

**Summary of Work  
on the  
Mount Haldane Project, Yukon Territory**

for

**Yukon Mining Incentive Program  
Economic Development, Government of Yukon  
Box 2703, Whitehorse, YT Y1A 2C6**

File # 03-071

by

**J. Peter Ross, Prospector**

NTS: 105 M/13

Latitude: 63° 50' N

Longitude: 135° 50' W

Dates Worked (2003): J. P. Ross: May 25, 27-31

June 1, 14

July 3, 5, 15-17, 19-24

Ron Berdahl: August 18,

Sept. 31

Dated: December 2003

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## Chapter One: SUMMARY and RECOMMENDATIONS

### 1.1 Summary

The NUR 1-20 claims were staked and recorded by J.P. Ross of Whitehorse, Yukon on June 2, 2003. The FARA 1-12 claims were staked and recorded by Ron Berdahl of Whitehorse, Yukon on 19 August 2003. The CLARKSTON 1-12 claims were staked and recorded by Ron Berdahl on October 1, 2003. The FARA 1-12 and CLARKSTON 1-12 claims were transferred to J.P. Ross of Whitehorse, Yukon.

The Mt. Haldane area (NUR, FARA and CLARKSTON claim groups were chosen because:

1. The price of gold is up and there is more interest in intrusion hosted and related gold deposits.
2. Deposits in this area are comparable to the Fort Knox mine (Fairbanks, Alaska) and related deposits.
3. The geology of the project area is similar to the nearby Dublin Gulch gold deposit and the Wayne gold-tungsten occurrence.
4. The area is being actively explored (Wayne and Aurex) at present and success in drilling projects in 2003 will help other projects in the area.
5. A power line is 2 – 3 km. away and one can drive to the area on a rough 2 wheel drive road (old road to placer mines at Dublin Gulch).
6. Mike Burke, Don Murphy and Ken Galambos (Yukon Geological Survey) feel the area has a high potential for an economic mineral discovery.
7. The nearby Wayne and Aurex gold prospects sit in the hanging wall (upper schist of Precambrian and /or Paleozoic age (carbonaceous) of an extensive thrust (Robert Service thrust) and over the younger rocks of the lower schist (Keno Hill Quartzite) with no carbonaceous zones. A series of stacked imbricated thrust blocks and NE and NW trending faults have mineralization. Deposit type is a skarn-replacement-quartz veined shear zone, distal to a Tombstone intrusion of Tertiary age.
8. Similar geology and conditions are thought to occur in the NUR, FARA and CLARKSTON claim group areas.
9. Past work on the NUR claim area produced anomalous silts As (up to 1000 ppm), Sn (up to 20 ppm) and W (up to 100 ppm). Gold was not analysed. Soils returned up to 30 ppb Au and 1590 ppm As.
10. The NUR claim area had no placer gold but Jim McFaull says most of the gold is micron sized in the McQuesten Aurex area and did not produce a gold placer.
11. Aerial photos of the area show four linears in the NUR claim area (recessive, calcareous zones?). These were not observed on the ground.

OR

12. Past work on the FARA, CLARKSTON claim area produced anomalous soils up to 85 ppb Au, 336 ppm As (lines at 150m intervals, lines at  $\pm$  1000m apart).
13. The soil samples were few and far apart and a detailed soil grid was felt to have a good chance of producing sizeable gold and arsenic anomalies similar to the Wayne/Aurex Au occurrences.

On the NUR claims J.P. Ross took 93 soil samples

Summary of Soil Sample Results (Au, As, Sb)

# of samples	Values (Au)
57	9 ppb Au or less
23	10 – 19 ppb Au
13	20 – 63 ppb Au

# of samples	Values (As)
54	499 ppm As or less
24	500 – 999 ppm As
9	1000 – 1999 ppm As
6	2000 – 9785 ppm As

# of samples	Values (Sb)
71	2.9 ppm Sb or less
10	3 – 4.9 ppm Sb
12	5 – 11.1 ppm Sb

On the NUR claims and surrounding area J.P. Ross took 11 float samples. The best assayed 7 ppb Au and 5281 ppm As.

