BLUEBIRD
SITE NO. 14
105M 001b

1. LOCATION AND ACCESS

Bluebird site is located on the lower northeast slope of Galena Hill, approximately 4km northwest along Highway 11 from the village of Keno Hill. The site is located roughly 70m upslope to the northeast from the Highway at an elevation of 945m. Access from the highway is only possible on foot through thick alder growth. UTM coordinates for the site are 482,750m east and 7,089,825m north.

2. SITE PHYSIOGRAPHY

The site occurs on a moderate to gentle northeast slope, averaging about 12 degrees toward azimuth 050. A moderately sloping hill underlain by greenstone occurs immediately to the northwest of the shafts. The area is thought to have permafrost. No surface water or channels were observed draining from the site that is situated roughly 550m southwest of Christal Creek.

3. GEOLOGY AND MINERALIZATION

Mineralization occurs at the contact between greenstone and carbonaceous phyllite. Mineralization is reported to consist of galena, sphalerite and pyrite in an ankerite, calcite, quartz, limonite and manganese oxide gangue. The shaft dumps are completely revegetated. Greenstone is exposed in outcrops a few metres west of the shafts, and in a stripped area near the cabin at the top of the hill to the west.

4. SITE HISTORY

Mining took place between 1925 and 1930. Two of the four shafts were reported to be 12.2 and 7 metres deep (Stockwell, 1930). Several shallow test pits are also present in the area, and appear to be of the same vintage. Bulldozer stripping of shallow overburden on the top of the hill is likely pre-1980, and exposed an area of bedrock about 25 by 10 metres. A cabin was built circa 1980, and appears to have been a residential structure.

5. MINE DEVELOPMENT

5.1 Mine Openings and Excavations

There are four shallow shafts and an area of overburden stripping/trenching on the Bluebird site.

No ore was processed on the site and there are no tailings or tailings impoundment structures on the site. There are also no wastewater treatment facilities on the site.

Shafts-Lower, Lower Middle, Upper Middle and Upper Shafts (Photos 14-1, 14-2, 14-4, 14-5)

Description: Four small shafts were dug through the overburden and into bedrock. All shaft areas are completely revegetated by willow, alder etc.

Location: Spaced 12 to 15m apart along a linear geological trend of azimuth 030°. Northeast shaft located 70m from Hwy. 11.

Dimensions (L x W x H): All shafts are about 1.5 x 1.5m, with depths unknown due to collapse and water fill. Depths of 12.2m and 7m are reported by Boyle.

Supports: Some small rotten timbers are visible projecting out of some shafts. Rotten ladders are present at the upper three shafts

Condition: All of the shafts are partially to completely collapsed, and the northernmost shaft has 40 cm of standing water covering the fill material.

Accessibility: The shafts are only about 70m up a gentle slope from the Silver Trail Highway, but access is impeded by very dense bush. The shafts are not likely to be a hazard due to small size, collapse of material into the shafts, shallow water in the shafts, trees growing around the shafts, and old timbers and ladders projecting out of the shafts.

Trenches

Description: Bulldozer stripping to bedrock along the top of the hill.

Location: Located 50m to the northwest of the shafts on top of an adjacent rocky knob.

Dimensions (L x W x H): 25 x 10 x 0.5

Condition: Stable, revegetated overburden, bare rock.

Accessibility: Easy access by foot from highway. No hazards at this site.

5.2 Waste Rock-Lower, Lower Middle, Upper Middle and Upper Waste Rock Piles (Photos 14-3, 14-4)

General Description: Small (less than 100 tonnes) waste rock piles are associated with each of the four shafts. All of the waste piles are completely covered with dense vegetation. The waste rock is very fine material, and likely contains overburden from the first metre or two of shaft sinking. The geology is difficult to evaluate due to lack of outcrop at the shafts and complete revegetation of the surrounding area including dumps.

Location: See map.

Dimensions: (L x W x H) Maximum size about 12 x 8 x 1m (Upper Middle); difficult to measure due to revegetation.

Sampling: No waste rock samples were collected. A 30cm test pit was dug, which revealed fine grey-brown phyllite flakes with 5% bright orange siderite material.

6. MINE SITE INFRASTRUCTURE

The site has very little mining related infrastructure present. There are no fuel storage, rail or trestle, milling, or electrical equipment areas present.

6.1 Buildings

A log cabin and a small outhouse are the only buildings present on the site. The cabin appears to date from the 1980s, postdating the mine site working.

Building 14-A - Cabin (Photo 14-6)

Description and type: Log cabin with a log and sod roof.

Dimensions (L x W x H): 7m x 5m x 4m.

