ASSESSMENT REPORT

105M-14-5

COMSTOCK

PREPARED BY

DIAND TECHNICAL SERVICES

FEBRUARY, 1994

105M-14-5

COMSTOCK

LOCATION

Comstock Keno Level 200

Latitude: 63° 56'34"N
Longitude: 135° 12'52"W

Comstock Keno Level 150

Latitude: 63°56'17"
Longitude: 135°12'05"

Comstock Keno Level 275

Latitude: 63°56'15"
Longitude: 135°12'11"

Comstock Keno Level 700

Latitude: 63°56'01"
Longitude: 135°12'08"

The site is located approximately 7km northeast of the community of Keno Hill near the peak of Monument Hill on Keno Hill in the Gustavus Range. Four mines at four separate levels were inspected ranging between 1400-1700m above sea level.

Maps showing the location of the site are attached as Appendix A to this report.

WORK HISTORY

A summary of the work history according to the Department of Indian Affairs and Northern Development Minfile record 105M 008 is presented below.

1919-1920 - The property made up of seven claims (Goldstar, Nabob, Lakeview, Gold Hill, Little Joe, Faro Fr., and Toledo) were staked.
1929-1930 - These claims were optioned to Keno Hill Ltd.
1930-1950 - Exploration included shallow shafts, 15m of drifts, and dozer trenching.
1950 - The property was acquired by Comstock Keno Mines Ltd. which drove a 62m adit on the Nabob claim.

1953 - A new vein discovered on the Goldstar claim was explored by crosscutting and drifting (183m) and raising (51m).

1954-1961 - The Goldstar claim was leased to J.B. O'Neill and Associates who shipped 298 tonnes of ore.

1962-1972 - The property was optioned by United Keno Hill Mines Ltd. which drifted on two levels and produced 15876 tonnes. From 1966-1972 work by United Keno Hill Mines Ltd. was restricted to surface exploration, including 387m of overburden drilling. (12 holes).

1967 - The Maiden's Hope claim adjoining the Nabob claim to the north was restaked as Ladie claims by J. Strebchuk and transferred in November, 1967 to Silver Spring Mines Ltd. Geophysical surveys were conducted in 1971.

February, 1980 - United Keno Hill Mines Ltd. reoptioned Goldstar and Little Joe claims and explored with 127m of cross-cutting and 13.4m of drifting.

1980-1981 - Cantung optioned the Goldhill #2 claim and drilled in 1980 and trenched in 1981.

1982 - Silver Spring's interest was transferred to Cantung.

1990 - Comstock Keno Hill Mines Ltd. drilled and blasted on the Nabob claim.

CLAIMS/LEASE STATUS

Status of mineral claims including claim or lease names and numbers, expiry dates, and current owners in the vicinity of the Comstock site have been noted as of 1994/02/17 as follows;

CLAIM OR LEASE	EXPIRY DATE	OWNER
Lake View	October 13, 2006	Comstock Keno Mines Ltd.
Gold Hill	October 13, 1994	Comstock Keno Mines Ltd.
Gold Star	October 13, 1994	Comstock Keno Mines Ltd.
Nabob	October 13, 1994	Comstock Keno Mines Ltd.
Little Joe	October 13, 1994	Comstock Keno Mines Ltd.
Faro	February 24, 2009	Comstock Keno Mines Ltd.
Toledo	October 13, 1994	Comstock Keno Mines Ltd.

Major commodities identified at this site includes silver, lead, and zinc.

Mineralization on the Nabob claim is in quartzite and schist while the mineralized part of the vein on the Goldstar claims cuts greenstone and schist overlying the main quartzite formation. Mineralization consists of galena, tetrahedrite, and sphalerite, plus considerable oxide material, forming a single ore shoot about 61m long.

CURRENT SITE CONDITIONS

Site conditions found at each of the four levels will be reported separately.

The four mines are located on the south facing slope below the peak of Monument Hill approximately 7km northeast of the community of Keno Hill. The mines are accessible by travelling east on a road from the community of Keno Hill. This road crosses Charity Gulch and the rises steeply with switchbacks up the slope below Monument Hill.

Surficial soil conditions across this site is weathered bedrock.

All sites are above tree line with northern alpine vegetation made up mainly of moss, lichen, and dwarf fireweed. In addition to this vegetation at the Level 700 site, the lowest of all the sites, black spruce are sparsely scattered particularly in the gully below the mine.

All sites were very well drained. The 700 Level mine is near the headwaters of Hope Gulch and the mine waste rock has been eroded downslope from the concentrated runoff in this gully. The mine site and erosion appears well above any potential fish bearing habitat.

A description of each site inspected on 1993/07/23 follows.

Comstock Keno Level 200

This is the highest of the four mine sites with road access from the lower sites. An adit with an enclosed entrance remains at this site. The adit was accessible through an unlocked door. Once inside the adit building access to the adit was unrestricted. Outside the adit, railway tracks extended to a waste rock dump and ore loadout about 100m from the adit. Overhead electrical power extended to this site from the lower sites. Electrical transformers, that appeared to be leaking, have been left on-site on a wood platform. The waste rock dump, measuring approximately 60m long x 3-4m deep x 30m wide (downslope) was dumped below the adit and the loadout structure. A summary of the remaining infrastructure includes;

- 10 ore cars (1 inside the adit),
- approximately 100m of rail,
- 2 transformers (65 or 90 litre capacity). **These appear to have leaked.**
- approximately 30m of wire cable,
- several hydro poles, two that supported a transformer base, and
- timber cribbing supporting the loadout structure.

Comstock Keno Level 150

This site, just below the Level 200 mine and also accessible by road from the lower mines, is also made up of one adit, a loadout, and rock waste dump. The adit was accessible through an unlocked door into a building connected to the adit. The adit was open and accessible to the public. A list of the remaining infrastructure includes;

- 4.3x4.3m wood frame, wood clad building attached to the adit,
- 20-30 pieces of rail,
- 40-50 pieces of pipe, 25-50mm diameter, and 6m long,
- wooden power poles,
- a wooden timber loadout structure, and
- a rock waste dump.

A metal clad building approximately 100m above the adit appears to be a ventilation shaft.

Comstock Keno Level 275

This mine site is the next lowest site, accessible by road from the lowest site immediately below. This mine, consisting of one adit, a loadout structure, a waste dump, with an overhead electrical service. A list of the remaining infrastructure includes;

- a metal clad building with wooden door to entrance of adit. Doors were locked into this building and adit was not accessible.
- a 4.9x4.9m metal clad warehouse housing electrical switching gear,
- piping in a utilidor extended into the adit from the 700 Level mine site, several hundred meters away.
- a wood timber loadout structure, and
- rock waste dump.

