



CONSTRUCTION SITE PLAN

BELLEKENO PROJECT

YUKON



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July 2009

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1.0 INTRODUCTION

This document, prepared by Access Consulting Group of Whitehorse with input from EBA Engineering Consultants Ltd. and Wardrop Engineering Inc. of Vancouver, describes plans for construction of the Bellekeno Mine Project.

In order to achieve construction goals in the required time frame, this Construction Site Plan has been broken into three phases. Please refer to Figure 1-3 for an overview graphic description of the location of the three phases. Although approval for various parts of the construction plan will come under different licences, they are presented together here for the sake of coherence. Phase I has been submitted and approved by Energy Mines and Resources as a pre-season report addendum under existing MLU approval LQ00240, and described plans for reconstruction of the Christal Lake Road between the Duncan Creek Road and the Silver Trail Highway, plans for pioneering the Keno City Bypass, Flame and Moth mill site access road improvements and preparatory earthworks for the Flame and Moth mill pad. This submission is attached as Appendix I.

Phase II of the construction site plan (this submission) includes construction details for time sensitive elements of mill construction which need to be constructed before freeze up in 2009. Specifically, Phase II describes a number of plans for construction and general management plans including:

- Mill site foundations;
- Civil design criteria;
- Construction surface water management designs;
- Waste Management Plan;
- Preliminary Decommissioning and Reclamation Plan;
- Emergency Response Plan;
- Heritage Resources Protection Plan and;
- Wildlife Protection Plan.

Also included in Phase II of the construction site plan are details for construction of a temporary Potentially-AML waste rock storage Facility (P-AML WRSF) near the Bellekeno

East portal. Construction for this facility will be approved under authorization of Alexco's Class IV MLU approval LQ00240 but is included in this document for coherence.

Phase III of the construction site plan will include all remaining mine construction plans including those requiring the Type A Water Licence. This will include:

- Detailed design of the Dry Stack Tailings Facility (DSTF);
- Water management and treatment structures at the mill site;
- Mill building construction and mill site ancillary facilities;
- Final routing and construction details for Keno City Bypass;
- Camp expansion details including septic systems;
- Final non-AML Waste Rock Disposal Area (N-AML WRDA) designs;
- Plans for permanent Potentially-AML Waste Rock Storage Facilities (P-AML WRSF);
- Noise survey plans;

For a more detailed list of Phase III construction activities, see Section 4.4. The current project development schedule for construction and operation activities is outlined in Section 2.0 of this Construction Site Plan. Section 3.0 outlines the overall layout of the project facilities and associated mineral claims for the project area and the access road. Section 0 details Phase II construction activities proposed during the initial stages of construction, i.e. prior to the anticipated date of the issuance of a Type A Water Use Licence. Section 5.0 introduces environmental management and monitoring plans that will be implemented during construction activities to assure compliance with environmental provisions included in permits, legislation, corporate policies and industry Best Management Practices. Preliminary versions of these plans for project construction are appended and will be updated as the project progresses.

Project drawings are provided within Appendix A as well as within preliminary design reports, also appended to this document.

1.1 PROJECT DESCRIPTION

The Keno Hill Mining District is located in the vicinity of Keno City (63° 55'N, 135° 29'W), in central Yukon Territory, 354 km (by air) due north of Whitehorse. 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. Figure 1-1 shows the general project location within the Yukon Territory while Figure 1-2 shows the location on a smaller scale. The Bellekeno mine is located about 3 km east of Keno City, while the Flame and Moth mill site is about 1.2 km to the west (Figure 1-2).

The mining operation is designed to produce approximately 600,000 tonnes of ore and 500,000 tonnes of waste rock over the estimated five year mine life. A conventional flotation mill will process approximately 250 tonnes per day for years one and two, ramping up to 400 tonnes per day for years three to five for net production of approximately 25,500 tonnes of mill concentrate per year for the first two years of operation and 48,500 tonnes per year for years three to five. Ore crushing will be conducted only during the day shift (7am-7pm) but mining and other milling operations will be operated year round on a seven day per week, 24 hours per day basis.

A conventional flotation mill will be constructed at the site of former Flame and Moth underground & open pit mine. Run of Mine (ROM) mill feed will be delivered to the mill by haul trucks from the Bellekeno Mine site and dumped directly into a mobile crushing unit or ROM stockpile. This crushing unit will consist of one jaw crusher, one cone crusher, and one vibrating screen in a closed circuit. The crushed material (-13 mm) will be conveyed to a fine mill feed storage stockpile with 550 tonnes live capacity. The crushed material from the fine mill feed stockpile will be discharged through a draw down pocket onto a ball mill feed conveyor. The mill process will employ conventional crushing, grinding, flotation, and dewatering processes. The sulphides in the mill feed will be recovered by conventional differential flotation with a cyanide-free zinc suppressing regime. Silver and lead minerals will be recovered together to produce a silver-lead bulk concentrate and zinc minerals will be recovered to a separate zinc concentrate.

The final tailings from the zinc flotation circuit will be further floated to remove pyrite before being dewatered and backfilled in the underground mine. The pyrite concentrate will be hauled to the Bellekeno mine and used as backfill below the static water level in the mine. This improves the geochemical stability of the Dry Stack Tailings Facility and places the pyrite in a stable, secure location. Pressure filters will dewater all tailings to approximately 85% solids on a batch basis, producing material for conventional dry stack tailings (depyritized) and paste fill

material (depyritized and pyritic concentrate) for underground backfill. Dewatered tailings will be discharged onto conveyor belts, and into two separate stockpiles before being loaded onto a truck for surface deposition as dry stack or to the underground backfill plant. Approximately 50% of the total tailings amount (only depyritized tailings) will be deposited as dry stack. All the pyrite concentrate together with the remaining depyritized tailings will be deposited underground for use in paste backfill.

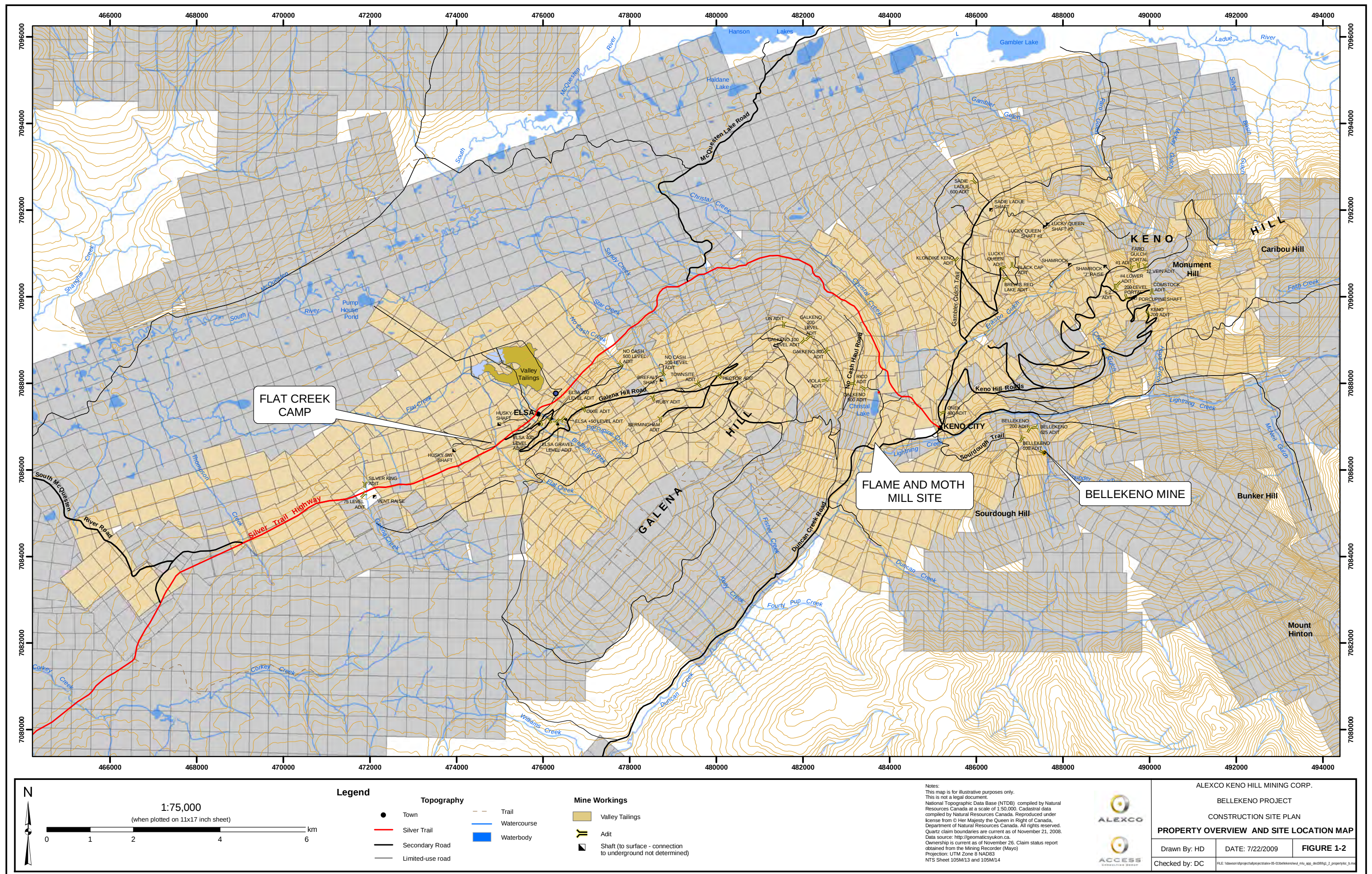
Meteoric runoff and drainage from the dry stack tailings facility (DSTF) and mill pad will be collected using water diversion and collection systems. A common water collection/polishing pond will be situated between the DSTF and mill pad for runoff and mill discharge collection. Conventional lime treatment will be applied as necessary in order to meet water licence discharge standards.

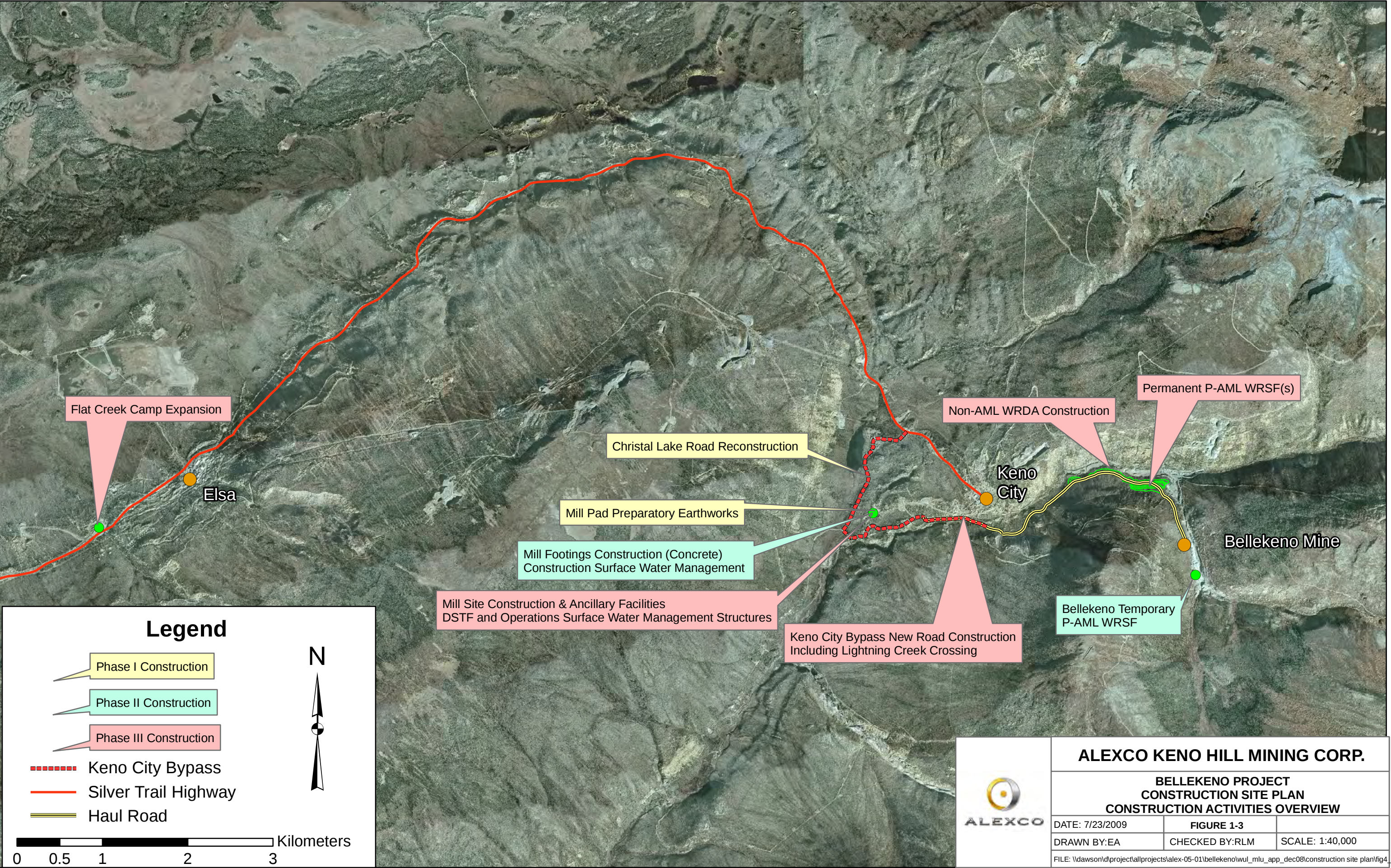
All wastewater from the Bellekeno mine reports to the Bellekeno 625 treatment facility, which is licensed under Water Licence QZ06-074 and consists of conventional wastewater treatment technology using continual lime addition to treat mine portal effluent.

The majority of construction activities for Bellekeno Mine Development will occur at the mill site (at former Flame and Moth pit). At Bellekeno East, a number of mine related facilities are already permitted and in use for ongoing care and maintenance, surface exploration, and advanced underground exploration and development. These facilities will continue to be utilized to support Bellekeno mine operations. With the exception of the temporary potentially-AML waste rock storage facility, no additional construction will be required at the Bellekeno mine site during Phase II of construction.



Figure 1-1 Project Location Map within Yukon





1.2 MINOR PERMITTING

In addition to a Quartz Mining Licence various minor permits will be required during the construction phase of the Bellekeno Mine Project; these permits will have specific terms and conditions pertaining to installation and construction of facilities. Some typical permits required (but not limited to) are described below:

An Access to Highway Permit will required from YG Highways and Public Works, Transportation Maintenance Branch for connecting the Christal Lake road to the Silver Trail Highway (Application Form for Construction or Modification of an Access to a Controlled Highway). A preliminary meeting and site inspection with YG Highways and Public Works was held in October, 2008 regarding the intersection of the Christal Lake Road with the Silver Trail Highway indicated that this access site will require widening and brushing to increase visibility but is otherwise suitable for highway access.

An Access to Highway Permit may also be required for the intersection between Christal Lake road and Keno City Bypass with Duncan Creek Road. A joint site inspection between Alexco and Government of Yukon Department of Highways of the Duncan Creek road near Keno City occurred on June 24, 2009. Department of Highways has committed to facilitating our construction activities by undertaking upgrading work on Duncan Creek road during the summer of 2009. Specifically, this work may consist of brushing, clearing, and realignment of portions of the Duncan Creek road in the vicinity of the intersections of the Flame and Moth access road and the intersection of the Keno City Bypass Phase II. These measures will improve the sight distances and suitability of the intersections for mine haul traffic. A number of additional minor permits will need to be obtained or amended to include Bellekeno mine facilities:

- An Air Emissions Permit No. 4201-60-026 is currently held from YG Environment in accordance with the Environment Act *Air Emissions Regulations*. This permit will continue to be used in support of the Bellekeno Mine operation.
- A Commercial Dump Permit No. 81-012 is currently held from YG Environment in accordance with the Environment Act *Solid Waste Regulations* as well as the Public

Health and Safety Act. This permit will continue to be used in support of the Bellekeno Mine operation.

- Alexco currently holds two (2) sewage disposal system permits at Elsa issued by YG Environmental Health Services: one septic system permit for the Flat Creek Camp (Permit #3012) and a septic system for the four houses (Permit #3131) constructed in 2008. Should the planned camp expansion at Flat Creek Camp require expansion of the existing septic system, plans for this expansion will be submitted as part of Phase III of the construction site plan.
- Special Waste Permit No. 41-199 is currently held from YG Environment in accordance with the Environment Act *Special Waste Regulations* for burning waste oil, generating and/or storing waste batteries, waste oil, waste solvents, and other special wastes.
- A Land Treatment Facility Permit will be required from YG Environment in accordance with the Environment Act *Contaminated Sites Regulation*.
- A Storage Tank System Permit is required from YG Environment in accordance with the Environment Act *Storage Tank Regulations* for installation and operation of fuel storage tanks.
- Various permits including Electrical, Plumbing, Gas Installation and Building will be required for building construction from YG Community Services.

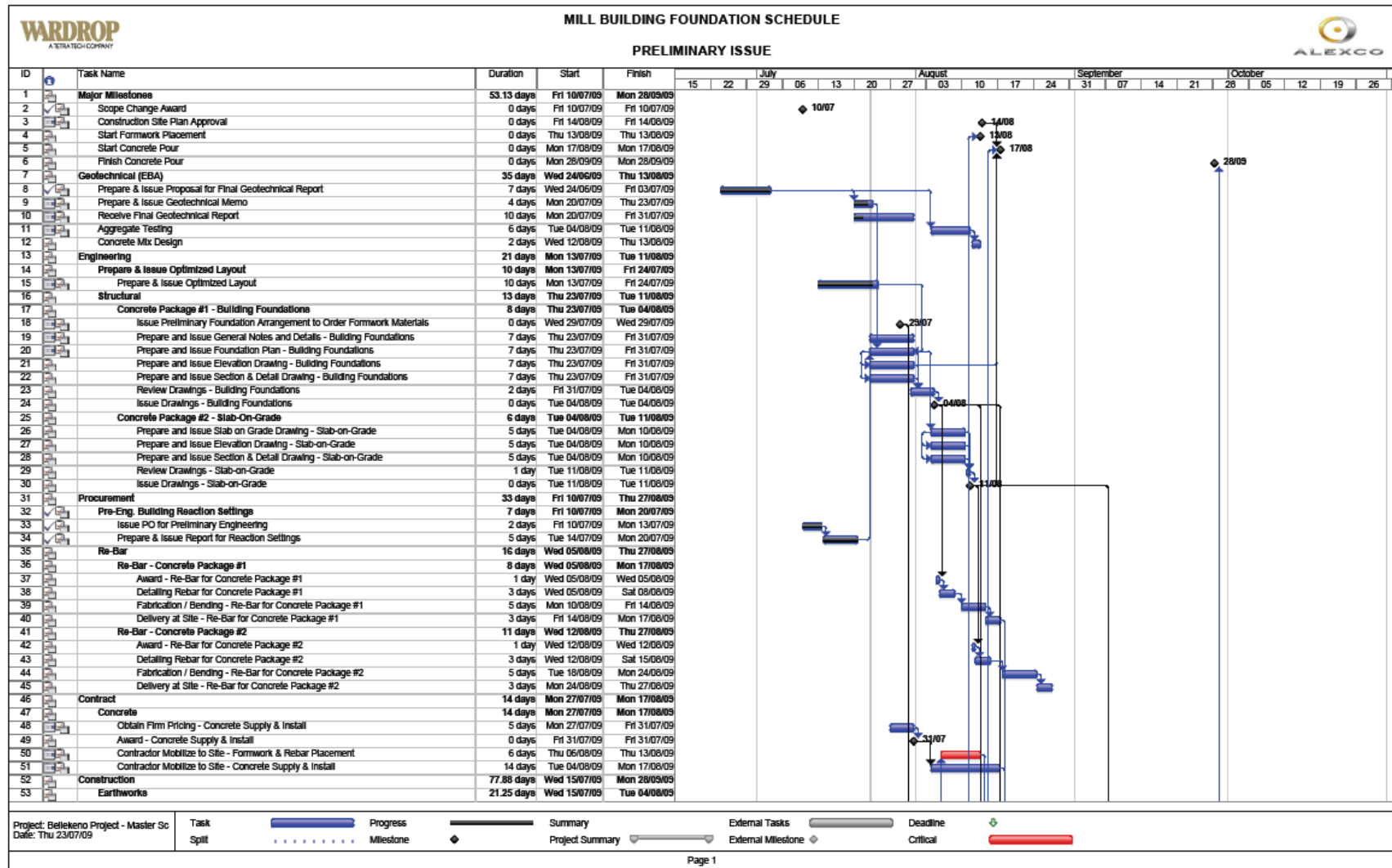
2.0 PROJECT SCHEDULE

The project was assessed by the Mayo designated office of YESAB under file number 2009-0030. The YESAB recommendations report which recommended the project proceed subject to recommended terms and conditions of mitigation measures is was issued on June 11, 2009. A YG Decision Document was received on July 11, completing the environmental and socioeconomic assessment. The completion of these two activities is a key step in the development of the project as only then can the Quartz Mining Licence (QML), which is required for construction to commence and ultimately for operation (in conjunction with the Type A Water Use Licence), be issued. It is understood that existing MLU authorization LQ00240 and a phased QML will enable initial project construction prior to issuance of the Water Use Licence.

The schedule assumes phased commencement of site construction by July 2009, commensurate with approvals as outlined elsewhere in this document. Assuming Alexco makes a positive production decision, commencement of milling and shipping concentrate could begin in the first half of 2010. See Figure 2-1 below for a detailed project schedule for Phase I and II of construction. A detailed schedule for Phase III of construction will be submitted with Phase III construction plans.

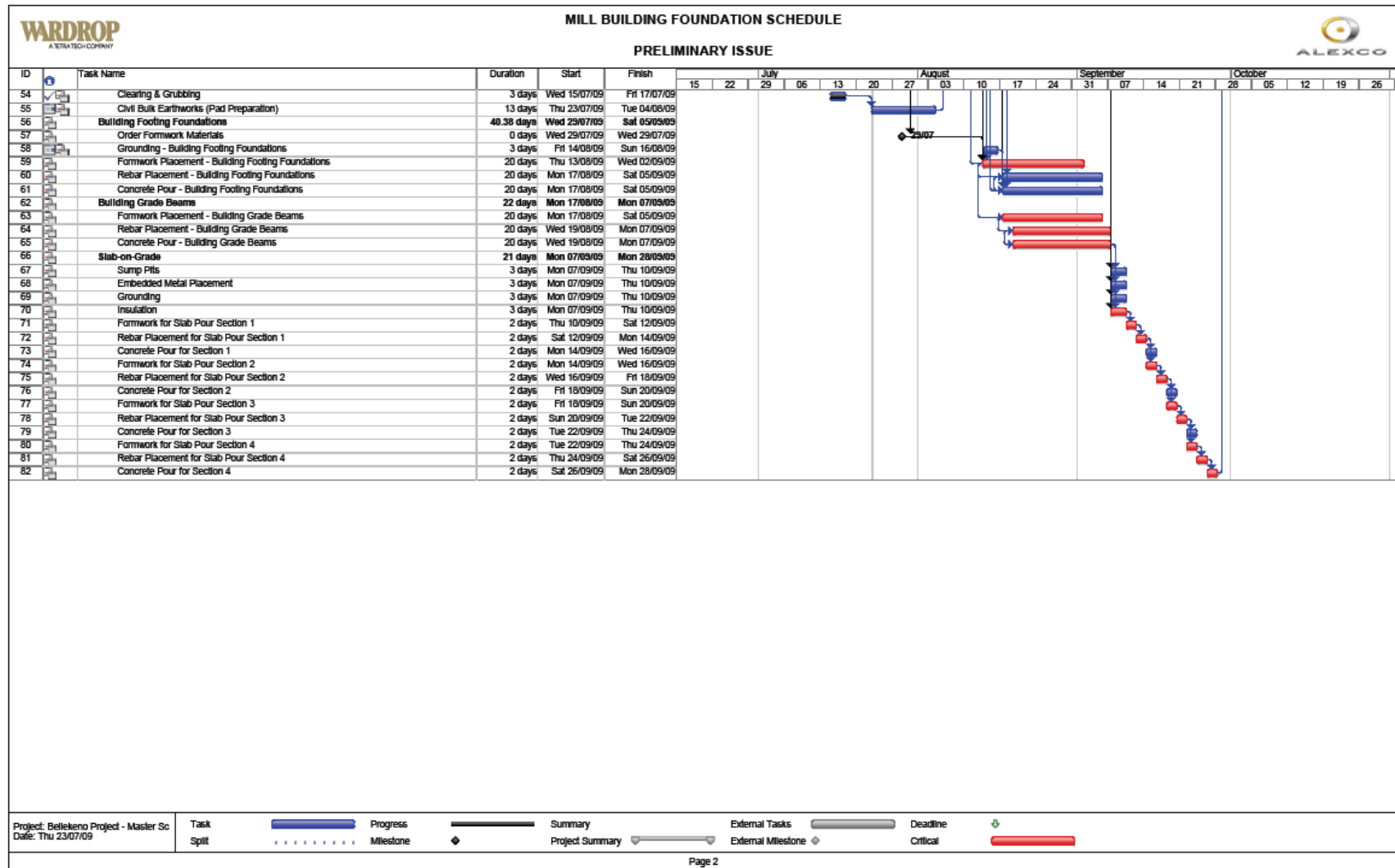
ALEXCO KENO HILL MINING CORP. BELLEKENO PROJECT, YUKON
CONSTRUCTION SITE PLAN

Figure 2-1 Phase II Building Foundation Construction Schedule



ALEXCO KENO HILL MINING CORP. BELLEKENO PROJECT, YUKON
CONSTRUCTION SITE PLAN

Figure 2-1 (continued) Phase II Building Foundation Construction Schedule



3.0 LAND TENURE AND MINERAL CLAIMS

The project site is located in the Mayo Mining District of the Yukon and consists of 1563 quartz claims, quartz claim fractions, quartz leases, and quartz lease fractions as shown on Figure 3-1. This map was adapted from the Yukon Government's mining recorders' website. A complete listing of Alexco's mineral claims in the Keno Hill Silver District is provided in Appendix B.

3.1 CLAIMS AFFECTED BY CONSTRUCTION

A total of 29 quartz claims and 37 placer claims will be directly affected by construction related to Bellekeno Mine development (see Table 1 and Table 2, respectively). 26 of these quartz claims belong to Alexco through wholly owned subsidiaries Alexco Keno Hill Mining Corp. or Elsa Reclamation and Development Company and 3 belong to M. Bindig of Erikson Gulch near Keno City. Of the placer claims, 21 are owned by Bardusan Placers Ltd. and the remaining 16 are owned by Frank Taylor.

Table 3-1 Quartz Claims Affected by Construction

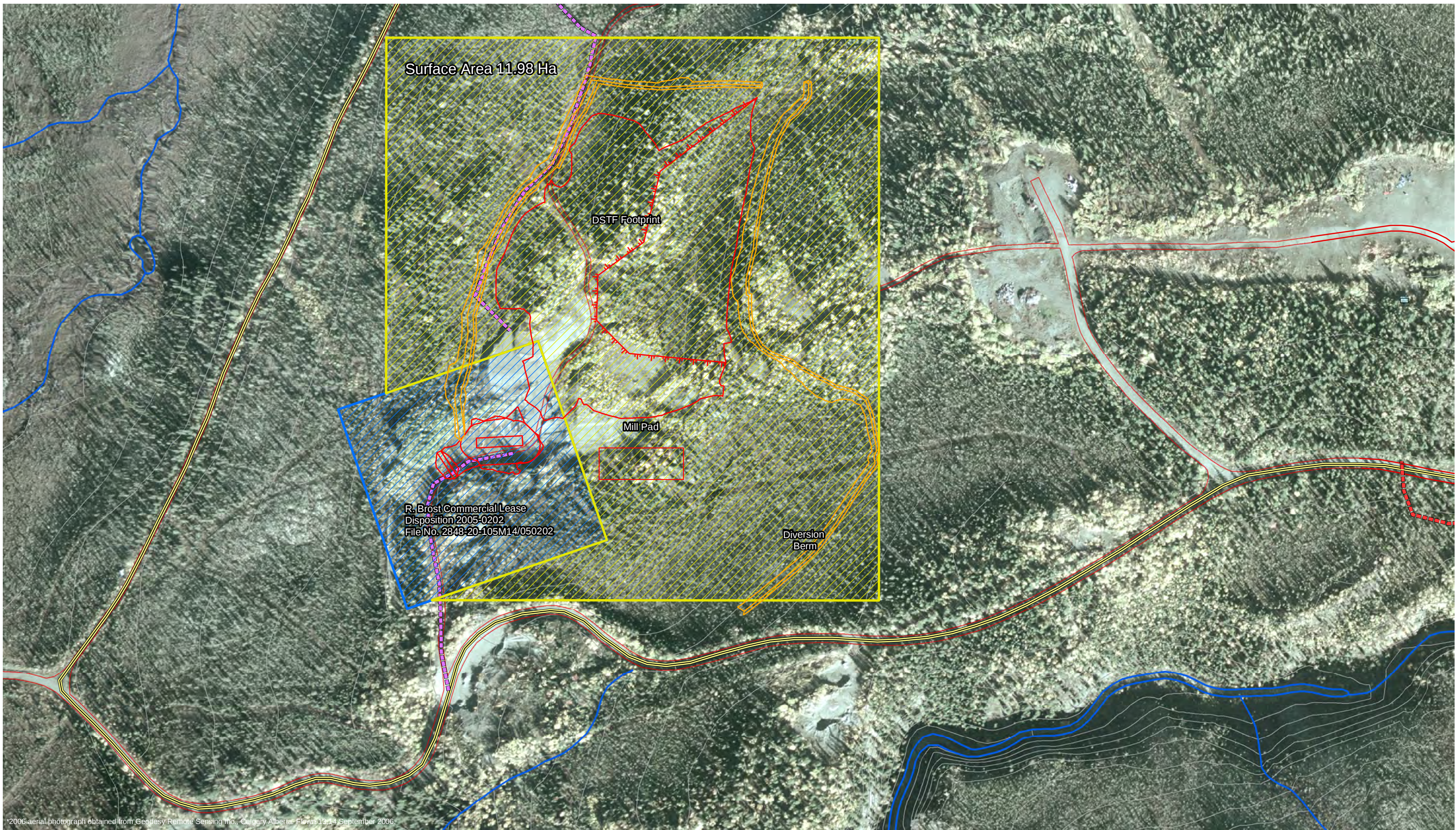
Claim Name	Nbr	Grant Number	RegType	Claim Owner	Record Date	Expiry Date	NTS
Lem	3	YA17397	Quartz	AKHM	11/14/1977	2/23/2030	105M14
WILDCAT		55426	Quartz	AKHM	6/3/1946	11/2/2027	105M14
DAVID		16097	Quartz	AKHM	12/8/1925	11/2/2027	105M14
SOLOMAN		55445	Quartz	AKHM	8/16/1946	11/2/2027	105M14
DAISY FRACTION		59645	Quartz	AKHM	7/22/1950	11/2/2027	105M14
K	94	YC56121	Quartz	AKHM	6/13/2007	6/13/2010	105M14
K	93	YC56120	Quartz	AKHM	6/13/2007	6/13/2010	105M14
K	80	YC42628	Quartz	AKHM	12/15/2005	12/15/2013	105M14
Lem	1	YA17395	Quartz	AKHM	11/14/1977	2/23/2030	105M14
TUNDRA		12838	Quartz	ERDC	10/27/1919	11/1/2020	105M14
ELI		55319	Quartz	ERDC	2/19/1945	11/2/2027	105M14
BES		56533	Quartz	ERDC	6/23/1948	11/26/2025	105M14
SEGLE		56534	Quartz	ERDC	6/23/1948	11/26/2025	105M14
SUDDO	9	59465	Quartz	ERDC	8/19/1949	12/19/2023	105M14
FALLS	16	59452	Quartz	ERDC	8/19/1949	5/22/2025	105M14
BRISTOL		59316	Quartz	ERDC	7/19/1949	6/27/2024	105M14
FRANCES	4	55600	Quartz	ERDC	4/18/1947	1/9/2024	105M14
FRANCES	6	56402	Quartz	ERDC	4/18/1947	1/9/2024	105M14
FLAME		38643	Quartz	ERDC	11/13/1929	11/29/2016	105M14
FRANCES	5	56401	Quartz	ERDC	4/18/1947	1/9/2024	105M14
FRANCES	7	56403	Quartz	ERDC	4/18/1947	1/9/2024	105M14
MOTH		38642	Quartz	ERDC	11/13/1929	12/8/2016	105M14
FRANCES	3	55599	Quartz	ERDC	4/18/1947	1/9/2024	105M14
OVERTIME	2	56582	Quartz	ERDC	8/13/1948	2/9/2023	105M14
SILVER FR.		38730	Quartz	ERDC	9/16/1931	12/15/2017	105M14
RAM		13073	Quartz	ERDC	6/4/1920	10/17/2020	105M14
Rage	1	YC39562	Quartz	Matthias Bindig	7/19/2005	7/19/2014	105M14
Rage	2	YC39563	Quartz	Matthias Bindig	7/19/2005	7/19/2015	105M14
Rage	3	YC48007	Quartz	Matthias Bindig	5/26/2006	5/26/2015	105M14
HUSKY	4	55540	Quartz	ERDC	10/22/1946	8/10/2023	105M13
MONTE CARLO		16569	Quartz	ERDC	7/7/1925	11/24/2012	105M13

Table 3-2 Placer Claims Affected by Construction

Claim Name	Nbr	Grant Number	RegType	Claim Owner	Record Date	Expiry Date	NTS
Creek Claim	8	3742	Placer	Bardusan Placers Ltd.		10/11/2018	105M14
Creek Claim	7	3736	Placer	Bardusan Placers Ltd.	7/7/1964	10/11/2018	105M14
Creek Claim	6	3735	Placer	Bardusan Placers Ltd.	7/7/1964	10/11/2018	105M14
Creek Claim	5	3734	Placer	Bardusan Placers Ltd.	7/7/1964	10/11/2018	105M14
Creek Claim	4	3733	Placer	Bardusan Placers Ltd.	7/7/1964	10/11/2018	105M14
Creek Claim	3	3732	Placer	Bardusan Placers Ltd.	7/7/1964	10/11/2018	105M14
Creek Claim	2	3731	Placer	Bardusan Placers Ltd.	7/7/1964	10/11/2018	105M14
Creek Claim	1	3730	Placer	Bardusan Placers Ltd.	7/7/1964	10/11/2018	105M14
L	9	P 02187	Placer	Bardusan Placers Ltd.	10/11/1977	10/11/2018	105M14
L	8	P 02186	Placer	Bardusan Placers Ltd.	10/11/1977	10/11/2018	105M14
L	7	P 02185	Placer	Bardusan Placers Ltd.	10/11/1977	10/11/2018	105M14
L	6	P 02184	Placer	Bardusan Placers Ltd.	10/11/1977	10/11/2018	105M14
L	5	P 02183	Placer	Bardusan Placers Ltd.	10/11/1977	10/11/2018	105M14
L	4	P 02182	Placer	Bardusan Placers Ltd.	10/11/1977	10/11/2018	105M14
L	3	P 02181	Placer	Bardusan Placers Ltd.	10/11/1977	10/11/2018	105M14
L	2	P 02180	Placer	Bardusan Placers Ltd.	10/11/1977	10/11/2018	105M14
L	1	P 02179	Placer	Bardusan Placers Ltd.	10/11/1977	10/11/2018	105M14
L	4	P 16061	Placer	Bardusan Placers Ltd.	10/19/1988	10/11/2017	105M14
L	3	P 16060	Placer	Bardusan Placers Ltd.	10/19/1988	10/11/2017	105M14
L	2	P 16059	Placer	Bardusan Placers Ltd.	10/19/1988	10/11/2017	105M14
L	1	P 16058	Placer	Bardusan Placers Ltd.	10/19/1988	10/11/2017	105M14
Will	16	P 47972	Placer	Frank Taylor	6/29/2007	6/29/2010	105M14
Will	15	P 47971	Placer	Frank Taylor	6/29/2007	6/29/2010	105M14
Will	14	P 47970	Placer	Frank Taylor	6/29/2007	6/29/2010	105M14
Will	13	P 47969	Placer	Frank Taylor	6/29/2007	6/29/2010	105M14
Will	12	P 47968	Placer	Frank Taylor	6/29/2007	6/29/2010	105M14
Will	11	P 47926	Placer	Frank Taylor	11/1/2005	7/1/2010	105M14
Will	10	P 47925	Placer	Frank Taylor	11/1/2005	7/1/2010	105M14
Will	9	P 47924	Placer	Frank Taylor	11/1/2005	7/1/2010	105M14
Will	8	P 47923	Placer	Frank Taylor	11/1/2005	7/1/2010	105M14
Will	7	P 47922	Placer	Frank Taylor	11/1/2005	7/1/2010	105M14
Will	6	P 47921	Placer	Frank Taylor	11/1/2005	7/1/2010	105M14
Will	5	P 47920	Placer	Frank Taylor	11/1/2005	7/1/2010	105M14
Will	4	P 47919	Placer	Frank Taylor	11/1/2005	7/1/2010	105M14
Will	3	P 47918	Placer	Frank Taylor	11/1/2005	7/1/2010	105M14
Will	2	P 47917	Placer	Frank Taylor	11/1/2005	7/1/2010	105M14
Will	1	P 47916	Placer	Frank Taylor	11/1/2005	7/1/2010	105M14

3.2 MILL SITE TENURE

In order to increase the level of tenure for the area around the Mill Site and ancillary facilities and the DSTF, a commercial lease has been applied for through Yukon Government EM&R Lands Branch (see Figure 3-2). The owner of existing commercial lease 105M14-050202 in the vicinity of the Flame and Moth area, Mr. R. Brost, has agreed to abandon this lease. This area will be added to Alexco's Flame and Moth lease area. Alexco also holds the quartz mining claims underlying the mill site.



*2006 aerial photograph obtained from Geodesy Remote Sensing Inc., Calgary Alberta. Flown 13-14 September 2006.



Legend



Existing Commercial Lease

Proposed Surface Lease Area

- Potential Mill Access Road
- Haul Route
- Public Road
- Exploration roads
- Contour



ALEXCO KENO HILL MINING CORP BELLEKENO PROJECT

CONSTRUCTION SITE PLAN
Flame and Moth Surface Lease

Drawn By: EA	DATE: 7/17/2009	FIGURE 3-2
Checked by: RLM	D:\Project\AIP\Project\ALEX-05-01\Bellekeno\Lease Application\FAM Lease for CSP.mxd	

4.0 CONSTRUCTION PLANS

This section describes in general terms construction activities associated with various components of the site construction plan. General site construction measures and construction surface water management, borrow areas, site access control and additional supplemental details regarding site road construction and management are included in Section 4.1 while Sections 4.2 – 4.4 describe Phases I—III of the construction plans. Section 4.6 introduces Decommissioning and Reclamation plans.

Project drawings are provided within Appendix A as well as within the design reports for specific mine components (also appended). As the project detailed engineering progresses, Issued for Construction drawings will be provided to Yukon Government Energy, Mines & Resources as required. Design criteria for the project are included within Appendix C.

4.1 General Site Construction Plans

4.1.1 Construction Surface Water Management Plan

These activities include those required to provide management of surface runoff to prevent sediment laden runoff from entering watercourses during construction. This Construction Surface Water Management Plan will be implemented to manage surface water runoff affected by project construction. Phase III of construction will involve construction of surface water management structures at the mill site which will provide water management for the life of the mine.

4.1.1.1 Erosion and Sediment Control

Construction of the mill pad and mill site will take place on previously impacted landscape, as the Flame and Moth site hosted a variety of surface exploration and underground and open pit mining operations between the 1950s and the 1990s. In particular, during the 1990s, the site was stripped in preparation of a 16,000 tonne open pit mine which never went into production. Perhaps partly because of this previous site disturbance, as well as the southern exposure and shallow soils over bedrock, there is no permafrost underlying the mill pad or mill site area, and the area is less prone to erosion than a previously undisturbed site.

Potential effects on erosion and sediment loading will be minimized by reducing the area of disturbance and maintaining and developing stable vegetation cover wherever possible during construction and all remaining project phases.

To avoid major erosion and sedimentation problems the following general practices will be implemented:

- The area of clearing and disturbed soil will be minimized – existing trails and disturbed areas will be used where possible to minimize the addition of new linear corridors and there will be no unnecessary disturbance to the organic mat and soils;
- Erosion protection measures (riprap, earth breaks or cross ditches) will be implemented as required;
- Early construction of diversion ditches and sediment control ponds to manage runoff and provide for settling of suspended solids will be implemented with inspection to ensure effectiveness;
- Construction activities will be completed efficiently to minimize the length of time disturbed soils are exposed;
- Site clearing will be timed to minimize soil compaction. To the maximum extent possible, disturbances will be restricted to times when soils are dry or frozen and avoid or delay construction during wet site conditions;
- Riparian areas will not be unnecessarily disturbed – a minimum buffer of 30 m will be maintained from surface watercourses to protect riparian areas;
- This Construction Surface Water Management Plan will be adapted as required to manage changing or unexpected site conditions.

The Construction Surface Water Management Plan is an adaptive management plan that describes conveyance structures and erosion and sediment control measures to be used during construction of mill site facilities. Measures to be implemented are outlined in Table 4-1:

Table 4-1 Surface Water Management Controls

Technique	Application
Diversion Ditches	Divert overland flow away from the construction site (interceptor ditches) or to sediment ponds (collection ditches).
Check Dams	Installed in ditches to reduce flow velocity.
Sediment Barrier	Brushwood wrapped in geotextile, hay bales, or sediment fences to trap sediment and reduce velocity of overland flow.
Sediment Ponds	Ponds to collect runoff through the construction site to settle out sediments, on an as needed basis
Revegetation	Disturbed areas minimized and reclaimed as soon as practical by surface roughening (using tracked equipment) then seeding. Straw, wood fiber/chips, erosion control blankets, granular materials and rock can be placed when disturbed soils have been seeded to provide erosion protection until a stabilizing vegetation cover is established. Best practices will be undertaken to avoid the introduction of invasive species. Active revegetation on areal disturbances, passive (natural revegetation) on linear sites.

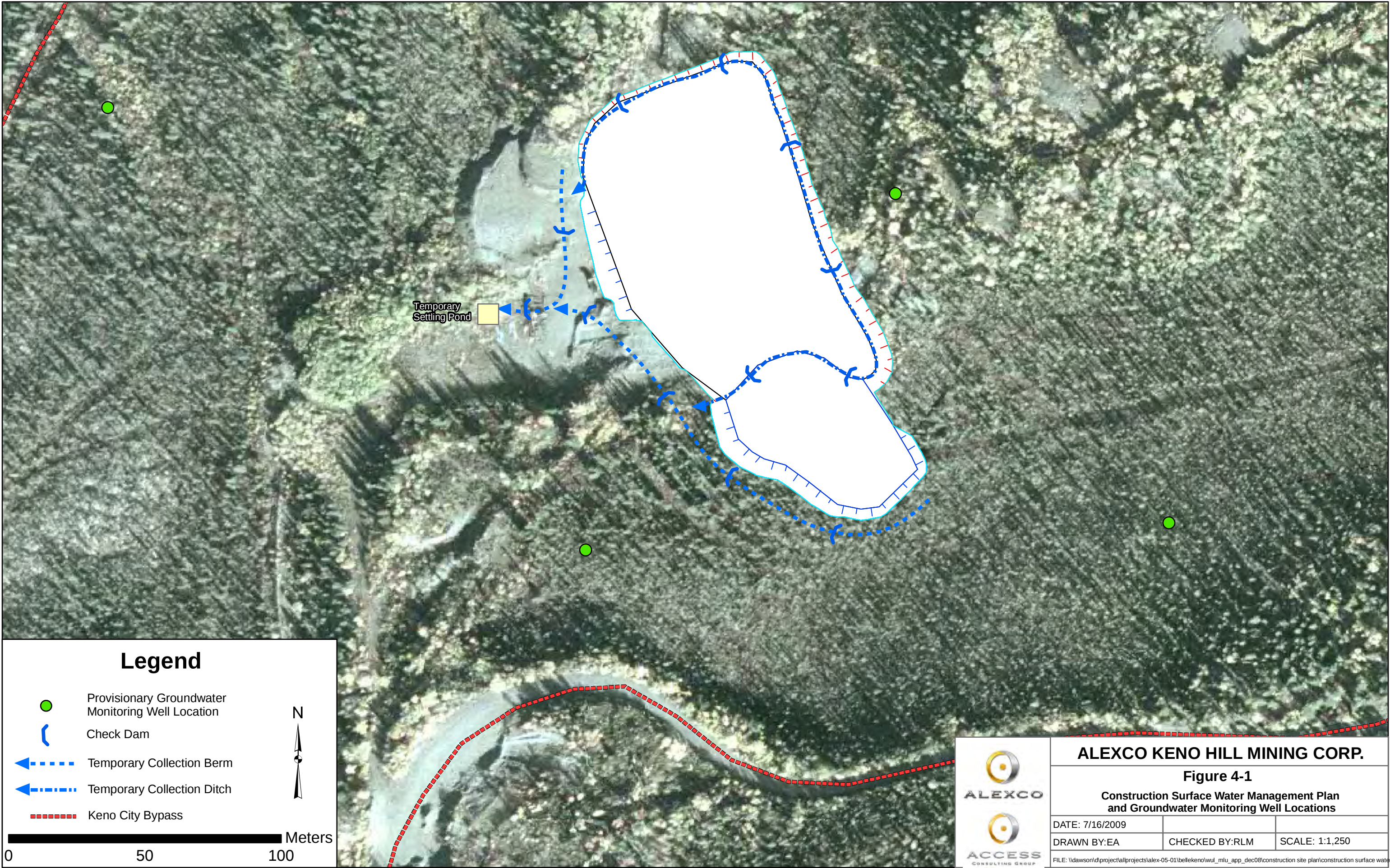
Figure 4-1 shows how surface runoff will be directed and stored and at the mine site. Surface water management plans which will be implemented during construction are outlined below.

4.1.2 Surface Water Management

The closest surface water drainage, Christal Creek, is approximately 300 meters from the Fame & Moth pit area, vegetated to the extent that surface runoff will be dispersed and absorbed, therefore no sediment from construction is expected to reach this watercourse. Nevertheless, we have outlined sediment control measures in the event of unusual storm rain events, or unusual snow pack combined with unusual snowmelt conditions should be experienced in the next year during construction.

During construction, a sediment pond may be employed if soil conditions indicate its necessity. Site clearing to date has shown there are only shallow soils over bedrock, and weather conditions to date have included minimal rain. However,, close monitoring will indicate if storage pond is required. Heavy equipment on site could construct a pond in a matter of hours if needed. The overland flow areas will promote sheet flow, thereby reducing flow velocities and encouraging infiltration.

The primary objective of the Construction Surface Water Management Plan (CSWMP) is to minimize construction related impacts to surface water quantity and quality, while also facilitating construction works. Surface water management controls are to be implemented to divert overland flow around construction areas, reduce erosion and remove suspended sediments from surface water before it is released into wide, natural overland flow areas or back into natural watercourses.



This CSWMP considers construction areas to be disturbed non-industrial areas with a potential for inert sediment generation. No treatment or control measures have been included for any industrial chemicals or other contaminants.

The CSWMP is based on four main principles for managing surface water during the construction phase of the project, as follows:

- Construction of surface water controls – potentially includes construction of sediment ponds, minor site diversion ditches, check dams and sediment barriers, and establishment of stockpile areas prior to any large scale land clearing or construction activity begins.
- Diverting overland runoff from undisturbed areas – includes interception and diversion of runoff from undisturbed areas around the construction sites to keep the construction areas dry and to minimize the potential for sediment transport into natural watercourses.
- Control of sediment near the source - the size and number of erosion and sediment controls is reduced by controlling sediment near the source.
- Protect receiving waters downstream of the construction sites – runoff from disturbed areas is collected and treated in sediment ponds to remove sediment prior to re-use at the site or release to natural watercourses.
- Potential augmentation with flocculent blocks to assist sedimentation deposit into ponds.

A number of temporary water management control structures have been proposed for the CSWMP. These structures correspond to standard Best Management Practices (BMPs) which have been adopted for the Project (see Section 4.1.2.4). To assure continued performance and functionality, all control structures will be inspected regularly, maintained and repaired, as required.

4.1.2.1 Temporary Diversion Ditches

Minor site temporary diversion ditches may be used to capture overland water flow from undisturbed areas (only required for storm events, as normal runoff through wooded area is

minor) and divert it around the construction sites and into wide, natural overland flow areas or natural watercourses downslope. They will have sufficient capacity to accommodate the 1:5 year, 24 hour return period peak flow (including a snowmelt contribution) with a minimum freeboard of 300 mm. These measures will not only facilitate construction, but will also limit the volume of water requiring treatment and the amount of sediment potentially eroded from disturbed areas.

Ditches with less than 2% grade are unlined but contain check dams to reduce velocities and settle sediment. Ditches that exceed 2% grade are lined with non woven geotextile over which rock riprap will be placed.

4.1.2.2 Check Dams

Check dams are small temporary structures installed within a ditch to reduce flow velocity, reducing potential to cause erosion in the channel and allowing sediment to settle.

For this project, it is recommended that check dams be temporary structures either constructed of in situ granular materials or haybales covered with geotextile cloth.

4.1.2.3 Sediment Barrier - Brushwood Barriers and Sediment Fences

Surface runoff onto the site from the adjacent wooded areas is expected to be minimal. Storm events may, however, cause runoff from the site itself down slope, therefore sediment barriers will be used as required. These are temporary filters made of brushwood available at the site wrapped in geotextile or sediment fences that provide a physical barrier to sediment and help reduce the velocity of overland surface water runoff. Sediment fences are linear filter barriers installed to prevent or minimize transport of sediment in overland runoff.

Brushwood barriers or alternatively sediment fences can be used down slope of disturbed areas and around stockpiles to capture sediment.

4.1.2.4 Additional Considerations

In addition to the control structures described above, the following BMPs will be applied to the construction sites:

- Maintain as much of the existing vegetation as possible. Limiting the disturbance is recognized as the single, most effective method of reducing erosion.
- Limit the length and steepness of excavated slopes by benching.
- Surface compaction reduces the potential for suspending sediment. Roughening the surface of disturbed areas serves to increase infiltration into the ground surface during rainfall events. Roughening the surface of a disturbed area can be accomplished by tracking the area with heavy equipment, such as a bulldozer, or track mounted excavator.
- Prevent tracking of sediments off-site by implementing dust control measures for roads.

All water management structures will be monitored weekly and after each rain event for maintenance purposes. Accumulated sediment will be cleaned out and buried and away from drainage flow paths and natural watercourses. Additional erosion and sediment controls may need to be implemented as required.

4.1.3 Groundwater Monitoring Wells

In order to comply with Yukon Government's Decision Document on the Bellekeno Mine Development Proposal (YESAB file number 2009-0030), prior to commencement of mine operations, Alexco will install a number of groundwater monitoring wells around the Flame and Moth mill site in order to assess baseline ground water quality and to characterize groundwater flow pathways and velocities. Conceptually, groundwater characterization is required with respect to four elements around the Flame and Moth mill site and their potential influence or effects:

Table 4-2 Mill Site Groundwater Monitoring Program Elements

Element	Proposed Location	Rationale
Keno City Solid Waste Management Facility	200 m east of mill site	Potential source of groundwater contamination to the mill site from hazardous materials dumping for many years
Keno City water well	1200 m east of mill site	To confirm hydrogeological opinion that the mill site will not affect Keno City water well
Christal Creek	400 m west of mill site	Potential groundwater connection with aquifer beneath mill site
Lightning Creek	400 m south of mill site	Potential groundwater connection with aquifer beneath mill site, to address concerns from stakeholders about Lightning Creek drainage contamination

Conceptual locations for these wells are shown on Figure 4-1. Finalized well locations and a detailed groundwater monitoring program will be completed by a hydrologist or hydrogeologist and final designs will be submitted for approval once this work is completed.

4.1.4 Site Road Construction and Management Guidelines

As discussed in the introduction, construction plans for site access road improvements were submitted on June 26th 2009 under a pre-season report addendum under Alexco's Class 4 MLU authorization LQ00240. A number of additional measures related to site access, road management and public safety and construction events notification are presented here:

- Speed limits will be enforced for mine traffic and posted along the access and site roads (maximum 40 km/hr, reduced to 20 km/hr at blind corners and bridge crossings). Mine traffic between the Bellekeno Mine and the mill site will be radio controlled for safety and speed control.
- To the maximum extent possible employees will be encouraged to take advantage of project bussing and transportation from Mayo/Elsa to the mine and mill site, thereby minimizing hunting opportunities and direct road mortalities;
- Private employee off-road vehicles will be prohibited on the access road and at the mine site.

- Existing trails and disturbed areas will be used where possible to minimize the addition of new linear corridors and there will be no unnecessary disturbance to the organic mat and soils.
- New trails, roads, or cut-lines will be doglegged to prevent predator line of sight into new habitat.
- Snow clearing equipment will be available on site to maintain the mine access road.
- Snow plows on the access road will create breaks in the snow berm every 0.5 km to allow for wildlife to escape from the access road.
- Signage posted near all construction sites.
- Weekly events notice to be continuously updated and posted at three locations (Post Office in Keno City, Post Office in Elsa, and Keno City Snack Bar). An example of the weekly events notice is shown below:



Alexco Resource Corp

Keno Hill Project

Weekly Events Notice

Week of:

Alexco site manager:

EXPLORATION

- Continued surface exploration (diamond drilling) throughout Keno/Sourdough Hill areas;
- Expect routine light vehicle traffic through town from drill contractor (Kluane Drilling) to access sites on Keno Hill;

CARE & MAINTENANCE/CLOSURE

- Continued water treatment at Bellekeno, Galkeno 900, Galkeno 300, and Silver King 100;
- Expect occasional vehicle traffic to access treatment sites;
- Ongoing field studies for Closure Plan;
- Keno 700 physical hazards remediation expected to be complete next week;

MINE DEVELOPMENT

- Mining contractor (Procon) on reduce activity – care & maintenance & site security;
- mill site preparatory earthworks underway at old Flame & Moth open pit site;
- Underground drilling complete, contractor demobing;

GENERAL

- Keno City communication protocol meeting planned for July 27th;
- YG Highways & Public works to begin Duncan Creek Road realignment & brushing Tuesday July 21, contractor Ewing Transport, and;
- SAFETY NOTE: traffic awareness on Silver Trail Highway – increased traffic due to summer tourist and mining exploration activity from unrelated companies.

Road or bridge construction and maintenance at the Lightning Creek crossing will be performed so as to ensure minimal riparian and aquatic disturbance (i.e. hand cutting). Construction will be minimized around streams during critical spawning periods (May-June for grayling). Construction of the Lightning Creek crossing will follow the Department of Fisheries and Oceans Operational Statement for construction of a clear span bridge.

Preliminary Christal Lake road design/reconstruction details are shown in Drawings 100-CI-101 through 100-CI-109 in Appendix A. The road alignment follows the haul road and is not expected to encounter any permafrost; however, once geotechnical conditions are confirmed the access road alignment may be refined as roads will be constructed to avoid permafrost exposure where possible. Otherwise roads will be engineered to maintain permafrost conditions under and surrounding the road. Cut and fill operations will be minimized to reduce road footprint and conducted to achieve the design grades and final surfacing with crushed gravel. Ditch construction along roadways will incorporate settling ponds and baffles to reduce erosion and settle out sediments. These general principles will also be followed for all new road construction. Refer to Section 4.1.6 for the potential location of borrow areas.

4.1.5 Access Control

The access roads to the mill and mine sites will be at least partly via private roads and public use will not be allowed. Due to the fact that segments of all site access roads have been open to the public (and thereby have become public roads) it is has become impermissible (and impractical) to block access using gates to many of these road segments. In order to provide some measure of public safety, all new roads build by Alexco will incorporate signage indicating that they are private mine haul roads and warning the public against trespassing and use gating as necessary.

4.1.6 Borrow Areas

Construction of earthwork structures will require a range of soil and rock types with specific geotechnical properties to provide suitable construction materials. It is expected that these materials will be sourced from borrow areas on site as well as several other sources in the area. Potential site borrow areas for the initial stages of construction have been identified and are shown in Figure 4-2. Appropriate material pre-stripped from the waste rock storage area and open pit will also be used as a source of borrow materials. Mine site borrow areas including material type and volume estimates are summarized in Table 4-2.

Potential borrow locations in the vicinity of the mill site have been identified and are shown on Figure 4-2. Geotechnical investigations will be conducted at potential borrow locations prior to the extraction of materials to confirm the quality and quantity of granular resource present.

Prior to the development of any of the borrow sources, drainage ditches will be constructed to divert clean run-off around the borrow area. Borrow areas will be excavated in near-horizontal layers and in such a manner that water will not collect and stand therein. In the event that the topography results in water from within a borrow area being discharged, it will be directed by drainage ditches to a sediment pond to allow the turbidity to settle out before discharge.

Once borrow sources have been exhausted, the area will be scarified, fertilized and seeded.

Table 4-3 Site Borrow Areas

Borrow Area #	Borrow Source	Material Type	Estimated Volume Available (m³)	Probable Use
1	Old Flame and Moth Pit Stripping Spoils	Glaciofluvial/alluvial gravel and till	25,000	Mill pad construction, general mill site construction, water diversion and retention structures, closure measures
2	Lightning Creek Placer Tailings	Alluvial sand, silt and gravel, mostly size sorted by washing (sluicing) into storage areas of predominantly fines and coarser material	>1,000,000	Mill pad construction, general mill site construction, water diversion and retention structures, closure measures concrete aggregate, also as base for temp P-AML WRSF at BK East
3	Sourdough Trail Pit	Sand	20,000	Liner construction for temporary and permanent P-AML WRSF(s)
4	Bellekeno Mine	Non-AML waste rock	210,000	Access road construction, base for possible future permanent P-AML WRSF(s)
5	Duncan Creek Road Realignment waste	glaciofluvial sand & gravel/till	100,000	Mill pad construction, concrete aggregate, fill, KC bypass road construction

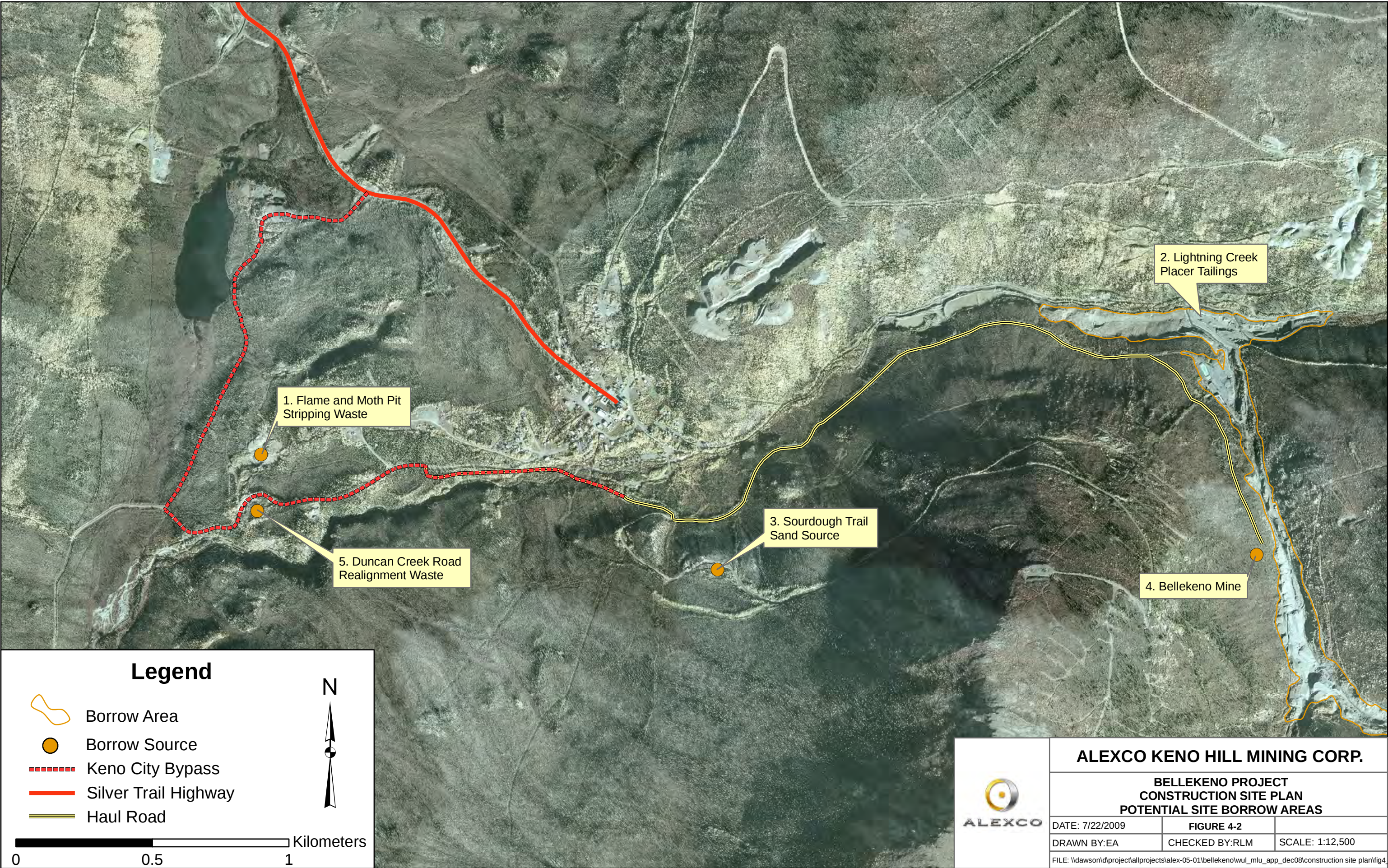
4.1.7 Geochemical Evaluation Protocol

Non-AML waste rock will be used for a number of mine development construction activities. A comprehensive waste rock management program has been developed and approved as part of the Bellekeno Advanced Underground Exploration and Development Program and will continue be used during Mine Operations. This program was designed to efficiently identify and segregate Potentially Acidic/Metal Leaching (P-AML) from Non-AML using a number of field screening methods and is verified by extensive, systematic geochemical and ABA

laboratory testing. This program will be relied on in order to ensure all mine waste rock used for road material and general construction purposes is non-AML.

As a past producing mine, Flame and Moth pit site may contain mineralized material which could be potentially acid generating/metal leaching. This material will be identified visually and placed either in the pad under the concrete or for use in the coarse ore stockpile.

Other aggregate and other non-waste rock borrow building material sources (surficial sands and gravels from Sourdough Trail sand, Lightning Creek placer tailings, Duncan Creek realignment) are deemed unlikely to be acid generating or metal leaching and therefore will not be subject to geochemical/ABA testing prior to use.



Legend

-  Borrow Area
-  Borrow Source
-  Keno City Bypass
-  Silver Trail Highway
-  Haul Road



0 0.5 1 Kilometers



ALEXCO KENO HILL MINING CORP.

**BELLEKENO PROJECT
CONSTRUCTION SITE PLAN
POTENTIAL SITE BORROW AREAS**

DATE: 7/22/2009	FIGURE 4-2	
DRAWN BY:EA	CHECKED BY:RLM	SCALE: 1:12,500
FILE: \\dawson\dl\project\all\projects\alex-05-01\bellegen\wul_mlu_app_dec08\construction site plan\fig4_2 borrow are		

4.2 PHASE I CONSTRUCTION

Phase I of construction involved preparatory earthworks for the mill pad footprint to enable concrete work. This work commenced on July 15th and will be completed by approximately July 30th. Reconstruction/rehabilitation of the Christal Lake Road will be undertaken after preparatory earthworks have been completed. Please see Appendix I for site construction plans submitted as Phase I.