Paint: Some paint on windows, door etc.

Asbestos: None observed.

Foundation: Log cribbing

Non-Hazardous Contents: Some furniture, wood stove.

Hazardous Contents: No hazardous materials observed.

Samples: None collected.

7. SOLID WASTE DUMPS

Minor household waste is present scattered around the site and in the Lower Middle Shaft area.

8. POTENTIAL CONTAMINANTS OF CONCERN

Metals in waste rock is the only potential contaminant of concern on the Bluebird site. There were no transformers, hydrocarbon contaminated soils or liquid or solid hazardous material observed on the site.

9. WATER QUALITY

A single water sample was collected on the site. A sample was collected from the standing ground water in the Lower Shaft

Sample:

Sample #	Location	Field Tests
14-WQ-A-01-01	Lower Shaft	pH 7.6

10. RECLAMATION

Natural revegetation has occurred at all of the disturbed sites except for the hilltop where overburden was completely stripped to bedrock. Near the shafts the vegetation consists of very dense alders, willows, moss, spruce and other plants. No reclamation measures by the site operators are known.

11. OTHER INFORMATION AND DATA

Note: A 1920's era shaft bucket in good condition was removed from the site and delivered to the Keno City Museum.

12. REFERENCES AND PERSONAL COMMUNICATIONS

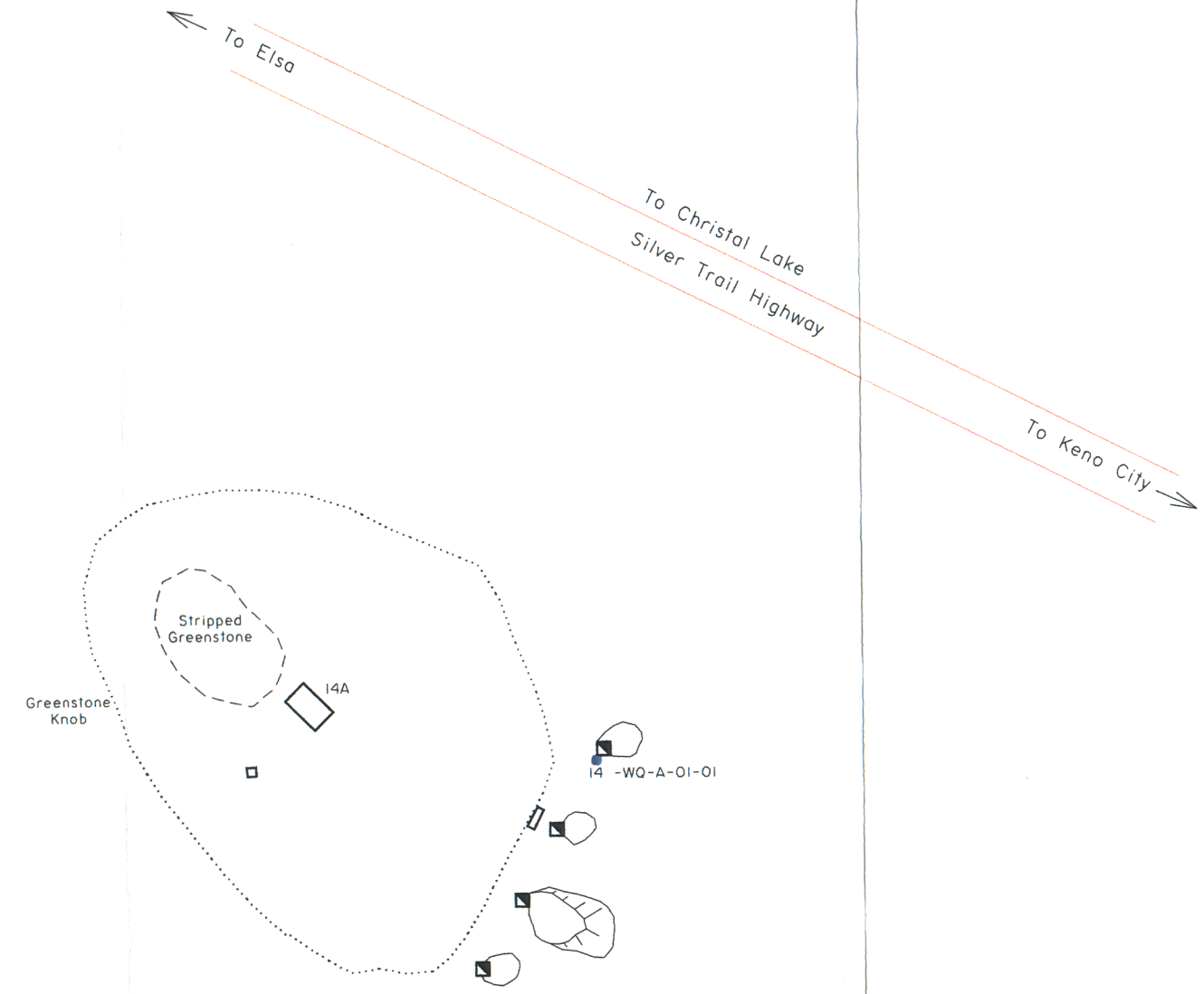
Boyle, R.W., 1965. Geology, Geochemistry, and Origin of the Lead-Zinc-Silver Deposits of the Keno Hill-Galena Hill Area, Yukon Territory. Geol. Surv. Can. Bull. 111.

