# CARIBOU and ALICE

## SITE #39

## MINFILE# 105M 001ax, aw (105M 062)

### 1. LOCATION AND ACCESS

The main Caribou showing is approximately 250m southwest of the Caribou Hill summit. The Alice showing is located in the steep walled cirque immediately west of Caribou Hill summit. Access is by the 5.5 km Hope Gulch Trail (possibly suitable for 4x4 vehicles) which leaves the Lightning Creek Road near the mouth of Hope Gulch. The approximate UTM co-ordinates are 7 090 700 m N and 492 900m E (Latitude: 63° 56' 40" N and Longitude: 135° 08' 54" W).

### 2. SITE PHYSIOGRAPHY

The site is located on a moderate southwest-facing slope, at an elevation of 5800ft (1770m). The site is well above treeline, in alpine tundra terrain with characteristic thin soils, talus, grass and moss. Surface runoff from the site drains 700m to the south into Faith Gulch, a tributary of the Keno Ladue River. Given the elevation and the presence of frost heaved bedrock, the site is presumably underlain by permafrost.

### 3. GEOLOGY AND MINERALIZATION

The bulldozer trench east of Caribou Hill summit cut a poorly exposed, irregular, approximately 1m wide vein fault containing up to 0.3m wide pods of vein quartz. The vein fault is hosted by thin interbands of carbonaceous phyllite and Keno Hill Quartzite.

The stripping west of Caribou Hill summit exposed a vein fault containing up to 2m wide siderite at the south end and decreasing to <0.3m wide at the rim cirque rim on the north side. Most of the siderite was heavily oxidized, however, occasionally fresh siderite was seen where it sometimes had miner fine tetrahedrite. The wallrock for the vein was think (<0.15m) interbanded, gray phyllite carbonaceous phyllite and Keno Hill quartzite. This vein in this trench is probably the same, or parallel to the vein fault seen in the main Caribou showing.

The main Caribou showing has exposed a vein fault for over 100m in strike length. The vein fault is narrow (<0.10m) to poorly developed at the north end as well as the south end where it splits into two separate diverging veins. Approximately at the middle of the trench, the vein takes an abrupt change in strike and the vein fault has a 2m wide band of oxidized siderite. The narrow vein faults have pods of oxidized siderite. In places, fresh siderite is seen and miner fine disseminated tetrahedrite and galena is on occasion present. The wallrock for the vein fault is thin to medium banded Keno Hill Quartzite and minor carbonaceous phyllite.

The Yukon Mine file reports that lenses of galena, tetrahedrite and sphalerite occur in the vein. No sphalerite was seen in our visit.

## 4. SITE HISTORY

Between 1920 and 1928 a 13.7m adit and 40.2m of drifting were excavated. During this period, 78.9 tonnes of ore grading 6103 g/t silver and 70% lead was hand mined and shipped from the Caribou Showing. In 1952, a second adit, 8.2m in length, and some bulldozer trenching were excavated. Further bulldozer trenching on a vein was undertaken in 1986.

## 5. MINE DEVELOPMENT

The Alice adit could not be located. It has probably collapsed and been buried by slide rock from the steep walled cirque. Bulldozer trenching at the Caribou showing and the Caribou Adit were examined. No ore was processed at the site and no tailings were encountered. There is no mine wastewater treatment facility at this site. Site details can be found on Figure 1; site photos are located in Attachment 1 and laboratory results for sampling are in Attachment 2.

### 5.1 Mine Openings and Excavations

**Caribou Adit (photo 39-1)**

Surface stripping has exposed part of the adit, at least 10m from the portal. The support structure at the portal of the adit has likely been buried by the bulldozer trenching. The dimensions of the adit could not be determined. There is no evidence of the adit collapsing, however it is difficult to determine since the area around the adit has been extensively worked. The adit cannot be accessed.