Comstock Keno Level 700

This mine was the largest of all four mine sites inspected in this area. It appears that this was the main site from which all of the other sites were serviced from and worked. A full camp was constructed at this site and has been abandoned on-site. A significant amount of infrastructure has been abandoned and is listed below. A total of 15 buildings still remain with varying amounts of equipment and fixtures. A listing of the buildings and contents follows.

Boiler Building

A 8.2x15.2m wood frame, wood clad building, housing two boilers. One is rated at 60 horsepower and the other is rated at 45 horsepower. Two water storage tanks are also housed in this building. Substantial piping from the boilers and the water storage tanks is in this building, and extends from this building to the other buildings on-site.

The boilers and water storage tanks are showing substantial corrosion and rusting. A metal exhaust stack extends approximately 10m above the top of the roof.

Storage Shed

A 4.9x4.9m wood frame, wood clad building with approximately 20 pieces of pipe and rail remaining.

Storage Shed

A 4.9x4.9m wood frame, plywood clad building with 30-40 pieces of pipe, 50-100mm diameter, and varying from 3-6m long.

Garage

This building is a 4.9x29.0m four bay garage complete with a generator and 4D24 power unit. Oil has been spilled across the garage floor and outside in front of the garage. Oil staining is quite extensive in and around this building. At least one barrel of oil remains in the garage. Several empty 204 litre barrels are scattered in and around the garage. Small pieces of equipment including a barrel stand, various small tools, miscellaneous pieces of pipe, hoses, ladders, insulation, etc. is scattered around the building.

Bunkhouses

Three bunkhouses have been constructed on-site, two are wood frame, wood clad structures, and one is a panabode (milled log) structure.

The panabode bunkhouse is approximately 27x30m in size, and is still furnished with bed frames, mattresses, toilets, sinks, hot water tanks, etc.

The upper bunkhouse, is a 10x39m structure complete with a recreation room complete with pool table and various pieces of furniture.

The third bunkhouse is below the recreation hall and is approximately 8x12m in size. This building appears to have only been used as a bunkhouse.

Kitchen and Staff Bunkhouse

A 7x31m kitchen with several sleeping rooms is located adjacent to the other three bunkhouses. This kitchen is equipped with stoves, overhead hoods and venting, walk-in freezers, large coffeee urns and a variety of other pieces of kitchen apparatus.

Commissary

Adjacent to the kitchen, a 5x7m wood frame, wood clad building used as a commissary still remains in place. Some shelving and chairs still remains scattered around this building.

Two other 3x4m wood frame, wood clad storage sheds are also near the commissary.

Kitchen Storage

A 7x7m wood frame, wood clad storage shed is located adjacent to the kitchen and was likely used to store groceries.

Wooden walkways and utilidors connecting all the bunkhouses, kitchen, and storage buildings are still in place.

Vehicle Maintenance Garage

A 6x11m wood frame, plywood and metal clad building is located along the trackage between the mine adit and the loadout and waste rock dump. This maintenance building was likely used for servicing and maintaining the heavier equipment such as locomotives, ore cars, etc.

Dry and Mine Foreman's Office

This 12x23m wood frame, wood clad building was used as a dry area for workers and is set up with shower facilities for a mine crew. 10 banks of lockers are still in the change room area. Attached to this area is a small office area likely used by the mine foreman.

Ambulance Garage

Adjacent to the four bay garage is a 4x7m wood frame wood clad garage used to store an ambulance. No vehicle has been left on-site.

Other Related Infrastructure

All buildings associated with accommodation were constructed on the slope above the mine adit and all other maintenance buildings and are connected by wooden stairways

and walkways. Insulated utilidors housing water and sewer lines also connect all serviced buildings.

Overhead electrical service connected all buildings. Power poles and wire are still in place from the central transformer base. Five large transformers are still in place in an area northeast of the main camp and mine site. The transformers found at this location include;

- 2 - 500kVA single phase transformers manufactured in 1956 by Supreme Power Supplies Ltd.
- 3 - 150kVA distribution transformers manufactured by Pioneer Electric.
- 1 transformer (90 litre capacity) supported on a wooden platform above ground.

Loadout and Waste Rock Dump

A timber retaining structure has been constructed with creosote timbers which served as a loadout structure. Rail extended to this loadout and beyond for the ore cars from the mine site to unload.

Below the loadout structure rock waste has been dumped into a gully below the mine site. This rock waste has slumped and appears to have been washed downslope from mine water channeled into this gully. This waste rock extends 300-400m downslope along with alot of other wood and metal debris from the mine.

Mine Adit

The mine adit extends from the sidehill and is sealed with wooden doors and a metal gate. A side entrance to the adit through a man door was unlocked, and the adit was accessible. No water was seeping from this adit at the time of inspection.

Miscellaneous

1-2km below this mine site another old site was found with 43 empty 204 litre fuel barrels and 10-15 pieces of rail. A small pile of waste rock was observed below an old collapsed adit.

RECOMMENDATIONS

Total development at this site is quite extensive, with five separate adits, roads to each adit, waste dumps, and buildings at four of the main sites. The environmental impact varies across the site and each adit. Recommendations are presented for each location inspected. These recommendations are presented below.

Comstock Keno Level 200

Work at this mine resulted in the development of an adit, loadout, and waste rock dump. A structure covering the entrance of the adit, track, and ore cars also remain from the mining operation. Little else remains from the mining operations and the site is generally in relatively good condition.

The most critical work that needs to be completed at this site is the testing of the transformers to determine whether or not polychlorinated biphenols (PCBs) are present. This work should be considered a **HIGH** priority. Once it is determined whether or not PCBs are present, removal of the transformers and a plan to assess if any ground contamination has occurred can be initiated. If ground contamination is suspected then a plan to conduct a more detailed assessment of any suspected problem can be undertaken. Using criteria that could include assessing the remoteness of the site, the potential to contaminate any surface or groundwater sources, etc. will determine the need to conduct further analysis of the site . If it is necessary to assess the site in more detail, then a soil and groundwater sampling and analysis program will need to be conducted to complete this assessment. Further site remediation can be established once this progam is completed.

Other work that could be done at this site includes the removal of the ore cars, remaining railway track, the wire, and any other metal waste that is around the site. This clean-up is not considered essential, and is considered a **LOW** priority to improve the environmental condition at this site. Any loose wooden debris, including power poles, could be piled and burned to also contribute to clean-up of the site.

Open access to the adit should be considered a safety hazard and proper closure and sealing of the adit should be considered a **HIGH** priority. It is recommended that the structure surrounding the adit be kept and and properly sealed to prevent access.

The loadout structure should be posted to warn anyone in the area that it is a potential safety hazard. As time goes on this structure will rot and become unsafe.

The waste rock dump has been placed on a dry slope below the mine adit. It is recommended that this adit be left in its present condition as it does not appear to be causing additional damage to the environment. Improving conditions of the waste rock is not considered practical. Revegetation of the site is not considered practical on this very dry remote site. No surface water was observed close to this site.