Cockfield, W.E., 1930. The Mining Industry of Yukon, 1929; Geol. Surv. Can., Sum. Rept. 1929, pt. A, pp 1A-15A.

Stockwell, C.H., 1926. Galena Hill, Mayo District, Yukon; Geol. Survey Can., Sum. Rept. 1925, pt. A, pp 1A-14A.

ATTACHMENT 2: 1999 BLUEBIRD WATER SAMPLES LABORATORY RESULTS			
Sample Number	**Detection Limit**	**Units**	**14WQ-A01-01 - 09/22/99**
Site Desciption			Standing ground water in the lower shaft
pH (field)	N/A	pH	7.6
Conductivity (field)	N/A	µS/cm	-
pH (Lab)	0.01	pH	7.62
Conductivity (Lab)	0.01	µS/cm	580
Total Alkalinity	5	mg CaCO3/L	172
Chloride	0.25	mg/L	0.58
Hardness (CaCO3 equiv)	5	mg/L	340
Nitrate-N	0.05	mg/L	0.54
Nitrite-N	0.003	mg/L	0.004
Sulphate	1	mg/L	113
Total Dissolved Solids	5	mg/L	422
Analysis by ICP-USN			
Aluminum	0.0008	mg/L	0.0462
Antimony	0.005	mg/L	<0.005
Arsenic	0.01	mg/L	<0.01
Barium	0.00004	mg/L	0.00634
Beryllium	0.00001	mg/L	<0.00001
Bismuth	0.0004	mg/L	<0.0004
Boron	0.002	mg/L	<0.002
Cadmium	0.00006	mg/L	0.00039
Calcium	0.002	mg/L	79.3
Chromium	0.00006	mg/L	0.00031
Cobalt	0.00003	mg/L	0.00012
Copper	0.00003	mg/L	0.00457
Iron	0.00001	mg/L	0.103
Lead	0.0003	mg/L	0.0058
Lithium	0.001	mg/L	0.002
Magnesium	0.0005	mg/L	25.8
Manganese	0.00002	mg/L	0.0168
Mercury	0.0001	mg/L	<0.0001
Molybdenum	0.00007	mg/L	0.00039
Nickel	0.00001	mg/L	0.0008
Phosphorus	0.03	mg/L	<0.03
Potassium	0.4	mg/L	0.5
Selenium	0.004	mg/L	0.005
Silicon	0.004	mg/L	2.05
Silver	0.00005	mg/L	0.00013
Sodium	0.004	mg/L	1.1
Strontium	0.00002	mg/L	0.125
Sulphur	0.008	mg/L	37.3
Thallium	0.001	mg/L	<0.001
Titanium	0.00002	mg/L	0.00083
Vanadium	0.00003	mg/L	<0.00003
Zinc	0.0002	mg/L	0.0278
Zirconium	0.00004	mg/L	
Analysis by Hydride AA			
Arsenic	0.0002	mg/L	0.0026
Selenium	0.0001	mg/L	<0.0001

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



0 10 20 30 40

Scale 1:1000

CAD FILE: SITE14.DGN

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

Architectural & Engineering Services
Western Region

Drawing title: Titre du dessin:

Bluebird Site #14
Site Assessment
Yukon Territory

designed by: / conçu par: date:
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 14-1: Lower shaft; openning located below flagging. (Azimuth 180^{0})

Photo 14-2: Lower-middle shaft; note ladder extending out of shaft opening. (Azimuth 040°)

Photo 14-3: Test pit in rock dump for lower-middle shaft.

Photo 14-4: Upper-middle shaft and rock dump area; note flagging on ladder extending from shaft opening and mapper standing at end of rock dump. (Azimuth120^{0})

Photo 14-5: Upper shaft site. (Azimuth 050^{0})

Photo 14-6: Recent cabin (early 1980's); note collapsed sod roof structure. (Azimuth 340°)