrade power line haul road and Christal Lake haul road (from Duncan Creek road to the mill); new Keno City bypass, including new culvert at Lightning Creek;
- Power distribution system (power poles, transformers); and
- Camp.

Please refer to Figure 1-3 for the location of these components.

The closure measures that are expressed herein are based on the general approach and best management practices used by the mining industry today, which has in recent years developed a great deal of experience in different climates and physical circumstances with revelation.

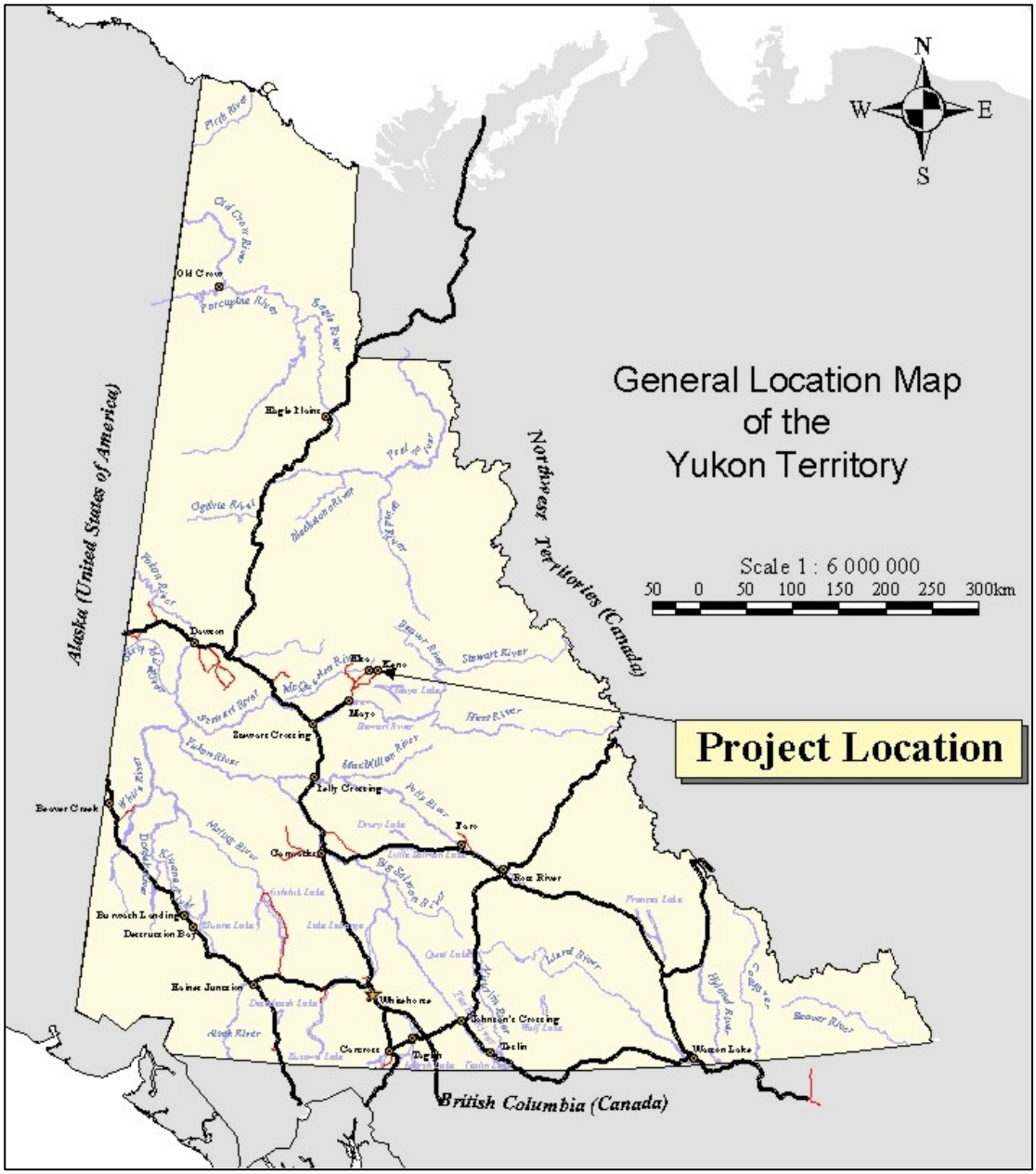
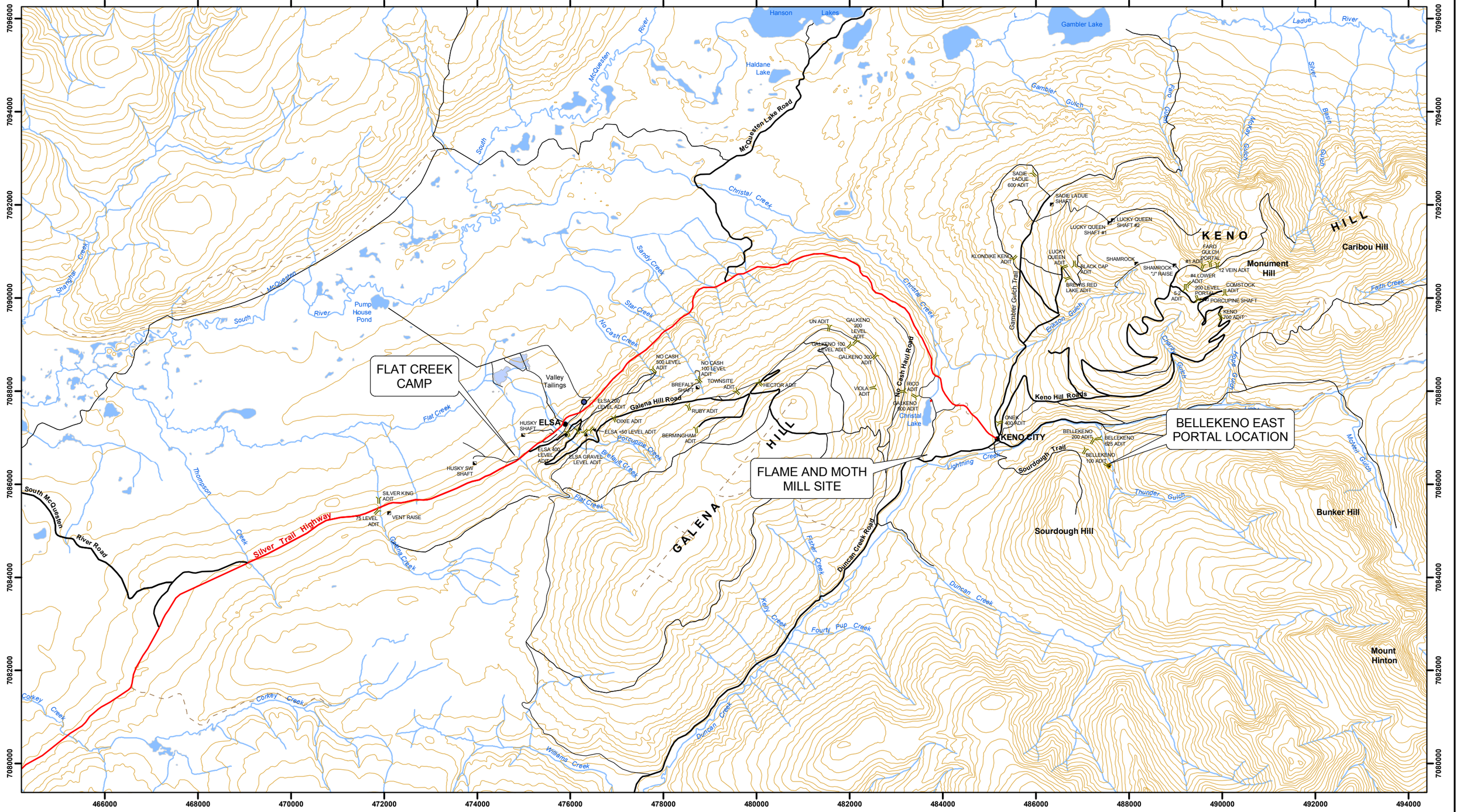


Figure 1-1 General Location Map



N

1:75,000
(when plotted on 11x17 inch sheet)

0 1 2 4 6 km

Legend

Topography

- Town
- Silver Trail
- Secondary Road
- Limited-use road
- Trail
- Watercourse
- Waterbody

Mine Workings

- Adit
- Shaft (to surface - connection to underground not determined)

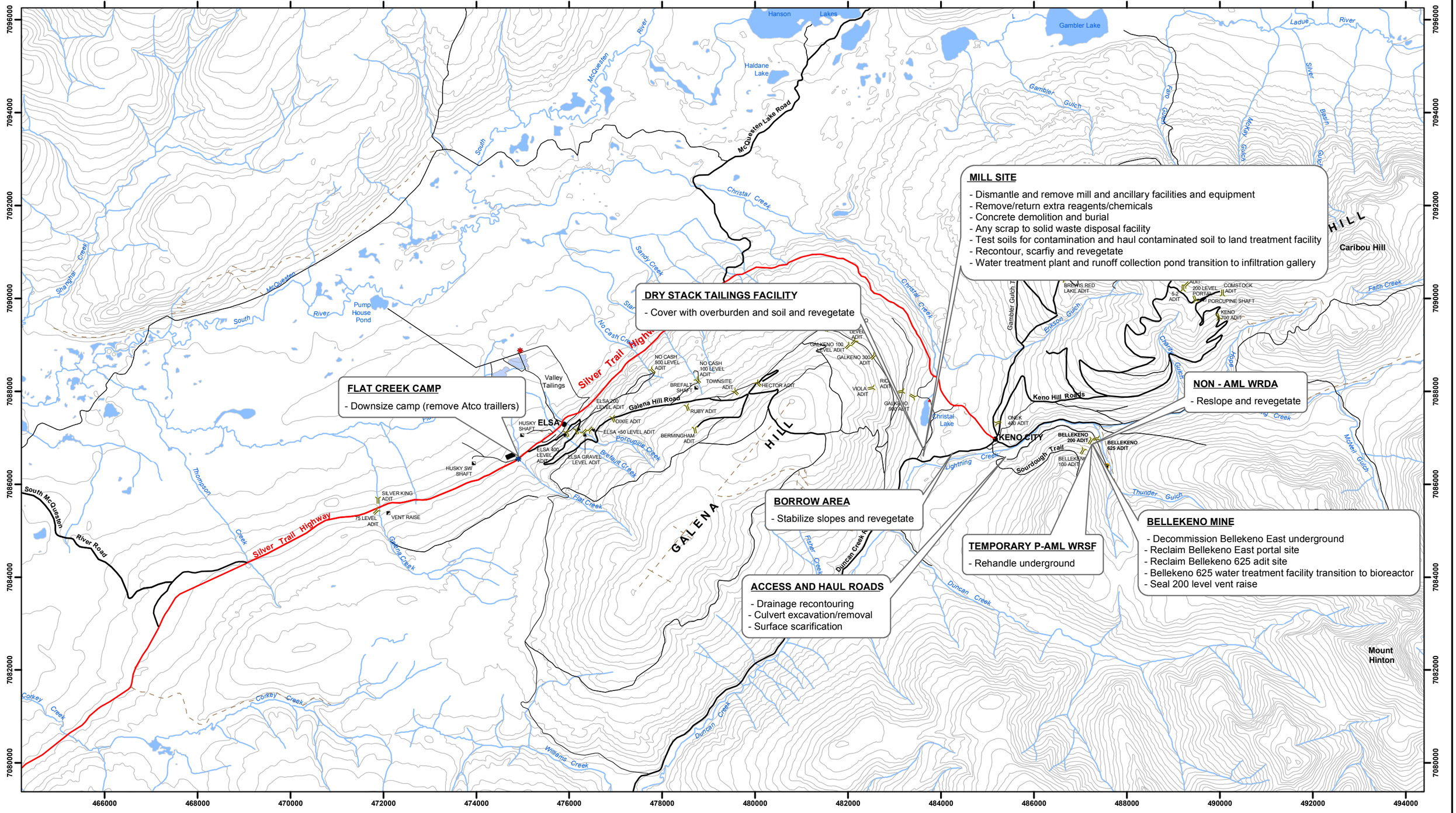
Notes:
This map is for illustrative purposes only.
This is not a legal document.
National Topographic Data Base (NTDB) compiled by Natural Resources Canada at a scale of 1:50,000. Cadastral data compiled by Natural Resources Canada. Reproduced under license from © Her Majesty the Queen in Right of Canada, Department of Natural Resources Canada. All rights reserved.
Quartz claim boundaries are current as of November 21, 2008.
Data source: http://geomaticsyukon.ca.
Ownership is current as of November 26. Claim status report obtained from the Mining Recorder (Mayo)
Projection: UTM Zone 8 NAD83
NTS Sheet 105M/13 and 105M/14

ALEXCO
ACCESS CONSULTING GROUP

ALEXCO KENO HILL MINING CORP. BELLEKENO MINE
PRELIMINARY DECOMISSION AND RECLAMATION PLAN

Property Overview

Drawn By: HD	July 2009	**FIGURE 1-2**
Checked by: NS	D:\Project\AllProjects\ALEX-05-01\gis\mxd\UKHM\PropertyOverview.mxd	



N

1:75,000
(when plotted on 11x17 inch sheet)

0 1 2 4 6 km

Legend

Topography

- Town
- Silver Trail
- Secondary Road
- Limited-use road
- Trail
- Watercourse
- Waterbody

Mine Workings

- Adit
- Shaft (to surface - connection to underground not determined)

Notes:
This map is for illustrative purposes only.
This is not a legal document.
National Topographic Data Base (NTDB) compiled by Natural Resources Canada at a scale of 1:50,000. Cadastral data compiled by Natural Resources Canada. Reproduced under license from © Her Majesty the Queen in Right of Canada, Department of Natural Resources Canada. All rights reserved.
Quartz claim boundaries are current as of November 21, 2008.
Data source: http://geomaticsyukon.ca.
Ownership is current as of November 26. Claim status report obtained from the Mining Recorder (Mayo)
Projection: UTM Zone 8 NAD83
NTS Sheet 105M/13 and 105M/14

ALEXCO

ACCESS CONSULTING GROUP

ALEXCO KENO HILL MINING CORP. BELLEKENO MINE
PRELIMINARY DECOMISSION AND RECLAMATION PLAN

Site Reclamation and Closure Plan

Drawn By: HD & JN	July 2009	**FIGURE 1-3**
Checked by: NS	D:\Project\AllProjects\ALEX-05-01\gis\mxd\UKHM\BelleKeno_ClosurePlan\Fig_1_3.mxd	

1.2 PHILOSOPHY AND INTEGRATION WITH DISTRICT-WIDE CLOSURE PLANNING

Alexco recognizes the importance of developing a DRP for the Bellekeno Mine that is synchronized with the district-wide Existing State of Mine Closure Plan (District Plan) that is currently being developed by the company in conjunction with the Government's of Canada, Yukon, and the NNDFN. Closure objectives, issues, and options are being developed by these four parties in a thorough process that involves field investigations, pilot studies and test work to identify appropriate closure options, supplemented by public consultation, in order to ensure that closure measures with the best potential for success, as viewed by all stakeholders, are selected for implementation.