Preparatory Earthworks Mill Pad, July 16, 2009



4.3 PHASE II CONSTRUCTION

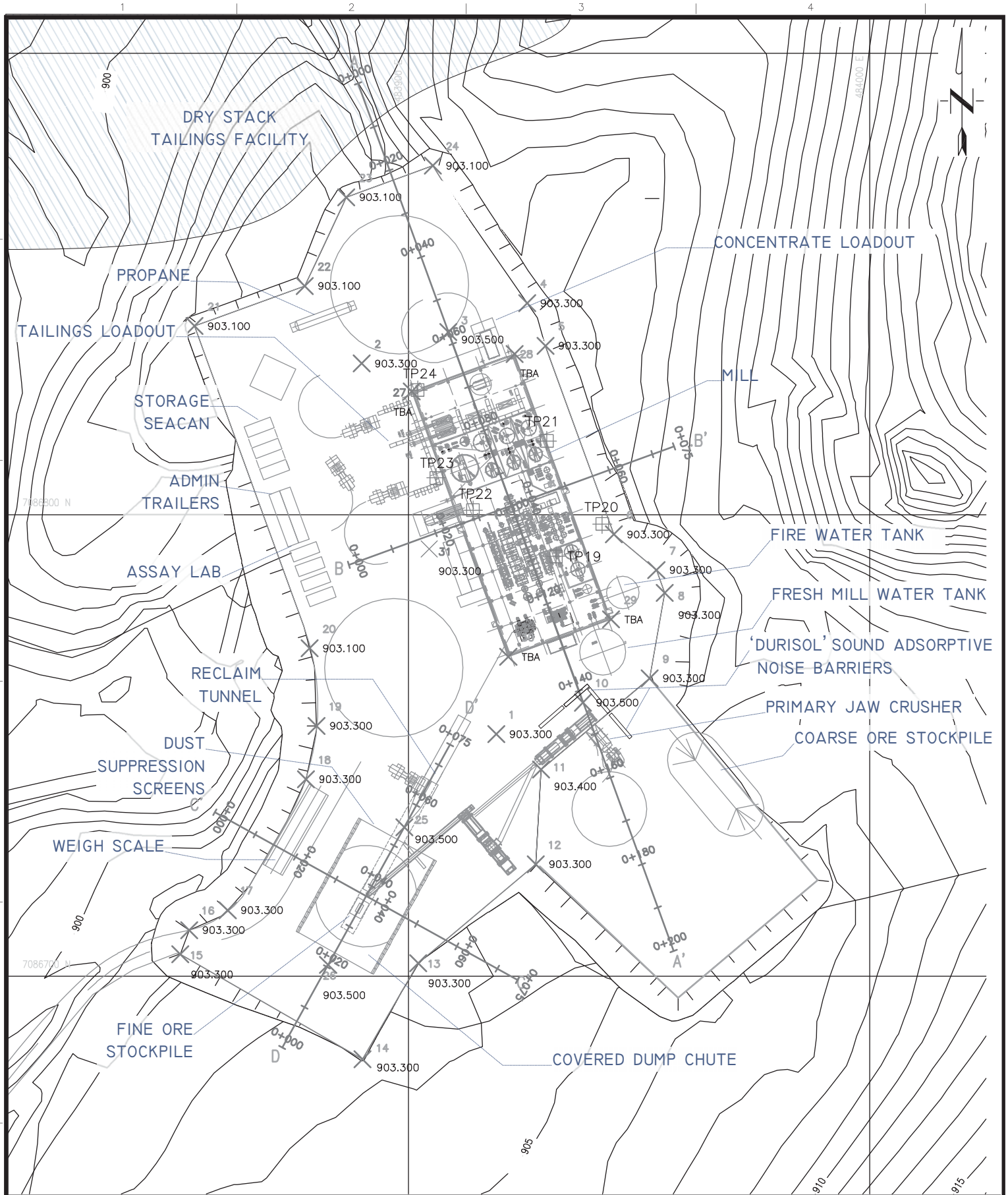
The following general areas and activities are scheduled during Phase II of project construction. These represent the construction activities to be accomplished prior to the issuance of the Type A Water Use Licence. In general, Phase I and II represent the construction activities required to be completed during the 2009 weather window in order to commence production in 2010.

4.3.1 Infrastructure

The following sections outline construction plans for project infrastructure mill pad concrete work and construction of temporary Non-AML WRSF at Bellekeno.

Prior to initial construction activities, the Yukon Water Board will be notified of planned water usage through the provision of a Schedule 3 – Notice of Water Use/Waste Deposit Without a Licence, water will be taken from Lightning Creek in order to assist with achieving desired compaction in the mill pad. As project permitting proceeds it is anticipated that a Type A Water Licence could be issued by mid-2010 and subsequently water related activities would be carried out in accordance with the licence.

Phase I and II of project construction is shown in Figure 4-3 and further details of the project construction plans and sequence follow. See Figure 2-1 for the targeted development schedule for Phase I and II.



ALEXCO
ALEXCO RESOURCE CORP.

ACCESS
CONSULTING GROUP

WARDROP

0 10M 20M 30M 40M

ALEXCO KENO HILL MINING CORP.
BELLEKENO PROJECT

PLANT SITE LAYOUT

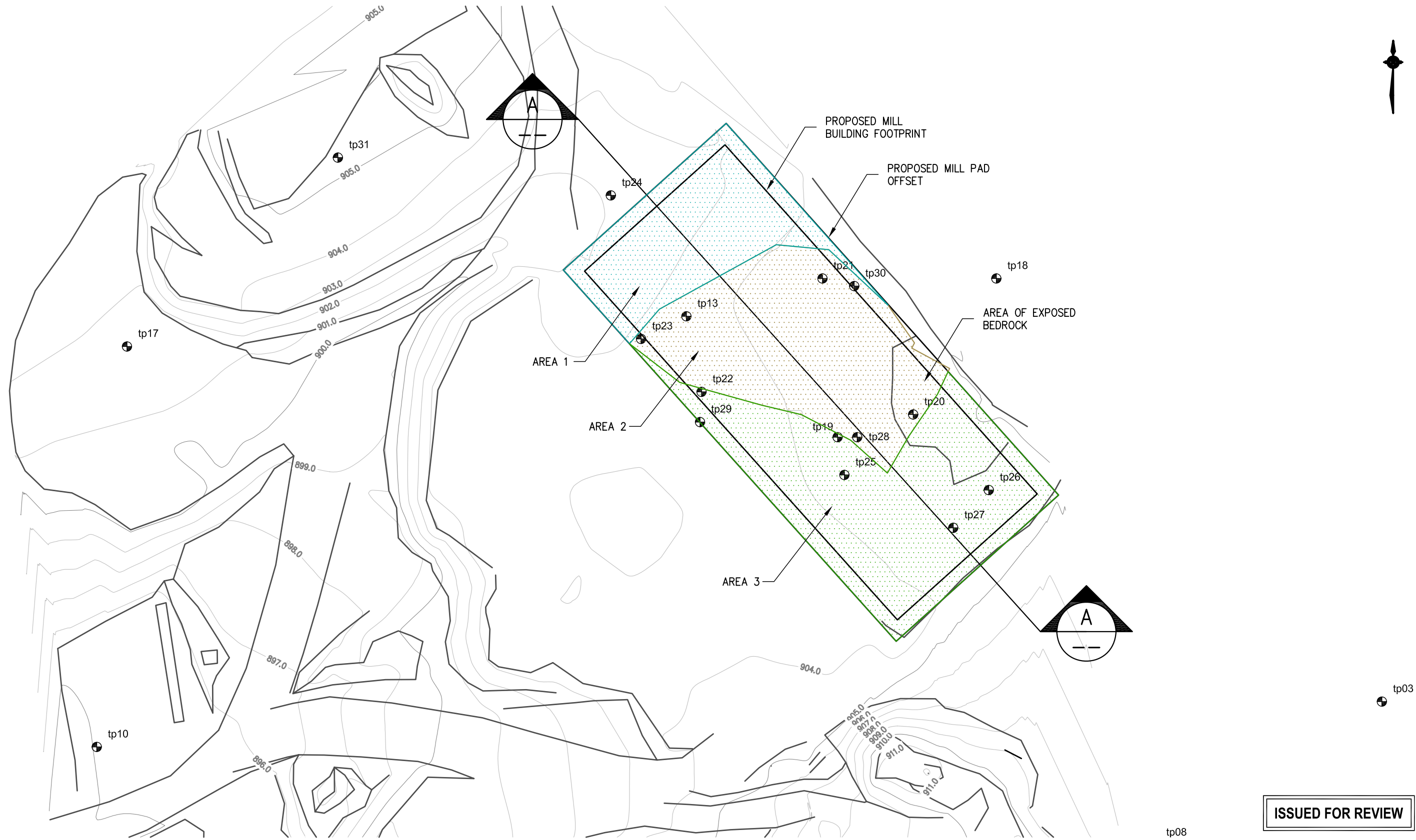
JULY 2009

FIGURE 4-3

4.3.2 Mill Pad Concrete Foundation Construction

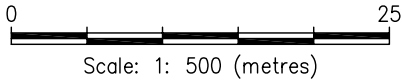
See Appendix A for construction drawings. Specifically related to mill foundations and concrete work, see Drawing E00-15-001 and E00-15-002. For Design Criteria, see Appendix C.

Two geotechnical test pitting programs have been carried out at the Flame and Moth mill and DSTF area by EBA Engineering to determine the extent of permafrost in the locations planned for infrastructure development. All organic soils, weak mineral soils, ice-rich soils and any other soils deemed to be unsuitable will be removed down to competent mineral soils or fractured bedrock under the mill facilities, and collection/treatment ponds will be constructed on a prepared foundation.



ISSUED FOR REVIEW

LEGEND:
● - TESTPIT LOCATION



CLIENT

ALEXCO

EBA Engineering
Consultants Ltd.



FLAME AND MOTH MILL SITE
GEOTECHNICAL RECOMMENDATIONS

SITE LOCATION PLAN

PROJECT NO.
W14101178.002

OFFICE
EBA-WHSE

DWN
CJD

DATE
JULY 2009

CKD
JRT

REV
0

Figure 4-4

4.3.3 Bellekeno Temporary Potentially-AML Waste Rock Storage Area

A ~ 10,000 tonne temporary potentially-AML WRSF will be constructed on Thunder Gulch near the Bellekeno East Portal. For additional details and location of this facility refer to Appendix J, entitled Technical Memo Regarding Temporary P-AML Waste Rock Storage Facility Geotechnical Stability from EBA Engineering Ltd (to be submitted separately on a later date).

4.4 Phase III Construction Activities (Provisionary)

At the Flame and Moth Mill Site, in addition to the Mill building itself a number of other ancillary facilities will be at the mill site. These will consist primarily of mobile units or will be constructed on site. Specifically, these will include the following:

- Fine and Coarse ore stockpiles
- Administration building;
- Assay Laboratory facility;
- First Aid unit;
- Electrical Substation;
- Warehouse Storage;
- Propane Storage;
- Fuel Tank;
- Weigh scale
- Sea Container Storage and Loadout; and
- Water Treatment facility

The overall general arrangement for the mill site is provided in Figure 4-3. (Some of the drawings or figures in supporting documentation are earlier versions and may show slightly differing arrangements for final layout mine components. These will be updated in due course and a final site as built will be provided to Yukon Government.) Phase I and Phase II of construction will represent activities that can be completed under the existing Type B Water Licence.

4.4.1 Flat Creek Camp Expansion

As described in the Bellekeno Mine Development Project Proposal (YESAB file number 2009-0030), the existing ~ 80 man exploration camp at Flat Creek will be expanded to accommodate approximately 150 people with the addition of another trailer camp unit. If required, an additional temporary “road-builders” type camp provided by the initial earthworks contractor will service the project during the construction phase.

Flat creek camp expansion activities will commence when the weather is suitable and will comprise clearing, leveling and filling of the site. An engineered conventional septic tank and below ground tile field for sanitary waste disposal will be installed as soon as practical after that, pending approval by Yukon Government Environmental Health Services. A well to supply the camp will be drilled in order to provide an additional potable water supply for the camp.

Electrical power for the camp will continue to be supplied by Yukon Energy Corp. and existing propane tanks will provide fuel for heating and cooking. The existing kitchen/dining area has enough capacity for operations and will continue to be used. Board walkways will connect the building units.

4.4.2 Mill Building Construction

The mill building will be constructed according to Wardrop Engineering Inc., designs as depicted on Drawing numbers E00-10-001, E00-10-002, E00-10-003, E00-10-004 in Appendix A for Mill building General Arrangement drawings. Civil and Mechanical design criteria are found in Appendix C.

4.4.3 Mill Site Ancillary Facilities

An Administrative Building of modular construction (trailer unit approximately 260 m²) will be set up adjacent to mill building (see Figure 1-3 General Arrangement).

4.4.4 Mill Process Area

The main Process Area comprises the following facilities (shown on Figure 4-3):

- Mill building;
- Assay lab;
- Office trailer;

- Sample preparation lab;
- Fine and coarse ore stockpiles;
- Mobile jaw and cone crushers;
- Warehouse storage containers;
- Propane storage;
- Sea container storage and loadout area, and;
- Fuel tank;
- Weigh scale.

The Water Treatment Plant, which will be housed within a building, is designed to treat excess process water and surface runoff from the DSTF and mill pad prior to discharge into the receiving environment.

Work on the foundations for buildings in the process plant area is scheduled to commence late in Stage 1 or as early as practical in Stage 2 so as to enable buildings to be erected and closed in prior to the onset of winter conditions. Concrete will be provided from a temporary batch plant erected close to the plant area. Aggregate for the batch plant is expected to be produced from crushing of mine pre-strip material, subject to final testing. Civil Design Criteria is described in Appendix C.

4.4.4.1 Crusher Area

The Crusher Area is located south of the Mill building. The area will be graded to the correct elevation and will be surrounded with Durasol sound reduction panels and dust suppression screens.

4.4.4.2 Substation

Permanent power for the operation will be provided from the Yukon Energy grid by means of a power tap at main 69 KV Line between Elsa and Keno City. Yukon Energy will construct a spur line to the property which will terminate at the new Substation located either in the process facilities area, or on Alexco's lot 956 near the old Mackeno Mill site. The Substation will be nominally 10MVA capacity and will transform the incoming 69 kV power to 4160V for site distribution. Construction and backup power will be supplied by a 1 MW diesel generator unit located onsite.

During Phase III, area will be constructed to grade and equipment and building foundations will be prepared for subsequent building erection and equipment installation. Buried services and duct banks will be constructed to connect the substation to other facilities.

4.4.4.3 Water Supply & Distribution

To support the construction camp, a well will be located near the camp to provide a potable water supply. The water will be purified by a packaged treatment unit located in a trailer adjacent to the camp and stored within a tank installed near to the camp.

A series of monitoring wells to be located around the mill site will also be utilized provide make-up water for the mill (see Figure 4-1). These will be developed in subsequent stages of construction. Makeup water from the wells will be pumped via pipeline to a 10 meter diameter by 10 m high storage tank in the mill building. Drawing A00-09-012 in Appendix A provides a flow sheet of water distribution.

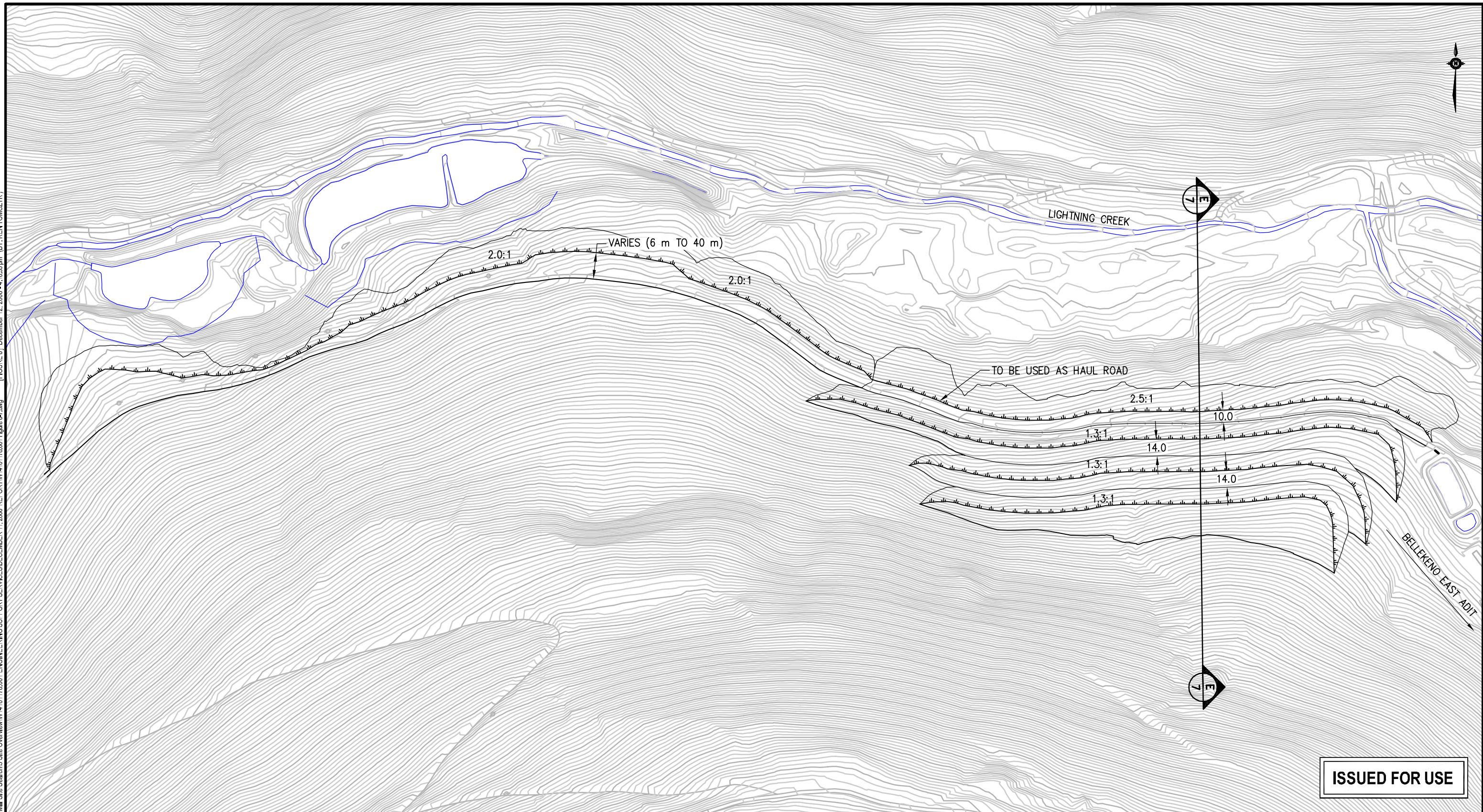
Camp waste will be managed as per the Waste Management Plan within Appendix D.

4.5 NON-AML WASTE ROCK DISPOSAL AREA

Preliminary designs for the non-AML WRDA were submitted as part of the Project Proposal for assessment (Figure 4-5).

The waste rock will be hauled from the Bellekeno adit directly to the WRDA. The WRDA will be constructed as a wrap around dump, so the lower benches will be constructed first. The lowest bench will follow the existing road alignment and have a slope to the existing ground surface of 2.5H:1V. The waste rock will be dumped in 10 m benches and allowed to fall to the bench below it at the natural angle of repose of the rock. The stability of the pile was checked using Geostudio 2007 – Slope W module. The factors of safety calculated for the waste WRDA and the guidelines set forth by the BC Mine Waste Rock Pile Research Committee (1991) are summarized in Table [6-11]. The WRDA will not need re-contouring at closure as the long-term stability of the pile should meet the guidelines. Waste rock piles in the area have been standing at the natural angle of repose without significant stability problems for over 30 years.

Q:\Whitehorse\Data\0201-drawings\Keno\W1410178 Mill Site Search3 Site Overview\W1410178,001 ENGINEERING SUPPORT SERVICES\DECEMBER 11, 2008 REPORT\W1410178,001 Figure 6-7.dwg [FIGURE 6] December 12, 2008 - 4:10:55 pm (BY: KEN TOMCZYK)



ISSUED FOR USE

WASTE ROCK VOLUME = 200,000 m³

NOTE:
BASE PLAN PROVIDED BY
ALEXCO RESOURCE CANADA CORP.

0 100
Scale: 1: 3,000 (metres)

CLIENT



EBA Engineering
Consultants Ltd.



ENGINEERING SUPPORT SERVICES
BELLEKENO MINE PROJECT, YUKON

WASTE ROCK DISPOSAL AREA
PLAN

PROJECT NO. W14101178.001	DWN KJT	CKD CJD	REV 1
OFFICE EBA-WHSE	DATE DECEMBER 11, 2008		

Figure 4-5

Please refer to the Bellekeno Mine Project Proposal (YESAB file number 2009-0030) Appendix E for further details and information. Further geotechnical studies and final design will be undertaken and IFC drawings submitted prior to construction as part of Phase III.

4.6 OTHER PHASE III ACTIVITIES

- Keno City Bypass route and Lightning Creek crossing will be constructed;
- Site roads will be cleared and built to final grades;
- Mill site services installation will be completed including water supply, power supply and waste disposal facilities;
- Main Process area and Crusher Area: general site grading will be completed along with buried services, building erection, commencement of mechanical and electrical installation;
- Dry Stack Tailings Facility (year 1): trees will be felled and water diversion and collection structures will be constructed;
- Ancillary mill site facility building installation will commence;
- Progressive reclamation of disturbed areas will take place as required.

Operations mill site surface water management plans will be presented as part of Phase III of construction in 2010. This will include:

- Construction of water diversion structures above the mill site;
- Progressive construction of water diversion structures above the DSTF;
- Construction of water collection structures below the mill in order to collect all mill site runoff;
- Progressive construction of water collection structures below the DSTF;
- Construction of permanent water collection/polishing pond including conventional lime treatment facilities;
- Construction of permanent water conveyance and discharge structures from the mill site water treatment pond to Christal Creek;

4.7 DECOMMISSIONING AND RECLAMATION PLAN

A Preliminary Decommissioning and Reclamation Plan that addresses both temporary and permanent closure for the Bellekeno Project has been prepared and is attached as Appendix E. Please refer to this plan for closure measures and estimated costs.

5.0 ENVIRONMENTAL MANAGEMENT & MONITORING FOR CONSTRUCTION ACTIVITIES

5.1 ENVIRONMENTAL MONITOR

As a component of construction activities, environmental mitigation and monitoring will take place to provide assurance that activities comply with environmental provisions included in permits, legislation, corporate policies and industry Best Management Practices. An Environmental Monitor will be appointed to monitor construction activities and provide assurance that project environmental management commitments and standards are being achieved. An experienced Construction Supervisor will be responsible for supervising all construction activities.

The Environmental Monitor's objectives will be to:

- Ensure the effective implementation of environmental control measures laid out in the appended environmental management and protection plans (see Section 5.2 below);
- Ensure that the project is in compliance with project authorizations, applicable legislation/regulations and industry Best Management Practices;
- Provide Alexco's construction and site management team with practical advice on site environmental management issues; and
- Monitor environmental parameters to assess the efficacy of control measures and make necessary adjustments if required.

The Environmental Monitor will be present during all construction activities. The construction QA/QC manual will outline personnel responsibilities and be implemented by a professional engineer and inspectors all of whom are suitably qualified.

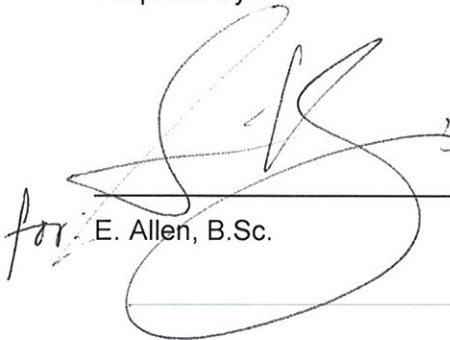
5.2 ENVIRONMENTAL MANAGEMENT, MONITORING AND PROTECTION PLANS

In addition to mitigating measures included within the mine design, a number of environmental management, monitoring and protection plans have been developed to address potential environmental and socio-economic effects during construction activities including:

1. Waste Management Plan (Appendix D)
2. Preliminary Decommissioning and Reclamation Plan (Appendix E)
3. Emergency Response Plan (Appendix F)
4. Heritage Resources Protection Plan (Appendix G)
5. Wildlife Protection Plan (Appendix H)

The plans are appended and will require updating and revision as the project progresses and moves into the operational phase.

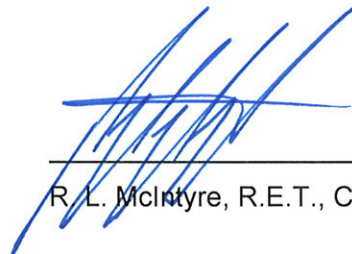
Prepared by:



for: E. Allen, B.Sc.

July 24, 2009

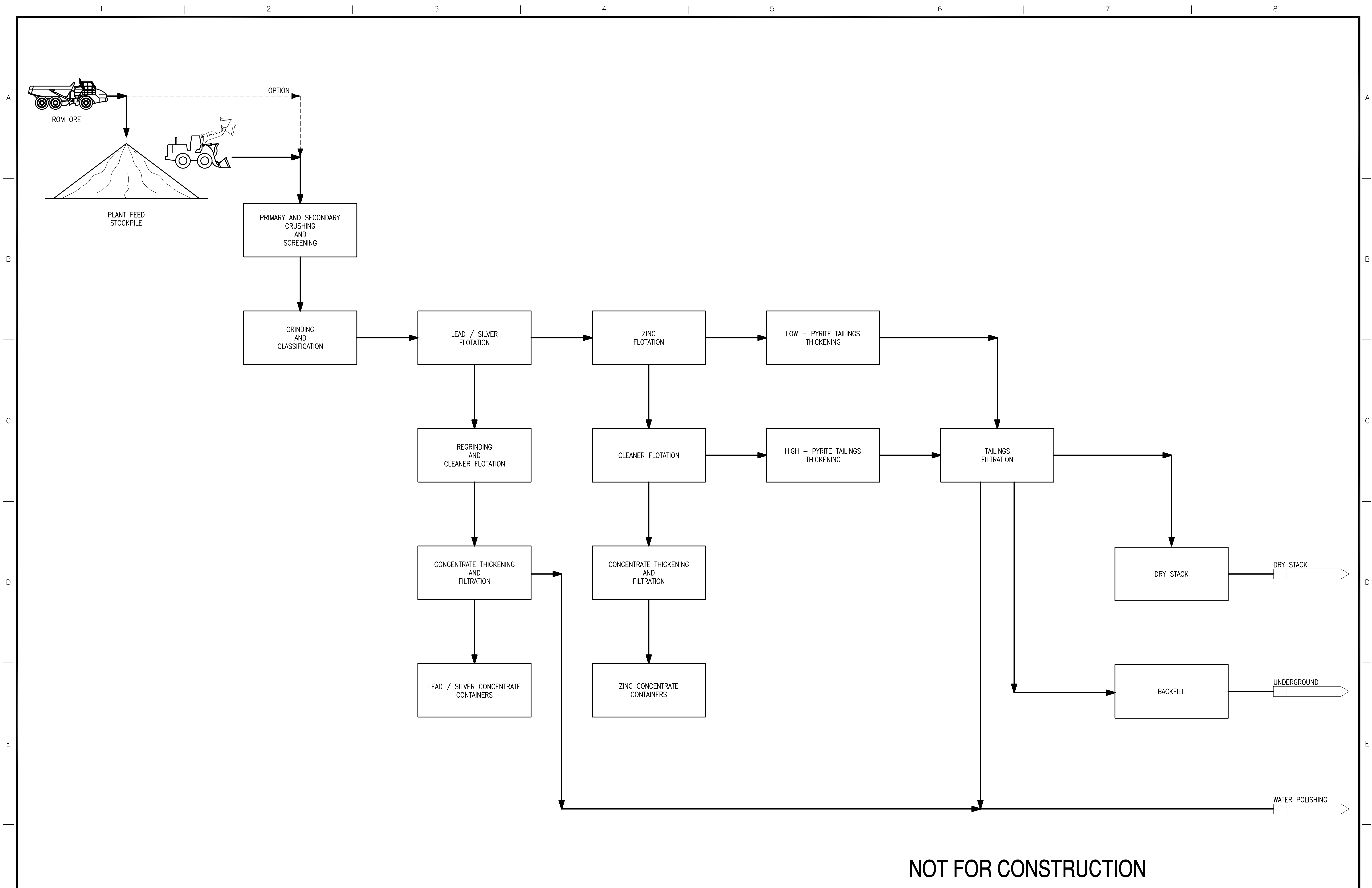
Reviewed by:



R. L. McIntyre, R.E.T., CCEP

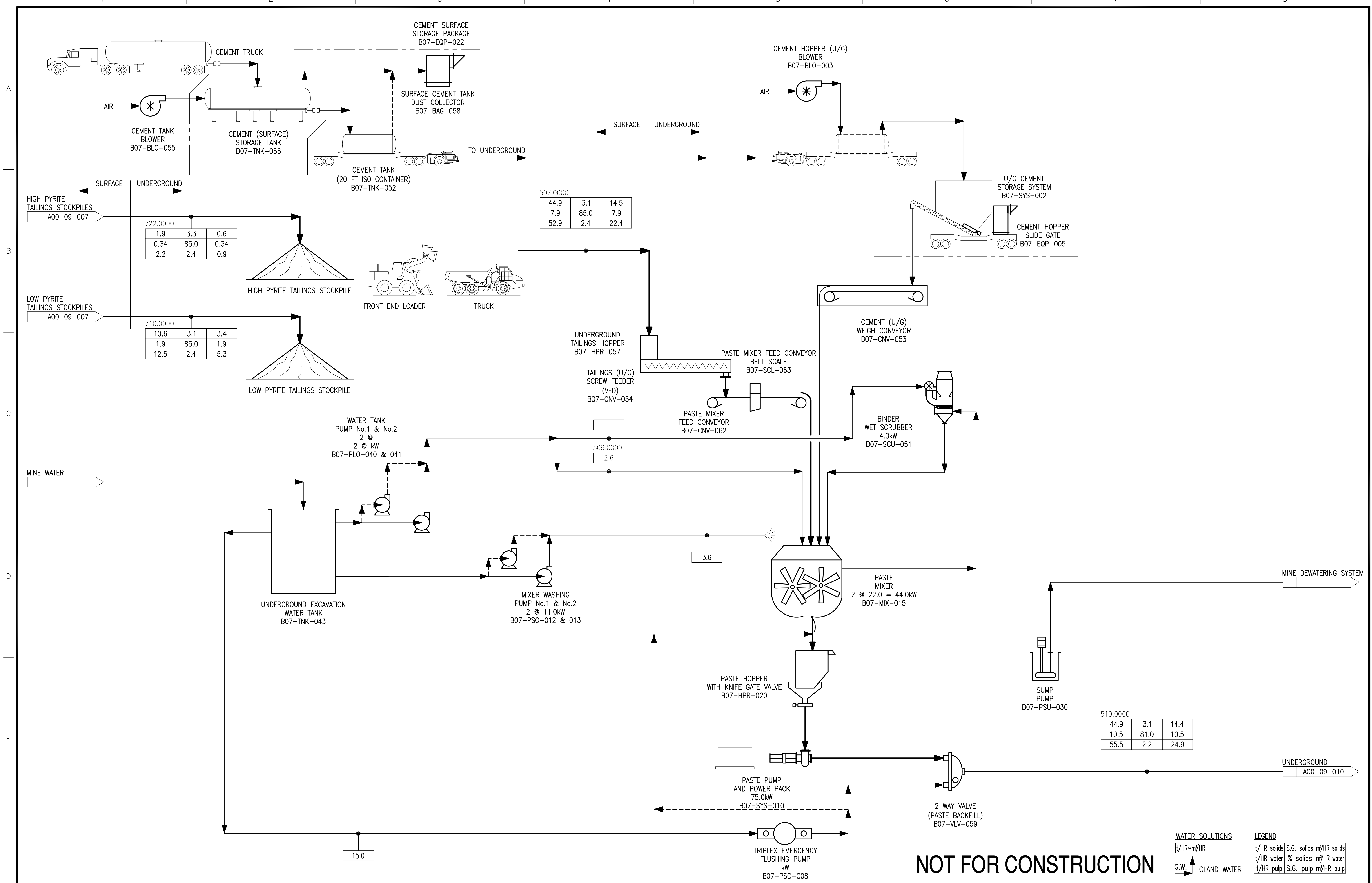
APPENDIX A

PROJECT DRAWINGS



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DWG. NO.

REFERENCE DRAWINGS

CLIENT	PROJ.MAN.	PROJ.ENG.	PROCESS	ELECTR.	INST.	MECH.	STRUC.	SERVICES	ARCH.	LAYOUT	REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
											A	1	ISSUED FOR INFORMATION	09JUL09	AKF

SECTION: PROCESS

SCALE: NONE

DATE

DESIGN. BY: RA

25MAR09

DRAWN BY: PH

25MAR09

CHECK. BY:

APP. BY:

YUKON TERRITORY

WARDROP Engineering Inc.

TITLE

BELLEKENO PROJECT

PASTE BACKFILL

PROCESS FLOWSHEET No.13

FILENAME

A0009013.DWG

PROJECT NUMBER

09539601.00

DRAWING NUMBER

A00-09-013

REV.

A

U:\A-G\ALEXCO RESOURCE CORP - 5396\09539601.00 - BELLEKENO PROJECT (UPDATED PE\A)\09-PROCESS\PDF\A0009013.DWG

11:35 09/07/09

GENERAL NOTES:

CONCRETE

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH WARDROP'S SPECIFICATION NUMBER 03-30-00 CAST-IN-PLACE CONCRETE IN CASE OF CONFLICT REFER TO THE GENERAL CONTRACT CONDITION.
2. THESE STANDARD NOTES SHALL BE USED UNLESS OTHERWISE NOTED ON THE PROJECT DRAWINGS.
3. CONCRETE DESIGN, SUPPLY AND CONSTRUCTION MUST COMPLY WITH THE LATEST EDITION OF GOVERNING CODES, SPECIFICATIONS AND STANDARDS INCLUDING:
 - NATIONAL BUILDING CODE OF CANADA (NBCC)
 - CAN/CSA-A23.1 CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION
 - CAN/CSA-A23.2 METHODS OF TEST FOR CONCRETE
 - CAN/CSA-A23.3 DESIGN OF CONCRETE STRUCTURES
4. MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS MUST BE AS FOLLOWS:
 - ALL STRUCTURAL CONCRETE UNO. 30 MPa
 - LEAN OR BLINDING CONCRETE 15 MPa
5. USE CAN/CSA-A3001 PORTLAND CEMENT TYPE GU UNO.
6. NOMINAL MAXIMUM AGGREGATE SIZE 20mm UNO., IN ACCORDANCE WITH CAN/CSA-A23.1
7. ALL REINFORCEMENT TO BE IN ACCORDANCE WITH CAN/CSA-G30.18 GRADE 400 MPa DEFORMED STEEL BARS.
8. USE CAN/CSA-G30.5 WELDED WIRE FABRIC FOR CONCRETE REINFORCEMENT.
9. REINFORCING STEEL SHALL BE DETAILED, SHOP FABRICATED AND PLACE IN ACCORDANCE WITH:
 - CAN/CSA-A23.1 AND CAN/CSA-A23.2
 - RSIC - REINFORCING STEEL INSTITUTE OF CANADA
MANUAL OF STANDARD PRACTICE
 - CRSI - CONCRETE REINFORCING STEEL INSTITUTE
MANUAL OF STANDARD PRACTICE
10. UNLESS NOTED OTHERWISE ON DRAWINGS ALL SPLICES SHALL BE IN ACCORDANCE WITH CAN/CSA-A23.3 GRADE 400 MPa. SPLICES TO BE STAGGERED AND MUST HAVE A MINIMUM CLASS "B" SPLICE LENGTH AS LISTED BELOW:
TOP BARS SHALL BE SPLICED USING 1.3 TIMES THE FIGURES BELOW:

fc'	BAR SIZE	10M	15M	20M	25M	30M	35M
30 MPa		400	600	700	1100	1300	1500

11. ALL REINFORCEMENT HOOKS AND BENDS MUST BE STANDARD UNO.
12. REINFORCEMENT SPACING SHOWN ON DRAWINGS IN ALL CASES IS CENTER TO CENTER OF BAR.
13. ALL REINFORCEMENT BARS NOT SPECIFICALLY LOCATED ON THE DRAWING MUST BE PLACED SYMMETRICALLY WITH RESPECT TO SUPPORTS.
14. DOWEL WALLS TO FOOTINGS WITH SAME BAR SIZE AND SPACING AS WALL REINFORCEMENT UNO.
15. CLEAR CONCRETE COVER TO REINFORCEMENT, UNO.
 - CONCRETE POURED ON GROUND: 75mm
 - CONCRETE EXPOSED TO GROUND OR EXPOSED TO WEATHER: 40mm FOR 15M BARS OR SMALLER
50mm FOR 20M BARS OR LARGER
 - INTERIOR FACES OF SLABS AND WALLS: MIN. 20mm OR BAR DIA.
 - INTERIOR FACES OF COLUMNS AND BEAMS: 40mm
16. BAR NOTATION GIVES THE FOLLOWING INFORMATION IN THIS ORDER:
 - NUMBER OF BARS (IF QUOTED) – BAR SIZE
 - BAR SPACING AND PLACING INFORMATION (IF QUOTED)
 - FOR EXAMPLE – 15M @ 150 TOP
17. SECURE CROSSING BARS AT INTERSECTIONS BY USING TIE-WIRE OF NOT LESS THAN 1.6mm THICK. REINFORCING STEEL SHALL HAVE ADEQUATE SUPPORTS SPACED NOT MORE THAN 1200mm APART IN ANY DIRECTION AND SHALL BE FIRMLY ANCHORED BEFORE CONCRETE IS POURED. PLASTIC CHAIR SUPPORTS SHALL BE USED IN CORROSIVE ATMOSPHERE.
18. FOR OPENINGS OR INSERTS LESS THAN 450mm THE REINFORCING STEEL SHALL BE DEFLECTED NOT CUT.
19. WELDING OF REINFORCEMENT OR THE USE OF POSITIVE MECHANICAL SPLICING IN PLACE OF LAP SPLICES IS PERMITTED ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.
20. TOLERANCES FOR PLACING REINFORCEMENT:

FOR CLEAR CONCRETE PROTECTION OF REINFORCEMENT WHERE DEPTH OF A FLEXURAL MEMBER THICKNESS OF A WALL OR SMALLEST DIMENSION OF A COLUMN IS:

200mm OR LESS-	+/- 8mm
200mm TO 600mm-	+/- 12mm
600mm OR LARGER-	+/- 20mm

LATERAL SPACING OF BARS SHALL BE WITHIN $\pm 30\text{mm}$ OF THE SPECIFIED SPACING.

LONGITUDINAL LOCATION OF BENDS AND ENDS OF BARS	+/-50mm.
AT DISCONTINUOUS ENDS OF MEMBERS	+/-20mm.

REGARDLESS OF ANY TOLERANCE REQUIREMENTS FOR PLACING THE CONCRETE COVER SHALL IN NO CASE BE REDUCED BY MORE THAN ONE THIRD OF THE SPECIFIED COVER.

1. FLOOR SLAB ON GRADE TO BE POURED IN CHECKER BOARD PATTERN WITH CONSTRUCTION JOINTS AND CONTROL JOINTS AT 6000 C/C IN EACH DIRECTION. EXACT LOCATION MAY BE VARIED TO SUIT BUILDING FOUNDATIONS AND EQUIPMENT PADS. EXPANSION JOINTS IN FLOOR ARE TO BE PROVIDED WHERE SHOWN ON THE DRAWINGS.
22. TO CONTROL SHRINKAGE CRACKING OF CONCRETE, CURE AND PROTECT FRESHLY DEPOSITED CONCRETE IN ACCORDANCE WITH CAN/CSA-A23.1.
23. POURING OF CONCRETE BELOW 5 DEGREES C. SHALL CONFORM TO THE COLD WEATHER CONCRETING REQUIREMENTS OF CSA STANDARD CAN. 3 - A23.1.
24. BEFORE CONCRETE IS POURED ALL OPENINGS, ANCHOR BOLTS, INSERTS ETC. INCLUDING EMBEDDED ITEMS FOR THE MECHANICAL, ELECTRICAL, OR ANY OTHER TRADES SHALL BE CHECKED AGAINST THE DRAWINGS.
25. ALL ANCHOR BOLTS SHALL CONFORM TO CAN/CSA-G40.21 GRADE 300W (300MPa).
26. ALL ANCHOR BOLTS SHALL BE SET USING A TEMPLATE FIXED TO THE FORMWORK TO ENSURE THAT PLACEMENT TOLERANCES ARE MAINTAINED.
27. ANCHOR BOLTS AND EMBEDDED MATERIAL SHALL BE PLACED ACCORDING TO DIMENSIONS AS SHOWN ON THE DRAWINGS AND WITH TOLERANCES AS FOLLOWS;

SINGLE BOLTS & EMBEDDED MATERIAL:	+/-3mm IN LOCATION & ELEVATION
BOLT GROUPS:	+/-3mm IN LOCATION & ELEVATION
MAXIMUM DIFFERENCE WITHIN GROUPS:	+/-3mm
ROCK BOLTS:	+/-3mm
28. GROUTING UNDER MACHINE BASES SHALL BE 'EMBECO 636' AND UNDER STRUCTURAL COLUMNS SHALL BE 'MASTERFLOW 713'.
29. FOR WATERPROOFING THE CONCRETE STRUCTURES, APPLY ONE COAT OF XYPEX CONCENTRATE AT 0.8Kg/m2 PLUS ONE COAT OF XYPEX MODIFIED AT 0.8Kg/m2/ BY XYPEX CORPORATION LTD. OR APPROVED EQUAL ON THE CONCRETE SURFACES AS NOTED ON THE DRAWINGS. APPLY AS PER MANUFACTURERS SPECIFICATIONS.
30. CHAMFER EXPOSED CORNERS OF COLUMNS AND BEAMS 20mm UNO.
31. CLEAN SURFACES OF ALL CONSTRUCTION JOINTS THOROUGHLY AND REMOVE LAITANCE. IN ADDITION, WET THE SET CONCRETE SURFACE AT CONSTRUCTION JOINTS THOROUGHLY AND COAT WITH NEAT CEMENT GROUT PRIOR TO POURING NEW CONCRETE.
32. APPLY SEALANT TO ALL JOINTS USING DOW CORNING 890-SL SEALANT OR APPROVED EQUAL. APPLY AS PER MANUFACTURER'S INSTRUCTIONS.
33. CONCRETE FLOORS AND GROUND SLABS SHALL HAVE TROWELLED FINISHES UNLESS OTHERWISE NOTED ON THE DRAWINGS.
34. FOR FLOOR SLAB SEALER/HARDENERS SEE DRAWINGS.
35. MISCELLANEOUS STEEL TO COMPLY WITH CAN/CSA-G40.21 GRADE 300W UNO., ALL PIPE MATERIALS SHALL CONFORM TO ASTM A53 TYPE S GRADE B ($F_y = 240MPa$ MIN.).
36. SLEEVES, PIPES, OR HOLES MUST BE PLACED THROUGH CONCRETE ONLY WHERE SHOWN ON DRAWINGS OR APPROVED BY THE ENGINEER.
37. FOR THE AREAS WHERE STYROFOAM INSULATION IS NOT USED UNDER SLAB ON GRADE, USE 0.25mm (10 MILS) THICK POLYETHYLENE SHEET UNDER ALL SLABS POURED ON GRADE, UNO.
38. THE FINAL 0.15m BELOW THE SLAB-ON-GRADE SHALL BE CONSTRUCTED WITH 20mm. CRUSHED BASE COURSE GRAVEL MEETING THE GRADATION SPECIFICATION OF TABLE 5.9 OF THE GEOTECHNICAL REPORT FROM EBA DATED NOVEMBER 14, 2008.

FOUNDATIONS, EXCAVATION, AND BACKFILL

1. ALL CIVIL WORK TO BE CARRIED OUT IN ACCORDANCE WITH SPECIFICATION NUMBER 31-23-01 AND GEOTECHNICAL REPORT FROM EBA (FILE: W14101095.001) DATED NOV. 14, 2008 AND SUBSEQUENT CORRESPONDENCES.
2. ALL STRUCTURES AND TANKS ARE DESIGNED TO BE FOUNDED AT THE ELEVATIONS AND LOCATIONS SHOWN ON THE DRAWINGS AND MUST BE ON SOLID UNDISTURBED NATIVE GROUND, COMPACTED STRUCTURAL FILL, ROCK OR LEAN CONCRETE.
3. EXCAVATE TO THE BASE OF FOOTING ELEVATION. REMOVE AND WASTE ANY REMAINING TOPSOIL, ORGANIC CLAY AND OTHER DELETERIOUS MATERIALS WITHIN THE PROPOSED RAFT FOOTING AREA. CONDUCT FINAL CLEAN-UP OF FOOTING BASE WITH HAND TOOLS. REMOVE ANY FROZEN SOIL.
4. AFTER PREPARATION, PROTECT FOOTING BASES FROM WETTING, DRYING AND FREEZING. REMOVE ALL AFFECTED SOIL AS REQUIRED.
5. DO NOT CONSTRUCT FOOTINGS ON FROZEN SOIL MATERIAL AND DO NOT PERMIT THE SOILS BELOW THE FOOTING TO FREEZE AFTER CONSTRUCTION OF FOOTINGS.
6. ON COMPLETION OF THE EXCAVATION, THE GEOTECHNICAL ENGINEER MUST CONFIRM IN THE FIELD THE BEARING CAPACITY AND TYPE OF NATIVE MATERIAL AT THE FOUNDING ELEVATION BEFORE PLACING FORMS, REINFORCEMENT OR CONCRETE. THIS CONFIRMATION MUST BE IN WRITING. ANY NECESSARY REMEDIAL WORK SHALL BE COMPLETED AS DIRECTED BY THE GEOTECHNICAL ENGINEER. SHOULD NATIVE MATERIAL BE CONFIRMED TO BE FROST SUSCEPTIBLE, THE EXCAVATION FOR LOCAL FOOTINGS SHOULD CARRY DOWN TO BELOW FROST LEVEL (4m BELOW GRADE) AND BACKFILL WITH COMPACTED NON FROST SUSCEPTIBLE (NFS) MATERIAL IN ACCORDANCE TO THE RECOMMENDATION OF THE GEOTECHNICAL REPORT.

7. REMOVE UNSUITABLE MATERIAL AND REPLACE WITH COMPACTED STRUCTURAL FILL OR LEAN CONCRETE AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
8. DO NOT INCREASE THE HEIGHT OF COLUMNS, PIERS, OR WALLS WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.
9. PLACE BACKFILL SIMULTANEOUSLY ON BOTH SIDES OF WALLS, GRADE BEAMS, AND BURIED STRUCTURES TO AVOID UNBALANCED LOADING.
10. BACKFILL BOTH SIDES OF GRADE BEAMS (FOUNDATION WALL) WITHIN 600mm FROM SIDE TO SIDE. COMPACT BACKFILL TO A MINIMUM OF 98% OF STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM-698) AT OR NEAR OPTIMUM MOISTURE CONTENT.
11. ANY OVER EXCAVATION OF FOUNDATION GRADES MUST BE MADE GOOD WITH BLINDING CONCRETE FOR FOOTINGS ON ROCK OR WITH COMPACTED STRUCTURAL FILL TO ACHIEVE THE BEARING CAPACITY.
12. EXCAVATE TO THE SUBGRADE ELEVATION OF FLOOR SLAB. REMOVE AND WASTE ANY REMAINING TOPSOIL, ORGANIC CLAY AND OTHER DELETERIOUS MATERIALS WITHIN THE PROPOSED RAFT FOUNDATION AREA.
13. THE SURFACE SHOULD BE PROOF ROLLED TO DETECT WET AND/OR SOFT SOILS. SUBGRADE AREAS WHICH EXHIBIT UNACCEPTABLE DEFLECTION DURING PROOF ROLLING SHOULD BE EXCAVATED AND REPLACED WITH COMPACTED PIT RUN GRANULAR FILL.
14. GRANULAR SOILS BELOW FLOOR SLAB SHOULD BE PLACED AND UNIFORMLY COMPACTED IN THIN LIFTS 150mm MAXIMUM TO A MINIMUM OF 100 PERCENT OF STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-690) AT OR NEAR OPTIMUM MOISTURE CONTENT.

FOUNDATION PREPARATION – MASONRY

1. ALL MASONRY WORK WILL BE IN ACCORDANCE WITH CSA S304.1- 04 DESIGN OF MASONRY STRUCTURES.
2. CONCRETE BLOCKS TO CONFORM TO: A165.1-04 CONCRETE BLOCK MASONRY UNITS MORTAR, GROUT, CONNECTORS, AND MASONRY CONSTRUCTION ARE AS SPECIFIED IN CSA A179, A370, AND A371, RESPECTIVELY.
3. STANDARD HOLLOW MASONRY UNITS TO BE: H/15/A/M.
4. MORTAR TYPE S
5. TYPICAL MASONRY WALL - 190 BLOCK RUNNING BOND, HORIZONTAL REINFORCING (TYPICAL) BOND BEAM AT TOP AND BOTTOM, R/W 2-15M, # 9 LADDER TYPE REINFORCING @ 400 O/C (EVERY SECOND COURSE), VERTICAL REINFORCING 15M @ 800 O/C AND EACH SIDE OF DOORWAY, IN GROUTED CORES. DOWELS TO SLAB TO MATCH. USE DOWELS WITH HOOKS OR HILTI HIT ADHESIVE SYSTEM (MIN 200mm EMBEDMENT).
6. ALL MASONRY WALLS TO BE PROPERLY BRACED UNTIL STRUCTURE IS COMPLETED.
7. CONNECT BLOCK WALLS TO STEEL COLUMNS WITH 10M REINFORCING LAPPED TO JOINT REINFORCING.
8. PROTECT MASONRY AND OTHER WORK FROM MARKING AND OTHER DAMAGE. PROTECT COMPLETED WORK FROM MORTAR DROPPINGS. USE NON-STAINING COVERS.
9. BUILD MASONRY PLUMB, LEVEL, AND TRUE TO LINE, WITH VERTICAL JOINTS IN ALIGNMENT.
10. FILL SPACES BETWEEN JAMBS AND MASONRY WITH MORTAR.
11. WITH JOINT ROUNDER, PROVIDE 8mm SMOOTH, TRUE TO LINE, UNIFORMLY CONCAVE JOINTS.
12. LAYOUT COURSING AND BOND TO ACHIEVE CORRECT COURSING HEIGHTS, AND CONTINUITY OF BOND ABOVE AND BELOW OPENINGS, WITH A MINIMUM OF CUTTING.
13. MAKE CUTS FOR ELECTRICAL SWITCHES, OUTLET BOXES, ETC., STRAIGHT, CLEAN AND FREE FROM UNEVEN EDGES.
14. U-BLOCK LINTELS OVER OPENINGS IN BLOCK WALL TO BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
 - 14.1 UP TO 1200mm - 400mm DEEP U-BLOCK
20 MPa CONCRETE FILL, 1-20M C/W END HOOKS, MINIMUM BEARING 200mm EACH END.
 - 14.2 UP TO 2400mm - 400mm DEEP U-BLOCK
20 MPa CONCRETE FILL, 2-20M BOTTOM, MINIMUM BEARING 200mm EACH END.

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REFERENCE No. 095360100-DWG-S0001

