



HERITAGE RESOURCES PROTECTION PLAN

KENO HILL DISTRICT OPERATIONS

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ALEXCO KENO HILL MINING CORP.



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1 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 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 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.
- Paleontological 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 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 enhance 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, identified specific elements 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. These items will remain on site until such time as an approved district wide closure plan is approved.

In general, the process developed in conjunction with Type II Abandoned Mine Sites and YG Heritage and FNNND 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.

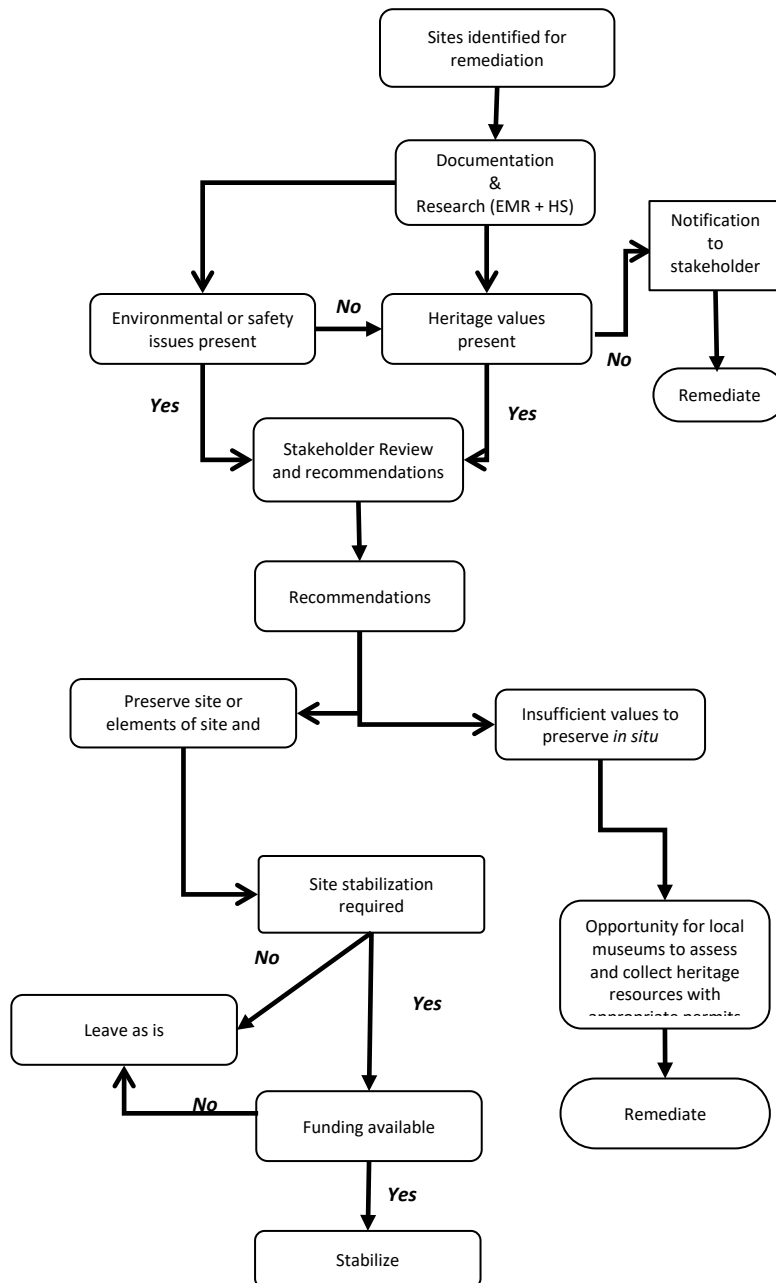


Figure 1 Protocol for Site Remediation of Keno Hill Mine Sites

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, Yukon Historic Sites staff and Keno City representatives.

Local Museums in the area are the Keno Mining Museum in Keno or the Binet House in Mayo. Any removal of any heritage resource from the Keno Hill will require a Permit under the Yukon Archaeological Sites Regulation.

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 and the District mill site/DSTF area was scheduled with Yukon Government Heritage Branch on July 28th, 2009 to provide guidance on the heritage resource identification and protection in the construction area.

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 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	<ul style="list-style-type: none"> • 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. • Additional information including GPS location, date, time, estimate of site and feature extent, and a brief description of the setting and access to the site will be recorded. • Notification will be provided to Yukon Government Heritage Resources Branch at (867)667-5983 or 1-800-661-0408 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.
Paleontological Resources	<ul style="list-style-type: none"> • If fossil bones are discovered, these will be set aside and as soon as practicable, reported to the Yukon Palaeontologist.
Human Remains	<ul style="list-style-type: none"> • 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.