**Trenches (photo 39-2)**

There were four trenches examined. Trench #1 is a single about 65m in length, bulldozer trench located at the rim of the cirque, 50 m east of Caribou Hill summit. Trench #2 is a 30m by 40m area at the rim of the cirque, approximately 100m west of Caribou Hill summit, where the bulldozer has stripped to expose bedrock. There are two trenches near the Caribou Adit. Trench #3 is 67m in length, 4-13m in width and up to 8m high. At the south end of the Trench #3 is Trench #4, measuring 33m in length and 3m wide, which was filled with ponded water at the time of the site visit.

### 5.2 Waste Rock Disposal Areas

Waste rock from Trenches #1 and #2, and possibly the Alice Adit, was pushed into the Caribou cirque. The volume and composition is unknown. The waste rock from Trenches #3 and #4, and from the adit is located on either side of Trench #3. The waste rock is composed of Keno Hill Quartzite, carbonaceous phyllite and siderite veining with minor fine disseminated tetrahedrite and galena. The waste rock on the west side of the trench is

70m long and up to 30m wide and 8m high. The waste rock on the east side of the trench is 65m long, up to 15m in width and 8m high. Some oxidation in the siderite was observed. A waste rock sample (Site #39-Waste Rock-Sept.14/99) was collected from the southern end of the western pile beside Trench #3. The field paste pH was 6.2 and the conductivity was 30μ S/cm.

## 6. MINE SITE INFRASTRUCTURE

No mine site infrastructure including buildings, rail and trestle, fuel storage areas and electrical equipment was encountered.

## 7. SOLID WASTE DUMPS

There were no solid waste dumps observed at this site.

## 8. POTENTIAL CONTAMINANTS OF CONCERN

No hazardous waste was encountered at the site. Potential contaminants of concern include any metals washing from the trench walls.

## 9. WATER QUALITY

There is ponded water at the base of Trench #4. A water sample (Site #39-Sample 1-Caribou 13/09/99) was collected for analysis. The field pH was 6.2 and the conductivity was 50μS/cm. No other surface water was encountered at the site.

## 10. RECLAMATION

Due to the high elevation and sparse vegetation, no revegetation of the disturbed areas has occurred.

## 11. REFERENCES AND PERSONAL COMMUNICATIONS

Minfile #105M 001aw,x

| ATTACHMENT 2: 1999 CARIBOU WATER SAMPLES LABORATORY RESULTS | | | |
|---|---|---|---|
| **Sample Number** | **Detection Limit** | **Units** | **Site 39 Sample 1 - Caribou - 13/09/99** |
| **Site Desciption** | | | Collected from ponded water at the eastern end of Trench #4 |
| pH (field) | N/A | pH | 6.2 |
| Conductivity (field) | N/A | µS/cm | 50 |
| pH (Lab) | 0.01 | pH | 5.87 |
| Conductivity (Lab) | 0.01 | µS/cm | 63 |
| Total Alkalinity | 5 | mg CaCO3/L | <5 |
| Chloride | 0.25 | mg/L | <0.25 |
| Hardness (CaCO3 equiv) | 5 | mg/L | 20.7 |
| Nitrate-N | 0.05 | mg/L | 1.14 |
| Nitrite-N | 0.003 | mg/L | <0.003 |
| Sulphate | 0.5 | mg/L | 18.3 |
| Total Dissolved Solids | 5 | mg/L | 35 |
| ***Analysis by ICP-USN*** | | | |
| Aluminum | 0.0008 | mg/L | 15 |
| Antimony | 0.005 | mg/L | 0.09 |
| Arsenic | 0.01 | mg/L | 0.29 |
| Barium | 0.00004 | mg/L | 0.26 |
| Beryllium | 0.00001 | mg/L | 0.00046 |
| Bismuth | 0.0004 | mg/L | <0.0004 |
| Boron | 0.002 | mg/L | 0.011 |
| Cadmium | 0.00006 | mg/L | 0.0448 |
| Calcium | 0.002 | mg/L | 8.82 |
| Chromium | 0.00006 | mg/L | 0.0233 |
| Cobalt | 0.00003 | mg/L | 0.0162 |
| Copper | 0.00003 | mg/L | 0.0678 |
| Iron | 0.00001 | mg/L | 24.5 |
| Lead | 0.0003 | mg/L | 6.24 |
| Lithium | 0.001 | mg/L | 0.017 |
| Magnesium | 0.0005 | mg/L | 6.66 |
| Manganese | 0.00002 | mg/L | 3.62 |
| Mercury | 0.0001 | mg/L | 0.0001 |
| Molybdenum | 0.00007 | mg/L | 0.00056 |
| Nickel | 0.00001 | mg/L | 0.0388 |
| Phosphorus | 0.03 | mg/L | 2.23 |
| Potassium | 0.4 | mg/L | 1.6 |
| Selenium | 0.004 | mg/L | <0.004 |
| Silicon | 0.004 | mg/L | 15.3 |
| Silver | 0.00005 | mg/L | 0.0779 |
| Sodium | 0.004 | mg/L | 1 |
| Strontium | 0.00002 | mg/L | 0.0861 |
| Sulphur | 0.008 | mg/L | 7.6 |
| Thallium | 0.001 | mg/L | 0.003 |
| Titanium | 0.00002 | mg/L | 0.604 |
| Vanadium | 0.00003 | mg/L | 0.0343 |
| Zinc | 0.0002 | mg/L | 1.78 |
| ***Analysis by Hydride AA*** | | | |
| Arsenic | 0.0002 | mg/L | 0.54 |
| Selenium | 0.0001 | mg/L | 0.0022 |