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CONTROL JOINTS

CONSTRUCTION JOINT / CONTROL JOINT



EXPANSION JOINTS

EXPANSION JOINT / ISOLATION JOINT



WATERTIGHT JOINT



SUMP DETAIL



SUMP EDGE ANGLE DETAIL



TYP. CURB REINFORCEMENT



EQUIPMENT PAD DETAIL

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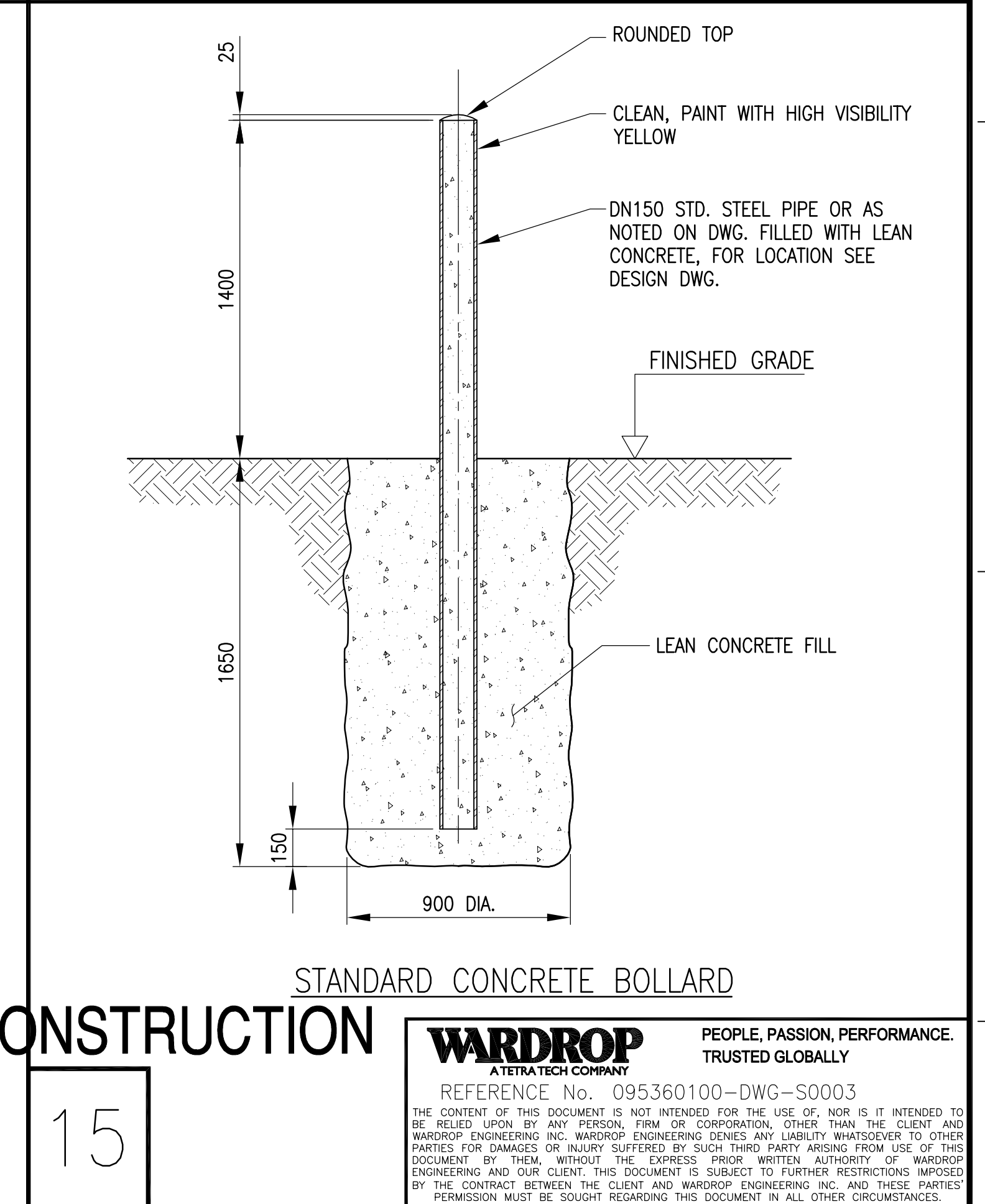
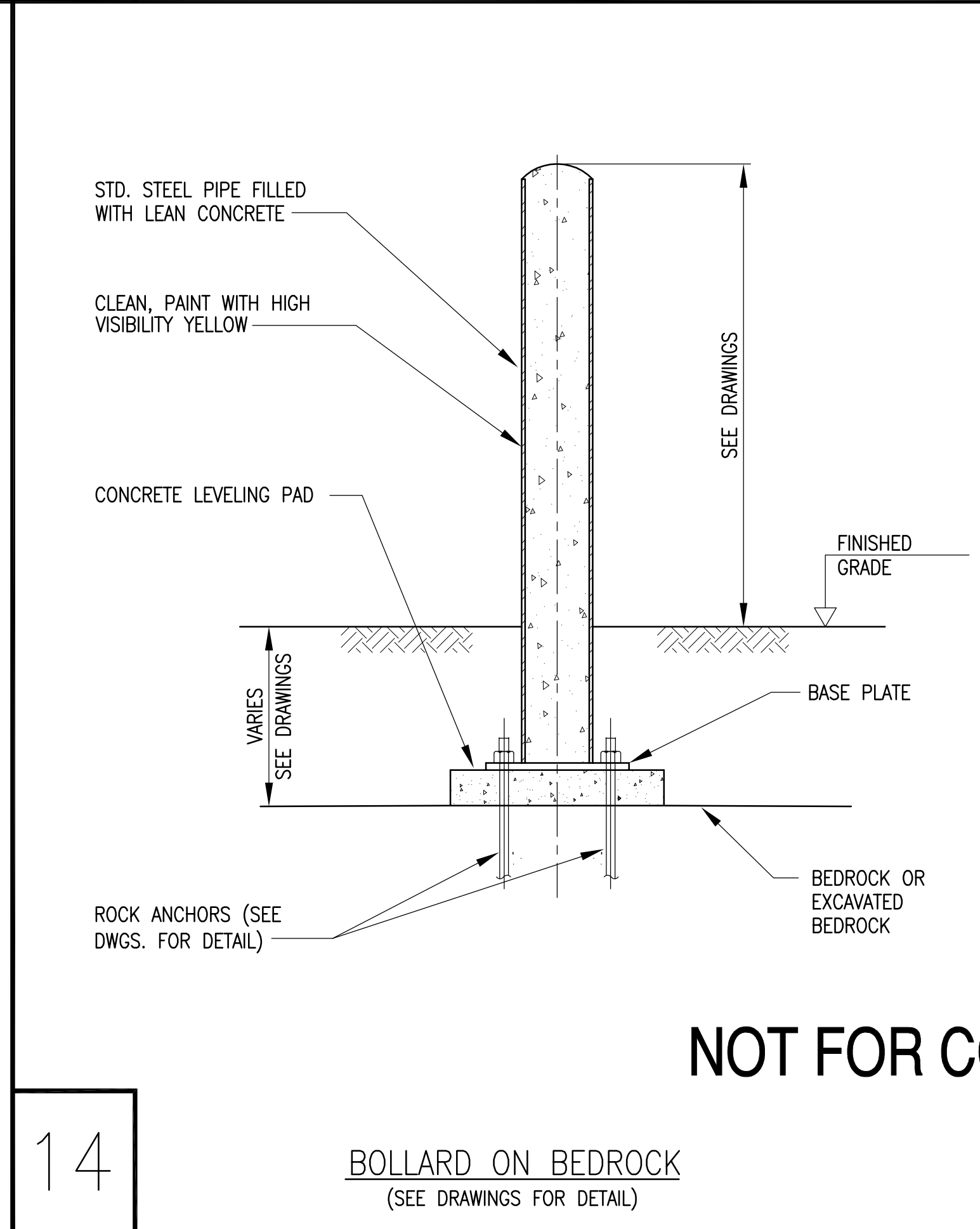
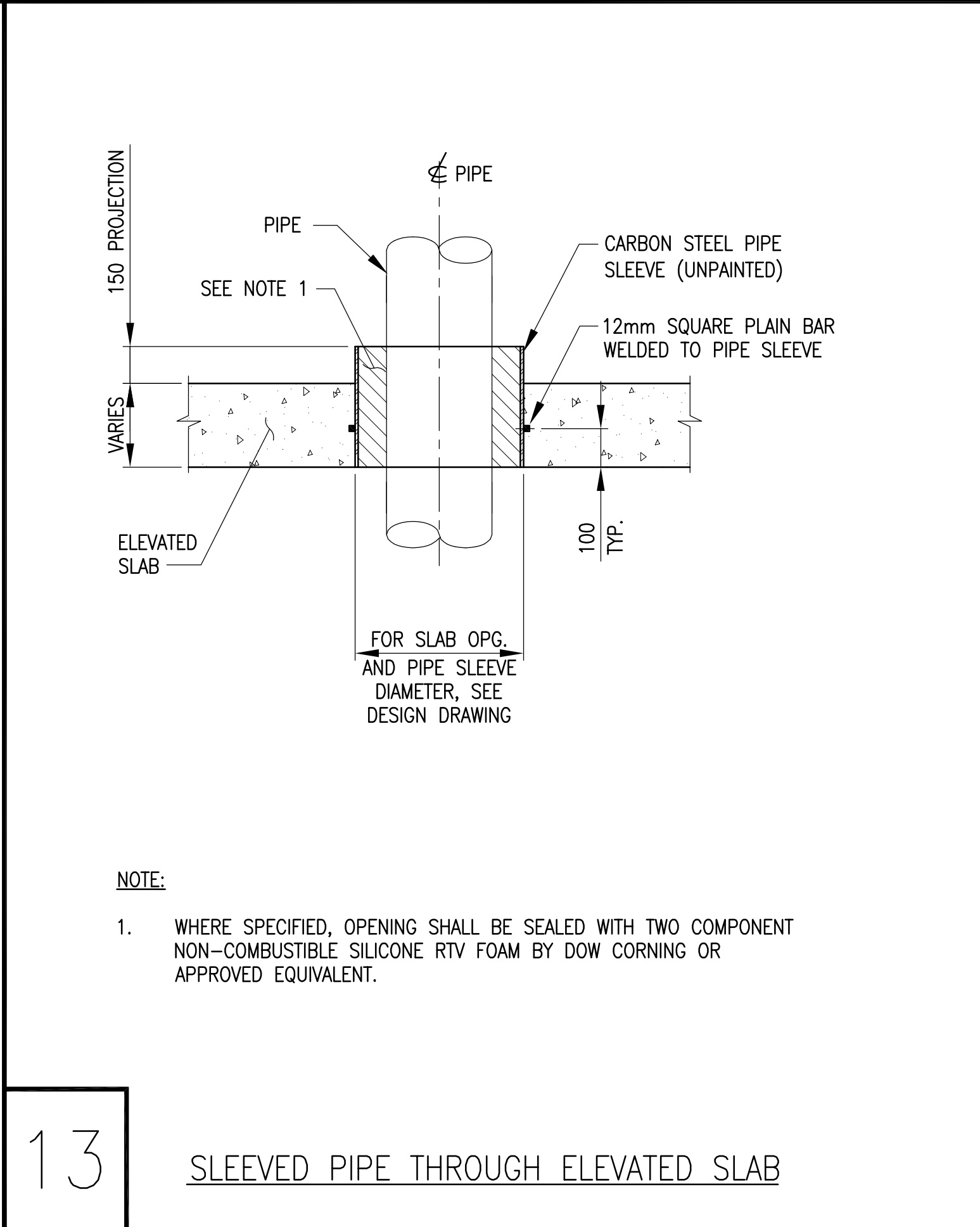
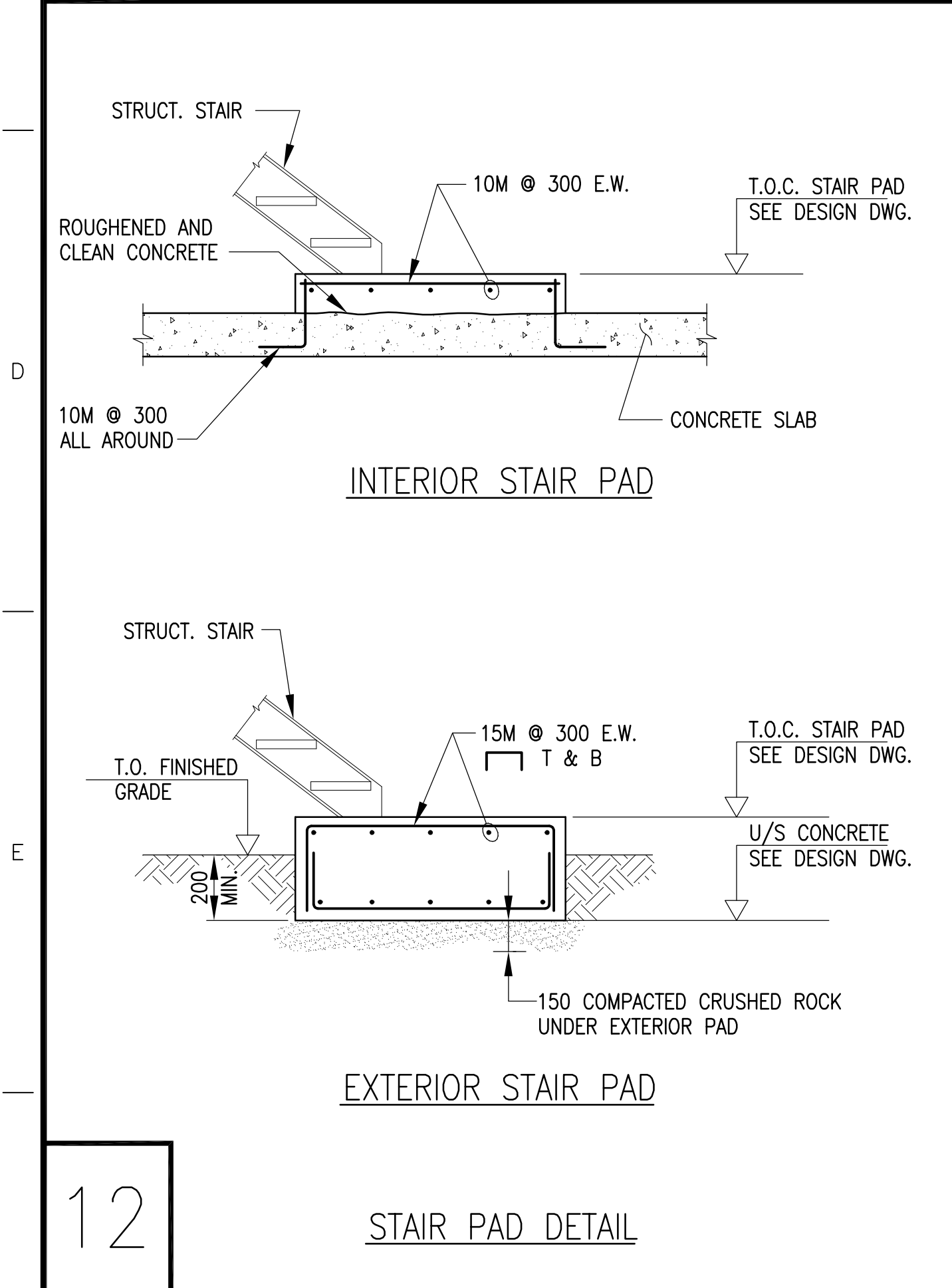
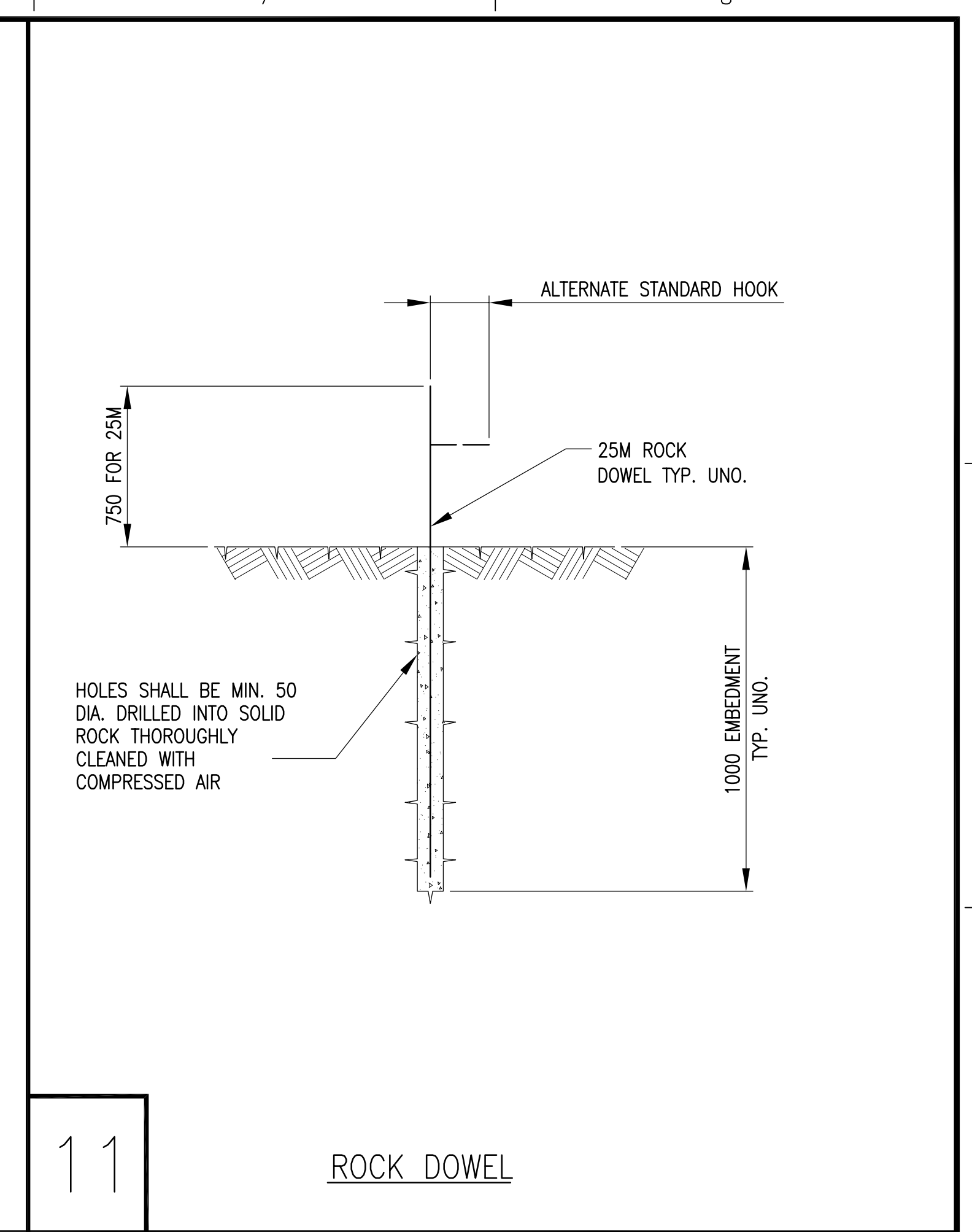
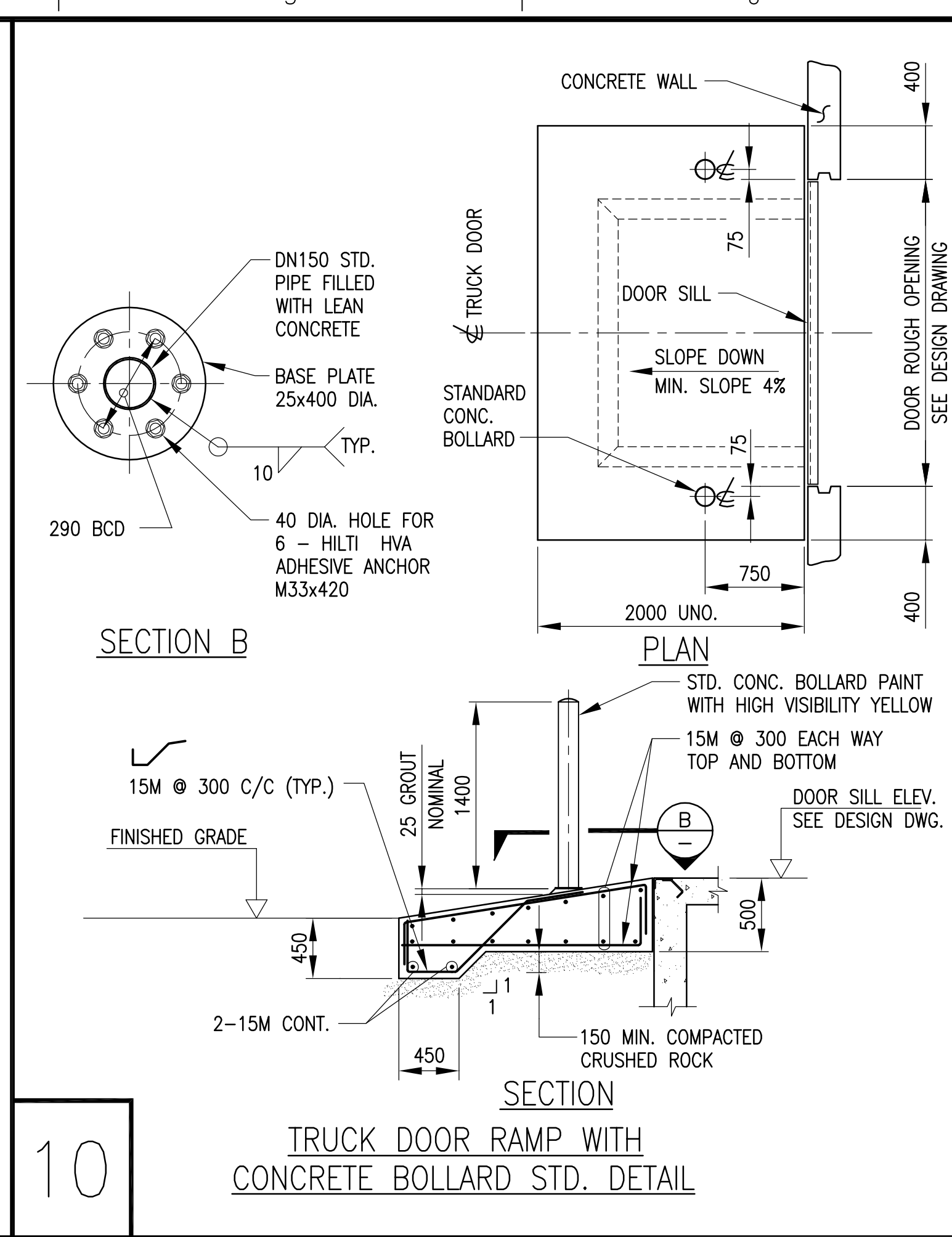
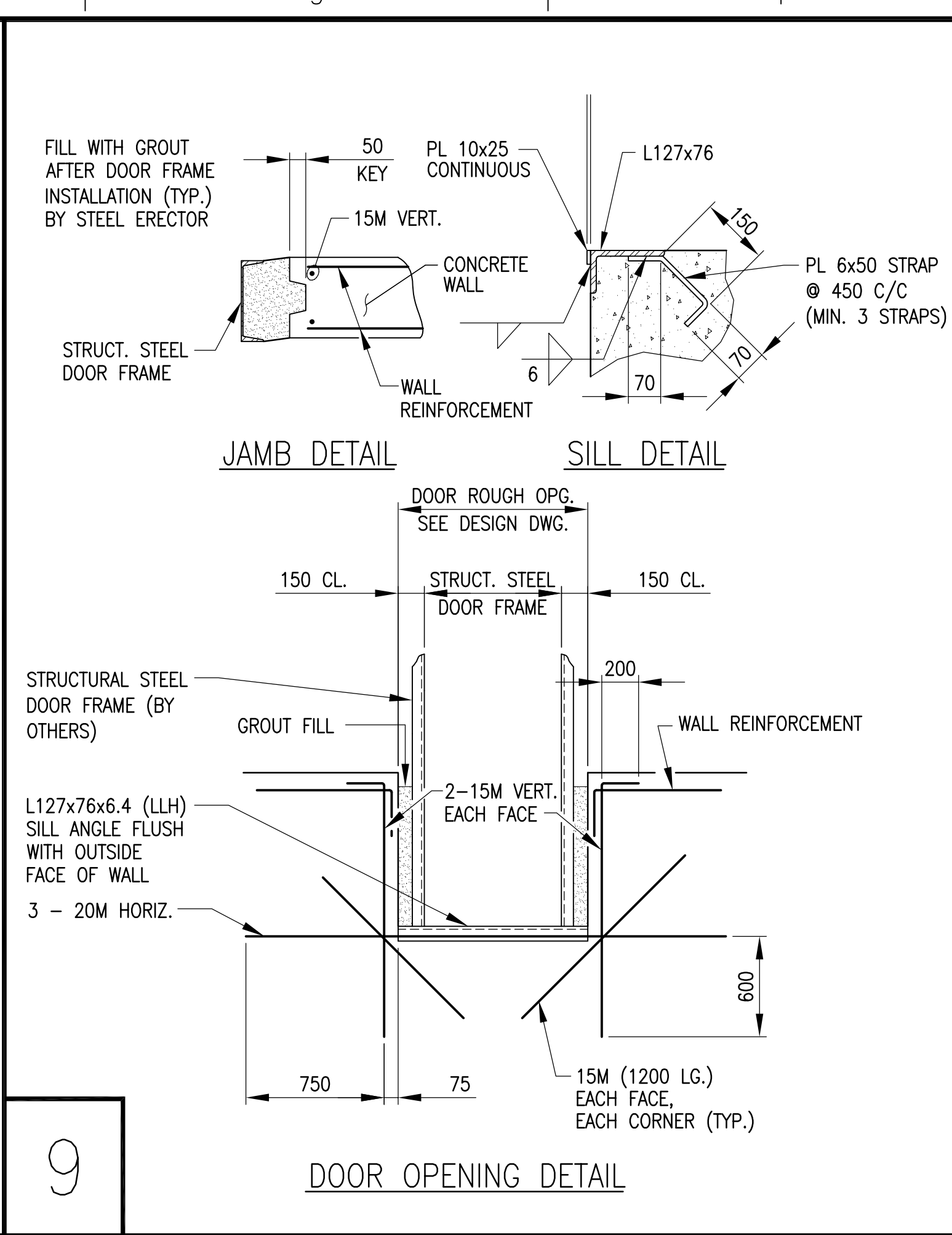
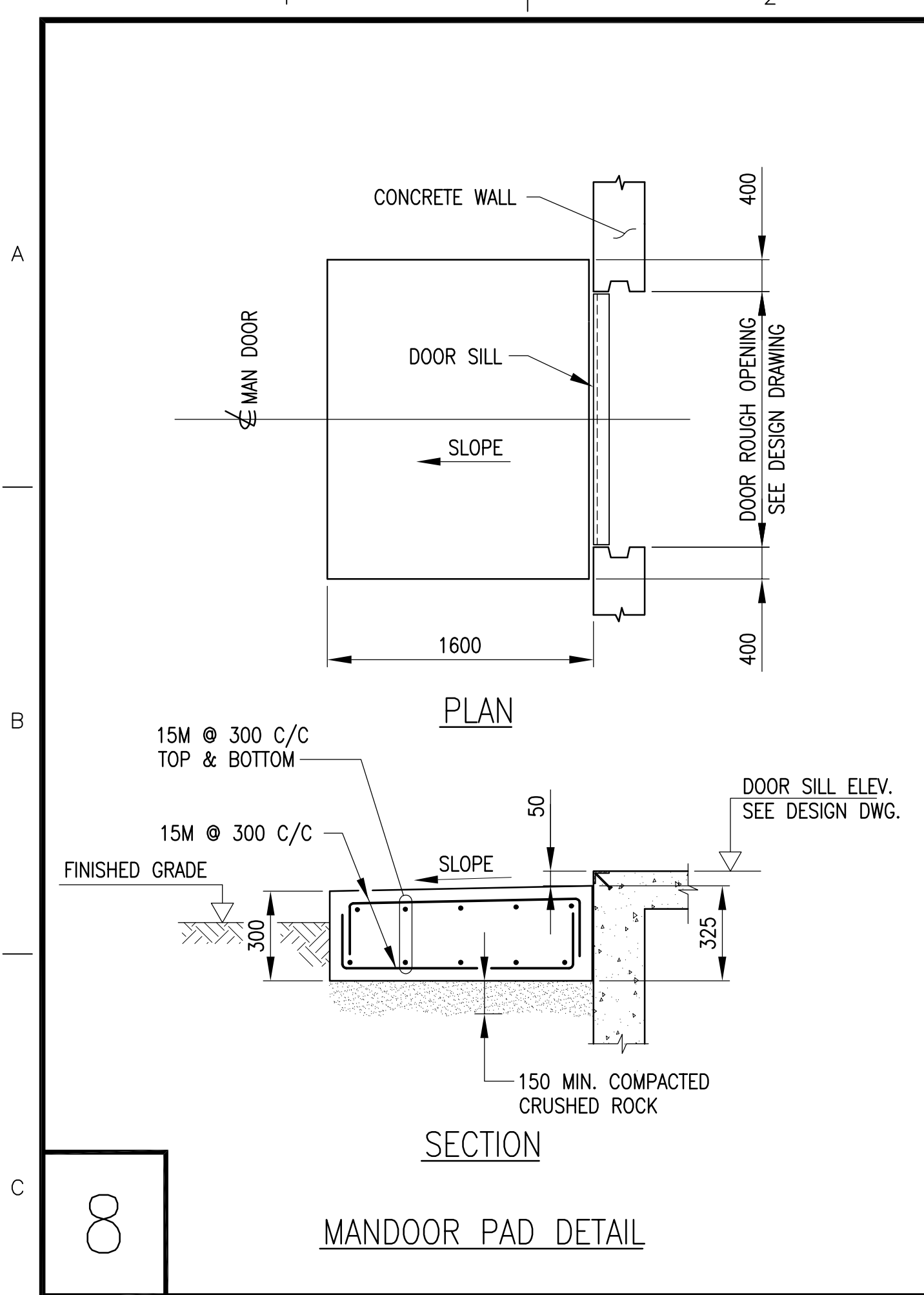
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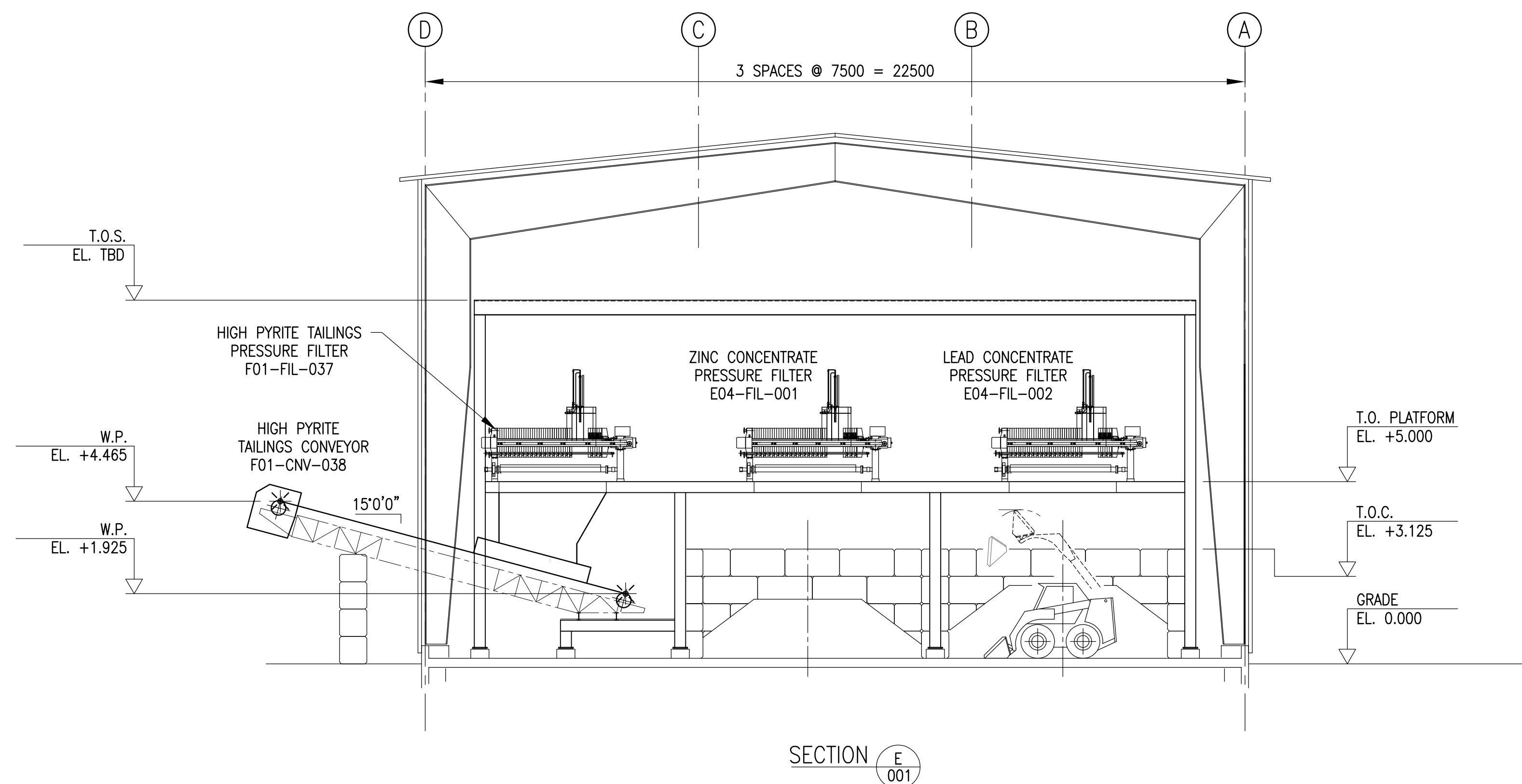
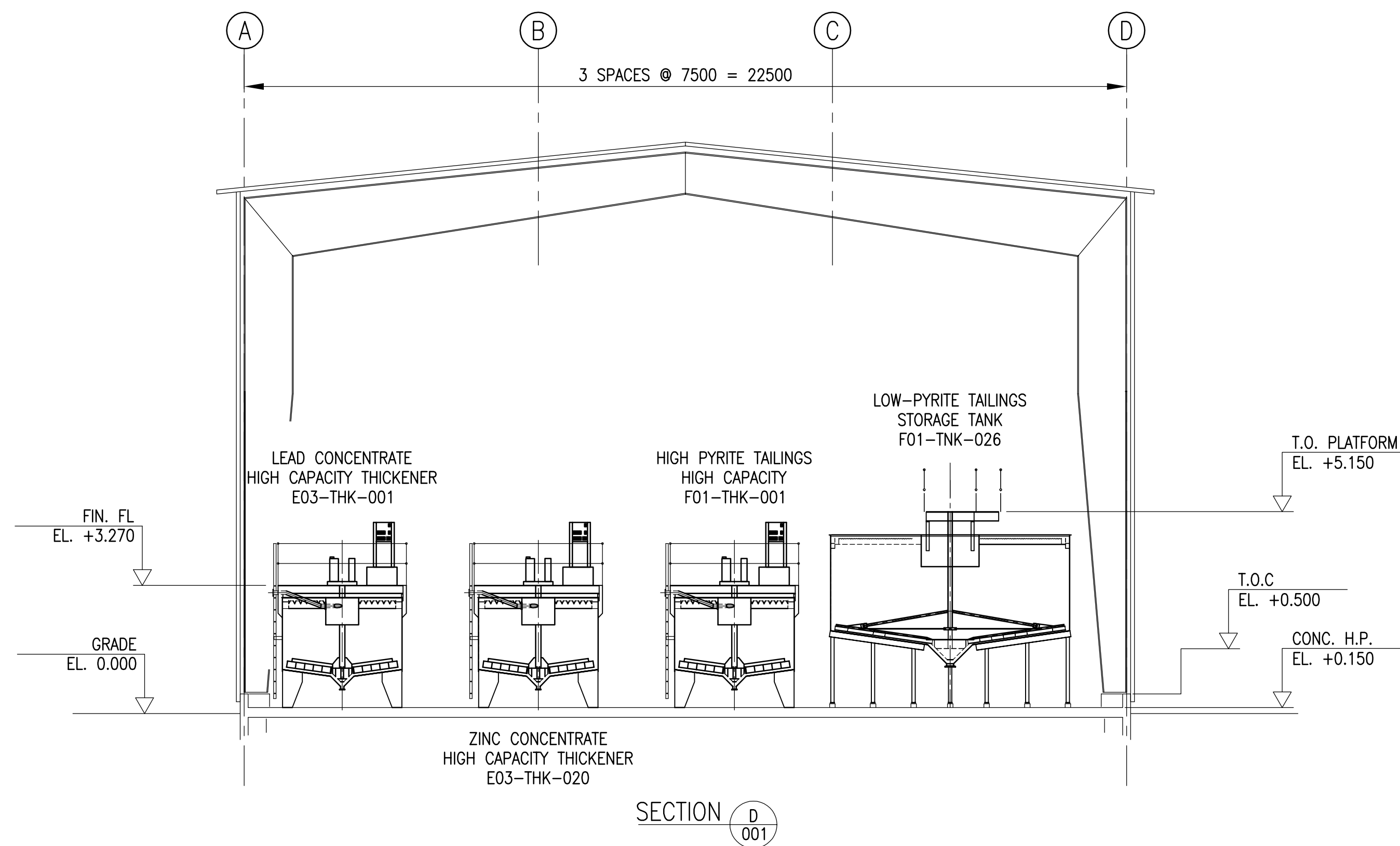
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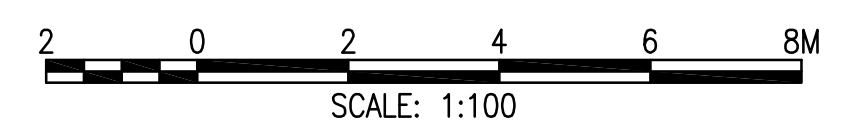
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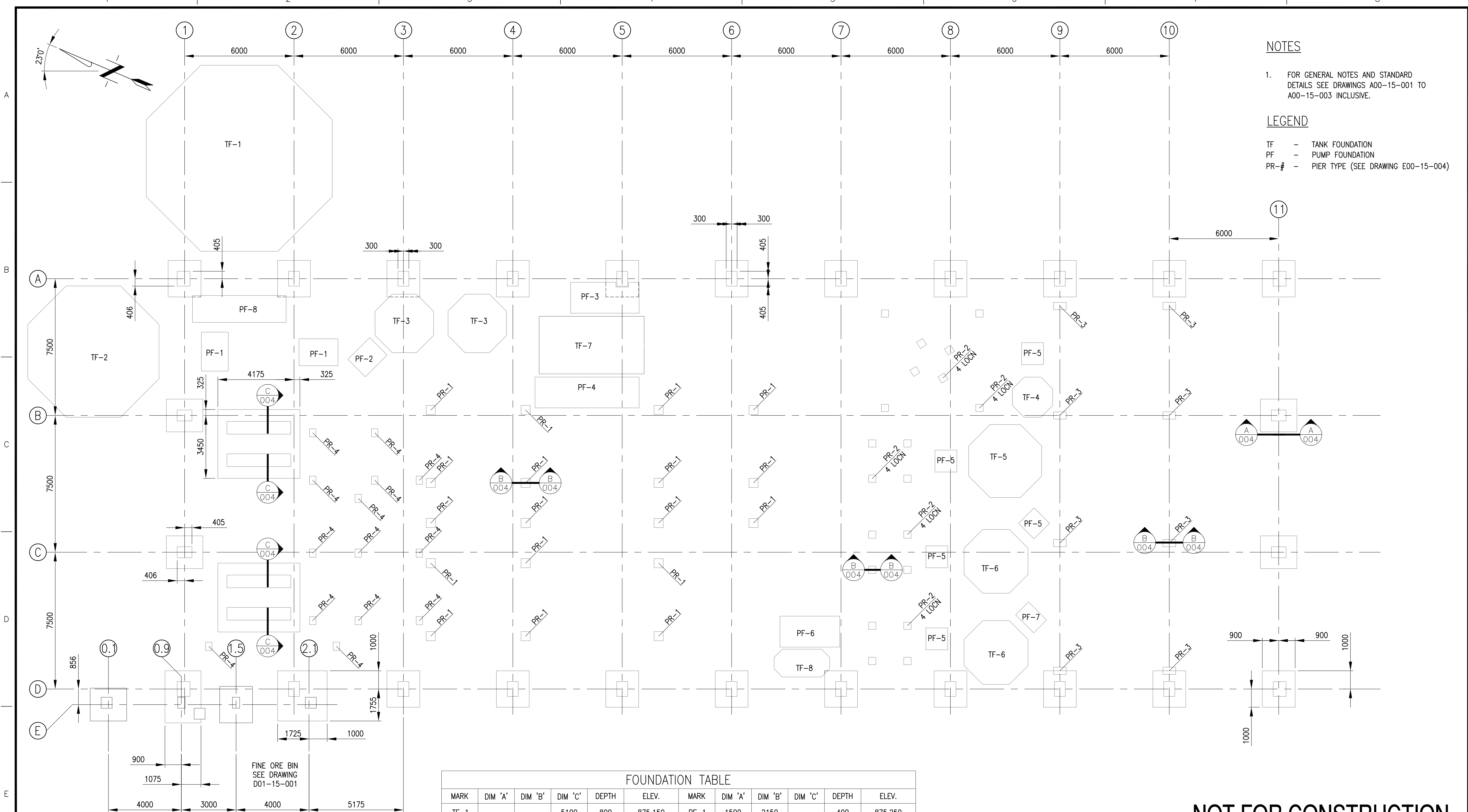
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DWG. NO.				REFERENCE DRAWINGS				SCALE: NONE				DATE				BELLEKENO PROJECT			
				NOT TO BE USED FOR CONSTRUCTION				DESIGN. BY: ATM				08APR09				OVERALL GENERAL NOTES			
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NOTES

1. FOR GENERAL NOTES AND STANDARD DETAILS SEE DRAWINGS A00-15-001 TO A00-15-003 INCLUSIVE.

LEGEND

- TF - TANK FOUNDATION
PF - PUMP FOUNDATION
PR-# - PIER TYPE (SEE DRAWING E00-15-004)

FOUNDATION TABLE											
MARK	DIM 'A'	DIM 'B'	DIM 'C'	DEPTH	ELEV.	MARK	DIM 'A'	DIM 'B'	DIM 'C'	DEPTH	ELEV.
TF-1	-	-	5100	800	875.150	PF-1	1500	2150	-	400	875.250
TF-2	-	-	3600	800	875.150	PF-2	1350	1700	-	400	875.250
TF-3	-	-	1600	600	875.250	PF-3	1700	3750	-	400	875.250
TF-4	-	-	1100	400	875.250	PF-4	1700	5700	-	400	875.250
TF-5	-	-	2000	600	875.250	PF-5	1200	1200	-	400	875.250
TF-6	-	-	1750	600	875.250	PF-6	1700	3150	-	400	875.250
TF-7	5800	3150	-	600	875.250	PF-7	1000	1400	-	600	875.250
TF-8	-	1550	760	400	875.150	PF-8	1500	5150	-	600	875.250

ALL RECTANGULAR FOUNDATION DIMENSIONS ARE TO BE READ AS Ax B AND CENTERED ABOUT EQUIPMENT CENTRELINES

ALL OCTAGONAL FOUNDATION DIMENSIONS ARE TO BE READ AS C CENTERED ABOUT EQUIPMENT CENTRELINES

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SCALE: 1:100

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A00-15-003	OVERALL GENERAL NOTES - CONCRETE SHEET 3
A00-15-002	OVERALL GENERAL NOTES - CONCRETE SHEET 2
A00-15-001	OVERALL GENERAL NOTES - CONCRETE SHEET 1

DWG. NO.

REFERENCE DRAWINGS

PRELIMINARY
DRAWING

NOT TO BE
USED FOR
CONSTRUCTION

CLIENT	PROJ.MAN	DESIGN	PROCESS	ELECTR.	INST.	MECH.	STRUCT.	SERVICES	ARCH.	LAYOUT	REV.	ISSUE	DESCRIPTION	DATE	BY
											C	1	ISSUED FOR INFORMATION	09JUL09	AKF
											B	1	ISSUED FOR INFORMATION ONLY	24JUN09	MRK
											A	1	ISSUED FOR SQUAD REVIEW	05JUN09	MRK

SECTION: CONCRETE

SCALE: 1:100

DATE: 08APR09

DESIGN BY: ATM

DRAWN BY: MRK

CHECK BY:

APP. BY:

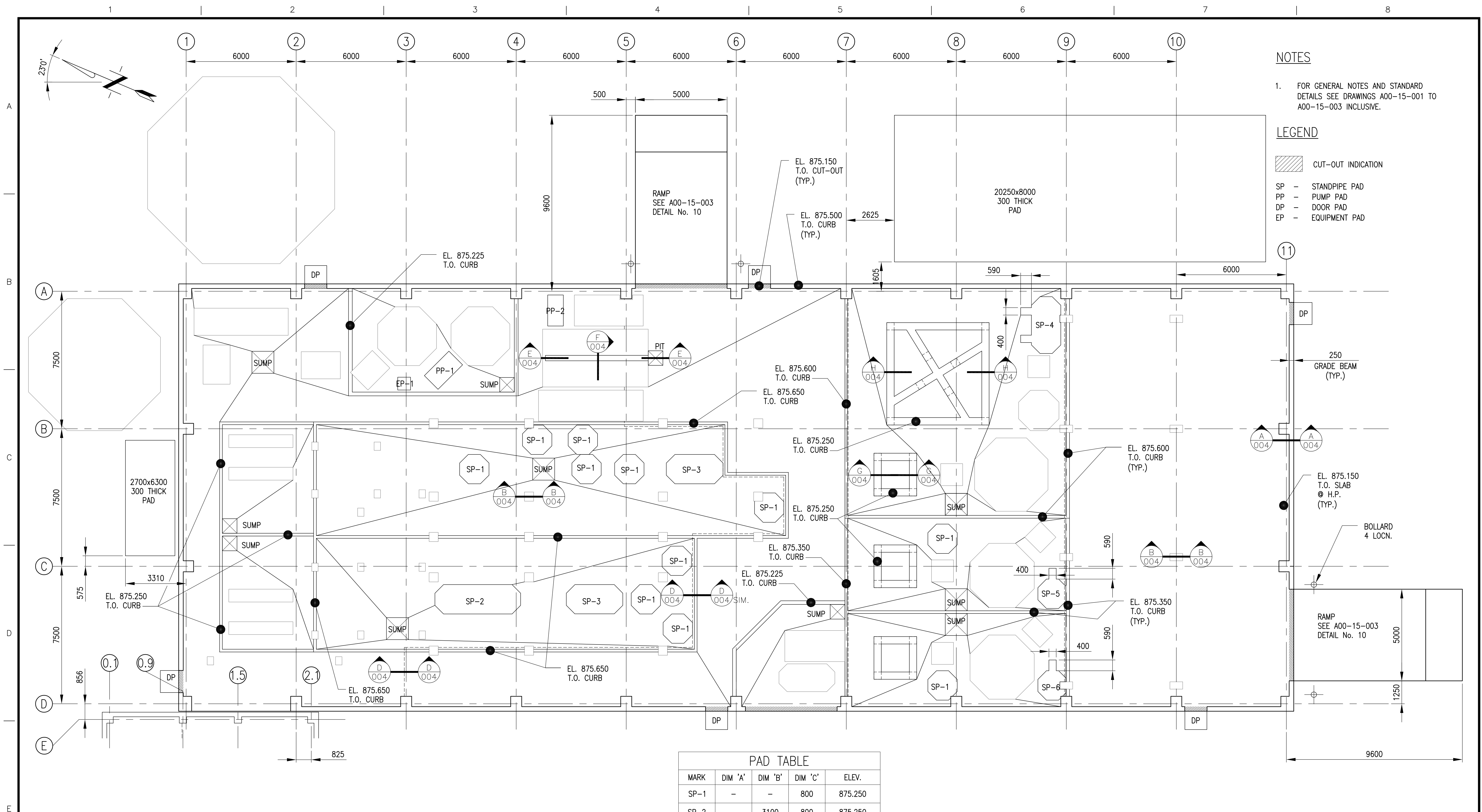
YUKON TERRITORY

TITLE

BELLEKENO PROJECT

MILL BUILDING
CONCRETE
FOUNDATION PLAN

FILENAME	PROJECT NUMBER	DRAWING NUMBER	REV.
E0015001.DWG	09539601.00	E00-15-001	C



NOTES

1. FOR GENERAL NOTES AND STANDARD DETAILS SEE DRAWINGS A00-15-001 TO A00-15-003 INCLUSIVE.

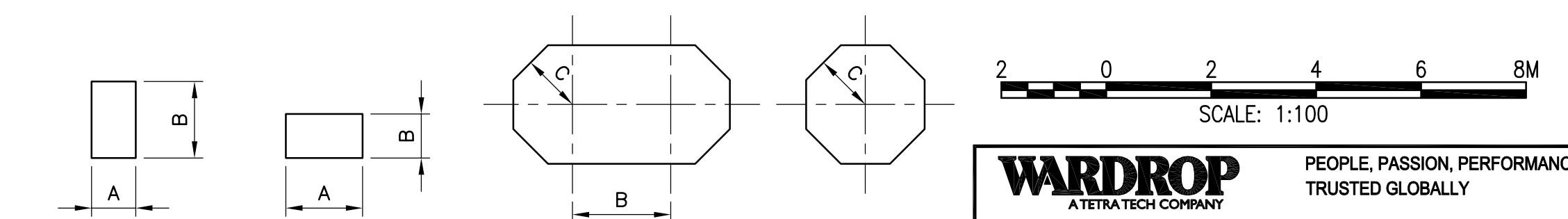
LEGEND

CUT-OUT INDICATION

SP - STANDPIPE PAD
PP - PUMP PAD
DP - DOOR PAD
EP - EQUIPMENT PAD

PAD TABLE				
MARK	DIM 'A'	DIM 'B'	DIM 'C'	ELEV.
SP-1	-	-	800	875.250
SP-2	-	3100	800	875.250
SP-3	-	1500	800	875.250
SP-4	-	1500	800	875.250
SP-5	-	-	800	875.250
SP-6	-	-	800	875.250
EP-1	700	700	-	875.250
PP-1	750	1900	-	875.250
PP-2	850	1700	-	875.250

NOT FOR CONSTRUCTION



WARDROP
A TETRA TECH COMPANY

PEOPLE. PASSION. PERFORMANCE.
TRUSTED GLOBALLY

REFERENCE No. 0953960100-DWG-S0005

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THE INFORMATION CONTAINED ON THIS DRAWING HAS BEEN PREPARED SOLELY FOR THE OWNER FOR USE ON THIS PROJECT AND IS COPYRIGHTED. ANY UNAUTHORIZED USE OF THIS INFORMATION IS A BREACH OF COPYRIGHT AND WILL BE PURSUED AS SUCH. USE OF THE INFORMATION ON THIS DRAWING IN WHOLE OR IN PART OTHER THAN FOR THE INTENDED PURPOSE IS AT THE SOLE RISK OF THE USER.			PRELIMINARY DRAWING NOT TO BE USED FOR CONSTRUCTION			<table><tr><td>CLIENT</td><td>PROJ.MAN</td><td>PROJ.ENG</td><td>PROCESS</td><td>ELECTR.</td><td>INSTR.</td><td>MECH.</td><td>SERVICES</td><td>ARCH.</td><td>LAYOUT</td><td>REV.</td><td>ISSUE</td><td>DESCRIPTION</td><td>DATE</td><td>BY</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>C</td><td>1</td><td>ISSUED FOR INFORMATION</td><td>09JUL09</td><td>AKF</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>B</td><td>1</td><td>ISSUED FOR INFORMATION ONLY</td><td>24JUN09</td><td>MRK</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>A</td><td>1</td><td>ISSUED FOR SQUAD REVIEW</td><td>05JUN09</td><td>MRK</td></tr></table>			CLIENT	PROJ.MAN	PROJ.ENG	PROCESS	ELECTR.	INSTR.	MECH.	SERVICES	ARCH.	LAYOUT	REV.	ISSUE	DESCRIPTION	DATE	BY											C	1	ISSUED FOR INFORMATION	09JUL09	AKF											B	1	ISSUED FOR INFORMATION ONLY	24JUN09	MRK											A	1	ISSUED FOR SQUAD REVIEW	05JUN09	MRK	SECTION: CONCRETE		YUKON TERRITORY		WARDROP Engineering Inc.		TITLE BELLEKENO PROJECT MILL BUILDING CONCRETE GROUND FLOOR PLAN	
CLIENT	PROJ.MAN	PROJ.ENG	PROCESS	ELECTR.	INSTR.	MECH.	SERVICES	ARCH.	LAYOUT	REV.	ISSUE	DESCRIPTION	DATE	BY																																																														
										C	1	ISSUED FOR INFORMATION	09JUL09	AKF																																																														
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										A	1	ISSUED FOR SQUAD REVIEW	05JUN09	MRK																																																														
E00-15-004 MILL BUILDING - CONCRETE - MISC. SECTIONS AND DETAILS									SCALE: 1:100		DATE																																																																	
E00-15-003 MILL BUILDING - CONCRETE - ELEVATIONS									DESIGN. BY: ATM		08APR09																																																																	
E00-15-001 MILL BUILDING - CONCRETE - FOUNDATION PLAN									DRAWN BY: MRK		13APR09																																																																	
DWG. NO.			REFERENCE DRAWINGS						CHECK. BY:																																																																			
									APP. BY:																																																																			

APPENDIX B

ALEXCO LIST OF CLAIMS AND LEASES IN KENO HILL SILVER DISTRICT

ALEXCO RESOURCE CORP.				APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES				UPDATED: MAY 25, 2009				
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
62977	LE BLANC		3439	ERDC	June 21, 1956	March 12, 2010	6	14.63	105M14	1173	53032	Mayo
81223	ANDY		3440	ERDC	June 26, 1962	March 12, 2010	7.5	18.45	105M14	1166	53055	Mayo
81225	SUSY Q.		3441	ERDC	June 26, 1962	March 12, 2010	14	33.76	105M14	1165	53055	Mayo
81226	CATHY		3442	ERDC	June 26, 1962	March 12, 2010	17.1	42.49	105M14	1163	53033	Mayo
81227	Mo		3443	ERDC	June 26, 1962	March 12, 2010	15.3	37.79	105M14	1162	53033	Mayo
82531	Joyce		3444	ERDC	March 12, 1963	March 12, 2010	3.8	9.2	105M14	1110	52067	Mayo
83133	Bunk		3446	ERDC	August 13, 1963	March 12, 2010	20	50.76	105M14	1144	52862	Mayo
83533	U.K. No.	17	3445	ERDC	July 17, 1964	March 12, 2010	6.6	15.91	105M14	1143	52865	Mayo
YC56120	K	93 F		AKHMC	June 13, 2007	June 13, 2010	18		105M14			Mayo
YC56121	K	94 F		AKHMC	June 13, 2007	June 13, 2010	18		105M14			Mayo
81721	R.J.		3447	ERDC	July 10, 1962	July 10, 2010	11.4	28	105M14	1108	52065	Mayo
14233	MAGGIE		3448	ERDC	September 24, 1921	September 24, 2010	2.4	6.24	105M14	109	55064	Mayo
12818	KING		3451	ERDC	October 20, 1919	September 27, 2010	21	51.65	105M14	156	54080	Mayo
12990	SILVER BELL		3449	ERDC	April 15, 1920	September 28, 2010	13.6	33.25	105M14	122	55064	Mayo
14833	TUNNEL		3450	ERDC	July 19, 1923	September 30, 2010	2.7	6.42	105M14	142	54104	Mayo
YC02673	Chiko	4		AKHMC-MQ	October 27, 2000	October 27, 2010			105M13			Mayo
YC02674	Chiko	5		AKHMC-MQ	October 27, 2000	October 27, 2010			105M13			Mayo
YC02675	Chiko	6		AKHMC-MQ	October 27, 2000	October 27, 2010			105M13			Mayo
YC02676	Chiko	7		AKHMC-MQ	October 27, 2000	October 27, 2010			105M13			Mayo
YC02677	Chiko	8		AKHMC-MQ	October 27, 2000	October 27, 2010			105M13			Mayo
YC02678	Chiko Fr.	9		AKHMC-MQ	October 27, 2000	October 27, 2010			105M13			Mayo
YC02679	Chiko	10		AKHMC-MQ	October 27, 2000	October 27, 2010			105M13			Mayo
62950	ORCHID	1		ERDC	May 30, 1956	October 31, 2010	27		105M13			Mayo
62951	ORCHID	2		ERDC	May 30, 1956	October 31, 2010	27.7		105M13			Mayo
62952	ORCHID	3		ERDC	May 30, 1956	October 31, 2010	20.9		105M13			Mayo
62953	ORCHID	4		ERDC	May 30, 1956	October 31, 2010	20.8		105M13			Mayo
62954	ORCHID	5		ERDC	May 30, 1956	October 31, 2010	20.7		105M13			Mayo
62955	ORCHID	6		ERDC	May 30, 1956	October 31, 2010	20.7		105M13			Mayo
62956	ORCHID	7		ERDC	May 30, 1956	October 31, 2010	19		105M13			Mayo
62957	ORCHID	8		ERDC	May 30, 1956	October 31, 2010	20.4		105M13			Mayo
62958	ORCHID	9		ERDC	May 30, 1956	October 31, 2010	21.3		105M13			Mayo
62959	ORCHID	10		ERDC	May 30, 1956	October 31, 2010	19.9		105M13			Mayo
62960	ORCHID	11		ERDC	May 30, 1956	October 31, 2010	12.7		105M13			Mayo
62961	ORCHID	12		ERDC	May 30, 1956	October 31, 2010	14.9		105M13			Mayo
62964	ORCHID	17		ERDC	May 30, 1956	October 31, 2010	12.3		105M13			Mayo
62965	ORCHID	18		ERDC	May 30, 1956	October 31, 2010	13.1		105M13			Mayo
62966	ORCHID	19		ERDC	May 30, 1956	October 31, 2010	20.2		105M14			Mayo
62967	ORCHID	20		ERDC	May 30, 1956	October 31, 2010	17.3		105M14			Mayo
YC56176	Alex	463		AKHMC	June 12, 2007	December 12, 2010	18		105M14			Mayo
YC56177	Alex	464		AKHMC	June 12, 2007	December 12, 2010	18		105M14			Mayo
YC56273	Alex	565		AKHMC	June 13, 2007	December 13, 2010	18		106D03			Mayo
YC56178	Alex	465		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56179	Alex	466		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56180	Alex	467		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56181	Alex	468		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56182	Alex	469		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo

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ALEXCO RESOURCE CORP.			APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES						UPDATED: MAY 25, 2009			
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
YC56183	Alex	470		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56184	Alex	471		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56185	Alex	472		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56186	Alex	473		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56187	Alex	474		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56188	Alex	475		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56189	Alex	476		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56190	Alex	477		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56191	Alex	478		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56192	Alex	479		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56193	Alex	480		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56194	Alex	481		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56195	Alex	482		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56196	Alex	483		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56197	Alex	484		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56198	Alex	485		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56199	Alex	486		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56200	Alex	487		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56201	Alex	488		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56202	Alex	489		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56203	Alex	490		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56204	Alex	491		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56205	Alex	492		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56206	Alex	493		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56207	Alex	494		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56208	Alex	495		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56209	Alex	496		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56210	Alex	497		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56211	Alex	498		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56212	Alex	499		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56213	Alex	500		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56214	Alex	501		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56215	Alex	502		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56216	Alex	503		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56217	Alex	504		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56218	Alex	505		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56220	Alex	507		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56221	Alex	508		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56222	Alex	509		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56224	Alex	511		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56225	Alex	512		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56226	Alex	513		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56227	Alex	514		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56228	Alex	515		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56229	Alex	516		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56230	Alex	517		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo

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ALEXCO RESOURCE CORP.				APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES					UPDATED: MAY 25, 2009			
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
YC56231	Alex	518		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56232	Alex	519		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56233	Alex	520		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56234	Alex	521		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56235	Alex	522		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56236	Alex	523		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56237	Alex	524		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56238	Alex	525		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56239	Alex	526		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56240	Alex	527		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56241	Alex	528		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56242	Alex	529		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56243	Alex	530		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56244	Alex	531		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56246	Alex	533		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56247	Alex	534		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56248	Alex	535		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56252	Alex	539		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56259	Alex	546		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56261	Alex	548		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56262	Alex	549		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56263	Alex	550		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56264	Alex	551		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56265	Alex	552		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56266	Alex	553		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC56267	Alex	554		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56268	Alex	556		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56269	Alex	558		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56270	Alex	560		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56271	Alex	562		AKHMC	June 22, 2007	December 22, 2010	18		106D03			Mayo
YC56272	Alex	564		AKHMC	June 22, 2007	December 22, 2010	18		105M14			Mayo
YC48132	Alex	1		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48133	Alex	2		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48134	Alex	3		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48135	Alex	4		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48136	Alex	5		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48137	Alex	6		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48138	Alex	7		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48139	Alex	8		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48140	Alex	9		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48141	Alex	10		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48142	Alex	11		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48143	Alex	12		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48144	Alex	13		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48145	Alex	14		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48146	Alex	15		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo

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ALEXCO RESOURCE CORP.				APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES				UPDATED: MAY 25, 2009				
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
YC48147	Alex	16		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48162	Alex	31		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48163	Alex	32		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48164	Alex	33		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48165	Alex	34		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48166	Alex	35		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48167	Alex	36		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48168	Alex	37		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48169	Alex	38		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48170	Alex	39		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48171	Alex	40		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48172	Alex	41		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48173	Alex	42		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48174	Alex	43		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48175	Alex	44		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48176	Alex	45		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48177	Alex	46		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48178	Alex	47		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48179	Alex	48		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48180	Alex	49		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48181	Alex	50		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48182	Alex	51		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48183	Alex	52		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48184	Alex	53		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48185	Alex	54		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48186	Alex	55		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48187	Alex	56		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48188	Alex	57		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48189	Alex	58		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48190	Alex	59		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48191	Alex	60		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48192	Alex	61		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48193	Alex	62		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48194	Alex	63		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48195	Alex	64		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48196	Alex	65		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48197	Alex	66		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48198	Alex	67		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48199	Alex	68		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48200	Alex	69		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48201	Alex	70		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48202	Alex	71		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48203	Alex	72		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48204	Alex	73		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48205	Alex	74		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48206	Alex	75		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo

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Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
YC48207	Alex	76		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48258	Alex	127		AKHMC	May 22, 2006	December 31, 2010	18		105M13			Mayo
YC48259	Alex	128		AKHMC	May 22, 2006	December 31, 2010	18		105M13			Mayo
YC48260	Alex	129		AKHMC	May 22, 2006	December 31, 2010	18		105M13			Mayo
YC48261	Alex	130		AKHMC	May 22, 2006	December 31, 2010	18		105M13			Mayo
YC48262	Alex	131		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48263	Alex	132		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48264	Alex	133		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48265	Alex	134		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48266	Alex	135		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48267	Alex	136		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48268	Alex	137		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48269	Alex	138		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48270	Alex	139		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48271	Alex	140		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48272	Alex	141		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48273	Alex	142		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48274	Alex	143		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48275	Alex	144		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48276	Alex	145		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48277	Alex	146		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48278	Alex	147		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48279	Alex	148		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48280	Alex	149		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48281	Alex	150		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48282	Alex	151		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48283	Alex	152		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48284	Alex	153		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48285	Alex	154		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48286	Alex	155		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48287	Alex	156		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48288	Alex	157		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48289	Alex	158		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48290	Alex	159		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48291	Alex	160		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48292	Alex	161		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48293	Alex	162		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48294	Alex	163		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48295	Alex	164		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48296	Alex	165		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48297	Alex	166		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48298	Alex	167		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48299	Alex	168		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48300	Alex	169		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48301	Alex	170		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48302	Alex	171		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo

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Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
YC48303	Alex	172		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48304	Alex	173		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48305	Alex	174		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48306	Alex	175		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48307	Alex	176		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48308	Alex	177		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48309	Alex	178		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48359	Alex	229		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48360	Alex	230		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48361	Alex	231		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48362	Alex	232		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48363	Alex	233		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48364	Alex	234		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48365	Alex	235		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48366	Alex	236		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48367	Alex	237		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48368	Alex	238		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48369	Alex	239		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48370	Alex	240		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48371	Alex	241		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48372	Alex	242		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48373	Alex	243		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48374	Alex	244		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48375	Alex	245		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48376	Alex	246		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48377	Alex	247		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48378	Alex	248		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48379	Alex	249		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48380	Alex	250		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48381	Alex	251		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48382	Alex	252		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48383	Alex	253		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48384	Alex	254		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48385	Alex	255		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48386	Alex	256		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48387	Alex	257		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48388	Alex	258		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48389	Alex	259		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48390	Alex	260		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48391	Alex	261		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48392	Alex	262		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48393	Alex	263		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48394	Alex	265		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48395	Alex	266		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48396	Alex	267		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48397	Alex	268		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo

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Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
YC48398	Alex	269		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48399	Alex	270		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48400	Alex	271		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48401	Alex	272		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48402	Alex	273		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48403	Alex	274		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48404	Alex	275		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48405	Alex	276		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48406	Alex	277		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48407	Alex	278		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48408	Alex	279		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48409	Alex	280		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48456	Alex	333		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48457	Alex	334		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48458	Alex	335		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48459	Alex	336		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48460	Alex	337		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48461	Alex	338		AKHMC	June 2, 2006	December 31, 2010	18		105M13			Mayo
YC48462	Alex	339		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48463	Alex	340		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48464	Alex	341		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48465	Alex	342		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48466	Alex	343		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48467	Alex	344		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48468	Alex	345		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48469	Alex	346		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48470	Alex	347		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48471	Alex	348		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48472	Alex	349		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48473	Alex	350		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48474	Alex	351		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48475	Alex	352		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48476	Alex	353		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48477	Alex	354		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48478	Alex	355		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48479	Alex	356		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48480	Alex	357		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48481	Alex	358		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48482	Alex	359		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48483	Alex	360		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48484	Alex	361		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48485	Alex	362		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48486	Alex	363		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48487	Alex	364		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48488	Alex	365		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48489	Alex	366		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo

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Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
YC48490	Alex	367		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48491	Alex	368		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48492	Alex	369		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48493	Alex	371		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48494	Alex	372		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48495	Alex	373		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48496	Alex	374		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48497	Alex	375		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48498	Alex	376		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48499	Alex	377		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48500	Alex	379		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48501	Alex	380		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48502	Alex	381		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48503	Alex	382		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48504	Alex	383		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48505	Alex	384		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48506	Alex	386		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC48549	Alex	264		AKHMC	June 2, 2006	December 31, 2010	18		105M14			Mayo
YC56219	Alex	506		AKHMC	June 22, 2007	December 31, 2010	18		106D03			Mayo
YC56223	Alex	510		AKHMC	June 22, 2007	December 31, 2010	18		106D03			Mayo
YC56245	Alex	532		AKHMC	June 22, 2007	December 31, 2010	18		105M14			Mayo
YC56249	Alex	536		AKHMC	June 22, 2007	December 31, 2010	18		105M14			Mayo
YC56250	Alex	537		AKHMC	June 22, 2007	December 31, 2010	18		105M14			Mayo
YC56251	Alex	538		AKHMC	June 22, 2007	December 31, 2010	18		105M14			Mayo
YC56253	Alex	540		AKHMC	June 22, 2007	December 31, 2010	18		105M14			Mayo
YC56254	Alex	541		AKHMC	June 22, 2007	December 31, 2010	18		106D03			Mayo
YC56255	Alex	542		AKHMC	June 22, 2007	December 31, 2010	18		106D03			Mayo
YC56256	Alex	543		AKHMC	June 22, 2007	December 31, 2010	18		106D03			Mayo
YC56257	Alex	544		AKHMC	June 22, 2007	December 31, 2010	18		106D03			Mayo
YC56258	Alex	545		AKHMC	June 22, 2007	December 31, 2010	18		106D03			Mayo
YC56260	Alex	547		AKHMC	June 22, 2007	December 31, 2010	18		105M14			Mayo
YC42600	K	52		AKHMC	December 3, 2005	December 3, 2011	18		105M14			Mayo
YC42598	K	50		AKHMC	December 15, 2005	December 15, 2011	18		105M14			Mayo
59313	Paddy			AKHMC-SPR	July 8, 1949	December 31, 2011	18		105M14			Mayo
80239	Carol	1		AKHMC-SPR	October 16, 1957	December 31, 2011	18		105M14			Mayo
80240	Carol	2		AKHMC-SPR	October 16, 1957	December 31, 2011	18		105M14			Mayo
80241	Carol	3		AKHMC-SPR	October 16, 1957	December 31, 2011	18		105M14			Mayo
80242	Carol	4		AKHMC-SPR	October 16, 1957	December 31, 2011	18		105M14			Mayo
80348	Carol	5		AKHMC-SPR	July 2, 1959	December 31, 2011	18		105M14			Mayo
80453	Joe No.	1		AKHMC-SPR	May 27, 1960	December 31, 2011	18		105M14			Mayo
81152	Carol			AKHMC-SPR	June 4, 1962	December 31, 2011	18		105M14			Mayo
83253	Paddy	2		AKHMC-SPR	October 16, 1963	December 31, 2011	18		105M14			Mayo
83254	Paddy	3		AKHMC-SPR	October 16, 1963	December 31, 2011	18		105M14			Mayo
83721	Paddy	4		AKHMC-SPR	October 26, 1964	December 31, 2011	18		105M14			Mayo
83722	Paddy	5		AKHMC-SPR	October 26, 1964	December 31, 2011	18		105M14			Mayo
84489	Joe	2		AKHMC-SPR	June 2, 1965	December 31, 2011	18		105M14			Mayo

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Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
Y 31586	Toni	1		AKHMC-SPR	December 2, 1968	December 31, 2011	18		105M14			Mayo
Y 31587	Toni	2		AKHMC-SPR	December 2, 1968	December 31, 2011	18		105M14			Mayo
Y 33741	O.K.	1		AKHMC-SPR	December 11, 1970	December 31, 2011	18		105M14			Mayo
Y 33742	O.K.	2		AKHMC-SPR	December 11, 1970	December 31, 2011	18		105M14			Mayo
Y 56174	O.K.	3		AKHMC-SPR	September 15, 1971	December 31, 2011	18		105M14			Mayo
Y 56175	O.K.	4		AKHMC-SPR	September 15, 1971	December 31, 2011	18		105M14			Mayo
Y 85963	O.K.	5		AKHMC-SPR	October 10, 1973	December 31, 2011	18		105M14			Mayo
Y 85964	O.K.	6		AKHMC-SPR	October 10, 1973	December 31, 2011	18		105M14			Mayo
Y 85965	O.K.	7		AKHMC-SPR	October 10, 1973	December 31, 2011	18		105M14			Mayo
Y 85966	O.K.	8		AKHMC-SPR	October 10, 1973	December 31, 2011	18		105M14			Mayo
Y 85967	O.K.	9		AKHMC-SPR	October 10, 1973	December 31, 2011	18		105M14			Mayo
Y 85968	O.K.	10		AKHMC-SPR	October 10, 1973	December 31, 2011	18		105M14			Mayo
YC42599	K	51		AKHMC	December 15, 2005	December 31, 2011	18		105M14			Mayo
YC56117	K	90 F		AKHMC	June 13, 2007	December 31, 2011	18		105M14			Mayo
YC56866	Alex	555		AKHMC	July 24, 2007	December 31, 2011	18		105M14			Mayo
YC56867	Alex	557		AKHMC	July 24, 2007	December 31, 2011	18		105M14			Mayo
YC56868	Alex	559		AKHMC	July 24, 2007	December 31, 2011	18		105M14			Mayo
YC56869	Alex	561		AKHMC	July 24, 2007	December 31, 2011	18		105M14			Mayo
YC56870	Alex	566		AKHMC	July 24, 2007	December 31, 2011	18		105M14			Mayo
YC56871	Alex	568		AKHMC	July 24, 2007	December 31, 2011	18		105M14			Mayo
YC56872	Alex	570		AKHMC	July 24, 2007	December 31, 2011	18		105M14			Mayo
YC56873	Alex	572		AKHMC	July 24, 2007	December 31, 2011	18		105M14			Mayo
YC56875	Alex	602		AKHMC	July 24, 2007	December 31, 2011	18		105M14			Mayo
YC56877	Alex	604		AKHMC	July 24, 2007	December 31, 2011	18		105M14			Mayo
YC56878	Alex	605		AKHMC	July 24, 2007	December 31, 2011	18		105M14			Mayo
YC56879	Alex	606		AKHMC	July 24, 2007	December 31, 2011	18		105M14			Mayo
YB64184	Lakehead	1		AKHMC-MQ	June 28, 1995	March 4, 2012			105M13			Mayo
YB64185	Lakehead	2		AKHMC-MQ	June 28, 1995	March 4, 2012			105M13			Mayo
16326	HECTOR		3519	ERDC	May 30, 1927	June 17, 2012	20	49.73	105M14	276	55080	Mayo
38715	JOCK		3517	ERDC	May 20, 1931	June 17, 2012	20.1	49.56	105M14	277	55080	Mayo
38779	CHANCE		3518	ERDC	April 18, 1934	June 17, 2012	0.82	2.17	105M13	282	55080	Mayo
13175	CAMOROTE		3527	ERDC	June 19, 1920	October 31, 2012	19.2	47.84	105M14	162	53800	Mayo
YA17398	Lem	4		AKHMC-SPR	November 14, 1977	November 14, 2012	18		105M14			Mayo
YA17399	Lem	5		AKHMC-SPR	November 14, 1977	November 14, 2012	18		105M14			Mayo
YA17400	Lem	6		AKHMC-SPR	November 14, 1977	November 14, 2012	18		105M14			Mayo
YA17401	Lem	7		AKHMC-SPR	November 14, 1977	November 14, 2012	18		105M14			Mayo
YA17402	Lem	8		AKHMC-SPR	November 14, 1977	November 14, 2012	18		105M14			Mayo
YA17403	Lem	9		AKHMC-SPR	November 14, 1977	November 14, 2012	18		105M14			Mayo
YA17404	Lem	10		AKHMC-SPR	November 14, 1977	November 14, 2012	18		105M14			Mayo
YA17405	Lem	11		AKHMC-SPR	November 14, 1977	November 14, 2012	18		105M14			Mayo
14989	RUBY		3525	ERDC	July 9, 1924	November 24, 2012	0.5	1.11	105M14	160	53801	Mayo
16025	HAWKS NEST		3524	ERDC	August 31, 1925	November 24, 2012	15.1	37.4	105M14	222	55107	Mayo
16497	DONNIE		3521	ERDC	August 28, 1924	November 24, 2012	20.2	48.63	105M14	218	55107	Mayo
16511	NO CASH		3526	ERDC	September 9, 1924	November 24, 2012	18.3	45.26	105M14	223	55107	Mayo
16512	LILL		3520	ERDC	September 9, 1924	November 24, 2012	18.4	45.6	105M14	224	55107	Mayo
16568	MONOPLY		3522	ERDC	July 7, 1925	November 24, 2012	8.9	21.96	105M14	225	55107	Mayo

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16569	MONTE CARLO		3523	ERDC	July 7, 1925	November 24, 2012	21	51.15	105M13	228	FB20919	Mayo
YC42549	K	1		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42550	K	2		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42551	K	3		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42552	K	4		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42553	K	5		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42554	K	6		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42555	K	7		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42556	K	8		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42557	K	9		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42558	K	10		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42559	K	11		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42560	K	12		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42561	K	13		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42562	K	14		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42563	K	15		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42564	K	16		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42565	K	17		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42566	K	18		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42567	K	19		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42568	K	20		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42569	K	21		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42570	K	22		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42571	K	23		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42572	K	24		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42573	K	25		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42574	K	26		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42575	K	27		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42576	K	28		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42577	K	29		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42578	K	30		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42579	K	31		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42580	K	32		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42581	K	33		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42582	K	34		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42587	K	39		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42588	K	40		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42589	K	41		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42590	K	42		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42591	K	43		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42592	K	44		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42593	K	45		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42594	K	46		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42595	K	47		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42596	K	48		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42602	K	54		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo

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YC42603	K	55		AKHMC	December 15, 2005	December 15, 2012	18		105M13			Mayo
YC42604	K	56		AKHMC	December 15, 2005	December 15, 2012	18		105M13			Mayo
YC42608	K	60		AKHMC	December 15, 2005	December 15, 2012	18		105M13			Mayo
YC42609	K	61		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42610	K	62		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42611	K	63		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42612	K	64		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42613	K	65		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42614	K	66		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42615	K	67		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42616	K	68		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42617	K	69		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42618	K	70		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42619	K	71		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42620	K	72		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42621	K	73		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42622	K	74		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42623	K	75		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42624	K	76		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42625	K	77		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42626	K	78		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42630	K	82		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42631	K	83		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42632	K	84		AKHMC	December 15, 2005	December 15, 2012	18		105M14			Mayo
YC42633	K	85		AKHMC	December 15, 2005	December 15, 2012	18		105M13			Mayo
13412	FOREST			ERDC	September 24, 1920	December 31, 2012	5.4		105M14			Mayo
13799	IVAN			ERDC	June 23, 1921	December 31, 2012	7.4		105M14			Mayo
14826	BELL YORK			ERDC	July 9, 1923	December 31, 2012	0.97		105M14			Mayo
14858	ADA			ERDC	August 30, 1923	December 31, 2012	6.1		105M14			Mayo
55392	YUKON			ERDC	January 30, 1946	December 31, 2012	14.6		105M14			Mayo
55394	BOB			ERDC	March 5, 1946	December 31, 2012	17.1		105M14			Mayo
59710	LEO	1		ERDC 65%-Cima 35%	September 26, 1950	December 31, 2012	20.6		105M13			Mayo
59711	LEO	2		ERDC 65%-Cima 35%	September 26, 1950	December 31, 2012	19.7		105M13			Mayo
59712	LEO	3		ERDC 65%-Cima 35%	September 26, 1950	December 31, 2012	20.5		105M13			Mayo
59714	LEO	4		ERDC 65%-Cima 35%	September 26, 1950	December 31, 2012	18.4		105M13			Mayo
59715	LEO	5		ERDC 65%-Cima 35%	September 26, 1950	December 31, 2012	20.6		105M13			Mayo
59716	LEO	6		ERDC 65%-Cima 35%	September 26, 1950	December 31, 2012	18		105M13			Mayo
59717	LEO	7		ERDC 65%-Cima 35%	September 26, 1950	December 31, 2012	20		105M13			Mayo
59718	LEO	8		ERDC 70%-Cima 30%	September 26, 1950	December 31, 2012	15.8		105M13			Mayo
59849	LEO	9		ERDC 70%-Cima 30%	October 2, 1950	December 31, 2012	20.3		105M13			Mayo
59850	LEO	10		ERDC 70%-Cima 30%	October 2, 1950	December 31, 2012	16.6		105M13			Mayo
59851	LEO	11		ERDC 70%-Cima 30%	October 2, 1950	December 31, 2012	19.7		105M13			Mayo
59852	LEO	12		ERDC 70%-Cima 30%	October 2, 1950	December 31, 2012	16.3		105M13			Mayo
59853	LEO	13		ERDC 70%-Cima 30%	October 2, 1950	December 31, 2012	20.1		105M13			Mayo
59854	LEO	14		ERDC 70%-Cima 30%	October 2, 1950	December 31, 2012	18.3		105M13			Mayo
59855	LEO	15		ERDC 70%-Cima 30%	October 2, 1950	December 31, 2012	22.6		105M13			Mayo