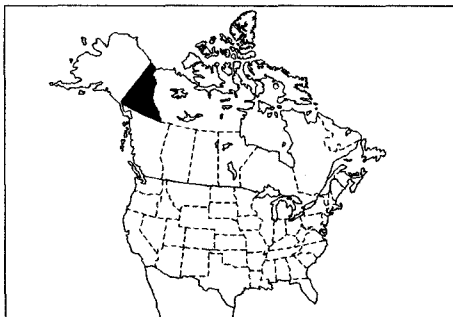
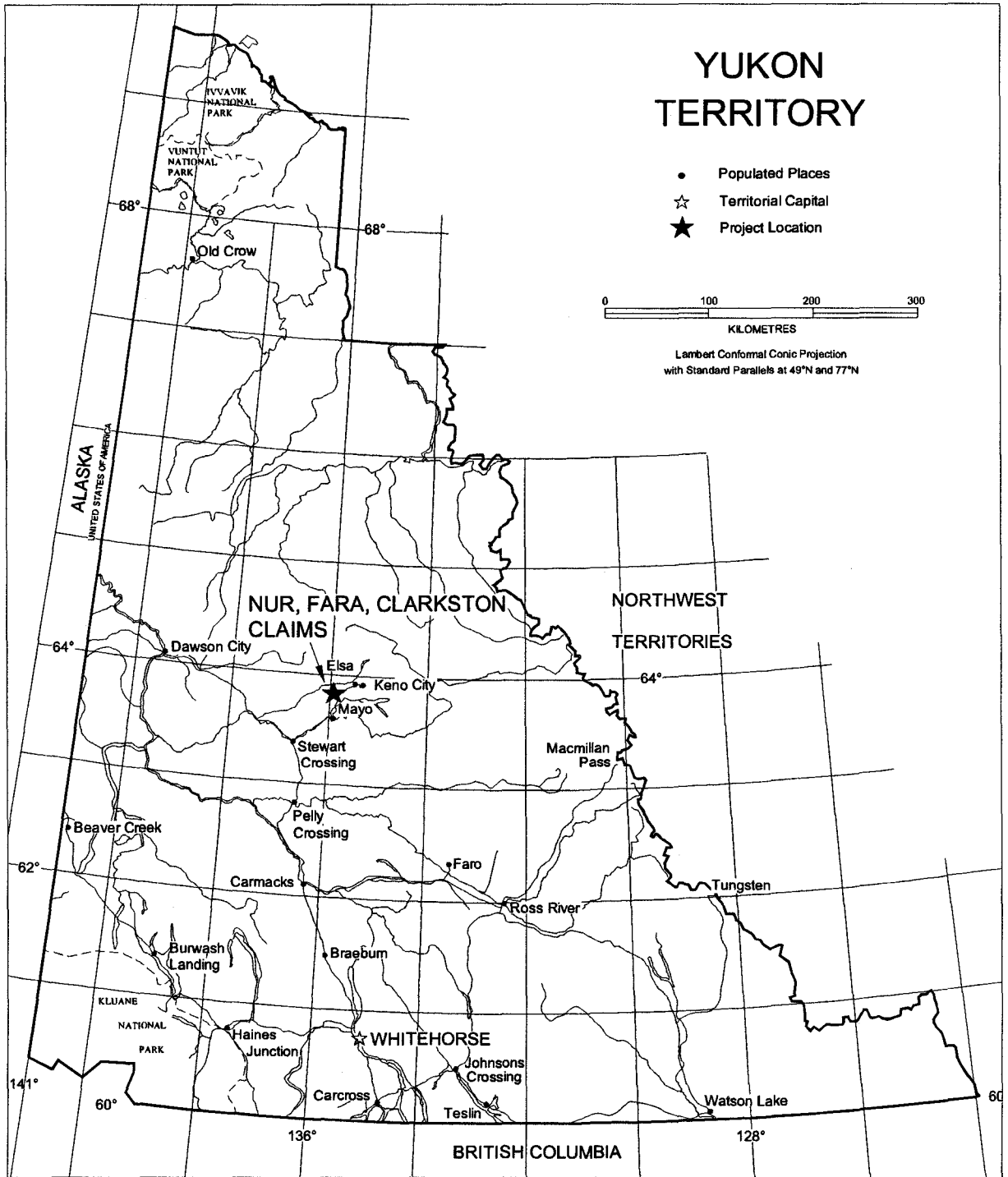
No work was done on the FARA - CLARKSTON claim groups.

## 1.2 Recommendations

All 44 claims will be kept. The results were very encouraging.

Future work should include a soil grid on the FARA – CLARKSTON claim groups. Claims should be staked to the NW and SE of the NUR claim group. A tighter soil grid should be