Comstock Keno Level 150

Remaining infrastructure includes a wood building attached to the adit, pipe and rail, power poles and power line, a wood supported loadout structure, and a rock waste dump.

Improvement of the environment at this site is limited to clean-up of remaining infrastructure. Removal of any metal including pipe and rail is recommended for this site. This howevr, is considered a **LOW** priority. Clean-up of wood waste could be considered at the same time, and this is also considered a **LOW** priority.

The loadout structure should be posted to warn anyone in the area that it is a potential safety hazard. As time goes on this structure will rot and become unsafe.

As in the site above, the waste rock has been dumped downslope of the mine adit, is on a dry stable slope, and site remediation of this dump in this very remote dry location is not considered practical.

The open adit is considered a public safety hazard, and although in a remote location, should be sealed off from the public. This work should be given a **HIGH** priority. Closing off the building beside the adit and adit enclosure is likely the easiest way of sealing the adit. For this reason it is recommended that the existing structure in front of the adit be left intact and used to close off access to the adit.

Comstock Keno Level 275

Conditions at this site are similar to the Comstock Keno Level 150 site with an adit enclosed at the entrance but accessible, and rail extending to a loadout and waste rock dump area. Also, a metal shed with electrical switching gear and utilidor from the Level 700 site extends into the adit. A loadout and waste dump are also part of the site.

When this site was closed, it appears that everything easily moved was removed. The remaining infrastructure that has been left behind is considered a **LOW** priority. The building, electrical switching gear, and utilidor cause some visual impact in this very remote area, but does not appear to be causing any other environmental damage. If a clean-up program is initiated in the area it is recommended that the remaining infrastructure, including the building, the utilidor, and electrical equipment be removed. The building and associated equipment will all require disassembly before it is removed.

The adit, as at the other sites needs to be secured to prevent access from the public. This can easily be completed by properly securing the doors at the adit entrance. This should be considered a **HIGH** priority for reasons of public safety.

It is not considered practical to remove the loadout structure and it is recommended that this be left in place. At some point in time this structure may become unsafe and it is recommended that it be posted to warn people to stay away from this structure.

The waste rock dump has been placed on a dry stable slope. It is recommended that this dump be left in its present condition and to avoid any additional disturbance to the surface. Any revegetation should be allowed to occur naturally.

Comstock Keno Level 700

This site has been extensively developed and served as the operations centre for the other Comstock mines in the area. Fifteen old wood frame buildings remain; along with equipment, including large boilers and water storage tanks, a diesel powered generator, extensive piles of metal waste including rail and pipe, kitchen equipment and fixtures, camp accommodation equipment including beds, toilets, showers, sinks, a pool table, mechanical shops with small amounts of hydrocarbon products still in barrels or spilled, etc. Large oil filled electrical transformers are on-site along with electrical distribution lines, a utilidor housing all the sewer, water, and heating lines to this site and at least as far as the Level 275 site. A very large waste rock dump has been placed in a gully downslope of the mine site. This rock waste dump has experienced extensive erosion and has been washed downslope between 300-400m killing any vegetation that grew in the area. Recommendations for each component of infrastructure follows.

Electrical Equipment

The large transformers left at this site are a potentially **HIGH** environmental risk. These transformers need to be inspected by a qualified inspector to determine the degree of hazard they pose. Once these transformers and any other associated electrical equipment are evaluated, an action plan can then be established.

Utilidor

The utilidor housing the water, sewer, and heating lines is quite unsightly but does not appear to be any particular ongoing threat to the environment. If a clean-up program is considered for the site it is recommended that this utilidor line be removed if **LOW or MEDIUM** priority items are considered. Care should be taken to identify any asbestos pipe or insulation and remove and dispose it according to approved methods.

Buildings and Contents

The buildings are old and are showing signs of significant deterioration. All buildings are open and have not been secured against the elements. In a few years these buildings will become a safety hazard for anyone entering them and eventual disposal of the buildings and remaining contents should be considered as a **MEDIUM** priority at this time. These buildings should be posted to advise anyone entering the area of any potential danger.

Any hydrocarbon products should be considered a **HIGH** priority and removed from the site as soon as possible. As the quantity found is very small this task can be completed quite easily. As noted earlier in this report, it is apparent that hydrocarbon products have

been spilled in and around the garage. It will be necessary to conduct a subsurface soil and groundwater sampling and analysis program to determine the extent of the hydrocarbon contamination. Once this is completed the extent and risk from this contamination can be assessed.

Equipment remaining in the buildings is quite varied and extensive. It is unlikely that there is much residual value associated with any remaining equipment. If **LOW** priority work is completed then this equipment should be removed from the site and disposed or recycled to an appropriate facility.

Rock Waste Dump

The rock waste dump was placed in a gully downslope of the mine site. It appears that water and waste water from the camp and mine were also channeled into this gully, resulting in severe erosion of the waste material. This has resulted in the waste material being washed noticeably about 400m downslope killing vegetation over any area that was covered by this debris. Mixed in the waste rock is wood, metal, and other debris from the mine. It appears this site served as a general dump area. This waste rock dump is quite unsightly and should be improved. **It is also recommended that water quality testing be completed downstream to determine if any contaminants are being carried into the streams.**

It is likely that most of the erosion took place when the mine was in operation. It does not appear that the small amount of existing surface runoff is now contibuting much to ongoing erosion. However, a plan to improve this waste rock dump should be developed and implemented. One method of containment would be to construct a toe berm.

Loadout

The loadout structure will continue to deteriorate and will eventually become unsafe. It is recommended that this structure be posted to warn anyone in the area of any potential danger.

Barrels and Metal Waste at Lower Site

The 43 barrels and rail should be removed from the site if a general clean-up program is initiated in the area.