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59856	LEO	16		ERDC 70%-Cima 30%	October 2, 1950	December 31, 2012	14		105M13			Mayo
59857	LEO	17		ERDC 70%-Cima 30%	October 2, 1950	December 31, 2012	12.6		105M13			Mayo
59941	LEO	18		ERDC 70%-Cima 30%	October 12, 1950	December 31, 2012	16.1		105M13			Mayo
59942	LEO	19		ERDC 70%-Cima 30%	October 12, 1950	December 31, 2012	20.2		105M13			Mayo
61635	LEO			ERDC 70%-Cima 30%	June 11, 1951	December 31, 2012	15.4		105M13			Mayo
62968	ORCHID	21		ERDC	May 30, 1956	December 31, 2012	22.7		105M14			Mayo
62969	ORCHID	22		ERDC	May 30, 1956	December 31, 2012	18.8		105M14			Mayo
62970	ORCHID	23		ERDC	May 30, 1956	December 31, 2012	22.2		105M14			Mayo
62971	ORCHID	24		ERDC	May 30, 1956	December 31, 2012	17.5		105M14			Mayo
80082	K.P.O.	1		ERDC 70%-Cima 30%	October 5, 1956	December 31, 2012	20.7		105M13			Mayo
80083	K.P.O.	2		ERDC 70%-Cima 30%	October 5, 1956	December 31, 2012	13.1		105M13			Mayo
80084	K.P.O.	3		ERDC 70%-Cima 30%	October 5, 1956	December 31, 2012	20.4		105M13			Mayo
80085	K.P.O.	4		ERDC 70%-Cima 30%	October 5, 1956	December 31, 2012	16.3		105M13			Mayo
80169	ORCHID	44		ERDC	April 3, 1957	December 31, 2012	6.8		105M14			Mayo
80170	ORCHID	45		ERDC	April 3, 1957	December 31, 2012	10		105M14			Mayo
80345	K.P.O.			ERDC 70%-Cima 30%	October 14, 1958	December 31, 2012	3.7		105M13			Mayo
80362	K.P.O.	13		ERDC 70%-Cima 30%	July 24, 1959	December 31, 2012	12.4		105M13			Mayo
80364	K.P.O.	15		ERDC 70%-Cima 30%	July 24, 1959	December 31, 2012	20.8		105M13			Mayo
80366	K.P.O.	17		ERDC 70%-Cima 30%	July 24, 1959	December 31, 2012	21.4		105M13			Mayo
80367	K.P.O.	18		ERDC 70%-Cima 30%	July 24, 1959	December 31, 2012	21		105M13			Mayo
80368	K.P.O.	19		ERDC 70%-Cima 30%	July 24, 1959	December 31, 2012	20.9		105M13			Mayo
80369	K.P.O.	20		ERDC 70%-Cima 30%	July 24, 1959	December 31, 2012	20		105M13			Mayo
80370	K.P.O.	21		ERDC 70%-Cima 30%	July 24, 1959	December 31, 2012	20.3		105M13			Mayo
80372	K.P.O.	23		ERDC 70%-Cima 30%	July 24, 1959	December 31, 2012	21.1		105M13			Mayo
80374	K.P.O.	25		ERDC 70%-Cima 30%	July 24, 1959	December 31, 2012	20.8		105M13			Mayo
80376	K.P.O.	27		ERDC 70%-Cima 30%	July 24, 1959	December 31, 2012	20.5		105M13			Mayo
80378	K.P.O.	29		ERDC 70%-Cima 30%	July 28, 1959	December 31, 2012	20.3		105M13			Mayo
Y 68364	Orchid	46		ERDC	July 19, 1972	December 31, 2012	20.2		105M13			Mayo
Y 68365	Orchid	47		ERDC	July 19, 1972	December 31, 2012	20.5		105M13			Mayo
Y 68366	Orchid	48		ERDC	July 19, 1972	December 31, 2012	20		105M13			Mayo
Y 68367	Orchid	49		ERDC	July 19, 1972	December 31, 2012	21.2		105M13			Mayo
Y 68368	Orchid	50		ERDC	July 19, 1972	December 31, 2012	20.1		105M13			Mayo
Y 68369	Orchid	51		ERDC	July 19, 1972	December 31, 2012	20.8		105M13			Mayo
Y 68370	Orchid	52		ERDC	July 19, 1972	December 31, 2012	13.1		105M13			Mayo
Y 68371	Orchid	53		ERDC	July 19, 1972	December 31, 2012	7.5		105M13			Mayo
Y 68414	Case	1		ERDC	August 17, 1972	December 31, 2012	4.7		105M13			Mayo
Y 68415	Case	2		ERDC	August 17, 1972	December 31, 2012	1.7		105M13			Mayo
Y 68416	Case	3		ERDC	August 17, 1972	December 31, 2012	11		105M13			Mayo
Y 87465	Snowdrift	4		ERDC	March 21, 1974	December 31, 2012	21		105M13			Mayo
Y 87466	Snowdrift	5		ERDC	March 21, 1974	December 31, 2012	21.3		105M13			Mayo
Y 87467	Snowdrift	6		ERDC	March 21, 1974	December 31, 2012	12		105M13			Mayo
Y 87468	Snowdrift	7		ERDC	March 21, 1974	December 31, 2012	21.6		105M13			Mayo
Y 87469	Snowdrift	8		ERDC	March 21, 1974	December 31, 2012	20.4		105M13			Mayo
Y 97220	Snowdrift	13		ERDC	December 23, 1974	December 31, 2012	22.2		105M13			Mayo
Y 97221	Snowdrift	14		ERDC	December 23, 1974	December 31, 2012	20.8		105M13			Mayo
Y 97222	Snowdrift	15		ERDC	December 23, 1974	December 31, 2012	21		105M13			Mayo

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Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
Y 97223	Snowdrift	16		ERDC	December 23, 1974	December 31, 2012	20.5		105M13			Mayo
YA01413	Snowdrift	18		ERDC	October 8, 1975	December 31, 2012	12		105M13			Mayo
YA01415	Snowdrift	20		ERDC	October 8, 1975	December 31, 2012	18		105M13			Mayo
YB43712	Barb One			ERDC	October 12, 1994	December 31, 2012	8		105M14			Mayo
YB43729	Raven			ERDC	October 18, 1994	December 31, 2012	20.8		105M13			Mayo
YB65005	Webfoot			ERDC	September 29, 1995	December 31, 2012	16.2		105M13			Mayo
YC02670	Chiko	1		AKHMC-MQ	October 27, 2000	December 31, 2012			105M13			Mayo
YC02671	Chiko	2		AKHMC-MQ	October 27, 2000	December 31, 2012			105M13			Mayo
YC02672	Chiko	3		AKHMC-MQ	October 27, 2000	December 31, 2012			105M13			Mayo
YC10897	North F.			AKHMC-MQ	August 8, 2003	December 31, 2012			105M13			Mayo
YC10946	Wedge	1		AKHMC-MQ	September 9, 2003	December 31, 2012			105M13			Mayo
YC10993	Wedge	2		AKHMC-MQ	September 18, 2003	December 31, 2012			105M13			Mayo
YC10994	Wedge	3		AKHMC-MQ	September 18, 2003	December 31, 2012			105M13			Mayo
YC10995	Mary A	0		AKHMC-MQ	September 2, 2003	December 31, 2012			105M13			Mayo
YC10996	Mary B	0		AKHMC-MQ	September 2, 2003	December 31, 2012			105M13			Mayo
YC42583	K	35		AKHMC	December 1, 2005	December 31, 2012	18		105M14			Mayo
YC42584	K	36		AKHMC	December 1, 2005	December 31, 2012	18		105M14			Mayo
YC42585	K	37		AKHMC	December 1, 2005	December 31, 2012	18		105M14			Mayo
YC42586	K	38		AKHMC	December 1, 2005	December 31, 2012	18		105M14			Mayo
YC42597	K	49		AKHMC	December 3, 2005	December 31, 2012	18		105M14			Mayo
YC42601	K	53		AKHMC	December 5, 2005	December 31, 2012	18		105M14			Mayo
YC48148	Alex	17		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48149	Alex	18		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48150	Alex	19		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48151	Alex	20		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48152	Alex	21		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48153	Alex	22		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48154	Alex	23		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48155	Alex	24		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48156	Alex	25		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48157	Alex	26		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48158	Alex	27		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48159	Alex	28		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48160	Alex	29		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48161	Alex	30		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48208	Alex	77		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48209	Alex	78		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48210	Alex	79		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48211	Alex	80		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48212	Alex	81		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48213	Alex	82		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48214	Alex	83		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48215	Alex	84		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48216	Alex	85		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48217	Alex	86		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48218	Alex	87		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo

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Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
YC48219	Alex	88		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48220	Alex	89		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48221	Alex	90		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48222	Alex	91		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48223	Alex	92		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48224	Alex	93		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48225	Alex	94		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48226	Alex	95		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48227	Alex	96		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48228	Alex	97		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48229	Alex	98		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48230	Alex	99		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48231	Alex	100		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48232	Alex	101		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48233	Alex	102		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48234	Alex	103		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48235	Alex	104		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48236	Alex	105		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48237	Alex	106		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48238	Alex	107		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48239	Alex	108		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48240	Alex	109		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48241	Alex	110		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48242	Alex	111		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48243	Alex	112		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48244	Alex	113		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48245	Alex	114		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48246	Alex	115		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48247	Alex	116		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48248	Alex	117		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48249	Alex	118		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48250	Alex	119		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48251	Alex	120		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48252	Alex	121		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48253	Alex	122		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48254	Alex	123		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48255	Alex	124		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48256	Alex	125		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48257	Alex	126		AKHMC	May 22, 2006	December 31, 2012	18		105M13			Mayo
YC48310	Alex	179		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48311	Alex	180		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48312	Alex	181		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48313	Alex	182		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48314	Alex	183		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48315	Alex	184		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48316	Alex	185		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo

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Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
YC48317	Alex	186		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48318	Alex	187		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48319	Alex	188		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48320	Alex	189		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48321	Alex	190		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48322	Alex	191		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48323	Alex	192		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48324	Alex	193		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48325	Alex	194		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48326	Alex	195		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48327	Alex	196		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48328	Alex	197		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48329	Alex	198		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48330	Alex	199		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48331	Alex	200		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48332	Alex	201		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48333	Alex	202		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48334	Alex	203		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48335	Alex	204		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48336	Alex	205		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48337	Alex	206		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48338	Alex	207		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48339	Alex	209		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48340	Alex	210		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48341	Alex	211		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48342	Alex	212		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48343	Alex	213		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48344	Alex	214		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48345	Alex	215		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48346	Alex	216		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48347	Alex	217		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48348	Alex	218		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48349	Alex	219		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48350	Alex	220		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48351	Alex	221		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48352	Alex	222		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48353	Alex	223		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48354	Alex	224		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48355	Alex	225		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48356	Alex	226		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48357	Alex	227		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48358	Alex	228		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48410	Alex	287		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48411	Alex	288		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48412	Alex	289		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48413	Alex	290		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo

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Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
YC48414	Alex	291		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48415	Alex	292		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48416	Alex	293		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48417	Alex	294		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48418	Alex	295		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48419	Alex	296		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48420	Alex	297		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48421	Alex	298		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48422	Alex	299		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48423	Alex	300		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48424	Alex	301		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48425	Alex	302		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48426	Alex	303		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48427	Alex	304		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48428	Alex	305		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48429	Alex	306		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48430	Alex	307		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48431	Alex	308		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48432	Alex	309		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48433	Alex	310		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48434	Alex	311		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48435	Alex	312		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48436	Alex	313		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48437	Alex	314		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48438	Alex	315		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48439	Alex	316		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48440	Alex	317		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48441	Alex	318		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48442	Alex	319		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48443	Alex	320		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48444	Alex	321		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48445	Alex	322		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48446	Alex	323		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48447	Alex	324		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48448	Alex	325		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48449	Alex	326		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48450	Alex	327		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48451	Alex	328		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48452	Alex	329		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48453	Alex	330		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48454	Alex	331		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48455	Alex	332		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48507	Alex	400		AKHMC	June 2, 2006	December 31, 2012	18		105M14			Mayo
YC48508	Alex	401		AKHMC	June 2, 2006	December 31, 2012	18		105M14			Mayo
YC48509	Alex	403		AKHMC	June 2, 2006	December 31, 2012	18		105M14			Mayo
YC48510	Alex	404		AKHMC	June 2, 2006	December 31, 2012	18		105M14			Mayo

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Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
YC48511	Alex	423		AKHMC	June 2, 2006	December 31, 2012	18		105M14			Mayo
YC48512	Alex	424		AKHMC	June 2, 2006	December 31, 2012	18		105M14			Mayo
YC48513	Alex	425		AKHMC	June 2, 2006	December 31, 2012	18		105M14			Mayo
YC48514	Alex	429		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48515	Alex	430		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48516	Alex	431		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48517	Alex	432		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48518	Alex	433		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48519	Alex	434		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48520	Alex	435		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48521	Alex	436		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48522	Alex	437		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48523	Alex	438		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48524	Alex	439		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48525	Alex	440		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48526	Alex	441		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48527	Alex	442		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48528	Alex	443		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48529	Alex	444		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48530	Alex	445		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48531	Alex	446		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48532	Alex	447		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48533	Alex	448		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48534	Alex	449		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48535	Alex	450		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48536	Alex	451		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48537	Alex	452		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48538	Alex	453		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48539	Alex	454		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48540	Alex	455		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48541	Alex	456		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48542	Alex	457		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48543	Alex	458		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48544	Alex	459		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48545	Alex	460		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48546	Alex	461		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48547	Alex	462		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC48548	Alex	208		AKHMC	June 2, 2006	December 31, 2012	18		105M13			Mayo
YC55952	K	86		AKHMC	May 29, 2007	December 31, 2012	18		105M14			Mayo
YC55953	K	87		AKHMC	May 29, 2007	December 31, 2012	18		105M14			Mayo
YC56115	K	88 F		AKHMC	June 13, 2007	December 31, 2012	18		105M14			Mayo
YC56116	K	89 F		AKHMC	June 13, 2007	December 31, 2012	18		105M14			Mayo
YC56118	K	91 F		AKHMC	June 13, 2007	December 31, 2012	18		105M13			Mayo
YC56119	K	92 F		AKHMC	June 13, 2007	December 31, 2012	18		105M13			Mayo
YC56127	K	100		AKHMC	June 15, 2007	December 31, 2012	18		105M14			Mayo
YC56128	K	101 F		AKHMC	June 15, 2007	December 31, 2012	18		105M14			Mayo

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ALEXCO RESOURCE CORP.			APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES						UPDATED: MAY 25, 2009			
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
YC56155	K	103 F		AKHMC	June 22, 2007	December 31, 2012	18		105M14			Mayo
YC56156	K	104		AKHMC	June 22, 2007	December 31, 2012	18		105M14			Mayo
YC56157	K	105 F		AKHMC	June 22, 2007	December 31, 2012	18		105M14			Mayo
YC56158	K	106		AKHMC	June 22, 2007	December 31, 2012	18		105M14			Mayo
YC56159	K	107 F		AKHMC	June 22, 2007	December 31, 2012	18		105M14			Mayo
YC56874	Alex	601		AKHMC	July 24, 2007	December 31, 2012	18		105M14			Mayo
YC56876	Alex	603		AKHMC	July 24, 2007	December 31, 2012	18		105M14			Mayo
13158	PHOENIX		3537	ERDC	June 17, 1920	February 27, 2013	13.7	34.14	105M14	114	18257	Mayo
YC01212	South F			AKHMC-MQ	July 6, 1998	March 4, 2013			105M13			Mayo
YC42605	K	57		AKHMC	December 15, 2005	December 15, 2013	18		105M14			Mayo
YC42606	K	58		AKHMC	December 15, 2005	December 15, 2013	18		105M13			Mayo
YC42607	K	59		AKHMC	December 15, 2005	December 15, 2013	18		105M13			Mayo
YC42627	K	79		AKHMC	December 15, 2005	December 15, 2013	18		105M14			Mayo
YC42628	K	80		AKHMC	December 15, 2005	December 15, 2013	18		105M14			Mayo
YC42629	K	81		AKHMC	December 15, 2005	December 15, 2013	18		105M14			Mayo
YC56124	K	97		AKHMC	June 15, 2007	December 15, 2013	18		105M14			Mayo
YC56125	K	98		AKHMC	June 15, 2007	December 15, 2013	18		105M14			Mayo
YC56126	K	99		AKHMC	June 15, 2007	December 15, 2013	18		105M14			Mayo
YA40163	Dice	1		ERDC	June 29, 1979	December 29, 2013	2.1		105M14			Mayo
YA40164	Dice	2		ERDC	June 29, 1979	December 29, 2013	18.5		105M14			Mayo
YA40165	Dice	3		ERDC	June 29, 1979	December 29, 2013	17.1		105M14			Mayo
YA40166	Dice	4		ERDC	June 29, 1979	December 29, 2013	21.9		105M14			Mayo
YA40167	Dice	5		ERDC	June 29, 1979	December 29, 2013	14.5		105M14			Mayo
YA40168	Dice	6		ERDC	June 29, 1979	December 29, 2013	21.3		105M14			Mayo
YA40169	Dice	7		ERDC	June 29, 1979	December 29, 2013	21		105M14			Mayo
YA40170	Dice	8		ERDC	June 29, 1979	December 29, 2013	20.3		105M14			Mayo
YA40171	Dice	9		ERDC	June 29, 1979	December 29, 2013	21.1		105M14			Mayo
YA40173	Dice	11		ERDC	June 29, 1979	December 29, 2013	20.9		105M14			Mayo
YA40174	Dice	12		ERDC	June 29, 1979	December 29, 2013	20.5		105M14			Mayo
YA40175	Dice	13		ERDC	June 29, 1979	December 29, 2013	19.7		105M14			Mayo
YA40176	Dice	14		ERDC	June 29, 1979	December 29, 2013	21.9		105M14			Mayo
YC02322	Twins	7		AKHMC-MQ	December 29, 1999	December 29, 2013			105M13			Mayo
Y 33308	Venus	3		ERDC	April 6, 1970	December 31, 2013	11.7		105M14			Mayo
Y 69403	Galaxy			ERDC	June 5, 1973	December 31, 2013	9.3		105M14			Mayo
Y 87462	Snowdrift	1		ERDC	March 21, 1974	December 31, 2013	21.3		105M13			Mayo
Y 87463	Snowdrift	2		ERDC	March 21, 1974	December 31, 2013	14.6		105M13			Mayo
Y 87464	Snowdrift	3		ERDC	March 21, 1974	December 31, 2013	20.1		105M13			Mayo
Y 87470	Snowdrift	9		ERDC	March 21, 1974	December 31, 2013	14.3		105M13			Mayo
Y 87471	Snowdrift	10		ERDC	March 21, 1974	December 31, 2013	16		105M13			Mayo
Y 87472	Snowdrift	11		ERDC	March 21, 1974	December 31, 2013	15.7		105M13			Mayo
Y 88686	Snowdrift			ERDC	June 5, 1974	December 31, 2013	1.3		105M13			Mayo
Y 97219	Snowdrift	12		ERDC	December 23, 1974	December 31, 2013	8.7		105M13			Mayo
Y 97333	Venus	4		ERDC	May 9, 1975	December 31, 2013	9		105M14			Mayo
YA01412	Snowdrift	17		ERDC	October 8, 1975	December 31, 2013	10.9		105M13			Mayo
YA01414	Snowdrift	19		ERDC	October 8, 1975	December 31, 2013	20.8		105M13			Mayo
YA01416	Snowdrift	21		ERDC	October 8, 1975	December 31, 2013	19.5		105M13			Mayo

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YA39498	Bulldozer	1		ERDC	April 4, 1979	December 31, 2013	21		105M14			Mayo
YA77506	Galena			ERDC	June 13, 1984	December 31, 2013	2		105M14			Mayo
YB29727	ALLA	4		ERDC	March 19, 1993	December 31, 2013	12.9		105M13			Mayo
YB29728	ALLA	5		ERDC	March 19, 1993	December 31, 2013	12		105M13			Mayo
YB29729	ALLA	6		ERDC	March 19, 1993	December 31, 2013	6.3		105M13			Mayo
YC01768	Jarret	2		AKHMC-MQ	April 30, 1999	December 31, 2013			105M13			Mayo
YC56122	K	95		AKHMC	June 15, 2007	December 31, 2013	18		105M14			Mayo
YC56123	K	96		AKHMC	June 15, 2007	December 31, 2013	18		105M14			Mayo
YC69940	K	108F		AKHMC	September 10, 2008	December 31, 2013	0.344		105M14			Mayo
12875	PORCUPINE		4065	ERDC	November 15, 1919	January 21, 2014	15.4	38.01	105M14	23	18252	Mayo
13152	FRIENDSHIP		4066	ERDC	June 16, 1920	January 30, 2014	10	25.1	105M14	102	18256	Mayo
13021	LUCKY QUEEN		4067	ERDC	May 4, 1920	February 17, 2014	20.1	48.29	105M14	181	36699	Mayo
12923	UNCLE SAM		4068	ERDC	December 26, 1919	March 12, 2014	14.4	35.18	105M14	182	36699	Mayo
13153	VIOLA		4069	ERDC	June 16, 1920	March 14, 2014	18.5	45.61	105M14	165	55110	Mayo
14898	RIO		4070	ERDC	November 15, 1923	April 14, 2014	14	35.05	105M14	168	55110	Mayo
16253	TIPPY		4074	ERDC	October 6, 1926	April 14, 2014	6.2	15.58	105M14	301	55112	Mayo
38694	JESSIE		4075	ERDC	November 21, 1930	April 14, 2014	16.4	40.74	105M14	300	55112	Mayo
38741	TOMTOM		4072	ERDC	June 20, 1932	April 14, 2014	10.3	25.19	105M14	298	55112	Mayo
38744	JEWEL		4073	ERDC	July 21, 1932	April 14, 2014	9.1	22.58	105M14	299	55112	Mayo
38812	GALENA HILL		4071	ERDC	November 12, 1934	April 14, 2014	17	41.57	105M14	297	55112	Mayo
16079	TOO GOOD		4076	ERDC	November 29, 1925	June 11, 2014	4.6	10.61	105M14	183	36699	Mayo
14846	DENVER		2092	ERDC	August 11, 1923	October 14, 2014	3.4	8.19	105M14	202	55109	Mayo
12785	PINOCHLE		3749	ERDC	September 11, 1919	October 29, 2014	20.7	51.26	105M14	22	16735	Mayo
12871	WOLVERINE		3750	ERDC	November 13, 1919	October 30, 2014	19.2	47.21	105M14	24	16735	Mayo
14168	MASTIFF		4087	ERDC	September 14, 1921	November 14, 2014	13.9	34.3	105M14	158	53801	Mayo
14089	ARCTIC		4088	ERDC	July 26, 1921	December 19, 2014	20.7	51.65	105M14	157	53801	Mayo
14169	ETTA		4089	ERDC	September 14, 1921	December 19, 2014	15.2	37.67	105M14	192	55109	Mayo
YC02323	Hoito	1		AKHMC-MQ	December 29, 1999	December 29, 2014			105M13			Mayo
YC02324	Hoito	2		AKHMC-MQ	December 29, 1999	December 29, 2014			105M13			Mayo
YC02325	Hoito	3		AKHMC-MQ	December 29, 1999	December 29, 2014			105M13			Mayo
YC02326	Hoito	4		AKHMC-MQ	December 29, 1999	December 29, 2014			105M13			Mayo
YC02327	Hoito	5		AKHMC-MQ	December 29, 1999	December 29, 2014			105M13			Mayo
YC02328	Hoito	6		AKHMC-MQ	December 29, 1999	December 29, 2014			105M13			Mayo
YC02329	Hoito	7		AKHMC-MQ	December 29, 1999	December 29, 2014			105M13			Mayo
YC02330	Hoito	8		AKHMC-MQ	December 29, 1999	December 29, 2014			105M13			Mayo
14088	MIDWAY		4090	ERDC	July 26, 1921	December 30, 2014	20.7	51.65	105M14	185	55109	Mayo
14085	FIG TREE		4098	ERDC	July 25, 1921	January 8, 2015	14.5	35.49	105M14	186	55109	Mayo
14084	BIRMINGHAM		4096	ERDC	July 25, 1921	January 15, 2015	17.3	41.91	105M14	179	55109	Mayo
14087	HUXLEY		4097	ERDC	July 26, 1921	January 20, 2015	10.3	25.59	105M14	176	55109	Mayo
14086	ORANGE		4092	ERDC	July 25, 1921	January 21, 2015	21.2	51.65	105M14	178	55109	Mayo
14893	SPENCER		4093	ERDC	November 14, 1923	January 27, 2015	0.2	0.46	105M14	189	55109	Mayo
14883	DARWIN		4091	ERDC	October 18, 1923	January 28, 2015	3.5	8.57	105M14	188	55109	Mayo
14998	ATLANTIC		4094	ERDC	July 14, 1924	January 29, 2015	7.1	17.27	105M14	191	55109	Mayo
14999	PACIFIC		4095	ERDC	July 14, 1924	January 29, 2015	12.9	31.4	105M14	190	55109	Mayo
13133	HOMESTAKE		2113	ERDC	June 15, 1920	February 27, 2015	20.8	51.65	105M14	241	FB20919	Mayo
13367	WARRIOR		2114	ERDC	October 12, 1920	February 27, 2015	13.7	33.75	105M13	372	41356	Mayo

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12803	SHAMROCK		2116	ERDC	October 8, 1919	April 28, 2015	20.9	51.65	105M14	232	55071	Mayo
14903	DIXIE		4110	ERDC	November 21, 1923	October 7, 2015	17.1	41.81	105M14	217	55107	Mayo
12829	MAPLE LEAF		4111	ERDC	October 23, 1919	October 15, 2015	18.2	45.32	105M14	235	55071	Mayo
12800	RENO		4112	ERDC	October 1, 1919	October 19, 2015	19.9	48.5	105M14	233	55071	Mayo
12812	KID		4109	ERDC	October 16, 1919	October 19, 2015	20.6	51.1	105M14	234	55071	Mayo
12830	LION		4108	ERDC	October 23, 1919	October 24, 2015	17.8	44.19	105M14	236	55071	Mayo
12807	TIGER		4107	ERDC	October 10, 1919	October 27, 2015	20.7	51.21	105M14	237	55071	Mayo
12919	MAYO		4113	ERDC	December 22, 1919	December 21, 2015	20.7	51.63	105M14	180	36699	Mayo
16561	ARIZONA		2132	ERDC	June 30, 1925	January 27, 2016	10	24.99	105M14	257	53837	Mayo
YB29002	Mary	1		AKHMC-MQ	September 25, 1992	March 4, 2016			105M13			Mayo
YB29003	Mary	2		AKHMC-MQ	September 25, 1992	March 4, 2016			105M13			Mayo
YB29394	Mary	6		AKHMC-MQ	November 18, 1992	March 4, 2016			105M13			Mayo
YB64186	Lakehead	5		AKHMC-MQ	June 28, 1995	March 4, 2016			105M13			Mayo
YB64187	Lakehead	6		AKHMC-MQ	June 28, 1995	March 4, 2016			105M13			Mayo
YB64188	Lakehead	7		AKHMC-MQ	June 28, 1995	March 4, 2016			105M13			Mayo
YB64189	Lakehead	8		AKHMC-MQ	June 28, 1995	March 4, 2016			105M13			Mayo
YB64190	Lakehead	9		AKHMC-MQ	June 28, 1995	March 4, 2016			105M13			Mayo
YB64191	Lakehead	10		AKHMC-MQ	June 28, 1995	March 4, 2016			105M13			Mayo
YB64192	Lakehead	3		AKHMC-MQ	June 30, 1995	March 4, 2016			105M13			Mayo
YB64193	Lakehead	4		AKHMC-MQ	June 30, 1995	March 4, 2016			105M13			Mayo
YB64194	Lakehead	11		AKHMC-MQ	June 30, 1995	March 4, 2016			105M13			Mayo
YB64195	Lakehead	12		AKHMC-MQ	June 30, 1995	March 4, 2016			105M13			Mayo
YB64196	Lakehead	13		AKHMC-MQ	June 30, 1995	March 4, 2016			105M13			Mayo
16557	WESTON		2133	ERDC	June 18, 1925	March 7, 2016	14.5	35.46	105M14	201	55047	Mayo
16571	MINERVA		2134	ERDC	July 7, 1925	March 22, 2016	19.1	46.94	105M14	197	55047	Mayo
16040	MINERVA JR.		2135	ERDC	September 23, 1925	April 14, 2016	9.3	22.99	105M14	199	55047	Mayo
15236	MOHAWK		2136	ERDC	June 13, 1928	April 20, 2016	15.8	38.98	105M14	200	55047	Mayo
56506	HILL		2179	ERDC	November 28, 1947	May 23, 2016	1.6	3.74	105M13	329	40951	Mayo
13480	BLACK MAGGIE		2181	ERDC	October 13, 1920	September 3, 2016	3.7	9.17	105M14	800	41543	Mayo
38748	MAY		2180	ERDC	August 15, 1932	September 3, 2016	17.9	44.59	105M14	777	41542	Mayo
12937	MATHOLE		2138	ERDC	January 3, 1920	September 7, 2016	20.5	50.6	105M14	269	21508	Mayo
38643	FLAME		2139	ERDC	November 13, 1929	November 29, 2016	13.7	33.77	105M14	249	21508	Mayo
38642	MOTH		2140	ERDC	November 13, 1929	December 8, 2016	16.4	39.91	105M14	250	21508	Mayo
YC56129	K	102 F		AKHMC	June 15, 2007	December 31, 2016	18		105M14			Mayo
14228	Dolly Varden		2194	ERDC	September 24, 1921	February 15, 2017	4.3	10.15	105M14	289	41270	Mayo
YB28942	Doug	1		AKHMC-MQ	September 4, 1992	March 4, 2017			105M13			Mayo
YB28943	Doug	2		AKHMC-MQ	September 4, 1992	March 4, 2017			105M13			Mayo
YB28944	Doug	3		AKHMC-MQ	September 4, 1992	March 4, 2017			105M13			Mayo
YB28945	Doug	4		AKHMC-MQ	September 4, 1992	March 4, 2017			105M13			Mayo
YB28998	Doug	5		AKHMC-MQ	September 25, 1992	March 4, 2017			105M13			Mayo
YB28999	Doug	6		AKHMC-MQ	September 25, 1992	March 4, 2017			105M13			Mayo
YB29000	Doug	7		AKHMC-MQ	September 25, 1992	March 4, 2017			105M13			Mayo
YB29001	Doug	8		AKHMC-MQ	September 25, 1992	March 4, 2017			105M13			Mayo
YB29395	Doug	9		AKHMC-MQ	November 18, 1992	March 4, 2017			105M13			Mayo
YB29440	Jarret	1		AKHMC-MQ	December 18, 1992	March 4, 2017			105M13			Mayo
15329	LITTLE FRACTION		2197	ERDC	May 16, 1929	March 8, 2017	0.6	1	105M13	210	55102	Mayo

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15304	GREEN BACK		2195	ERDC	November 27, 1928	March 13, 2017	18.4	44.65	105M13	208	55102	Mayo
16556	KENO		2200	ERDC	June 18, 1925	March 21, 2017	17.6	41.61	105M14	203	55047	Mayo
15364	LINK		2196	ERDC	July 16, 1929	March 22, 2017	8.2	19.06	105M13	213	55102	Mayo
15365	WASP		2201	ERDC	July 11, 1929	March 27, 2017	5.7	13.89	105M13	209	55102	Mayo
16585	LUCKY		2198	ERDC	June 11, 1925	March 29, 2017	2.2	5.02	105M14	258	53796	Mayo
13454	BULL FROG		2199	ERDC	October 2, 1920	March 30, 2017	20.8	51.65	105M13	261	21254	Mayo
16523	ELSA		2202	ERDC	October 11, 1924	May 12, 2017	15.4	38.2	105M14	193	55047	Mayo
16524	JEAN		2203	ERDC	October 11, 1924	May 19, 2017	16.9	41.23	105M14	194	55047	Mayo
16552	LUCKY STRIKE		2204	ERDC	June 15, 1925	June 14, 2017	5.6	13.64	105M14	196	55047	Mayo
16553	PORCUPINE		2205	ERDC	June 15, 1925	June 20, 2017	16.9	41.93	105M14	195	55047	Mayo
84580	SURPLOMB	2	2228	ERDC	July 14, 1965	October 8, 2017	1.9	4.83	105M14	1175	53032	Mayo
84581	SURPLOMB	3	2229	ERDC	July 14, 1965	October 8, 2017	1.7	4.08	105M14	1172	53032	Mayo
84616	GLORIA FRACTION		2232	ERDC	August 24, 1965	October 8, 2017	6.1	15.53	105M14	1168	53032	Mayo
84617	REVENGE FRACTIO		2231	ERDC	August 24, 1965	October 8, 2017	5.8	14.35	105M14	1169	53032	Mayo
84626	JEAN FRACTIONAL		2230	ERDC	August 26, 1965	October 8, 2017	10.4	25.91	105M14	1174	53032	Mayo
84628	TESS		2233	ERDC	September 9, 1965	October 8, 2017	0.38	0.88	105M14	1176	53032	Mayo
55364	HELEN		2211	ERDC	October 25, 1945	November 1, 2017	15.5	37	105M14	797	41545	Mayo
59274	JUNE		2212	ERDC	June 22, 1949	November 1, 2017	0.75	1	105M14	803	41540	Mayo
14081	WHIPSAW		OM00011	ERDC	July 23, 1921	December 15, 2017	8.6	20.67	105M14	163	55050	Mayo
14327	EUREKA		2227	ERDC	October 11, 1921	December 15, 2017	9	22.5	105M14	164	55050	Mayo
16087	EXTENSION		2226	ERDC	November 24, 1925	December 15, 2017	15.4	38.01	105M14	173	55050	Mayo
16170	NOD FR.		2225	ERDC	July 13, 1926	December 15, 2017	0.85	2	105M14	461	41801	Mayo
38730	SILVER FR.		2223	ERDC	September 16, 1931	December 15, 2017	2.5	6.32	105M14	463	41801	Mayo
55120	CHANCE		2222	ERDC	November 28, 1938	December 15, 2017	14.4	35.43	105M14	464	41801	Mayo
55327	SAM		2221	ERDC	October 16, 1945	December 15, 2017	16.6	41.3	105M14	465	41801	Mayo
55333	DOE		2220	ERDC	October 16, 1945	December 15, 2017	1.7	3.94	105M14	466	41801	Mayo
55473	ENDYMION		2219	ERDC	January 23, 1947	December 15, 2017	18.3	34.61	105M14	742	41555	Mayo
55474	ARETHUSA		2218	ERDC	January 23, 1947	December 15, 2017	6.3	15.81	105M14	743	41555	Mayo
55475	ARTEMIS		OM00017	ERDC	January 23, 1947	December 15, 2017	17.1	41.52	105M14	744	41555	Mayo
55476	APOLLO		2216	ERDC	January 23, 1947	December 15, 2017	13.6	33.4	105M14	745	41555	Mayo
55477	ADONAI		2215	ERDC	January 24, 1947	December 15, 2017	13.1	32.23	105M14	747	41552	Mayo
55478	HESPERIDES		2214	ERDC	January 24, 1947	December 15, 2017	16.7	41.19	105M14	748	41552	Mayo
56443	APEX FR.		OM00022	ERDC	July 15, 1947	December 15, 2017	8.1	2.09	105M14	462	41791	Mayo
12870	FORAKER FRACTION		2207	ERDC	November 13, 1919	December 27, 2017	6.1	14	105M14	266	21677	Mayo
12873	PERRY FRACTIONAL		2206	ERDC	November 14, 1919	December 28, 2017	6.3	15.19	105M14	267	21677	Mayo
13169	ELSIE FRACTIONAL		2209	ERDC	June 18, 1920	January 8, 2018	3.1	7.92	105M14	271	21667	Mayo
38619	MCCARTHY FRACTION		2208	ERDC	September 19, 1929	January 8, 2018	1.1	1.82	105M14	272	21677	Mayo
2201	MABEL		OM00028	ERDC	March 17, 1913	February 15, 2018	18.8	45.91	105M13	16	15165	Mayo
16564	PAL OF MINE		OM00031	ERDC	June 30, 1925	May 28, 2018	17.4	42.68	105M14	270	55064	Mayo
13110	WHITEHORSE		OM00032	ERDC	June 10, 1920	August 5, 2018	6.6	16	105M14	888	42093	Mayo
13088	CHIEF	2	OM00038	ERDC	June 8, 1920	August 18, 2018	19.2	47.88	105M14	415	41758	Mayo
13089	CHIEF		OM00039	ERDC	June 8, 1920	August 18, 2018	21.2	52	105M14	416	41758	Mayo
13156	VERNA		OM00034	ERDC	June 17, 1920	August 18, 2018	20.7	51	105M14	413	41761	Mayo
14466	AJAX		OM00033	ERDC	December 7, 1921	August 18, 2018	14.6	47.53	105M14	166	55110	Mayo
15303	SWISS		OM00037	ERDC	October 26, 1928	August 18, 2018	19.2	47	105M14	412	41759	Mayo
38687	AUGUST		OM00036	ERDC	September 16, 1930	August 18, 2018	1.7	3	105M14	410	41759	Mayo

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ALEXCO RESOURCE CORP.				APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES				UPDATED: MAY 25, 2009				
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
55024	KENO		OM00035	ERDC	October 30, 1936	August 18, 2018	16.8	42	105M14	411	41759	Mayo
59125	FRONTIER		OM00041	ERDC	November 13, 1948	January 6, 2019	14	not kwr	105M14	421	41762	Mayo
10269	HAPPY		NM00011	ERDC	July 22, 1936	July 27, 2019	7.3	17.7	105M14	664	42735	Mayo
13025	NABOB		NM00012	ERDC	May 5, 1920	July 27, 2019	14	34.23	105M14	673	42735	Mayo
13027	TIN CAN		NM00007	ERDC	May 5, 1920	July 27, 2019	21.1	51.7	105M14	661	42735	Mayo
13069	SILVER HOARD		NM00013	ERDC	May 31, 1920	July 27, 2019	17.1	42.81	105M14	662	42735	Mayo
15366	JIGGYWIG		NM00008	ERDC	July 18, 1929	July 27, 2019	15.2	37.83	105M14	670	42735	Mayo
55065	TIPTOP		NM00010	ERDC	March 28, 1938	July 27, 2019	1.4	3.32	105M14	665	42735	Mayo
55214	SANTIAGO		NM00009	ERDC	February 23, 1942	July 27, 2019	13.7	33.9	105M14	671	42735	Mayo
55569	BARKY		NM00014	ERDC	February 17, 1947	July 27, 2019	3.8	8.89	105M14	674	42735	Mayo
59160	BLUE BIRD		NM00015	ERDC	November 22, 1948	July 27, 2019	20.2	50.07	105M14	667	42735	Mayo
59161	TREASURE ISLAND		NM00016	ERDC	November 22, 1948	July 27, 2019	16.4	40.28	105M14	668	42735	Mayo
59336	KAYE		NM00017	ERDC	July 19, 1949	July 27, 2019	8.5	37.8	105M14	672	42735	Mayo
59341	NANCE		NM00019	ERDC	July 19, 1949	July 27, 2019	14.4	35.71	105M14	666	42735	Mayo
59342	BETS		NM00018	ERDC	July 19, 1949	July 27, 2019	13.4	32.99	105M14	669	42735	Mayo
59518	BEN		NM00005	ERDC	November 1, 1949	July 27, 2019	19.3	46.87	105M14	663	42735	Mayo
59754	EILEEN		NM00020	ERDC	September 26, 1950	July 27, 2019	8.8	21.58	105M14	648	41524	Mayo
62131	METEOR		NM00006	ERDC	June 16, 1952	July 27, 2019	3.9	9.28	105M14	675	42735	Mayo
55421	COMPLEX		NM00023	ERDC	August 16, 1946	August 28, 2019	20.8	51.65	105M14	537	41866	Mayo
12876	FISHER		NM00022	ERDC	November 26, 1919	September 14, 2019	17.5	43.66	105M14	68	55052	Mayo
12878	CARIBOU		NM00021	ERDC	November 26, 1919	September 14, 2019	18	46.6	105M14	66	18253	Mayo
55495	LORNE		NM00025	ERDC	February 1, 1947	October 12, 2019	10.6	26.25	105M14	486	41795	Mayo
55497	MAYO		NM00027	ERDC	February 1, 1947	October 12, 2019	12.1	29.87	105M13	322	40961	Mayo
55499	DUPLEX		NM00026	ERDC	February 1, 1947	October 12, 2019	16.5	40.97	105M13	323	40961	Mayo
13060	KIDDO		NM00024	50% ERDC	May 11, 1920	November 11, 2019	5.6	13.53	105M14	705	42747	Mayo
16558	PUNCH		OM00040	ERDC	June 18, 1925	December 29, 2019	9.9	24.26	105M14	205	55047	Mayo
YB29004	Mary	3		AKHMC-MQ	September 25, 1992	December 31, 2019			105M13			Mayo
YB29005	Mary	4		AKHMC-MQ	September 25, 1992	December 31, 2019			105M13			
12961	LAST CHANCE		NM00028	ERDC	February 26, 1920	February 5, 2020	20.3	50.09	105M14	246	54073	Mayo
14002	UPTON		NM00029	ERDC	June 25, 1921	February 5, 2020	14.2	34.76	105M14	245	54073	Mayo
55480	CORA		NM00031	ERDC	January 24, 1947	February 11, 2020	20.7	51.26	105M14	496	41798	Mayo
12965	LONE STAR		NM00030	ERDC	March 1, 1920	February 20, 2020	16.2	39.93	105M14	244	54073	Mayo
12998	WALSH		NM00032	ERDC	April 17, 1920	February 28, 2020	15.8	38.43	105M14	247	54073	Mayo
12880	NAPOLEON		NM00033	ERDC	November 28, 1919	March 13, 2020	10.8	26.6	105M14	116	53816	Mayo
13058	BUNNY		NM00035	ERDC	May 11, 1920	April 25, 2020	13.9	34.46	105M14	806	42747	Mayo
13072	HIGHLANDER		NM00034	ERDC	June 4, 1920	April 25, 2020	14.8	36.21	105M14	807	42747	Mayo
59335	TIP TOP		NM00010	ERDC	July 19, 1949	May 15, 2020	16.4	39.97	105M14	571	41529	Mayo
12915	SIWASH		NM00040	ERDC	December 19, 1919	August 13, 2020	16.7	41.82	105M14	98	18256	Mayo
12970	CANADIAN		NM00041	ERDC	March 4, 1920	August 14, 2020	2	4.66	105M14	37	16982	Mayo
16350	RING		NM00036	AKHMC-SPR	August 27, 1927	August 19, 2020	5.7	14.16	105M14	493	41799	Mayo
12877	EUREKA		NM00038	ERDC	November 26, 1919	August 20, 2020	16.2	39.41	105M14	92	18254	Mayo
12819	MOOSE		NM00037	ERDC	October 20, 1919	August 21, 2020	19.9	48.2	105M14	927	42112	Mayo
12879	MIRAMICHI		NM00039	ERDC	September 26, 1919	September 16, 2020	19	46	105M14	195	53778	Mayo
13073	RAM		NM00042	ERDC	June 4, 1920	October 17, 2020	20.8	51.65	105M14	170	55050	Mayo
12838	TUNDRA		NM00043	ERDC	October 27, 1919	November 1, 2020	20.7	51.65	105M14	152A	18946	Mayo
13122	BLUE ROCK		NM00044	ERDC	June 12, 1920	November 14, 2020	18.6	46	105M14	775	41556	Mayo

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ALEXCO RESOURCE CORP.			APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES						UPDATED: MAY 25, 2009			
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
55269	LITTLE GIRL		NM00045	ERDC	November 9, 1943	November 14, 2020	7.2	17.87	105M14	802	42220	Mayo
55315	DELIA		NM00046	ERDC	February 19, 1945	November 14, 2020	19.3	48.19	105M14	782	41564	Mayo
55330	JIMMIE		NM00047	ERDC	October 16, 1945	November 14, 2020	19	46.48	105M14	786	41564	Mayo
55341	ROBIN		NM00048	ERDC	October 17, 1945	November 14, 2020	15.8	38.03	105M14	776	41556	Mayo
55385	MARMOT		NM00049	ERDC	October 26, 1945	November 14, 2020	19.4	48	105M14	789	41564	Mayo
55386	GOPHER		NM00050	ERDC	October 26, 1945	November 14, 2020	6	15.25	105M14	783	41564	Mayo
55387	REX		NM00051	ERDC	October 26, 1945	November 14, 2020	1.9	3.96	105M14	784	42220	Mayo
55389	PORKY		NM00052	ERDC	October 26, 1945	November 14, 2020	20.7	51.62	105M14	788	41564	Mayo
55427	JAY		NM00053	ERDC	August 19, 1946	November 14, 2020	19.2	46.72	105M14	785	41564	Mayo
55428	HAY		NM00054	ERDC	August 19, 1946	November 14, 2020	20.3	50.57	105M14	787	41564	Mayo
12845	FOX		NM00056	ERDC	October 28, 1919	March 11, 2021	19.4	48.2	105M14	93	18254	Mayo
59765	CORA Fr	2	NM00055	ERDC	September 27, 1950	June 17, 2021	2.4	5.89	105M14	893	42101	Mayo
56522	QUEST		NM00111	AKHMC-SPR	June 8, 1948	June 19, 2021	22.8	56.37	105M14	492	41817	Mayo
59273	QUILL		NM00112	AKHMC-SPR	June 21, 1949	June 19, 2021	10.7	26.55	105M14	541	41872	Mayo
13108	ANEROID		NM00058	ERDC	June 10, 1920	July 18, 2021	12.1	29.82	105M14	542	42156	Mayo
13109	WATCH		NM00130	ERDC	June 10, 1920	July 18, 2021	16.9	41.96	105M14	543	42156	Mayo
14446	BARKER Jr		NM00061	ERDC	December 1, 1921	July 24, 2021	20.5	51.39	105M14	408	41747	Mayo
14884	BUDDY		NM00065	ERDC	October 22, 1923	July 24, 2021	16.5	40.18	105M14	404	41747	Mayo
14885	TILLY		NM00069	ERDC	October 22, 1923	July 24, 2021	19.6	47.8	105M14	403	41747	Mayo
15250	BOYLE		NM00063	ERDC	August 6, 1928	July 24, 2021	17.4	43	105M14	405	41747	Mayo
38737	ETHEL		NM00066	ERDC	April 11, 1932	July 24, 2021	21.6	53.86	105M14	402	41747	Mayo
56501	83		NM00059	ERDC	September 24, 1947	July 24, 2021	6.9	20	105M14	394	41739	Mayo
56502	A.A.		NM00060	ERDC	September 24, 1947	July 24, 2021	1.1	2.66	105M14	396	41747	Mayo
56524	BETTY		NM00062	ERDC	June 11, 1948	July 24, 2021	20.9	51.61	105M14	518	41870	Mayo
56577	HOB0		NM00067	ERDC	August 3, 1948	July 24, 2021	21.2	51.75	105M14	400	41747	Mayo
59026	BOYLE		NM00064	ERDC	September 13, 1948	July 24, 2021	1	2.28	105M14	406	41747	Mayo
59027	SISTER		NM00068	ERDC	September 13, 1948	July 24, 2021	10.8	25.85	105M14	395	41747	Mayo
14092	WALL EYE		NM00081	ERDC	July 26, 1921	August 8, 2021	21.8	53.96	105M14	347	40962	Mayo
14095	WIGWAM		NM00082	ERDC	July 26, 1921	August 8, 2021	18.5	45.66	105M14	345	40962	Mayo
14216	SILVER SPOON		NM00079	ERDC	September 24, 1921	August 8, 2021	18.8	43.33	105M14	338	40952	Mayo
14219	LOUISE		NM00078	ERDC	September 24, 1921	August 8, 2021	18.6	45.8	105M14	336	40952	Mayo
14220	FRANK		NM00076	ERDC	September 24, 1921	August 8, 2021	20.9	51.65	105M14	337	40952	Mayo
14223	DREADNAUGHT		NM00071	ERDC	September 24, 1921	August 8, 2021	20	48.72	105M14	339	40952	Mayo
14229	LITTLE CHARLIE		NM00077	ERDC	September 24, 1921	August 8, 2021	10.4	25.73	105M14	341	40962	Mayo
16083	WINFRED		NM00083	ERDC	November 20, 1925	August 8, 2021	4.3	10.93	105M14	346	40962	Mayo
59013	ALICE		NM00070	ERDC	September 1, 1948	August 8, 2021	16.1	39.35	105M14	353	40952	Mayo
59293	SYLDIX		NM00080	ERDC	June 30, 1949	August 8, 2021	0.18	0.31	105M14	380	41740	Mayo
59296	ELINOR	1	NM00072	ERDC	June 30, 1949	August 8, 2021	19.6	48.93	105M14	445	41746	Mayo
59297	ELINOR	3	NM00074	ERDC	June 30, 1949	August 8, 2021	22.9	57.08	105M14	447	41746	Mayo
59298	ELINOR	4	NM00075	ERDC	June 30, 1949	August 8, 2021	21.2	51.65	105M14	448	41746	Mayo
59302	ELINOR	2	NM00073	ERDC	June 30, 1949	August 8, 2021	20.3	50.61	105M14	446	41746	Mayo
14090	SAXON		NM00091	ERDC	July 26, 1921	August 20, 2021	20.7	51.65	105M14	349	40962	Mayo
14093	PAGODA		NM00089	ERDC	July 26, 1921	August 20, 2021	18.5	45.4	105M14	350	40962	Mayo
14227	READY CASH		NM00090	ERDC	September 24, 1921	August 20, 2021	20.2	49.58	105M14	355	40958	Mayo
14231	WETT		NM00094	ERDC	September 24, 1921	August 20, 2021	19.9	48.71	105M14	342	40962	Mayo
15305	GRUB STAKE		NM00086	ERDC	November 27, 1928	August 20, 2021	0.77	1.91	105M14	354	40962	Mayo

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16166	BUNNY		NM00084	ERDC	July 12, 1926	August 20, 2021	7	17.21	105M14	383	41741	Mayo
16496	EFFIE		NM00085	ERDC	August 28, 1924	August 20, 2021	15.4	38.18	105M14	226	55107	Mayo
16498	WINSOME		NM00095	ERDC	August 28, 1924	August 20, 2021	20.8	51.65	105M14	219	55107	Mayo
56419	KIJO		NM00088	ERDC	June 10, 1947	August 20, 2021	20.5	50.75	105M14	852	41891	Mayo
59315	HARDIX		NM00087	ERDC	July 13, 1949	August 20, 2021	1.1	2.55	105M14	381	41740	Mayo
56504	TOPOLO		NM00093	ERDC	September 26, 1947	August 22, 2021	15.1	37.62	105M14	853	41891	Mayo
56505	TOM BOY		NM00092	ERDC	October 10, 1947	August 22, 2021	20.6	51.63	105M14	854	41891	Mayo
56515	YUKON		NM00096	ERDC	April 19, 1948	August 22, 2021	12.1	28.95	105M14	851	41891	Mayo
13092	CHIEF	3	NM00103	ERDC	June 8, 1920	August 26, 2021	20.4	50.56	105M14	414	41758	Mayo
13721	STAURT		NM00108	ERDC	June 7, 1921	August 26, 2021	5.8	14.04	105M14	417	41737	Mayo
14445	BUSH		NM00099	ERDC	December 1, 1921	August 26, 2021	21.3	51.93	105M14	398	41767	Mayo
14816	GIBALTAR		NM00106	ERDC	April 13, 1923	August 26, 2021	8.2	20.29	105M14	439	41735	Mayo
14880	JUMBO		NM00107	ERDC	October 17, 1923	August 26, 2021	6	14.71	105M14	438	41735	Mayo
15306	BEAR		NM00097	ERDC	November 29, 1928	August 26, 2021	10.2	24.84	105M14	437	41768	Mayo
59120	CLIMBER		NM00105	ERDC	November 10, 1948	August 26, 2021	18.4	45.19	105M14	423	41893	Mayo
59420	CACHI	1	NM00100	ERDC	August 10, 1949	August 26, 2021	1.4	3.31	105M14	418	41766	Mayo
59421	CACHI	2	NM00101	ERDC	August 10, 1949	August 26, 2021	4.1	10.15	105M14	419	41766	Mayo
59422	CACHI	3	NM00102	ERDC	August 10, 1949	August 26, 2021	4.2	10.06	105M14	420	41766	Mayo
59474	BERRHOME		NM00098	ERDC	September 3, 1949	August 26, 2021	2.6	6.37	105M14	443	41757	Mayo
59475	CLIMBEAGLE		NM00104	ERDC	September 3, 1949	August 26, 2021	9.2	22.57	105M14	442	41893	Mayo
55048	BEE		NM00109	ERDC	October 29, 1937	August 28, 2021	2.8	6.92	105M14	387	41763	Mayo
59295	TIPTOE		NM00110	ERDC	June 30, 1949	August 29, 2021	13.9	34.78	105M14	440	41743	Mayo
55317	FROG		NM00132	ERDC	February 19, 1945	February 3, 2022	21.8	53.79	105M14	485	41783	Mayo
55496	WARREN		NM00131	ERDC	February 1, 1947	February 3, 2022	10.8	26.06	105M14	498	41803	Mayo
55581	JENBET		NM00133	ERDC	March 20, 1947	February 3, 2022	20.3	49.94	105M14	798	42217	Mayo
14225	ARNOLD		NM00134	ERDC	September 24, 1921	May 7, 2022	15.4	38.25	105M14	343	40962	Mayo
55484	CANADA		NM00135	ERDC	January 24, 1947	May 7, 2022	14.1	34.75	105M14	340	40952	Mayo
59014	MARY L.		NM00136	ERDC	September 1, 1948	May 7, 2022	5.1	12.78	105M14	352	40952	Mayo
59030	HAVLOCK		NM00137	ERDC	September 17, 1948	May 7, 2022	21.6	53.72	105M14	401	41747	Mayo
59121	BERRMAC	1	NM00138	ERDC	November 10, 1948	May 7, 2022	1.8	4.4	105M14	433	41750	Mayo
59122	BERRMAC	2	NM00139	ERDC	November 10, 1948	May 7, 2022	14.7	36.47	105M14	434	41750	Mayo
59123	BERRMAC	3	NM00140	ERDC	November 10, 1948	May 7, 2022	5.6	13.82	105M14	435	41750	Mayo
59124	BERRMAC	4	NM00141	ERDC	November 10, 1948	May 7, 2022	22	54.28	105M14	436	41750	Mayo
59338	VALLEY		NM00142	ERDC	July 19, 1949	May 7, 2022	23.6	57.76	105M14	568	41529	Mayo
59476	BERRNAT		NM00143	ERDC	September 3, 1949	May 7, 2022	6.1	14.83	105M14	444	41757	Mayo
38813	SPOT		NM00160	ERDC	November 12, 1934	June 2, 2022	19.6	48.69	105M14	923	42089	Mayo
55361	WANDERER		NM00161	ERDC	October 25, 1945	June 2, 2022	20.7	51.65	105M14	820	42700	Mayo
56574	CORA	2	NM00162	ERDC	July 21, 1948	June 2, 2022	0.28	0.76	105M14	497	42101	Mayo
38819	ASTORIA		NM00163	ERDC	November 19, 1934	June 12, 2022	12.4	30.38	105M14	315	40964	Mayo
38831	BILLYS		NM00164	ERDC	May 15, 1935	June 12, 2022	0.39	0.55	105M14	536	41873	Mayo
55312	MONTY		NM00165	ERDC	February 13, 1945	June 12, 2022	7.1	16.5	105M14	316	40955	Mayo
55561	PIRATE		NM00166	ERDC	February 17, 1947	June 12, 2022	3.4	8.06	105M13	318	40963	Mayo
55562	PIRATE	1	NM00167	ERDC	February 17, 1947	June 12, 2022	21.2	51.65	105M13	319	40963	Mayo
56566	OHIO		NM00168	ERDC	June 28, 1948	June 12, 2022	20.4	51.65	105M13	333	40960	Mayo
56567	INDIANA		NM00169	ERDC	June 28, 1948	June 12, 2022	19.9	49.17	105M13	334	40960	Mayo
56575	ACRE FRACTION		NM00170	ERDC	July 21, 1948	June 12, 2022	0.45	1.05	105M13	500	41878	Mayo

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59041	BUCKEYE		NM00171	ERDC	September 21, 1948	June 12, 2022	7	17.41	105M13	499	41860	Mayo
59299	PIRATE EAST		NM00172	ERDC	June 30, 1949	June 12, 2022	3.8	9.63	105M13	362	41745	Mayo
13415	NORTH STAR		NM00173	ERDC	September 25, 1920	November 13, 2022	15.5	39.37	105M14	147	55056	Mayo
16393	ARGENTUM		NM00174	50% ERDC	February 25, 1928	November 16, 2022	16.4	40.88	105M14	819	55107	Mayo
12869	BLACK CAP		NM00175	ERDC	November 12, 1919	November 19, 2022	16	38.79	105M14	45	16982	Mayo
12931	SHEPHERD		NM00177	ERDC	December 31, 1919	November 19, 2022	17.3	42.95	105M14	46	16982	Mayo
59367	DE CHUCK		NM00176	ERDC	July 25, 1949	November 19, 2022	13.6	33.48	105M14	873	41863	Mayo
59294	PACSAX		NM00178	ERDC	June 30, 1949	December 29, 2022	2.4	5.95	105M14	441	41738	Mayo
12852	ORPHAN		NM00179	ERDC	October 31, 1919	January 18, 2023	10.2	25.37	105M14	35	16982	Mayo
15294	JEFFREY SPECIAL		NM00180	ERDC	September 28, 1928	February 2, 2023	2.5	6.14	105M14	532	41873	Mayo
15323	KLONDIKE		NM00181	ERDC	April 25, 1929	February 2, 2023	13.2	32.9	105M14	227	55107	Mayo
16313	THELMA		NM00182	ERDC	April 7, 1927	February 2, 2023	12.7	31.14	105M13	521	41859	Mayo
55029	PREMIER		NM00183	ERDC	February 15, 1937	February 2, 2023	15.9	38.87	105M13	335	40957	Mayo
55307	STANWIX		NM00184	ERDC	February 12, 1945	February 2, 2023	18.2	44.95	105M13	317	40956	Mayo
56500	WILD CAT		NM00185	ERDC	September 22, 1947	February 2, 2023	10.3	25.03	105M13	332	40959	Mayo
56581	OVERTIME	1	NM00187	ERDC	August 13, 1948	February 9, 2023	14.6	35.3	105M14	469	41804	Mayo
56582	OVERTIME	2	NM00188	ERDC	August 13, 1948	February 9, 2023	13.7	33.69	105M14	470	41804	Mayo
59542	BUNT		NM00186	ERDC	May 1, 1950	February 9, 2023	4.7	11.7	105M14	481	41786	Mayo
59543	BOB		NM00189	ERDC	May 1, 1950	February 9, 2023	6.9	17.39	105M14	482	41786	Mayo
59491	BOBBIE	7	NM00190	ERDC	September 6, 1949	February 12, 2023	6.4	17.32	105M14	740	42102	Mayo
59493	BOBBIE	9	NM00191	ERDC	September 6, 1949	February 12, 2023	7.6	18.84	105M14	741	42102	Mayo
59494	BOBBIE	10	NM00192	ERDC	September 6, 1949	February 12, 2023	10.6	25.93	105M14	921	42102	Mayo
16271	VAN KEUREN		NM00194	ERDC	October 23, 1926	February 22, 2023	12.6	30.5	105M14	487	41784	Mayo
13032	GALENA FARM		NM00193	ERDC	May 6, 1920	March 22, 2023	18.3	45.4	105M14	69	18253	Mayo
59373	BANKER		NM00195	ERDC	July 29, 1949	June 16, 2023	15.4	37.8	105M14	808	42674	Mayo
59374	BANKER	1	NM00196	ERDC	July 29, 1949	June 16, 2023	14.1	34.52	105M14	809	42674	Mayo
59375	BANKER	2	NM00197	ERDC	July 29, 1949	June 16, 2023	14.5	35.67	105M14	810	42674	Mayo
59376	BANKER	3	NM00198	ERDC	July 29, 1949	June 16, 2023	14.9	36.92	105M14	811	42674	Mayo
59360	BLUE FOX	4	NM00203	ERDC	July 19, 1949	July 20, 2023	15.8	38.75	105M14	581	42665	Mayo
59361	BLUE FOX	5	NM00204	ERDC	July 19, 1949	July 20, 2023	10.3	25.26	105M14	582	42665	Mayo
59362	BLUE FOX	6	NM00205	ERDC	July 19, 1949	July 20, 2023	19.2	46.67	105M14	583	42665	Mayo
59363	BLUE FOX	7	NM00206	ERDC	July 19, 1949	July 20, 2023	19.2	47.24	105M14	584	42665	Mayo
59364	BLUE FOX	8	NM00207	ERDC	July 19, 1949	July 20, 2023	15	37.08	105M14	585	42665	Mayo
59365	BLUE FOX	9	NM00208	ERDC	July 19, 1949	July 20, 2023	12.2	29.85	105M14	586	42665	Mayo
59366	BLUE FOX	10	NM00209	ERDC	July 19, 1949	July 20, 2023	17.1	41.81	105M14	587	42665	Mayo
59343	BLUE FOX	2	NM00202	ERDC	July 19, 1949	July 27, 2023	12.7	31.43	105M14	579	42665	Mayo
59351	BLUE-FOX	1	NM00210	ERDC	July 19, 1949	July 27, 2023	1.5	3.49	105M14	578	42665	Mayo
59359	BLUE FOX	3	NM00201	ERDC	July 19, 1949	July 27, 2023	7.6	18.6	105M14	580	42665	Mayo
13009	SMILES		NM00199	AKHMC-SPR	April 28, 1920	July 29, 2023	20.2	49.46	105M14	491	41792	Mayo
59692	DORA		NM00200	AKHMC-SPR	September 19, 1950	July 29, 2023	9.4	22.96	105M14	897	42094	Mayo
55536	HUSKY		NM00212	ERDC	February 12, 1947	August 10, 2023	6.5	16.06	105M13	302	40963	Mayo
55537	HUSKY	1	NM00213	ERDC	February 12, 1947	August 10, 2023	21.2	51.13	105M13	303	40963	Mayo
55538	HUSKY	2	NM00214	ERDC	February 12, 1947	August 10, 2023	20.4	48.32	105M13	305	40963	Mayo
55539	HUSKY	3	NM00215	ERDC	October 22, 1946	August 10, 2023	20.5	50.74	105M13	306	40963	Mayo
55540	HUSKY	4	NM00216	ERDC	October 22, 1946	August 10, 2023	12.3	30.28	105M13	307	40964	Mayo
55541	HUSKY	5	NM00217	ERDC	October 22, 1946	August 10, 2023	20.4	50.81	105M13	308	40964	Mayo

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ALEXCO RESOURCE CORP.					APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES				UPDATED: MAY 25, 2009			
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
55542	HUSKY	6	NM00218	ERDC	October 22, 1946	August 10, 2023	4.2	10.23	105M13	309	40964	Mayo
55543	HUSKY	7	NM00219	ERDC	October 22, 1946	August 10, 2023	20.9	51.49	105M13	310	40964	Mayo
55544	HUSKY	8	NM00220	ERDC	February 12, 1947	August 10, 2023	2.7	6.25	105M14	311	40964	Mayo
55545	HUSKY	9	NM00221	ERDC	October 22, 1946	August 10, 2023	15.4	38.16	105M13	312	40964	Mayo
55546	HUSKY	10	NM00222	ERDC	February 13, 1947	August 10, 2023	3.6	9.13	105M14	313	40964	Mayo
55547	HUSKY	11	NM00223	ERDC	October 22, 1946	August 10, 2023	12.9	30.9	105M13	314	40964	Mayo
56576	HUSKY	12	NM00224	ERDC	July 21, 1948	August 10, 2023	15.3	38.01	105M13	320	40963	Mayo
56592	HOLIDAY	1	NM00225	ERDC	August 23, 1948	August 22, 2023	4.9	12.01	105M13	358	41751	Mayo
56593	HOLIDAY	2	NM00226	ERDC	August 23, 1948	August 22, 2023	4.9	12.37	105M13	359	41751	Mayo
56594	HOLIDAY	3	NM00227	ERDC	August 23, 1948	August 22, 2023	3.7	9.08	105M13	360	41751	Mayo
56595	HOLIDAY	4	NM00228	ERDC	August 23, 1948	August 22, 2023	6.2	14.75	105M13	361	41751	Mayo
56597	HOLIDAY	7	NM00229	ERDC	August 23, 1948	August 22, 2023	19.6	47.98	105M13	363	41745	Mayo
56598	HOLIDAY	8	NM00230	ERDC	August 23, 1948	August 22, 2023	10	24.63	105M13	364	41745	Mayo
56599	HOLIDAY	9	NM00231	ERDC	August 23, 1948	August 22, 2023	2.3	5.14	105M13	365	41745	Mayo
56600	HOLIDAY	10	NM00232	ERDC	August 23, 1948	August 22, 2023	7.8	19.16	105M13	366	41745	Mayo
59001	HOLIDAY	11	NM00233	ERDC	August 23, 1948	August 22, 2023	14.3	35.28	105M13	367	41745	Mayo
59002	HOLIDAY	12	NM00234	ERDC	August 23, 1948	August 22, 2023	16	39.19	105M13	368	41745	Mayo
59003	HOLIDAY	13	NM00235	ERDC	August 23, 1948	August 22, 2023	18	44.1	105M13	369	41745	Mayo
59004	HOLIDAY	14	NM00236	ERDC	August 23, 1948	August 22, 2023	20.7	51.1	105M13	370	41745	Mayo
56559	POO FRACTION		NM00239	ERDC	June 25, 1948	August 29, 2023	1.7	3.64	105M13	304	40963	Mayo
59178	JESSIE	1	NM00237	ERDC	January 25, 1949	August 29, 2023	20.4	49.94	105M13	374	41754	Mayo
59180	JESSIE	3	NM00238	ERDC	January 25, 1949	August 29, 2023	4.5	9.83	105M13	373	41754	Mayo
55334	TAKU		NM00240	ERDC	October 16, 1945	September 7, 2023	20	50.05	105M13	331	41026	Mayo
13258	VANGUARD FRAC.		NM00211	AKHMC-SPR	July 28, 1920	September 13, 2023	14.6	36.34	105M14	184	FB20607	Mayo
59436	SLOPE	2	NM00249	ERDC	August 19, 1949	December 19, 2023	8.4	20.64	105M14	750	41562	Mayo
59457	SUDDO	1	NM00250	ERDC	August 19, 1949	December 19, 2023	21.4	53.43	105M14	751	41562	Mayo
59458	SUDDO	2	NM00251	ERDC	August 18, 1949	December 19, 2023	21.2	53.15	105M14	752	41562	Mayo
59459	SUDDO	3	NM00252	ERDC	August 19, 1949	December 19, 2023	22.7	55.95	105M14	753	41562	Mayo
59460	SUDDO	4	NM00253	ERDC	August 19, 1949	December 19, 2023	21.1	52.33	105M14	754	41562	Mayo
59461	SUDDO	5	NM00254	ERDC	August 19, 1949	December 19, 2023	24	59.48	105M14	755	41558	Mayo
59462	SUDDO	6	NM00255	ERDC	August 19, 1949	December 19, 2023	13.5	32.74	105M14	756	41558	Mayo
59463	SUDDO	7	NM00256	ERDC	August 19, 1949	December 19, 2023	21.8	54.08	105M14	757	41558	Mayo
59464	SUDDO	8	NM00257	ERDC	August 19, 1949	December 19, 2023	8.3	20.4	105M14	758	41558	Mayo
59465	SUDDO	9	NM00258	ERDC	August 19, 1949	December 19, 2023	23.7	58.16	105M14	759	42679	Mayo
59466	SUDDO	10	NM00259	ERDC	August 19, 1949	December 19, 2023	19.1	46.88	105M14	760	42679	Mayo
59467	SUDDO	11	NM00260	ERDC	August 19, 1949	December 19, 2023	21.5	53.48	105M14	761	41562	Mayo
55599	FRANCES	3	NM00261	ERDC	April 18, 1947	January 9, 2024	11.3	27.26	105M14	471	41778	Mayo
55600	FRANCES	4	NM00262	ERDC	April 18, 1947	January 9, 2024	20	49.81	105M14	472	41778	Mayo
56401	FRANCES	5	NM00263	ERDC	April 18, 1947	January 9, 2024	13.2	32.75	105M14	473	41778	Mayo
56402	FRANCES	6	NM00264	ERDC	April 18, 1947	January 9, 2024	4.4	10.65	105M14	474	41778	Mayo
56403	FRANCES	7	NM00265	ERDC	April 18, 1947	January 9, 2024	19.5	47.61	105M14	475	41778	Mayo
56404	FRANCES	8	NM00266	ERDC	April 18, 1947	January 9, 2024	4	10.03	105M14	476	41778	Mayo
59248	CAMEO		NM00267	ERDC	May 31, 1949	January 18, 2024	9.1	22.13	105M14	552	41529	Mayo
59249	CAMARRILA		NM00268	ERDC	May 31, 1949	January 18, 2024	10.3	25.34	105M14	553	41529	Mayo
59250	CAPSTAN		NM00269	ERDC	May 31, 1949	January 18, 2024	20.1	49.98	105M14	556	41529	Mayo
59253	DENTON		NM00270	ERDC	June 3, 1949	January 18, 2024	17.2	42.4	105M14	558	41522	Mayo