done in between lines EN, DN, CN, BN and AN plus soil samples to the west of line EN.

Tighter grids around high Au As anomalous areas and prospecting should be done to produce targets for trenching and/or drilling.



J. Peter Ross

LOCATION MAP  
MT. HALDANE PROJECT



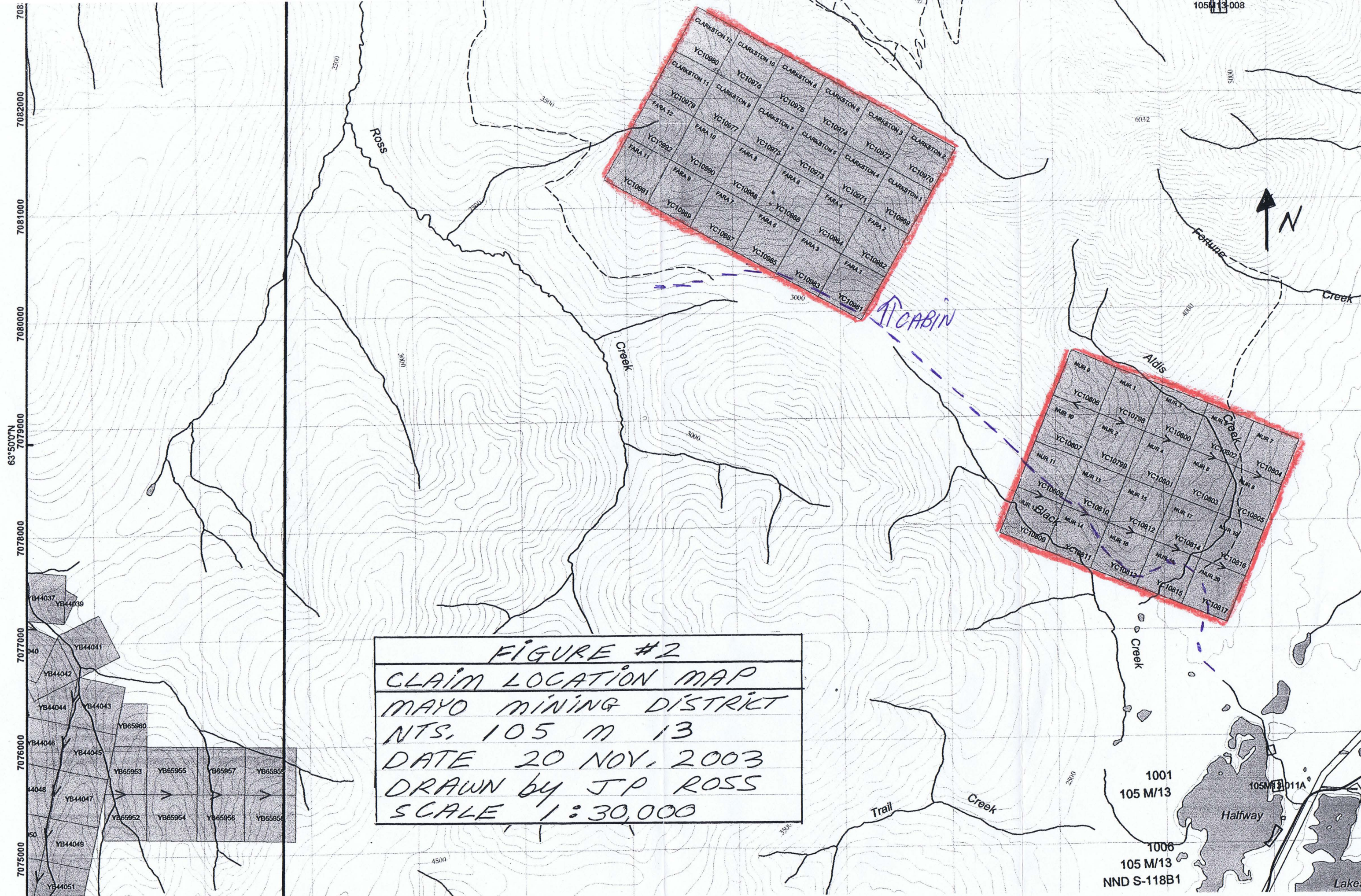
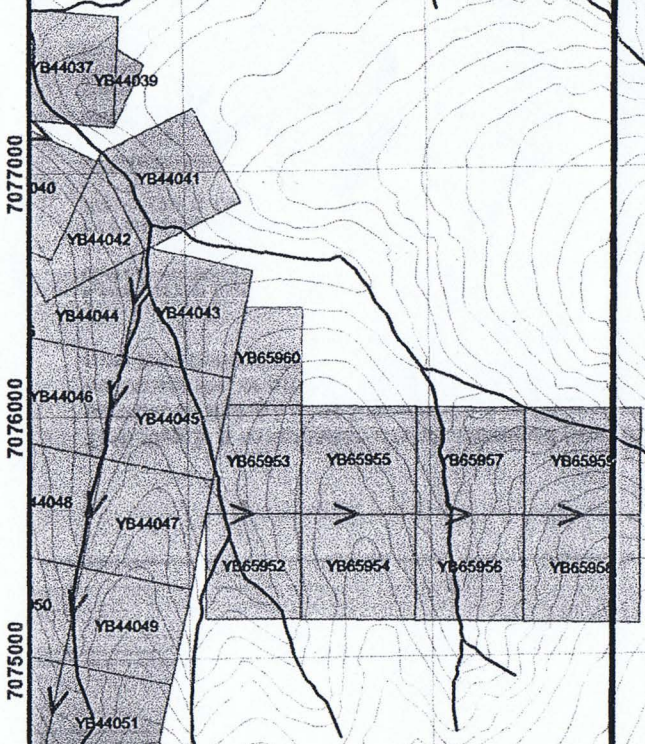
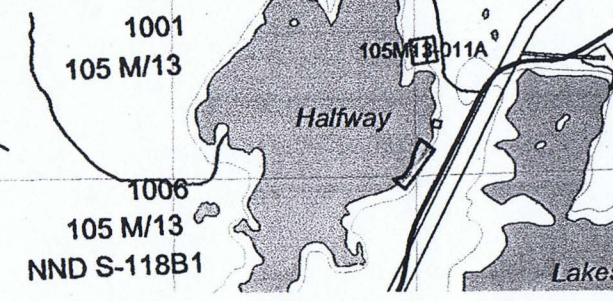