| ATTACHMENT 2: 1999 CARIBOU WASTE ROCK LABORATORY RESULTS | | | |
|---|---|---|---|
| **Site Number** | **Detection Limit** | **Units** | **Caribou #39 - Waste Rock - Sept 14/99** |
| **Sample Desciption** | | | Collected from the waste rock pile on the west side of Trench #3, at the southern end. |
| Paste pH (field) | N/A | pH | 6.2 |
| Conductivity (field) | N/A | µS/cm | 30 |
| ***pH in Saturated Paste*** | | | |
| pH | 0.1 | pH | 5.6 |
| ***pH in Soil (1:2 water)*** | | | |
| pH | 0.01 | pH | 6.4 |
| ***ICP Semi-Trace Scan*** | | | |
| Aluminum | 5 | µg/g | 13900 |
| Antimony | 2 | µg/g | 79 |
| Arsenic | 2 | µg/g | 169 |
| Barium | 0.05 | µg/g | 211 |
| Beryllium | 0.1 | µg/g | 0.4 |
| Bismuth | 5 | µg/g | <5 |
| Cadmium | 0.1 | µg/g | 8.6 |
| Calcium | 5 | µg/g | 2150 |
| Chromium | 0.5 | µg/g | 21.1 |
| Cobalt | 0.1 | µg/g | 7.2 |
| Copper | 0.5 | µg/g | 62.1 |
| Iron | 1 | µg/g | 28000 |
| Lead | 1 | µg/g | 3210 |
| Lithium | 0.5 | µg/g | 12.5 |
| Magnesium | 1 | µg/g | 2780 |
| Manganese | 0.5 | µg/g | 3160 |
| Mercury | 0.01 | µg/g | 0.21 |
| Molybdenum | 1 | µg/g | 1 |
| Nickel | 1 | µg/g | 23.2 |
| Phosphorus | 5 | µg/g | 649 |
| Potassium | 20 | µg/g | 2850 |
| Selenium | 2 | µg/g | <2 |
| Silicon | 5 | µg/g | 4010 |
| Silver | 0.5 | µg/g | 27.2 |
| Sodium | 5 | µg/g | 1420 |
| Strontium | 1 | µg/g | 43 |
| Sulphur | 10 | µg/g | 290 |
| Thorium | 1 | µg/g | 4 |
| Tin | 1 | µg/g | 7 |
| Titanium | 0.2 | µg/g | 367 |
| Uranium | 5 | µg/g | <5 |
| Vanadium | 1 | µg/g | 35 |
| Zinc | 0.5 | µg/g | 520 |
| Zirconium | 0.1 | µg/g | 22.1 |