Closure planning and implementation for the Bellekeno Mine will be incorporated into the overall closure implementation for the Keno Hill District. Although the work in developing the district wide Closure Plan is still in the early stages, preliminary objectives have been developed and are undergoing discussion and refinement concurrently with the design of the Bellekeno Mine. Alexco has presented them in italics below so that reviewers of this document may appreciate the context in which this plan will also be developed:

Keno Hill Mines - Closure Planning
DRAFT Closure Plan Objectives

The following are draft objectives that are intended to guide the development of the Closure Plan for the Keno Hill Mines property. These objectives will be developed in conjunction with the local community and will assist with selection of preferred closure options and implementation of the final plan.

Public health and safety

- *Ensure that the health and safety of people using the land and water are protected*
- *Protect country and traditional food source*

Environment

- *Protect wildlife health and safety*
- *Identify and alleviate adverse environmental effects by protecting key resources such as the aquatic resources of the South McQuesten River*
- *Mitigate significant adverse environmental effects to identified Valued Components (VC's) using a risk based approach*

- *Minimize or prevent adverse environmental impact*

Community Land Use

- *Consider the relevant expectations of stakeholders for post closure land use*
- *Use traditional knowledge in the planning process to protect the culture and traditional pursuits of local First Nations.*
- *Ensure the continued traditional use of aquatic and terrestrial resources*
- *Provide a land use that allows the mine site to continue to be productive in a manner consistent with, although not necessarily identical to local and pre-mining land use.*

Socio-economic

- *Provide economic opportunities for the First Nation residents, local residents and Yukoners in general.*
- *Minimize negative socio-economic impacts in the area*

Cost Effective

- *Provide a closure plan that meets industry standards of best practice*
- *Minimize overall cost of remediation project*
- *Consider, and use where appropriate, technologies that reduce long-term liability and minimize requirements for long-term post-closure care and maintenance.*

The Bellekeno Mine is subject to approvals under the provision of the Yukon Waters Act and the Yukon Quartz Mining Act. The issuance of Water and Quartz Mining Licenses require submission of a DRP. As such, this Preliminary DRP has been developed under the requirements of the Waters Act, Quartz Mining Act and Yukon Government Mine Site Reclamation and Closure Policy.

Alexco acknowledges Yukon Government's mandate and specifications for mine site closure and reclamation. As such, the Company has developed this DRP to address regulatory and government policy for the mine closure. In keeping with its high standards for environmental and social responsibility, Alexco intends to implement an environmentally sound and technically feasible decommissioning and reclamation measures for the Bellekeno Mine. Closure planning and implementation will be

undertaken with appropriate environmental care while respecting local laws, first nations agreements, and the public interest and ensuring that the Company's high environmental standards are achieved. Necessary environmental protection measures have been adopted in the development of this Plan to ensure that a healthy environment exists after closure.

To ensure that the overall closure philosophy can be achieved, the following primary closure objectives were emphasized during the development of this plan:

- protection of public health and safety;
- implementation of environmental protection measures that prevent adverse environmental impact by:
  - incorporating progressive reclamation;
  - providing slope stabilization and erosion control on linear and non-linear disturbances;
  - ensuring long-term chemical stability of the waste rock storage areas and components constructed from waste rock to minimize effects to downstream aquatic resources;
  - ensuring the long-term physical stability of key structures such as the dry stack tailings facility, Bellekeno portals, waste rock storage facilities, and access roads;
  - conducting post closure monitoring of the site and adaptive management to assess effectiveness of closure measures for the long term;
- ensuring land use commensurate with surrounding lands;
- meaningful participation of the NNDFN in the planning and progress monitoring of the closure and reclamation activities to ensure appropriate and effective closure measures;
- developing a cost effective DRP that works towards a walk-away closure scenario; and
- passive post closure monitoring and management of the site until considered an environmentally benign site, in which case a walk-away closure scenario will be realized.

These closure principles and objectives work to ensure both physical stability and chemical stability of the site in the long term and are reflective of the guidelines derived from the YG's Reclamation and Closure Policy, the development of which saw contribution from all Yukon First Nations.

It is anticipated that final determination of the effectiveness of closure measures will be the subject of review and concurrence with regulatory agencies. Under the Yukon Quartz Mining Act, the company would then apply for a certificate of closure from Yukon Government.

1.3 SCOPE OF THE CLOSURE PLAN

The approach taken in the presentation of this Plan is to provide an overview of the environmental setting for the Keno Hill Silver District (Section 2) followed by a description of progressive reclamation activities (Section 3). Section 4 then provides a brief description of each component of the exploration program and the closure objectives, measures, and estimated costs related to that component.

Closure objectives can be considered in terms of the following key areas:

- (geo)chemical stability;
- water quality;
- physical stability; and,
- land use, aesthetics and public health and safety.

At closure the facilities for which physical stability must be addressed will be the Bellekeno portals, waste rock storage areas, any access roads not decommissioned, mill pad, and dry stack tailings facility.

2. PROJECT DESCRIPTION

2.1 PROJECT LOCATION AND OVERVIEW

The Bellekeno Mine Project principal mine development activities involve continued underground development and operations at Bellekeno, (located within the Keno Hill Silver District) and building a conventional flotation mill at the Flame and Moth mill site for the processing and production of minerals from the Bellekeno mine. The Keno Hill Mining District is located in the vicinity of Keno City in central Yukon Territory, 354 km (by air) due north of Whitehorse (see previous Figure 1-1). Access to the property is via a paved, two-lane highway from Whitehorse to Mayo (407 km) and an all-weather gravel road northeast from Mayo to Elsa (45 km); a total distance of 452 km. The property lies along the broad McQuesten River valley with three prominent hills to the south of the valley (see Figure 1-2). The Bellekeno area is located about 3 km east of Keno City, while the Flame and Moth Mill site is about 1.2 km to the west.

The following Table 2-1 presents an overview of the Bellekeno Mine Project:

Table 2-1 Bellekeno Mine Project Overview

Bellekeno Mine Project Overview	
Location	3 km east of Keno City, 45 km northeast of Mayo, 354 km north of Whitehorse, YT. Located in the Traditional Territory of the First Nation of Nacho Nyak Dun within the McQuesten River Valley
Land Position	Alexco Resource Corp. and its wholly owned subsidiary Elsa Reclamation and Development Corp. owns 1,563 claims and leases covering an area of approximately 24,262 ha within the Keno Hill Silver District including the Bellekeno Mine project area. Two Fee Simple lots within the Bellekeno Mine project area total 59 ha (Lot 960 and Lot 956)
Mining Method	Year round underground narrow vein cut and fill mining
Mine Life	5 years
Total Project Life	15 years (0 – 5 years construction and mine operation; 6 – 15 years decommissioning and reclamation and closure monitoring).

Bellekeno Mine Project Overview	
Annual Production	Average annual production of 3,300,000 oz silver, 30,000,000 lb lead, and 24,500,000 lb zinc (based on current Preliminary Economic Assessment).
Total Metal Production	Current Life of Mine production of 16,500,000 oz silver, 150,700,000 lb lead, and 122,400,000 lb zinc (based on current Preliminary Economic Assessment).
Ore Production Rate	250 tonnes/day for Years 1-2 and 400 tonnes/day for Years 3-5
Mine Waste Rock	500,000 tonnes of waste rock produced from underground development
Ore Mining and Placement Schedule	Ore mining for 360 days/year Mill Operation 360 day/year 100,000 tonnes of waste material placed on surface each year
Mill Recovery Process	Conventional flotation producing separate lead/silver concentrate and zinc concentrate shipped off site for smelting. Mill location at Flame and Moth pit area Dry stack tailings technology, 50% of dry tailings placed on surface and 50% placed underground as paste backfill. Pyrite removal circuit to remove pyrite from tailings and then placed underground as paste backfill.
Effluent Testing	Metal Mining Effluent Regulations
Work Force	~ 135 production and ongoing exploration; ~ 200 peak (construction)
Airstrip	Mayo, YT
Power	Hydro grid power Yukon Energy, diesel power backup
Water Supply and Use	Water use and discharge within 2 drainages, Lightning Creek and Christal Creek. 245 m^3/day water use, 385 m^3/day water discharge Lightning Creek drainage 68 m^3/day fresh water use, 17 m^3/day water discharge Christal Lake drainage Conventional lime precipitation water treatment
Climate Setting	945 m above sea level Annual Precipitation 413 mm

Bellekeno Mine Project Overview	
	Annual Lake Evaporation 460 mm
Environmental Baseline	Site Characterization Report 1996, ongoing data collection programs through current Type B Water License QZ06-074, QZ07-078, Class Mining Land Use Approval LQ00240
First Nations	First Nation of Na cho Nyak Dun

2.2 CURRENT STATUS

In 2006, Alexco initiated a broad surface exploration program (Class 3 Mining Land Use Approval LQ00186) in the historic Keno Hill silver district with surface diamond drilling focused primarily toward systematic testing of numerous targets, validating and expanding historic mineral resources and acquiring a better understanding of the local geology and ore controls. Based on broadly successful 2006 results, in 2007 Alexco expanded its exploration to a two phase district exploration program; the first phase focused on following up prior results in the area of the historic Bellekeno mine and the second phase continuing the broad information gathering drill program elsewhere across the district. In 2008 Alexco conducted surface exploration at a number of targets throughout the district and proceeded with advanced underground exploration and development at Bellekeno (Mining Land Use Approval LQ-00240, and Yukon Water Board Licence QZ07-078). On July 9, 2008, Alexco released a Preliminary Economic Assessment (PEA) of Bellekeno prepared by SRK Consulting. The positive economics suggested by the PEA have led Alexco to proceed with pursuance of a Quartz Mining Licence and a Type A Water Licence in anticipation of a positive development plan and ultimately a production decision.

The project is presently in the permitting stage with a YESAB Designated Office Evaluation Report issued June 12, 2009 and on July 10, 2009 a YG Decision Document which recommends the project proceed subject to recommended terms and conditions of mitigation measures. This DRP is a part of the permitting stage, and is a necessary requirement for the Quartz Mining License and Water Licence.

3. ENVIRONMENTAL SETTING

Table 3-1 provides an overview of the project area and environmental setting information for the area. This information was compiled from various published and unpublished reports and is not intended to provide a thorough reflection of the environmental setting, but rather a succinct overview of the key environmental parameters.

Table 3-1 Keno Hill Silver District Setting Summary

Region:	Yukon
Topographic Map Sheets:	- NTS 105M/14 & 105M/13
Geographic Location Name Code:	- Keno City
Latitude:	- 63° 54' 32" N
Longitude:	- 135° 19’ 18” W
Drainage Region:	- Stewart River drainage region
Significant Watersheds:	- McQuesten River, Lightning Creek and Stewart River Watershed, Mayo River
Nearest Communities:	- Mayo, Keno City
Road Access:	- Silver Trail Highway
First Nations Traditional Territory:	- Nacho Nyak Dun
Surrounding Land Status:	- YG Land
Special Designations:	- None
Ecoregion:	- Yukon Plateau (North)
Study Area Elevation:	- 945 m asl (Above Sea Level)
Vegetation Communities:	- Northern boreal forests occupy lower slopes and valley bottoms, spruce, pine and alder - Grasses and sedges, mosses occupy forest floor - Heavy moss and lichen growth resident as ground cover understory of shrub willow - Open and forest fringe areas of willow and scrub birch, and various flowering plant species
Wildlife Species:	- Moose, dall sheep, grizzly and black bear, caribou, furbearers, small mammals Various terrestrial bird species including ptarmigan, birds of prey, and migratory species, including waterfowl (snow geese, eagles, peregrine falcon, gyrfalcon)
Fish Species:	- Bering and Beaufort Sea salmonids and freshwater species, including: Arctic grayling, Arctic char, lake trout, trout perch, lake whitefish, broad whitefish, burbot, inconnu, Arctic Cisco, Northern pike
Valued Environmental and Socio-economic Components:	Water quality, Arctic grayling, Chinook salmon, moose, public health and safety, trapping, traditional harvesting, tourism.