FIGURE #2  
 CLAIM LOCATION MAP  
 MAYO MINING DISTRICT  
 NTS, 105 M 13  
 DATE 20 NOV, 2003  
 DRAWN by JP ROSS  
 SCALE 1:30,000





## GEOLOGICAL LEGEND

### Early - Late Cretaceous

KHQ Keno Hill Quartzite  
Quartzite and minor phyllite

### Mississippian

HG Hyland Group  
"Calcareous" metasediments (upper Proterozoic)



Thrust fault contact  
(teeth on hanging wall)



High angle fault



Tombstone Intrusions: Dykes, sills and  
small plugs of aplite and granite

MT. HALDANE PROJECT

LEGEND and SYMBOLS

J.P. Ross

SCALE:

FILE: HALDANE

DATE: 2004.01.07

NTS: 105 M/13

DRAWN:

FIGURE 3A



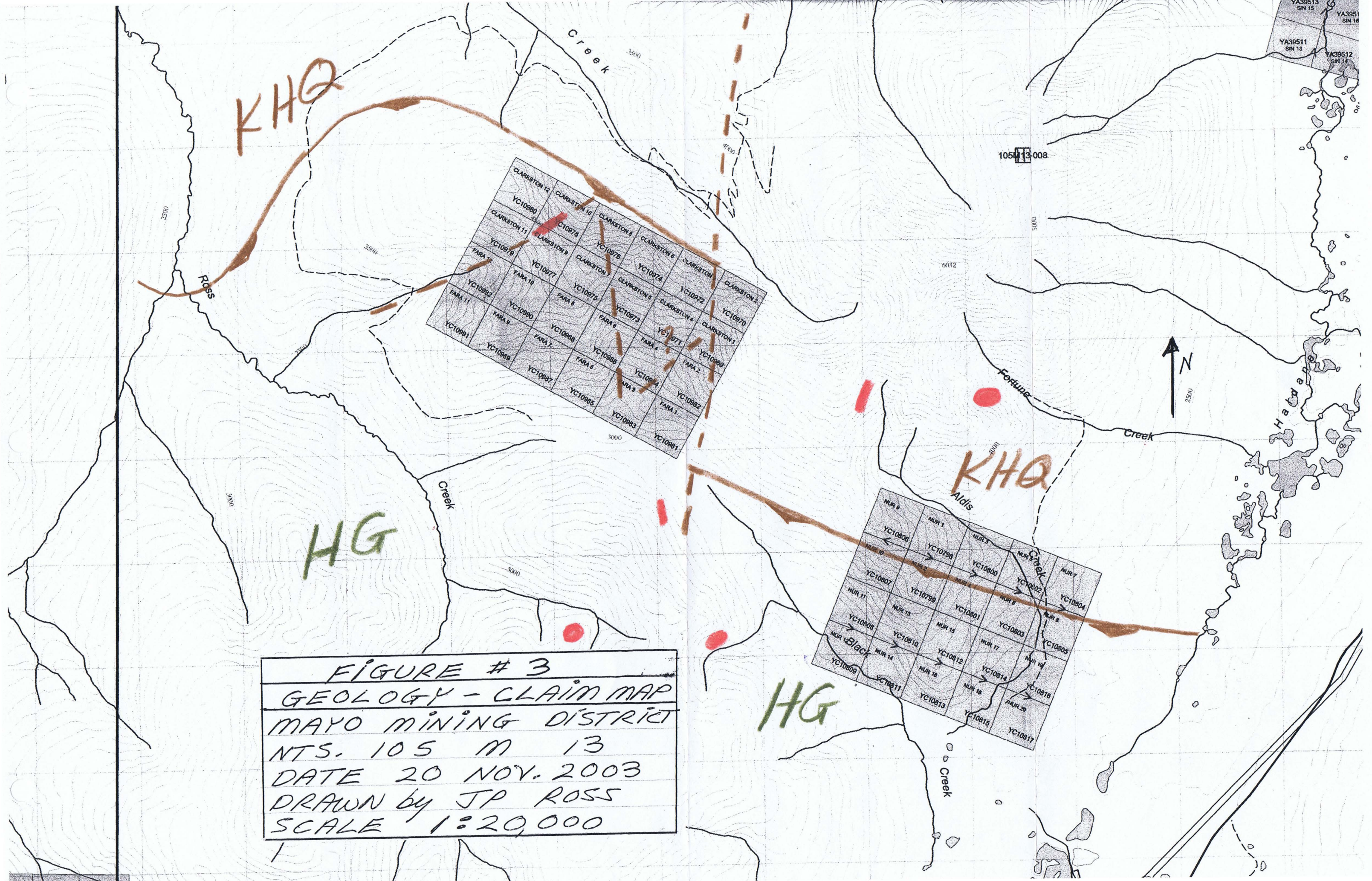


FIGURE # 3  
 GEOLOGY - CLAIM MAP  
 MAYO MINING DISTRICT  
 NTS. 105 M 13  
 DATE 20 NOV. 2003  
 DRAWN by JP ROSS  
 SCALE 1:20,000



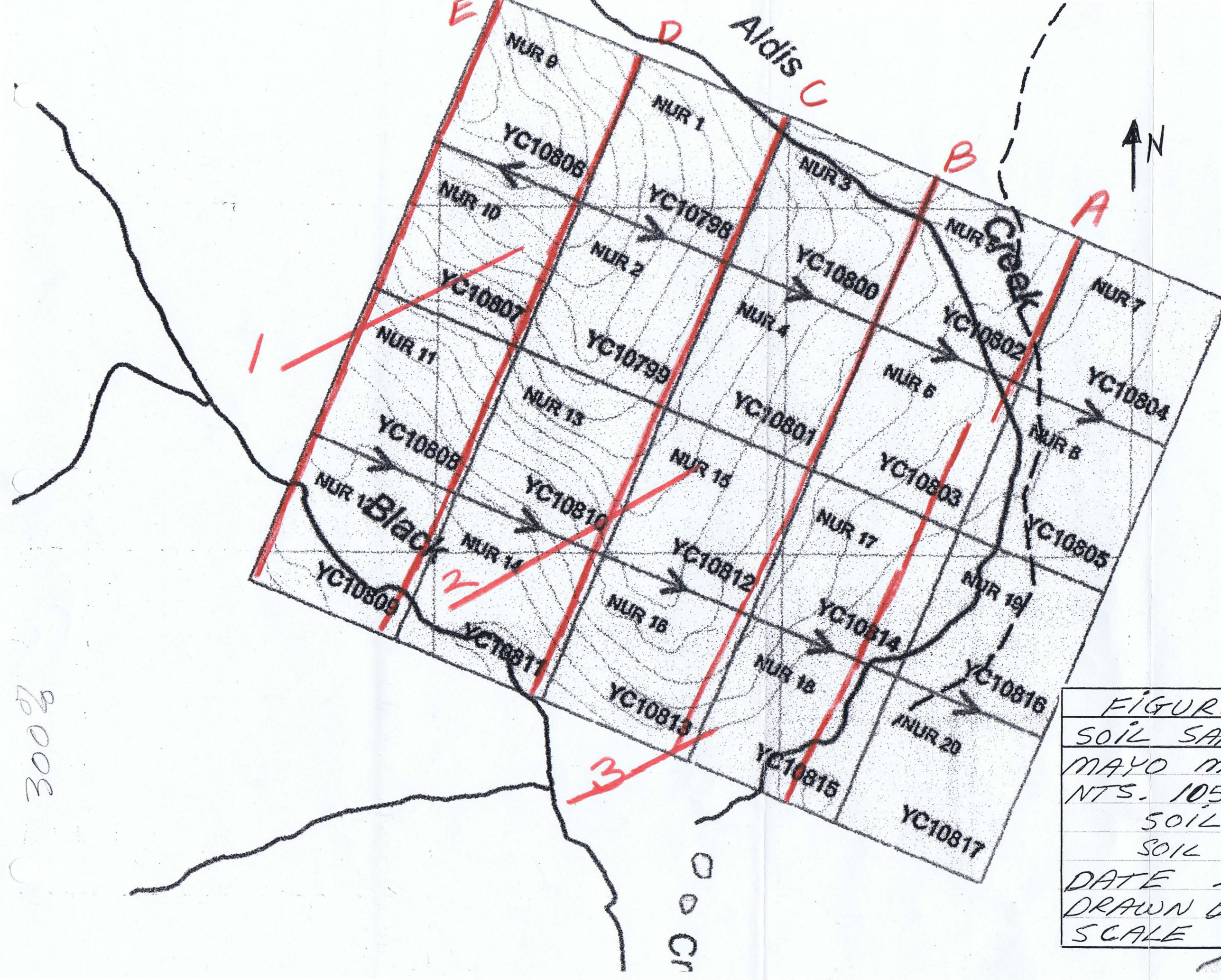


FIGURE # 4A (EAST)
SOIL SAMPLE LOCATION
MAYO MINING DISTRICT
NTS. 105 M 13
SOIL SAMPLES (JPR)
SOIL SAMPLES (PAST)
DATE 20 NOV. 2003
DRAWN by JP ROSS
SCALE 1 : 10,000



