DIXIE #4
(MINFILE# 105M 001b)

1. LOCATION AND ACCESS

Access to the site is from Keno City drive 12km west on Highway #11 to the Elsa Townsite, turn left at the junction and stay left. From the Elsa Townsite @ the junction of Calumet Drive and Wernecke Road travel 3.6 km. along Calumet Drive to the Dixie Portal. This road is two-wheel drive accessible at 4.3 km along Calumet Drive a 4-wheel drive track switchbacks to the S. W. to the Dixie Shaft and Raises # 1 & #2. 300 m along the track, it intersects the powerline right-of-way, the Dixie shaft is 30 meters upslope from this junction; 100 m further on is the site of a backfilled raise, the last backfilled raise is another 100 m at the end of the track. The Dixie mine site is at an approximate elevation of 1200m. UTM co ordinates for the site are 7,087,200m N 477,000m E.

2. SITE PHYSIOGRAPHY

The site is on a Northwest facing slope, dipping at ~20% overlooking the McQuesten Valley at an elevation of 1037m. The surrounding vegetation consists of black spruce, willows, and alder with a floor covering of mosses. Drainage from the site flows towards the bogs in the McQuesten Valley, to the east of the Elsa tailings area.

3. GEOLOGY AND MINERALIZATION

The Dixie adit and dump are located in the Keno Hill quartzites with no known surface mineralization. The surface exposures of the mineralized vein are 200 to 400 meters up slope to the East. The vein is hosted in barren quartzite and the vein material is heavily weathered with strong manganese staining. The vein material is composed of brecciated quartzite with disseminated pyrite, siderite, quartz stringers, galena and pyrite.

4. SITE HISTORY

Early workings from 1925 through 1930 consisted of several surface pits and a 23 m deep shaft with short drifts off of it. 26 tonnes of ore were produced. During the 1970's the 200 Level adit and development produced 21,630 tonnes of ore and 18,000 tonnes of waste.

5. MINE DEVELOPMENT

5.1 Mine Openings and Excavations

200 Level Adit (Photo 4-1)

The adit has dimensions of 2.5 m x 2.5 m; mine drawings show the adit to be 300 meters long with 960 m of drifting off it. The portal is wood frame construction with timber cribbing blocking any access into the mine. The talus around the portal is retained by 5 m high wood frame walls. The construction appears stable. The rails and any mine services have been removed.

Dixie Shaft (Photo 4-2)

The shafthouse (4 m x 5 m) is wood frame construction and has collapsed. The shaft dimensions are 1.2 m x 2 m, the lagging has partially collapsed and the shaft appears to be filled with water and soil ~3 m below ground level. This site should be considered a hazardous area.

Vent Raises

Eastern Raise (Photo 4-3)

The raise has been backfilled and any surface installations removed. The level pad area is 50 m x 30 m.
There is minor subsidence 2.5 m in diameter by 1 m deep. The raise poses a minimal hazard.

Western Raise (Photo 4-4)

The raise has been backfilled and any surface installations removed. The level pad area is 50 m x 50 m.
There is an area of subsidence 5 m in diameter by 3 m in depth. The raise poses a minor hazard.

Open Pits

There are no open pits associated with this site.

Trenches

No significant trenches were observed.

5.2 Waste Rock Disposal Areas

Waste rock pile at the 200 Level Portal

Comprised of vein material overlying development waste rock and the quartzite excavated to collar the portal. (~18,000 tonnes). The vein material consists of brecciated quartzite, quartz stringers with disseminated pyrite and minor amounts of galena. There is no sign of any significant water flow through the dump. There is a significant kill zone below the toe of the dump. It comprises an area

of 50 m wide x 80 m downslope, it has been bulldozed in the past (Sept. 14 F04-P22A). Minimal revegetation has occurred.

Sampling:

Three samples were taken at the adit dump site during a 1995 investigation. The following table illustrates the findings.

Table 1 – 1995 Waste Rock Samples

Location	Sample ID	Paste PH	S (tot.)	S (SO4)	AP	NP	NET NP	NP/AP
			%	%	kg CaCO3/tonne			
Dixie	95UKHDD01	4.14	0.35	0.28	2.19	0.00	-2.2	<0.1
Dixie	95UKHDD01	4.44	0.51	0.34	5.31	2.25	-3.1	0.4
Dixie	95UKHDD03	5.55	0.47	0.42	1.56	13.56	12.0	8.7

Waste rock pile at the Dixie Shaft

Comprised of vein material and barren quartzite, dimensions 10 m x 8 m x 1.5 m thick (~300 tonnes). Vein material is heavily weathered, with strong manganese staining and cubic crystal vugs, brecciated quartzite is cemented with siderite, quartz stringers, galena and pyrite. No signs of any stressed vegetation were observed. No samples were taken at this site.