4. PROGRESSIVE RECLAMATION

Progressive reclamation efforts will help reduce slope erosion through physical slope stabilization by means of revegetation efforts, enhancing ultimate reclamation success. Progressive reclamation will be undertaken in a manner to ensure that the amount of work required at the end of the mine life to achieve the closure objectives is minimized.

Progressive reclamation limits the environmental liability and thus reduces the ongoing risk carried by the company through:

- providing remediation to reduce or eliminate chemically hazardous material and sources of chemical contamination and other wastes;
- stabilizing potential sources of erosion and sediment release;
- initiating slope stability measures to enable reclamation;
- replanting and reseeding disturbed areas not scheduled for rework;
- reducing the total area requiring reclamation at the end of exploration; and
- reducing closure security requirements as closure liability is reduced progressively.

Progressive reclamation activities will take place at every possible opportunity. Initially these activities are limited to stockpiling surface overburden and soil materials for future use in stabilization and revegetation of disturbed areas resulting from mine construction.

4.1 REVEGETATION

In general, revegetation measures can be grouped into two categories:

- Linear disturbances (roads, cut lines, power lines, etc.) that by their nature are within close proximity to natural seed sources are best prepared by decompacting the surface but allowing the surrounding flora to volunteer seed for the clearing. This has been shown to promote the most biologically authentic and hence natural performing and revegetated sites. The natural revegetation observed on the historic haul roads at Keno Hill probably took many years to become revegetated on a strictly volunteer basis because the road surfaces were

compacted from truck traffic, and therefore water and seed had difficulty penetrating the surface, but none the less naturally revegetated. Therefore, simple surface preparation, known as scarification/decompacting, has been shown to produce excellent natural revegetation results and will normally suffice for revegetation. In certain circumstances, however, areas of access roads which may require drainage/erosion control will be assisted with reseeding.

- Areal disturbances (tailings area, mill pad clearing, etc.) tend to require assisted revegetation to promote biologically authentic revegetation in a timely manner. Areas that have been compacted (mill pad and other areas subject to truck traffic) will be scarified/decompacted and reseeded. The dry stack tailings facility will be covered with 0.5 m evapotranspiration soil cover and actively revegetated. Experience at other sites has shown that simple grass seeding may create large open areas of grass species that have the tendency to out-compete woody stemmed vegetation, thereby creating an unnatural 'pasture' in the boreal forest. Therefore, revegetation of these sites is focused on stabilizing the surface from erosion but allowing natural succession (willows, etc).

5. CLOSURE MEASURES

This section presents a discussion of the closure objectives and measures associated with the various components slated for reclamation (reclamation components) at the Bellekeno Mine. It is worth noting that some elements of this plan have already been developed, reviewed and approved under Mining Land Use Approval LQ00240 (such as closure measures for the Bellekeno East portal reclamation, mine access road, waste rock storage area), and security has been provided to cover the anticipated costs. These measures are repeated here with up-to-date information and costs (Section 6).

Decommissioning and reclamation measures will be reviewed regularly to ensure conformity with site wide objectives, issues and closure measures that are developed during the district wide Closure Plan discussed above. As the Decommissioning and Reclamation Plan is updated in the future, site conditions and development activities will be refined based on detailed engineering that will be required to construct facilities. It is proposed that mine development will be sufficiently advanced so that the Detailed Decommissioning and Reclamation Plan can be developed within two years of mine start up for actual as-built features and structures.

The approach to each subsection is to present a brief description of each component and related facilities with potential closure objectives and planned closure measures to ensure long term physical and chemical stability.

Summaries of the various closure measures are provided for features or groups of features shown in Figure 1-3 and discussed below.

The disturbed area has been divided into reclamation components as follows:

- Bellekeno Mine;
- Waste Rock Storage Facilities;
- Roads;
- Camp Downsizing;
- Mill; and

- Dry Stack Tailings Facility.

In addition to the closure measures proposed in the following sections, the *Yukon Mine Site and Reclamation Closure Policy* Technical Guidelines also provide direction on reclamation and closure objectives for key features of a mine. The Technical Guidelines applicable to the Bellekeno Mine and the Guidelines main objectives are listed in Table 5-1. The Guidelines themselves may be referenced for principal legal requirements, policy detail pursuant to the Yukon Mine Site Reclamation and Closure Policy, as well as possible strategies for achieving the desired objectives, which have been considered in the development of this DRP.

Table 5-1 Yukon Mine site and Reclamation Closure Policy Technical Guidelines Applicable to the Bellekeno Exploration Program

Technical Guideline #	Topic	Objectives
T-01	Water Retention & Sediment Control Structures	To ensure decommissioning of water retention and sediment control structures, and the appurtenances, in such a way that drainage at, and adjacent to the side, is stable in the long term.
T-02	Watercourses	Restore watercourses to meet current water management objectives.
T-03	Water Quality	To prevent contamination of receiving environments.
T-04	Site Contamination	To prevent exposure to and mobilization of substances that pose a risk to human health and the environment through physical and chemical stability.
T-05	Acid Rock Drainage Potential	Walk away scenario with respect to acid rock drainage and metal leaching. Reliance on long-term active treatment is not considered acceptable for reclamation and closure planning.
T-06	Tailings Management	To ensure physical and chemical stability for the long term and eliminate the need for long term active treatment.
T-07	Underground Workings & Openings to Surface	To meet water quality objectives. Except for authorized access, prevent inadvertent or intentional underground access that may be a hazard to humans and wildlife. Prevent subsidence or other changes in the topography that may result in a hazard to humans and wildlife.
T-08	Terrain Hazards	Remaining terrain hazards should present no more significant hazard to people and wildlife than is present in the surrounding vicinity.

Technical Guideline #	Topic	Objectives
T-09	Mine Rock Piles	Reclaimed rock piles and dumps must be physically and chemically stable in the long term to prevent erosion, subsidence or collapse, and such that dump runoff and surface drainage meet legal requirements.
T-10	Roads & Other Access	Protection of public safety is key objective. In decommissioning linear infrastructure the intention is to enable human and wildlife utilization in the area to revert to pre-development levels and types, all other factors being equal. If, however, an alternate future land use has been identified for the site, or population in the area has increased, alternative objectives may be identified in the approved reclamation and closure plan.
T-11	Erosion Control	Objective of erosion control is physical stability, such that upon closure, slopes, excavations and other disturbed lands are in a condition that will limit the incidence of soil erosion, slumping and other instabilities that are likely to impede revegetation of a reclaimed site, pose a threat to public safety, lead to wildlife mortality, or cause excessive sediment loads to enter nearby water bodies.
T-12	Revegetation	To ensure physical stability and to prevent a temporary loss of wildlife habitat utilization from becoming permanent, through the re-establishment of a vegetative mat (food source, hide, etc.) leading to self-sustaining native vegetation.
T-13	Mine Infrastructure	The objective following closure is to ensure physical stability and to remove potential threats to public health and safety; including identification and removal of hazards and hazardous materials.
T-15	Temporary Closure Site Conditions	To ensure public health and safety and protection of the environment in the event of a temporary closure and to manage risks associated with the potential abandonment of a site.
T-16	Geological Values & Heritage	Ensuring post-closure access to geological information identified leading up to and during mineral development and production at a mine site.

5.1 BELLEKENO MINE

Decommissioning and reclamation of the Bellekeno East portal and Bellekeno 625 adit sites will be undertaken. This includes Bellekeno East underground and portal site and Bellekeno 625 adit site and treatment facility, as well as the 200 level vent raise.

5.1.1 Closure Objectives

The objective for decommissioning mine infrastructure is to ensure physical stability and management of the mine pool. Potential threats to public health and safety will be removed, including restricting access and identification and removal of hazards and hazardous materials. Concern regarding physical stability of infrastructure at closure will be mitigated for the most part through disassembly and removal from the site and by barricading underground access. The mine pool will be managed by transitioning from actively treating adit discharge to sealing the adit and installing a contingency passive treatment system. Additional chemical stability objectives would be associated with any soil contamination by fuel, chemicals or other wastes.

5.1.2 Closure Measures

Bellekeno East

At closure, underground equipment (e.g. paste plant, switch gear, electrical, hydraulic control structures) will be removed from Bellekeno East and the potentially AML waste rock stockpile will be rehandled back underground to be deposited below rest water level. The Bellekeno East adit opening will be blocked to protect human health and safety and prevent wildlife access. See Figure 5-1 for a depiction of the proposed method of inserting rockfill for closure of the Bellekeno East portal. This method, in use at other northern Canadian mines, allows for movement of water and air through the opening, as well as allowing for any movement of rock walls, to prevent failure as would occur with a concrete plug for example. An adit decant channel will not be constructed as any water leaving the mine workings will flow via the Bellekeno 625 adit which is connected to the Bellekeno East decline. Reclamation measures for the Bellekeno Mine

are predicated on the fact that the static water elevation will not reach the elevation of the Bellekeno East portal and therefore this portal will not discharge water. As such the sediment ponds constructed at Bellekeno East for development of the decline will be progressively reclaimed prior to mine closure.

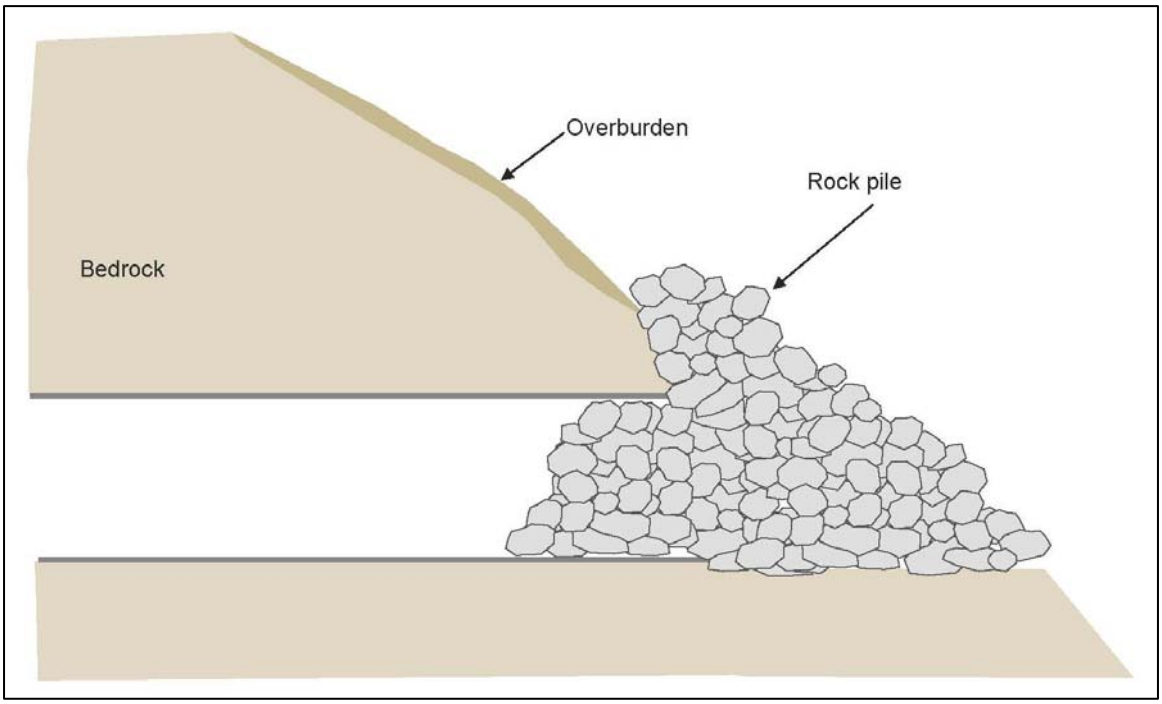


Figure 5-1 Conceptual Bellekeno East Portal Closure Rock Pile

Reclamation of the Bellekeno East portal site will include removal of the shop and other buildings (e.g. explosives and cap magazine). Fuel tanks will be cleaned and removed along with liners for reuse or landfill. Any additional debris will also be removed for reuse or proper disposal. All solid waste will be disposed of in accordance with the *Solid Waste Regulations*. Alexco has a permitted commercial solid waste facility located in Elsa. All waste petroleum products and any other special waste, as defined in the *Special Waste Regulations* will be disposed of in accordance with the Regulations. Any soils contamination will be documented through a final site contamination assessment. Contaminated soil would be removed and/or remediated in an approved manner (i.e. land treatment facility in Mayo or Elsa if one is developed there). The portal site would then be recontoured and scarified to facilitate revegetation and establish drainage (revegetation at the Bellekeno East portal site has already been undertaken). Signage will be installed to indicate the portal presence.

Bellekeno 625

Without continued dewatering and pumping after closure, the static water elevation of the Bellekeno Mine will rise and flow out the Bellekeno 625 adit. Therefore the closure measures presented for the 625 adit are predicated on a hydraulic concrete bulkhead to retain the mine pool while at the same time allow controlled discharge from the plug for additional circulation or treatment as necessary. A typical concrete plug design is shown in Figure 5-2. The size of this opening is approximately 2.5 m x 2.5 m.