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ALEXCO RESOURCE CORP.				APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES				UPDATED: MAY 25, 2009				
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
59255	MATTAGAMI		NM00271	ERDC	June 3, 1949	January 18, 2024	16.9	41.37	105M14	559	41529	Mayo
59385	INCA		NM00272	ERDC	July 29, 1949	January 18, 2024	5	12.25	105M14	577	41523	Mayo
14307	SYLVIA		NM00241	ERDC	October 6, 1921	February 28, 2024	20	50.33	105M14	294	55053	Mayo
15249	BRIDGETTE		NM00242	ERDC	August 6, 1928	February 28, 2024	20.9	51.28	105M14	278	55080	Mayo
15319	CALUMET	2	NM00243	ERDC	March 27, 1929	February 28, 2024	8.3	20	105M14	279	55080	Mayo
15331	"X"		NM00244	ERDC	May 30, 1929	February 28, 2024	0.62	1.53	105M14	285	55080	Mayo
16093	MAY G		NM00245	ERDC	December 7, 1925	February 28, 2024	18.6	46.64	105M14	291	55053	Mayo
16105	BETTY		NM00246	ERDC	January 20, 1926	February 28, 2024	16.5	40.53	105M14	292	55053	Mayo
16554	IKWOGGY		NM00247	ERDC	June 15, 1925	February 28, 2024	19.7	48.29	105M14	290	55053	Mayo
38720	HOB0		NM00248	ERDC	July 24, 1931	February 28, 2024	8.9	21.38	105M14	280	55080	Mayo
12817	GROUND HOG		NM00273	ERDC	October 20, 1919	April 18, 2024	21	51.65	105M14	794	42217	Mayo
12988	BRITANNIA		NM00274	ERDC	April 9, 1920	April 18, 2024	17.6	44.04	105M14	74	55113	Mayo
55365	BOKA		NM00275	ERDC	October 25, 1945	April 18, 2024	19.9	48.74	105M14	795	42104	Mayo
55573	ALICE		NM00276	ERDC	February 17, 1947	April 18, 2024	15.1	37.8	105M14	930	42099	Mayo
55577	DEVON		NM00277	ERDC	March 20, 1947	April 18, 2024	21.4	51.62	105M14	931	42107	Mayo
55579	KENO		NM00278	ERDC	March 20, 1947	April 18, 2024	13.9	34.76	105M14	545	41876	Mayo
59171	HONEYMOON	1	NM00279	ERDC	January 25, 1949	April 18, 2024	15.1	37.11	105M14	546	42104	Mayo
62282	CALF		NM00280	ERDC	October 2, 1952	April 18, 2024	0.87	1.86	105M14	932	42099	Mayo
15207	TICK		NM00281	ERDC	April 28, 1928	June 27, 2024	20.3	50.64	105M13	259	53387	Mayo
16375	VENTURE		NM00282	ERDC	October 18, 1927	June 27, 2024	20.7	51.67	105M13	356	40954	Mayo
55436	RAND		NM00283	ERDC	June 24, 1946	June 27, 2024	17.3	42.29	105M14	855	41920	Mayo
55442	LIME		NM00284	ERDC	July 30, 1946	June 27, 2024	13.1	32.38	105M14	856	41920	Mayo
59040	OXO		NM00285	ERDC	September 21, 1948	June 27, 2024	13.7	33.61	105M13	522	41879	Mayo
59177	KAY R.		NM00286	ERDC	January 25, 1949	June 27, 2024	10	24.86	105M13	371	41745	Mayo
59316	BRISTOL		NM00287	ERDC	July 19, 1949	June 27, 2024	1.5	3.53	105M14	560	41522	Mayo
62341	CAKE		NM00288	ERDC	November 20, 1953	June 27, 2024	14.5	35.83	105M14	989	50280	Mayo
62826	FILTER FRACTION		NM00289	ERDC	June 23, 1955	June 27, 2024	3.6	9.12	105M14	965	50268	Mayo
62339	ROCKET FRACTION		NM00291	ERDC	October 2, 1953	July 13, 2024	8.1	19.63	105M13	964	50268	Mayo
13114	CALUMET	1	NM00290	ERDC	June 11, 1920	August 15, 2024	20.9	51.65	105M14	240	FB20919	Mayo
55273	HUB		NM00298	ERDC	May 27, 1944	January 30, 2025	3.4	8.19	105M14	799	41539	Mayo
55500	PIL		NM00299	ERDC	February 1, 1947	January 30, 2025	3.3	7.89	105M14	1006	50420	Mayo
55501	LOVIE		NM00300	ERDC	February 1, 1947	January 30, 2025	13.2	32.6	105M14	489	41793	Mayo
55503	BUCONJO FRACTIO		NM00301	ERDC	February 1, 1947	January 31, 2025	1.3	3.22	105M13	328	40951	Mayo
55504	BUCONJO	1	NM00302	ERDC	February 1, 1947	January 31, 2025	20.8	51.65	105M13	327	40951	Mayo
55505	BUCONJO	2	NM00303	ERDC	February 1, 1947	January 31, 2025	20.8	50.24	105M13	326	40951	Mayo
55506	BUCONJO	3	NM00304	ERDC	February 1, 1947	January 31, 2025	21.2	51.51	105M13	501	41926	Mayo
55507	BUCONJO	4	NM00305	ERDC	February 1, 1947	January 31, 2025	1.2	2.57	105M13	330	40951	Mayo
55508	BUCONJO	5	NM00306	ERDC	February 1, 1947	January 31, 2025	13	31.77	105M13	502	41842	Mayo
55509	BUCONJO	6	NM00307	ERDC	February 1, 1947	January 31, 2025	20.9	51.66	105M13	503	41926	Mayo
55510	BUCONJO	7	NM00308	ERDC	February 1, 1947	January 31, 2025	21	52.03	105M13	504	41926	Mayo
55511	BUCONJO	8	NM00309	ERDC	February 3, 1947	January 31, 2025	20.5	49.67	105M13	505	41926	Mayo
55512	BUCONJO	9	NM00310	ERDC	February 3, 1947	January 31, 2025	19.2	47.34	105M13	325	40951	Mayo
55513	BUCONJO	10	NM00311	ERDC	February 3, 1947	January 31, 2025	5.4	13.41	105M13	324	40951	Mayo
55514	BUCONJO	11	NM00312	ERDC	February 3, 1947	January 31, 2025	19.4	48.48	105M13	321	40951	Mayo
55515	BUCONJO	12	NM00313	ERDC	February 3, 1947	January 31, 2025	18.7	45.55	105M13	506	41926	Mayo
55516	BUCONJO	13	NM00314	ERDC	February 3, 1947	January 31, 2025	20.1	49.18	105M13	507	41926	Mayo

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55517	BUCONJO	14	NM00315	ERDC	February 3, 1947	January 31, 2025	20.9	51.66	105M13	508	41926	Mayo
55518	BUCONJO	15	NM00316	ERDC	February 3, 1947	January 31, 2025	11.2	27.37	105M13	509	41926	Mayo
62154	BUCONJO	16	NM00317	ERDC	July 2, 1952	January 31, 2025	3.1	7.84	105M13	531	41842	Mayo
2203	PATRICIA		NM00318	ERDC	April 8, 1913	February 1, 2025	20.1	50.34	105M13	286	22098	Mayo
62152	BUCK		NM00319	ERDC	July 2, 1952	February 1, 2025	1.7	3.64	105M13	510	41926	Mayo
62153	CON		NM00320	ERDC	July 2, 1952	February 1, 2025	1.1	2.39	105M13	511	41926	Mayo
56516	LOOS		NM00321	ERDC	April 21, 1948	February 2, 2025	6	14.71	105M14	490	50420	Mayo
55548	ACE-HI		NM00322	ERDC	February 13, 1947	February 8, 2025	0.1	0.22	105M14	835	41921	Mayo
55549	ACE-HI	1	NM00323	ERDC	February 13, 1947	February 8, 2025	20.1	49.89	105M14	836	41921	Mayo
55550	ACE-HI	2	NM00324	ERDC	February 13, 1947	February 8, 2025	20.2	50.27	105M14	837	41921	Mayo
55552	ACE-HI	4	NM00325	ERDC	February 14, 1947	February 8, 2025	20.8	51.63	105M14	839	41921	Mayo
55553	ACE-HI	5	NM00326	ERDC	February 14, 1947	February 8, 2025	6.6	16.05	105M14	840	41921	Mayo
55555	ACE-HI	6	NM00327	ERDC	February 14, 1947	February 8, 2025	20.4	51.4	105M14	841	41921	Mayo
55556	ACE-HI	7	NM00328	ERDC	February 14, 1947	February 8, 2025	3.7	8.54	105M14	842	41922	Mayo
55557	ACE-HI	8	NM00329	ERDC	February 14, 1947	February 8, 2025	19.9	49.61	105M14	843	41922	Mayo
55558	ACE-HI	9	NM00330	ERDC	February 14, 1947	February 8, 2025	2	4.44	105M14	844	41922	Mayo
55559	ACE-HI	10	NM00331	ERDC	February 14, 1947	February 8, 2025	20.4	50.85	105M14	845	41922	Mayo
55560	ACE-HI	11	NM00332	ERDC	February 14, 1947	February 8, 2025	2.6	6.17	105M14	846	41922	Mayo
55563	PIRATE	2	NM00333	ERDC	February 17, 1947	February 8, 2025	16.4	40.46	105M14	876	41921	Mayo
55564	PIRATE	3	NM00334	ERDC	February 17, 1947	February 15, 2025	17.4	43.22	105M14	877	41921	Mayo
55565	PIRATE	4	NM00335	ERDC	February 17, 1947	February 15, 2025	16.9	41.51	105M14	878	41921	Mayo
55566	PIRATE	5	NM00336	ERDC	February 17, 1947	February 15, 2025	15.7	38.46	105M14	879	41922	Mayo
55567	PIRATE	6	NM00337	ERDC	February 17, 1947	February 15, 2025	17.3	43.09	105M14	880	41922	Mayo
55568	PIRATE	7	NM00338	ERDC	February 17, 1947	February 15, 2025	16	38.58	105M14	881	41922	Mayo
62267	MORGAN		NM00339	ERDC	September 17, 1952	February 15, 2025	1.5	2.97	105M14	868	41922	Mayo
62268	DRAKE		NM00340	ERDC	September 17, 1952	February 15, 2025	5.2	12.59	105M14	867	41922	Mayo
62269	QUEEN		NM00341	ERDC	September 17, 1952	February 15, 2025	4.1	10.25	105M14	848	41922	Mayo
62270	KING		NM00342	ERDC	September 17, 1952	February 15, 2025	1.9	4.6	105M14	869	41921	Mayo
62271	DUCE		NM00343	ERDC	September 17, 1952	February 15, 2025	3.6	8.3	105M14	890	41921	Mayo
62272	BLOOD		NM00344	ERDC	September 17, 1952	February 15, 2025	1.2	2.94	105M14	870	41921	Mayo
62281	TREY		NM00345	ERDC	October 2, 1952	February 15, 2025	0.84	1.67	105M14	838	41921	Mayo
55586	REX		NM00293	AKHMC-SPR	March 28, 1947	February 23, 2025	16.4	40.59	105M14	1060	50901	Mayo
55587	CAIN		NM00294	AKHMC-SPR	March 28, 1947	February 23, 2025	13.9	34.28	105M14	1057	50901	Mayo
55588	PRO		NM00295	AKHMC-SPR	March 28, 1947	February 23, 2025	13.8	34.08	105M14	1058	50901	Mayo
55589	HORSESHOE		NM00296	AKHMC-SPR	March 28, 1947	February 23, 2025	16.7	40.59	105M14	1061	50901	Mayo
55590	ABEL		NM00297	AKHMC-SPR	March 28, 1947	February 23, 2025	16.2	39.43	105M14	1059	50901	Mayo
15264	KIM		NM00346	ERDC	August 10, 1928	March 30, 2025	7.2	17.44	105M14	384	41763	Mayo
16012	NORTH STAR		NM00347	ERDC	August 14, 1925	March 30, 2025	21.1	52.16	105M14	390	41755	Mayo
16026	EXTENSION		NM00348	ERDC	August 31, 1925	March 30, 2025	3.5	8.43	105M14	386	41756	Mayo
16499	PLATA		NM00349	ERDC	August 28, 1924	March 30, 2025	14.4	35.31	105M14	392	41755	Mayo
16588	EAGLE		NM00350	ERDC	July 23, 1925	March 30, 2025	12.7	42.82	105M14	221	55107	Mayo
16589	ARDELLE		NM00351	ERDC	July 23, 1925	March 30, 2025	19	46.39	105M14	220	55107	Mayo
56503	V.O.		NM00352	ERDC	September 24, 1947	March 30, 2025	7.9	19.13	105M14	393	41739	Mayo
56525	HARRIETT		NM00353	ERDC	June 14, 1948	March 30, 2025	21.1	51.58	105M14	399	41747	Mayo
56578	REX (F)		NM00354	ERDC	August 3, 1948	March 30, 2025	0.66	1.32	105M14	391	41756	Mayo
56591	EILEEN		NM00355	ERDC	August 20, 1948	March 30, 2025	17.1	42.46	105M14	385	41744	Mayo

*Requested or Pending Expiry Dates subject to Government approval

ALEXCO RESOURCE CORP.				APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES				UPDATED: MAY 25, 2009				
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
62314	ZELMA	3	NM00356	ERDC	July 31, 1953	March 30, 2025	15.5	38.32	105M14	969	50270	Mayo
62315	ZELMA	4	NM00357	ERDC	July 31, 1953	March 30, 2025	11.7	28.78	105M14	970	50270	Mayo
62366	MOSSBACK		NM00358	ERDC	June 8, 1954	March 30, 2025	22.7	56.77	105M14	968	50270	Mayo
14990	NAETHING		NM00359	ERDC	July 9, 1924	April 12, 2025	21	51.74	105M14	388	41756	Mayo
12820	PEACH		NM00360	ERDC	October 20, 1919	April 30, 2025	20	48.89	105M14	889	42104	Mayo
12840	AJAX		NM00361	ERDC	October 28, 1919	April 30, 2025	19.2	47.53	105M14	793	42217	Mayo
14091	PASCO		NM00362	ERDC	July 26, 1921	April 30, 2025	21.9	53.99	105M14	348	40962	Mayo
14094	CORAL		NM00363	ERDC	July 26, 1921	April 30, 2025	18.7	46.12	105M14	344	40962	Mayo
55177	HARDWICK		NM00364	ERDC	December 19, 1940	April 30, 2025	18.3	45.48	105M14	382	41741	Mayo
55371	BINGO		NM00365	ERDC	October 25, 1945	April 30, 2025	19.7	48.96	105M14	796	42217	Mayo
55377	HOPE		NM00366	ERDC	October 26, 1945	April 30, 2025	15.5	38.63	105M14	887	42104	Mayo
59468	DUNCAN	1	NM00367	ERDC	August 19, 1949	April 30, 2025	14.3	34.8	105M14	710	41559	Mayo
59469	DUNCAN	2	NM00368	ERDC	August 19, 1949	April 30, 2025	13.2	32.96	105M14	711	41561	Mayo
59470	DUNCAN	3	NM00369	ERDC	August 19, 1949	April 30, 2025	16.8	40.94	105M14	712	41561	Mayo
62200	B & H		NM00370	ERDC	August 4, 1952	April 30, 2025	12.3	30.72	105M14	550	42104	Mayo
62316	ZELMA	5	NM00371	ERDC	July 31, 1953	April 30, 2025	8.6	20.86	105M14	971	50270	Mayo
13418	CUB		NM00372	ERDC	September 25, 1920	May 10, 2025	10	24.67	105M14	821	42700	Mayo
55326	IRENE		NM00373	ERDC	October 16, 1945	May 22, 2025	19.7	47.95	105M14	972	50274	Mayo
55332	MOSS		NM00374	ERDC	October 16, 1945	May 22, 2025	13.6	34.23	105M14	973	50274	Mayo
55525	U. N.		NM00375	ERDC	February 4, 1947	May 22, 2025	9.4	22.64	105M14	974	50274	Mayo
55526	ROSE		NM00376	ERDC	February 4, 1947	May 22, 2025	17	41.32	105M14	975	50274	Mayo
55527	FLY FRACTION		NM00377	ERDC	February 4, 1947	May 22, 2025	1.2	3.03	105M14	976	50274	Mayo
56417	WILD MAN		NM00378	ERDC	June 10, 1947	May 22, 2025	13.4	32.79	105M14	744	42216	Mayo
59172	HONEYMOON	2	NM00379	ERDC	January 25, 1949	May 22, 2025	11.7	28.56	105M14	935	42095	Mayo
59173	HONEYMOON	3	NM00380	ERDC	January 25, 1949	May 22, 2025	0.62	2.75	105M14	547	42097	Mayo
59174	HONEYMOON	4	NM00381	ERDC	January 25, 1949	May 22, 2025	14.2	34.75	105M14	548	42097	Mayo
59175	HONEYMOON	5	NM00382	ERDC	January 25, 1949	May 22, 2025	4.9	12.2	105M14	549	42097	Mayo
59176	HONEYMOON	6	NM00383	ERDC	January 25, 1949	May 22, 2025	10.9	26.09	105M14	929	42097	Mayo
59452	FALLS	16	NM00384	ERDC	August 19, 1949	May 22, 2025	4.5	10.95	105M14	728	42677	Mayo
59520	MARG		NM00385	ERDC	December 14, 1949	May 22, 2025	15.1	37.16	105M14	980	50270	Mayo
59670	EDITH-CAVELL	9	NM00386	ERDC	August 16, 1950	May 22, 2025	1.8	4.42	105M14	860	41895	Mayo
61209	HOBBO	3	NM00387	ERDC	December 18, 1950	May 22, 2025	2.4	5.62	105M14	978	50274	Mayo
62297	MUD		NM00388	ERDC	November 5, 1952	May 22, 2025	20.9	51.65	105M13	1009	50346	Mayo
62298	MUD FR.		NM00389	ERDC	November 5, 1952	May 22, 2025	18.9	46.14	105M14	1010	50346	Mayo
62299	MUD	2	NM00390	ERDC	November 5, 1952	May 22, 2025	20.9	51.65	105M13	1008	50346	Mayo
62312	ZELMA	1	NM00391	ERDC	July 31, 1953	May 22, 2025	13	32.13	105M14	966	50272	Mayo
62313	ZELMA	2	NM00392	ERDC	July 31, 1953	May 22, 2025	11.9	29.11	105M14	967	50272	Mayo
12809	JEAN		NM00393	ERDC	October 10, 1919	June 12, 2025	21.4	51.6	105M14	539	41864	Mayo
12810	IVY		NM00394	ERDC	October 14, 1919	June 12, 2025	20.2	50.26	105M14	847	41896	Mayo
59528	RUTH		NM00395	ERDC	January 7, 1950	June 12, 2025	13.9	34.6	105M14	1020	50962	Mayo
59673	LOON		NM00396	ERDC	September 8, 1950	June 12, 2025	18.3	45.16	105M14	991	50282	Mayo
61733	DON FRACTION		NM00397	ERDC	July 19, 1951	June 12, 2025	0.16	0.4	105M14	992	50282	Mayo
61744	JACK		NM00398	ERDC	July 20, 1951	June 12, 2025	0.47	1.12	105M14	900	42092	Mayo
61919	JOY FRACTION		NM00399	ERDC	August 31, 1951	June 12, 2025	0.81	1.91	105M14	990	50282	Mayo
62051	LAMB FRACTION		NM00400	ERDC	November 7, 1951	June 12, 2025	2.9	7.09	105M14	993	50296	Mayo
62198	KARL		NM00401	ERDC	August 4, 1952	June 12, 2025	22.2	55	105M14	997	50288	Mayo

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ALEXCO RESOURCE CORP.				APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES				UPDATED: MAY 25, 2009				
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
62199	RUBE		NM00402	ERDC	August 4, 1952	June 12, 2025	20.9	50.74	105M14	998	50288	Mayo
62236	CAT		NM00403	ERDC	August 27, 1952	June 12, 2025	9	22.76	105M14	891	41919	Mayo
62294	DOUBT		NM00404	ERDC	October 11, 1952	June 12, 2025	4.6	10.08	105M14	995	50288	Mayo
62309	RENO		NM00405	ERDC	July 15, 1952	June 12, 2025	2.2	5.33	105M14	983	50276	Mayo
62837	MINK FRACTION		NM00406	ERDC	August 3, 1955	June 12, 2025	19.5	48.58	105M14	999	50288	Mayo
59327	TALISMAN		NM00407	ERDC	July 19, 1949	June 19, 2025	10	24.93	105M14	604	41528	Mayo
12821	LIZZIE		NM00423	ERDC	October 20, 1919	November 26, 2025	20.7	51.64	105M14	54	55085	Mayo
12920	MINTO	2	NM00424	ERDC	December 22, 1919	November 26, 2025	4.7	11.76	105M14	238	55071	Mayo
14908	HELEN		NM00425	ERDC	November 27, 1923	November 26, 2025	3.5	8.71	105M14	407	41734	Mayo
15346	VIMY		NM00426	ERDC	June 21, 1929	November 26, 2025	6.2	15.21	105M14	1002	50292	Mayo
15374	NANCY		NM00427	ERDC	July 24, 1929	November 26, 2025	1.5	3.91	105M13	535	41873	Mayo
55309	SHAMROCK		NM00428	ERDC	February 12, 1945	November 26, 2025	5.1	12.59	105M14	928	42111	Mayo
55318	HENRY		NM00429	ERDC	February 19, 1945	November 26, 2025	20.7	51.04	105M14	484	41794	Mayo
55362	DIVIDE		NM00430	ERDC	October 25, 1945	November 26, 2025	15	36.94	105M14	544	42097	Mayo
55440	DOUGLAS		NM00431	ERDC	July 6, 1946	November 26, 2025	19	47.41	105M14	1018	50968	Mayo
55443	MONARCH		NM00432	ERDC	August 26, 1946	November 26, 2025	17.7	44.12	105M14	805	41548	Mayo
56405	LOUIS	1	NM00433	ERDC	April 18, 1947	November 26, 2025	21.5	53.62	105M14	477	41778	Mayo
56407	LOUIS	3	NM00434	ERDC	April 18, 1947	November 26, 2025	21.8	54.68	105M14	479	41778	Mayo
56408	LOUIS	4	NM00435	ERDC	April 18, 1947	November 26, 2025	21.8	54.7	105M14	480	41778	Mayo
56533	BES		NM00436	ERDC	June 23, 1948	November 26, 2025	17.4	42.8	105M14	858	56533	Mayo
56534	SEGLE		NM00437	ERDC	June 23, 1948	November 26, 2025	17.4	43.14	105M14	859	56534	Mayo
56573	MAYO		NM00438	ERDC	July 12, 1948	November 26, 2025	19.8	48.17	105M14	1019	50966	Mayo
56583	OVERTIME	13	NM00439	ERDC	August 13, 1948	November 26, 2025	21.4	52.59	105M14	449	41787	Mayo
56584	OVERTIME	14	NM00440	ERDC	August 13, 1948	November 26, 2025	21.5	52.52	105M14	450	41787	Mayo
56585	OVERTIME	15	NM00441	ERDC	August 13, 1948	November 26, 2025	21	51.62	105M14	451	41787	Mayo
56586	OVERTIME	16	NM00442	ERDC	August 13, 1948	November 26, 2025	20.7	51.49	105M14	452	41787	Mayo
59169	NEWLYWED	1	NM00443	ERDC	January 25, 1949	November 26, 2025	14.3	35.28	105M14	933	42678	Mayo
59170	NEWLYWED	2	NM00444	ERDC	January 25, 1949	November 26, 2025	15.1	36.68	105M14	934	42109	Mayo
59453	OVERTIME	17	NM00445	ERDC	August 19, 1949	November 26, 2025	20.5	51.1	105M14	707	41561	Mayo
59454	OVERTIME	18	NM00446	ERDC	August 19, 1949	November 26, 2025	20.8	51.23	105M14	706	41561	Mayo
59455	OVERTIME	19	NM00447	ERDC	August 19, 1949	November 26, 2025	17.6	43.53	105M14	708	41561	Mayo
59456	OVERTIME	20	NM00448	ERDC	August 19, 1949	November 26, 2025	17.9	43.48	105M14	709	41561	Mayo
59478	EDITH-CAVELL	1	NM00449	ERDC	September 6, 1949	November 26, 2025	15.2	38.33	105M14	729	41559	Mayo
59479	EDITH-CAVELL	2	NM00450	ERDC	September 6, 1949	November 26, 2025	10.7	26.03	105M14	730	41559	Mayo
59480	EDITH-CAVELL	3	NM00451	ERDC	September 6, 1949	November 26, 2025	18.2	44.27	105M14	731	41559	Mayo
59481	EDITH-CAVELL	4	NM00452	ERDC	September 6, 1949	November 26, 2025	18.9	46.6	105M14	732	41559	Mayo
59482	EDITH-CAVELL	5	NM00453	ERDC	September 6, 1949	November 26, 2025	15.1	36.78	105M14	733	41559	Mayo
59483	EDITH-CAVELL	6	NM00454	ERDC	September 6, 1949	November 26, 2025	14.2	35.46	105M14	734	41559	Mayo
59484	EDITH-CAVELL	7	NM00455	ERDC	September 6, 1949	November 26, 2025	19.4	48.26	105M14	735	41559	Mayo
59486	BOBBIE	2	NM00456	ERDC	September 6, 1949	November 26, 2025	14.4	35.2	105M14	737	41550	Mayo
59487	BOBBIE	3	NM00457	ERDC	September 6, 1949	November 26, 2025	2	5.02	105M14	738	41550	Mayo
59488	BOBBIE	4	NM00458	ERDC	September 6, 1949	November 26, 2025	16	39.93	105M14	739	41550	Mayo

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ALEXCO RESOURCE CORP.				APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES				UPDATED: MAY 25, 2009				
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
59630	SOLO FRACTION		NM00459	ERDC	July 21, 1950	November 26, 2025	12.1	29.97	105M14	1001	50292	Mayo
59821	GRACE		NM00460	ERDC	October 2, 1950	November 26, 2025	1.7	3.94	105M14	1021	50968	Mayo
61596	ONEK		NM00461	ERDC	May 21, 1951	November 26, 2025	5.3	12.19	105M14	857	43000	Mayo
61908	EDBO		NM00462	ERDC	August 22, 1951	November 26, 2025	5.1	12.14	105M14	790	41550	Mayo
61909	EDBO	2	NM00463	ERDC	August 22, 1951	November 26, 2025	3.9	9.87	105M14	791	41550	Mayo
62202	MAGGIE		NM00464	ERDC	August 5, 1952	November 26, 2025	14.9	36.87	105M14	1022	50968	Mayo
62247	ERICA		NM00465	ERDC	September 5, 1952	November 26, 2025	15.5	38.77	105M14	885	41848	Mayo
62283	DIVORCE		NM00466	ERDC	October 2, 1952	November 26, 2025	8.3	19.84	105M14	994	50286	Mayo
62284	CITY		NM00467	ERDC	October 2, 1952	November 26, 2025	2.1	5.34	105M14	988	50278	Mayo
62295	KENT		NM00468	ERDC	October 11, 1952	November 26, 2025	1.8	4.4	105M14	996	50288	Mayo
62310	KID		NM00469	ERDC	July 15, 1953	November 26, 2025	0.99	2.49	105M14	981	50276	Mayo
62317	ALICE	1	NM00470	ERDC	August 5, 1953	November 26, 2025	11.6	25.25	105M14	986	50284	Mayo
62318	ALICE	2	NM00471	ERDC	August 5, 1953	November 26, 2025	11.8	29.06	105M14	987	50284	Mayo
62367	DAWSON		NM00472	ERDC	June 21, 1954	November 26, 2025	15.6	37.76	105M14	1023	50966	Mayo
62558	PRINCESS FRACTION		NM00473	ERDC	October 27, 1954	November 26, 2025	15	36.76	105M14	985	50276	Mayo
62944	FAIR FRACTION		NM00474	ERDC	January 6, 1956	November 26, 2025	7.4	18.22	105M14	1003	50294	Mayo
62945	WEATHER FRACTION		NM00475	ERDC	January 6, 1956	November 26, 2025	7.9	19.35	105M14	1004	50294	Mayo
62946	SNOW		NM00476	ERDC	February 10, 1956	November 26, 2025	5.1	12.44	105M14	1000	50290	Mayo
62962	ORCHID	15	NM00477	ERDC	May 30, 1956	November 26, 2025	21.1	51.6	105M13	1024	50958	Mayo
62963	ORCHID	16	NM00478	ERDC	May 30, 1956	November 26, 2025	21	51.65	105M13	1025	50958	Mayo
62972	ORCHID	25	NM00479	ERDC	May 30, 1956	November 26, 2025	15.4	38.09	105M13	1026	50958	Mayo
62973	ORCHID	26	NM00480	ERDC	May 30, 1956	November 26, 2025	20.5	51.64	105M14	1027	50962	Mayo
62974	ORCHID	27	NM00481	ERDC	May 30, 1956	November 26, 2025	20.7	51.59	105M14	1028	50962	Mayo
62975	ORCHID	28	NM00482	ERDC	May 30, 1956	November 26, 2025	20.7	51.56	105M14	1029	50964	Mayo
62976	ORCHID	29	NM00483	ERDC	May 30, 1956	November 26, 2025	20.9	51.28	105M14	1030	50964	Mayo
80117	ORCHID	31	NM00484	ERDC	December 13, 1956	November 26, 2025	14.4	55.49	105M13	1031	50958	Mayo
80118	ORCHID	32	NM00485	ERDC	December 13, 1956	November 26, 2025	18.8	46.43	105M13	1032	50958	Mayo
80119	ORCHID	33	NM00486	ERDC	December 13, 1956	November 26, 2025	21.8	54.33	105M13	1033	50958	Mayo
80120	ORCHID	34	NM00487	ERDC	December 13, 1956	November 26, 2025	24	59.52	105M13	1034	50960	Mayo
80121	ORCHID	35	NM00488	ERDC	December 13, 1956	November 26, 2025	19.8	48.5	105M13	1035	50960	Mayo
80122	ORCHID	36	NM00489	ERDC	December 13, 1956	November 26, 2025	17.2	42.35	105M13	1036	50960	Mayo
80123	ORCHID	13	NM00490	ERDC	December 13, 1956	November 26, 2025	16.8	40.37	105M13	1037	50960	Mayo
80124	ORCHID	14	NM00491	ERDC	December 13, 1956	November 26, 2025	17.9	44.03	105M13	1038	50960	Mayo
80162	ORCHID	37	NM00492	ERDC	April 3, 1957	November 26, 2025	23.9	59.32	105M14	1039	50962	Mayo
80163	ORCHID	38	NM00493	ERDC	April 3, 1957	November 26, 2025	21	51.59	105M14	1040	50962	Mayo
80164	ORCHID	39	NM00494	ERDC	April 3, 1957	November 26, 2025	20.5	51.66	105M14	1041	50964	Mayo
80165	ORCHID	40	NM00495	ERDC	April 3, 1957	November 26, 2025	14.7	36.2	105M14	1042	50964	Mayo
80166	ORCHID	41	NM00496	ERDC	April 3, 1957	November 26, 2025	10.3	25.43	105M14	1043	50962	Mayo
80167	ORCHID	42	NM00497	ERDC	April 3, 1957	November 26, 2025	14.3	35.24	105M14	1044	50962	Mayo
80168	ORCHID	43	NM00498	ERDC	April 3, 1957	November 26, 2025	8.9	22.01	105M14	1045	50964	Mayo
80178	ALBERTA L		NM00499	ERDC	December 13, 1956	November 26, 2025	11.6	28.89	105M14	984	50276	Mayo
80179	ORCHID	30	NM00500	ERDC	May 10, 1957	November 26, 2025	23.1	57.05	105M13	1046	50960	Mayo
56529	MALCOM		NM00502	AKHMC-SPR	June 14, 1948	November 28, 2025	7.6	18.76	105M14	540	41872	Mayo

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ALEXCO RESOURCE CORP.					APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES				UPDATED: MAY 25, 2009			
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
14222	LILY		NM00501	ERDC	September 24, 1921	March 31, 2026	15.6	37.91	105M14	159	53801	Mayo
13035	STONE		NM00503	ERDC	May 6, 1920	November 1, 2026	20.2	49.65	105M14	146	55056	Mayo
38658	NOIDER		NM00504	ERDC	January 27, 1930	November 1, 2026	5.5	13.35	105M14	871	41865	Mayo
55270	V.D.		NM00505	ERDC	November 9, 1943	November 1, 2026	2.2	5.55	105M14	778	42220	Mayo
55308	PRINCE		NM00506	ERDC	February 12, 1945	November 1, 2026	18.4	45.35	105M14	982	50276	Mayo
55384	ROAD		NM00507	ERDC	October 26, 1945	November 1, 2026	5	12.26	105M14	779	42220	Mayo
56530	MARIE ELENA		NM00508	ERDC	June 17, 1948	November 1, 2026	10.8	26.87	105M14	850	41868	Mayo
59005	D.C.		NM00509	ERDC	August 26, 1948	November 1, 2026	0.14	0.3	105M14	780	42220	Mayo
59437	FALLS	1	NM00510	ERDC	August 19, 1949	November 1, 2026	19.6	48.32	105M14	713	41566	Mayo
59438	FALLS	2	NM00511	ERDC	August 19, 1949	November 1, 2026	21.1	51.66	105M14	714	41566	Mayo
59439	FALLS	3	NM00512	ERDC	August 19, 1949	November 1, 2026	17.7	43.01	105M14	715	41560	Mayo
59440	FALLS	4	NM00513	ERDC	August 19, 1949	November 1, 2026	21	51.59	105M14	716	41560	Mayo
59441	FALLS	5	NM00514	ERDC	August 19, 1949	November 1, 2026	15.1	37.59	105M14	717	41560	Mayo
59442	FALLS	6	NM00515	ERDC	August 19, 1949	November 1, 2026	21	51.31	105M14	718	41560	Mayo
59443	FALLS	7	NM00516	ERDC	August 19, 1949	November 1, 2026	0.53	1.24	105M14	719	41560	Mayo
59444	FALLS	8	NM00517	ERDC	August 19, 1949	November 1, 2026	14.9	36.46	105M14	720	41560	Mayo
59445	FALLS	9	NM00518	ERDC	August 19, 1949	November 1, 2026	21.4	52.86	105M14	721	41566	Mayo
59446	FALLS	10	NM00519	ERDC	August 19, 1949	November 1, 2026	20.8	50.74	105M14	722	41566	Mayo
59447	FALLS	11	NM00520	ERDC	August 19, 1949	November 1, 2026	21.2	52.16	105M14	723	41566	Mayo
59448	FALLS	12	NM00521	ERDC	August 19, 1949	November 1, 2026	20.6	50.68	105M14	724	41566	Mayo
59449	FALLS	13	NM00522	ERDC	August 19, 1949	November 1, 2026	21.9	52.68	105M14	725	41566	Mayo
59450	FALLS	14	NM00523	ERDC	August 19, 1949	November 1, 2026	19.8	49.01	105M14	726	41566	Mayo
59451	FALLS	15	NM00524	ERDC	August 19, 1949	November 1, 2026	20.7	50.79	105M14	727	41566	Mayo
61725	FALLOT		NM00525	ERDC	July 16, 1951	November 1, 2026	19	47.21	105M14	746	41566	Mayo
62248	KARIN		NM00526	ERDC	September 5, 1952	November 1, 2026	8.9	21.68	105M14	886	41862	Mayo
80227	VENUS FRACTION	1	NM00527	ERDC	July 3, 1957	November 7, 2026	8.2	20.35	105M14	1052	51000	Mayo
80228	VENUS FRACTION	2	NM00528	ERDC	July 3, 1957	November 7, 2026	10.6	25.66	105M14	1053	51000	Mayo
55271	ROSEMARY		NM00529	ERDC	November 9, 1943	November 9, 2026	19.6	47.83	105M14	538	41861	Mayo
13542	OUTCAST FRACTION		NM00530	ERDC	October 25, 1920	November 18, 2026	3.5	8.59	105M14	483	41913	Mayo
13094	OK FRACTION		NM00556	ERDC	June 9, 1920	November 2, 2027	3.3	7.76	105M14	1120	52069	Mayo
13591	SCOT		NM00557	ERDC	February 18, 1921	November 2, 2027	12	29.72	105M14	1112	52068	Mayo
13709	ROY		NM00558	ERDC	May 28, 1921	November 2, 2027	9.4	23	105M14	1111	52068	Mayo
15393	DONNIE		NM00559	ERDC	August 26, 1929	November 2, 2027	1.7	4.03	105M14	1101	52061	Mayo
16097	DAVID		NM00531	AKHMC-SPR	December 8, 1925	November 2, 2027	11.1	27.66	105M14	455	41797	Mayo
38723	VIOLA		NM00560	ERDC	August 14, 1931	November 2, 2027	2.9	7.05	105M14	1113	52068	Mayo
55022	RANDO		NM00561	ERDC	October 28, 1936	November 2, 2027	5.7	14.12	105M14	457	54073	Mayo
55206	PEARL		NM00562	ERDC	October 30, 1941	November 2, 2027	18.7	46.45	105M14	1119	52069	Mayo
55319	ELI		NM00563	ERDC	February 19, 1945	November 2, 2027	5.9	15.1	105M14	458	41796	Mayo
55420	CROESUS		NM00564	ERDC	May 27, 1946	November 2, 2027	12.9	31.69	105M14	849	41919	Mayo
55426	WILDCAT		NM00532	AKHMC-SPR	June 3, 1946	November 2, 2027	5.4	13.12	105M14	762	41565	Mayo
55429	BALTO		NM00533	AKHMC-SPR	June 6, 1946	November 2, 2027	21	51.61	105M14	763	41565	Mayo
55433	SUNRISE		NM00534	AKHMC-SPR	June 20, 1946	November 2, 2027	12.9	31.84	105M14	764	41565	Mayo
55445	SOLOMAN		NM00535	AKHMC-SPR	August 16, 1946	November 2, 2027	16	39.23	105M14	456	41797	Mayo

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ALEXCO RESOURCE CORP.			APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES						UPDATED: MAY 25, 2009			
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
55446	SOL		NM00536	AKHMC-SPR	August 21, 1946	November 2, 2027	18.7	45.97	105M14	467	41802	Mayo
55519	WILLOW		NM00537	AKHMC-SPR	February 4, 1947	November 2, 2027	13.6	33.74	105M14	765	41565	Mayo
55520	THUNDER BIRD		NM00538	AKHMC-SPR	February 4, 1947	November 2, 2027	14.5	35.66	105M14	766	41565	Mayo
55582	HECLA		NM00565	ERDC	March 20, 1947	November 2, 2027	10.3	25.18	105M14	894	42101	Mayo
55583	NIKKA		NM00566	ERDC	March 20, 1947	November 2, 2027	5	12.37	105M14	874	41874	Mayo
55585	DIXIE		NM00567	ERDC	March 20, 1947	November 2, 2027	5.9	14.46	105M14	875	41874	Mayo
55592	FOX		NM00539	AKHMC-SPR	March 28, 1947	November 2, 2027	4.5	10.98	105M14	768	41565	Mayo
55593	GRETA		NM00540	AKHMC-SPR	March 28, 1947	November 2, 2027	16.8	41.12	105M14	769	41565	Mayo
56590	MIKE		NM00568	ERDC	August 18, 1948	November 2, 2027	8.3	20.48	105M14	1116	52069	Mayo
59275	QUAIL		NM00541	AKHMC-SPR	June 22, 1949	November 2, 2027	12.1	29.67	105M14	770	41565	Mayo
59387	PUEBLO		NM00569	ERDC	July 29, 1949	November 2, 2027	19.2	46.99	105M14	1102	52062	Mayo
59419	ELI	2	NM00570	ERDC	August 8, 1949	November 2, 2027	14.2	34.86	105M14	459	41800	Mayo
59519	EVY		NM00542	AKHMC-SPR	November 30, 1949	November 2, 2027	12.2	30.22	105M14	767	41565	Mayo
59534	BUNKER		NM00543	AKHMC-SPR	April 1, 1950	November 2, 2027	12.9	31.98	105M14	915	42086	Mayo
59535	BUNKER NO.	1	NM00544	AKHMC-SPR	April 1, 1950	November 2, 2027	10.2	25.1	105M14	916	42086	Mayo
59645	DAISY FRACTION		NM00545	AKHMC-SPR	July 22, 1950	November 2, 2027	6.8	16.57	105M14	468	41797	Mayo
59683	ROCK		NM00546	AKHMC-SPR	September 19, 1950	November 2, 2027	20.9	51.59	105M14	896	42101	Mayo
59764	MIKE		NM00571	ERDC	September 26, 1950	November 2, 2027	15.1	37.68	105M14	892	42101	Mayo
59795	BUCKO		NM00572	ERDC	October 2, 1950	November 2, 2027	12.8	31.35	105M14	895	42101	Mayo
59796	CHARITY		NM00573	ERDC	October 2, 1950	November 2, 2027	5.5	12.26	105M14	898	42101	Mayo
59824	QUAIL FRACTION		NM00547	AKHMC-SPR	October 2, 1950	November 2, 2027	4.4	10.38	105M14	771	41565	Mayo
59932	DUDE		NM00548	AKHMC-SPR	October 11, 1950	November 2, 2027	4.7	11.31	105M14	772	41565	Mayo
61021	DOT		NM00574	ERDC	October 27, 1950	November 2, 2027	0.1	0.17	105M14	1118	52069	Mayo
61598	JIB NO.	2	NM00549	AKHMC-SPR	May 25, 1951	November 2, 2027	3	7.06	105M14	773	41565	Mayo
61599	DON FRACTION		NM00550	AKHMC-SPR	May 25, 1951	November 2, 2027	1.9	4.21	105M14	863	41877	Mayo
61600	GROUSE		NM00551	AKHMC-SPR	May 25, 1951	November 2, 2027	1.8	4.2	105M14	864	41877	Mayo
61601	TARM		NM00552	AKHMC-SPR	May 25, 1951	November 2, 2027	1.8	4.26	105M14	781	41547	Mayo
61877	FOX		NM00553	AKHMC-SPR	August 15, 1951	November 2, 2027	3.6	8.52	105M14	749	41565	Mayo
61916	EVY		NM00554	AKHMC-SPR	August 29, 1951	November 2, 2027	1.2	2.89	105M14	899	42101	Mayo
61976	ROZ FRACTION		NM00575	ERDC	September 19, 1951	November 2, 2027	5.1	12.5	105M14	804	42220	Mayo
62132	AGRAM		NM00555	AKHMC-SPR	June 17, 1952	November 2, 2027	2.7	6.71	105M14	866	41854	Mayo
62235	NM		NM00576	ERDC	August 27, 1952	November 2, 2027	2.9	7.39	105M14	1117	52069	Mayo
80346	INCA FRACTION		NM00577	ERDC	April 30, 1959	November 2, 2027	15.5	38.88	105M14	1007	50298	Mayo
80347	FILL		NM00578	ERDC	June 10, 1959	November 2, 2027	20.4	50.63	105M14	1047	50966	Mayo
80357	HAP		NM00579	ERDC	July 21, 1959	November 2, 2027	3.4	8.34	105M14	1048	50966	Mayo
80358	CLOSURE		NM00580	ERDC	July 21, 1959	November 2, 2027	9.8	23.04	105M14	1049	50966	Mayo
80359	FINAL		NM00581	ERDC	July 21, 1959	November 2, 2027	10.9	26.62	105M14	1050	50966	Mayo
80360	OBOE		NM00582	ERDC	July 22, 1959	November 2, 2027	2.7	6.8	105M14	979	50274	Mayo
80361	GNAT		NM00583	ERDC	July 22, 1959	November 2, 2027	0.392	0.9	105M14	977	50274	Mayo
80517	GAIL FRACTION		NM00584	ERDC	August 4, 1960	November 2, 2027	5.4	13.09	105M14	1106	52064	Mayo
80518	WREN FRACTION		NM00585	ERDC	August 4, 1960	November 2, 2027	2.7	6.61	105M14	1107	52064	Mayo
80561	KANGAROO FRACTION		NM00586	ERDC	October 25, 1960	November 2, 2027	15.6	38.19	105M14	1109	52066	Mayo
81139	JEFFY FRACTION		NM00587	ERDC	May 31, 1962	November 2, 2027	3.5	8.93	105M14	1125	52072	Mayo
81228	JENNY FRACTION		NM00588	ERDC	June 28, 1962	November 2, 2027	1.5	3.67	105M14	1123	52071	Mayo
82289	LITE FRACTION		NM00589	ERDC	August 7, 1962	November 2, 2027	2.1	5.08	105M14	1105	52063	Mayo
83003	JENNY TOO FRACT		NM00590	ERDC	June 12, 1963	November 2, 2027	18.7	46.04	105M14	1124	52071	Mayo

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ALEXCO RESOURCE CORP.				APPENDIX I: KENO HILL LIST OF CLAIMS AND LEASES				UPDATED: MAY 25, 2009				
Grant	Claim Name	Nbr	Lease	Owner - Filing Note	Record Date	Expiry (Requested*)	Hectares	Acres	NTS	Lot	Survey No.	District
83004	NIP FRACTION		NM00591	ERDC	June 12, 1963	November 2, 2027	6.3	14.83	105M14	1121	52070	Mayo
83010	NORTH FRACTION		NM00592	ERDC	June 25, 1963	November 2, 2027	6.4	3.67	105M14	1122	52070	Mayo
83011	ADAM FRACTION		NM00593	ERDC	July 9, 1963	November 2, 2027	0.85	2.09	105M14	1103	52062	Mayo
83012	CATHY FRACTION		NM00594	ERDC	July 9, 1963	November 2, 2027	3	7.07	105M14	1104	52062	Mayo
83023	STONE FRACTION		NM00595	ERDC	July 16, 1963	November 2, 2027	3	7.38	105M14	1114	52068	Mayo
56406	LOUIS	2	NM00596	ERDC	April 18, 1947	November 26, 2027	10.4	25.84	105M14	478	41778	Mayo
59485	EDITH-CAVELL	8	NM00597	ERDC	September 6, 1949	November 26, 2027	6.6	16.4	105M14	736	41559	Mayo
56473	CORA		NM00601	ERDC	August 25, 1947	July 22, 2028	1.2	2	105M14	872	41877	Mayo
62723	UK	1	NM00606	ERDC	March 29, 1955	April 30, 2029	20.9	51.55	105M14	1127	52865	Mayo
62724	UK	2	NM00607	ERDC	March 29, 1955	April 30, 2029	19.5	48.35	105M14	1128	52865	Mayo
62729	UK	7	NM00608	ERDC	March 29, 1955	April 30, 2029	20.9	51.65	105M14	1133	52865	Mayo
62730	UK	8	NM00609	ERDC	March 29, 1955	April 30, 2029	15.1	37.97	105M14	1134	52865	Mayo
62735	UK	13	NM00610	ERDC	March 29, 1955	April 30, 2029	12	29.43	105M14	1139	52865	Mayo
62736	UK	14	NM00611	ERDC	March 29, 1955	April 30, 2029	19.6	47.75	105M14	1140	52865	Mayo
62835	UK	15	NM00612	ERDC	July 8, 1955	April 30, 2029	20.2	49.76	105M14	1141	52865	Mayo
62836	UK	16	NM00613	ERDC	July 8, 1955	April 30, 2029	23.1	56.47	105M14	1142	52865	Mayo
13558	LADUE		NM00603	ERDC	November 5, 1920	July 7, 2029	7.6	18.13	105M14	108	55064	Mayo
14332	TRIANGLE		NM00604	ERDC	October 18, 1921	July 11, 2029	0.003	0.09	105M14	100	55064	Mayo
14404	WILLIAM FOURTH		NM00605	ERDC	November 5, 1921	July 11, 2029	0.11	0.26	105M14	125	55064	Mayo
55479	IDOL		NM00602	ERDC	January 24, 1947	July 22, 2029	19.1	47.02	105M14	495	41798	Mayo
62992	JUNE		NM00614	ERDC	July 11, 1956	August 21, 2029	5.8	14.29	105M14	1170	53032	Mayo
13182	POCA PLATA		NM00615	ERDC	June 21, 1920	September 30, 2029	14.8	36.81	105M14	107	55064	Mayo
13019	LOTUS		NM00625	ERDC	May 4, 1920	November 25, 2029	17.8	43.63	105M14	104	55064	Mayo
16204	THISTLE		NM00626	ERDC	August 12, 1926	December 3, 2029	18.3	45.83	105M14	177	55096	Mayo
13093	CHIEF	4	NM00627	ERDC	June 9, 1920	December 6, 2029	18.6	46.09	105M14	295	55080	Mayo
38857	M.T.		NM00632	ERDC	October 1, 1935	December 6, 2029	3.4	8.2	105M13	281	55080	Mayo
38873	NEIN		NM00630	ERDC	December 4, 1935	December 6, 2029	1.4	2.89	105M14	284	55080	Mayo
38882	SLIVER		NM00629	ERDC	March 31, 1936	December 6, 2029	1.7	5.9	105M14	283	55080	Mayo
55039	SIS		NM00631	ERDC	September 3, 1937	December 6, 2029	4.3	10.27	105M14	296	41801	Mayo
55091	IKE		NM00628	ERDC	August 12, 1938	December 6, 2029	3.4	8.76	105M14	293	55053	Mayo
12814	MINTO		NM00633	ERDC	August 17, 1919	December 16, 2029	18.7	46.44	105M14	49	18252	Mayo
13038	SADIE		NM00634	ERDC	May 6, 1920	December 17, 2029	17.6	43.68	105M14	101	18256	Mayo
13222	LAKOTA		NM00635	ERDC	July 9, 1920	December 29, 2029	3.3	8.27	105M14	110	55064	Mayo
13151	BLUE STONE		NM00636	ERDC	June 16, 1920	December 31, 2029	11.9	29.35	105M14	105	55064	Mayo
13586	LUNA		NM00637	ERDC	November 12, 1920	December 31, 2029	4.1	10.05	105M14	111	55064	Mayo
12779	ROULETTE		NM00616	ERDC	August 27, 1919	January 26, 2030	20.6	51.65	105M14	17	16735	Mayo
13143	BLUE BELL		NM00617	ERDC	June 16, 1920	January 31, 2030	16.8	41.5	105M14	106	55064	Mayo
13787	MARY		NM00618	ERDC	June 21, 1921	January 31, 2030	2.9	7.44	105M14	112	55064	Mayo
12780	RICO		NM00619	ERDC	August 27, 1919	February 16, 2030	20.5	51.12	105M14	18	16735	Mayo
12816	SOLO	2	NM00620	ERDC	October 18, 1919	February 18, 2030	20.5	50.12	105M14	21	16735	Mayo
12784	KENO		NM00622	ERDC	September 10, 1919	February 23, 2030	20.6	50.46	105M14	19	16735	Mayo
YA17395	Lem	1	NM00638	AKHMC-SPR	November 14, 1977	February 23, 2030	13.91		105M14	1009	95399	Mayo
YA17396	Lem	2	NM00639	AKHMC-SPR	November 14, 1977	February 23, 2030	20.43		105M14	1010	95399	Mayo
YA17397	Lem	3	NM00640	AKHMC-SPR	November 14, 1977	February 23, 2030	5.64		105M14	1011	95399	Mayo
YC69940	K	108F	NM00641	AKHMC	September 10, 2008	February 23, 2030	0.344		105M14	1012	95399	Mayo
12783	SCOTTY		NM00621	ERDC	September 10, 1919	February 24, 2030	20.5	50.44	105M14	20	16735	Mayo

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83132	TECH		NM00623	ERDC	August 13, 1963	February 28, 2030	7	17.2	105M14	1126	52867	Mayo
83532	JENNY	3	NM00624	ERDC	July 17, 1964	February 28, 2030	22.1	11.26	105M14	1154	52868	Mayo
12909	ANTHONY		NM00642	ERDC	December 17, 1919	March 24, 2030	17.3	42.67	105M14	48	16982	Mayo
13452	RICO		NM00643	50% ERDC	October 2, 1920	March 28, 2030	20.2	49.57	105M14	151A	18945	Mayo
13622	TRAVICE		NM00644	ERDC	April 23, 1921	April 22, 2030	20.1	49.81	105M14	141	54104	Mayo
13225	LAKE	1	NM00645	ERDC	July 13, 1920	April 27, 2030	19.2	47.25	105M14	143	55056	Mayo
13276	LAKE	2	NM00646	ERDC	August 25, 1920	April 27, 2030	19.6	49.09	105M14	144	55056	Mayo
13277	LAKE	3	NM00647	ERDC	August 25, 1920	April 27, 2030	19.3	47.14	105M14	145	55056	Mayo
14288	SEXTANT		3425	ERDC	October 4, 1921	May 15, 2030	0.25	0.64	105M14	123	55064	Mayo

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APPENDIX C

DESIGN CRITERIA

- i) CIVIL DESIGN CRITERIA
- ii) MECHANICAL DESIGN CRITERIA
- iii) PIPING DESIGN CRITERIA
- iv) BUILDING SERVICES DESIGN CRITERIA
- v) STRUCTURAL DESIGN CRITERIA
- vi) INSTRUMENTATION DESIGN CRITERIA
- vii) ELECTRICAL DESIGN CRITERIA

 ALEXCO	CIVIL 31 00 00 Design Criteria	Project Number: 09539601.00 Project Name: Bellekeno Project
WARDROP Engineering Inc.		

Revision No.	Date Revised	Engineering Specification	Signatures				
			Prepared By	Checked By	Approved By	Project Manager	Client
A	21 Apr 2009	Issued for Internal Review	CW	MB		JA	
B	09 July 2009	Issued for Information	CW	MB		JA	

 ALEXCO	CIVIL 31 00 00 Design Criteria	Project Number: 09539601.00
WARDROP Engineering Inc.		Project Name: Bellekeno Project

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 ALEXCO	CIVIL 31 00 00 Design Criteria	Project Number: 09539601.00
WARDROP Engineering Inc.		Project Name: Bellekeno Project

1.0 CODES AND SPECIFICATIONS

Unless stated otherwise, the design of all structures and facilities will be based on, but not be limited to, applicable portions of the most current edition of the following codes, specifications, industry standards, regulations and other reference documents.

1.1 FEDERAL GOVERNMENT OF CANADA

- National Building Code of Canada
- Supplement No. 1 – Climatic Information for Building Design in Canada
- Northern Inland Waters Act and Regulations
- Fisheries Act and Regulations
- Territorial Lands Act and Regulations
- Yukon Territories Water Act and Regulations
- Explosives Act
- Guidelines for Canadian Drinking Water Quality, latest edition.
- Health and Safety Act
- Water License.

1.2 ROADS AND TRANSPORTATION ASSOCIATION OF CANADA (RTAC)

- Design of Surface Mine Haulage Roads-Bureau of Mines Information Circular 8758
- Geometric Design Standards for Canadian Roads and Streets
- Drainage Manual.

1.3 YUKON TERRITORIAL GOVERNMENT

- Mining Safety Act and Regulations
- Environmental Protection Act and Regulations
- Commissioner's Land Act and Regulations
- Explosive Use Act
- Fire Prevention Act
- Yukon Department of Transportation.

 ALEXCO	CIVIL 31 00 00 Design Criteria	Project Number: 09539601.00
WARDROP Engineering Inc.		Project Name: Bellekeno Project

2.0 SITE INFORMATION

.1 Survey Datum

The topographic mapping, horizontal and vertical control (metric elevations) for the project have been provided by the Owner. The project site horizontal co-ordinate and grid system is based on UTM Nad 83.

.2 Road Information

- Christal Lake Haul Road – (upgrade to existing road) ~ 1580 m long, running northeast from Duncan Creek Rd (existing Yukon Highways Road) to Silver Trail Highway.
- Flame and Moth Road – (new road) ~ 250 m long, running north from Duncan Creek Rd (existing Yukon terr. Rd) to the Flame and Moth Site.
- By-Pass Road – (new road) ~ running east from Duncan Creek Rd (existing Yukon Highways Road) to the Lightning Creek Bridge – Option 1 is 270 m and Option 2 is 150 m long.
- Twin Road – (new road) ~ 400 m long running southeast above the existing public road to the Bellekeno Power Line Road and Sourdough Hill Road junction.

3.0 CIVIL SITE WORK CRITERIA

.1 Cut-and-fill quantities shall be minimized by excavating a single level area for all buildings.

.2 Different levels of pads will be used as necessary to improve operating characteristics.

.3 Building outline to make best use of ground contours and geotechnical conditions.

.4 Ground survey shall confirm site elevations.

.5 Erosion control shall conform to the drainage/water management plan developed by the Geotechnical Engineer.

3.2 AGGREGATE SUPPLY

.1 Sub-base,. maximum particle size 75 mm, to be used for road base material.

 ALEXCO WARDROP Engineering Inc.	CIVIL 31 00 00 Design Criteria	Project Number: 09539601.00 Project Name: Bellekeno Project
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- .2 Base, crushed material, maximum particle size 50 mm, to be used for road base material.
- .3 Surfacing, crushed material, maximum particle size 25 mm, to be used for road and plant site surfaces.

3.3 EARTH AND ROCK WORK

- .1 Recommendations on cuts, fills, compaction, material gradations, and temporary and permanent slopes to be confirmed by the Geotechnical Engineer.

4.0 ROAD DESIGN CRITERIA

- .1 The road design criteria of the road type is shown in Table 1. The design vehicle used as the basis of design criteria is shown in Table 2.
 - Roads shall be all-weather construction
 - Off-site drainage shall be diverted around the site (by others)
 - Alternating vehicular pull-outs every 500 m
 - All roads are one way radio controlled
 - Pull outs length equals 1.5 times the vehicle length
 - Pull outs width equals 1.5 times the operating width.

Table 1 Road Design Criteria

	Haul Road
Operating Width	4 m *
Design Speed	50 km/hr
Cross fall	2%
Maximum Grade	8%
Surface	200 mm
Base	300 mm
Sub-base	500mm
Cut Side Slope	1.5 : 1
Fill Side Slope	2 : 1
Subgrade Compaction	95%
Granular Compaction	100%

* Excludes berms and ditches on both side of haul roads.

 ALEXCO	CIVIL 31 00 00 Design Criteria	Project Number: 09539601.00
WARDROP Engineering Inc.		Project Name: Bellekeno Project

Table 2 Design Vehicle

Road Type	Haul
Design Vehicle	Volvo A30E
Width	2.94 m
Length	10.3 m
Height	3.3 m
Weight	51 060 kg

5.0 DESIGN LOADS

Volvo A30E 28 t capacity:

	<u>Loaded</u>	<u>Empty</u>
	51 060 kg	28 000 kg
Front Axle	14 990 kg	12 500 kg
Drive Axle	36 070 kg	15 560 kg
Wheel Base	2.216 m	
Tire Pressure	267 kPa	

5.1 SITE GRADING

- .1 Plant site final grading will be a minimum of 150 mm below adjacent floor slabs.
- .2 Plant site final grading will generally have a minimum finish grade slope of 2% away from structures towards storm drainage facilities.
- .3 The plant site area will generally be covered by 300 mm of Base material overlain with 200 mm of Surfacing material – subject to geotechnical conditions.

5.2 RUN-OFF CONTROL

- .1 Drainage outside the plant site or road will be the responsibility of others.
- .2 Within the plant site and building run off, resulting from rainfall, will be conveyed to drainage ditches by sloping the plant site surface.
- .3 Storm run-off quantities for small areas in the plantsite shall be determined by the Rational Method using a minimum time of concentration of 15 minutes.
- .4 Interception ditches will, where possible, divert non-contact runoff from areas uphill of the disturbed areas (this work by others).

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- .5 Precipitation and freshet design data for run-off control/drainage facilities will be determined in consultation with the Owner and EBA.

- .6 Ditches shall be trapezoidal design with a 300 mm minimal bottom width. Ditch bottom will be 500mm below the road sub-grade. Side slopes shall not be steeper than 1 vertical, 1.5 horizontal. Longitudinal slopes shall ensure passage of run-off; where velocity exceeds 1.0 meters per second, ditch linings and energy dissipating structures will be provided. Ditching will be avoided in ice rich till areas.

- .7 Open channel flow calculations shall be made according to the Manning Formula.

- .8 Culverts will be galvanized corrugated steel pipe, with a 600 mm minimum diameter.

- .9 Culverts shall have a minimum backfill cover of 450mm or the diameter divided by 2, whichever is greater.

END OF SECTION

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SPECIFICATION REVISION INDEX

Revision No.	Date Revised	Engineering Specification	Signatures				
			Prepared By	Checked By	Approved By	Project Manager	Client
A	01 May 2009	Issued for Internal Review	MM	AF		JA	BT
B	09 July 2009	Issued for Information	MM	AF		JA	BT

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1.0 GENERAL

1.1 SCOPE

- .1 This design criterion outlines the basis for the overall design parameters and criteria to be adopted in the selection of mechanical equipment and systems used for the project.
- .2 The Bellekeno Project consists of an underground zinc and lead mine. The run-of-mine-feed will be designed to crushed and feed at nominal 408 tonnes per day of ore feed to the grinding and flotation circuits. The process facilities will consist of a primary and secondary crushing facility followed by the grinding and flotation processes.

1.2 CODES AND STANDARDS

- .1 All design material, equipment manufacturing, fabrication, testing, installation and construction shall be in accordance with the latest edition of the applicable codes and standards of the following organizations. The organizations include, but are not limited to, the following:

ABMA	American Bearing Manufacturers' Association
ACI	American Concrete Institute
AGMA	American Gear Manufacturers' Association
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
API	American Petroleum Institute
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWS	American Welding Society
AWWA	American Water Works Association
CEC	Canadian Electrical Code
CEMA	Conveyor Equipment Manufacturers' Association
CISC	Canadian Institute of Steel Construction
CSA	Canadian Standards Association
CWB	Canadian Welding Bureau
EEMAC	Electrical Equipment Manufacturers Association
FM	Factory Mutual
HI	Hydraulic Institute
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronics Engineers

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IESNA	Illuminating Engineering Society of North America
IFE	Industrial Fasteners Institute
ISA	Instrument Society of America
ISMA	Industrial Silencer Manufacturers' Association
ISO	International Organization for Standardization
JIC	Joint Industrial Council
MHIA	Material Handling Industry of America
MHEA	Material Handling Engineers Association
MPTA	Mechanical Power Transmission Association
MSHA	Mine Safety and Health Administration
MSS	Manufacturers' Standardization Society
NACE	National Association of Corrosion Engineers
NBC	National Building Code of Canada
NEC	National Electrical Code (US)
NEMA	National Electrical Manufacturers' Association
NESC	National Electrical Safety Code
NFC	National Fire Code
NFPA	National Fire Protection Association
NFPI	National Fluid Power Institute
OSHA	Occupational Safety and Health Act
PFI	Pipe Fabrication Institute
PPI	Plastics Pipe Institute
RMA	Rubber Manufacturers' Association
SNT	Society of Non-Destructive Testing
SAE	Society of Automotive Engineers
SSPC	Steel Structure Painting Council
TEMA	Tubular Exchanger Manufacturers' Association
UL	Underwriters Laboratories
CUL	Underwriters Laboratories of Canada
WHMIS	Workplace Hazardous Materials Information System
YWCHSB	Yukon Workers' Compensation Health and Safety Board

- .2 The codes and laws of the Yukon Territory, municipality or jurisdiction may take precedence over the aforementioned codes.