SUMMARY

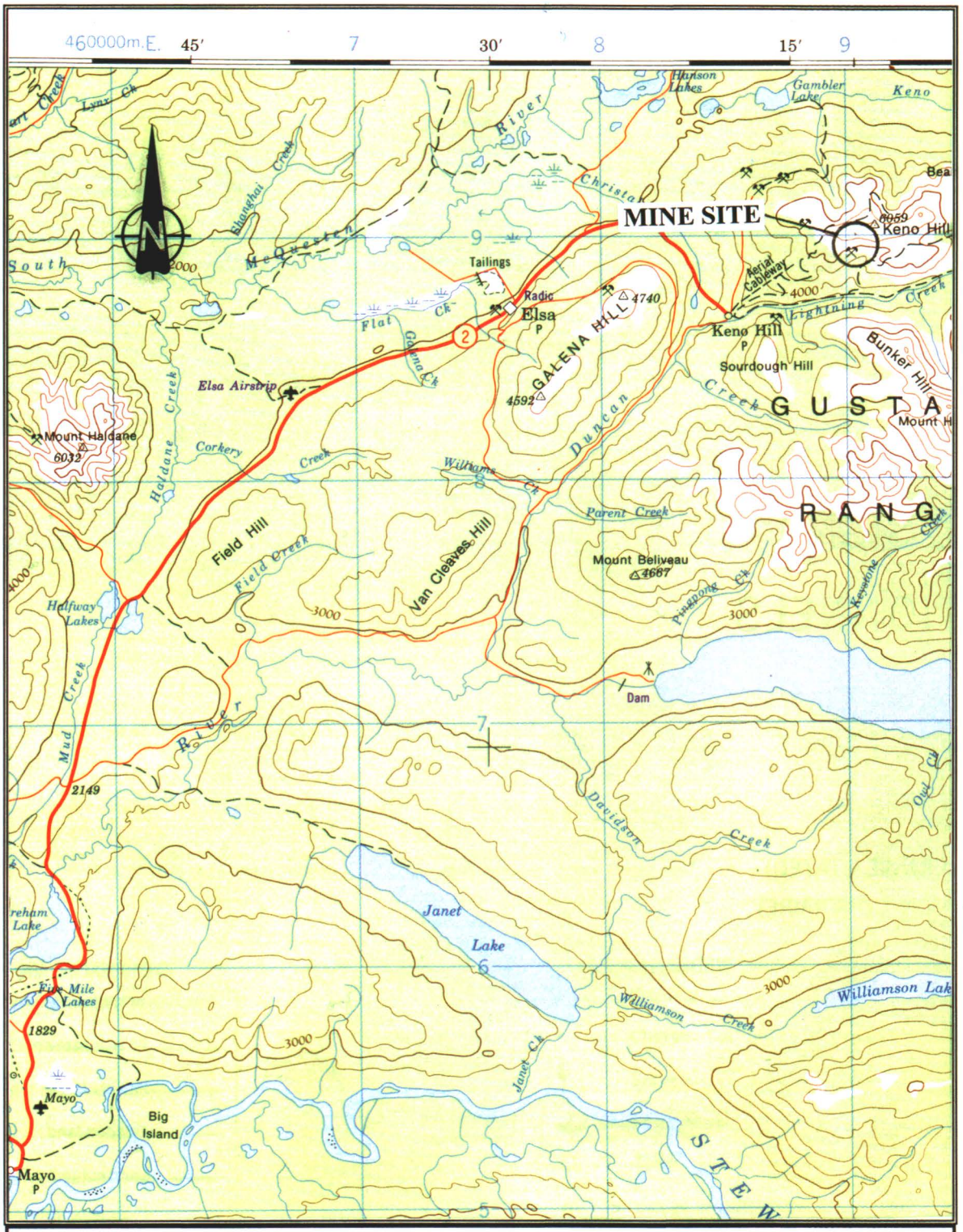
In summary, disturbance at this site is extensive along with significant infrastructure left behind. The need to remove and properly dispose remaining hydrocarbon products and oil filled electrical transformers should be considered a **HIGH** priority.

Clean-up of remaining buildings should be considered a **lower** priority than clean-up of the hydrocarbons and transformers, however the longer these facilities are left, recovery will become more difficult.

The waste rock dump was not properly contained and has resulted in excessive damage to the vegetation and environment. This dump should be assessed to verify whether or not it is causing continuing damage to the environment, and appropriate corrective action taken.