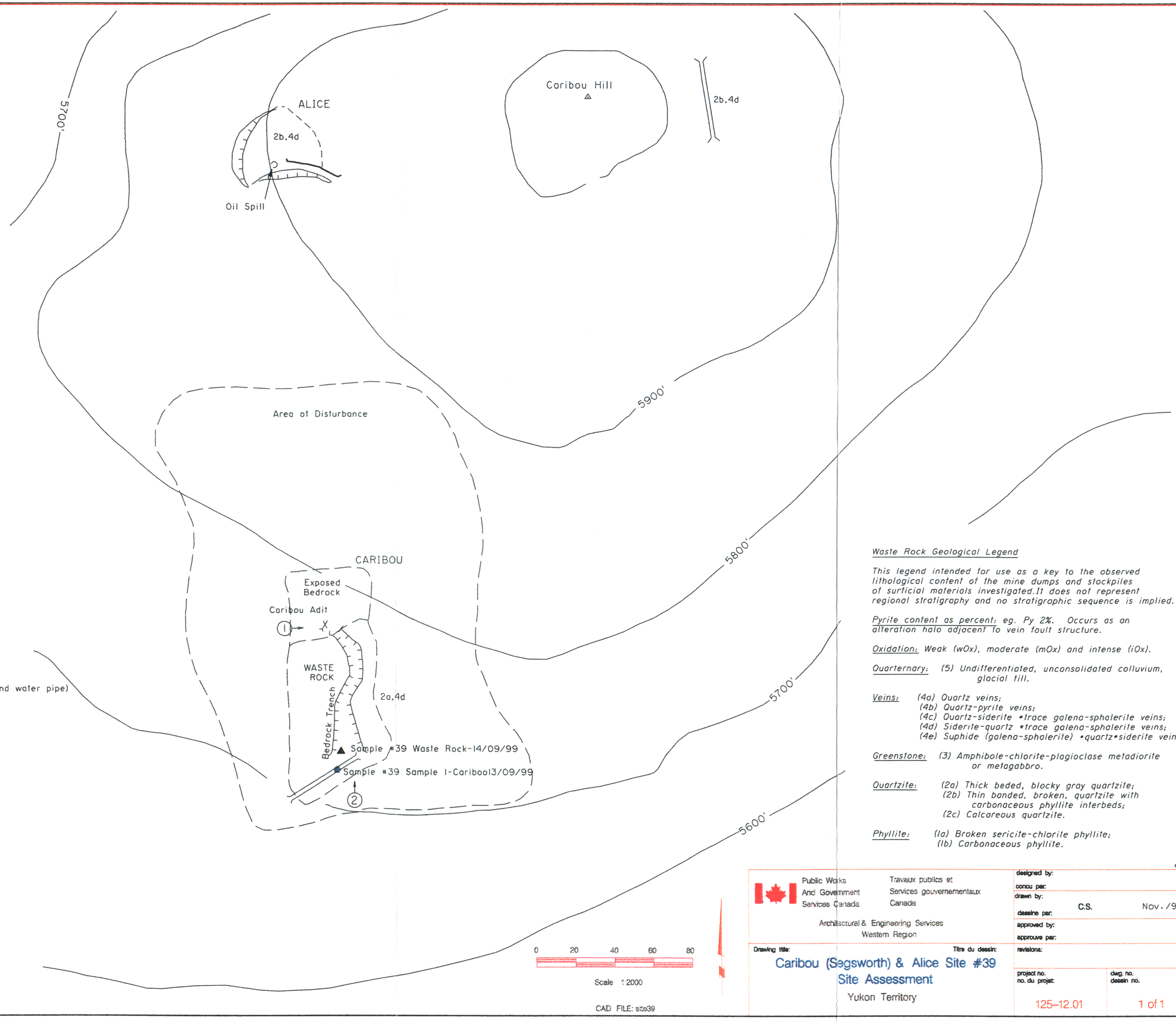
## ATTACHMENT 2: 1999 CARIBOU WASTE ROCK LABORATORY RESULTS
## MODIFIED SOBEK METHOD ACID-BASE ACCOUNTING TEST