5.3 Tailings Impoundments

There were no tailings impoundments at the site.

5.4 Tailings Ponds

There were no tailings ponds at the site.

5.5 Minesite Water Treatment

There were no water treatment facilities located at the site. The adit is dry, however, de-watering during production has affected the vegetation downslope.

6. MINE SITE INFRASTRUCTURE

6.1 Buildings

There were two buildings located on the Dixie mine site. One of the structures was used as a garage and office and the other structure was the portal to the mine. A loading area is located on the Dixie mine site and is constructed of timber cribbing and a timber reinforcement wall (photo 4-5).

Building 4A – Garage/Office

Office and garage.

Location: The structure is located on the Dixie mine site and labeled as Building 4A.

Dimensions (L x W x H): 3m x 6m x 3m

Construction: The building is of wood frame construction with metal sheathing on the exterior and roof. Tile flooring is located throughout the office. The garage area has a soil and gravel base with some areas stained with hydrocarbons.

Paint: The interior was painted white, however, the paint has faded and flaked off over the years and there are only small areas that remain adhered.

Asbestos: There is asbestos board in the office area of the structure. A sample of the floor tile was taken to determine potential asbestos content. The analysis is shown in the table below.

Foundation: No foundation other than raised timber sheathing.

Non-Hazardous Contents: No non-hazardous contents were noted in the building

Hazardous Contents: No hazardous materials were noted in the building.

Samples:

Table 2 - Asbestos

Asbestos	**Units**	**06-01-tile (Dixie)**
Approximate % fibrous asbestos and most similar type	%	1-10% chrysotile

Building 4B – Portal

Portal opening

Location: The portal is listed on the Dixie site map as Building 4B.

Dimensions (L x W x H): The portal structure is encased in the rock and there is little protrusion.

Construction: The portal is constructed of wood and timber. The portal entrance has been blocked permanently by a timber crib structure located just within the double steel doors. A timber retaining wall has been constructed to reinforce the portal entrance and extends approximately 20m in length.

Paint: There is no paint visible on the structure.

Asbestos: There is no asbestos visible on the structure.

Foundation: No foundation.

Non-Hazardous Contents: No non-hazardous contents were noted at the site.

Hazardous Contents: No hazardous contents were noted at the site.

Samples: No samples were taken at the portal structure.

6.2 Fuel Storage

No fuel storage sites were found at the site.

6.3 Rail and Trestle

No rail structure was found intact at the site.

6.4 Milling and Processing Infrastructure

There were three grizzlies noted at the loading area signifying that the site conducted minor amounts of processing by hand shoveling the ore for separation purposes.

6.5 Electrical Equipment

No electrical equipment was found at the site.

7. SOLID WASTE DUMPS

There is a small dump area that consists mostly of waste rock, however, there is also miscellaneous debris that has been deposited at the site. Most of the materials appear to be from the dismantling of equipment at the site such as rails and ties from the tracks and old fuel drums. The drums were inspected and all were empty, rusted and void of any interior residues (photo 4-7).

8. POTENTIAL CONTAMINANTS OF CONCERN

8.1 Out-of-Service Transformers

No out-of-service transformers were found at the site.

8.2 Metals and Hydrocarbons in Soil

Soil staining was visible at the site both in the garage and around the exterior of the garage. The largest area of staining was located along the north wall of the garage and measured 5m in wide and 2m in length. Another smaller area of staining was noted on the west side of the building. Both areas appeared to be limited to surficial soils and were caused by heavy machinery maintenance procedures (photo 4-8).

Samples: No samples were taken.

8.3 Liquid Hazardous Materials

No liquid hazardous materials were noted at the site.

8.4 Solid Hazardous Materials

No solid hazardous materials were noted at the site.

9. WATER QUALITY

A downstream water sample (04-01-water) was taken below the Dixie Mine site along the No Cash 500 access. Water flow at the site was approximately 0.2 L/s. There were two piezometers located in the same vicinity (95-UK-2, 95-UK-3) and sampling was attempted at both, however, both piezometers were dry. Attachment B contains the sample analyses results completed on sample 04-01-water.

There was no seepage from the portal itself, however, there was evidence that seepage does occur. An area of 15m x 1m of bright orange brown staining was noted at the entrance to the portal.

10. RECLAMATION

There was sparse revegetation at the site, however, the waste rock dump site has had no revegetation. A large kill zone exists below the waste rock dump site and only sparse vegetation re-growth has occurred (photo 4-9).

11. OTHER SOURCES OF INFORMATION AND DATA

No other sources of information and data were identified.