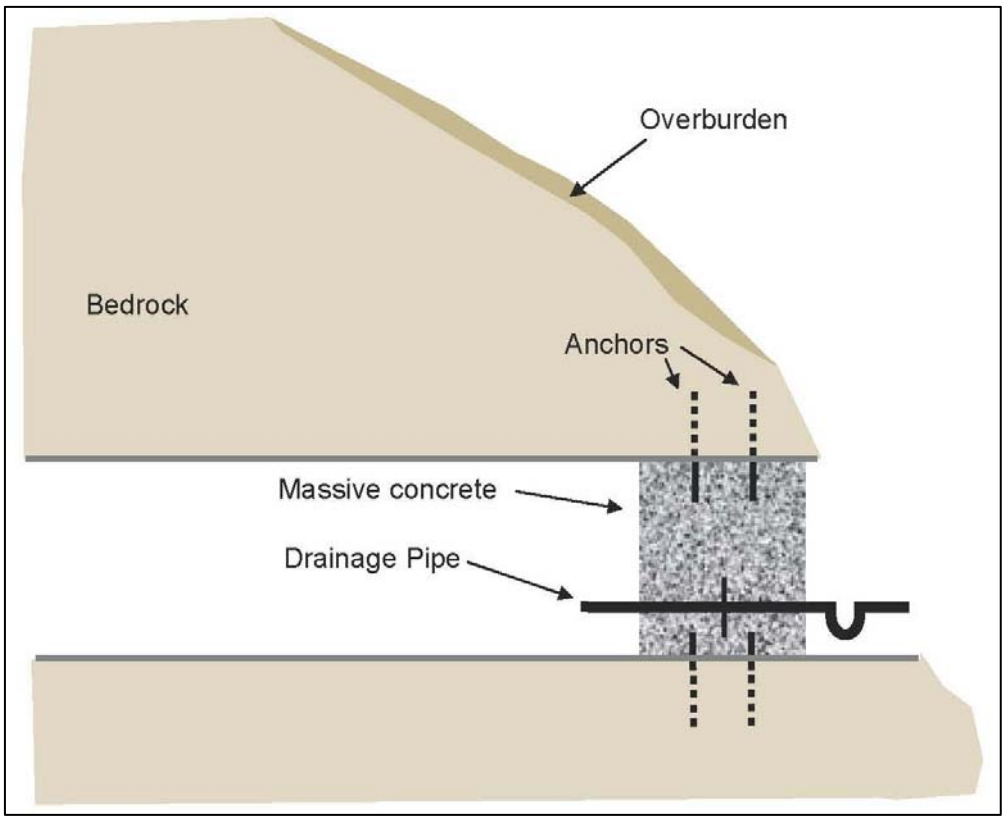


Figure 5-2 Conceptual Bellekeno 625 Adit Bulkhead

The following steps will be undertaken to decommission the Bellekeno 625 adit and treatment facility:

- A detailed hydrogeologic study of the Bellekeno Mine will be required to determine the final elevation of the static water.
- Depending on final engineering designs for the bulkhead, underground rehabilitation is anticipated. The bulkhead would be put into place as the mine pool is allowed to flood (estimated to take 6 – 9 months if not longer). Instrumentation in the form of a pressure gauge would be installed to assist with monitoring of the mine pool.
- Depending on water quality of the flooded Bellekeno Mine, in mine pool treatment using a carbon source such as molasses will be implemented to reduce soluble metals (zinc) loads. The mine pool would be accessed through the Bellekeno East decline, which would not be blocked until Bellekeno 625 has been adequately decommissioned.
- Additional polishing treatment if necessary will be conducted in the existing 625 treatment facilities, which will remain in place for an estimated 2 years for this purpose. Another option for additional treatment would be to recirculate water from Bellekeno 625 around and back into Bellekeno East for further in mine pool treatment.
- Once metals levels and conditions in the mine pool stabilize, the existing Bellekeno 625 water treatment facility will be decommissioned and a passive contingency treatment system constructed. There will be a transition period from active chemical treatment to a passive biological treatment system. Salvageable equipment will be removed along with extra reagents/chemicals. Settling ponds sediments/sludge will be disposed of as per the Sludge Management Plan and liners removed to the landfill.
- The ethanol-based, gravel infiltration gallery bioreactor currently in operation and demonstration at Galkeno 900 will be developed and operated at the site for an estimated five years.

As with Bellekeno East, reclamation of the Bellekeno 625 adit site will include removal of buildings (e.g. lab). The shop, loadout facility, compressor shack, and electrical substation and transmission line will be addressed under the District Plan and in discussion with INAC and YG respecting terrestrial liability. Any additional debris will also be removed for reuse or proper disposal. All solid waste will be disposed of in

accordance with the *Solid Waste Regulations*. All waste petroleum products and any other special waste, as defined in the *Special Waste Regulations* will be disposed of in accordance with the Regulations. Any soils contamination will be documented through a final site contamination assessment. Contaminated soil would be removed and/or remediated in an approved manner (i.e. land treatment facility in Mayo or Elsa if one is developed there). The adit site would be recontoured and scarified to facilitate natural revegetation and establish drainage. Signage will be posted to indicate the presence of an adit.

200 Level Vent Raise

The 200 level vent raise will be capped with an engineered concrete cap similar to what is used at mines elsewhere in Canada. This cement plug will restrict physical entry and prevent air movement and possible ice plug formation at the Bellekeno 625 adit.

5.2 WASTE ROCK STORAGE

Potentially and identified AML waste rock from mine development activities is currently being placed in a temporary waste rock storage facility (WRSF) which exists south of the Bellekeno East portal (Figure 1-3).

Additional permanent potentially AML waste rock storage facilities will be constructed at alternative locations yet to be determined. Final engineering design of these facilities by EBA Engineering Consultants has been approved by YG, Energy Mines and Resources as per Mining Land Use Approval LQ00240.

Rock that is not potentially acidic or metal leaching, or “non-AML” will be deposited in a waste rock disposal area (WRDA) along the northeast flank of Sourdough Hill, northwest of the current Bellekeno 625 waste rock storage areas.

5.2.1 Closure Objectives

At closure, the physical and chemical objectives for the waste rock storage facilities and disposal areas are erosion control and geochemical stability.

5.2.2 Closure Measures

Temporary Potentially AML WRSF – Bellekeno East

This facility will be used to the extent possible during the life of mine (five years) and at closure, potentially AML rock will be rehandled back underground (Section 5.1.2). The liner will be removed and the area recontoured and revegetated.

Permanent Potentially AML WRSF

Additional, permanent WRSFs for potential AML waste rock will be constructed at alternative sites in accordance with the approved engineered designs. Waste rock will be recontoured as necessary, although waste rock deposit protocols will be developed with closure measures in mind. The facilities will be covered with a low permeable cover to prevent meteoric water from entering the cell as well as growth medium to form a 0.5 m cover that would be seeded to promote vegetative growth.

Should the need arise prior to cover placement, accumulated water will be educted using a vacuum truck and transported to either the Bellekeno 625 treatment facility or the mill site for discharge, and treatment if needed.

Non-AML WRDA – Bellekeno 625

Preliminary engineering design by EBA Engineering Consultants Ltd. of the linear benched waste rock disposal area (WRDA) to be developed adjacent to and to the east of the Bellekeno 625 adit has concluded that no additional contouring is required upon closure with regard to stability. However, in order to further increase stability and improve aesthetics, Alexco will recontour the WRDA by pulling the crests back with an excavator followed by scarification and revegetation. The final overall (crest to crest) slope of the WRDA will be 3H:1V.

A toe buttress may be required along the alluvial terrace below the toe of the WRDA which was previously placer mined. This contingency may be necessary to improve the overall stability of the embankment in the event of an earthquake, or other seismic event. Adequate backfilling or re-contouring by the placer miner may alleviate this concern, but this should be re-examined at closure.

Borrow Areas

Borrow material will be required for construction of WRSF liners and any borrow areas used will be reclaimed through slope stabilization and revegetation.

5.3 ROADS

All roads either developed new or reconstructed/upgraded from existing roads will be subject to standard road decommissioning and reclamation measures at closure. These include:

- the newly constructed haul road between BK East Portal and BK 625 Adit;
- the upgraded power line haul road;
- the new Keno City bypass including a new culvert at Lightning Creek; and
- Christal Lake road (from Duncan Creek road to the mill).

These roads will be resloped and scarified, culverts removed and seeded in areas where erosion control is necessary.

5.3.1 Closure Objectives

The primary consideration for the physical stability of roads at closure will be slope stability where culverts have been removed and intermittent drainage channels have been established through the road alignments which could lead to localized erosion.

5.3.2 Closure Measures

Standard road decommissioning and reclamation measures at closure include culvert removal, resloping banks and removal of the safety berm to reflect the natural

topography as well as provide stability, and surface scarification to encourage natural revegetation. Regrading/contouring the roads will ensure that runoff sheds off the road surface. Localized seeding will take place where erosion control is necessary. A typical haul road and site road reclamation cross-section is shown in Figure 5-3.

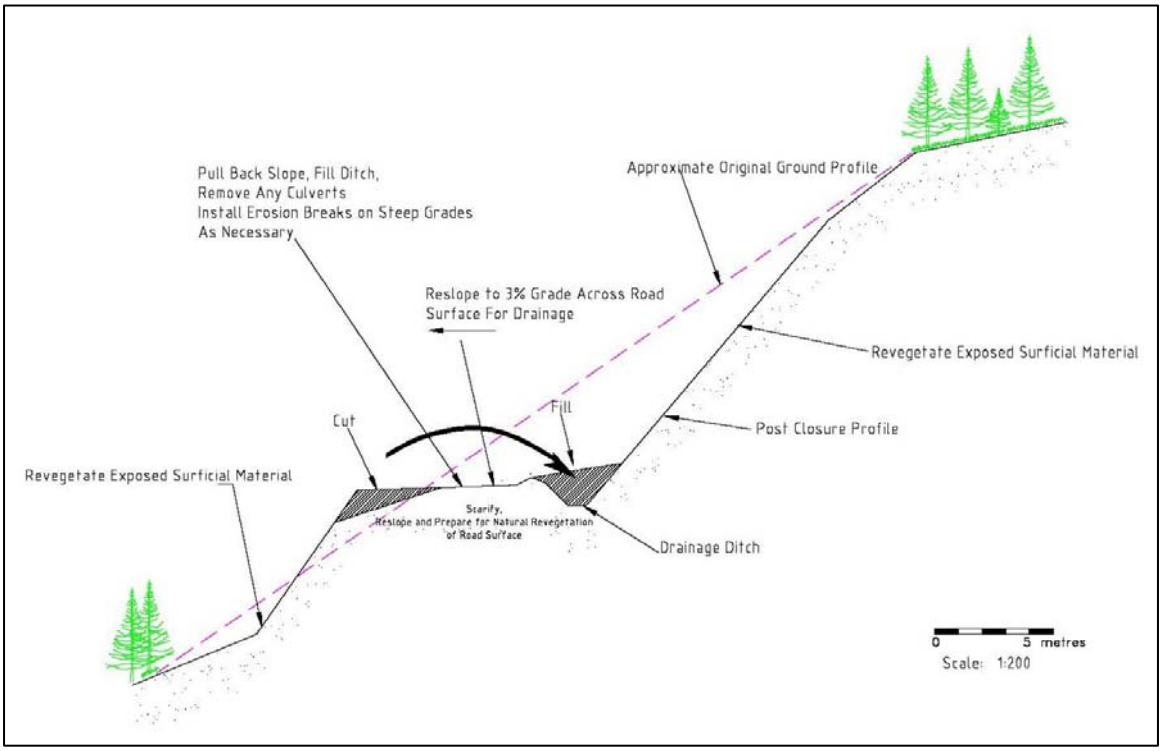


Figure 5-3 Haul Road and Site Road Typical Reclamation Cross-Section

5.4 CAMP DOWNSIZE

The camp has been expanded (roughly doubled in size) to accommodate mine contractors and drilling crews required for the advanced exploration program, and this expansion is expected to increase once again another approximately 20% to house mine construction workforce.

5.4.1 Closure Objectives and Measures

Closure objectives and measures include dismantling and removal of five trailer units to Lot 960. The expanded septic system, along with the increased freshwater supply will remain in place for continued use by the downsized camp.

5.5 MILL PAD AREA AND ANCILLARY FACILITIES

The mill pad location will be built at the Flame and Moth mill site. Ore produced during mining will be shipped to the Flame and Moth mill site coarse ore stockpile, with a separate area for high grade ore that has been designated as direct shipping ore. Selection of the mill site location has been made in consideration of the potential to use the mill for production from future producing mines. Although the mill and related infrastructure may be retained as-is and where-is for use in mining other deposits after Bellekeno is depleted, costing for mill closure is provided these plans are not complete. The closure concepts developed here assume that the site will no longer be used after the current Bellekeno mine life.

5.5.1 Closure Objectives

The objective for decommissioning the mill and ancillary facilities is to ensure physical stability and management of run-off. Potential threats to public health and safety will be removed, including identification and removal of hazards and hazardous materials. Concern regarding physical stability of these structures at closure will be mitigated for the most part by their disassembly and removal from the site. Management of surface run-off will be accomplished by transitioning from active treatment to a passive infiltration system. Additional chemical stability objectives would arise primarily from contamination of surrounding soils by metals, fuel and reagents.

5.5.2 Closure Measures

The entire mill complex and ancillary facilities (i.e. crushers, conveyors, mill equipment, trailer units, fine ore bin) will be removed from the site. Extra reagents or chemicals will be loaded up and returned to the supplier where possible. Concrete footings will be demolished and buried in situ. Any additional debris will also be removed for reuse or proper disposal. All solid waste will be disposed of in accordance with the *Solid Waste*

Regulations. All waste petroleum products and any other special waste, as defined in the *Special Waste Regulations* will be disposed of in accordance with the Regulations. Any soils contamination will be documented through a final site contamination assessment. Contaminated soil would be removed and/or remediated in an approved manner (i.e. land treatment facility in Mayo or Elsa if one is developed there). The pad area will have its embankment shoulders re-graded to prevent water ponding, and the surface will be scarified and reseeded to promote vegetative cover.

Ore stockpile pads will be concrete or rolled concrete pad, with steel rails (mine tracks) embedded for ease of rehandling ore with loader bucket. It is expected that at closure the material beneath the ore stockpiles will be processed through the mill to remove any remaining economic values as well as eliminating any potential contaminant of concern from the material. The impermeable rehandling pads will be demolished and buried once cleaned of all metal contaminants.