| SAMPLE | SITE DESCRIPTION | PASTE pH | S(T) % | S(SO4) % | AP | NP | NET NP | NP/AP |
|---|---|---|---|---|---|---|---|---|
| Caribou #39 - Waste Rock - Sept.14/99 | Collected from the waste rock pile on the west side of Trench #3, at the southern end. | 6.7 | <0.01 | <0.01 | 0.0 | 0.8 | 0.8 | ~~~ |

AP = ACID POTENTIAL IN TONNES CaCO3 EQUIVALENT PER 1000 TONNES OF MATERIAL.
NP = NEUTRALIZATION POTENTIAL IN TONNES CaCO3 EQUIVALENT PER 1000 TONNES OF MATERIAL.
NET NP = NET NEUTRALIZATION POTENTIAL = TONNES CaCO3 EQUIVALENT PER 1000 TONNES OF MATERIAL.
NOTE: WHEN S(T) AND/OR S(SO4) IS REPORTED AS <0.01, IT IS ASSUMED TO BE ZERO FOR THE AP CALCULATION.
N/D = NO DUPLICATE ASSAY. CALCULATIONS ARE BASED ON ASSAY RESULTS OF THE INITIAL SAMPLE.
RE = REPLICATE.

NOTE - A HIGH LEVEL OF SOLUBLE METALS (ESPECIALLY IRON) WERE OBSERVED IN MANY SAMPLES DURING THE ABA TITRATIONS.
SAMPLES WITH A NEGATIVE NET NP SHOULD BE TESTED FOR MOBILE METALS USING STANDARD SHAKE FLASK EXTRACTION TESTS.

- Building (22A: building site present reference*) Indicates Asbestos Material
- Collapsed Building
- 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)




*Waste Rock Geological Legend*

*This legend intended for use as a key to the observed lithological content of the mine dumps and stockpiles of surficial materials investigated.It does not represent regional stratigraphy and no stratigraphic sequence is implied.*

*Pyrite content as percent:* eg. Py 2%. Occurs as an alteration halo adjacent to vein fault structure.

*Oxidation:* Weak (wOx), moderate (mOx) and intense (iOx).

*Quarternary:* (5) Undifferentiated, unconsolidated colluvium, glacial till.

*Veins:* (4a) Quartz veins;
(4b) Quartz-pyrite veins;
(4c) Quartz-siderite *trace galena-sphalerite veins;
(4d) Siderite-quartz *trace galena-sphalerite veins;
(4e) Suphide (galena-sphalerite) *quartz*siderite veins.

*Greenstone:* (3) Amphibole-chlorite-plagioclase metadiorite or metagabbro.

*Quartzite:* (2a) Thick beded, blocky gray quartzite;
(2b) Thin banded, broken, quartzite with carbonaceous phyllite interbeds;
(2c) Calcareous quartzite.

*Phyllite:* (1a) Broken sericite-chlorite phyllite;
(1b) Carbonaceous phyllite.

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

Architectural & Engineering Services
Western Region

Drawing title: / Titre du dessin:

# Caribou (Segsworth) & Alice Site #39 Site Assessment

Yukon Territory

date:
designed by:
concu par:
drawn by: C.S. Nov./99
dessine par:
approved by:
approuve par:
revisions:
project no. / no. du projet: 125-12.01
dwg. no. / dessin no. 1 of 1

Photo 39-1 : Caribou. Caribou adit; portal exposed by bedrock striping. (Azimuth 080 $^{o}$)

Photo 39-2 : Caribou. View of bedrock trench at Caribou. Note empty plastic pails and water sample site in foreground. (Azimuth ~000 $^{o}$)