APPENDIX A

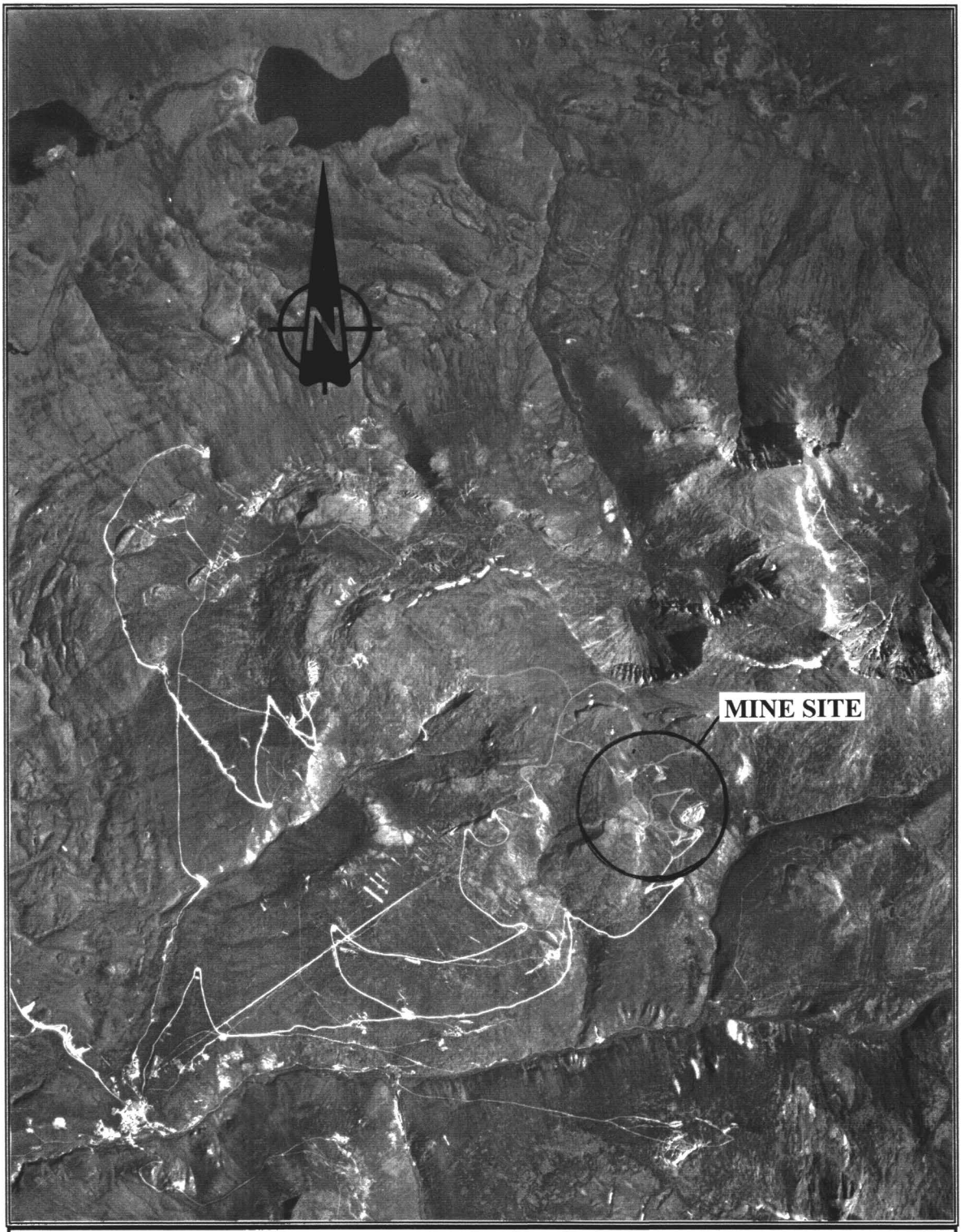
SITE LOCATION MAPS



SITE NAME: **COMSTOCK** SITE NUMBER: **105M-14-5**

MAP NUMBER: **105M** MAP NAME: **MAYO** MAP SCALE: **1:250000**

SITE LOCATION: LATITUDE: **63° 56'01"** LONGITUDE: **135° 12'08"**



SITE NAME: **COMSTOCK** SITE NUMBER: **105M-14-5**

AIRPHOTO NUMBER: **A19980-11** YEAR: **1968** AIRPHOTO SCALE: **1:56000**

SITE LOCATION: LATITUDE: **63° 56'01"** LONGITUDE: **135° 12'08"**

APPENDIX B

SITE PHOTOGRAPHS

LEVEL 700 SITE WITH WASTE DUMP IN FOREGROUND

LOADOUT AT LEVEL 700 SITE

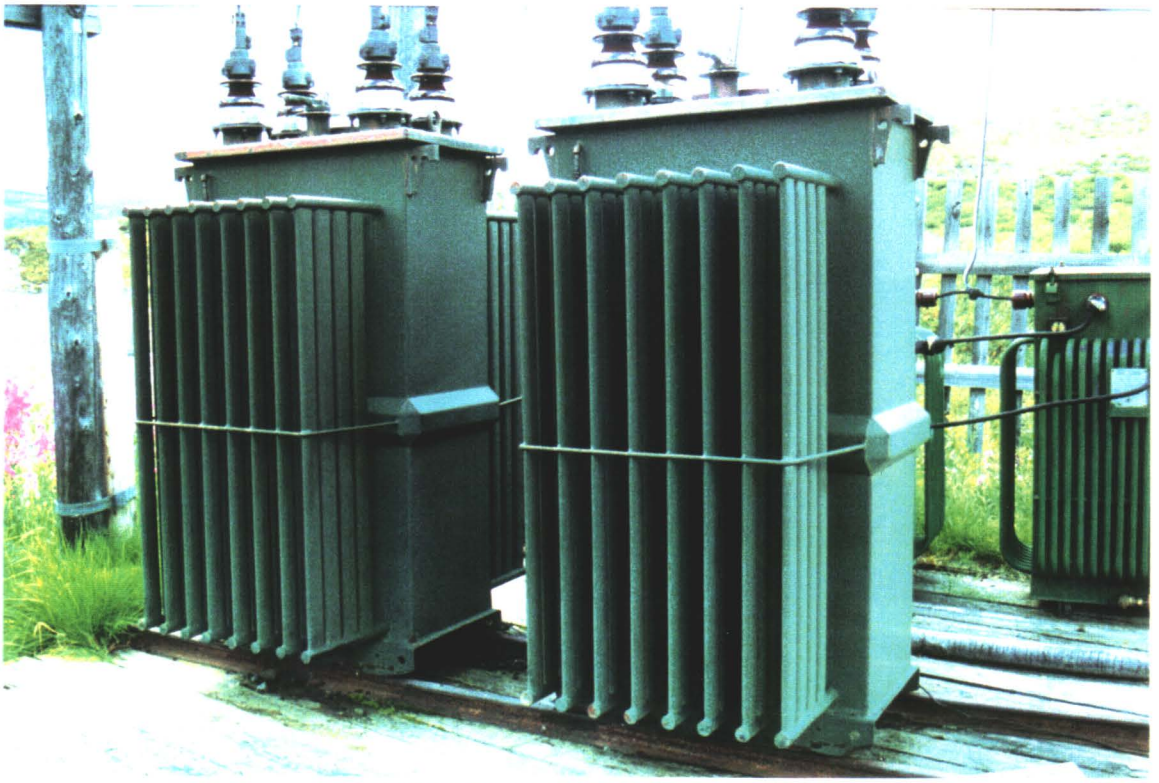
4 BAY GARAGE AND GENERATOR BUILDING (AT RIGHT)