The mill runoff collection pond and treatment plant operation will be decommissioned and an infiltration gallery constructed. Any impounded water in the collection pond will be pumped down and sediments/sludge characterized and appropriately disposed of. The sediment pond dyke would be breached, and slopes recontoured and stabilized with erosion barriers. The discharge pipeline would be removed, diversion ditches recontoured and the area revegetated.

5.6 DRY STACK TAILINGS FACILITY

The dry stack tailings facility (DSTF) will be located adjacent to the mill site with approximately 50% of tailings stored in the facility. The DSTF will be progressively constructed and reclaimed over five years as tailings are generated by the mill. A portion of the DSTF will be built on an ongoing basis each year. In the summer of each year, granular material will be hauled and placed as a cover for the portion of the DSTF that is not actively being constructed.

5.6.1 Closure Objectives

In the closure of a DSTF, objectives to be met include:

- physical stability (erosion and dust control);
- geochemical stability;
- water management;
- reducing water infiltration with an evapotranspiration cover and revegetation; and
- decommissioning of the sediment ponds.

5.6.2 Closure Measures

Although the DSTF will be built in compacted 1 to 2 foot lifts to limit water penetration, closure measures will include covering the stack with an approximately 0.5 meter thick evapotranspiration cover. This cover will be fertilized and seeded to encourage revegetation. This cover will limit water migration through the stack.

Diversion (interceptor) ditches and collection ditches will be resloped and allowed to naturally revegetate.

If monitoring during operations indicates that treatment will be required for meteoric water after closure, a passive bioreactor treatment system will be constructed at the site immediately down slope from the DSTF. The area at the toe of the DSTF occupied by the runoff collection pond and polishing pond during operations can be reconstructed and used for the development of a gravel infiltration gallery, ethanol-based bioreactor cell (similar to the one currently in use at Galkeno 900 adit across Christal Lake). The operational phase active lime water treatment plant will be removed once active treatment is no longer required.

6. CLOSURE MANAGEMENT AND MONITORING

The closure phase of the Bellekeno mine will commence with the cessation of economic mining. Closure management and monitoring of the site will be guided by licence requirements, the performance of physical structures remaining on site and the ability to achieve and demonstrate long-term compliance with effluent discharge standards. Once overall closure performance has been demonstrated for all aspects of decommissioning, the necessity of maintaining licences or permits would be examined. At this point, a Certificate of Closure, under the Quartz Mining Act would be requested. The following sections provide a general outline of the site management approach that will be taken at the Bellekeno mine during the closure phase.

Care & maintenance personnel will be on-site to implement decommissioning and reclamation tasks. Generally these tasks entail closure of mine components, salvage and removal of infrastructure, equipment and reagents, maintaining contingency water treatment facilities, decommissioning of roads and reclamation and revegetation of disturbed lands. A site contamination assessment plan will be prepared leading up to closure which:

- Locates through a site investigation program all contaminated material, if any, on the mine site arising from any operation, transportation, storage, handling or processing;
- Characterizes the type, level and horizontal and vertical extent of the contamination; and
- Proposes methods for dealing with the contamination.

These activities would be undertaken on a seasonal basis and directed by an on-site manager responsible for decommissioning and reclamation of the Bellekeno mine.

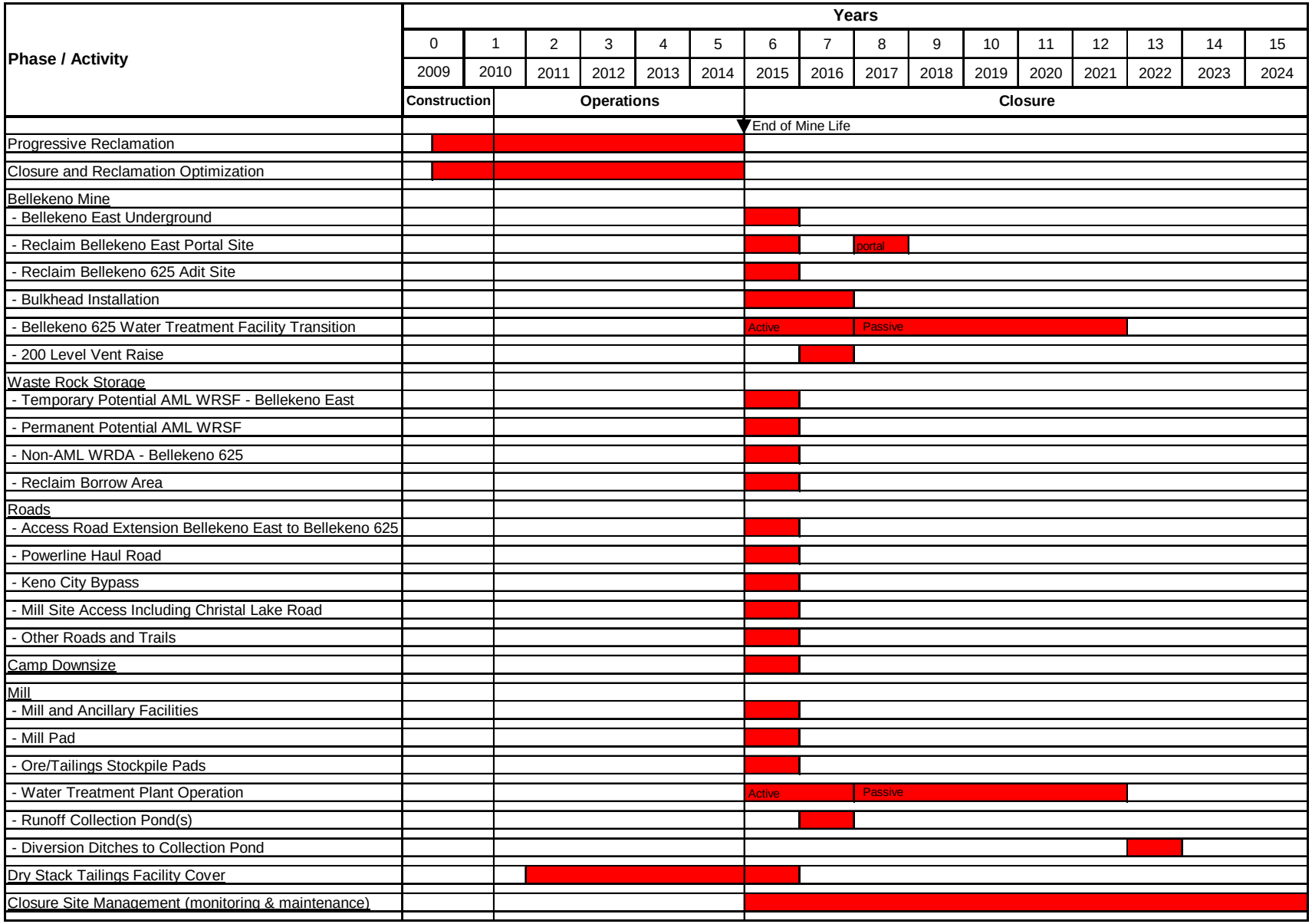
During site decommissioning, camp accommodations would be available to support site personnel. As other activities will continue to be undertaken in the Keno Hill Silver District a site caretaker or security personnel will not be required.

6.1 DECOMMISSIONING AND RECLAMATION IMPLEMENTATION SCHEDULE

Progressive reclamation will begin during operations to promote slope stabilization and reduce erosion during the life of the mine. Disturbed slopes will be stabilized and revegetated. Progressive reclamation of the DSTF cover will occur for the most part during operations.

Mine decommissioning and reclamation including removal of equipment and infrastructure will mainly take place during the first year of mine closure. The Bellekeno 625 and mill water treatment facilities will be transitioned from active to passive treatment which will take place over the course of a few years. Please see Figure 6-1 which shows the project decommissioning and reclamation schedule.

Figure 6-1 Bellekeno Mine Decommissioning and Reclamation Schedule



6.2 CLOSURE MONITORING AND MAINTENANCE

It is assumed that monitoring activity will be required to determine the ongoing and continued success of closure measures in meeting the closure objectives, for a period of 10 years. The adaptive management approach (Section 6.3 below) will be used to determine if criteria triggers for remedial action have been triggered, and then the success of the remedial measures will need to be incorporated into the monitoring and surveillance regimen.

At the time of closure, monitoring would continue to be undertaken by an Environmental Monitor:

- Continued water quality sampling at monitoring stations identified in the Type A Water Licence ;
- Monitoring of road bank and drainage along access road;
- Physical inspection of tailings area;
- Physical inspection of the passive water treatment;
- Physical stability of all waste rock storage areas;
- Success of revegetation measures where employed (principally portal area and mill pad area);
- Integrity of covers (potentially-AML WRSF and DSTF); and
- Physical inspection of impacted earthen surfaces for evidence of erosion, gullying, or sediment transport to watercourses.

The condition of permafrost beneath the WRDA will be monitored throughout operation and at least 10 years past closure. The requirement for ground temperature monitoring will be reviewed 10 years after closure. An annual geotechnical inspection should be conducted on the WRDA for at least 5 years after closure. The requirement for an annual geotechnical inspection will be reviewed 5 years after closure.

6.3 ADAPTIVE MANAGEMENT STRATEGY

To address risks or hazards over the short term, an adaptive management strategy is required in the event conditions reach a point where management actions are required. Adaptive management planning (AMP) is a recognized and effective tool to ensure that changing site conditions are not subject to static reclamation initiatives, and that closure measures can be adapted to these conditions to achieve desired performance. The adaptive management approach will be used to determine if indicators for remedial action have been triggered. The success of remedial actions would then be incorporated into the monitoring and surveillance regimen.

An Adaptive Management Plan has been developed for the entire Keno Hill Silver District which provides adaptive management implementation protocol for the Company and includes provisions for monitoring at Bellekeno. During the decommissioning phase, environmental and physical compliance monitoring and inspections will continue according to the site-wide Environmental Monitoring Program and Adaptive Management Plan.

6.4 TEMPORARY CLOSURE

In the event of a premature closure, the following monitoring and "care and maintenance" activities (focussed on a temporary closure scenario occurring after mine start-up) will be instigated. In the unlikely event that a temporary closure scenario occurs prior to mine start-up, these proposed temporary closure measures will be applied where applicable to maintain the existing site infrastructure.

Alexco's priority during any temporary closure scenario will be to ensure that the site remains geochemically and physically stable, secure and safe, monitored and in compliance with applicable licences and legislation. This will include initial stabilization and ongoing routine monitoring and maintenance of the site infrastructure and facilities until mining recommences or full closure is initiated.

Table 6-1 provides a summary of the various project components and associated inspection and maintenance activities during any temporary cessation of mining activities.

6.4.1 Physical Stability and Geochemical Stability

Stabilization of site works during any temporary closure will be addressed initially well in advance of any closure scenario through the Company's commitment to progressive reclamation and stabilization measures. Progressive reclamation will be implemented on an ongoing basis (Section 4) to fulfil the Company's commitment to maintaining site stability and reclaiming areas as soon as operationally possible, therefore reducing both financial and operational liability.

Site infrastructure, including primarily buildings, equipment and machinery, will be emptied/drained of hazardous reagents and process fluids where appropriate and stabilized for temporary closure based on recommendations from mechanical and chemical suppliers, contractors and engineers. This includes the removal of all hazardous wastes, including waste hydrocarbons, coolants, lubricants, mill reagents and process chemicals. The bulk explosives inventory will be removed from site and explosives storage containers and facilities will be inspected regularly. In the event of suspended operations, the Bellekeno 625 and mill water treatment facilities will be maintained by the care and maintenance crew.

This temporary decommissioning will be conducted to a level whereby the infrastructure and mine components are ensured to be stable in the short term (3 years) and whereby mining and milling operations can be resumed in a timely manner should the decision be made to transition back into operations. This will include:

- the retention of essential equipment/assets onsite to maintain infrastructure; and
- the storage of hazardous materials (not waste) in competent primary and secondary containment ensuring compliance with applicable legislation.