1.3 REFERENCE SPECIFICATIONS

- .1 For equipment general specification, weather and all site data refer "02 10 00 – Site Conditions and Equipment Standards" unless otherwise noted in the equipment Criteria.

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- .2 For all piping data and information (pipe velocity, pipe material, buried pipe) see "40 00 00 Piping Design Criteria".
- .3 For all structural data and information see "05 00 00 Structural Design Criteria".
- .4 For all electrical data and information see "26 00 00 Electrical Design Criteria".
- .5 For all instrumentation data and control information see "40 90 00 Instrumentation Design Criteria".
- .6 For all building services datas, fire fighting systems and dust control systems information see "23 00 00 Building Services Design Criteria".

1.4 LAYOUT

- .1 Equipment shall be arranged in accordance with the current and approved process flowsheets.
- .2 The design criteria for equipment layout are as follows:
 - Gravity and natural properties of material flow shall be utilized to the maximum extent possible, to reduce energy inputs.
 - Arrangements shall provide a smooth process flow, and allow for merging with other process flow streams.
 - All material transfer points shall be designed to minimize spillage.
 - Adequate accessibility and clearance around equipment shall be provided for operation and maintenance.
 - Suitable Safe Working Load (SWL) rated cranes, monorails and hoists shall be provided for operation and maintenance purposes and at all equipment that may require replacement.
 - Wherever possible, ladders and catladders shall be avoided, and only after discussion with the Owner and/or the Owner's Representative shall they be used in a design.
 - Optimal use of the structures and available space within the structures shall be implemented.
 - Floors shall be suitably sloped and drains/sumps shall be provided and positioned at the lowest point to collect spillage and wash-down water. Each area's slope will be determined based on possible spills particle size and will be shown on the layout drawings. The slope range will be between 2% to 10%.

1.5 EQUIPMENT SELECTION CRITERIA

- .1 Manufacturers and fabricators shall be given the latitude to use their experience to employ the best design, installation practice and/or procedure, except where the latter would

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contravene Standard Operating Procedures (SOP) or other standards of the mine or this criteria.

- .2 The equipment shall be robust and fit for heavy-duty applications found in a mining environment.
- .3 All equipment shall be conservatively rated and sized to withstand capacity changes due to process upsets and variations.
- .4 All equipment shall be designed to meet site conditions, such as altitude, ambient temperatures, seismic, wind, rain, humidity and any corrosive surrounding atmosphere.
- .5 The equipment shall meet or exceed the project specified production requirements for the 10 years expected plant life.
- .6 Wherever possible, standard “off the shelf” equipment and components shall be used.
- .7 All materials used in the construction or assembly of equipment shall be new and free of any defects. Material Test Certificate (MTC) and (NDT) shall be requested where applicable.
- .8 The equipment shall meet or exceed the current environmental standards of the jurisdiction in which it is installed, as well as any environmental restriction(s) that could or should be anticipated.
- .9 Where required for operation, maintenance or cleaning, equipment shall be provided with appropriate access. This access may include stairs and/or ladders, walkways and platforms complete with handrails, kneerails and kickboards that comply with the current applicable health and safety regulations.
- .10 All equipment shall be designed and/or selected in accordance with the process and site condition requirements. Other factors to be considered for equipment selection shall include the following:
 - Maximization of personnel health, safety and protection.
 - Ease of installation, operation, inspection, cleaning, maintenance, equipment removal and repairs.
 - Minimization of vibration and excessive noise.
 - Minimization of thermal expansion stresses.
 - Maximization of standardized components.
 - Availability of spare parts.
 - Demonstrate a successful operational history of comparable equipment and components in similar installations.

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- .11 Noise levels shall be controlled and not exceed the most stringent of the values stated in MSHA regulations or "02 10 00 – Site Conditions and Equipment Standards".
- .12 All equipment heavier than 34 kg shall be provided with lifting lugs or another convenient lifting arrangement.
- .13 Personnel health, safety and protection shall be prime factors in the mechanical design and layout of equipment. Equipment shall be in complete accordance with MSHA, NFC, OSHA and all other applicable codes and regulations.
- .14 All mechanical moving parts shall be guarded. The design of the guards shall allow their removal without having to remove other items of equipment.
- .15 All openings, sumps, vessels, bins, hoppers, elevated platforms or pits that constitute a hazard shall be adequately fenced or otherwise guarded.
- .16 Equipment shall be provided with appropriate access areas where required for operation, maintenance or cleaning.

1.6 PAINTING AND PROTECTIVE COATINGS

- .1 Manufacturer standard coating system shall be used for all supplied equipment. Suppliers shall provide their painting system for Owner and/or the Owner's Representative review.
- .2 For all fabricated items such as tanks and steel works for mechanical equipment surface preparation, priming and finish coating shall comply with "02 10 00 Site Conditions and Equipment Standards".
- .3 Under no circumstances shall machined parts be packaged for delivery without a suitable protective coating.

1.7 INSULATION

- .1 Wherever insulation is required, Supplier's standard insulation shall be used only after Supplier's proposed insulation system has been reviewed by the Owner and/or the Owner's Representative.
- .2 Insulation thickness shall be calculated and insulation/cladding material shall be selected as per whether data outlined in "02 10 00 Site Conditions and Equipment Standards".
- .3 All other insulation requirements shall conform to insulation specification and Health and Safety Regulations, provided by the Owner and/or the Owner's Representative.

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2.0 DESIGN CONSIDERATION

2.1 PROCESS EQUIPMENT

- .1 Process equipment shall be specified in accordance with the process design criteria and flow sheets.
- .2 All process equipment design flows rates are based the plant design feed rate as stated in the Process Design Criteria and flow diagrams so no safety factor/margins shall be added to the equipment flow rates and throughputs specified in the Process Design Criteria or flow diagrams.

2.2 LIFTING DEVICES

CRANES & HOISTS

- .1 All cranes and hoists shall be designed, manufactured, tested and certified in accordance with the latest applicable editions of Crane Manufacturers Association of America (CMAA) Specifications #70 and #74 as well as the Hoist Manufacturers Institute (HMI) specification "100-74 – Standard Specification for Electric Wire Rope Hoists".
- .2 The Mill building will be equipped with two cranes on the same rail. The large crane (25 t) shall be used for erection and heavy maintenance purposes. A small crane (5 t) shall be used for light maintenance duties. The cranes have been selected based on the heaviest possible load during maintenance/erection period, as applicable.
- .3 The crushing area crane (5 t) shall be used for maintenance purposes only. The crane capacity may not cover the weight of the heaviest possible load during maintenance period in this area.

MONO RAILS

- .1 Monorail hoists shall be designed, manufactured, tested and certified in accordance with the latest applicable editions of Crane Manufacturers Association of America (CMAA) Specifications #70 and #74 as well as the Hoist Manufacturers Institute (HMI) specification "100-74 – Standard Specification for Electric Wire Rope Hoists".
- .2 A mono rail crane for the reagent area shall be provided. The hoist capacity shall be adequate for lifting and loading/unloading of the reagent bags and or drums.
- .3 A mono rail crane for the rod mill bin area shall be provided. The hoist capacity shall be adequate for maintenance of the bin vent system.
- .4 A mono rail crane for the crushing and screening conveyor tower shall be provided. The hoist capacity shall be adequate for maintenance of the bin vent system.

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2.3 STEEL TANKS

- .1 Tank sizing shall be as specified in the process design criteria and flow sheets.
- .2 Steel tanks can be bolted (only for field erected tanks) or welded construction.
- .3 Any tanks with the diameter less than 4200 mm shall be shop fabricated. All other larger diameter tanks shall come in maximum possible shippable sizes to reduce workmanship at site.
- .4 Tanks shall be designed with a minimum 300 mm freeboard for surges. Frothing allowance shall be determined on a case-by-case basis. Overflow will be designed for 150% of inflow capacity, and routed to the floor, which will be sloped to a sump or trench. Tank materials shall be suitable for the application and shall be evaluated on a case-by-case basis.
- .5 Outdoor tanks shall be heated and insulated as per process requirements for freeze protection. Heating will be electrical and if tanks require heat tracing, tank fabricator shall provide lugs or clips for tracing installation.

2.4 FIBRE REINFORCED PLASTIC (FRP) VESSELS AND TANKS

- .1 Process equipment shall be specified in accordance with the process design criteria and flow sheets.
- .2 FRP Vessels and Tanks shall be designed to the requirements of ASME RTP-1 "Reinforced Thermoset Plastic corrosion Resistant Equipment" latest edition or BS 4994 "Design and Construction of Vessels and Tanks in Reinforced Plastic".
- .3 Tanks shall be designed with a minimum 300 mm freeboard for surges. Frothing allowance shall be determined on a case-by-case basis. Overflow will be designed for 150% of inflow capacity, and routed to the floor, which will be sloped to a sump or trench.
- .4 The FRP tank agitators (if any) shall be preferably supported from separate steelwork above the tanks, thus limiting the static and dynamic loads on the tank walls.
- .5 Where applicable, tanks shall be fitted with lifting lugs at suitable positions to ensure a level lift. Each individual lug shall be designed to support the total tank weight and stiffeners shall be added to ensure that no deformation of the tank occurs during installation.

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3.0 PROCESS DISTRIBUTION SYSTEMS

3.1 COMPRESSED AIR SYSTEM

- .1 Compressed air system shall be designed considering maximum operational flexibility, good efficiency over a wide range of operating conditions, low maintenance and lifecycle cost with highest availability.
- .2 Three separate compressed air system shall be provided for:
 - Mill building compressed air system to provide both plant and instrument air; complete with air receivers and air dryer. This system will also provide compressed air for the underground mine operations.
 - Crusher building compressed air system for plant and instrument air c/w air receiver and air dryer. This shall provide compressed air for maintenance (tools) and instrumentation.
 - Boiler house compressed air system for plant air c/w air receiver. This system will provide compressed air for soot blowing at the boilers.
- .3 All compressor stations will be indoors.
- .4 The Mill building compressors will supply compressed air to the following areas/equipment:

Area/Equipment	Pressure (kPa)	Air Receiver	Note
Mine area	690	No	
Mills clutches	690	Yes	
Filter presses	690	Yes	Pressure to be confirmed
Mill building	690	Yes	General use
Disc Filter	690	Yes	
Column Cells	690	Yes	
Instrument air	690	Yes	Dry air (separate piping system)

- .5 The following air tools shall be used in the compressed air capacity calculation for the mill building compressed air system:

Tools	Quantity	Air Requirements (Nm ³ /min)	Service Factor	Note
Grinders	5	1.4	10%	
Drills	5	2.5	10%	
Wrenches	6	2.5	10%	
Chipping hammers	1	1	10%	
Paint spray	4	0.5	5%	

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- .6 The crusher building compressor will supply compressed air to the following areas/equipment:

Area/Equipment	Pressure (kPa)	Air Receiver	Note
Instrument air	690	Yes	Dry air

- .7 The following air tools shall be used in the compressed air capacity calculation for the crusher building compressed air system:

Tools	Quantity	Air Requirements	Service Factor	Note
Grinders	5	1.4	10%	
Drills	5	2.5	10%	
Wrenches	6	2.5	10%	
Chipping hammers	1	1	10%	
Paint spray	4	0.5	5%	

- .8 The boiler house compressors will supply compressed air to the following areas/equipment:

Area/Equipment	Pressure (kPa)	Air Receiver	Note
Soot blowing	690	Yes	

- .9 Compressors shall be a packaged skid mounted type, electric motor driven, air cooled screw compressors that provide instrument air, plant air and mining air for the entire facility.
- .10 A safety factor of 30% will be applied to the final air requirements.
- .11 The mill building compressed air system will be designed for “n + 1” units where n is the number of units required to be running continuously to handle the projected continuous operating load.
- .12 No stand by units will be considered for the crusher building and the boiler house compressed air systems.
- .13 Compressors shall be rated considering site conditions and elevation as specified in “02 10 00 – Site Conditions and Equipment Standards”. Air compressors shall be derated for the site condition and elevation.
- .14 Instrument air systems for the mill building and crusher building shall have their own air filter, heatless desiccant type air dryer for instrument air supply and air receiver.

3.2 REAGENT SYSTEMS

- .1 Reagent system consists of the following units:

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- SIPX system, in drums with 14 days of storage
- Copper sulphate system, in 1000 kg tote solid
- Sodium Sulphite System
- Zinc sulphate system, in 25 kg bags
- Bulk hydrated lime system (Quick Lime)
- Flocculant system (Magnafloc 10)
- Aerophine 3418A Collector system, in drums
- MIBC system, in drums

- .2 Reagent systems shall be sized and designed based on the Process Design Criteria and flow diagrams.
- .3 All reagent packages equipment will be specified individually and form part of different packages, such as tank package, mixer package and metering pump package.
- .4 Reagent systems with common non toxic and non hazardous properties will each have a separate containment area. Possible spills for such reagents will be collected in each sump individually.
- .5 Reagent systems with toxic or hazardous or specific properties will have dedicated containment areas. Possible spills for such reagents will be collected separately.
- .6 A minimum of two weeks of total reagent supply will be stored at site.
- .7 Reagent delivery and handling will be as per Process Design Criteria.

3.3 LIME SLAKING SYSTEM

- .1 Lime slaking system will be sized and designed based on the Process Design Criteria and flow diagrams.
- .2 Lime will be delivered in powder.
- .3 Lime slaking system exclusive of the holding tank and pump will be specified as a packaged unit.
- .4 Lime will be delivered by truck in bulk.
- .5 This package shall consist of a transfer system, a silo, a feeder, mixing tank, agitator and circulating pumps as per process flow diagrams.
- .6 Lime for slaking will be measured by timing control at the feeder.
- .7 Lime feed to the process will be by metering pumps.

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3.4 FLOCCULANT SYSTEM

- .1 Flocculant system will be sized and designed based on the Process Design Criteria and flow diagrams.
- .2 Flocculant will be delivered in 25kg bags.
- .3 Flocculant system will be purchased as a vendor package.
- .4 Flocculant will be delivered to site in bags.
- .5 This package shall consist of a bag breaking system, a hopper, a screw feeder, blower, mixing tank and mixer as per process flow diagrams.
- .6 Flocculant feed to the process will be by metering pumps.

3.5 CEMENT SYSTEM

- .1 Cement system will be sized and designed based on the Process Design Criteria and flow diagrams.
- .2 Cement system will be purchased as a package. Suitable for reclaiming cement, delivered to site by truck or 5 tonne jumbo bags.
- .3 This package shall incorporate an emptying system suitable for both truck and jumbo bag deliveries, a 500 tonnes silo, a screw feeder and transfer system. The area layout will further define possible additional requirements for jumbo bags handling and storage.

3.6 FUEL SYSTEM

- .1 Fuel system will be a design, supply and installation package. Supplier shall design supply all necessary equipment including fuel delivery system from the fuel tanker to the storage tanks including pumps (if necessary), dispensers, internal piping and instrumentation on the tank farm and transfer system. Inter connection piping shall be recommended but excluded.
- .2 Three types of fuel shall be used as follows:
 - Diesel fuel oil for diesel generator sets, boilers and surface vehicles
 - Diesel fuel for underground mine mobile fleet (low sulphur)
 - Gasoline for light vehicles
- .3 Diesel fuel oil shall be Arctic type suitable for the climatic conditions.

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.4 Fuel delivery shall be by Fuel tanker. Fuel tanker size and fuel delivery frequency shall be as per supplier's recommendations.

.5 Fuel tank(s) capacity shall be sized based on storage duration as specified below:

Consumer	Fuel type	Storage Required (days)	Total Storage (m ³)
Diesel generators, surface fleet	Diesel fuel	14	840
Mine trucks	Diesel fuel (low sulphur)	14	200
Gasoline vehicles	Gasoline	14	2.5

.6 Fuel tank(s) shall be aboveground, single wall, vertical or horizontal. Supplier to recommend tank type and size. All tanks will be located in a dike area to prevent any possible contamination (environmental permit requirements). Dike area's volume shall meet all necessary applicable codes requirements and at minimum shall be large enough to contain 110% of the largest tank volume.

.7 Feed to the diesel generator sets will be via day tanks supplied by diesel generator units.

.8 Fuel filling dispensing stations shall have spill containment pads.

4.0 WATER AND SOLUTION PUMP SYSTEM

4.1 WATER AND SOLUTION PUMP

.1 Pump design flow rates will be operating flowrates as specified in the Process Flow Diagrams multiplied by a process variation factor of 1.2.

.2 System friction head losses shall be calculated using the Darcy or Hazen and Williams formulae.

.3 The rated impeller size shall not exceed 90% of the maximum impeller size and not less than 110% of the minimum impeller size.

.4 Pump TDH will be calculated based on the design flow rates (excluding the froth factor). The design factor for TDH will be 20% on friction loss or 1.1X of TDH, which ever is greater.

.5 Where possible the operating point on the head-capacity curve shall be close to, or just to the left of, the best efficiency point shown on the pump performance curve.

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- .6 Particular attention shall be paid to the NPSH requirement. Available NPSH shall exceed required NPSH by a minimum of 10% or 1 m, whichever is greater.
- .7 Open type impellers are preferred whenever entrained air is likely.
- .8 A 20% contingency will normally be added to calculated friction heads.

4.2 POTABLE WATER SYSTEM (BY OTHERS)

- .1 Potable water system will be design as per the Process Design Criteria and flow diagrams.
- .2 Well water will be pumped to potable water treatment package and treated water stored in a Potable water storage tank. Potable water is then distributed by potable water distribution pumps.
- .3 Pump flow will be as per process design criteria and pump head will be calculated based on the maximum pressure requirements at the farthest consumer.

4.3 RECLAIM WATER SYSTEM

- .1 Reclaim water system will be design as per the Process Design Criteria and flow diagrams.
- .2 Reclaim water from the Tailing Ponds and Underground Mine Water Settling pond will be collected in the Reclaim Water tank. Water will be distributed by Reclaim Water pumps.
- .3 The Reclaim Water Pumps flow will be as per process design criteria and pump head will be calculated based on the maximum pressure requirements by the farthest consumer.
- .4 The Reclaim water pumping system and related piping design shall consider the requirement for ensuring the system operating integrity for the climatic condition.

4.4 FRESH WATER SYSTEM

- .1 Fresh water system will be designed as per the Process Design Criteria and flow diagrams.
- .2 Fresh water from the mine dewatering lines will be collected in the Fresh Water Pond.
- .3 Collected water in the Fresh Water Pond will be transferred to the fresh water tank by Fresh water pond pumping system. Water from this tank will be distributed by the fresh water pump and distribution system.
- .4 Pump flow will be as per process design criteria and pump head will be calculated based on the maximum pressure requirements by the farthest consumer.

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4.5 GLAND WATER SYSTEM

- .1 Gland water flow requirements will be as per the Process Design Criteria and flow diagrams.
- .2 Gland water pressure (P) for each pump will be calculated as follows:
 - $P = \text{Suction pressure} + 0.25 \times (\text{Discharge pressure} - \text{suction pressure}) + 100 \text{ kPa}$
- .3 Gland water will be distributed by the gland water pumps from the fresh water tank. For high pressure gland water requirements a separate high pressure pump will be provided.
- .4 Pump flow will be as per process design criteria and pump head will be calculated based on the maximum pressure requirements by the gland of the farthest pump.

4.6 MINE WATER SYSTEM

- .1 Mine water system will be as per the Process Design Criteria and flow diagrams.
- .2 Mine contact water will be collected in the underground mine water settling ponds No. 1 and 2. The collected water will be transferred to underground for mining purposes, to the reclaim water tank and also for distribution to hose stations in the mill building.
- .3 Pump flow will be as per Process Design Criteria and pump head will be calculated based on the maximum pressure requirements at the end point.

4.7 FIRE WATER SYSTEM

- .1 Fire water system will be as per The Fire Protection Design Criteria.
- .2 Fire water tank will be fed by the well water pumps. Fire water will be transferred into the distribution system by fire pumps. Pumps type and quantity will be as per Fire Protection Design Criteria.
- .3 A jockey pump will keep the fire water ring under pressure.
- .4 Pump flow will be as per Fire Protection Design Criteria and pump head will be calculated based on the maximum pressure requirements by the farthest hydrant/user.
- .5 Fire water tank and fire pumps for the camp will be by others. Tie in point on the tank will be provided to connect to the fire pumps for industrial area.

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5.0 WATER AND SLURRY PUMP SYSTEM

5.1 SLURRY PUMPS

- .1 Pump design flow rates will be operating flowrates as specified in the Process Flow Diagrams multiplied by a process variation factor of 1.1 and a mechanical flow factor to compensate impeller wear equal to 1.05 to 1.1.
- .2 The rated impeller size shall not exceed 90% of the maximum impeller size and not less than 110% of the minimum impeller size.
- .3 Pump TDH will be calculated based on the design flow rates (excluding the froth factor). The design factor for TDH will be 20% on friction loss or 1.1X of TDH, which ever is greater.
- .4 When pumping slurries, head losses and pump hydraulic efficiencies shall be adjusted where appropriate to reflect the "solids effect" of the slurry. The pump supplier shall confirm the head and efficiency de-rating factors used to calculate pump speed and brake power (kW).
- .5 When pumping abrasive slurries, impeller tip speeds shall preferably not exceed 19 m/s for rubber lined impellers and 25 m/s for hard metal impellers.
- .6 Where possible the operating point on the head-capacity curve shall be close to, or just to the left of, the best efficiency point shown on the pump performance curve.
- .7 Previous experience of pumping similar slurries shall be employed to specify the type of material to be used for the impellers and casings. Supplier recommendation shall also be requested.
- .8 Particular attention shall be paid to the NPSH requirement. Available NPSH shall exceed required NPSH by a minimum of 10% or 1 m, whichever is greater.
- .9 Open type impellers are preferred whenever entrained air is likely.
- .10 Froth factor will applied to pump flow rates as necessary.
- .11 The froth factor is a multiplier that increases the process design capacity to allow for the increased passing volume caused by the gas in the froth. The factored volume usually causes the pump to be at least one pipe size larger than would normally be selected. Depending on the manufacturer and the application, the factor applied will vary; typical values are 1.5 to 4. Froth factor for each pump will be applied as necessary. Froth factors value will be shown in pumps schedule as per process requirements.

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6.0 MATERIAL HANDLING

6.1 CONVEYORS

- .1 Design factor shall be 1.2.
- .2 The conveyors shall operate at fixed speed.
- .3 Maximum speed of conveyors shall not exceed 1.5 m/s.
- .4 Maximum angle of incline at all loading zones shall be limited to seven (7) degrees.
- .5 Maximum incline of rock and tailing conveyor shall not exceed fifteen (15) degrees.
- .6 Conveyors shall be selected for the design capacity tonnage as shown in Data Sheets.
- .7 Belt sag on carry side shall not exceed 2%.
- .8 Belt sag on the return side of the belt shall not exceed 3%.
- .9 All belt transition distances at the tail pulley loading zone shall be “full trough” design, and the length shall be according to CEMA’s latest edition for specific trough angle.
- .10 All belt transition distances at the discharge point shall be “half trough” design, and the length shall be according to CEMA’s latest edition for specific trough angle.
- .11 All conveyors shall be designed in accordance with the most current issue of the Conveyor Equipment Manufacturer’s Association (CEMA) manual.
- .12 Snub pulleys or other measures shall be utilized to ensure a positive traction of the driven pulley to ensure no belt slippage. Any modulus operandi with the exception of the snub pulley is subject to approval by the Owner's Representative.
- .13 Conveyor size optimization shall be given high priority.
- .14 Each conveyor shall have one primary and one secondary belt cleaner, and single mining duty V or Diagonal Plow.
- .15 Tracking of the belt shall be supported by Tru-Trainers, no substitution.
- .16 Impact absorbing media at any impact loading zone shall be impact cradles (beds).
- .17 Belt support at non-impact areas shall be provided by means of support cradles (beds).
- .18 Minimum maintenance clearances shall be as per “02 10 00 – Site Conditions and Equipment Standards”.

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- .19 All skirting shall be self adjusting/tensioning type that follows belt undulations, keep positive contact, and comes in contact with the belt at trough angle– 20 degrees. The rubber shall be wear resistant type.

6.2 BELTING

- .1 Crushing Conveyors and the Belt Feeders shall have RMA – 1 or better impact-rip-tear resistant grade of rubber covers.
- .2 Process conveyors shall have RMA – 2 grade of rubber covers.
- .3 Fabric for crushing conveyors shall have high impact-rip-tear resistance. Straight–warp such as in US-Flex type of belts is recommended.
- .4 Grade of rubber covers shall be selected in compliance with climatic conditions defined in “02 10 00 – Site Conditions and Equipment Standards”.

6.3 CHUTES AND PLATEWORK

- .1 Chute shall be designed according to “02 10 00 – Site Conditions and Equipment Standards”, and 05 00 00 – “Structural Design Criteria”.
- .2 All chutes and skirtboards shall be designed to withstand plugged conditions, impact and wear without deformation or failure of the walls and/or structural steel members or platework, and to loosen the bonding between wear liners and the plates.
- .3 Minimum cross sectional area of the chute shall be not less than four (4) times the cross sectional area of the load operating at full capacity.
- .4 Chutes shall be equipped with inspection doors placed on the “clean” side of the chute.
- .5 Chutes shall be designed so the trajectory shall strike material contained in the rock boxes or where unavoidable liner plates.
- .6 The minimum valley angle in chutes shall be 60 degrees from the horizontal where achievable.
- .7 Material free fall height shall be limited where practical by use of rock boxes or accelerating chutes where applicable.
- .8 Wherever possible, chute exits shall be designed to transfer the momentum of the material in the direction of flow of the downstream equipment.
- .9 Where required, multiple material diversions of flow paths (multiple rock boxes) shall be put into service.

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- .10 "Accelerating" chute design shall be employed for chutes transferring material from slow moving belts, feeders onto much faster moving belt conveyors.
- .11 The Mass Flow chute design shall be implemented for bin discharge where possible, in order to improve material evacuation.
- .12 Chute design shall allow sufficient space for installation of a secondary cleaner within the chute where possible.
- .13 Chute back walls beyond the secondary cleaner shall have a minimum angle of 70 degrees.
- .14 Any non impact wall that shall have contact with removed carryback shall be lined with low friction material (UHMW) or similar liner.
- .15 Chute sections shall be flanged for field bolting and shall be made dust- tight by sealing the joints with rubber or felt gaskets. Flange connections shall be straight and welds shall be continuous.

END OF DESIGN CRITERIA

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Revision No.	Date Revised	Engineering Specification	Signatures				
			Prepared By	Checked By	Approved By	Project Manager	Client
A	21 Apr 2009	Issued for Internal Review					
B	09 July 2009	Issued for Information					

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1.0 SCOPE

This Piping Design Criteria outlines the basis for the overall design of the piping systems, and the general requirements of the piping components and drawings.

All measurements (lengths, flows, pressures, temperatures) will be expressed in units of the metric system.

The base design codes shall be CSA Standard B51-2003.

2.0 CODES AND STANDARDS

2.1 REQUIREMENTS

The components of piping systems will comply, as a minimum and as appropriate, with the following standards. In the event of a conflict between codes and the technical specifications, the requirements of the more stringent shall govern:

ANSI	American National Standards Institute
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
ASME B31.1	Code for pressure Piping "Power Piping"
ASTM B31.3	Code for "Chemical Plant and Petroleum Refinery Piping"
ASTM	American Society for Testing and Materials
AWWA	American Water Works Associations
AWS	American Welding Society
CSA	Canadian Standards Association
HIS	Hydraulic Institute Standards
NBC	National Building Code of Canada
NFC	National Fire Code
NFPA	National Fire Protection Association
PFI	Pipe Fabricators Institute
PPI	Plastic Pipe Institute
ULC/FM	Underwriters Laboratories Canada/Factory Mutual

2.2 OTHER REQUIREMENTS

Pressure piping systems such as steam, condensate, glycol, etc. are subject to design registration and shall be submitted for approval by the appropriate authorities.

All drawings associated with fire protection shall be submitted to the local Fire Marshal and to the insurance underwriter for approval (not required for the DFS).

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3.0 GENERAL DESIGN DEFINITIONS

3.1 DESIGN PRESSURE

- .1 Design pressure shall be the most severe condition of internal or external pressure under normal operating conditions.
- .2 Normal operating condition is the most severe condition of pressure and temperature expected to exist when continuous operating conditions are in progress.
- .3 Normal operating conditions do not include pipe pressure testing and abnormal system operation.
- .4 Design pressure for unrelieved piping on pumped systems shall be the pump shut-off discharge pressure.
- .5 Design pressure for vacuum piping shall be full vacuum pressure.
- .6 Minimum design pressure shall be 1034 kPa.
- .7 Where two piping systems of different design pressures are connected, the piping system with the higher pressure will extend to the first block valve on the lower system.

3.2 DESIGN TEMPERATURE

- .1 Design temperature will be the maximum temperature under normal operating conditions as defined above.
- .2 Design temperature will be consistent throughout the complete system.

4.0 PIPING MATERIALS AND METHODS

4.1 GENERAL

- .1 Pipes, pipe components and valves will be classified primarily in accordance with material of pipe and components and each class group will be given a secondary classification based on service performed and/or pressure/temperature ratings. For reference see Piping Materials and Methods Specification 40 05 00.

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.2 The specification for the materials includes the following:

- Piping Specification General
- Piping Materials Class Index
- Pipe Support Specification Index
- Line List
- Valve List
- Tie-in list
- Pipe Materials Specifications
- Valve Specifications
- Rubber Lining
- Thermal Insulation
- Painting Labels & Colours
- Gasket Specification

5.0 PIPING DESIGN

5.1 LINE SIZING CRITERIA

Table 1.0 Line Sizes

Description		Velocity m/s
Slurries General	pump discharge	1.2 - 2.1
	gravity flow	0.5 - 1
Process Solutions Lines	pump discharge	2.0 - 2.5
	gravity flow	2.0 - 3.0
Air		15.0 - 30.0
Steam		30.0 - 45.0
Water	pump discharge	2.0 - 3.0
	gravity flow	2.0 - 3.0
Flocculant	pump discharge	0.25 - 0.5
Fuel Oil	pump discharge	1.0
Reagent	pump discharge	0.7

5.2 LINE SIZING

- .1 All piping sizes will be expressed in nominal pipe size using Metric Units.
- .2 Piping shall be sized for flowsheet design rated flow conditions. Provision for future increase in capacity shall be made only when specifically requested by client.

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- .3 Nominal Pipe size diameters 125mm, 175mm, 225mm, 325mm, 550mm, 800mm, shall not be used, except where required to connect to equipment. Conversion to standard piping shall be as near the equipment as possible.
- .4 Minimum pipe size run shall be 25mm except for connections to equipment, instrument services, lube oil piping and auxiliary services such as pump and x-ray tube cooling.
- .5 In pipe utilidors the minimum pipe size shall be 50mm
- .6 General pipe sizing will be based on:
 - Historic data for similar projects
 - Economics
 - Available pressure drop and power consumption
 - Velocity limitations
- .7 Pump suction lines will be at least one size larger than pump suction flange size.
- .8 Gravity piping shall be sized in general to provide maximum design flow at 50 – 60% full pipe.
- .9 Control valve bypasses on slurry piping shall be line size and on solution, air, and steam piping shall be control valve size.

5.3 PIPE SLOPES

Table 2.0 Pipe Slopes

Description	Nominal Size Fraction (mm)	Percent Solids (%)	Minimum Slope (angle)
Slurries	-	-	1 – 2
Solutions	-	-	0.5 – 1
Air and Vents	-	-	0.5 - 1
Steam and Condensate	-	-	0.5 – 1
Water	-	-	0.5 - 1

5.4 LAUNDERS

- .1 Launders are defined as an open channel for carrying suspended solids in water under gravity flow conditions. Although launder sizes are calculated, specified and

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verified by the Process and Mechanical Engineering groups, Launder design generally conform to the following guidelines:

- The quality that will flow in as open channel is dependent on several factors, which are the cross-sectional area of the flow stream, the slope of the launders, the roughness condition of the sides and bottom of the launder and the shape of the launder as well as the flow characteristics of the pulp itself. The preferred shape of the launder is the semi-circular bottom-type, where it is possible to use. This particular shape reduces the hydraulic radius, thus allowing for a lesser slope and still maintaining a required velocity. Flat bottom launders may be used where connections to distributors are rectangular in shape. Flat bottom launders may also be used where gravity flow pipelines are collected by a common launder.
- For each launder, minimum geometric parameters to ensure adequate flow, including slopes and sizes, shall be determined by appropriate calculation methods – the Colebrook White Formula, Manning formula or an approved equivalent.
- Slurry launders will have a minimum total depth of four times the flow depth.

5.5 SLURRY PIPING

- .1 All piping shall be routed as direct as possible to its destination minimizing the use of bends, and decreasing the chance of abrasion and plugging.
- .2 All piping shall be routed above ground whenever possible.
- .3 Erosive slurry service piping shall be rubber lined with natural rubber. Rubber lining thickness shall be minimum 6mm for pipes up to 200mm in diameter and 12mm for pipes larger than 200mm in diameter. For full details of rubber lining refer to Rubber Lining Specification 40 05 08.
- .4 Pipe bends shall have a minimum radius of three pipe diameters (3D) for pipe size 76mm and above. Five pipe diameters (5D) for pipe sizes 50mm and below unless layout constraints determine otherwise. Where necessary, material conducting hose will be used in place of bends.
- .5 Piping will be jointed to allow for rotating of spools. Rotating will extend the life of the pipe spools by allowing even distribution of wear due to abrasion.
- .6 Drain and flushing connections shall be provided on all pump suction and be of the quick disconnect type. For header sizes 100 mm and smaller ball type block valves shall be used for both drainage and flushing. For header sizes 200 mm and above Knifegate type valves shall be used for drainage and Butterfly valves shall be used

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for flushing. Flushing lines 50 mm and larger will be hard piped. All piping will be self draining with high point vents and low point drains located to facilitate maintenance and hydro testing.

- .7 Block valves shall be knifegate type fitted with replaceable natural gum rubber sleeves which allow full port flow and eliminate seat cavities preventing packing of the sleeve with solids. On smaller line sizes full port fully enclosed body style replaceable natural gum rubber sleeve pinch valves or diaphragm shall be provided.
- .8 Pump suction lines shall be minimum length and the use of bends or valves will be kept to a minimum. Suction piping shall be sloped down from the pumpbox to the pump suction inlet and have fabrication reducers with 10° included angle wherever possible.
- .9 High abrasion slurries shall be Carbon Steel extra heavy wall pipe butt welded and flanged, or Standard wall rubber lined pipe.
- .10 Low abrasion slurries shall be Standard wall pipe butt welded and flanged.
- .11 Slurry lines outside of buildings or heated areas shall be either Carbon Steel extra heavy wall pipe, Carbon Steel Standard wall rubber lined, Standard wall pipe, or HDPE flanged pipe and fittings. Wall thickness to suit pressure rating of system.
- .12 Piping at pumps shall be arranged to avoid interference with access to pumps, the surrounding maintenance areas, and pull spaces during maintenance. Removable spool pieces to be provided where required (e.g. pump suction and discharges) to permit maintenance with a minimum of piping disassembly.
- .13 Suitable supports and anchors shall be provided for piping at pumps such that excessive weight and stresses will not be transmitted to the pump casings. Temporary start-up strainers will be provided on non-slurry pump suctions.
- .14 The number and location of sampling connections shall be provided as per P&ID. All sampling points shall have an isolating or sampling valve.

5.6 GRAVITY FLOW PIPELINES

- .1 Although gravity flow pipeline sizes and velocities are calculated, specified and verified by the Process and Mechanical Engineering groups, gravity flow pipelines generally conform to the following guidelines:

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- .2 Pipelines carrying slurries will be designed to flow from 3% to 75% full, however they are generally sized 1/3 to 2/3 full.
- .3 Slopes shall be identified on P&ID's with the minimum slope.
- .4 Gravity flow pipeline slopes and sizes shall be determined by appropriate calculation methods – the Colebrook White Formula, Manning formula or an approved equivalent.

5.7 SOLUTION PIPING

- .1 Pressurized solution lines shall be sized as noted in Table 1.0. Exceptions shall be made for high viscosity fluids, low pressure drop requirements, and long lines where lower velocity would be used to optimize system and operating cost.
- .2 All piping will be self draining. Drain and vent connections shall be provided at high and low points of the piping system to facilitate maintenance and hydro testing.
- .3 Generally solution piping shall be Standard wall Carbon Steel pipe and butt welded or grooved fittings. Pipe fittings 50mm and below shall be 3000 # socket weld or threaded. If solution is corrosive, use Stainless Steel or Alloy specifications.
- .4 Pockets and dead ends shall be avoided.

5.8 WATER PIPING

- .1 Water system primary headers shall be “looped” so that all branch lines are fed from two directions.
- .2 Suitable allowance shall be made for future demands on the system by designing pipe racks to have a 10% additional capacity to accommodate future loads.
- .3 Generally water piping shall be Standard wall Carbon Steel pipe with butt weld or grooved fittings. Pipe fittings 50mm and below shall be 3000# threaded. If water is corrosive, use Stainless or Alloy Steel.
- .4 Block valves shall be butterfly type for 65mm and above and ball type for 50mm and below.
- .5 Combinations safety shower/eyewash stations are required adjacent to all locations where the release of harmful fluids, airborne dust, or non-toxic particles occurs.

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5.9 AIR PIPING

- .1 Compressed air piping shall be sized so that the pressure drop along the line shall not exceed 10% of the initial line pressure, with full capacity being delivered at the end of the line. Air piping shall be looped.
- .2 All take-offs shall be from the top of the header for horizontal piping.
- .3 All instrument air branch piping shall be run to within 6m of the instrument and terminated with a valve. Where clusters of instruments occur a single centrally located valved connection shall be provided.
- .4 All plant air piping shall be Standard wall Carbon Steel pipe with butt weld or grooved fittings. Pipe fittings 50mm and below shall be 3000# threaded.
- .5 All instrument air piping shall be Standard wall Carbon Steel Galvanised pipe with threaded or grooved fittings. Fittings 50mm and below shall be 150# Malleable iron threaded. Run out pipe and fittings from branch block valve shall be Stainless Steel tube and fittings.

5.10 UTILITY PIPING

- .1 Utility stations shall supply plant air and water at convenient locations on all floors such that all parts of the floor can be reached with a 15m flexible hose.
- .2 All air and utility stations shall be 25mm, equipped with 25mm ball valve and quick disconnect type hose connections.
- .3 Water utility station shall be 1 ½ mm diameter.
- .4 Utility headers shall be located on the top deck of pipeways whenever possible. The minimum size of process and utility headers on pipeways shall be 50mm.

5.11 PERSONNEL PROTECTION

- .1 Eye wash/emergency showers shall be provided in areas where operating personnel are subject to hazardous sprays or spills.
- .2 Pipes carrying hazardous chemicals shall have dual containment and safety shields at all flanged, mechanical joints and valves to protect personnel.

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- .3 Acid, Lime, or other pipe lines carrying hazardous liquids shall be located close to grade level whenever possible. These lines shall be identified clearly with signs to avoid unnecessary risks.

5.12 INSULATION AND HEAT TRACING

- .1 Personnel protection shall be provided on uninsulated lines operating above 60°C where they constitute a hazard to the operating personnel during normal operating routine.
- .2 Piping subject to freezing weather shall have insulation and heat tracing, unless otherwise authorized by client, see Table 3.0.
- .3 Insulation shall be used on heated lines to minimize heat losses, see Table 3.0
- .4 Cold water lines in concealed spaces shall be insulated with anti-sweat type insulation.
- .5 For details on insulation see Piping Thermal Insulation Specification 40 05 09.

Table 3.0 Insulation & Heat Tracing Requirement

SERVICE	HEAT TRACING REQUIREMENTS	EMERGENCY HEAT TRACING REQUIREMENTS	INSULATION	ALTERNATIVE TO EMERGENCY HEAT TRACE
Reclaim Water	No	Yes, around pumps up to drain valve	Yes with heat tracing channel in case of retrofit	No
Fresh Water	No - buried	Yes, around pumps and any exposed pipe	Yes - exposed pipe	Slope line & provide emergency drain valves at low points of vertical lines
Potable Water	No - buried	Yes, around pumps and any exposed pipe	Yes - exposed pipe	Slope line & provide emergency drain valves at low points of vertical lines
Mine Contact Water	No - inside	No	Yes - exposed pipe	Slope line & provide emergency drain valves at low point of vertical lines
Well water (?)	No - buried	Yes - around pumps & fire water tank/WTP	Yes - exposed pipe	Slope line & provide emergency drain valves at low point of vertical

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				line
Fire Water – N/R	No - buried	Yes - around tank and pumps - supplied by vendor?	Yes - exposed pipe	No
Sewage (?)	No- buried	Yes, around pumps and any exposed pipe	Yes - exposed pipe	No
Glycol – N/R	No	No	Yes	N/A
Air to Mine	No	No	Yes	N/A
Tailings	No - self draining	No - but emergency power for flush connection in mill building	Yes	N/A
Fuel	Hold depending on fuel type	Hold depending on fuel type	Hold depending on fuel type	No
Propane	No	No	No	N/A
STP Collection Sump Pump to Settling Pond	No- buried	Yes, around pumps and any exposed pipe	Yes - exposed pipe	Slope line & provide emergency drain valves at low point of vertical line
Crushing Building Sump Pump to Settling Pond	No- buried	Yes, around pumps and any exposed pipe	Yes - exposed pipe	Slope line & provide emergency drain valves at low point of vertical line
Settling Pond to Contact Water Pond	No - self draining line	No	No	N/A
Tailings Seepage Pond to Tailings Pond	No - self draining line	No	No	N/A
STP Collection Sump Pump to Fresh Water Pond	No- buried	Yes, around pumps and any exposed pipe	Yes - exposed pipe	Slope line & provide emergency drain valves at low point of vertical line

6.0 GENERAL PIPING LAYOUT

6.1 INSTALLATION

- .1 Piping within buildings shall generally be installed in 6m (random) lengths, unless on a pipe rack or trestle where 12m lengths (double random, maximum) may be utilized. In highly congested areas or areas where maintaining piping will be difficult, 3m lengths may be used.
- .2 Flange bolt holes shall straddle centre lines unless otherwise indicated on the drawings.

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- .3 Headroom clearance for piping in the aisles is 5m. Clearance of 2.1m is provided over operating platforms. Minimum clearance of 5m for Pipe Rack to road is required.
- .4 All slurry and utility valves shall be accessible from floors and operating platforms. Spindle extensions and chain wheel operators are only to be installed where space constants limit normal access.
- .5 Piping shall be routed in piping corridors and grouped together. The arrangement of the piping should allow operations and maintenance to be carried out with minimum effort.
- .6 Piping systems shall be designed to allow for expansion and contraction. Expansion effects due to exposure to direct sunlight shall also be considered.
- .7 Piping shall be arranged to maximize inherent flexibility. Expansion joints shall only be used when it is absolutely necessary.
- .8 Piping shall not be routed through electrical rooms.
- .9 All walls and floor penetrations shall be sleeved.
- .10 All control valves shall have adequate clearance for disassembly without disturbing other equipment or piping.
- .11 Valves shall be oriented so that stems and hand wheels do not project into platform or passageway areas. However, valves should be situated so that they are readily accessible.
- .12 Vents and drain connections shall be provided at all high and low points on tanks. Drains shall never be less than 18mm in diameter. Vents consisting of plugged bosses shall be provided at the highpoints of all piping for hydrostatic testing. The plugs should be sealed after the hydrostatic test.
- .13 All pipe systems and equipment that require draining shall be provided with Valve connections.
- .14 After installation, all piping shall be cleaned by flushing with water until free of dirt, grit, welding slag, and foreign materials.
- .15 All services requiring metering will have minimum upstream and downstream clearances based on Instrumentation manufacturers recommendations.

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- .16 In safety and environmental critical applications where absolute and verifiable shut off is required the use of a double block and bleed shall be installed.

6.2 PIPE IDENTIFICATION

- .1 Pipes shall be marked by a system of identification set out in the following standards:

- ANSI Z53.1-1979, "Safety Colour Code for Marking Physical Hazards",
- ANSI A13.1-1981 (R1985), Scheme for the Identification of Piping Systems.

- .2 Pipes shall be labelled as to contents and direction of flow as follows:

- Hazard shall be identified using the following colour codes:

Table 4.0 Classification of Hazards of Materials and Designation of colours

Classification	Background Colour	Colour of Letters for Legend
Materials of Inherently Hazardous		
Flammable or Explosive	Yellow	Black
Chemically Active or Toxic	Yellow	Black
Extreme Temperatures or Pressures	Yellow	Black
Radioactive	Yellow	Black
Materials of Inherently Low Hazardous		
Liquid or Liquid Mixture	Green	White
Gas or Gaseous Mixture	Blue	White
Fire Quenching Hazard		
Water, Foam, Carbon Dioxide, Halon etc.	Red	White

Table 5.0 Size of Legend Letters and Banding

Outside Diameter of Pipe or Covering	Length of Colour Background	Size of Letters	Width of Banding Tape
mm	mm	mm	mm
10 to 32	200	13	25
38 to 51	200	19	25
64 to 150	300	32	50
200 to 250	600	64	100
over 250	800	80	100

- .3 Labelling and Colour may be either:

Paint and stencil: Pipe is painted as per hazard colour code then text and flow direction arrows are stencilled in.

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Adhesive labels: Hazard colour Code adhesive label with flow direction arrows, banding tape applied either side of label.

.4 Location of text and arrows:

- maximum of 12 m centres on straight pipe;
- at all valves;
- at all changes in direction;
- at fittings for hose or other terminal connection;
- at 1.5 m above floor on vertical pipes;
- at 1.5 m from wall where pipe passes through the wall;
- at 1.5 m from equipment to which pipe is connected.;

When the contents of a container or pipe is a controlled product, there shall also be a WHMIS product identification label.

7.0 STRESS ANALYSIS

- .1 Piping stress analysis shall be performed on lines with thermal expansion or lines where weight or fluid dynamics may cause excessive stresses.
- .2 Piping stress analysis shall satisfy the requirements of applicable CSA and ANSI B31.1 codes.
- .3 Piping stress analysis shall be done using computer program, manual calculation or calculation tables from the "Piping Guide" published by Syntek Inc.
- .4 For pipe supporting guidelines, flexibility and pipe stress, refer to Piping Materials and Methods 40 05 02.
- .5 The stress analysis of lines shall be carried out using Caesar II.

8.0 VALVES

- .1 Piping will be responsible for all manual valves.
- .2 On/Off activated valves (XV's), control valves and PSV's.

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- This package falls outside the piping scope. The Instrument and Process Engineering group shall be responsible for carrying out the control valve sizing. The Instrument Engineering group shall furnish piping with information required for piping hook-up.
- .3 Valves requiring attention, observation or adjustment during normal plant operation shall be located within reach from grade, platform or permanent ladder or stairway.
- .4 Operating valves shall be chain-operated when the bottom of handwheel is over 2m above the high point of grade or operating platform and is not accessible from permanent ladder or stairway.
- .5 The centreline of handwheel or handles on block valves used for shutdown only, located less than 4.5m above the high point of finish surface and those located in pipeways, may be accessible by portable ladder.
- .6 The centreline of handwheel or handles on block valves used for shutdown only, located over 4.5m above the high point of finish surface, except those located in pipeways, shall be operable from permanent ladder or platform.
- .7 Valve handwheels, handles and stems shall be kept out of operating aisles. Where this is not practical, the valve shall be elevated to 2m clear from the high point of operating surface to bottom of handwheel.

END OF SECTION

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1.0 INTRODUCTION

- .1 The following outlines the scope of work; applicable codes, standards and regulations, HVAC design parameters; description of Heating Ventilation, Fire Protection and plumbing and sanitary drainage design parameters.

2.0 SCOPE

- .1 Building services shall be provided in the following areas:
 - Mill Building

3.0 CODES, STANDARDS AND REGULATIONS

- National Building Code of Canada (NBC)
- Canadian Plumbing Code (CPC)
- National Fire Code of Canada (NFC)
- American National Standards Institute (ANSI)
- American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
- National Fire Protection Association (NFPA)
- Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
- Associated Air Balance Council (AABC)
- National Environmental Balancing Bureau (NEBB)
- Underwriters Laboratories of Canada Standards (UL, ULC)
- Hydronics Institute (HI)
- Canadian Electrical Code (CEC)
- Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI)
- Canadian Standards Association (CSA)
- Occupational Safety and Health Act (OSHA)
- National Institute for Occupational Safety and Health (NIOSH)
- Instrument Society of America (ISA)
- American Conference of Governmental Industrial Hygienists (ACGIH)
- Air Movement and Control Association (AMCA)
- American Society for Testing and Materials (ASTM)
- Factory Mutual (FM)

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- Mine Safety Act

4.0 DESIGN CRITERIA

4.1 AMBIENT DESIGN CONDITIONS

- .1 The following ambient design temperature data has been provided by Meteorological Service Canada.

Ambient Design Temperatures: Winter 1%: minus 46°C
July (summer 2%), dry bulb +25°C coincidental wet bulb +16°C

Ground elevation: 850 metres above mean sea level

4.2 INTERNAL CONDITIONS

The mill building heating and ventilation systems shall be designed to maintain temperatures above freezing in the mill building, at the winter design outdoor air temperature, and no greater than 32°C when it is 25°C outside

The laboratory building heating and ventilation systems shall be designed to maintain temperatures above 20°C in the building, at the winter design outdoor air temperature, and no greater than +32°C when it is +25°C outside

The ventilation rate through the laboratory area will be governed by the number of exhaust hoods and fume hoods provided, however, in no case shall the rate shall be less than 15 air changes per hour. Canopy hoods shall have a minimum face velocity of 0.76 m/s (150 fpm). Fume hoods shall be exhausted at a rate recommended by the manufacturer.

The ventilation rate through the mill building shall not be less than one air change per hour in the winter, and not be less than four air changes per hour in summer.

5.0 HEATING AND VENTILATION SYSTEMS

- .1 The mill building will be provided with multiple roof exhaust fans for flexibility of ventilation. During winter one or two fans will be operational and during warmer weather the remaining fans will be used. Make up air for the mill building will enter the building through wall louvers
- .2 Air from the laboratory shall not be recirculated and the air pressure shall be negative with respect to corridors and non-laboratory areas.

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- .3 Mechanical ventilation shall be provided for the toilets, locker rooms, garbage rooms, battery rooms and any rooms that contain toxic or flammable materials. These rooms shall be vented directly to the outside and have a minimum of 10 l/s/m² (2 ft.³/min. per ft.²) exhaust, with make-up air coming from either heated primary air, or air transferred from adjacent areas. No contaminated air shall be recirculated. The point of discharge from all building exhausts shall be at least 1.5 m (5 ft.) from any openable window or door and 1 m (3 ft.) above and 3 m (10 ft.) away from any air intake.
- .4 Make-up air for the laboratory shall be handled through a packaged propane-fired make up air unit. ..
- .5 Free cooling will be utilized in all areas in lieu of air conditioning.
- .6 Propane fired radiant heaters controlled by remote thermostats shall be used to provide perimeter heating in the mill building.
- .7 An exhaust fan in the compressor room will operate on a reverse acting thermostat, to offset the heat gains in this room. The exhaust air will be delivered into the mill building and the make up air will enter the room from the mill building through wall louvres

6.0 FIRE PROTECTION SYSTEMS **(HOLD FOR CODE COMPLIANCE)**

- .1 The fire protection systems shall comply with the following requirements:
 - Operation of any fire protection device, including pressure switches, pull stations, smoke detectors, water flow switches and alarm valves shall be supervised and monitored by a central fire alarm panel, (CFP) which will be located in a room that is occupied 24 hours a day.
 - All detection devices shall be intelligent addressable.
 - Manual pull stations will be provided at exits of all buildings.
 - Detection systems, and manual pull stations shall initiate audible (horns), and visual (strobic), alarms at exits.
 - Each area shall be provided with its own stand alone fire alarm system, and all systems shall be networked to the central fire alarm panel.
 - All like equipment shall be of the same manufacturer.
 - Fire alarm panels shall incorporate batteries and battery charger for battery back up.
 - In addition to requirements of this design criteria, NFPA 13 shall be the design standard for all sprinkler systems. The most stringent requirements shall prevail.

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- In addition to requirements of this design criteria, NFPA 14 shall be the design standard for all standpipe systems. The most stringent requirements shall prevail.
- All automatic sprinkler system control valves, standpipe water supply control valves, and fire water tank isolating valves shall be provided with chains and padlocks.
- All hydraulic equipment and lube oil systems with fluid reservoirs over 378 liters, or a combined total in excess of 378 liters within 6 metres, shall be protected with automatic sprinklers with 71 degrees Celsius heads. Sprinklers shall extend 3 meters beyond the hazard or to the closest solid wall, whichever is closest.
- Mechanical equipment, such as hydraulic units, lube units and conveyors, which are protected by sprinkler systems, shall be equipped with interlocks to automatically shut down the equipment in the event of sprinkler flow.
- UL/ULC approved fire stop systems, with UL/ULC listed and/or FM approved materials, and UL/ULC listed fire/smoke dampers shall be provided wherever fire rated walls or floors are penetrated by piping, cables and ductwork. Combustible insulation or sealants, such as polyurethane foam, will not be accepted.
- All construction material for electrical rooms, including insulation, shall be constructed of 100% non-combustible materials.
- Hand held all-purpose ABC fire extinguishers shall be provided in all buildings for local emergency fire fighting. Fire extinguishers shall be located at spacing as specified by NFPA 10, with additional units being located at each exit door from the area.
- Clean agent hand held fire extinguishers shall be provided in all electrical rooms and control rooms, with spacing in accordance with NFPA 10, plus additional units being located at each exit door from the area.
- Water velocities shall not exceed 6 metres per second in any section of above ground fire protection piping.
- The entire fire protection system shall be designed in accordance with the seismic requirements of NFPA 13 and FM data sheet FM-2-8.
- All fire protection equipment and materials shall be UL/ULC listed and / or FM approved for the intended purpose.
- All buildings and structures in excess of 14 meters in height, or having any dimension in excess of 30 metres, will be provided with wet class 2 standpipe systems with fixed hoses. Hoses shall be located such that all areas at all levels of the buildings, conveyor transfer towers and structures are within reach of a fire hose stream.
- The fire protection systems shall be designed and installed by professionals who are experienced in the proper design, installation and testing of fire protection and fire alarm systems.
- The sprinkler system piping will be hydraulically sized, designed, installed and tested by the "Fire Protection" contractor.
- Dry alarm valves will be located in heated spaces.
- Flow switches for individual, localized sprinkler systems shall include a shut off valve with a chain and a padlock.

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- All sprinkler systems shall include an inspector's test connection, located at the most hydraulically remote part of the system.
- The time interval between activation of a dry sprinkler system and water reaching the most remote head shall not exceed 60 seconds.
- Piping for dry systems shall be constructed of galvanized steel.
- Auxiliary drain valves at all sprinkler system low points will be provided, to allow the complete system to be drained.
- Conveyors shall be provided with alignment switches to shut down the respective conveyor on misalignment.

7.0 PLUMBING AND DRAINAGE

- .1 The plumbing and drainage systems shall comply with the requirements of the National Plumbing Code.
- .2 Sewage from the Mill Building fixtures shall be directed to a holding tank for disposal by a mobile vacuum truck.
- .3 Hot and cold water piping shall be provided with individual shut off valves to all fixtures.
- .4 The minimum pipe size for under-slab piping shall be 75 mm.
- .5 Cleanouts shall be provided to all under-slab piping at 15 metre intervals and at each change of direction.
- .6 Plumbing piping through electrical rooms shall be avoided.
- .7 Stacks, drains and vents shall be sized in accordance with the National Plumbing Code.
- .8 Drains shall slope downward in the direction of flow, a minimum of 1:50 except as permitted in the National Plumbing Code.
- .9 Every plumbing fixture shall bear the CSA label.
- .10 Floor drains shall be deep seal type, with trap primers.
- .11 Water systems shall be protected against back-syphonage and back flow with back flow preventers.

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- .12 Laboratory wastes shall be neutralized in a collection tank, prior to being discharged into a separate drainage system from the sewer piping.
- .13 Cold water piping shall be insulated for condensation control.

END OF DESIGN CRITERIA

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1.0 GENERAL

1.1 SCOPE

- .1 This design document establishes the criteria for structural engineering design and construction of the Bellekeno Project Mill Plant. The specification defines applicable codes and standards, design loads, serviceability and materials of construction.

1.2 REFERENCES

- .1 Design and construction of the mine processing buildings will be in accordance with, but not limited to the following codes and standards. The publications listed below form part of this specification, and shall be used for the purposes listed. Other standards and recommended best practice will be used where applicable.
 - Units of measure will be imperial.
 - Client standard equipment numbering system to be used.
 - Drawing numbers to be obtained from client.
 - National Building Code of Canada 2005.
 - Wardrop drafting standard to be used.
 - Yukon Occupational Health and Safety Act.
 - CAN/CSA S16.1 Limit States Design for Steel Structures.
 - CAN/CSA A23.3-04, Design of Concrete Structures for Buildings.
 - CAN/CSA A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete Design of Concrete Structures for Buildings.
 - Yukon Environment Act.
 - Yukon Employment Standards Act.

1.3 CLIMATIC DATA

- .1 Based on Bellekeno Project Mill Plant Site, UTM Coordinates 7087630 N, 483918 E (Approximately 2 Km west of Keno City in Yukon):
 - Snow Load, S_s (1/50) 2.50 kPa
 - Rain Load, S_r (1/50) 0.10 kPa
 - Hourly Wind Pressure, q (1/50) 0.35 kPa

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2.0 EXECUTION

2.1 DESIGN LOAD DEFINITIONS

.1 General: Loads and forces used for design shall be as defined in NBCC and as specified below:

- **Dead Loads (D):** Vertical loads due to the weight of permanent structural and non-structural components of a building or structure, including empty vessels, piping, ducting, electrical cables and trays and permanent fixtures.
- **Operating Loads (O):** Dead loads plus the weight of any liquids or solids present within the vessels, equipment, or piping during normal operation. This includes unusual conditions such as upset conditions when fluid levels could be higher than normal operating levels.
- **Live Loads (L):** The loads produced by use and occupancy of the structure. They include the weight of all movable loads, including personnel, tools, miscellaneous equipment, movable partitions, cranes, hoists, parts of dismantled equipment and stored material.
- **Snow Loads (S):** Snow loading on roofs or other exposed surfaces including the effects of snow drifts at offsets in roof elevations and obstructions.
- **Wind Loads (W):** Loading on the building cladding and roofing, overall structure and structural components caused by the wind.
- **Earthquake Loads (E):** Rare loads due to earthquake.
- **Impact Loads (I):** Live loads that induce impact on structures.
- **Dynamic Loads (N):** Forces that are caused by vibrating machinery such as screens, crushers, blowers, fans and compressors.
- **Lateral Pressure (H):** Forces caused by pressure of soil, granular materials or liquids contained in tanks or bins.

2.2 DESIGN LOAD FACTORS

- **Dead Loads (D)** 1.25
- **Operating Loads (O)** 1.25
- **Principal Live Loads (L)** 1.5
- **Companion Live Loads (L)** 0.5
- **Principal Snow Loads (S)** 1.5
- **Companion Snow Loads (S)** 0.5

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- Principal Wind Loads (W) 1.4
- Companion Wind Loads (W) 0.4
- Earthquake Loads (E) 1.0
- Impact Loads (I):

Description	Vertical
Monorails and trolley beams	1.25
Pendant or radio operated travelling crane girders	1.25
Supports for light machinery, shaft or motor-driven	1.2
Supports for reciprocating machinery	1.5
Supports for power-driven units	1.5

Note: Loads imposed on structural members subjected to impact forces will be multiplied by the live load factor in addition to being multiplied by the impact load factor.

- Lateral Pressure (H) 1.5

.1 Design of Cranes

- Vertical, transverse and longitudinal impact will not be considered to act concurrently.
- Bridge crane rails will be designed to resist a horizontal force applied perpendicular to the top of the rails equal to 20% of the sum of the capacity of the hoist and the weight of crane trolley. For bridge cranes this force can be equally distributed on each side.
- Bridge crane rails will be designed to resist a longitudinal force applied to the top of the rail equal to 10% of the maximum wheel loads of the crane and force from crane stops.
- Monorails will be designed to resist a horizontal force applied perpendicular to the top of the rails equal to 10% of the capacity of the hoist and the weight of the trolley.

2.3 DESIGN LOADS

- Roof Loads
 - w Dead Load (including steel) 1.3 kPa
 - w Weight of mechanical equipment: indicated on plans
 - w Superimposed dead load (weight of mechanical/electrical ductwork, piping, cable trays, etc.) typical 1.0 kPa
 - w Built-up Snow indicated on plans
 - w Wind Loads determined by building layout in accordance with NBCC
- Wind Loads: Cladding and Structural Components

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- w Reference the NBCC 2005 Structural Commentary I for loading.
- Earthquake Loads:
 - w Site Class D
 - w Seismic Importance Factor, I_E 1.0

The following seismic data has been interpolated using the 2005 National Building Code Seismic Hazard Calculation:

2% probability of exceedance in 50 years:

Sa(0.2)	=	0.440
Sa(0.5)	=	0.264
Sa(1.0)	=	0.130
Sa(2.0)	=	0.072
PGA	=	0.213
- Floor Loads
 - w Live Load
 - Heavy duty floor subject to vehicle traffic 7.2 kPa
 - Normal duty floor 4.8 kPa
 - w Monorails and Bridge Cranes indicated on plans
 - w Weight of Mechanical Equipment indicated on plans
 - w Superimposed dead load (weight of mechanical/electrical ductwork, piping, cable trays, etc.):
 - Typical 1.0 kPa
 - Electrical Room 0.5 kPa
 - Mechanical Room 0.5 kPa
 - w Structure Self Weight:
 - Steel grating on steel floor framing 1.5 kPa
 - 4" concrete slab on steel floor framing 2.9 kPa
 - 6" concrete slab on steel floor framing 4.1 kPa
 - w Lay down areas designed for 44.5 kN (10 kips) over any 4' x 8' (1.2 m x 2.4 m) area.
 - w All floor areas designed for 9 kN (2 kips) over any 2'-6" (0.76 m) square area.
 - w Fall Arrest Anchor Points designed for point load of 22 kN (5000 lbs) in any direction.
- Geotechnical:
 - w All designs are based on the Geotechnical Evaluation Report – Potential Mill Sites, Bellekeno Project Near Keno City, Yukon, by "EBA Engineering Consultants Ltd.", EBA File: W14101178, dated 08 December 2008 for Alexco Resources Canada Corp.

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2.4 DEFLECTION LIMITS (UNDER LIVE SERVICE LOAD)

- Roof framing L/240
- Wall cladding and girts L/180
- Floor framing L/360
- Crane runway beams:
 - w Vertical under full service no impact L/600 Vertical
 - w Lateral under full service no impact L/400 Lateral
- The total deflection of crane runway beams will not exceed 1" (25 mm)
- Wind sway of building columns:
 - w Buildings with Cranes L/400 and 1" (25 mm) max.
 - w Buildings without Cranes L/180 and 2" (50 mm) max.

2.5 MATERIAL PROPERTIES

- Concrete
 - w Unit weight of concrete 23.5 kN/m³ (150 pcf)
 - w Concrete strength at 28 days 30 MPa (4350 psi)
 - w Reinforcing steel: CSA G30.12, Grade 400, Ties and Stirrups Grade 300
 - w Class of Exposure (CSA A 23.1-04 Table 1):
 - (i) For interior floors: Class N
 - (ii) For piers, footings and grade beams: Class F2
- Masonry
 - w Unit weight of masonry concrete 20.5 kN/m³ (130 pcf)
 - w Masonry compressive strength at 28 15 MPa (2176 psi)
 - w 2-core light weight concrete block 8" x 8" x 16" (190 mm x 190 mm x 390 mm): CSA A 165-94.
- Structural Steel
 - w Channels, angles and plates: CSA G40.21, 300W.
 - w Wide Flange shapes: CSA G40.21, Grade 345W (Min.)
 - w Hollow Structural Sections: CSA G40.21, Grade 350W, Class C A500, 50 ksi (345 MPa)

END OF SPECIFICATION

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1.0 SCOPE AND BATTERY LIMITS

- .1 Electronic instrumentation and a local control system shall be provided in three distinct areas of the Bellekeno Plant:
 - Primary Crushing, Conveying and Crushed Ore Storage
 - Process Plant
 - Paste Backfill Area
- .2 A local operator control station shall be provided for the Primary Crushing, Conveying and Crushed Ore Storage operation and for the Paste Backfill Area.
- .3 Local operator control stations shall be provided for Process Plant control and monitoring.
- .4 All control is to be locally operated, no DCS or PLC is required for overall site.

2.0 CODES AND STANDARDS

- .1 The design and manufacture of electrical, instrumentation and controls equipment shall conform to the latest versions of the following codes and standards:
 - Canadian Electric Code (C22.1)
 - Canadian Standards Association (CSA)
 - Local Codes and Standards
 - American National Standards Institute (ANSI)
 - Instrument Society of America (ISA)
- .2 All equipment shall be rated for a minimum elevation of 45 meters feet above sea level and an ambient temperature range of 0°C to 40°C and shall have CSA Approval Marking.
- .3 Manufacturer's recommended design, installation practices and procedures shall be adhered to whenever such practices and procedures are available.