BUNKHOUSES AT LEVEL 700

TRANSFORMERS AT LEVEL 700 SITE

TRANSFORMER AT LEVEL 700 SITE

WASTE MATERIAL WASHED DOWN GULLY BELOW LEVEL 700 WASTE DUMP

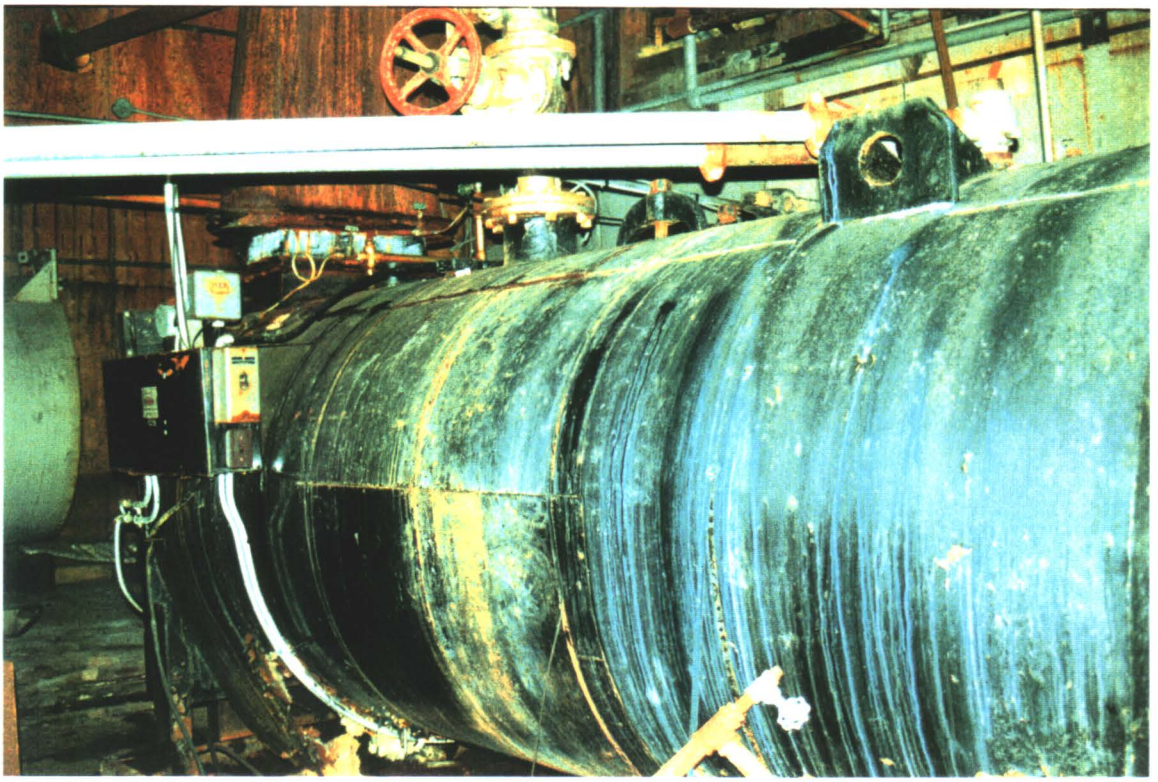


TRANSFORMERS AT LEVEL 700 SITE

UTILIDOR WITH PIPING