12. REFERENCES AND PERSONAL COMMUNICATIONS

United Keno Hill Mines Limited. 1996. *United Keno Hill Mines Limited – Site Characterization.* Report No. UKH/96/01, prepared by Access Mining Consultants Limited.

United Keno Hill Mines Limited. 1996. *United Keno Hill Mines Limited – Site Characterization, Technical Appendices I-VI.* Report No. UKH/96/01, prepared by Access Mining Consultants Limited.

Table 3 – Metal Analysis – mg/L

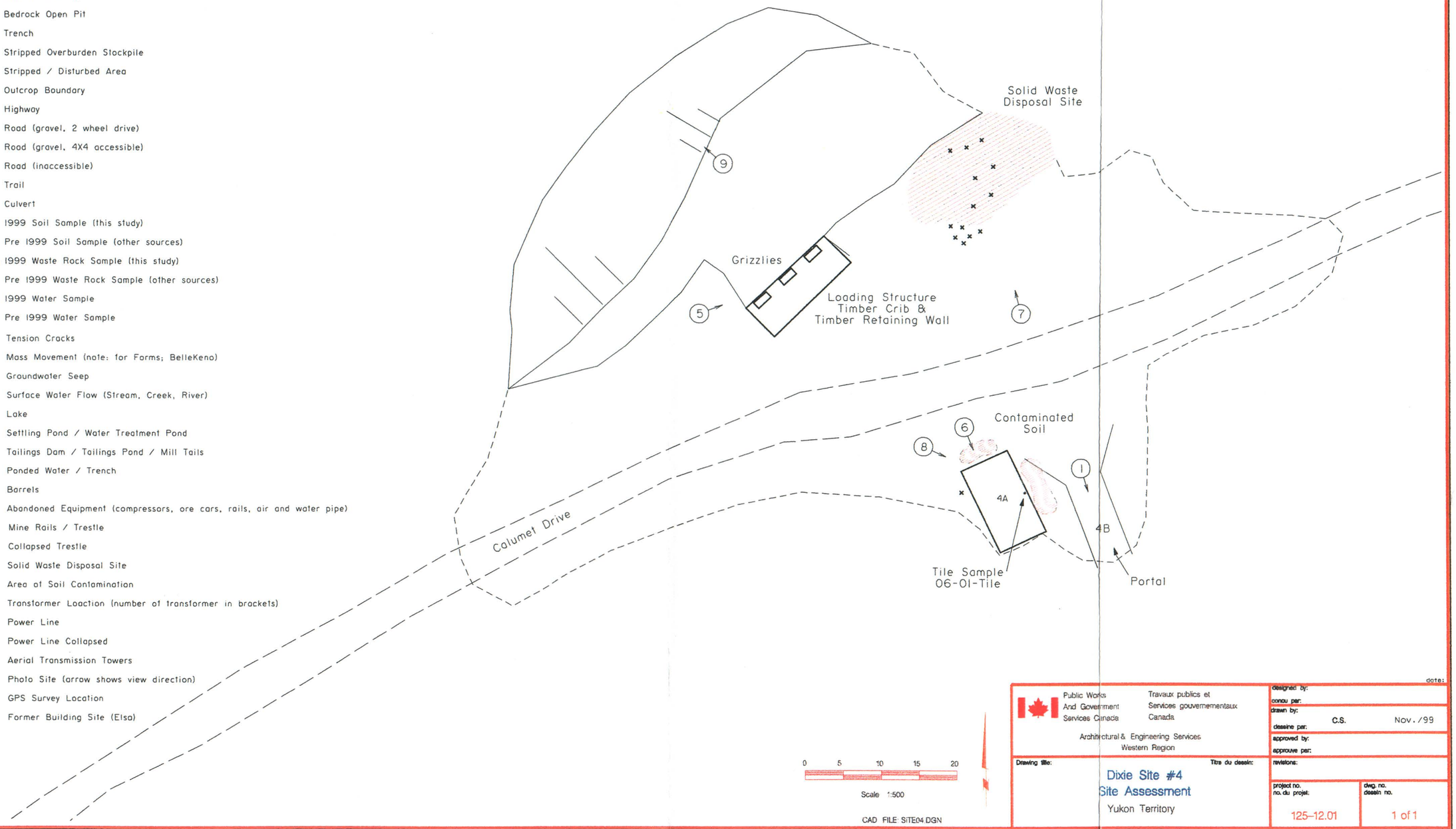
Total Metals	Detection	04-01-water
Aluminum	0.0008	0.0086
Antimony	0.005	<0.005
Arsenic	0.01	<0.01
Barium	0.00004	0.0184
Beryllium	0.00001	<0.00001
Bismuth	0.0004	<0.0004
Boron	0.002	<0.002
Cadmium	0.00006	0.00021
Calcium	0.002	128
Chromium	0.00006	0.00038
Cobalt	0.00003	<0.00003
Copper	0.00003	0.00252
Iron	0.00001	0.02
Lead	0.0003	<0.0003
Lithium	0.001	0.011
Magnesium	32.9	24.9
Maganese	0.00002	0.0114
Mercury	0.0001	<0.0001
Molybdenum	0.00007	0.00027
Nickel	0.0001	<0.00001
Phosphorus	0.03	<0.03
Potassium	0.4	0.8
Selenium	0.004	<0.004
Silicon	0.004	4.12
Silver	0.00005	<0.0000