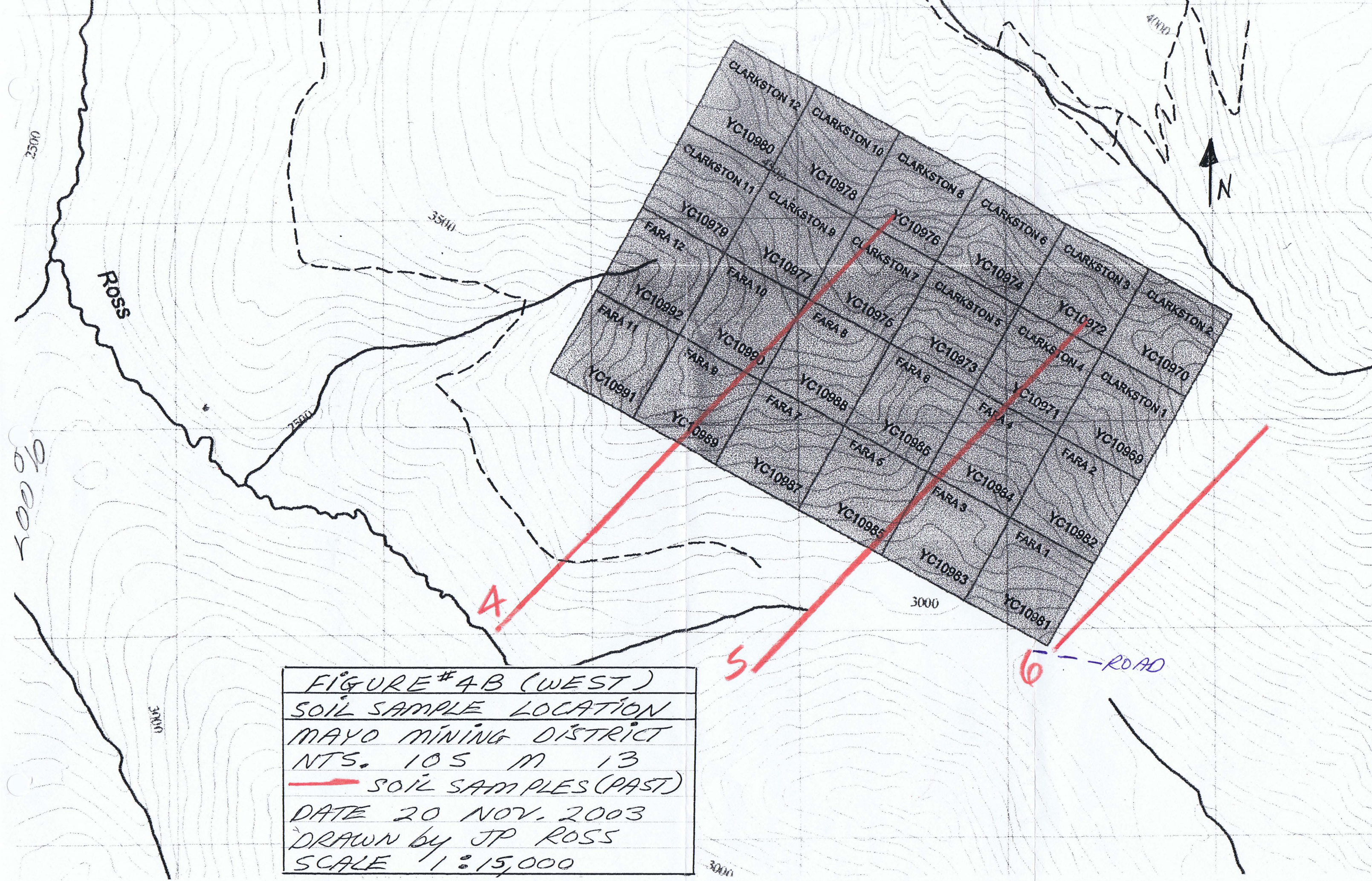
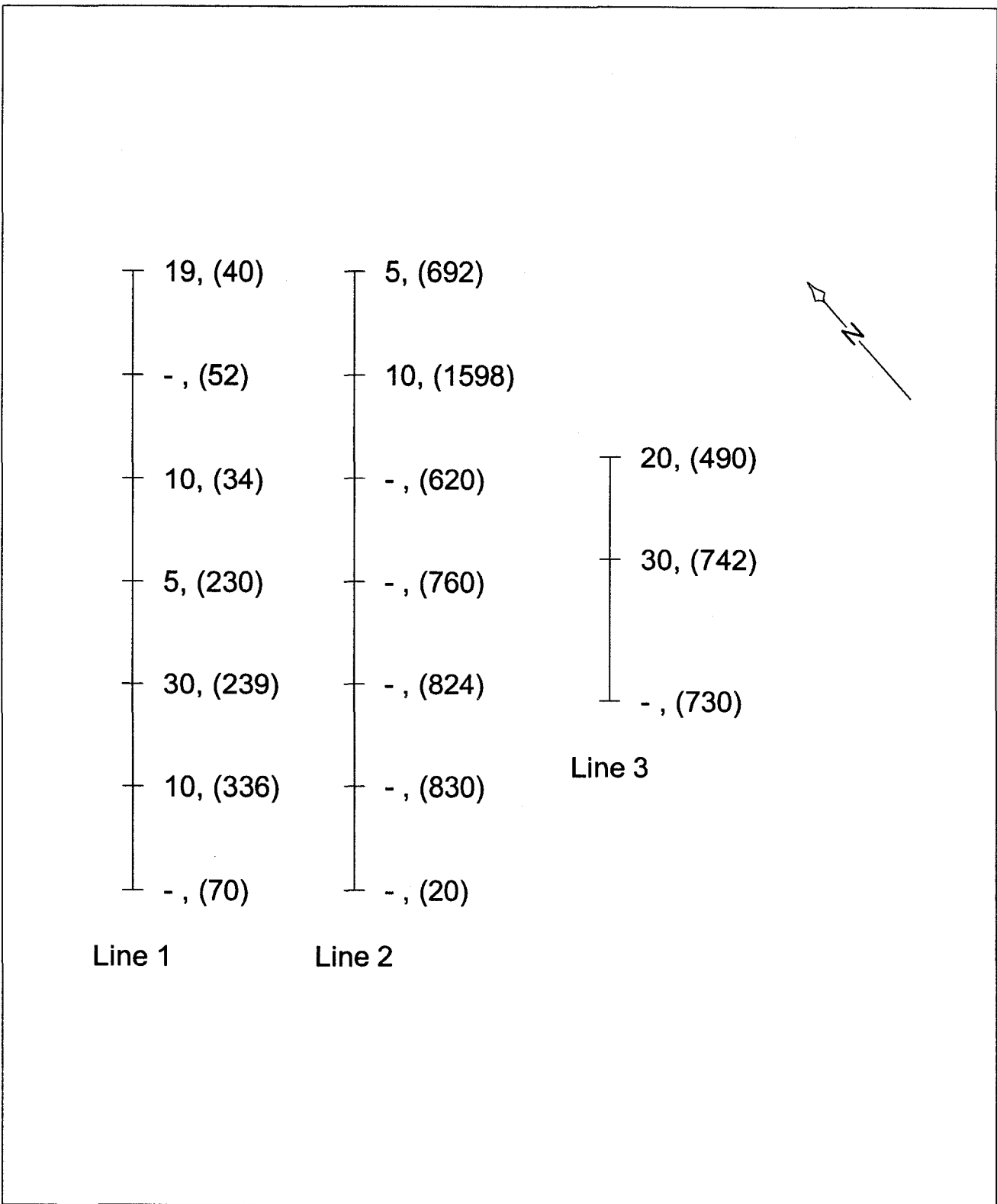