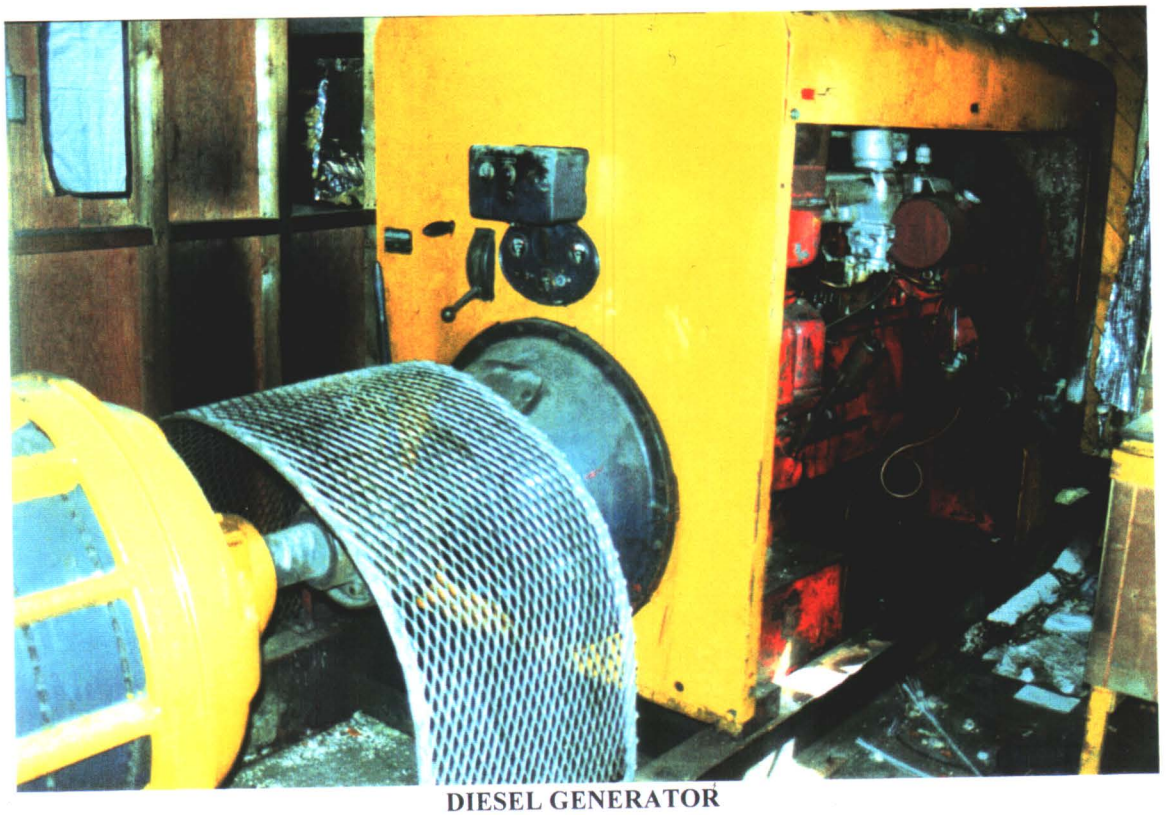
MECHANICAL SHOP

WALK-IN FREEZER

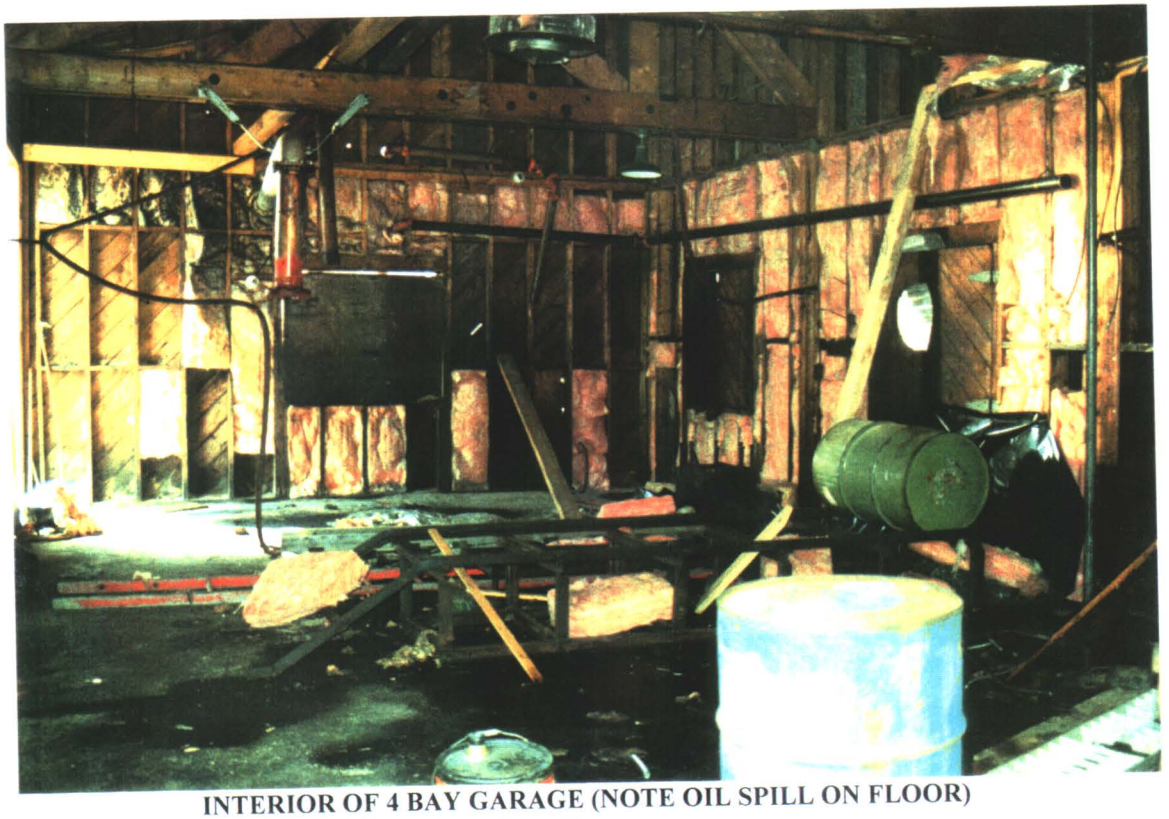


BOILER AND PIPING

ENTRANCE TO ADIT AT LEVEL 700

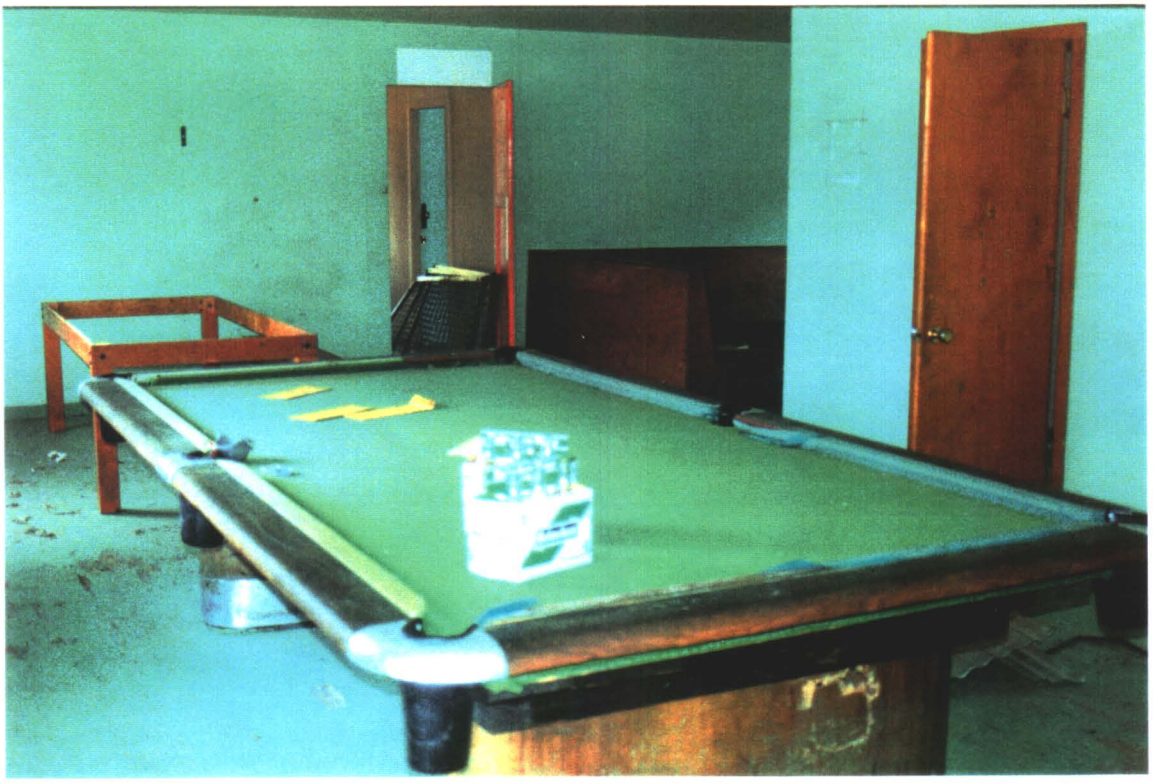


DIESEL GENERATOR



INTERIOR OF 4 BAY GARAGE (NOTE OIL SPILL ON FLOOR)