Table 6-1 Summary of Care and Maintenance Activities and Surveillance During Temporary Cessation of Mining Activities

Project Component	Objectives	Care & Maintenance Activities	Monitoring	Monitoring Responsibility	Monitoring Timing/ Frequency
Bellekeno Mine	Water Management	Maintain Bellekeno 625 water treatment facility and related water management infrastructure.	WUL Water Quality Surveillance Program	Care & Maintenance Crew	As per WUL
	Physical Stability	Restrict access to hazardous areas with physical barriers.	QML Physical Monitoring Program	Care & Maintenance Crew	As per QML
Waste Rock Storage	Physical stability	Runoff/Erosion/Sediment control. Progressive reclamation will occur during operations.	QML Physical Monitoring Program	Care & Maintenance Crew	As per QML
			Geotechnical Inspection	Engineer	Annual
	Geochemical Stability	Cover AML WRSF with HDPE? Monitor WRSF & WRDA for seepage.	WUL Water Quality Surveillance Program	Care & Maintenance Crew	As per WUL
Roads	Physical Stability	Surface grading and granular amendments, ditch and culvert maintenance.	Visual inspection periodically for signs of instability/erosion	Care & Maintenance Crew	Weekly and after heavy precipitation events
Mill	Buildings, Equipment and Infrastructure	Secure buildings and retain necessary equipment for site maintenance.	Visual inspection for signs of instability.	Care & Maintenance Crew	Monthly
		Concentrate removed from site.			
	Physical Stability	Inspect for site stability.	Structural Inspection	Engineer	Twice Annually
		Reduce ore stockpile inventory.			
	Water Management	Maintain water treatment system and related water management infrastructure.	WUL Water Quality Surveillance Program	Care & Maintenance Crew	As per WUL
Dry Stack Tailings Facility	Physical stability	Surface water diversion structure repair/ maintenance.	Monitoring Program from DSTF Operating Plan; & QML Physical Monitoring Program	Care & Maintenance Crew	As per Monitoring Programs & QML
		Runoff/Erosion/Sediment control.			
		Dust Control.			
		Progressive reclamation will occur during operations.	Geotechnical Inspection from QML and DSTF Operating Plan	Engineer	Annual
	Geochemical Stability	Monitor for seepage and water quality.	WUL Water Quality Surveillance Program; & Monitoring Program from DSTF Operating Plan	Care & Maintenance Crew	As per WUL
Entire Site	Physical stability	Runoff/Erosion/Sediment control.	QML Physical Monitoring Program	Care & Maintenance Crew	As per QML
		Road/culvert maintenance.			
		Progressive reclamation will occur during operations.			
	Security	Full time site care & maintenace crew will check, repair and replace as required: • precautionary signage • security gates – installed to restrict access to the mill	Care & Maintenance Monitoring of all infrastructure and site elements	Care & Maintenance Crew	Daily: Inspection Sheets included in Annual Reporting
	Miscellaneous Infrastructure	Minimize camp size.			
		Inspect power line	Care & Maintenance monitoring of all infrastructure and site elements	Care & Maintenance Crew	Daily: Inspection Sheets included in Annual Reporting
	Reporting	Prepare and submit annual report to Yukon Water Board pursuant to WUL, including details of temporary closure activities and monitoring.		Alexco	Annually
		Prepare and submit annual report to YG Mineral Resources Branch pursuant to the QML, including details of temporary closure activities and monitoring.			
		Prepare and submit quarterly monitoring reports to Environment Canada under MMER.			Quarterly, Online RISS Registry

6.4.2 Security and Monitoring

Uncontrolled access to the mine components and facilities could pose a risk to the public and to the site assets. As such, the full-time care and maintenance crew will conduct daily monitoring of all infrastruction and site elements. Equipment and vehicles will be available onsite for the staff should more intensive earthworks be required during the temporary closure period.

During temporary closure gates may be required and locked with warning signs erected at the gates and key locations around the site indicating the risks of entry. Site buildings will be locked and secured. Roads will be maintained as required.

The care and maintenance crew will be responsible for:

- Regular inspections of the site to observe and document the condition of, and any changes to: site security and public safety measures, infrastructure, mine components, etc., as well as to document potential emerging environmental or public health and safety objectives;
- Conducting routine physical monitoring activities;
- Regular water quality and flow monitoring;
- Submitting inspection and monitoring reports to managers on a regular basis;
- Responding to any security/safety objectives as required; and
- Conducting routine site maintenance and basic repairs to infrastructure and works as required (snow removal, culvert and road maintenance, building maintenance).

Site inspections and monitoring will be conducted by vehicle when seasonally possible. Some sites may be difficult to access in winter as snow removal would not be reasonable at all locations. Inspection results will be documented on a form and submitted to management on a regular basis. Reports of changes to physical status of any part of the site may warrant a follow-up investigation by managers and/or professional personnel.

The Company's Environmental Monitoring Program and detailed design reports further commit to structural monitoring, which will continue in the event of temporary closure.

Some elements of the monitoring program (geotechnical and structural inspections and non-routine water quality and biological monitoring) will be conducted by appropriate professional personnel, and results of these inspections will be included in annual reports and other required submissions.

6.4.3 Reporting

Monitoring and inspection data collected will be compiled and submitted according to the required annual reporting timeframes for both the Quartz Mining and Water Licences.

6.5 SUPERVISION AND DOCUMENTATION OF WORK

All decommissioning and reclamation works will be supervised to ensure that works are constructed according to their design and that this work is properly carried out and documented. The project manager or construction supervisor would supervise all closure works. Regular inspection procedures would be completed to document work progress, deficiencies and completion.

Upon completion of the decommissioning and reclamation works, a final site plan report (summary text and drawings) will be prepared that will outline the facilities or works remaining on the site following closure including the locations of subsurface features. It is expected that this plan would accompany an Application for a Certificate of Closure under the Quartz Mining Act.

7. RECLAMATION SECURITY AND COSTING

Costing of the proposed decommissioning and reclamation measures is the basis for the provision of security. Yukon Government currently holds a security bond to cover the potential liabilities arising from the ultimate advance of the underground exploration project. Once final security has been assessed for the Bellekeno Mine, this bond will be augmented by such security as necessary to cover the cost of closure measures for additional mine related infrastructure.

Decommissioning and reclamation cost estimates have been prepared for the following phases in the life of the mine:

- Current Site Status (currently posted) = $297,000;
- End of Mine Construction = $1,661,000;
- End of Mine Life = $2,769,000.

Closure liability cost estimate summary tables are provided below. Where possible, cost estimates were made using unit cost per volume. Where the use of unit costs proved difficult, then an estimation of equipment and labour hours were used. The unit costs and job hours were derived from Access Consulting Group's professional experience with other closure program costing estimates prepared for Yukon Government as well as Alexco's operational experiences. In particular, the unit costs are the same as those used to calculate closure costs for Western Copper Corporation's recently approved Preliminary Detailed Closure and Reclamation Plan. The exception is camp costs, as Alexco's actual rate per person per day is used. Unit costs are presented in Table 7-1.

As the mine is constructed and operated, this Decommissioning and Reclamation Plan will be reviewed every two years and closure costs updated based on more detailed engineering plans. Assumptions for the current closure liability cost estimates are based on current site conditions, as well as Alexco retaining the contract to perform site care and maintenance. Alexco maintains a constant presence on site fulfilling the care and maintenance contract, and this is reflected in closure costs for site management, the incremental costs of water treatment, as well as camp costs.

Certain pre-existing terrestrial liabilities are the responsibility of the Federal Government and have not been included. Others remain in question and will require discussion with INAC and YG to determine terrestrial liability. The need to reclaim these areas is still noted in the tables below as well as where further discussion is needed.

Table 7-2 summarizes closure liability cost estimate for end of mine life while Table 7-3 summaries costs for end of mine construction. Cost estimates for the separate reclamation components including site management are provided in the remaining tables.

Cost estimates for waste rock storage and site management at end of mine construction will differ from those at end of mine life; therefore, two tables representing the two stages of closure for each of these components are provided. For end of mine construction much of the closure costs for mine infrastructure will be the same as at the end of mine life while the DSTF will not exist. Similarly, it will not be necessary to operate the mill water treatment facility and costs for this have been excluded.

Table 7-1 Unit Rate Cost Table

EQUIPMENT RATES		
Bulldozer-small (Cat D6)	$130	per hr
D8K Dozer	$190	per hr
D9H Dozer	$260	per hr
D250E Haul Truck	$220	per hr
Tandem Haul Truck	$110	per hr
A35 Haul Truck	$190	per hr
Cat 325 Hoe	$190	per hr
Cat 235 Excavator	$240	per hr
235 Excavator w Hammer	$275	per hr
Cat 16H grader	$220	per hr
988B Loader	$250	per hr
Tractor Trailer (lowbed)	$130	per hr
30 ton Crane	$160	per hr
Hiab Flatdeck truck	$125	per hr
Cat 950 Loader	$125	per hr
Underground LHD 4-6yd Placement	$219	per hr
Underground Truck 20t	$113	per hr
Misc Mine Infrastructure	$100	per hr
Vacuum Truck	$100	per hr
Gas Powered Pump	$100	per day
Pickup Truck	$2,500	per month
Support Equipment	??	lump sum

PERSONNEL RATES		
Blaster	$60	per hr
General Labourer	$45	per hr
Underground Labourer	$65	per hr
Trades Labourer	$80	per hr
Underground / Site Supervisor	$95	per hr
Medical Safety	$50	per hr
Technician	$75	per hr
Design Engineer	$130	per hr
Environmental Scientist	$95	per hr
Project Manager	$9,700	per month
Camp Labourer	$4,000	per month
Site Caretaker	$6,100	per month
Environmental Monitor	$90	per hr
Analytical Costs	$500	Unit cost
Misc.	??	lump sum

REVEGETATION RATES		
Revegetation Seed Mix	$13	per kg
Revegetation Seed Mix - 50kg/ha	$510	per ha
Fertilizer	$1	per kg
Fertilizer - 250kg/ha	$250	per ha
Tree Seedlings	$1,750	per ha (1,000 seedlings per ha)
Seed/Fertilizer Application	$1,500	per ha
Revegetation cost per ha. Including application cost	$2,260.00	per ha

CONTRACTOR UNIT RATES & CAMP COST		
Custom Rate A (Load, haul and place overburden cover on AML Waste Rock)	$4.50	cu.m
Custom Rate B (Load, haul and dump mineralized rock stockpile in BK East Decline)	$4.50	cu.m
Compact and Contour Cover	$2	cu.m
Excavation of Soil	$5	cu.m
Supply and place Geotextile	$7	sq m
Load, haul and place soil cover	$8	cu.m
Haul & Place rock cover	$8	cu.m
Drill, Blast and Screen Rip Rap	$22	cu.m
Load and Haul and Place Rip Rap	$13	cu.m
HDPE Liner Install	$10	sq m
Erosion barriers	$3	sq m
Freight run to Whitehorse	$1,000	per load
Camp Cost	$55	per day per person
Power and Heat	$5,500	per month
Sundry equipment maintenance	$5,000	yearly
General Administrative expenses	$2,000	per month
Employee Transport Costs	$3,000	per month

Note: Custom Unit Rates have been developed specifically for Bellekeno Mine, taking into account such factors as haul distance, grade, machinery required, time required, etc.

Table 7-2 Bellekeno Mine Closure Liability Cost Estimate Summary – End of Mine Life

Item No.	Mine Component	Cost
1	**BELLEKENO MINE**	**$589,000**
1.1	Bellekeno East Underground	$32,000
1.2	Reclaim Bellekeno East Portal Site	$89,000
1.3	Reclaim Bellekeno 625 Adit Site	$34,000
1.4	*Bulkhead Installation**	*$237,000*
1.5	Bellekeno 625 Water Treatment Facility Transition	$166,000
1.6	200 Level Vent Raise	$31,000
2	**WASTE ROCK STORAGE**	**$226,000**
2.1	Temporary AML WRSF - Bellekeno East	$38,000
2.2	Permanent AML WRSF	$87,000
2.3	Non-AML WRDA - Bellekeno 625	$94,000
2.4	Reclaim Borrow Area	$7,000
3	**ROADS**	**$83,000**
3.1	Access Road Extension Bellekeno East to Bellekeno 625 (~600 m)	$15,000
3.2	*Powerline Haul Road (~2.3 km)**	*$26,000*
3.3	Keno City Bypass (~650 m)	$13,000
3.4	*Mill Site Access Including Christal Lake Road (1.9 km)**	*$24,000*
3.5	Other Roads and Trails (~5 km)	$5,000
4	**CAMP DOWNSIZE**	**$27,000**
5	**MILL**	**$472,000**
5.1	Mill and Ancillary Facilities	$308,000
5.2	Mill Pad (~3 ha)	$25,000
5.3	Ore/Tailings Stockpile Pads	$11,000
5.4	Water Treatment Plant Operation (~2 yrs)	$81,000
5.5	Runoff Collection Pond (4,700 m3)	$38,000
5.6	Diversion Ditches to Collection Pond	$9,000
6	**DRY STACK TAILINGS FACILITY**	**$271,000**
6.1	Mine Year 2 DSTF Cover	$32,000
6.2	Mine Year 3 DSTF Cover	$36,000
6.3	Mine Year 4 DSTF Cover	$63,000
6.4	Mine Year 5 DSTF Cover	$65,000
6.5	Mine Year 6 DSTF Cover	$75,000
7	**SITE MANAGEMENT**	**$502,000**
7.1	Onsite Management	$213,000
7.2	Compliance Monitoring and Reporting	$252,000
7.3	Contaminated Site Assessment Plan	$12,000
7.4	Closure Maintenance	$25,000
	TOTAL CLOSURE COSTS	**$2,170,000**
	Contingency Costs (15%)	**$326,000**
	Contingency Water Treatment (Mine & Mill 2 yrs)	**$218,000**
	Contingency WRDA Toe Buttress	**$55,000**
	GRAND TOTAL CLOSURE COSTS - END OF MINE LIFE	**$2,769,000**

** for discussion with INAC & YG re terrestrial liability* (also components of item 1.3, see table for breakdown)

Table 7-3 Bellekeno Mine Closure Liability Cost Estimate Summary – End of Mine Construction