FIGURE #4B (WEST)  
 SOIL SAMPLE LOCATION  
 MAYO MINING DISTRICT  
 NTS. 105 M 13  
 — SOIL SAMPLES (PAST)  
 DATE 20 NOV. 2003  
 DRAWN by JP ROSS  
 SCALE 1:15,000

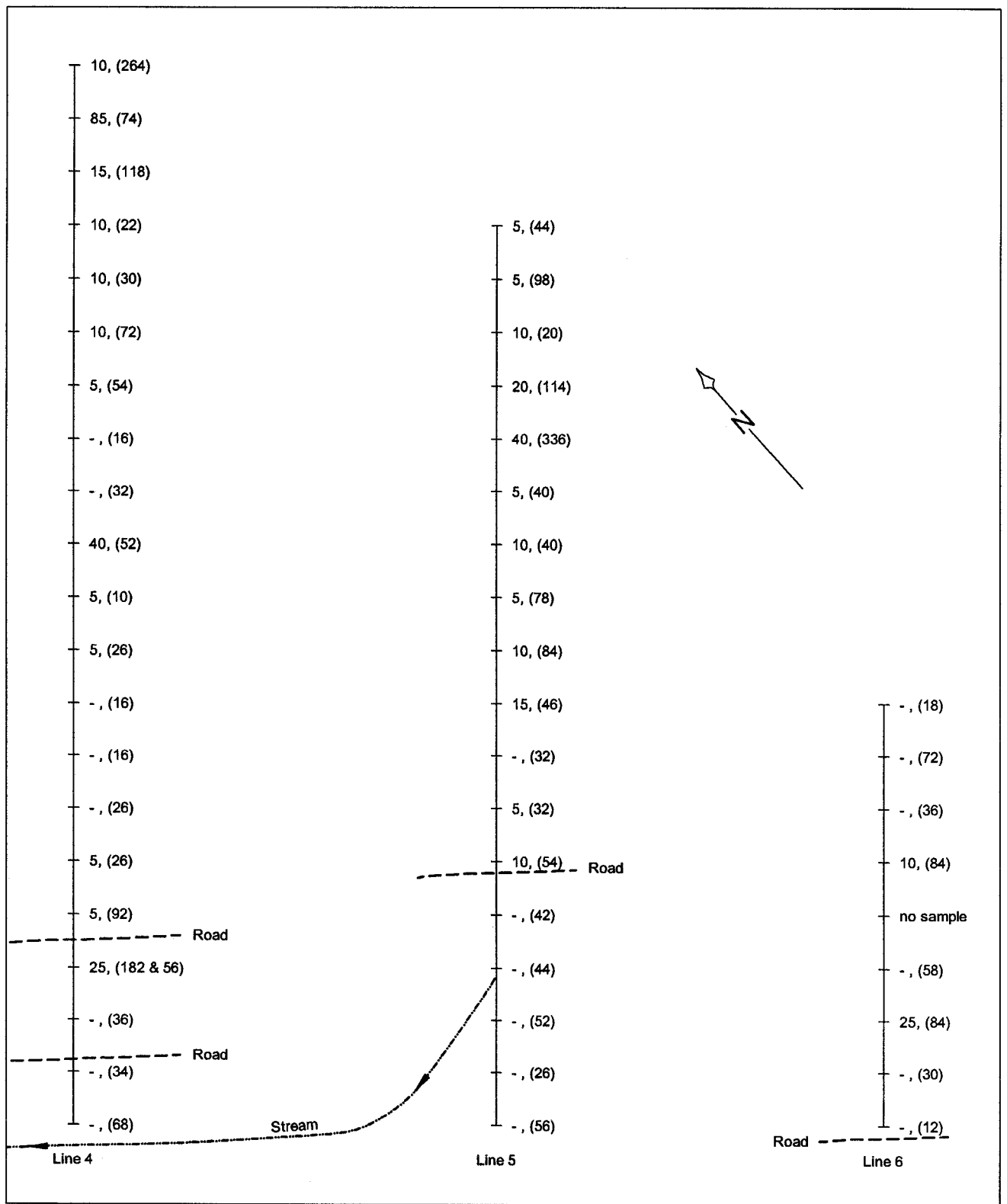




**LEGEND**

30, (742) Au, ppb; As, ppm

<b>MT. HALDANE PROJECT</b>		
<b>SOIL SAMPLE LOCATIONS (East)</b>		
<b>Previous Work, Lines 1-3</b>		
J.P. Ross		
SCALE:	FILE: HALDANE	DATE: 2004.01.06
NTS: 105 M/13	DRAWN:	FIGURE 4C