Table 4 – Water Analysis

Water Analysis	Units	04-01-water	
		Field	Lab
Total Alkalinity	g CaCO3		199
Chloride in Water	mg/L		<0.25
EC	ℓS/cm	640	810
Hardness	mg/L		455
Nitrate-N in H2O	mg/L		0.3
Nitrate Nitrogen	mg/L		<0.003
pH in Water	pH	8.1	8
Sulphate	mg/L		240
TDS	mg/L		552

		5
Sodium	0.004	1.6
Strontium	0.00002	0.179
Sulphur	0.008	76.2
Thallium	0.001	<0.001
Titanium	0.00002	<0.00002
Vanadium	0.00003	<0.00003
Zinc	0.0002	0.0698
Total Arsenic Hydride AA	0.0002	0.0006
Total Selenium Hydride AA	0.0001	<0.0001

- Building (22A: building site present reference*) Indicates Asbestos Material (22A*)
- Collapsed Building (22A)
- Adit
- Collapsed Adit
- Shaft
- Collapsed/Backfilled Shaft
- Mine Rock Dump
- Bedrock Open Pit
- Trench
- Stripped Overburden Stockpile
- Stripped / Disturbed Area
- Outcrop Boundary
- Highway
- Road (gravel, 2 wheel drive)
- Road (gravel, 4X4 accessible)
- Road (inaccessible)
- Trail
- Culvert
- 24501-01 1999 Soil Sample (this study)
- Pre 1999 Soil Sample (other sources)
- 25WR04-01 1999 Waste Rock Sample (this study)
- Pre 1999 Waste Rock Sample (other sources)
- WQ-12-06 1999 Water Sample
- Pre 1999 Water Sample
- Tension Cracks
- Mass Movement (note: for Forms; BelleKeno)
- Groundwater Seep
- Surface Water Flow (Stream, Creek, River)
- Lake
- Settling Pond / Water Treatment Pond
- Tailings Dam / Tailings Pond / Mill Tails
- Ponded Water / Trench
- Barrels
- Abandoned Equipment (compressors, ore cars, rails, air and water pipe)
- Mine Rails / Trestle
- Collapsed Trestle
- Solid Waste Disposal Site
- Area of Soil Contamination
- *(6) Transformer Loaction (number of transformer in brackets)
- Power Line
- Power Line Collapsed
- Aerial Transmission Towers
- (5) Photo Site (arrow shows view direction)
- GPS Survey Location
- Former Building Site (Elsa)



0 5 10 15 20

Scale 1:500

CAD FILE: SITE04.DGN

Public Works And Government Services Canada / Travaux publics et Services gouvernementaux Canada

Architectural & Engineering Services
Western Region

Drawing title: / Titre du dessin:

Dixie Site #4
Site Assessment
Yukon Territory

date:

designed by: / conçu par:

drawn by: / dessiné par: C.S. Nov./99

approved by: / approuvé par:

revisions:

project no. / no. du projet: 125-12.01

dwg. no. / dessin no. 1 of 1

Photo 4-1: Photograph of the adit at Dixie Mine, note the portal entrance has been blocked off with timber cribbing. (Azimuth 145°)

Photo 4-2: Collapsed structure above raise. The raise is located at the intersection of the powerline and roadway approximately 500m above the main Dixie site. (Azimuth 95°)

Photo 4-3: Eastern raise of the Dixie mine site. Magnesium staining is evident on the vein rocks. (Azimuth 25°)

Photo 4-4: Photo of the collapsed western raise located directly above the main Dixie site. (Azimuth 210^{o})

Photo 4-5: The loading area at the main Dixie mine site. (Azimuth 80°)

Photo 4-6: Building 4A (garage/office) facing NE. (Azimuth 75°)

Photo 4-7: Empty barrels at the solid waste dump site. (Azimuth 25°)

Photo 4-8: Stained soil on the west side of building 4A. (Azimuth 135°)

Photo 4-9: The kill zone associated with the waste rock dump site. (Azimuth 320°)