Item No.	Mine Component	Cost
1	**BELLEKENO MINE**	**$589,000**
1.1	Bellekeno East Underground	$32,000
1.2	Reclaim Bellekeno East Portal Site	$89,000
1.3	Reclaim Bellekeno 625 Adit Site	$34,000
1.4	*Bulkhead Installation**	*$237,000*
1.5	Bellekeno 625 Water Treatment Facility Transition	$166,000
1.6	200 Level Vent Raise	$31,000
2	**WASTE ROCK**	**$20,000**
2.1	Rehandle existing temporary AML waste rock (from exploration) underground	$13,000
2.2	Reclaim Borrow Area	$7,000
3	**ROADS**	**$83,000**
3.1	Access Road Extension Bellekeno East to Bellekeno 625 (~600 m)	$15,000
3.2	*Powerline Haul Road (~2.3 km)**	*$26,000*
3.3	Keno City Bypass (~650 m)	$13,000
3.4	*Mill Site Access Including Christal Lake Road (1.9 km)**	*$24,000*
3.5	Other Roads and Trails (~5 km)	$5,000
5	**MILL**	**$385,000**
5.1	Mill and Ancillary Facilities	$308,000
5.2	Mill Pad (~3 ha)	$25,000
5.3	Ore/Tailings Stockpile Pads	$11,000
5.5	Runoff Collection Pond (4,700 m3)	$32,000
5.6	Diversion Ditches to Collection Pond	$9,000
7	**SITE MANAGEMENT** (includes monitoring & maintenance during decommissioning & 2 year closure period)	**$204,000**
7.1	Project G & A	$19,000
7.2	Onsite Management	$136,000
7.3	Compliance Monitoring and Reporting	$32,000
7.4	Contaminated Site Assessment Plan	$6,000
7.5	Closure Maintenance	$11,000
	TOTAL CLOSURE COSTS	**$1,281,000**
	Contingency Costs 15%)	**$192,000**
	Contingency Water Treatment at Bellekeno 625 (2 yrs after mine flooding)	**$188,000**
	GRAND TOTAL CLOSURE COSTS - END OF CONSTRUCTION	**$1,661,000**

** for discussion with INAC & YG re terrestrial liability* (also components of item 1.3, see table for breakdown)

Table 7-4 Bellekeno Mine Estimated Closure Costs

Item No.	Reclamation Component	Equipment / Labour	Units	Quantity	Unit Cost	Cost	Total Cost
1.1	**Bellekeno East Underground**						
	Removal of underground equipment (e.g. paste plant; switch gear; electrical; hydraulic control structures)	Underground LHD 4-6yd Placement	per hr	60	$219	$13,140	
		A35 Haul Truck	per hr	60	$190	$11,400	
		General Labourer	per hr	120	$45	$5,400	$29,940
	Project Management	7% of Total Cost	%		7.00%	$2,096	$2,096
	Sub-Total						**$32,000**
1.2	**Reclaim Bellekeno East Portal Site**						
	Remove shop and other buildings (explosives and cap magazine)	Misc.	lump sum	1	$25,000	$25,000	
	Supply rockfill for portal barrier	Load and Haul and Place Rip Rap	cu.m	700	$13	$9,100	
	Labour for portal barrier	General Labourer	per hr	40	$45	$1,800	
	Characterize settling ponds sediments	Analytical Costs	Unit cost	1	$500	$500	
	Remove settling ponds liners to landfill	A35 Haul Truck	per hr	2	$190	$380	
		General Labourer	per hr	8	$45	$360	
	Clean out fuel tank residue	Misc.	lump sum	1	$1,000	$1,000	
	Haul fuel tank and liner for reuse or landfill	Cat 325 Hoe	per hr	6	$190	$1,140	
		A35 Haul Truck	per hr	6	$190	$1,140	
		General Labourer	per hr	16	$45	$720	
	Area cleanup and haul debris to landfill	Cat 325 Hoe	per hr	20	$190	$3,800	
		A35 Haul Truck	per hr	20	$190	$3,800	
		General Labourer	per hr	40	$45	$1,800	
	Test area soils for contamination	Environmental Monitor	per hr	8	$90	$720	
	Laboratory Analysis for soils testing	Analytical Costs	Unit cost	2	$500	$1,000	
	Haul any contaminated soils to nearest Land Treatment Facility	Cat 325 Hoe	per hr	16	$190	$3,040	
		A35 Haul Truck	per hr	16	$190	$3,040	
	Recontour and scarify area and slopes to establish drainage	D8K Dozer	per hr	24	$190	$4,560	
		Cat 16H grader	per hr	20	$220	$4,400	
	Install Signage	Misc.	lump sum	1	$1,000	$1,000	
	Mob/Demob (entire mine)	Misc.	lump sum	1	$15,000	$15,000	$83,300
	Project Management	7% of Total Cost	%		7.00%	$5,831	$5,831
	Sub-Total						**$89,000**
1.3	**Reclaim Bellekeno 625 Adit Site**						
	Remove lab	Misc.	lump sum	1	$5,000	$5,000	
	*Remove electrical substation**	*Misc.*	*lump sum*			*$0*	
	*Remove electrical transmission line (Keno City to BK 625)**	*Misc.*	*lump sum*			*$0*	
	*Remove shop/loadout facility, compressor shack**	*Misc.*	*lump sum*			*$0*	
	Area cleanup and haul debris to landfill	Cat 325 Hoe	per hr	20	$190	$3,800	
		A35 Haul Truck	per hr	20	$190	$3,800	
		General Labourer	per hr	40	$45	$1,800	
	Test area soils for contamination	Environmental Monitor	per hr	8	$90	$720	
	Laboratory Analysis for soils testing	Analytical Costs	Unit cost	2	$500	$1,000	
	Haul any contaminated soils to nearest Land Treatment Facility	Cat 325 Hoe	per hr	16	$190	$3,040	
		A35 Haul Truck	per hr	16	$190	$3,040	
	Recontour and scarify area and slopes to establish drainage	D8K Dozer	per hr	24	$190	$4,560	
		Cat 16H grader	per hr	20	$220	$4,400	
	Install Signage	Misc.	lump sum	1	$1,000	$1,000	$32,160
	Project Management	7% of Total Cost	%		7.00%	$2,251	$2,251
	Sub-Total						**$34,000**
1.4	***Bulkhead Installation****						
	Hydrogeologic study & engineering for concrete bulkhead	*Misc.*	*lump sum*	*1*	*$45,000*	*$45,000*	
	Underground Rehab for bulkhead	*Misc.*	*lump sum*	*1*	*$50,000*	*$50,000*	
	Construct concrete plug	*General Labourer*	*per hr*	*120*	*$45*	*$5,400*	
		Underground Labourer	*per hr*	*200*	*$65*	*$13,000*	
		Underground Truck 20t	*per hr*	*120*	*$113*	*$13,560*	
	Concrete Batch	*Misc.*	*lump sum*	*1*	*$75,000*	*$75,000*	
		Cat 950 Loader	*per hr*	*80*	*$125*	*$10,000*	
	Install Instrumentation (e.g pressure gauge)	*Misc.*	*lump sum*	*1*	*$10,000*	*$10,000*	*$221,960*
	Project Management	*7% of Total Cost*	%		*7.00%*	*$15,537*	*$15,537*
	Sub-Total						***$237,000***
1.5	**Bellekeno 625 Water Treatment Facility Transition**						
	*Contingency treatment operation (2 yrs after mine flooding)***	*Misc.*	*lump sum*	*24*	*$7,845*	*$188,280*	
	Remove salvageable equipment	General Labourer	per hr	16	$45	$720	
		Trades Labourer	per hr	16	$80	$1,280	
	Load & return extra reagents/chemicals	General Labourer	per hr	8	$45	$360	
		Misc.	lump sum	1	$2,000	$2,000	
	Dismantle building	Cat 235 Excavator	per hr	4	$240	$960	
		Cat 950 Loader	per hr	10	$125	$1,250	
		Tractor Trailer (lowbed)	per hr	30	$130	$3,900	
		General Labourer	per hr	40	$45	$1,800	
	In mine pool treatment	Misc.	lump sum	1	$40,000	$40,000	
	Characterize settling ponds sediments/sludge	Analytical Costs	Unit cost	2	$500	$1,000	
	Remove sludge from settling ponds	Vacuum Truck	per hr	40	$100	$4,000	
		General Labourer	per hr	40	$45	$1,800	
	Remove settling ponds liners to landfill	A35 Haul Truck	per hr	4	$190	$760	
		General Labourer	per hr	8	$45	$360	
	Construct infiltration gallery	A35 Haul Truck	per hr	80	$190	$15,200	
		Cat 950 Loader	per hr	60	$125	$7,500	
		General Labourer	per hr	60	$45	$2,700	
	Operate infiltration gallery (5 yrs)	Misc.	lump sum	5	$10,000	$50,000	
	Site levelling	D9H Dozer	per hr	20	$260	$5,200	
	Scrap hauled to solid waste facility	Cat 235 Excavator	per hr	8	$240	$1,920	
		D250E Haul Truck	per hr	12	$220	$2,640	
	Misc. Supplies & Tools	Misc.	lump sum	1	$10,000	$10,000	$155,350
	Project Management	7% of Total Cost	%		7.00%	$10,875	$10,875
	Sub-Total						**$166,000**
1.6	**200 Level Vent Raise**						
.	Engineering for concrete cap	Misc.	lump sum	1	$10,000	$10,000	
	Concrete Batch	Misc.	lump sum	1	$10,000	$10,000	
		Cat 950 Loader	per hr	12	$125	$1,500	
		Hiab Flatdeck truck	per hr	48	$125	$6,000	
	Labour for cap	General Labourer	per hr	40	$45	$1,800	$29,300
	Project Management	7% of Total Cost	%		7.00%	$2,051	$2,051
	Sub-Total						**$31,000**
	Total Estimated Cost in Reclaiming Bellekeno Mine						**$589,000**

** for discussion with INAC & YG re terrestrial liability*

***contingency cost incorporated into summary table*

Table 7-5 Waste Rock Storage Estimated Closure Costs – End of Mine Life

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Cost	Cost	Total Cost
2.1	**Temporary AML WRSF - Bellekeno East**						
	Rehandle underground	Custom Rate B (Load, haul and dump mineralized rock stockpile in BK East Decline)	cu.m	6000	$5	$27,000	
	Remove liner and haul to solid waste facility	D250E Haul Truck	per hr	2	$220	$440	
		General Labourer	per hr	8	$45	$360	
	Site recontouring	D8K Dozer	per hr	20	$190	$3,800	
	Revegetation	Revegetation cost per ha. Including application cost	per ha	1.8	$2,260	$4,068	$35,668
	Project Management	7% of Total Cost	%		7.00%	$2,497	$2,497
	Sub-Total						**$38,000**
2.2	**Permanent AML WRSF**						
	Educt impounded water	General Labourer	per hr	8	$45	$360	
		Vacuum Truck	per hr	8	$100	$800	
	Recontour waste rock	Cat 235 Excavator	per hr	8	$240	$1,920	
	Cover (0.5 m cover for 5 WRSF at 50 m x 50 m)	Load, haul and place soil cover	cu.m	6,250	$8	$50,000	
	Revegetation	Revegetation cost per ha. Including application cost	per ha	12.5	$2,260	$28,250	$81,330
	Project Management	7% of Total Cost	%		7.00%	$5,693	$5,693
	Sub-Total						**$87,000**
2.3	**Non-AML WRDA - Bellekeno 625**						
	Recontour waste rock - pull back crests	Cat 235 Excavator	per hr	60	$240	$14,400	
	Scarification	Cat 16H grader	per hr	24	$220	$5,280	
	Revegetation	Revegetation cost per ha. Including application cost	per ha	30	$2,260	$67,800	
	*Toe buttress***	*Cat 235 Excavator*	*per hr*	*120*	*$240*	*$28,800*	
		D250E Haul Truck	*per hr*	*120*	*$220*	*$26,400*	$87,480
	Project Management	7% of Total Cost	%		7.00%	$6,124	$6,124
	Sub-Total						**$94,000**
2.4	**Reclaim Borrow Area**						
	Stabilize slopes	D8K Dozer	per hr	12	$190	$2,280	
	Revegetation	Revegetation cost per ha. Including application cost	per ha	2	$2,260	$4,520	$6,800
	Project Management	7% of Total Cost	%		7.00%	$476	$476
	Sub-Total						**$7,000**
	Total Estimated Cost in Reclaiming Waste Rock Storage Areas						**$226,000**

***contingency cost incorporated into summary table*

Table 7-6 Waste Rock Storage Estimated Closure Costs – End of Mine Construction

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Cost	Cost	Total Cost
2.1	**Temporary AML WRSF - Bellekeno East**						
	Rehandle existing temporary AML waste rock (from exploration) underground	Custom Rate B (Load, haul and dump mineralized rock stockpile in BK East Decline)	cu.m	850	$5	$3,825	
	Remove liner and haul to solid waste facility	D250E Haul Truck	per hr	2	$220	$440	
		General Labourer	per hr	8	$45	$360	
	Site recontouring	D8K Dozer	per hr	20	$190	$3,800	
	Revegetation	Revegetation cost per ha. Including application cost	per ha	1.8	$2,260	$4,068	$12,493
	Project Management	7% of Total Cost	%		7.00%	$875	$875
	Sub-Total						**$13,000**
2.4	**Reclaim Borrow Area**						
	Stabilize slopes	D8K Dozer	per hr	12	$190	$2,280	
	Revegetation	Revegetation cost per ha. Including application cost	per ha	2	$2,260	$4,520	$6,800
	Project Management	7% of Total Cost	%		7.00%	$476	$476
	Sub-Total						**$7,000**
	Total Estimated Cost in Reclaiming Waste Rock Storage Areas						**$20,000**