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3.0 INSTRUMENTATION DESIGN AND CONSTRUCTION

3.1 GENERAL

- .1 Electrical Supply – Electrical supply to field instruments, relays, solenoids where required shall be 120V-60Hz. Electrical supply to Control Systems, panel and back of panel Instruments shall be 120V-60Hz.
- .2 Pneumatic transmitters shall have an output signal of 3-15 psig. Electronic transmitters shall have an output signal of 4-20 mA DC. Where possible, electronic transmitters shall be smart, programmable, microprocessor based 2-wire and powered by the signal receiver. If the electronic transmitter is externally powered (4-wire), its output signal must be isolated or floating with respect to ground so that the 4-20 mA DC signal could be transmitted to receiver without ground loop problem. If ground loop is a problem, then a signal isolator must be used.
- .3 The materials of components that come into contact with process fluids (instrument wetted parts) shall be resistant to stress resulting from pressure, temperature, corrosion and erosion, and shall be made of 316 stainless steel minimum unless the process and piping specifications require a different or higher grade material.
- .4 Control valves shall have integrally mounted smart electro-pneumatic positioners.
- .5 Instrument Air – Instrument air supply shall be dust-free, oil-free and dry. The minimum instrument air dew point at line pressure shall be at least -40°C or -10°C below the minimum locally recorded ambient temperatures at the plant site, whichever is lower. No condensation shall occur in the distribution system or in the instruments. The minimum instrument air supply pressure on the header shall be 700 kPag.
- .6 The capacity of the instrument air system shall be rated for all the connected loads plus 20%. An air receiver shall be provided for protection against loss of air. A low-pressure alarm shall be provided to indicate that the air pressure has fallen below 500 kPag. The air receiver shall be sized such that, 15 minutes after the low air pressure alarm, the instrument air header pressure shall not be below 250 kPag.
- .7 Field Wiring – In general, multi-conductor cables shall be used between each local control station and field junction boxes. Single pair cables shall be used between field junction boxes and individual instruments or electrical devices.

3.2 LOCAL CONTROL STATIONS

- .1 Local control stations shall be in accordance with the requirements of the associated electrical area classification. In an unclassified area the enclosures shall be NEMA 4X corrosion resistant, non-metallic, watertight and dust tight construction. Hinges and latches shall be 316 stainless steel. Cable entries shall be through cable

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glands in the rear of the box or side of box where feasible. Watertight seals shall be used. Terminal rails shall be mounted vertically, complete with sufficient grounding terminals. All connections within the control station shall be made via terminal blocks. Splicing of wires is not permitted.

- .2 All cables, wires, terminals and any other device shall be tagged uniquely in each station. A control station layout and wiring diagram shall be provided and placed in a pocket in the rear side of the front door. Control Stations shall be tagged uniquely with a lamacoid nameplate attached to the front panel. Lamacoids shall be white with black lettering.
- .3 Local control stations shall provide 120VAC-60Hz power to instrumentation where needed. Local control stations shall also house two sources of 24VDC power supply to be used for 24VDC loop powered devices (2-wire) and 24VDC powered devices (4-wire).

3.3 GROUNDING

- .1 Plant electronic instrument system shall have its own dedicated grounding system. In the event that several instrument systems exist, these grounding systems shall be connected in common.
- .2 Manufacturer's recommended grounding procedures and installations shall take precedence over all grounding designs and installations.
- .3 All signal cable shields shall only be grounded at the local control station end of the circuit. The field end shall be trimmed flush with the cable jacket and taped to prevent accidental ground contact.

3.4 MOUNTING AND LOCATION OF FIELD INSTRUMENTS

- .1 All field instruments shall be mounted at grade or platform to provide easy access for operation and maintenance.
- .2 All field mounted remote transmitters with indicators shall be mounted so that the transmitter is 54" above grade or platform and shall be located as close to the primary connection/element as possible consistent with instrument accessibility.
- .3 Dial thermometers and pressure gauges that are line mounted shall be plainly visible and accessible from grade or platform.

3.5 FIELD MOUNTED INSTRUMENTS AND EQUIPMENT

- .1 All field instruments shall meet the electrical classification of the area. Field mounted instrument electrical devices shall be supplied in weatherproof enclosures NEMA 4, watertight and dust-tight as a minimum.

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- .2 Instruments shall be installed with flanges or unions and isolation valves to permit removal without process shutdown. Isolation valves shall be provided so that inline valves and instruments can be removed for maintenance without draining tanks and equipment.
- .3 Separate process connections are required for each instrument including pressure gauges. Process connections for instruments on vessels shall be dedicated to the instrument and not shared with process piping.
- .4 Junction boxes shall be in accordance with the requirements of the associated electrical area classification. In an unclassified area the enclosures shall be NEMA 4X corrosion resistant, non-metallic, watertight and dust tight construction. Hinges and latches shall be 316 stainless steel. Cable entries shall be through cable glands in the bottom of the box where feasible. Watertight seals shall be used. Terminal rails shall be mounted vertically complete with sufficient grounding terminals. All connections within the junction box shall be made via terminal blocks. Splicing of wires is not permitted.
- .5 All cables, wires, terminals and any other device shall be tagged uniquely in each box. A junction box layout and wiring diagram shall be provided and placed in a pocket in the rear side of the front door. Junction boxes shall be tagged uniquely with a lamacoid nameplate attached to the front panel. Lamacoids shall be white with black lettering.

3.6 INSTRUMENT ELECTRICAL WIRING

- .1 Armored multi-pair instrument cables shall be individually twisted shielded pairs of stranded #16 AWG copper conductors with drain wire, cable overall shield with drain wire, FRPVC inner jacket, aluminum interlock armour, FRPVC outer jacket, Wire pairs shall be coloured black and white. Black is positive, white is negative. The number of pairs shall be as per drawings.
- .2 Armored control and instrument power cables shall be Teck cable with stranded copper conductors, aluminum interlock armour, and PVC outer jacket. The number of conductors and conductor size shall be as per drawings.
- .3 Power cables shall be supplied with bare copper grounding conductor.
- .4 All wiring shall be clearly identified at every termination with a permanent marking system. Wire markers shall be the heat-shrunk type unless otherwise specified. The preferred method of identification is the loop number as specified on the loop diagrams.

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3.7 INSTRUMENT AIR TUBING

- .1 Instrument air tubing to an instrument shall be 1/4" OD 316 SS seamless unless specified larger on drawings. Instrument air tubing fittings shall be 316 SS compression type.

END OF SECTION

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Revision No.	Date Revised	Engineering Specification	Signatures				
			Prepared By	Checked By	Approved By	Project Manager	Client
A	09 May 2009	Issued for Internal Review	SS	SAA		JA	BT
B	09 July 2009	Issued for Information	SS	SAA		JA	BT

 ALEXCO WARDROP Engineering Inc.	ELECTRICAL 26 00 00 Design Criteria	Project Number: 09539601.00 Project Name: Bellekeno Project
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1.0 GENERAL

1.1 SCOPE

- .1 This design document establishes the criteria for electrical engineering design for Bellekeno Project Mill Plant. The specification defines applicable codes and standards, design loads, serviceability and materials of construction.
- .2 The distinct areas of the project are:

Main plant areas:
 - Mill Process Area
 - Coarse Ore Storage Location
- .3 Critical loads (defined as those which require power upon normal electrical supply failure) including power supplies if any, are identified during project design by area and shown on the project equipment list. These critical loads will be further defined as requiring uninterruptible power or interruptible power (i.e. time needed to start any standby generators). See Emergency power Section 3.2.1.

These loads shall be connected to the power system in such a manner that the failure of any bus or power supply would not prevent the safe shutdown of the related equipment.

2.0 CODES AND STANDARDS

- .1 The design and manufacture of electrical equipment will conform, as a minimum, to the latest versions of the following International codes and standards:

CSA M421-00	Use of Electricity in Mines
CEC C22.1	Canadian Electrical Code
ANSI	American National Standards Institute
IEEE	Institute of Electrical and Electronics Engineers
CSA	Canadian Standards Association
NEMA	National Electrical Manufacturer's
- .2 The codes and laws of the country, state, province, municipality or jurisdiction in which a project occurs may take precedence over the aforementioned codes.

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- .3 In case of conflict between the referred codes, specifications, standards and manufacturer's preferred procedures, conflicts shall be resolved in consultation with the Owner and/or the Owner's Representative before equipment selection or manufacture.

3.0 POWER SYSTEM

3.1 GENERAL

- .1 Main power will be provided from a overhead powerline at 69 kV. There will be a 69kV/4.16kV step down transformer at the substation. The power system will have the capacity and characteristics to support the plant electrical load and equipment.

3.2 EMERGENCY POWER

- .1 A preliminary assement of critical loads in Mill building shows a 500 kW generator is sufficient to provide back-up power for such loads.

3.3 SYSTEM VOLTAGE

- .1 Frequency is 60 Hz.
- .2 AC voltage levels will be as follows:

Equipment

All drives from 0.5 HP to 250 HP
Small drives below 0.5 HP
Electrical heaters over 2 kW
Electrical heaters 2.0 kW or less
Lighting 120 or 347 V
Small power & controls 120 V
Heat tracing short lengths 208 V
Heat tracing long lengths 600 V

Distribution System Voltage

600 V, 3-phase, high resistance grounded.
120/208 V, 3- or 1-phase, solidly grounded.
600 V, solidly grounded.
120/208 V, 3- or 1-phase, solidly grounded
1-phase solidly grounded
1-phase solidly grounded
1-phase solidly grounded
3- or 1- phase solidly grounded

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4.0 POWER DISTRIBUTION

4.1 GENERAL

- .1 Electrical distribution necessary for the processing facility will consist of:
 - Medium voltage switchgear, power cables for step down power transformers.
 - Step down power transformers to suit the physical and electrical characteristics of the various plant areas.
 - Low voltage power distribution will generally be provided by power distribution centers.
 - In general, power for motors will be supplied from factory assembled motor control centers. A local "Start/Stop" pushbutton and H-O-A selector will be used. Lockout is to be done at the motor control center by qualified electricians in accordance with Owner developed lockout procedures. Remote disconnect switches will not be installed at motor locations, this fact will be included by the Owner in the above mentioned lock out procedure development.
 - Power for lighting and receptacles will be supplied from lighting and power panel boards.
 - Overhead power lines will be 4.16 kV.
- .2 Transformers shall be design loaded to not more than load to 80 % of full capacity and 25% future expansion allowance. Dedicated purpose transformers which are part of specific equipment systems (e.g. conveyor or pump variable frequency drive systems) shall be sized according to the duty anticipated.
- .3 The need for harmonic mitigation will be managed by including requirements in the overall design and in equipment specifications to address the harmonic generation limits and control outlined in IEEE 519 Guide for Harmonic Control and Reactive Compensation in Electric Power Systems. Smaller variable speed drives will be provided complete with built in reactor and dv/dt filtering while larger VFDs must be provided with minimum 12 pulse drive systems and/or isolation transformer. The need for a harmonic study will be evaluated in conjunction with identifying any harmonic limits relevant to the generation system. The harmonic tolerance (spectrum and magnitude) must be provided by the generation system vendor.

4.2 VOLTAGE DROP AND POWER FACTOR

- .1 Overall voltage drop from source distribution transformer secondary to the end of last feeder shall not be more than 3 %. Overall voltage drop from the supply to point of utilization shall not exceed 5 %. Where required, capacitors for power factor correction will be concentrated at logical load centers.

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5.0 EQUIPMENT DESIGN CRITERIA

5.1 ENCLOSURES

- .1 Equipment and device enclosures will have the following ratings:

Location	Rating
Control Room, Electrical Rooms	NEMA 1A
All other areas (Non-classified)	NEMA 12, 4 or 4X as needed.

5.2 CABLES

- .1 All power and control cables will be copper and will generally be installed in **underground** non-metallic ducts or above ground in ladder type cable trays. Cables will have interlocking aluminium armour with a PVC FT4 rated jacket and as follows:

4.16 kV System	5 kV rated, 133% Insulation
600 V System	1,000 V rated, #12 AWG minimum
Controls	600V rated, #14 AWG minimum. A minimum of 15% spare conductors will be left in each control cable where possible.
Color Coding	All power wiring will be color coded to suit local standards.

5.3 ELECTRIC MOTORS

- .1 All motors supplied shall be suitable for inverter duty, IEEE 841 rated for severe industrial duty including protection from corrosive washdown liquids. (Note: No areas are anticipated to be classified as hazardous due to the presence of an explosive dust or gas concentration under normal or process upset conditions.)

5.4 LOW VOLTAGE POWER DISTRIBUTION CENTRES

- .1 Low voltage power distribution centres shall be rated for use at the site elevation. Enclosure type shall be equivalent to NEMA 1A for installation indoors.
- .2 Each low voltage switchboard shall be complete with an incoming main breaker section and suitable digital protective relaying including ground fault detection and alarms. Main breakers will be complete with features to allow a maintenance mode to reduce any fault

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duration time in order to limit the arc flash hazard. Arc flash will otherwise be managed by maintenance use of suitable personal protective equipment and appropriate lock-out and maintenance procedures.

- .3 Individual distribution feeder cells will be circuit breaker type with digital protective relaying.
- .4 Design loading for low voltage distribution centres shall not exceed 75% of calculated running loads including spares.

5.5 MEDIUM VOLTAGE DISTRIBUTION

- .1 Medium voltage distribution equipment shall be metal-clad and rated for use at the elevation of utilization. Enclosure type shall be equivalent to NEMA 1A for indoor electrical room applications.

5.6 LOW VOLTAGE MOTOR CONTROL CENTRES

- .1 MCCs shall be 600 V, 3 phase, 3 wire complete with copper bus, top mounted ground bar and bus bracing as noted on other design documents. Enclosures shall be NEMA 1A for installation in indoor modular electrical rooms or major building electrical rooms.
- .2 MCCs shall have incoming sections with digital meter display of instantaneous three phase voltage, current and power parameters. All transformer fed MCCs require a main breaker sized to the transformer secondary current complete with a digital protection relay. Main breakers will be complete with features to allow a maintenance mode to reduce any fault duration time in order to limit the arc flash hazard. Arc flash will otherwise be managed by maintenance use of suitable personal protective equipment and appropriate lock-out and maintenance procedures.
- .3 Where specified, individual MCC starters shall be complete with door mounted H-O-A selector switches, start-stop push buttons and LED type pilot lights.
- .4 MCCs shall have smart starters and be connected to local plant control system I/O racks for control purposes where control is not strictly manual. The preferred communications system will be determined as further progress is made in plant control system design.

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5.7 ELECTRIC SPACE HEATERS

- .1 Electric space heaters where provided shall be complete with built-in contactors and thermostats and will have a local manual disconnect switch for isolation purposes.

5.8 LIGHTING

- .1 High intensity discharge lighting will be provided in exterior locations, for roadway lighting and where specified indoors. Fluorescent lighting will be provided in the control rooms, motor control centre rooms, offices and other plant buildings. Note that, where possible at the design stage, steps will be taken to reduce energy use in all areas by:
 - Use of two level switches for larger lighting area – activated by personnel entering area when needed for operations or maintenance.
 - Use of detection type switches to turn off lights in office areas after periods of room being empty.
 - Photocell controlled exterior lighting.
- .2 Control room lighting will be electronically dimmable and fixtures shall be complete with louvers to minimize glare from operating monitors. Lighting for offices and control rooms will be via 120 V, high efficiency fluorescent type fixtures.
- .3 Battery powered emergency lights and exit signs will be included for offices, labs, electrical rooms, the control room and major egress routes indoors.
- .4 Where required by the nature of the process, lighting fixtures shall be of the corrosion resistant type. Outdoor floodlight circuits will be automatically controlled by photocells with a "Manual-Off-Auto" bypass selector switch. Main indoor lighting circuits will be supplied from 600/347 V lighting panels. In general, plant lighting will be switched from the supply panels, in all other areas local switching will be provided.
- .5 Lighting Illumination Levels

Illumination levels shall meet the following requirements:

Areas	Level
Electrical Room	300 lux
Control Room	500 lux
Offices	600 lux
Process Areas	300 lux
Loading Areas	30lux
Yard	10 lux

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5.9 GROUNDING

- .1 The main generation system grounding method will be designed by using the generation system future planned fault levels and details of soils in the area.
- .2 Building ground references will be provided by using the UFER grounding method, where concrete foundation exists. Depending on the native soil conditions, additional perimeter ground rods and conductor systems may be employed. All column footings will be bonded by welding anchor bolts to the rebar.
- .3 The ground conductor will be connected to building steel, tanks, and equipment and the ground wire will be installed exposed wherever possible. Where corrosion presents a problem, ground wire shall have green PVC insulation. All underground connections will be exothermic type. Exposed connections and taps will be made with pressure type connectors.
- .4 Grounding provisions shall be provided to limit the Ground Potential Rise (GPR) to 100V.
- .5 Ground current return paths will be provided within individual cables, within discrete cable tray runs and by use of separate conductors on overhead lines.
- .6 Motor control centres, medium and low voltage switchgear, unit substations, transformers, etc., will be provided with two connections to the ground grid. All medium voltage motors, control panels, tanks, vessels, and other equipment will have at least one direct connection to the ground grid. All 120 V receptacles will be grounded by means of a separate green coloured insulated wire. Ground fault circuit interrupter type receptacles will be located in areas as required throughout the plant site. A #2/0 AWG bare ground cable will be installed in all cable trays. The ground cable will be connected to all sections and fittings at intervals of not less than 15 m. Final resistance of the grounding system will be in accordance with the local codes and standards.

END OF SPECIFICATION

APPENDIX D

WASTE MANAGEMENT PLAN



WASTE MANAGEMENT PLAN
Construction Version – July 2009

BELLEKENO PROJECT



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1.0 INTRODUCTION

Throughout the course of the Bellekeno Project various forms of waste will be produced and require management to ensure proper disposal under the applicable legislation. As such, the following preliminary Waste Management Plan has been prepared to outline the facilities and measures that will be used to manage the waste streams. Because the Bellekeno mine will operate within the context of existing and ongoing care and maintenance and closure planning for the whole Keno Hill Silver District, existing waste management facilities and licences are already in place. It is anticipated that amendments to existing licenses will be required to accommodate wastes generated by the Bellekeno Project. As the project proceeds and permits are obtained or amended that regulate the management and disposal of waste, this plan will be revised accordingly with approvals appended.

2.0 WASTE MANAGEMENT FACILITIES

2.1 Existing Waste Management Facilities

A number of existing waste management facilities exist on site and are used in support of care and maintenance and closure activities, and will be amended in order to accommodate waste resulting from the Bellekeno Project (see Figure 1).

A Commercial Dump Permit No. 81-012 is currently held from YG Environment in accordance with the Environment Act Solid Waste Regulations as well as the Public Health and Safety Act. This permit will continue to be used in support of the Bellekeno Mine operation.

Alexco currently holds two (2) sewage disposal system permits at Elsa issued by YG Environmental Health Services: one septic system permit for the Flat Creek Camp (Permit #3012) and a septic system for the four houses (Permit #3131) constructed in 2008. Should the planned camp expansion at Flat Creek Camp require expansion of the existing septic system, plans for this expansion will be submitted as part of Phase III of the construction site plan.

Special Waste Permit No. 41-199 is currently held from YG Environment in accordance with the Environment Act Special Waste Regulations for burning waste oil, generating and/or storing waste batteries, waste oil, waste solvents, and other special wastes.

2.2 Valley Tailings Landfill

The Valley Tailings landfill will be used to accommodate solid wastes generated during construction, operation, and closure activities of the Bellekeno Mine Project. An amendment to existing commercial dump permit No. 81-012 for a will be submitted to Yukon Environment as per the *Solid Waste Regulations*. The location for this waste management area is north of the Elsa near the Valley Tailings Area (see Figure 1).

The quantity of waste projected to be collected at the commercial dump for each phase of the project has been estimated as:

- Construction (year 0) ~ 106 m³/year
- Pre-production (year 1) ~ 106 m³/year
- Operations (years 2 – 8) ~ 50 m³/year
- Closure (first 3 years) ~ 100 m³/year
- Closure (subsequent years) – minimal use, facility closed out

2.3 Incinerator

Existing Air Emission Permit No. 4201-60-026 will be used in accordance with Yukon Environment as per the *Air Emissions Regulations* in order incinerate solid waste from the Bellekeno Project. This facility is located at the Valley Tailings Landfill area (see Figure 1).

Refuse originating as camp and office waste, plus warehouse scrap will contain some organic wastes. Garbage and debris destined for disposal will be collected routinely and prior to incineration stored in wildlife proof containers / fenced short term storage areas in a manner which does not attract wildlife to the mine or mill site. Solid waste will be frequently and completely incinerated (once installed) in a manner which minimizes odours and eliminates the attraction of bears and other wildlife to the mine site. Combustible waste containing a fossil fuel by-product shall be drained prior to incineration and that material will be recycled where possible.

2.4 Land Treatment Facility

A land treatment facility is located in the vicinity of the Flat Creek Camp for the potential collection, storage and treatment of soil and/or liquid contaminated with petroleum hydrocarbons.

2.5 Sewage Disposal

Three separate locations (Elsa/Flat Creek, Flame and Moth mill site, and Bellekeno mine site) will require sewage services in order to accommodate Bellekeno mine development and operations (details below). Sewage disposal facilities currently include both permanent and portable facilities.

All disposal facilities will comply with the Public Health and Safety Act, *Sewage Disposal Systems Regulations*. In particular, septic tanks, sewage holding tanks or contained privies will be located at least 15 m from the high water level of nearby water bodies; while the soil absorption system (or pit privies) will be located not less than 30 m from the high water level of nearby water bodies. Soil absorption systems will not be located where soil conditions are unsuitable for absorption of effluent.

Two conventional septic tank/leach field systems will accept all sanitary wastewater. One system will be located adjacent to the camp and serve the camp, administrative offices, and process plant. The second system will be located at the truck shop area to serve the truck shop and the mine.

2.5.1 Flat Creek Camp and Elsa

Alexco currently holds two (2) sewage disposal system permits at Elsa issued by YG Environmental Health Services: one septic system permit for the Flat Creek Camp (Permit #3012) and a septic system for the four houses in Elsa (Permit #3131) constructed in 2008. Should the planned camp expansion at Flat Creek Camp require expansion of the existing septic system, plans for this expansion will be submitted as part of Phase III of the construction site plan.

2.5.2 Flame and Moth Mill Site

Holding tank and trucked to Flat Creek Camp.

2.5.3 Bellekeno Mine

Holding tank and trucked to Flat Creek Camp.

2.6 Sediment Control & Events Ponds

During construction the accumulated sediment within the sediment control & events ponds will be collected as required and buried below ground away from drainage flow paths and watercourses.

3.0 WASTE STREAMS & SEGREGATION

The type of waste that will be managed at the site includes:

- Solid Waste (non-hazardous)
 - o Putrescible (i.e. camp refuse)
 - o Non-putrescible (i.e. burnable or non-burnable)
- Special wastes (i.e. waste oil, batteries – only to be segregated and stored temporarily)

3.1 Solid Waste (non-hazardous)

Kitchen / organic waste will be stored in clear plastic bags inside a 10'x10' bear proof steel clad bin at the camp site with a 1" thick steel door with heavy clasp for security. The bin will be emptied daily and taken to the incinerator for immediate burning.

Waste that is non-burnable, non-hazardous, and non-recyclable will either be temporarily stored in steel bins at the commercial dump area (e.g. construction wastes) or in the steel clad bin at the camp site (e.g. washed out containers for non-hazardous contents). This waste, along with incinerator ash will be buried within the dump. Material will periodically be covered with a layer of soil to prevent the loss of waste through wind action.

Used tires requiring disposal and have a rim size of 24.5 inches or greater will be buried within the commercial dump. Used tires requiring disposal with a rim size of 24.5 inches or less will be dealt with in accordance with the Yukon Used Tire Management Program and transported off site to an approved facility.

3.2 Special Waste

Any special wastes, as defined by the *Special Waste Regulations* (batteries, used oil, antifreeze, solvents), will be collected and stored in specially marked containers and then shipped to an appropriate treatment or disposal facility. Wildlife-proof rig bins will be used to provide segregated storage for solid waste that cannot be burned and special wastes in compliance with *Special Waste Regulations*.

Alexco currently holds Special Waste Permit No. 41-199 for this project and will comply with the Yukon *Special Waste Regulations* and track wastes through the use of Transportation of Dangerous Goods Waste Manifests. An amendment to this permit in order to accommodate special wastes generated from the Bellekeno mine will be applied for. Special Waste Permit No. 41-199 includes authorization to use a waste oil burner at the site (in Elsa) as per the *Special Waste Regulations*. Waste oil will be burned and used as a source of heat.

A concrete floor will be provided throughout the truck maintenance area and will be sloped towards a dry sump, which will collect any wash solutions and petroleum products that result from the maintenance activities. Oil-absorbent products will also be used on the shop floors.

Any accumulated sump water will be separated and oils pumped to the waste oil tank or empty drums. All oily wastes from oil changes, including the sump separation products and absorbent, will be hauled off the site for disposal or recycling in an environmentally acceptable manner or disposed of in the waste oil burner. An oil and water separator will be used in the truck shop to capture oil, which will then be taken offsite by the oil supplier for disposal or disposed of in the waste oil burner.

The lubrication bay of the maintenance shop will have a vacuum evacuation system for waste oil. Hose reels will feed from the lubrication storage area and will dispense antifreeze, grease and various grades of oil to the lubrication bay.

3.3 Waste Management Matrix

Both controlled / hazardous and non-controlled / non-hazardous materials will be dispensed of accordingly. Signage will be in place to assist in proper segregation of wastes. The general projected types of waste expected to be disposed of at the commercial dump for the project are presented in Table 1 while Figure 1 follows and shows the general location for the commercial dump.

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WASTE MANAGEMENT PLAN – CONSTRUCTION VERSION

Table 1 Waste Management Matrix

Type of Waste Generated	On Site Storage Method	On Site Storage Location	Disposal Method
Non-Controlled Materials			
Incinerator Ash	Open top drums with sealable lids.	N/A	Incinerator ash will be removed from the incinerator with machinery and hauled directly into the dump.
Scrap Steel	N/A	Waste management area	Segregated and recycled or buried.
Wood - Burnable	N/A	Waste management area	Incinerated.
Kitchen /Camp Waste	Clear plastic bags inside 10'x10' steel clad with a 1" thick steel door with heavy clasp for security.	Within camp	Bin shall be emptied daily and taken to the incinerator for immediate burning.
Construction Waste - drywall, glass, insulation, electrical wire, etc. (non hazardous)	Steel bins.	Waste management area	Bins shall have their contents emptied into the dump and buried.
All tires with a rim size of 24.5 inches or greater.	These tires will be taken directly to the ash disposal area.	N/A	These tires will be buried.
All tires with a rim size of 24.5 inches or less.	These tires will be placed in a segregated area within the waste management area.	Shall be stored in a segregated area determined by managers. Location will be clearly labeled.	These tires will be transported off site to a regulated and permitted dump with tire segregation on an as required basis.
Plastic containers - non hazardous contents	Containers will be inside placed 10'x10' steel clad with a 1" thick steel door with heavy clasp for security. Containers shall be washed out completely and not contain any residual.	Within camp	Bin shall be emptied as required and taken to the incinerator for immediate burning.
Metal containers - non hazardous contents	Containers will be inside placed 10'x10' steel clad with a 1" thick steel door with heavy clasp for security. Containers shall be washed out completely and not contain any residual.	Within camp	Bin shall be emptied as required and taken to the dump to have the contents buried.
Glass containers - non hazardous contents	Containers will be inside placed 10'x10' steel clad with a 1" thick steel door with heavy clasp for security. Containers shall be washed out completely and not contain any residual.	Within camp	Bin shall be emptied as required and taken to the dump to have the contents buried.
Controlled Materials			
Batteries	Lined wooden box	Segregated area at waste management area. Clearly labeled.	Batteries will be placed in an upright position within a 4'x4' box. When the 4'x4' box is full, another will be built and the full box shall be shipped off site to the local Waste Management facility in Whitehorse. Appropriate measures will be taken to ensure batteries remain upright during transport (i.e. waste construction wood will be used as filler to take up extra space).
Used Oil	Used oil will be placed in a 300 gallon container located in a bermed area.	Enclosed tanker.	When the container is full, the oil will either be transported to a waste oil burner onsite or management will contact a local supplier to transport oil to a recycling facility offsite.
Fuel Filters	Open top drums with sealable lids.	Waste management area - segregated special waste storage area.	Residual oil and fuel will be drained from filters into waste oil/fuel storage containers.
Antifreeze	Closed top drums with both bungs.	Segregated lined area at waste management area. Clearly labeled. Bungs sealed tight.	When enough drums are gathered up they shall be palletized in similar groups of 4 and banded together for shipment to the local Waste Management facility in Whitehorse.
Solvents	Closed top drums with both bungs.	Segregated lined area at waste management area. Clearly labeled. Bungs sealed tight.	When enough drums are gathered up they shall be palletized in similar groups of 4 and banded together for shipment to the local Waste Management facility in Whitehorse.

Figure 1 Proposed Commercial Dump Location

4.0 ATMOSPHERIC EMISSIONS

Alexco will implement the following measures with respect to the control of atmospheric emissions:

Fugitive Dust	• Minimize activities that generate large quantities of fugitive dust; • Use dust suppression measures to control any generated fugitive dust to the maximum extent possible such as watering main haul roads (ensuring water quality standards identified for release into receiving waters are met); • Progressively reseed disturbed areas that may contribute to fugitive dust.
Combustion	• Ensure proper maintenance of vehicles, pumps, compressors, generators, and other internal combustion engines to minimize emissions of polluting gases; • Use low sulphur fuels including diesel fuel with a sulphur content <15 ppm and propane with negligible sulphur content and where appropriate, waste heat recovery and energy efficient techniques will be employed to decrease diesel use.

APPENDIX E

PRELIMINARY DECOMMISSIONING AND RECLAMATION PLAN



PRELIMINARY DECOMMISSIONING & RECLAMATION PLAN

**BELLEKENO MINE
KENO HILL SILVER DISTRICT**

PREPARED BY:



JULY 2009

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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 reclamation.

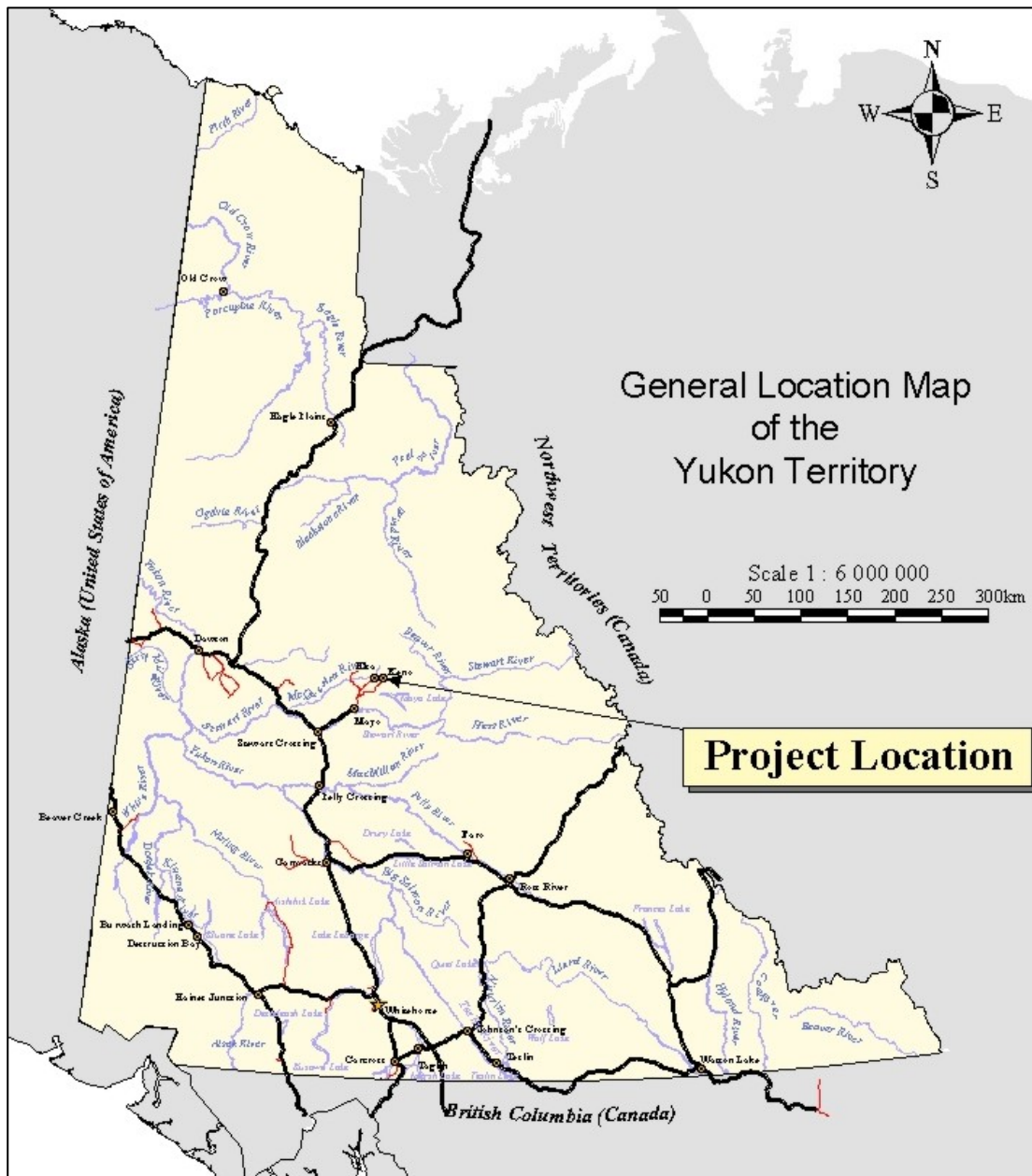
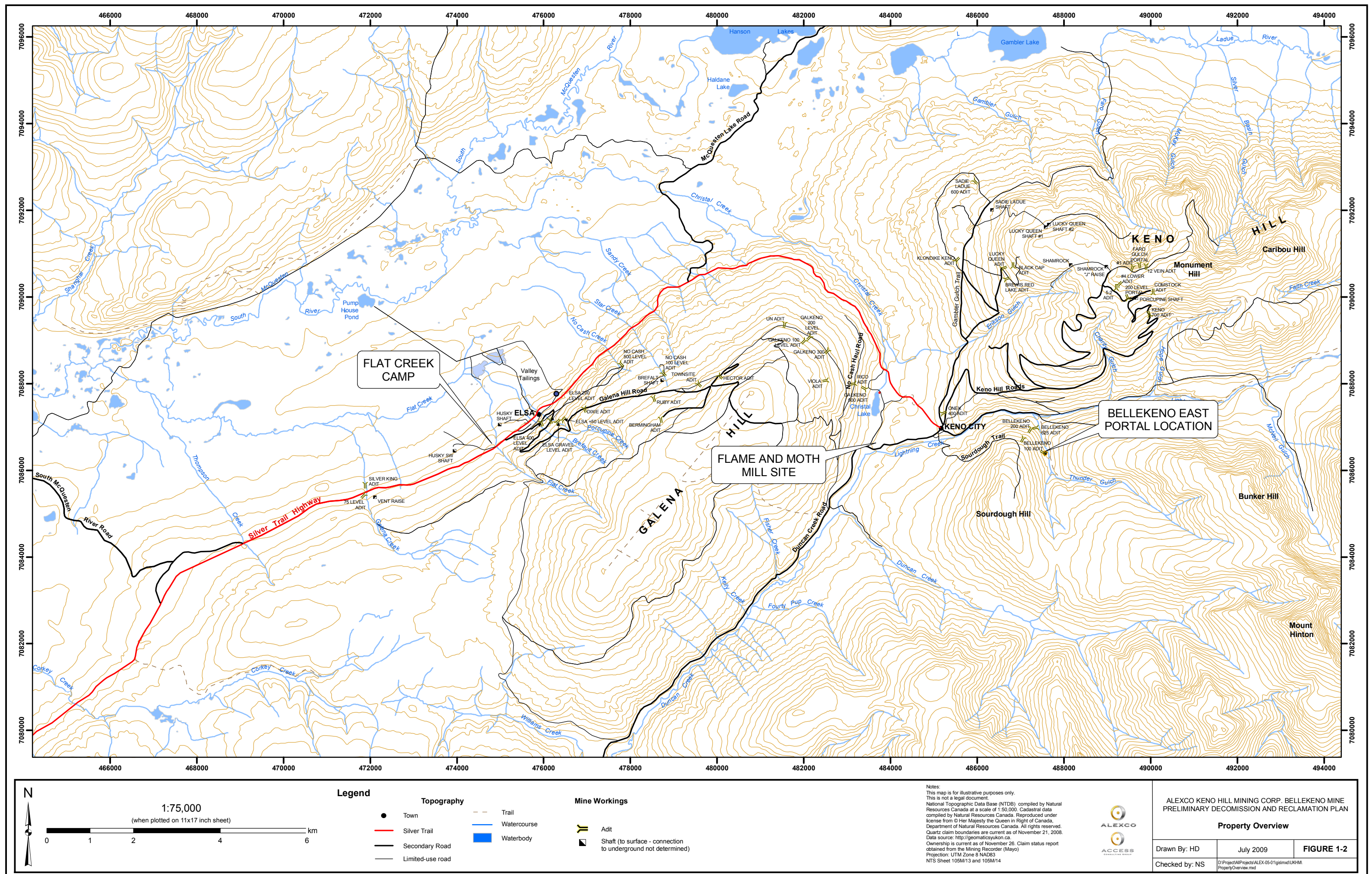
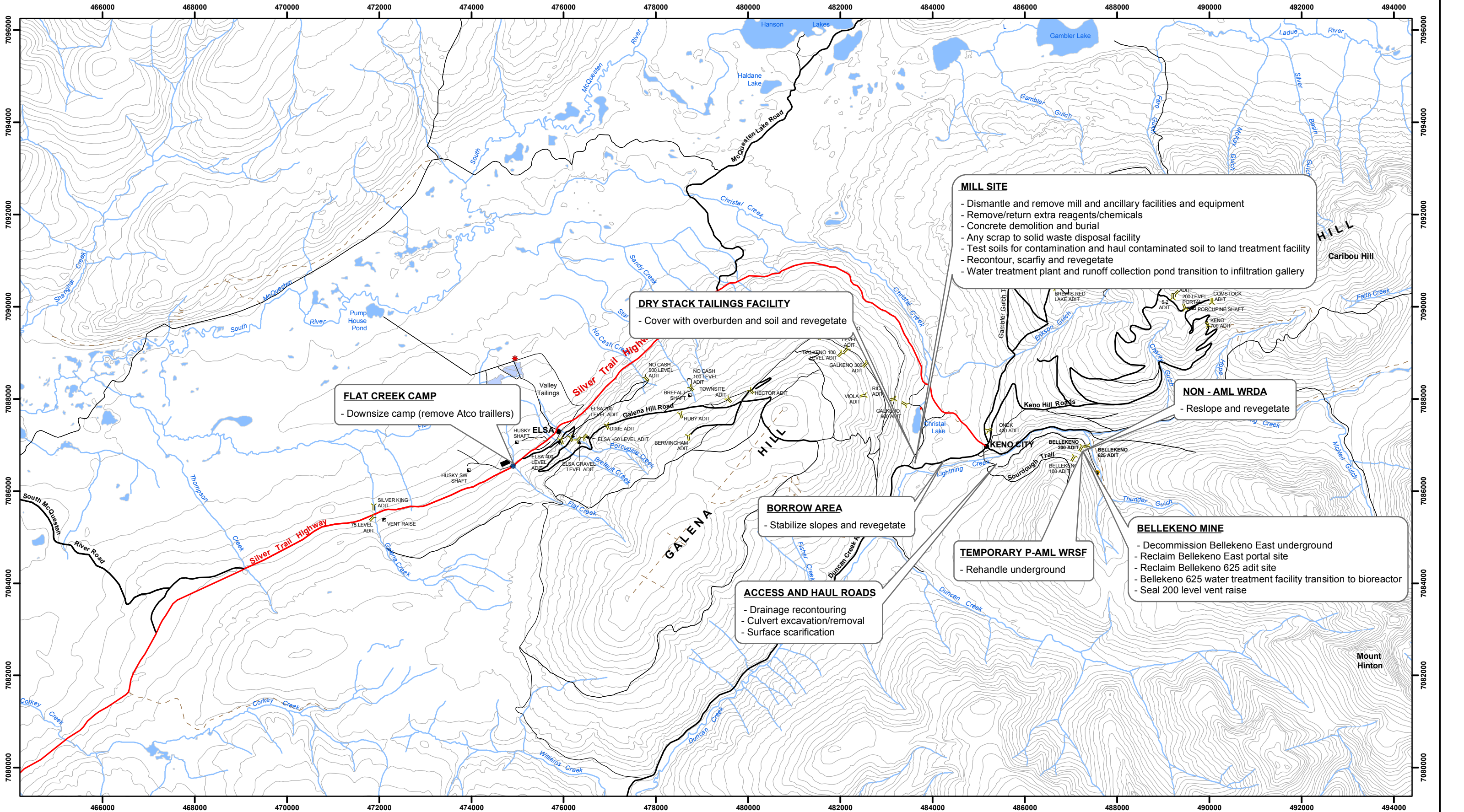


Figure 1-1 General Location Map





MILL SITE

- Dismantle and remove mill and ancillary facilities and equipment
- Remove/return extra reagents/chemicals
- Concrete demolition and burial
- Any scrap to solid waste disposal facility
- Test soils for contamination and haul contaminated soil to land treatment facility
- Recontour, scarifi and revegetate
- Water treatment plant and runoff collection pond transition to infiltration gallery

DRY STACK TAILINGS FACILITY

- Cover with overburden and soil and revegetate

FLAT CREEK CAMP

- Downsize camp (remove Atco trailers)

NON - AML WRDA

- Reslope and revegetate

BORROW AREA

- Stabilize slopes and revegetate

ACCESS AND HAUL ROADS

- Drainage recontouring
- Culvert excavation/removal
- Surface scarification

TEMPORARY P-AML WRSF

- Rehandle underground

BELLEKENO MINE

- Decommission Bellekeno East underground
- Reclaim Bellekeno East portal site
- Reclaim Bellekeno 625 adit site
- Bellekeno 625 water treatment facility transition to bioreactor
- Seal 200 level vent raise

N

01246

km

1:75,000

(when plotted on 11x17 inch sheet)

Legend

● Town

— Silver Trail

— Secondary Road

— Limited-use road

Topography

— 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://geomaticsukon.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

ALEXCO KENO HILL MINING CORP. BELLEKENO MINE

PRELIMINARY DECOMMISSION AND RECLAMATION PLAN

Site Reclamation and Closure Plan

Drawn By: HD & JN

July 2009

FIGURE 1-3

Checked by: NS

D:\Project\AIR\Projects\ALEX-05-01\gis\mxd\UK\HM\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 NNDFFN. 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:
 - o incorporating progressive reclamation;
 - o providing slope stabilization and erosion control on linear and non-linear disturbances;
 - o ensuring long-term chemical stability of the waste rock storage areas and components constructed from waste rock to minimize effects to downstream aquatic resources;
 - o 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;
 - o 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.

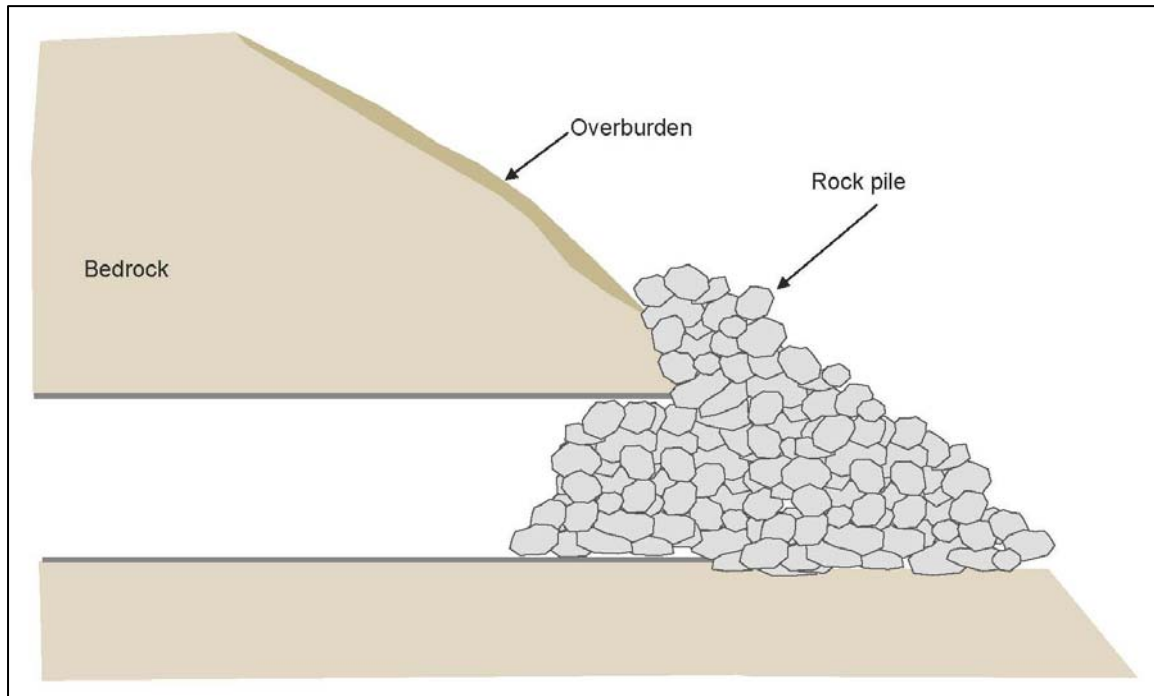


Figure 5-1 Conceptual Bellekeno East Portal Closure Rock Pile

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.

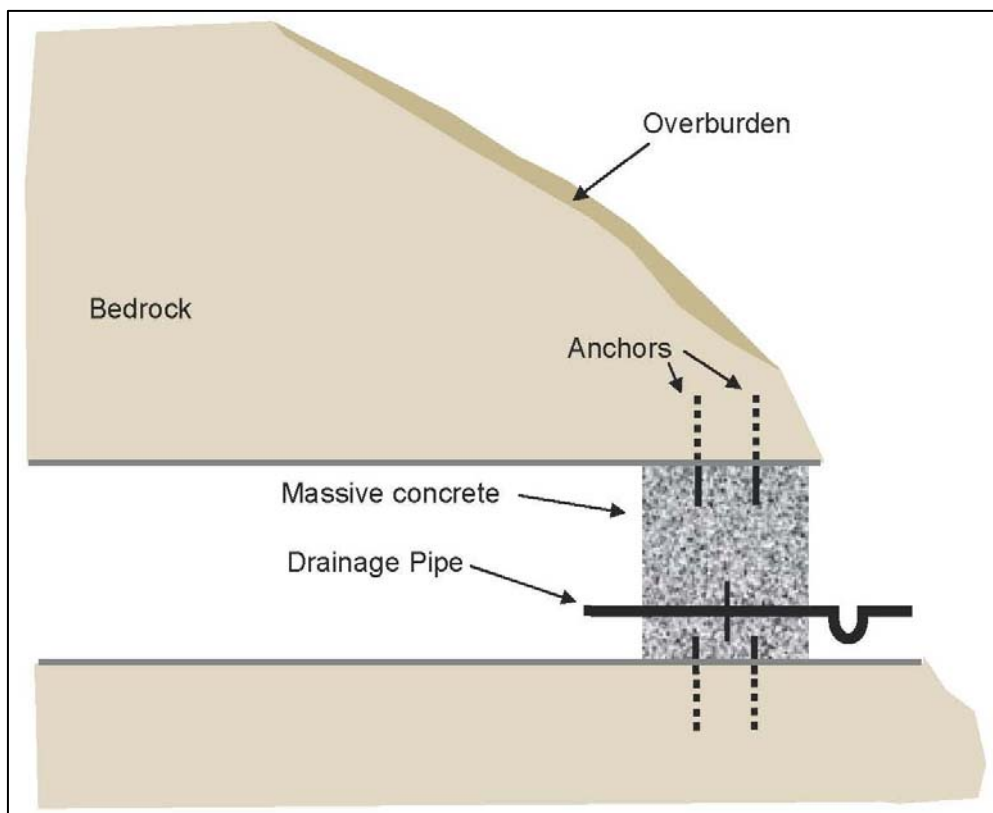


Figure 5-2 Conceptual Bellekeno 625 Adit Bulkhead

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.

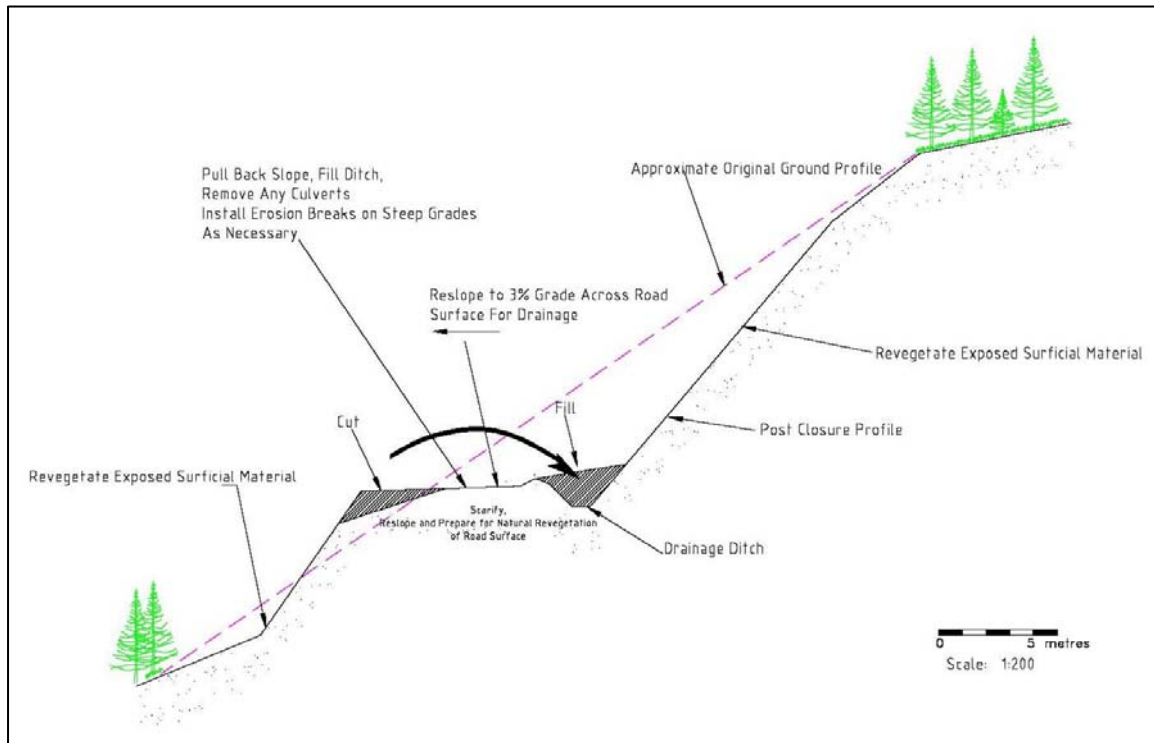


Figure 5-3 Haul Road and Site Road Typical Reclamation Cross-Section

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.

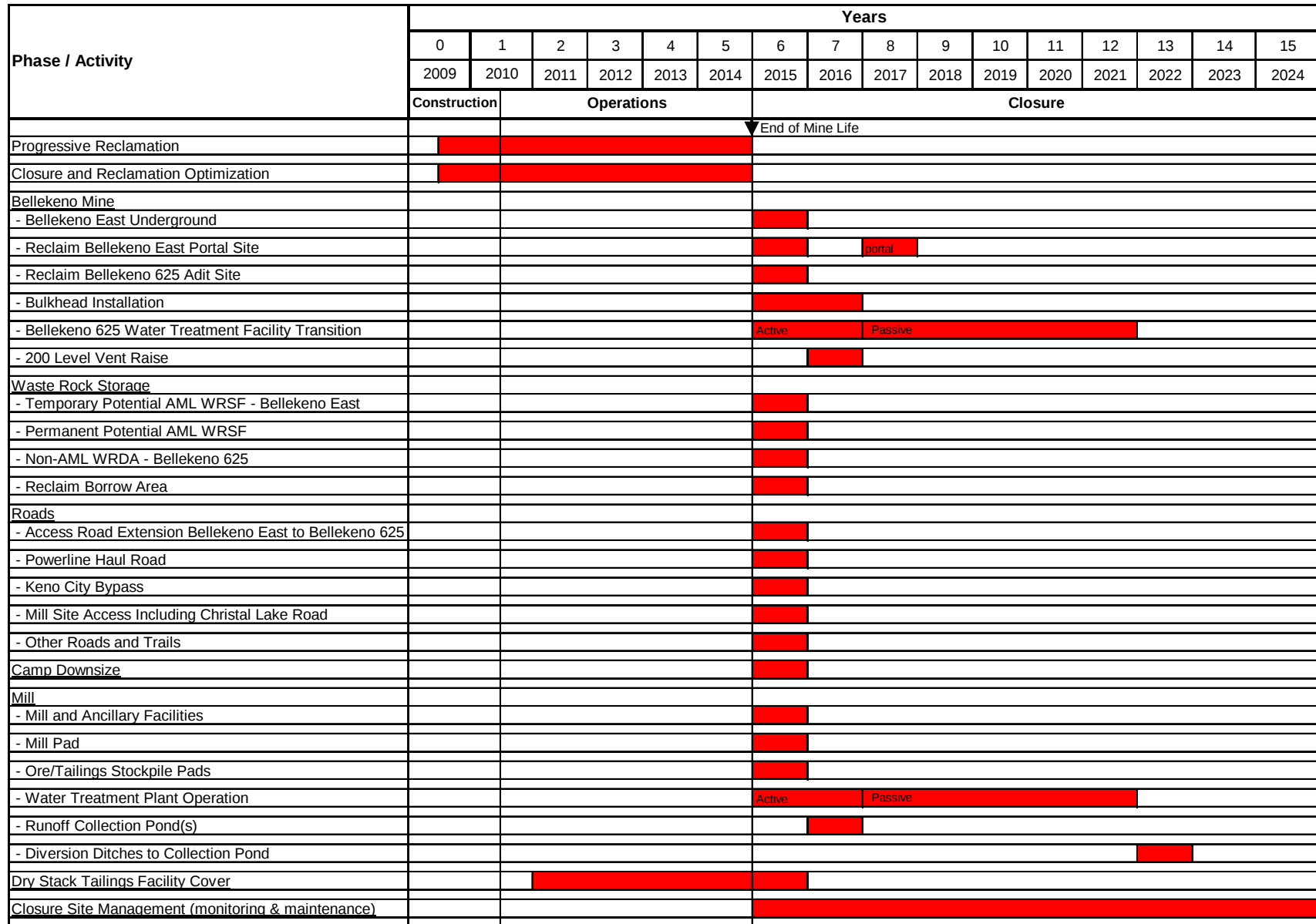
During site decommissioning, camp accommodations would be available to support site personnel. As other activities will continue to be undertaken in the Keno Hill Silver District a site caretaker or security personnel will not be required.

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, gullyng, 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; &	Care & Maintenance Crew	As per Monitoring Programs & QML
		Runoff/Erosion/Sediment control.	QML Physical Monitoring Program		
		Dust Control.			
	Geochemical Stability	Progressive reclamation will occur during operations.	Geotechnical Inspection from QML and DSTF Operating Plan	Engineer	Annual
		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 & maintenance 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 infrastructure 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 summarizes 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	<i>Bulkhead Installation*</i>	<i>\$237,000</i>
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	<i>Powerline Haul Road (~2.3 km)*</i>	<i>\$26,000</i>
3.3	Keno City Bypass (~650 m)	\$13,000
3.4	<i>Mill Site Access Including Christal Lake Road (1.9 km)*</i>	<i>\$24,000</i>
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	<i>Bulkhead Installation*</i>	<i>\$237,000</i>
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	<i>Powerline Haul Road (~2.3 km)*</i>	<i>\$26,000</i>
3.3	Keno City Bypass (~650 m)	\$13,000
3.4	<i>Mill Site Access Including Christal Lake Road (1.9 km)*</i>	<i>\$24,000</i>
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)

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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	c.u.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	\$90	\$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

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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 transport 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

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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 m³)						
	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

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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 Administrative 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 qtr	8	\$2,000	\$16,000	
	Disbursements (non-labour/non-analytical)	Misc.	per qtr	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

APPENDIX F

EMERGENCY RESPONSE PLAN

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Managing Risk – Unlocking Value

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This controlled document will be regularly updated to reflect revisions.

- Updated Emergency Management Response Plan (EMRP) documents will be bound and distributed to all authorized personnel.
- All Keno Hill Project personnel must have EMRP training and know where to gain access to the document in the event of an emergency.

Authorized Distribution / Location List:

Alexco Resource Corp. - Keno Hill Property:

Administration Office
Bellekeno East Shifters Office
Care & Maintenance Shop
First Aid Room
General Managers Workspace
Kitchen Medical Station
Mine Rescue Shed – Bellekeno East
Safety Coordinators Office

Alexco Resource Corp.:

Access Consulting Group Whitehorse Office
Alexco Resource Corp. Vancouver Office
Alexco Resource Corp. Whitehorse Office

Community:

Mayo Nursing Station
Mayo RCMP Detachment
Mayo Fire Department

Government:

Occupational Health & Safety - YWCHSB

Primary Partners On-site Contractors:

First Nation Na-Cho Nyak Dun – Mayo
Procon Mining and Tunneling Corporate Office

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1.0 PURPOSE

This guide sets out the response protocol in the event of a “Serious Incident” as defined in the following section.

It is intended for use as a quick reference handbook for managers and supervisors. Incident reporting and investigating is also outlined.

In an emergency situation it is imperative that due diligence is exercised as well as discretion. The priorities are the protection of **LIFE, LIMB and PROPERTY** – in that order.

2.0 DEFINITIONS

2.1 “SERIOUS INCIDENT”

A “**Serious Incident**” is defined as any occurrence meeting one or more of the following criteria:

1. Any “serious injury” or “serious accident” as defined in OH&S 33(1) (see Section 2.2),
2. Any incident requiring first aid or rescue response to the scene,
3. Any fire requiring discharge of a fire extinguisher,
4. Any release of mill process solution outside of containment,
5. Any release of a hazardous product where there is potential for that product to enter a waterway,
6. Any hazardous product spill of reportable volume, as defined in Section 11.0.

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2.2 **“SERIOUS INJURY” AND “SERIOUS ACCIDENT” UNDER OH&S ACT**

(Excerpt from Occupational Health & Safety Act)

33. (1) In this section,

“Serious Injury” means:

- a) an injury that results in death,
- b) fracture of a major bone, including the skull, the spine, the pelvis, or the thighbone,
- c) amputation other than of a finger or toe,
- d) loss of sight of an eye,
- e) internal bleeding,
- f) full thickness (third degree) burns,
- g) dysfunction that results from concussion, electrical contact, lack of oxygen, or poisoning, or
- h) an injury that results in paralysis (permanent loss of function);

“Serious Accident” means:

- (a) an uncontrolled explosion,
- (b) failure of a safety device on a hoist, hoist mechanism, or hoist rope,
- (c) collapse or upset of a crane
- (d) collapse or failure of a load-bearing component of a building or structure regardless of whether the building or structure is complete or under construction,
- (e) collapse or failure of a temporary support structure,

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- (f) an inrush of water in an underground working,
- (g) fire or explosion in an underground working,
- (h) collapse or cave-in, of a trench, excavation wall, underground working, or stockpile,
- (i) accidental release of a controlled product,
- (j) brake failure on mobile equipment that causes a runaway,
- (k) any accident that likely would have caused serious injury but for safety precautions, rescue measures, or chance. (As amended by SY 1988, c.22, s. 5; SY 1989, c. 19, s.6)

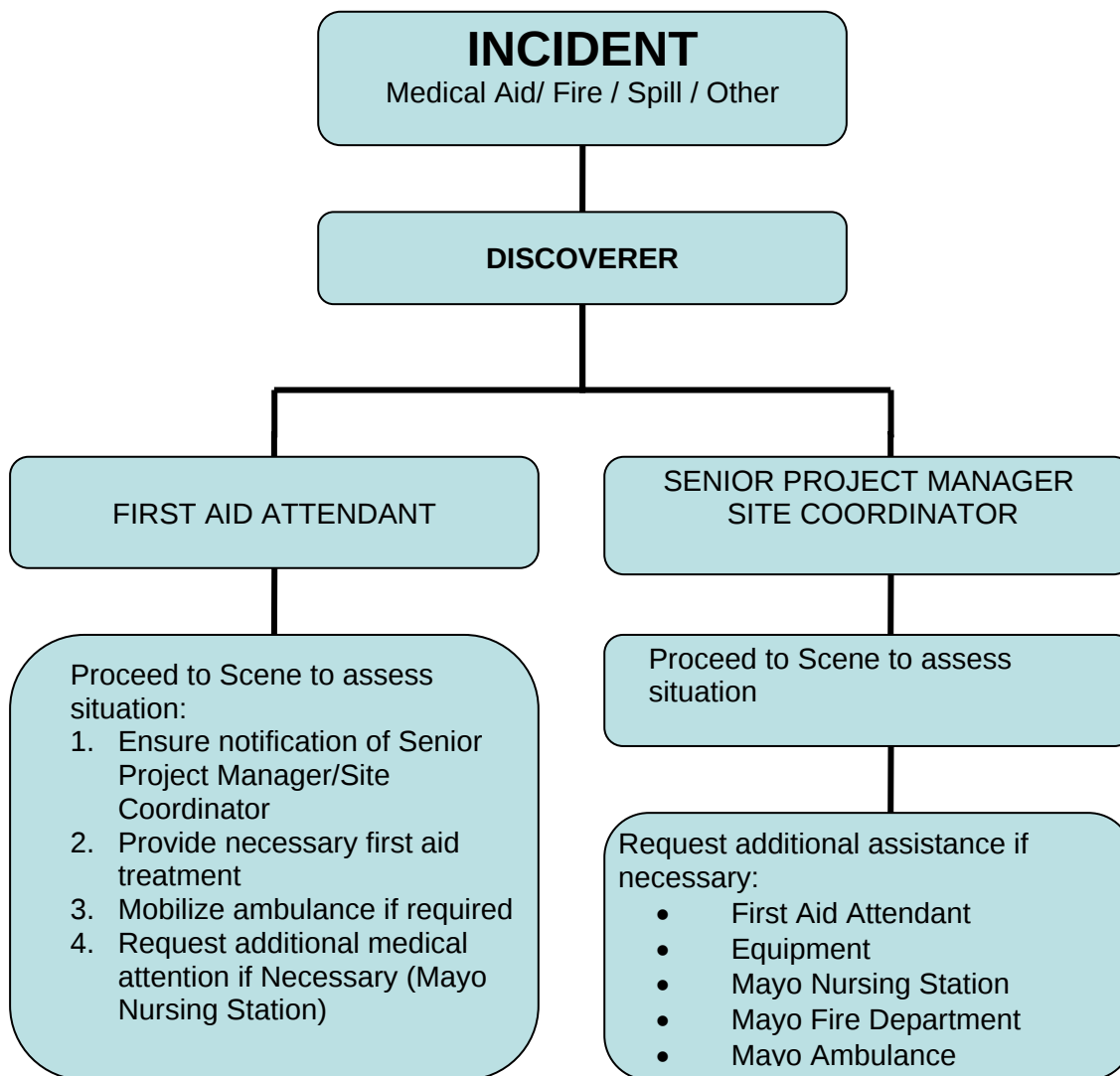
Reprinted from "Occupational Health and Safety with Mine Safety Regulations."
Yukon Workers' Compensation Health and Safety Board. Department of Justice, Government of the Yukon. 1992

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3.0 INITIAL RESPONSE TO SERIOUS INCIDENT - KENO HILL PROJECT

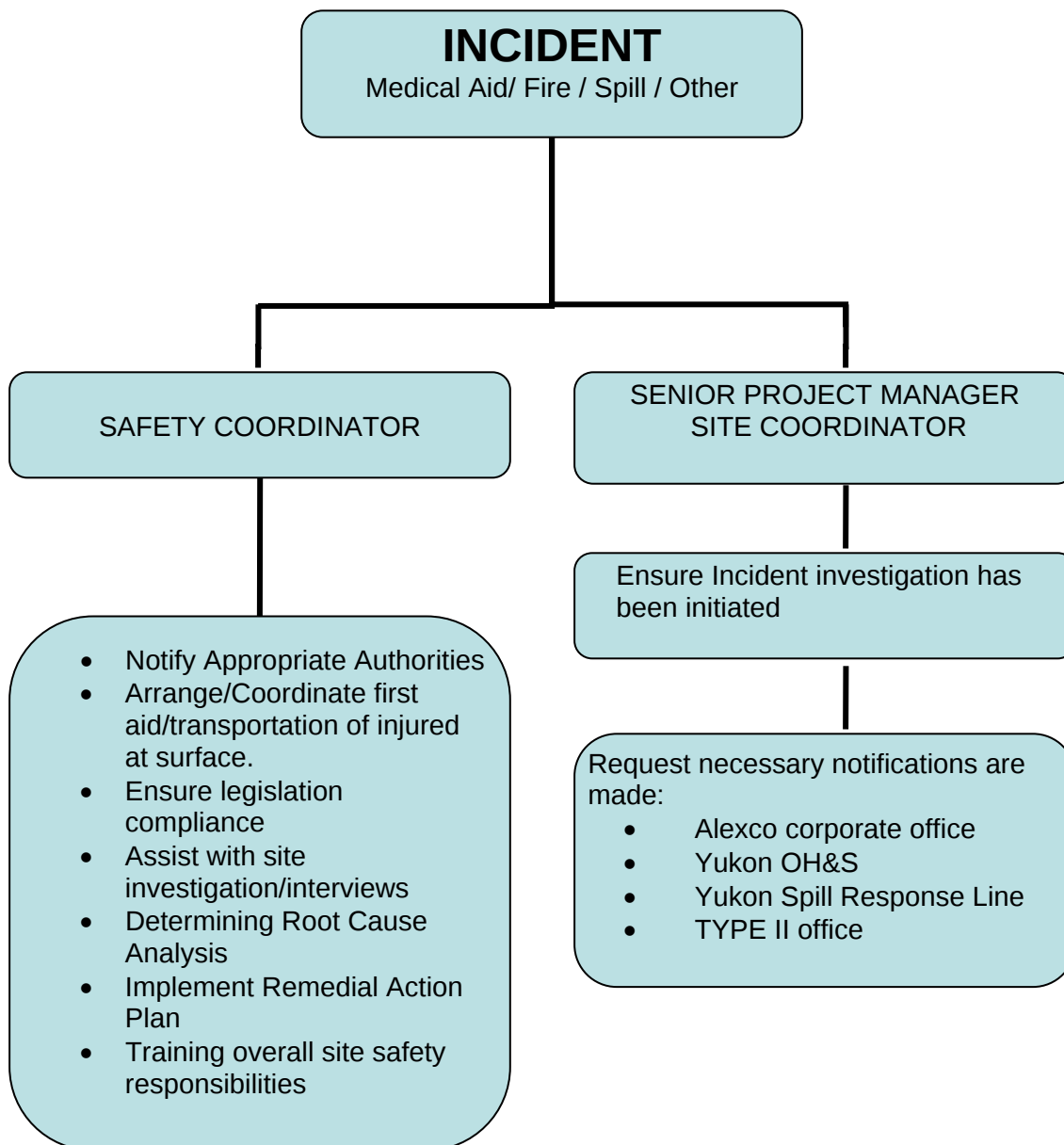


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4.0 FOLLOW UP TO SERIOUS INCIDENT - KENO HILL PROJECT



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5.0 SERIOUS INCIDENT RESPONSIBILITY MATRIX

POSITION	RESPONSIBILITIES
Area Supervisor Site Coordinator	• Coordinate initial response • E.R.T. and specialized resources mobilization & consultation • Attend and coordinate response for all incidents involving “serious injury” and “serious accident”, as defined in Sec. 33, OHS Act • Initial scene control • Responsible for investigation – determine contributing causes and take immediate proactive action • Request additional external resources as necessary • Coordinate recovery and investigative activity • Notify Senior Project Manager • Ensure all government reporting has been completed • Organize and conduct post-incident debriefings • Prepare Incident Report and make recommendations
First Aid Attendant	• Ensure area supervisor has been notified of incident • Provide first aid treatment if necessary • Mobilize ambulance to scene, if required • Stand by to assist as required by scene coordinator
Senior Project Manager	• Designate on-call senior personnel during weekends • Receive briefings on incident details • Provide direction as required • Notify regulatory agencies, government and Alexco corporate office of incident • Review Incident Reports • Attend at all incidents involving “serious injury” and “serious accident”, as defined in Sec. 33, OHS Act • Verify compliance with standards and government regulatory requirements • Forward necessary reports to regulatory agencies • Fire Chief – assume responsibility for fire investigation
Safety Coordinator	

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6.0 SERIOUS INCIDENT CONTACTS FOR SITE PERSONNEL

Position	Contact Personnel	Office Contact Number	Radio	Home Contact Number
Operations General Manager	Tim Hall	867-995-3113	CH 3	907-790-2245
Safety Coordinator	Colleen Geddes	867-995-3113	CH 3	867-667-6155
Mine Manager	Tom Fudge	867-995-3113	CH 3	
Project / Construction Manager	Peter Johnson	867-995-3113	CH 3	867-993-5911
Remediation Manager	Kael Hanak	867-995-3113	CH 3	867-393-2741
Operations General Manager	Tim Hall	867-995-3113	CH 3	907-790-2245
Chief Operating Officer	Brad Thrall	604-633-4888		604-250-6501
Chief Executive Officer	Clynt Nauman	604-633-4888		604-250-3293
Access Consulting Group	Dan Cornett	867-668-6463		867-668-7964
Procon Mining (Elsa)	Anson Smith	867-995-3113 604-637-5997 (Bellekeno)	CH 3	
Procon Mining (Vancouver)	Brad Skeeles	604-296-3365		778-837-4407
Boart Longyear	William Krasnozon	705-672-3311		705-499-3444
Kluane Drilling		705-672-3311		

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7.0 EXTERNAL RESOURCE CONTACTS

With the exception of medical aid incidents, external resources will be authorized only by the Senior Project Manager on site or his designate, or those with higher level of responsibility.