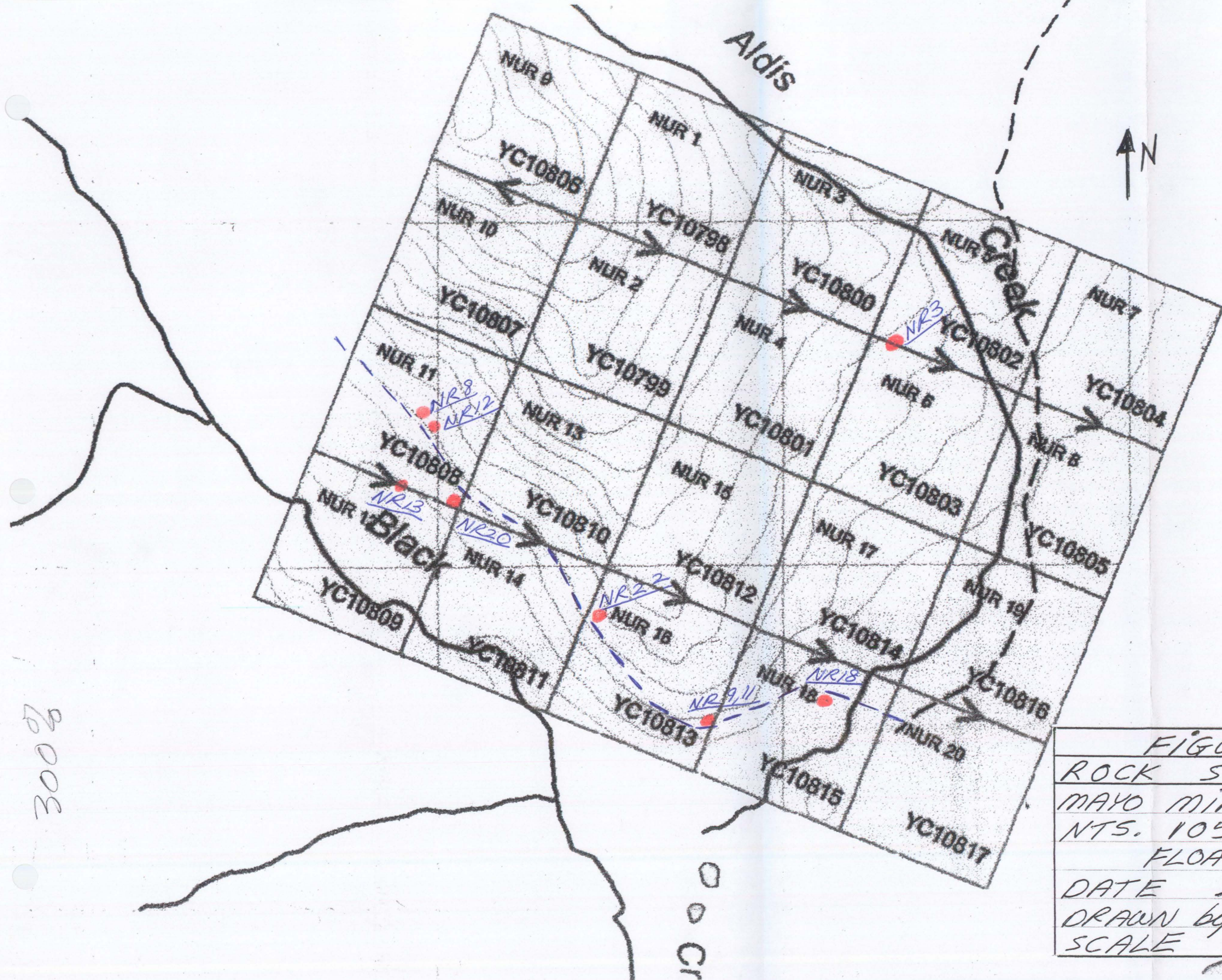


**LEGEND**

85, (74) Au, ppb; As, ppm

<b>MT. HALDANE PROJECT</b>		
<b>SOIL SAMPLE LOCATIONS (West)</b>		
<b>Previous Work, Lines 4 - 6</b>		
<b>J.P. Ross</b>		
SCALE:	FILE: HALDANE	DATE: 2004.01.07
NTS: 105 M/13	DRAWN:	FIGURE 4D





300%

FIGURE # 5
ROCK SAMPLE LOCATION
MAYO MINING DISTRICT
NTS. 105 M 13
FLOAT SAMPLE
DATE 20 NOV. 2003
DRAWN by JP ROSS
SCALE 1:10,000