4 IDENTIFICATION OF HERITAGE RESOURCES

Identification of heritage resources will be determined using the protocols established in the Handbook for the Identification of Heritage Sites and Features provided by the Yukon Government department of Tourism and Culture. This handbook provides a comprehensive methodology for identifying heritage resources as well as numerous examples of heritage resources that may be identified at a site. Some of the features used to identify archaeological and heritage sites outlined in the handbook include, but are not limited to the following:

- A change in vegetation, such as a grassy clearing or a patch of alder or cottonwood in the midst of a spruce or pine forest, is a clue that there might have been a camp at that location. People usually kept their habitation sites free of brush;
- Habitation sites are generally on well drained, elevated ground, not too far from water or other wetlands. Very ancient sites may be associated with former water courses such as meltwater channels or may occur on old river terraces high above the present river levels.
- Stream confluences, lake narrows and lake outlets/inlets are particularly sensitive areas;
- High terraces, ridges or hills were favoured game lookouts and also were traditionally preferred for burial sites;
- Winter sites, particularly those relating to trapping, are scattered and may not be associated with water or elevated ground. Look for cut stumps (winter cut), blazed trees and scattered artifacts; and
- Limbed trees and axe cut stumps are a sign that people were camping in an area.

5 HERITAGE RESOURCE OVERVIEW ASSESSMENT

To assess the heritage resource potential and sensitivity within the KHSD, Ecofor Natural and Cultural Resource Consultants conducted a Heritage Resource Overview Assessment (HROA) on behalf of Alexco Resource Corp and Banyan Gold Corporation. A review of the physical/environmental and historical/cultural setting of the study area was undertaken to identify areas with elevated potential for encountering previously undocumented heritage resources. Below is a summary of the report and its findings, for a detailed version of the report please refer to Bennett, 2018.

The HROA identified multiple areas of elevated heritage potential for surface/subsurface heritage resources sites. Map's detailing the whereabouts of these areas can be found in Bennett, 2018. As part of the HROA, several recommendations related to heritage resource management were developed for the KHSD. They included the following:

- Heritage Resource Impact Assessments (HRIA) are recommended for all lands with elevated heritage resource potential, as illustrated in the potential areas identified in Bennett, 2018 before any development be approved to proceed within them. This includes both predicted areas of elevated potential for undocumented heritage resources, buffer areas surrounding known heritage sites, and in the vicinity of previously documented areas of historical significance. Should additional areas of potential be identified within a proposed development area during HRIA work, they should be assessed following the same standards recommended for the areas of potential identified in Bennett,

2018. HRIA work should be conducted under a Class 2 archaeological research permit issued by the Heritage Resources Unit of Yukon Tourism and Culture. HRIAs, should at minimum, include provisions for surficial surveys and subsurface testing within the boundaries of the HRIA are identified in Bennett, 2018 and any associated areas of potential that are identified in the field which are at risk of being impacted by proposed developments.

- Avoidance is recommended for all known heritage sites. If avoidance is not feasible, then HRIA as per the above recommendation is recommended.
- No specific recommendations are made regarding culturally modified trees due to a lack of vegetation inventory data. Field crews should be vigilant for culturally modified trees in all forested areas.
- No further work is recommended in areas identified as having low heritage resource potential prior to development. However, development should only be allowed to proceed on the condition that all chance finds of heritage resource materials be reported immediately to the Heritage Resources Unit of Yukon Tourism and Culture, and that all work at the location of a chance find cease until the Heritage Resources Unit is able to assess the finds and issue a response (clearance to proceed or requirements for avoidance/further mitigative work).
- Should future HRIA work be conducted, all heritage resource sites identified, whether new or revisited, should be recorded as per the requirements outlined in the Yukon Archaeological Sites Regulation (O.I.C. 2003/73). Once recorded/revisited, specific heritage resource management recommendations should be made for each site that reflect the potential impacts associated with the proposed development that spurred the HRIA.

6 EMPLOYEE AND CONTRACTOR AWARENESS

During mandatory orientation, all new employees and contractors of Alexco will be made aware of Alexco's heritage awareness policy and briefed on company protocols and procedures related to heritage resource protection.

7 REPORTING

A summary of heritage activities will be included as part of the annual reporting for the Quartz Mining License. The summary will include any activities recommended by the HROA including HRIA's conducted, as well as any other activities related to heritage within the district.

8 REFERENCES

Gotthardt, R. & Thomas, C. 2007. Handbook for the Identification of Heritage Sites and Feature. Yukon Government: Tourism and Culture.

Bennett, T. 2018. Heritage Resource Overview Assessment: Alexco-Banyan Keno Hill Silver District. Prepared for Alexco Resource Corp and Banyan Gold Corporation