KITCHEN COMPLETE WITH STOVE AND COFFEE URN



POOL TABLE

RAIL TO LOADOUT AT LEVEL 275

LEVEL 700 SITE

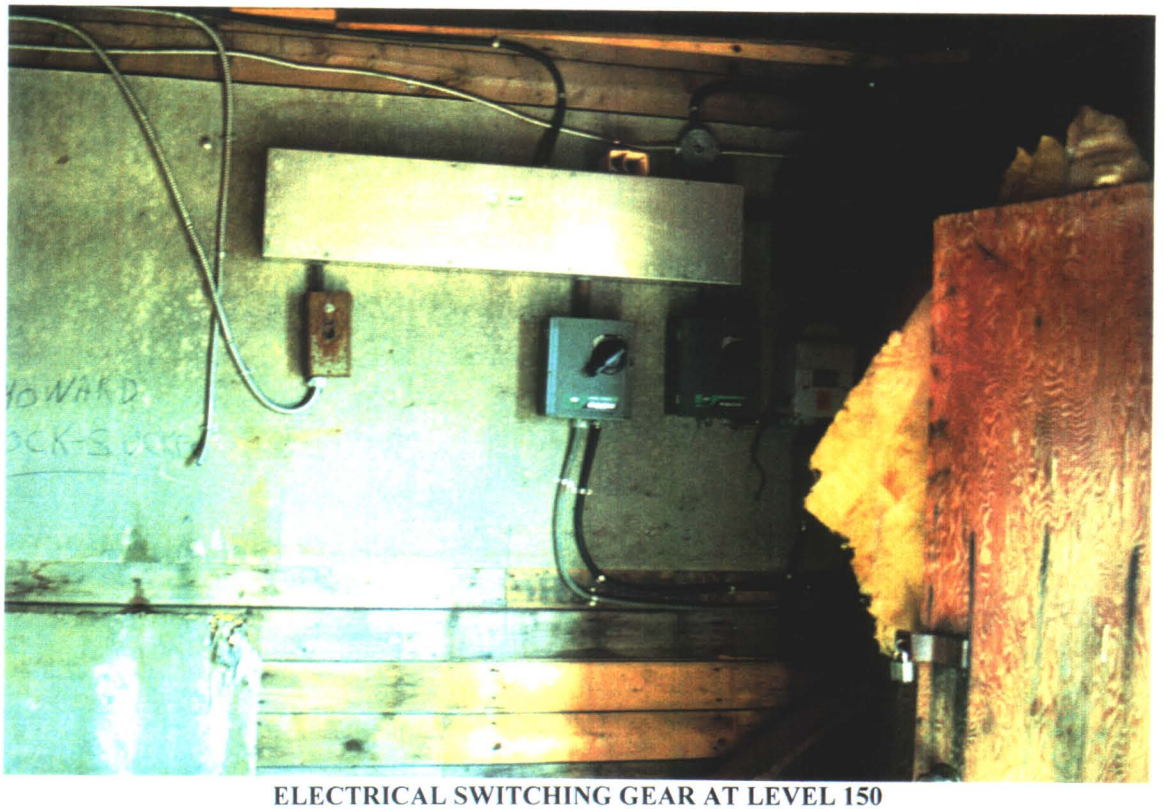
ADIT BUILDING AT ENTRANCE TO LEVEL 275

GARAGE WITH ELECTRICAL SWITCHING EQUIPMENT AT LEVEL 275

LOADOUT AND ADIT BUILDING AT LEVEL 150

ADIT BUILDING AT LEVEL 150

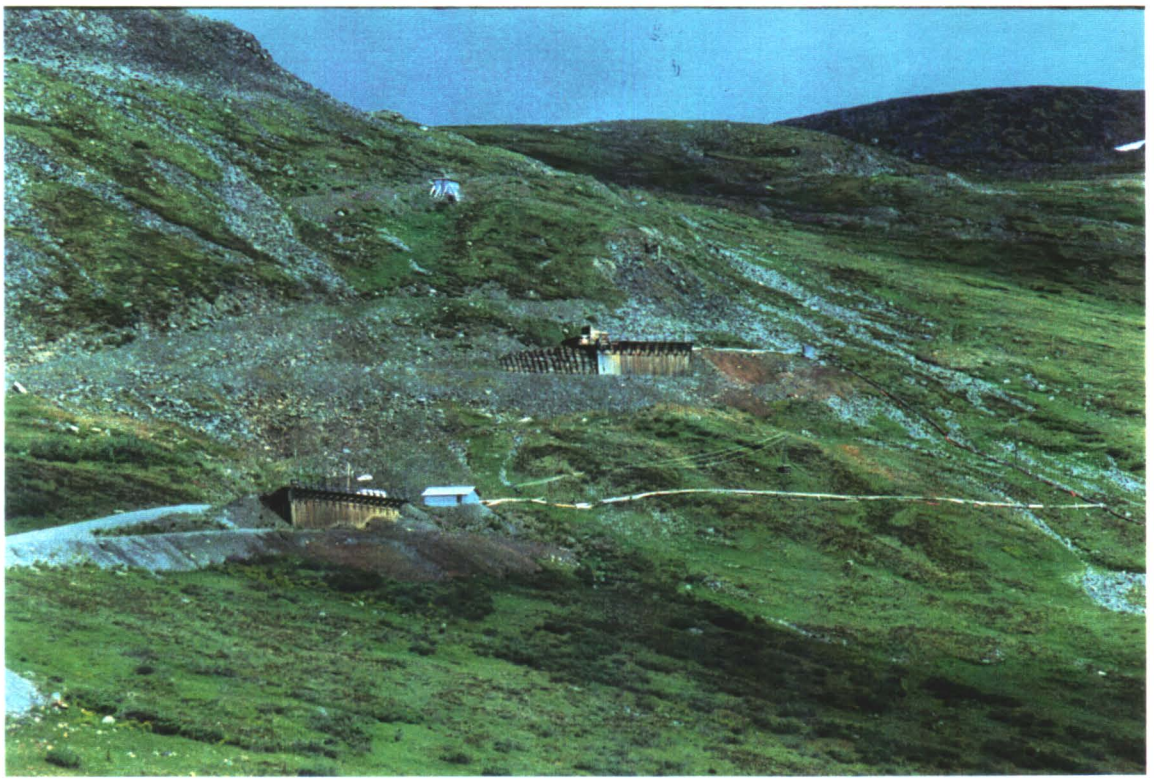
INTERIOR OF ADIT AT LEVEL 150



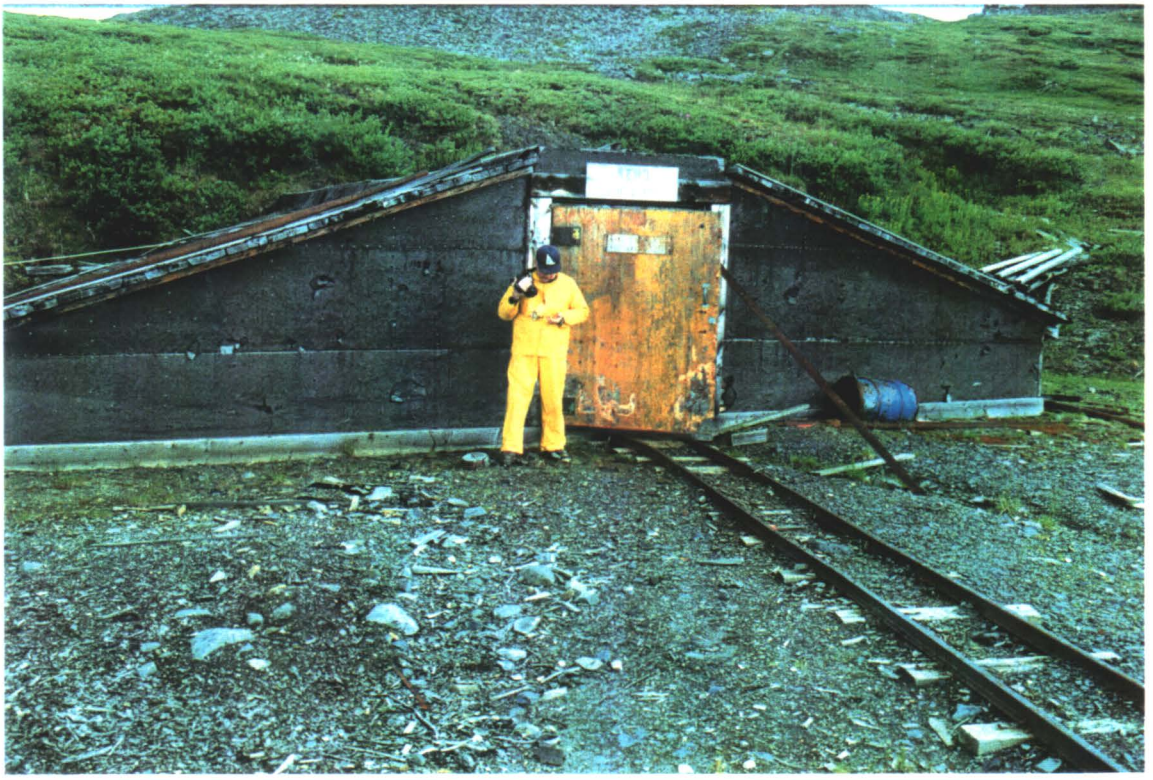
ELECTRICAL SWITCHING GEAR AT LEVEL 150

WASTE RAIL AND UTILIDOR AT LEVEL 150

STRUCTURE ABOVE LEVEL 150 (POSSIBLY A VENTILATION SHAFT)



MINE SITES LEVEL 200 (TOP), 150 (MIDDLE), AND 275 (BOTTOM)



ADIT ENTRANCE TO LEVEL 200

ORE CARS, TRANSFORMERS, AND ADIT BUILDING AT LEVEL 200

TRANSFORMERS AT LEVEL 200

INTERIOR OF ADIT LEVEL 200

RAIL TO DUMP AT LEVEL 200