Table 7-7 Access and Haul Roads Estimated Closure Costs

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Cost	Cost	Total Cost
3.1	**Access Road Extension Bellekeno East to Bellekeno 625 (~600 m)**						
	Culvert excavation (2 culverts)	Cat 235 Excavator	per hr	10	$240	$2,400	
	Culvert removal and install swales	General Labourer	per hr	24	$45	$1,080	
	Reslope banks/remove safety berm	D8K Dozer	per hr	24	$190	$4,560	
	Scarify road surface	Cat 16H grader	per hr	16	$220	$3,520	
	Erosion barriers (50% of length)	Erosion barriers	sq m	750	$3	$2,250	$13,810
	Project Management	7% of Total Cost	%		7.00%	$967	$967
	Sub-Total						**$15,000**
3.2	***Powerline Haul Road (~2.3 km)****						
	Culvert excavation (20 culverts)	*Cat 235 Excavator*	*per hr*	*40*	*$240*	*$9,600*	
	Culvert removal and install swales	*General Labourer*	*per hr*	*40*	*$45*	*$1,800*	
	Reslope banks/remove safety berm	*D8K Dozer*	*per hr*	*32*	*$190*	*$6,080*	
	Scarify road surface	*Cat 16H grader*	*per hr*	*32*	*$220*	*$7,040*	*$24,520*
	Project Management	*7% of Total Cost*	*%*		*7.00%*	*$1,716*	*$1,716*
	Sub-Total						***$26,000***
3.3	**Keno City Bypass (~650 m)**						
	Culvert excavation (4 culverts)	Cat 235 Excavator	per hr	8	$240	$1,920	
	Culvert removal and install swales	General Labourer	per hr	8	$45	$360	
	Reslope banks/remove safety berm	D8K Dozer	per hr	16	$190	$3,040	
	Scarify road surface	Cat 16H grader	per hr	8	$220	$1,760	
	Lightning Creek culvert removal	Cat 235 Excavator	per hr	16	$240	$3,840	
		Tractor Trailer (lowbed)	per hr	8	$130	$1,040	$11,960
	Project Management	7% of Total Cost	%		7.00%	$837	$837
	Sub-Total						**$13,000**
3.4	***Mill Site Access Including Christal Lake Road (1.9 km)****						
	Culvert excavation (40 culverts)	*Cat 235 Excavator*	*per hr*	*40*	*$240*	*$9,600*	
	Culvert removal and install swales	*General Labourer*	*per hr*	*40*	*$45*	*$1,800*	
	Reslope banks/remove safety berm	*D8K Dozer*	*per hr*	*12*	*$190*	*$2,280*	
	Scarify road surface	*Cat 16H grader*	*per hr*	*40*	*$220*	*$8,800*	*$22,480*
	Project Management	*7% of Total Cost*	*%*		*7.00%*	*$1,574*	*$1,574*
	Sub-Total						***$24,000***
3.5	**Other Roads and Trails (~5 km)**						
	Scarify road surface	Cat 16H grader	per hr	20	$220	$4,400	$4,400
	Project Management	7% of Total Cost	%		7.00%	$308	$308
	Sub-Total						**$5,000**
	Total Estimated Cost in Reclaiming Roads						**$83,000**

** for discussion with INAC & YG re terrestrial liability*

Table 7-8 Camp Downsize Estimated Closure Costs

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Cost	Cost	Total Cost
4	**Camp Downsize**						
	Dismantle 5 trailer units and tranport to Lot 960 private	Misc.	lump sum	1	$25,000	$25,000	$25,000
	Project Management	7% of Total Cost	%		7.00%	$1,750	$1,750
	Sub-Total						**$27,000**
	Total Estimated Camp Downsizing Costs						**$27,000**

Table 7-9 Mill Estimated Closure Costs

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Cost	Cost	Total Cost
5.1	**Mill and Ancillary Facilities**						
	Remove equipment (crushers, conveyors, mill equipment, trailer units, other ancillary facilities - fine ore bin)	General Labourer	per hr	600	$45	$27,000	
		Trades Labourer	per hr	400	$80	$32,000	
		Cat 950 Loader	per hr	150	$125	$18,750	
		Cat 235 Excavator	per hr	50	$240	$12,000	
		Tractor Trailer (lowbed)	per hr	120	$130	$15,600	
	Load and return extra reagents/chemicals	General Labourer	per hr	75	$45	$3,375	
		Misc.	lump sum	1	$2,500	$2,500	
	Dismantle Mill Building	Cat 950 Loader	per hr	70	$125	$8,750	
		Tractor Trailer (lowbed)	per hr	70	$130	$9,100	
		Trades Labourer	per hr	300	$80	$24,000	
		General Labourer	per hr	1,000	$45	$45,000	
	Concrete Demolition	235 Excavator w Hammer	per hr	60	$275	$16,500	
		D9H Dozer	per hr	20	$260	$5,200	
	Crane Support	30 ton Crane	per hr	200	$160	$32,000	
	Haul scrap to solid waste facility	Cat 235 Excavator	per hr	50	$240	$12,000	
		D250E Haul Truck	per hr	100	$220	$22,000	
	Misc. Supplies & Tools	Misc.	lump sum	1	$2,000	$2,000	$287,775
	Project Management	7% of Total Cost	%		7.00%	$20,144	$20,144
	Sub-Total						**$308,000**
5.2	**Mill Pad (~3 ha)**						
	Test area soils for contamination	Environmental Monitor	per hr	16	$90	$1,440	
	Laboratory Analysis for soils testing	Analytical Costs	Unit cost	12	$500	$6,000	
	Haul any contaminated soils to nearest Land Treatment Facility	Cat 325 Hoe	per hr	16	$190	$3,040	
		A35 Haul Truck	per hr	16	$190	$3,040	
	Regrade embankment shoulders	D8K Dozer	per hr	8	$190	$1,520	
	Scarify pad area	Cat 16H grader	per hr	8	$220	$1,760	
	Revegetate	Revegetation cost per ha. Including application cost	per ha	3	$2,260	$6,780	$23,580
	Project Management	7% of Total Cost	%		7.00%	$1,651	$1,651
	Sub-Total						**$25,000**
5.3	**Ore/Tailings Stockpile Pads**						
	Concrete Demolition & Burial	Cat 235 Excavator	per hr	20	$240	$4,800	
		D9H Dozer	per hr	20	$260	$5,200	$10,000
	Project Management	7% of Total Cost	%		7.00%	$700	$700
	Sub-Total						**$11,000**
5.4	**Water Treatment Plant Operation (~2 yrs)**						
	Contingency treatment operation (2 yrs freshet)	*Misc.*	*lump sum*	*2*	*$15,000*	*$30,000*	
	Construct infiltration gallery	A35 Haul Truck	per hr	80	$190	$15,200	
		Cat 950 Loader	per hr	60	$125	$7,500	
		General Labourer	per hr	60	$45	$2,700	
	Operate infiltration gallery (5 yrs)	Misc.	lump sum	5	$10,000	$50,000	$75,400
	Project Management	7% of Total Cost	%		7.00%	$5,278	$5,278
	Sub-Total						**$81,000**
5.5	**Runoff Collection Pond (4,700 m^3)**						
	Pump down impounded water	General Labourer	per hr	36	$45	$1,620	
		Gas Powered Pump	per day	2	$100	$200	
	Misc. Supplies & Tools	Misc.	lump sum	1	$500	$500	
	Characterize pond sediments/sludge	Analytical Costs	Unit cost	1	$500	$500	
	Remove sediment/sludge from settling pond	Vacuum Truck	per hr	16	$100	$1,600	
		General Labourer	per hr	16	$45	$720	
	Breach dyke, relocate and contour materials	Excavation of Soil	cu.m	3,000	$5	$15,000	
	Stabilize slopes with erosion barriers	Erosion barriers	sq m	3,000	$3	$9,000	
	Remove discharge pipeline	Misc.	lump sum	1	$5,000	$5,000	
	Revegetate	Revegetation cost per ha. Including application cost	per ha	0.5	$2,260	$1,130	$35,270
	Project Management	7% of Total Cost	%		7.00%	$2,469	$2,469
	Sub-Total						**$38,000**
5.6	**Diversion Ditches to Collection Pond**						
	Recontour	D9H Dozer	per hr	24	$260	$6,240	
	Revegetate	Revegetation cost per ha. Including application cost	per ha	1	$2,260	$2,260	$8,500
	Project Management	7% of Total Cost	%		7.00%	$595	$595
	Sub-Total						**$9,000**
	Total Estimated Mill Closure Cost						**$472,000**

Table 7-10 Dry Stack Tailings Facility Estimated Closure Costs

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Cost	Cost	Total Cost
6.1	**Mine Year 2 DSTF Cover**						
	Top with overburden and soil (0.5m)	Load, haul and place soil cover	cu.m	3,500	$8	$28,000	
	Revegetate	Revegetation cost per ha. Including application cost	per ha	0.7	$2,260	$1,582	$29,582
	Project Management	7% of Total Cost	%		7.00%	$2,071	$2,071
	Sub-Total						**$32,000**
6.2	**Mine Year 3 DSTF Cover**						
	Top with overburden and soil (0.5m)	Load, haul and place soil cover	cu.m	4,000	$8	$32,000	
	Revegetate	Revegetation cost per ha. Including application cost	per ha	0.8	$2,260	$1,808	$33,808
	Project Management	7% of Total Cost	%		7.00%	$2,367	$2,367
	Sub-Total						**$36,000**
6.3	**Mine Year 4 DSTF Cover**						
	Top with overburden and soil (0.5m)	Load, haul and place soil cover	cu.m	7,000	$8	$56,000	
	Revegetate	Revegetation cost per ha. Including application cost	per ha	1.4	$2,260	$3,164	$59,164
	Project Management	7% of Total Cost	%		7.00%	$4,141	$4,141
	Sub-Total						**$63,000**
6.4	**Mine Year 5 DSTF Cover**						
	Top with overburden and soil (0.5m)	Load, haul and place soil cover	cu.m	7,000	$8	$56,000	
	Remediate sludge storage area	D8K Dozer	per hr	8	$190	$1,520	
	Revegetate	Revegetation cost per ha. Including application cost	per ha	1.4	$2,260	$3,164	$60,684
	Project Management	7% of Total Cost	%		7.00%	$4,248	$4,248
	Sub-Total						**$65,000**
6.5	**Mine Year 6 DSTF Cover**						
	Top with overburden and soil (0.5m)	Load, haul and place soil cover	cu.m	8,000	$8	$64,000	
	Revegetate	Revegetation cost per ha. Including application cost	per ha	2.5	$2,260	$5,650	$69,650
	Project Management	7% of Total Cost	%		7.00%	$4,876	$4,876
	Sub-Total						**$75,000**
	Total Estimated DSTF Closure Cost						**$271,000**

Table 7-11 Site Management Estimated Closure Costs – End of Mine Life

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Cost	Cost	Total Cost
7.1	**Onsite Management**						
	Project Management and Engineering - Included in costs for each closure component						
	Pickup truck	Pickup Truck	per month	15	$2,500	$37,500	
	Sundry equipment maintenance	Sundry equipment maintenance	yearly	3	$5,000	$15,000	
	Power and heat (incremental additional costs)	Misc.	lump sum	15	$1,000	$15,000	
	General Admininstrative expenses	General Administrative expenses	per month	15	$2,000	$30,000	
	Camp Costs	Camp Cost	per day per person	2100	$55	$115,500	
	Sub-Total						**$213,000**
7.2	**Compliance Monitoring and Reporting**						
	Water Quality Monitoring						
	Years 1-5 (monthly)	Misc.	monthly	60	$2,000	$120,000	
	Years 6-10 (quarterly - spring/summer/fall)	Misc.	quarterly	20	$2,000	$40,000	
	Disbursements (non-labour/non-analytical)	Misc.	lump sum	10	$1,000	$10,000	
	Biological Monitoring - Closure implementation						
	Years 1-5 (Every 2 Years)	Misc.	yearly	2	$3,000	$6,000	
	Years 6-10 (Every 2 Years)	Misc.	yearly	2	$3,000	$6,000	
	Bellekeno waste rock & DSTF permafrost monitoring (10 yrs)	Misc.	yearly	10	$4,000	$40,000	
	WRDA & DSTF Annual Geotechnical Inspection - 5 yrs after closure	Misc.	yearly	5	$6,000	$30,000	
	Sub-Total						**$252,000**
7.3	**Contaminated Site Assessment Plan**						
	Develop Plan	Misc.	lump sum	1	$6,000	$6,000	
	Assessment Reporting	Misc.	lump sum	1	$6,000	$6,000	
	Sub-Total						**$12,000**
7.4	**Closure Maintenance**						
	Manage Land Treatment Facility and Testing	Misc.	per year	5	$2,000	$10,000	
	Misc. Maintenance work related to the site after closure (roads, covers, revegetation)	Misc.	per year	5	$3,000	$15,000	
	Sub-Total						**$25,000**
	Total Estimated Cost for Site Management at Closure						**$502,000**

Table 7-12 Site Management Estimated Closure Costs – End of Mine Construction

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Cost	Cost	Total Cost
7.1	**Project G & A**						
	Pre-closure planning and organization	Project Manager	per month	2	$9,700	$19,400	
	Sub-Total						**$19,000**
7.2	**Onsite Management**						
	Project Management and Engineering - Included in costs for each closure component						
	Site vehicle	Pickup Truck	per month	8	$2,500	$20,000	
	Camp Costs	Camp Cost	per day per person	2,100	$55	$115,500	
	Sub-Total						**$136,000**
7.3	**Compliance Monitoring and Reporting**						
	Water Quality Monitoring						
	Years 1-2 (quarterly)	Misc.	per qrtr	8	$2,000	$16,000	
	Disbursements (non-labour/non-analytical)	Misc.	per qrtr	8	$500	$4,000	
	Geotechnical Inspection (yrs 2 & 3)	Misc.	yearly	2	$6,000	$12,000	
	Sub-Total						**$32,000**
7.4	**Contaminated Site Assessment Plan**						
	Develop Plan	Misc.	lump sum	1	$3,000	$3,000	
	Assessment Reporting	Misc.	lump sum	1	$3,000	$3,000	
	Sub-Total						**$6,000**
7.5	**Closure Maintenance**						
	Misc. site maintenance	Misc.	per year	2	$3,000	$6,000	
	Revegetation maintenance (25% of area revegetated)	Revegetation cost per ha. Including application cost	per ha	2	$2,260	$4,690	
	Sub-Total						**$11,000**
	Total Estimated Cost for Site Management						**$204,000**