Assistance Required For:	Agency Contact	Contact Number
Ambulance / Air Medivac	Mayo Nursing Station	867-996-4444
Poisonous Substance Ingestion	Poison Control Centre	867-633-8477
Fire (building) / Rescue Assistance	Mayo Fire Department	867-996-2222
Forest Fire		888-798-FIRE
Spill	Yukon Spill Report Line	867-667-7244
Spill Fax		867-393-6266
Wildlife Management	YTG Ren. Res. - Mayo	867-996-2162
Crime – Related Incidents	RCMP – Mayo	867-996-5555
Fatality	Coroner or RCMP	867-996-5555
Mine Rescue YT OH&S	Mine Inspector	867-334-2002
Procon Mining and Tunneling Ltd	Brad Skeeles	604-291-8292
Boart Longyear	William Krasnozon	705-499-3444
Kluane Drilling		705-672-3311

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8.0 UNDERGROUND EMERGENCY ACTION PLAN

In an emergency situation it is imperative that due diligence is exercised as well as discretion. The priorities are the protection of **LIFE, LIMB and PROPERTY** – in that order

Please see **Section 2. of this E.M.R.P document** for further definition of a SERIOUS reportable incident / accident. All SERIOUS reportable incidents / accidents require notification of the YT OH&S Mine Inspector as defined in the Occupation Health and Safety Act – Mine Safety Regulations

“Underground Emergency” means:

- a) “Serious” Incident
- b) Serious Injury
- c) Uncontrolled fire
- d) Unexpected fall
- e) Unexpected explosion
- f) Any condition that can negatively affect:
 - life,
 - health
 - the environment.

“Mass Casualty Incident Emergency” – Underground means:

Any underground emergency which could affect 5 or more people.

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8.1 REPORTING THE EMERGENCY:

Where an EMERGENCY exists that may affect mine personnel, evacuation procedures must be initiated.

Underground Emergency -

Any person discovering an emergency shall:

1. Request or initiate mine evacuation.
2. Notify personnel of the emergency using a mine phone or radio in your area (leaky feeder).
3. When mine radio or phone is not readily available for use as emergency notification:
 - a) Proceed to the mine portal.
 - b) Open the stench warning control box located on the compressed airline
 - c) Turn the cylinder "on".
 - d) Remain at the box until the cylinder is empty.
 - e) Proceed to Bellekeno Mine Office Dry and report the nature of the emergency to response personnel.
 - f) Report in, brass out and standby for further instruction.
 - g) In addition to the compressed airline stench a stench bottle will be located at the main fan intake at both Bellekeno East Portal and Bellekeno 625 level. The fan must be on and response personnel must open the stench bottle and release the gas into the main fan air intake.

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8.2 IN CASE OF FIRE:

Where a FIRE exists that may affect other personnel working in the area, evacuation procedures must be initiated:

Evacuation Procedures

1. Warn all personnel in the immediate area (voice, radio, phone) to evacuate to a safe location.
2. Initiate the Stench Warning System.
3. Where the fire is small, use nearby fire extinguishers to extinguish it, provided it is safe to do so.
4. If down wind of the fire, don your self rescuer (either the W65 or the SCSR's) and proceed to either a refuge station or fresh air base.
5. Do not expose yourself to unnecessary risk and keep a clear area of retreat behind you.
6. If the fire is too big, do not hesitate, leave the area immediately and evacuate to the designated assembly area or seek refuge.

Mass Casualty Incident Emergency - Underground

In the event of an emergency which could harm more than 5 employees, request that the underground stench warning system be initiated immediately:

This includes:

- All fires
- Fall of ground
- Inundation of water
- Unplanned explosion
- Gas
- Electrical

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8.3 EMERGENCY WARNING RESPONSE:

Upon being notified of a mine emergency evacuation either by radio, phone or stench warning:

1. Stop work immediately,
2. Note the time you received the warning
3. Calmly proceed out of the mine using the safest route possible.
4. DO NOT RUSH UNNECESSARILY – EXCESSIVE SPEEDS USED TO LEAVE THE MINE CAN RESULT IN INCIDENT OR INJURY.

Once out of the mine,

1. Proceed immediately to the Bellekeno Mine Office Dry,
2. Report in to the Check out Coordinator and “Brass Out”.
3. Remain in the Mine Office Dry for further instructions.

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8.4 MEDICAL PERSONNEL:

Underground Emergency – System of response

1. Initiate emergency response notification procedures as directed by Area Supervisor or Site Coordinator.
2. Upon completion of the emergency response notification procedure:
 - a) Complete the EMERGENCY DATA SHEET.
 - b) Establish MEDICAL ROOM as the COMMUNICATION CENTER.
 - c) Keep all Communication Equipment on Standby.
 - d) Direct operations personnel to COMMUNICATION CENTER.
 - e) Confirm Incident Coordinator (IC) response has been initiated.
 - f) Complete the EMERGENCY DATA SHEET by obtaining the following information:
 - Name of person reporting the emergency
 - Nature and severity of injuries and/or incident
 - Assistance required
 - Location of emergency
 - Number of people involved

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8.5 REFUGE CHAMBER BARRICADING

For use when the nature of an emergency (such as fire, smoke, fall of ground) prevents your safe exit from the mine.

Nature of the refuge chamber

An air lock is provided to keep smoke and gases out of the inner chamber. There is a charged air line between the doors that can be used to blow smoke and gases out of the air lock before opening the inner door and possibly admitting bad air into the chamber.

When the refuge chamber is required:

1. DO NOT HESITATE. DON YOUR SELF-RESCUER IF SMOKE OR FIRE IS ENCOUNTERED.
2. RETREAT DIRECTLY TO THE NEAREST REFUGE CHAMBER AND BARRICADE YOURSELF IN.
3. Review the barricading procedures posted inside the refuge chamber.
4. Once inside, if smoke and gases leak in around the door frame, use the foam sealant provided to seal the door frame.
5. There is a compressed air line in the inner chamber. Open the air valve a $\frac{1}{4}$ turn to ensure a supply of breathing air and create a slight positive pressure to keep smoke and gases out.
6. Each chamber has a CO₂ exhaust valve located on an outer wall 2 feet above the floor. Find it and open it when using compressed or bottled air. This will prevent the chamber from over-pressurizing and allows carbon dioxide from your exhaled breath to escape. Carbon dioxide is much heavier than air; that is why the valve is low on the wall.

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7. If the compressed air line loses pressure, the compressed air bottles can be used to provide a source of breathing air. Turn the compressed air line off. If fire caused the failure, air could be withdrawn out of the chamber through the air line.
8. Turn on all 4 compressed air bottles. Turn the regulator knob and adjust the outlet pressure to 25 – 30 psi. Adequate breathing air and slight positive pressure will be provided.
9. Check the mine phone for operation and call outside the mine. Report the following information:
 10. Your name and name of others in refuge.
 11. Refuge Chamber location.
 12. Outside conditions.
 13. That you are safe in refuge.
 14. Remain in the refuge as long as you are safe, even if communication is cut off.
 15. Do not be tempted to wander about the mine seeking safe passage out.
 16. Remain in the refuge until you are rescued by mine rescue personnel.

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8.6 MAIN VENTILATION CONTROLS IN CASE OF FIRE

In the event of an underground fire, efforts will be undertaken to ensure ventilation to the mine is maintained.

Operation of the main ventilation fans in Bellekeno East Decline and/or Bellekeno 625 level will be guarded and monitored to ensure continuous operation of the fans at all times.

The effects of the alteration to the main ventilation fans shall be clearly understood before the changes are made.

During a mine fire:

- There will be no alteration to the operation of the main fans without the authorization of the Area Supervisor or Site Coordinator.

8.7 MINE VENTILATION OUTAGE ACTION PLAN

In the event of fan failure due to a malfunction, accident, power failure, or other such unplanned or unscheduled event, this action plan applies to all underground employees and contractors whose work areas are affected by the temporary interruption of the operation of the main, booster, or auxiliary fans in the mine.

Main Ventilation Interruption Procedure:

Less Than 2 Hours:

1. Diesel mobile equipment, mucking operations, will cease in all active production and development headings supplied by mechanical ventilation until the main ventilation system is restored. ... OR ... The active heading is continually monitored for air quality and is maintained in compliance with the applicable standards.
2. All other work relevant (scaling, cleanup, maintenance, etc) to the active heading may continue per normal operations provided the air quality remains in compliance with the applicable standards.
3. Diesel mobile equipment for access to, or egress from, the mine will continue per normal mine operations provided air quality remains within compliance of the standards. **If the ventilation is forced the diesel equipment must be shut down until ventilation is re-established.**

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Two Hours or More:

1. Air quality testing will be performed by Supervision in all active headings affected by the ventilation interruption. Where air quality is not within compliance of the standards for mine ventilation, all personnel shall be withdrawn from the active heading affected.
2. Ventilation to the affected active headings shall be restored to normal and the air quality in the affected active workings shall be tested by Supervision to ensure the air quality meets the requirements of the standards prior to the return to work in the area.
3. Prolonged ventilation interruption will require air quality testing in the affected active workings at least every four hours until ventilation has been restored.
4. In areas where air quality prevents continued testing, normal ventilation shall be restored for a minimum of two hours before persons enter the area to test air quality ... OR ... Suitable self contained breathing apparatus and procedures consistent with YT WCB OHS Regulations will be followed by competent persons to perform air quality testing the effected area.
5. Diesel mobile equipment for access to, or egress from, the mine on the main haulage ways will continue per normal mine operations provided air quality remains within compliance of the standards.
 - a. **This is contingent on the mine having flow through exhaust. If the ventilation is forced the diesel equipment must be shut down and the mine evacuated until ventilation is re-established.**

Mine Quality Air Standards		
OXYGEN	Minimum 19%	Normal air is 21%
CARBON MONOXIDE	Permissible limit 35 PPM	
NITROGEN DIOXIDE	Permissible limit 3 PPM	
SULFUR DIOXIDE	Permissible limit 2 PPM	

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9.0 MINE RESCUE

The contractor (Procon Mining and Tunneling) and Alexco Resource Corp. will have a trained mine rescue team available for mine emergencies.

If the mine rescue team is required, a back-up team has to be readily available. Due to Alexco's size of operation, sufficient responders may not be available onsite. Alexco has in place cooperative agreements with the Cantung Mine in the Yukon, BHP Ekati Mine in the NWT and other divisions of Procon Mining and Tunneling.

If the incident requires Mine Rescue response the YT OH&S Mine Inspector, Cantung and Ekati must be notified immediately, advised of the situation and to respond immediately pending available resources.

Agency	Contact Personnel	Office Contact Number	Home Contact Number
YT OH&S Mine Inspector	Ossie Venasse	867-334-2002	1-800-661-0443 (toll free)
Procon Mining and Tunneling	Brad Skeeles	604-291-8292	778-837-4407
Cantung Mine	Mark Goebel or Mike Daley	604-759-0913 X225	safety@skymessage.com .
BHP Ekati Mine (NWT)	Rob MacLean or Richard Weishaupt	867-880-2201	867-880-2154

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10.0 REPORTABLE SPILL QUANTITIES

Should a spill of reportable quantity occur, under federal and territorial regulations, we are required to *immediately* notify the 24-hour Yukon Spill Report line: telephone number 867-667-7244.

For the purposes of the water use license:

1. Any quantity of spill is reportable.
2. The Senior Project Manager, Site Coordinator or Manager On-Call are responsible for reporting spills.
3. Reportable spills require an Incident Investigation Report to be completed.

This guide will assist in determining what volume of product requires reporting to regulatory agencies.

If a spill is deemed to be of reportable quantity, the area supervisor will immediately notify the Site Coordinator or Senior Project Manager who will in turn ensure that spill reporting is completed by designated personnel.

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Reportable spill quantities

HAZARD Class	TYPICAL PRODUCTS ON SITE	REPORTABLE QUANTITY
Explosives (1)	ANFO	Any amount spilled outside of blast pattern
Flammable Gases (2.1)	- Propane - Acetylene	>100 Liters
Non-Flammable Gases (2.2)	Halon	>100 Liters
Poisonous Gases (2.3)		Any Amount
Non-poisonous Gases (2.3)		>100 Liters
Corrosive Gases (2.4)		Any Amount
Non-corrosive Gases (2.2)		>100 Liters
Flammable Liquids (3.)	- Diesel - Gasoline - Glycol - Hydraulic &/or Engine Oil	>200 Liters
Flammable Solids (4.)		>25 kg
Spontaneous Combustibles (4.)		>25 kg
Dangerous When Wet (4.)		>25 kg
Oxidizers (5.1)	- Sodium Hydroxide / Caustic Soda - Lime Solution - Sodium Nitrate - Calcium Hypochlorite - Ammonium Nitrate	>50 kg or 50 Liters
Corrosive Materials (8.)	Hydrochloric / Muriatic /	>5 kg or 5 Liters
Miscellaneous Dangerous Goods (9.1)		>50 kg
Dangerous Waste (9.3)	Waste Oil	>5 kg or 5 Liters

The Bellekeno MLU operating permit dictates that all spills will be reported.

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11.0 SPILL RESPONSE EQUIPMENT RESOURCE LIST

	Location	Contact
Spill Response Kit	• Bellekeno East Fuel Tank • Bellekeno East Shop • Bellekeno 625 adit	Site Coordinator
Oil- Absorbent Pads	• In Spill Kits	Site Coordinator
Oil- Absorbent Booms	• In Spill Kits	Site Coordinator

Any contaminated soils will be removed to the land treatment facility in Mayo or a suitable permitted facility within the Keno Project area.

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12.0 MISSING PERSONS ACTION PLAN

Potential exists where persons may become lost on the property. Such incidents can occur under the following circumstance:

- Alexco or Contractor personnel engaged in surface exploration or any other activities (i.e. care and maintenance) are overdue and can not be located or contacted.

Upon notification that Alexco personnel, or Contractors are unaccounted for on the property you should:

1. Immediately advise the Area Supervisor and Senior Project Manager or Site Coordinator who will:
 - Assess and determine the level of response required.
 - Gather all available information about the missing persons including last known location.
 - Advise the RCMP of the circumstances and request further assistance
 - Designate Keno Hill Project employees to stand-by and assist the RCMP in search efforts as directed
2. Stand-by to provide further information and assistance as required.

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13.0 EMERGENCY EQUIPMENT AND EQUIPMENT LOCATIONS

EMERGENCY EQUIPMENT	LOCATION	USE IS AUTHORIZED BY:
Ambulance 4x4 Suburban with Stretchers	Elsa Town site Fire hall	Sr .Project Manager / Site Coord. First Aid Attendant
(MMTU) Mobile Medical Treatment Unit 4 x 4 Truck with Stretchers	Bellekeno Mine Site	Sr .Project Manager / Site Coord. First Aid Attendant
AED Automatic External Defibrillator Use when CPR is required	Admin 1 st Aid Room Black and Neon ZOLL – AED Bellekeno East 1 st Aid Room	Sr .Project Manager / Site Coord. First Aid Attendant
Oxygen Airway Adjuncts (OPA)	MMTV 1 st Aid Jump Kit Admin 1 st Aid Room Bellekeno East 1 st Aid Room	Sr .Project Manager / Site Coord. First Aid Attendant
Spinal Precautions Spine Boards & Head Blocks Stiff Collars Spyder Straps KED – Vehicle extrication device	Ambulance MMTV Admin 1 st Aid Room Bellekeno East 1 st Aid Room	Sr .Project Manager / Site Coord. First Aid Attendant
Splints Vacuum Splints – Extremity breaks	Admin 1 st Aid Room Bellekeno E. 1 st Aid Room	Sr .Project Manager / Site Coord. First Aid Attendant
Wound Management Burn Dressings Sterile Water Bandages & Dressings	Ambulance MMTV Admin 1 st Aid Room 1 st Aid Jump Kit Bellekeno East 1 st Aid Room	Sr .Project Manager / Site Coord. First Aid Attendant
EPI Pens Anaphylactic Shock / Allergies	Ambulance MMTV Admin 1 st Aid Room 1 st Aid Jump Kit Bellekeno E. 1 st Aid Room	Sr .Project Manager / Site Coord. First Aid Attendant

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14.0 EMERGENCY FIRST AID PATIENT ASSESSMENT MODEL

THE ROLE OF THE FIRST PERSON AT THE SCENE

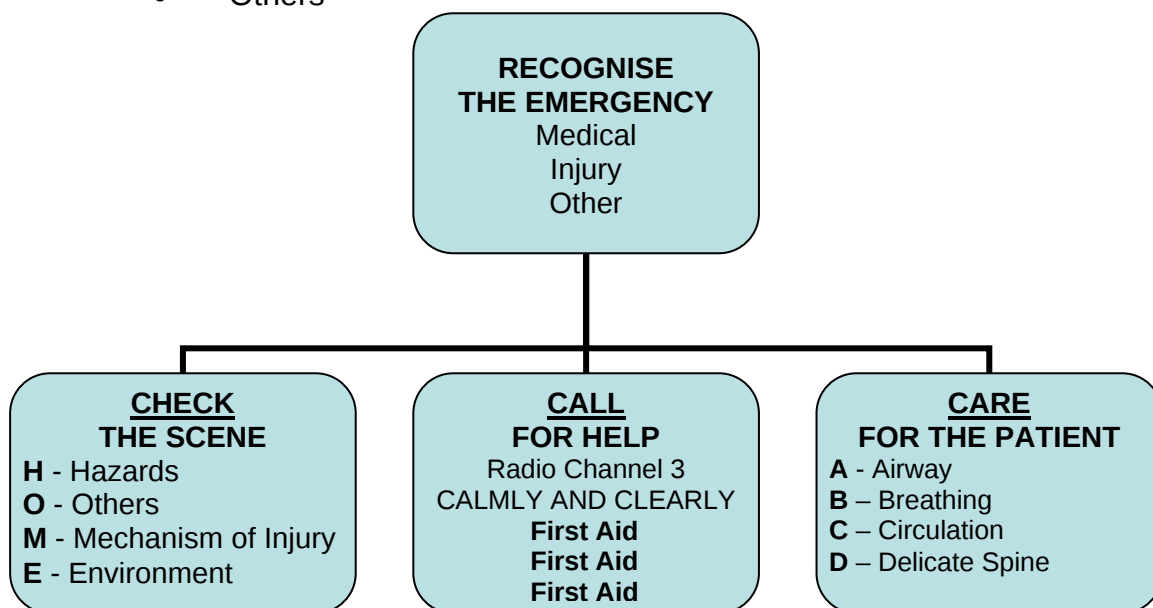
1. **CHECK** - Recognize the emergency
2. **CALL** – Activate medical services / first aid to attend the scene
3. **CARE** - Act according to your skills, knowledge and comfort level

A “**medical emergency**” is an illness or condition that needs immediate medical attention. For example:

- Anaphylactic shock
- Diabetic emergency
- Heart attack
- Others

An “**injury**” is damage to the body caused by external force. For example this damage can cause

- Broken bones
- Burns
- Wounds
- Others



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15.0 EMERGENCY CONTACT INFORMATION

*As this **ERP document** is updated, only revised pages will be replaced.*

15.1 Keno Hill Project

Name	Office	Home (other)	Cell
Tim Hall Operations General Manager	867-995-3113	907-790-2245	907-723-8974
Colleen Geddes Safety Coordinator	867-995-3113	867-667-6155	867-332-8384
Peter Johnson Project/Construction Manager	867-995-3113	867-993-5911	N/A
Kael Hanak Remediation Manager	867-995-3113	867-393-2741	N/A
Andrea Mansell Administration	867-995-3113	867-993-5911	N/A
Stan Dodd VP Exploration	867-995-3113	360-647-1375	360-319-1882
Bellekeno Shifters Office	1-604-637-5669		
Anson Smith Procon Mining	867-995-3113		306-382-9748
William Kraznosen Boart Longyear	705-672-3311		705-499-3444
Kluane Drilling			

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In the event of a "SERIOUS" Incident, injury or accident you must notify:

1. Keno Hill Project Department Manager or Alternate
2. Member of the First Aid, Health and Safety Department

15.2 Keno Hill Project Department/Area Mangers

Name	Office	Home (other)	Cell
Tim Hall Operations General Manager	867-995-3113	907-790-2245	907-723-8974
Colleen Geddes Safety Coordinator	867-995-3113	867-667-6155	867-332-8384
Stan Dodd VP Exploration	867-995-3113	360-647-1375	360-319-1882
Peter Johnson Project/Construction Manager	867-995-3113	867-993-5911	
Kael Hanak Remediation Manager	867-995-3113	867-393-2741	N/A
Andrea Mansell Administration	867-995-3113	867-993-5911	
Anson Smith Procon Mining	867-995-3113		
William Kraznosen Boart Longyear	705-672-3311		705-499-3444
Kluane Drilling			

15.3 First Aid, Health & Safety Department

Name	Office	Home (other)	Qualification
Jennifer Dobbie First Aid & Safety	867-995-3113	867-332-5363	EMR, Mine Rescue U/G
Andrea Mansell First Aid / Administration	867-995-3113	867-993-5911	EMR, Surface Rescue
Tiffany Jewell First Aid & Safety	867-995-3113		EMR
Lisa Perry First Aid & Safety	867-995-3113		EMR

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15.4 Alternate Keno Hill Department Managers

Name	Office	Home (other)	Cell
Grant Ewing / Les Keim Care and Maintenance	867-995-3113	867-332-1329 GE 867-993-5878 LK	
Rob McIntyre Access Consulting	867-668-6463	867-633-5844	867-334-6002
Dan Cornett Access Consulting	867-668-6463	867-668-7964	867-334-5104
Brad Thrall, COO Alexco Resource Corp	604-633-4888		604-250-6501
Clynt Nauman, CEO Alexco Resource Corp	604-633-4888		604-250-3293
David Whittle, CFO Alexco Resource Corp	604-633-4888		

ALEXCO RESOURCE CORP.

Keno Hill Project
PO Box #7
Elsa, Yukon Territory
Y0B 1J0

Tel: 867-995-3113

Fax: 604-995-2600

ALEXCO RESOURCE CORP.

Corporate Administrative Office
Suite 1150 - 200 Granville Street
Vancouver, BC
V6C 1S4

Tel: 604-633-4888

Fax: 604-633-4887

ALEXCO RESOURCE CORP.

#3 Calcite Business Centre
151 Industrial Road
Whitehorse, YT
Y1A 2V3

Tel: 867-633-4881

Fax: 867-633-4882

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15.5 Reporting for "Serious" incidents, injuries, or accidents

Agency	Name	Home (other)	Other
YT OH&S Mine Inspector	Ossie Venasse	867-334-2002	1-800-661-0443 (toll free)
Chief Operating Officer Alexco Resource Corp	Brad Thrall	604-633-4888	604-250-6501
Chief Executive Officer Alexco Resource Corp	Clynt Nauman	604-633-4888	604-250-3293
Chief Financial Officer Alexco Resource Corp	David Whittle	604-633-4888	

15.6 Radio Communications

Channel	Area
Channel 3	Keno Hill Project – First Aid
Channel 4	LAD 1

Summon First Aid by:

Ensuring the radio turned on and on Channel 3

Keying the mic. to capture the channel

Clearly and calmly say: First Aid ...First Aid ...First Aid

Wait for a response from the attendant

State your name

State your location

State the nature of the assistance required

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15.7 Emergency MEDIVAC Transportation

Name	Office	
ALCAN Air Fixed Wing	867-668-2107	Whitehorse Dispatch
Trans North Helicopters Helicopter	867-996-2355 867-335-2355	Mayo Dispatch Kel Huston - Pilot
Trans North Helicopters Helicopter	867-668-2177	Whitehorse Dispatch
Mayo Nursing Station Ground Ambulance	867-996-4444	Mayo Nursing Station Dispatch
Mayo RCMP Alternate Emergency	867-996-5555	Mayo / Whitehorse Station Dispatch

Important information to convey to MEDIVAC dispatch

1. Number of patients
2. Location of patients
3. Patient assessment provided by First Aid Attendant including:
 - Level of consciousness
 - Vitals – ABC's
 - Treatments provided (if any)
 - Spinal precautions (if any)
4. Weather or driving conditions
5. Coordinates for helicopter

HELICOPTER LANDING PADS -

Sites have windsocks for directional reference

Safety personnel will ensure the landing site is clear, lighted and free of traffic

<u>Elsa town site:</u>	Latitude	63. 54 North
	Longitude	135.29 West
Landing is at the shop / transport area		
<u>Bellekeno East Mine:</u>	Latitude	63. 54 North
	Longitude	135.15 West
Landing is at the helicopter pad located up hill of the portal at the waste rock site.		

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15.8 Keno Hill Mine Rescue

Name	Agency	Name
Anson Smith	PROCON	U/G Rescue
Leland Smith	PROCON	U/G Rescue
Steve Cooper	PROCON	U/G Rescue
Andrew McArdle	PROCON	U/G Rescue
Randy Molinga	PROCON	U/G Rescue
Herman Melancon	PROCON	U/G Rescue
Roger Herbert	Boart Longyear	U/G Rescue
Jean-Guy Therriault	Boart Longyear	U/G Rescue
Tim Hall	ALEXCO – U/G	U/G Rescue, SFA – CPR
Jennifer Dobbie	ALEXCO – U/G	U/G Rescue, EMR
Grant Ewing	ALEXCO – U/G	U/G Rescue, SFA – CPR, Fire 1, Auto Ex
Travis Murphy	ALEXCO – U/G	U/G Rescue, SFA – CPR
Florian Zech	ALEXCO – U/G	U/G Rescue, SFA – CPR
Vince Scartozzie	ALEXCO – U/G	U/G Rescue, SFA – CPR
Kael Hanak	ALEXCO – U/G	U/G Rescue, SFA – CPR
Peter Johnson	ALEXCO – Surface	EMR, Auto Ex
Tiffany Jewell	ALEXCO – Surface	EMR, Auto Ex
Andrea Mansell	ALEXCO – Surface	EMR, Auto Ex
Kyle Morrison	ALEXCO – Surface	SFA, Class 2
Rob Schneider	ALEXCO – Surface	EMR, Auto Ex
Stan Dodd	ALEXCO – Surface	SFA – CPR
Jared Chipman	ALEXCO – Surface	SFA – CPR
Kathleen Gould	ALEXCO – Surface	SFA – CPR
Colleen Geddes	ALEXCO – Surface	EMR

15.9 Co-operative Mine Rescue (CMR) Assistance

Agency	Name	Home (other)	Other
YT OH&S Mine Inspector	Ossie Venasse	867-334-2002	1-800-661-0443
Procon Mining & Tunneling	Brad Skeeles	604-291-8292	778-837-4407
Cantung Mine	Mark Goebel or Mike Daley	604-759-0913 X225	safety@skymessage.com
BHP Ekati Mine (NWT)	Rob MacLean or Richard Weishaupt	867-880-2201	867-880-2154

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15.10 Territorial and Federal contact numbers

Name	Office	
Mayo Ambulance	867-996-4444	Mayo (Volunteer Responders)
Mayo Fire & Rescue	867-996-2222	Mayo (Volunteer Responders)
RCMP	867-996-5555	Mayo
Whitehorse Regional Hospital	867-393-8700	Emergency
Whitehorse Regional Hospital	867-393-8700	Admissions
Yukon Corner	867-667-5317	Whitehorse
Yukon Dept. of Conservation	867-667-5317	Whitehorse
Yukon Dept. of Fish & Game	867-393-6722	Whitehorse
Yukon Energy	867-996-2387	Mayo
Yukon Energy	1-800-676-2843	After hours Whitehorse
Yukon Occupational Health & Safety	867-334-2002 tel. 867-393-6279 fax	YOH&S Ossie Venasse (Mine Inspector)

APPENDIX G

HERITAGE RESOURCES PROTECTION PLAN



HERITAGE RESOURCES PROTECTION PLAN

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BELLEKENO PROJECT



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1.0 Introduction

The Keno Hill Mining District is located in the vicinity of Keno City (63° 55'N, 135° 29'W), in central Yukon Territory, 354 km (by air) due north of Whitehorse. 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 Bellekeno mine 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 Heritage Resources Protection Plan has been assembled to address the potential discovery of previously unknown heritage resources during the course of the project and provide a protocol for reporting and protecting these resources. For reference, the following definitions of heritage resources are provided:

- Heritage (or Historic) Resource – abandoned sites and objects greater than 45 years in antiquity. Cabins, caches, graves, brush camps, and other man-made structures, features or objects are the most readily recognized. Mining artifacts in the Keno Hill District are particularly abundant, as the area has hosted nearly 100 of years of very active mining.
- Archaeological Resource – tend to date before European contact and found on or under the ground surface, generally consisting of the remains of ancient camps, hearths, stone tools and debris.
- Palaeontological Resource – fossil and other remains of extinct or prehistoric plants and animals including bones of mammoth, horse, bison and other ice age fauna as well as fossil remains and traces plants, vertebrate and invertebrate fauna.

2.0 Heritage Resources Protection Plan

Over the decades since the mid-19th century, pioneer gold seekers, frontiersmen, miners, surveyors, trappers, merchants, geologists, engineers and individualists have come to explore, live and work in the Keno area. Since the major discovery of silver around the turn of the 20th century, the district made the Yukon one of the world's leading silver producers and backstopped the territorial economy for decades.

Alexco recognizes the importance of the historic and heritage values that characterize this historic mining district. In fact, the historic and heritage aspects of the Keno Hill Silver District certainly enhances our pride and enjoyment of the area while we pursue the economic revitalization of the District. As miners, we naturally hold historic mining evidence and artifacts in high regard.

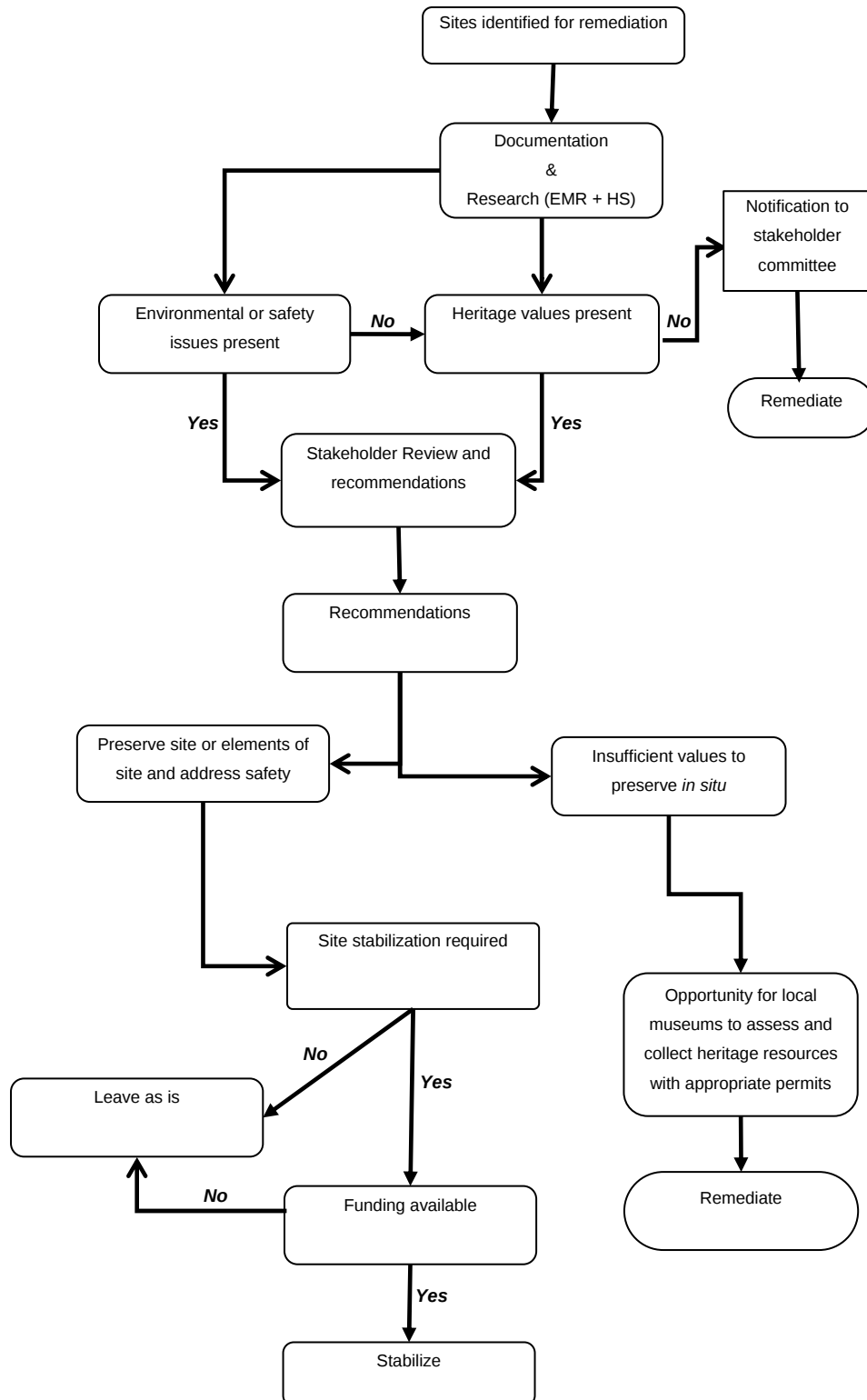
Consideration of heritage resources is an important component of the District wide Closure Plan being developed by Alexco and the governments of Canada and Yukon and the NNDFN. Multi-stakeholder heritage assessment of Keno Hill last year, as a component of our Physical Hazards reduction program, identifying specific element of the Keno 700 mine site, as well as Comstock-Keno, the Keno 200, and the Porcupine Mine. Although much of these sites will be remediated, there were several items of interest to various the stakeholder groups who participated in the preliminary assessment.

In general, the process developed in conjunction with Type II Abandoned Mine Sites and YG Heritage and NNDFN follows the protocol as presented as Figure 1 “*Protocol for Site Remediation of Keno Hill Mine Sites*”.

Documentation of sites includes: locating with GPS, photographs, cataloguing, initial condition, environmental and public safety assessment, historical research.

The stakeholder Committee struck to oversees this work includes ERDC, First Nation of the Nacho Nyak Dun, the Silver Trail Association, YG – Yukon Type II Abandoned Mines staff, and Yukon Historic Sites staff.

Figure 1 Protocol for Site Remediation of Keno Hill Mine Sites



Local Museums in the area are the Keno Mining Museum in Keno or the Binet House in Mayo.

Prior to any removal of any heritage resource from the Keno Hill will require a Permit to remove heritage resources from sites – Scientists and Explorers Permit.

Through community and stakeholder consultation, the Duncan Creek Road to the west of Keno City was identified as having been used in the past as an informal solid waste disposal area. This area may correspond with Phase II of the Keno City Bypass, and construction of this road may disturb heritage resources. A formal heritage inspection of the Keno City Bypass the Flame and Moth mill site/DSTF area has been scheduled with Yukon Government Heritage Branch on July 28th, 2009 in order to identify and preserve any heritage resources which may exist before construction commences.

With the possible aforementioned exception, no activities will occur in the vicinity of known heritage resources unless approved in writing by the appropriate authorities. Before commencing any project activities that may disturb known heritage resources, the area would be appropriately marked in the field. Development is prohibited within 30 m of a known or suspected heritage site.

3.0 Response to Discovery of Heritage Resources

The following response will be implemented to provide protection for any heritage resources discovered during:

- Land clearing;
- Road and trail construction/use; and
- Excavation and placement of soils/rock in are as proposed for development.

Notification & Preliminary Response	• In the event previously unknown heritage resources are discovered, operations will be suspended and the site will immediately be marked and protected from further disturbances and no objects will be removed. • Notification will be provided to Yukon Government Heritage Resources Branch at (867)667-5363 and the NNDFN at (867) 996-2265 and they will be consulted for advice on mitigation. • No further activities may be carried out within 30 m of the site until Yukon Government indicates in writing that the activities may be resumed.
Archaeological Resources	• Any site containing archaeological objects discovered in the course of carrying out operations will, as soon as practicable, be reported to the Yukon Archaeology Program, Government of Yukon in Whitehorse at (867)667-3771 or (867)667-5386.
Palaeontological Resources	• Any site containing palaeontological resources discovered will, as soon as practicable, be reported to the Yukon Palaeontology Program, Government of Yukon in Whitehorse at (867)667-8089 or 1-800-661-0408.
Human Remains	• If human remains or burial sites are discovered, work will cease immediately and the RCMP notified. The Guidelines Respecting the Discovery of Human Remains and First Nation Burial Sites in the Yukon will be followed.

APPENDIX H

WILDLIFE PROTECTION PLAN



WILDLIFE PROTECTION PLAN

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1.0 INTRODUCTION

The Keno Hill Silver District supports a variety of wildlife including ungulates, fur-bearers, small mammals, upland game birds and waterfowl. Results of moose surveys conducted between 1993 and 2006 as well as an annual ground based monitoring program (2001 – 2006) generally indicate that the density of moose in the Mayo-Elsa-Keno area is higher than the Yukon average. Small mammals common to the area include muskrat, beaver, ground squirrel, red squirrel, varying hare, fox, mink, weasel, vole and shrew. Less common are porcupine, river otter and chipmunk. Alpine areas have local populations of hoary marmot and pika as well as a unique population of butterflies. Large carnivores include black bear, grizzly bear, lynx and timber wolf. This area is included in the range of the Mayo woodland caribou herd, although only anecdotal information on the herd is available. Caribou and sheep are also observed on rare occasion.

A summary of the key terrestrial resources and resources utilization within the regional area is provided:

- the area is characterized by widespread discontinuous permafrost with a variety of habitat types including low wetland areas to scree dominated mountainous areas;
- a wide variety of wildlife is supported (above);
- the area has a long history of resources utilization by local communities and first nations with exploitation of local wildlife populations; and
- local observations indicate that wildlife habitat is regenerating and wildlife populations are being maintained.

1.1 Site History

There is no question that past anthropogenic activities in the Keno Hill Silver District have altered the local landscape and affected local wildlife populations. However, observations of these effects over time have indicated the environment's natural capacity to regenerate habitat and sustain wildlife and waterfowl populations in the face of past development and occupation pressures. With the Bellekeno mine/mill development and operation activities, it is expected that there will be minimal loss of

wildlife habitat or displacement of local wildlife due to the Bellekeno mine/mill development operation. Some areas within the mill site and tailing areas have been previously disturbed with many facilities already in existence on the sites (Flame and Moth pit is a previously disturbed area).

2.0 TOPICS OF CONCERN AND PROTECTION MEASURES

The objective of the procedures described below is to mitigate adverse impacts on wildlife by minimizing disturbance to the animals and their habitat, and minimizing disruption of their free movement.

Topic of Concern	Protection Measures
General	• All incidents and interactions with wildlife shall be reported to the District Conservation Officer in Mayo at (867) 996-2202, as well as any other communication regarding wildlife. • Every effort shall be made to avoid disturbing wildlife. • The provisions of the <i>Quartz Mining Land Use Regulations</i> Schedule 1 Operating Conditions (MLUA Class 3 LQ00186) will be adhered to.
Access Management	• Public access to the mill site will be controlled by means of signage at the mine site, mill site and all site haul and access roads. • Public access to the mine site, ponds and adits will be controlled by signage or gates and/or fencing • Access to the Flat Creek Camp will be controlled by means of fencing and a gate. • Speed limits will be enforced for mine traffic and posted along the access and site roads (maximum 40 km/hr, reduced to 20 km/hr at blind corners and bridge crossings). Mine traffic between the mill and the mine site will be radio controlled for safety and speed control. • To the maximum extent possible employees will be encouraged to take advantage of project bussing and transportation from Mayo/Elsa to the mine and mill site, thereby minimizing hunting opportunities and direct road mortalities; • Private employee all-terrain vehicles will be prohibited on the access road and at the mine site. • Existing trails and disturbed areas will be used where possible to minimize the addition of new linear corridors and there will be no unnecessary disturbance to the organic mat and soils. • Subject to safety considerations, new trails, roads, or cut-lines will be

Topic of Concern	Protection Measures
	doglegged to prevent predator line of sight into new habitat. • Snow plows on the access road will create breaks in the snow berm every 0.5 km to allow for wildlife to escape from the access road.
Harassment	• As provided for in sections 92 and 93 of the <i>Wildlife Act</i>, the proponent shall not harass wildlife or encourage wildlife to become a public nuisance. • Employees will undergo wildlife education, which will encompass no wildlife feeding, wildlife avoidance, and bear awareness among other topics. • Project personnel will not be allowed to have pets on the project site.
Ecologically Sensitive Areas	• Every precaution will be taken to avoid disturbance of wildlife sensitive areas, including but not limited to calving, denning or nesting sites. • Vegetative buffer zones will be maintained around stream riparian areas and facilities to minimize wildlife disturbance and protect wildlife corridors.
Wildlife Movement	• Measures will be implemented to reduce any impediment of wildlife movements, including ploughing back snow banks and ensuring sufficient breaks in the bank to provide adequate sightlines for drivers and wildlife escape. • All project activities will be maintained to the project area. Personnel movement will be restricted to the project area and access routes. Wildlife movements will not be restricted. • Windrows will not be created so that wildlife movements are not restricted, and fire hazards are minimized.
Wildlife Mortality	• Speed limits and signage at possible wildlife crossings will be posted to minimize vehicle/wildlife collisions. • Collisions between wildlife and project vehicles along the mine haul route will result in changes to the Traffic Management Plan to minimize these effects.
Wildlife Monitoring	• Wildlife monitoring is outlined within the Environmental Monitoring Program and includes maintaining a wildlife observation log onsite; reporting wildlife encounters; monitoring measures to ensure birds do not settle in ponds; and scheduled post-rut moose surveys. Environmental personnel on site will monitor project activities and modify operations to address wildlife concerns. • Wildlife monitoring responsibilities will include waterfowl and shorebirds within the sedimentation pond during migration periods.
Hunting and Fishing	• Project personnel will not be permitted to have firearms on the project site, unless authorized as a safety precaution.

Topic of Concern	Protection Measures
	Employees are prohibited from hunting and fishing while on the mine site or in the vicinity of the project area, including during travel to and from the site. Infringement of this policy will be reported and may result in disciplinary measures.
Migratory Birds	- Monitoring of measures to ensure waterfowl and shorebirds do not settle in ponds. Environmental personnel on site will monitor project activities and modify operations to address wildlife concerns. - Further measures to protect against impact on migratory birds will be discussed with the Canadian Wildlife Service. These discussions may include bird scaring devices and measures to ensure birds do not settle in the sedimentation pond.
Bears	- The Company will have an employee bear awareness program. - The camp shall be equipped with bear deterrent devices and the devices shall be maintained in good working order throughout the duration of camp occupancy. - A Waste Management Plan is provided (section 6.0). Routine garbage patrols will be undertaken to remove materials, (e.g., metals, plastics, grease) which may be potentially harmful to wildlife. Garbage and debris destined for disposal will be collected routinely and prior to incineration stored in wildlife proof containers / fenced short term storage areas in a manner which does not attract wildlife to the mine site. Solid waste will be frequently and completely incinerated at the Elsa Solid Waste Management Facility in a manner which minimizes odours and eliminates the attraction of bears and other wildlife to the mine site. Nuisance bears shall be reported to Yukon Government authorities. - In the event that bears or other wildlife become a nuisance or problem at the camp, the Company will take appropriate measures such as the installation of a portable electrified fence around the perimeter of the camp.
Caribou	- All caribou observations will be reported to the Regional Biologist in Mayo - If caribou are observed on the project site between 15 May and 30 June¹, construction activities will be minimized to reduce disturbance of caribou calving.
Moose	If moose are observed on the project site between 20 May and 10 June², construction activities will be minimized to reduce disturbance of moose calving.

3.0 REFERENCES

Gamberg Consulting, 1999. Contaminants in Yukon Moose and Caribou. Whitehorse, YT. March 1999

APPENDIX I

LQ00240 PRE-SEASON
REPORT ADDENDUM
(PHASE I, CONSTRUCTION SITE PLAN)



February 16, 2009

Mr. Neil Salvin, Mining Lands Officer
Minerals Management Branch
Energy Mines and Resources
Yukon Government
Box 96
Mayo, Yukon
Y0B 1M0
T: (867) 996-2256

Dear Neil:

**Re: 650399 BC Ltd.(dba Alexco Resource Corp.) – Quartz Mining Land Use Class IV
Operating Permit LQ00240 for Keno Hill Exploration & Development.**

Our pre-season summary report follows. Over the course of the season we will provide your office and the Abandoned Mines office with any additions or changes of substance to the program outlined below.

Sincerely,

Stan Dodd
VP - Exploration
Alexco Resource Corp.

Vancouver (Corporate) Office

200 Granville Street
Suite 1150
Vancouver, BC V6C 1S4
T. 604 633 4888
F. 604 633 4887

Whitehorse Office

#3 Calcite Business Centre
151 Industrial Road
Whitehorse, Yukon Y1A 2V3
T. 867 633 4881
F. 867 633 4882

Elsa Office

Keno Hill Project
P.O. Box 7, Site#2
Elsa, YT Y0B 1J0
T. 867 995 3113
F. 867 995 2600

PRE-SEASON SUMMARY REPORT
Operating Plan Update
Yukon Quartz Mining Land Use Regulations

Operating Plan Number: LQ00240

Date: February 16, 2009

Field Season: 2009

Property Name: Keno Hill

Operator: 650399 BC Ltd.

c/o Alexco Resource Corp.
1150 – 200 Granville Street
Vancouver, BC V6C 1S4
Telephone: 604-633-4888

Summary of Work to be Performed:

Alexco Resource Corp. (Alexco) plans to accelerate work at Keno Hill during 2009, with the ultimate goal of establishing reserves and beginning development of the Bellekeno mine. Concurrently, district-wide exploration will continue to focus on expanding mineral resources.

In the near term, work will be centered on underground definition drilling at Bellekeno. Boart Longyear of Haileybury, Ontario has been selected as the contractor for this work.

Surface exploration drilling will commence as the season progresses and the weather moderates. Areas which may see surface work include; Bellekeno, Runer, Onek, Coral-Wigwam, Silver King, Lucky Queen, Keno 700 and the McQuesten river valley. Alexco has yet to award a contract for the surface diamond drill program. Surface geological mapping and soil sampling will also be performed at select locations throughout the district.

For the majority of the program, roads and trails constructed by previous mining and exploration operations as well as those constructed during Alexco's previous drill campaigns will be used to facilitate the 2009 program. Reclamation of disturbed areas which are unlikely to be re-entered in the near future will be carried out during the course of the season.

- 1. Total length and width of corridors/linecutting – None proposed.**
- 2. Total volume of trenching per claim – None proposed.**
- 3. Number of clearings per claim and purpose for clearings.**

As many as 29 drill sites (54 holes) have been planned (**Table 1**). Where practical, sites will be prepared in areas of prior disturbance and many sites will likely contain more than one drill hole and as such the amount of sites prepped will be considerably reduced.

Many areas of interest have been intensely disturbed in the past. Removal of any vegetative mat will result in stockpiling of the material in a manner such that it can be later dragged back over the disturbed area. In order to accommodate the drill rig, rod sloop, water tank, and support equipment each site will be approximately 30 x 20 metres in size and will include a sump capable of holding up to 20m³ (based on HQ) to allow for settling of drill cuttings.

Table 1: Surface drill site data by area (Estimated).

Claim Area	Drilling (m)	# of Sites	# of Holes	Previously Disturbed
Bellekeno	4500	8	30	Yes
Runer	1000	3	3	Yes
Onok	2500	5	8	Yes
Coral-Wigwam	1500	4	4	Locally
Silver King	500	2	2	Locally
Lucky Queen	500	2	2	Yes
Keno 700	1000	3	3	Locally
McQuesten Valley	1500	3	3	Locally
Totals	13,000	30	55	

4. Total length of new access roads.

Where ever possible, access to the majority of sites will utilize existing roads. No upgrades other than maintenance are expected on these routes that established during earlier mining and exploration operations. Short stretches of new road or trail will be constructed in a few instances during the 2009 drilling campaign. It is estimated that new road construction in 2009 will be less than **500 metres** in aggregate over a surface width of 4 metres. For roads, the vegetative cover will be removed (stockpiled where feasible), and a cut into soil and bedrock made to produce a 4-5m wide driving surface. Slope and erosional control features including ditching on the upslope and berming on the downslope as well as insertion of water bars will be placed where necessary.

5. Total length of road upgrades on claims.

Several upgrades are planned on existing roads local to the historical Bellekeno mining operations and the historical Mackeno mill site. It is estimated road upgrades in 2009 will be less than **3000 metres** in length. Road upgrades, include emplacement of erosion control measures such as water bars and ditching as well as culvert replacement if necessary.

6. Total length and width of new trails.

Where feasible, in lieu of new roads, trails will be constructed. For trails, vegetative and soil material is removed only as required to construct a safe but primitive surface for accessing drill sites with a 4x4 pickup truck. Trails will be constructed in areas requiring

limited use (e.g. one or two drill sites). If an area requires long term access a road will be constructed in accordance with demand. Total estimated length of new trails would be up to **5000 metres** over a 4-metre wide bed in 2009.

7. Total length of off road use – N/A

8. Total amount of explosives.

Approximately **6500 kg** of explosives are anticipated to be used as part of the Bellekeno underground program in 2009.

9. For underground structures, total volume of material moved to surface.

Approximately **5000 tonnes** of waste rock could be brought to the surface in 2009 as part of the Bellekeno underground operations.

10. Description of any reclamation activities

Alexco and those companies and contractors involved with the program will perform responsible exploration and make every effort to mitigate any new environmental impact to the Keno Hill property. On-going reclamation includes removing garbage from drill sites and using drag back techniques of vegetative mat, grooming and modest re-contouring to reclaim disturbed areas. The following criteria must be met in order for the site and or roads to be considered reclaimed:

- Felled timber and brush bucked into short lengths.
- Stockpiled vegetative mat and timber dragged back over the sites.
- Sites were cleaned, waste removed and if required slope contouring was completed.
- Sumps back filled.
- All collar locations with drill hole information inscribed on an aluminum tag marked in the field with a 4" x 4" post.

11. Status of camp

A temporary trailer camp, kitchen/lunch room facility as well as a drillers dry are currently assembled at the old Flat Creek town site (part of Elsa) on Surface Lease 105M13-001. Grey and black water within the camp is disposed of by an approved septic system (Permit #3012). Grey and black water for the geology office facilities is contained within a 3785-litre septic tank and drained by-weekly primarily by Na-cho Nyak Dun out of Mayo, Yukon and Grenon Services out of Dawson City, Yukon. Once drained, waste from these tanks is taken to the Mayo lagoon and disposed of.

Water for camp consumption is being drawn from Flat Creek and treated through a series of filters and UV light before it is chlorinated and stored into holding tanks ready for consumption under the Yukon Environmental Health standards.

In order to dispose of garbage and debris as not to attract wildlife, an incinerator was constructed prior to camp occupation and operated under Air Permit# 4201-60-026. The incinerator is located on the North side of the Elsa tailings pond

Power for the camp is supplied from the local grid that runs through Elsa to Keno.

12. Status of fuel storage.

Diesel fuel and gasoline for the project is delivered primarily by Mackenzie Petroleum Ltd. out of Dawson City, Yukon and Hutton Services out of Mayo, Yukon. Fuel is currently being stored in steel tanks on a bermed concrete pad in the town of Elsa. Diesel is stored within a 45,000-litre tank (reg. # T824) and a 4500-litre secondary tank (reg. # T823). Gasoline is currently being stored in a 4500-litre (reg. # T825) and a 2100-litre tank. A 22,400-litre diesel tank (reg. # T827) and a 4500-litre tank are also situated at the new Bellekeno adit underlain by an approved liner with berm. The previously submitted Alexco fuel spill response plan continues to be in effect.

13. Maps/tables with the location of work proposed during the 2007 field season

An updated map (**Figure 1**) and table (**Table 1**) with initial proposed work areas within the Keno Hill district is provided.

14. Photographic Documentation

Photographs, pre- and post- disturbance/reclamation will be provided at season's end. Several photographs are supplied that provide a preliminary project overview.

15. Contact Information

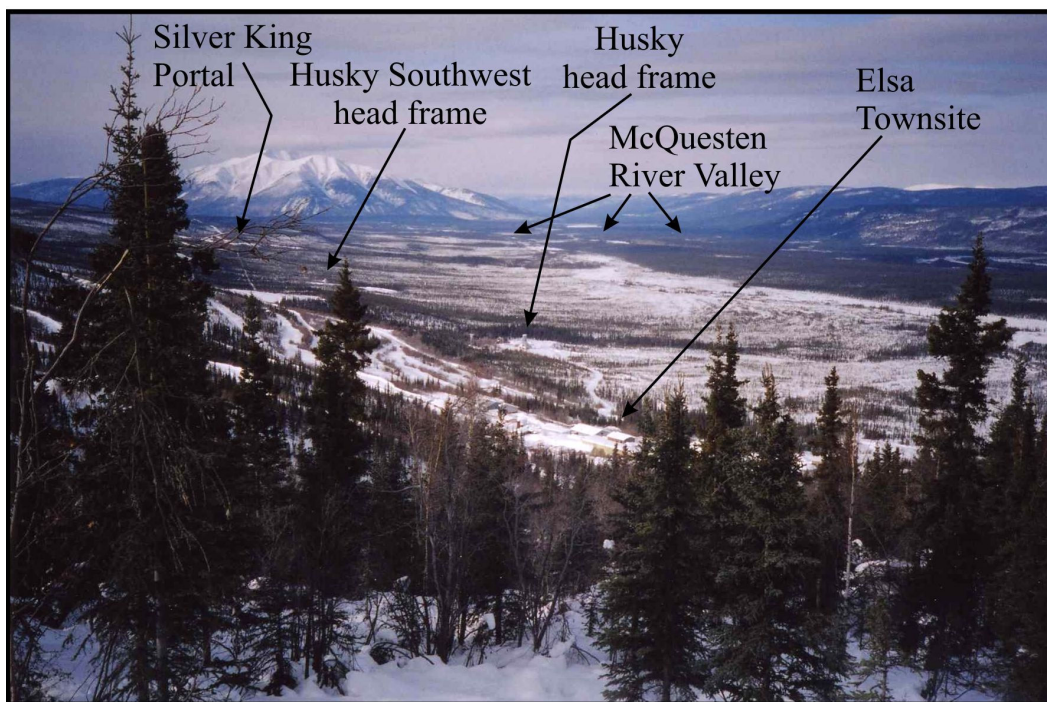
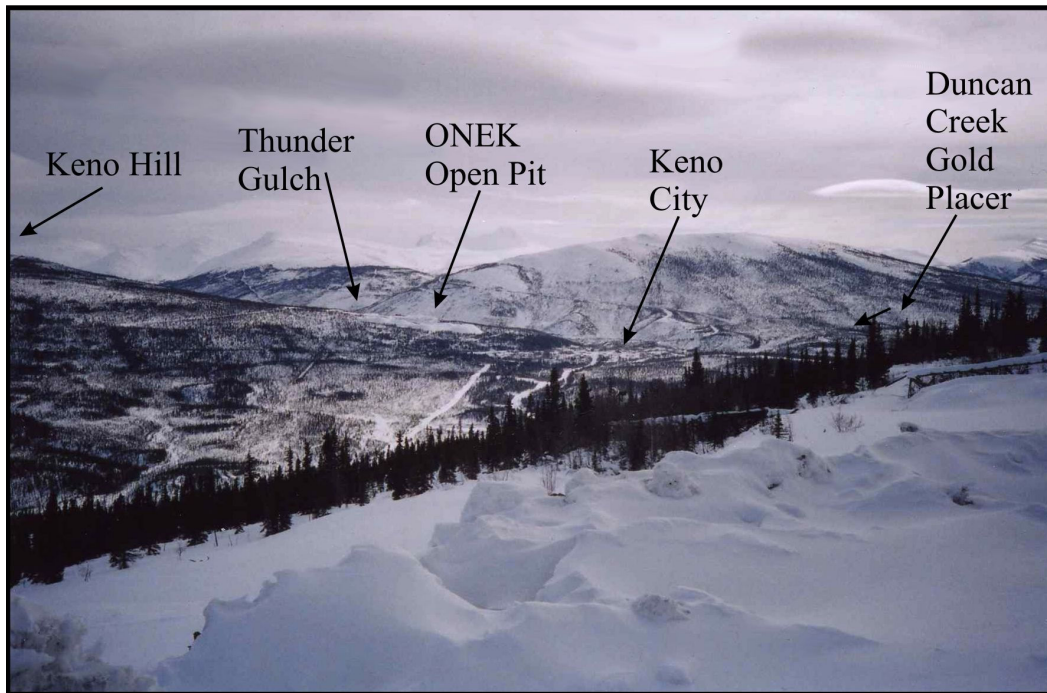
Alexco Resource Corp.
1150 – 200 Granville Street
Vancouver, BC V6C 1S4
T. (604) 633-4888
F. (604) 633-4887

Site phone numbers are presently: 867-995-3113 and 604-630-4969. E-mail contact is: sdodd@alexcoresource.com

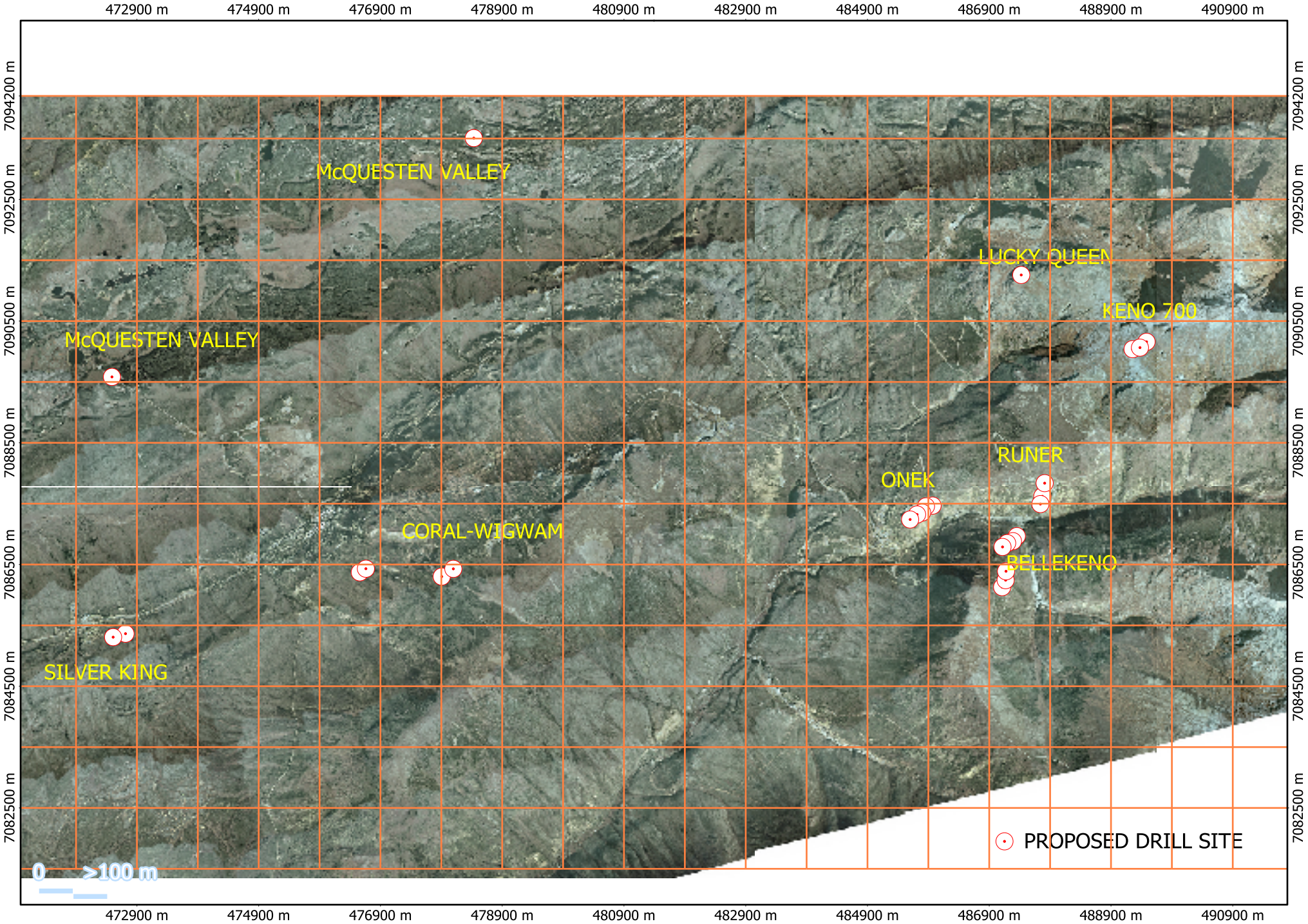
Sincerely,



Stan Dodd
VP – Exploration
Alexco Resource Corp.



Photos 3 & 4: General Project Orientation Photos: Credit – T. Bundtzen, March 2005



2009 PROPOSED DRILLING AREAS

FIGURE 1
ALEXCO RESOURCE CORP.

APPENDIX J

TECHNICAL MEMO REGARDING TEMPORARY
P-AML WASTE ROCK STORAGE FACILITY
GEOTECHNICAL STABILITY

*TO BE SUBMITTED SEPARATELY
AT A LATER DATE*