000 Cr



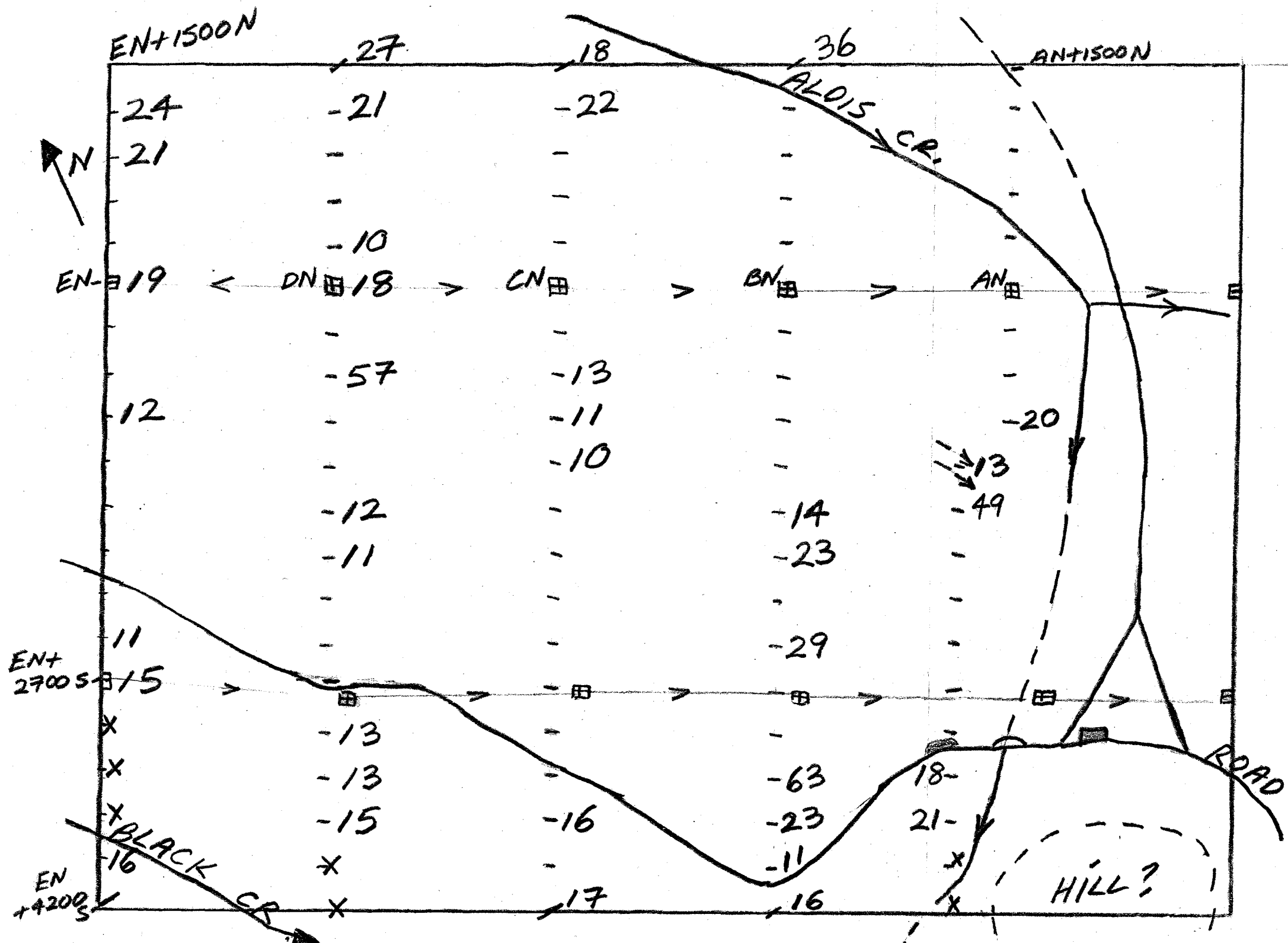


FIGURE #6  
 SOIL SAMPLE LOCATION (Au)  
 MAYO MINING DISTRICT  
 NTS 105 M 13  
 -49 = PPBGOLD (+10 PPB)  
 DATE 20 NOV 2003, DRAWN BY J PROSS  
 SAMPLES (300' APART - ON CLAIM LINES)

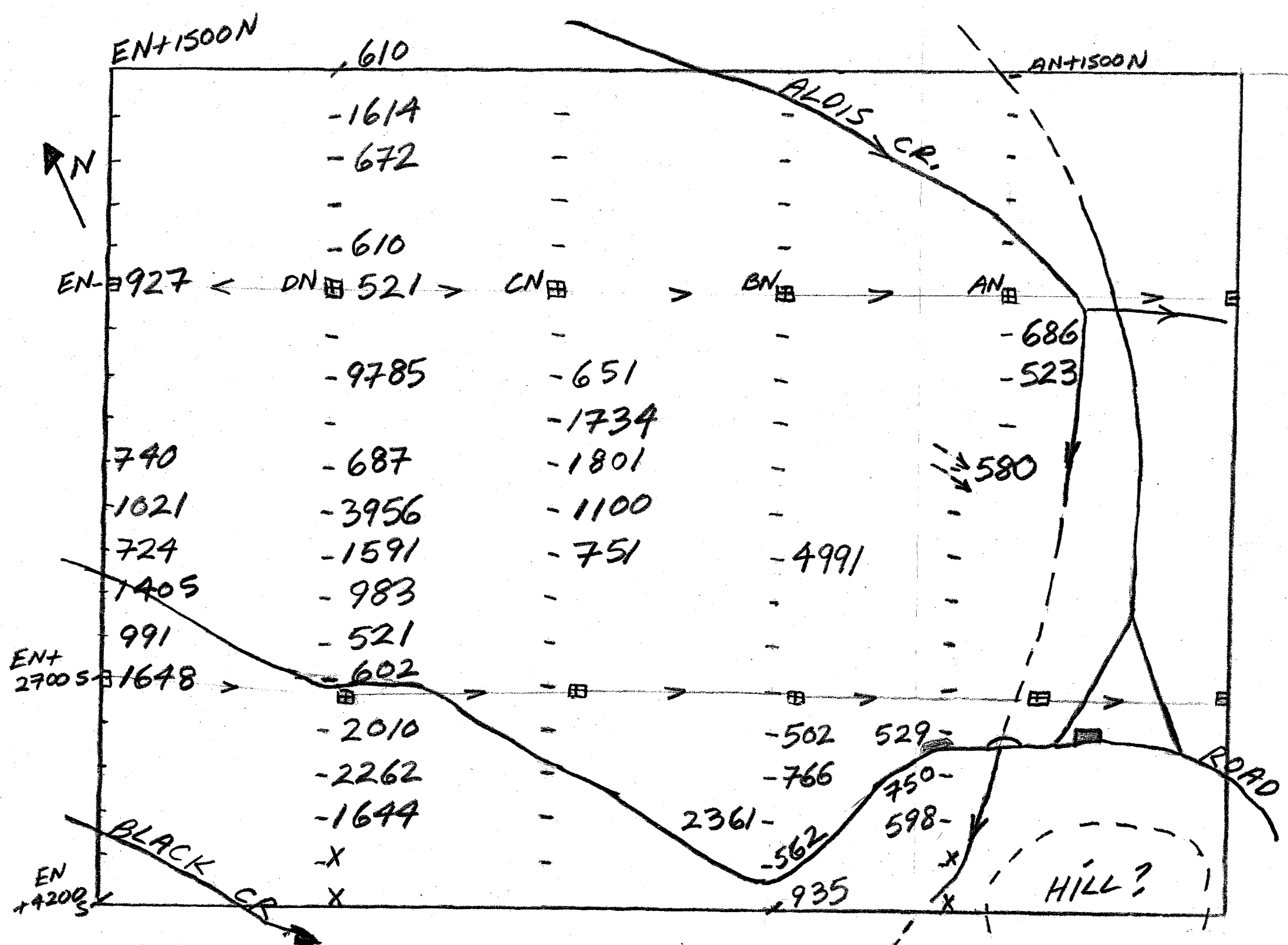


FIGURE # 7
SOIL SAMPLE LOCATION (As)
MAYO MINING DISTRICT
NTS 105' M 13
-1733 = PPM ARSENIC (+500PPM)
DATE 20 NOV 2003. DRAWN BY J PROSS
SAMPLES (300' APART - ON CLAIM LINES)

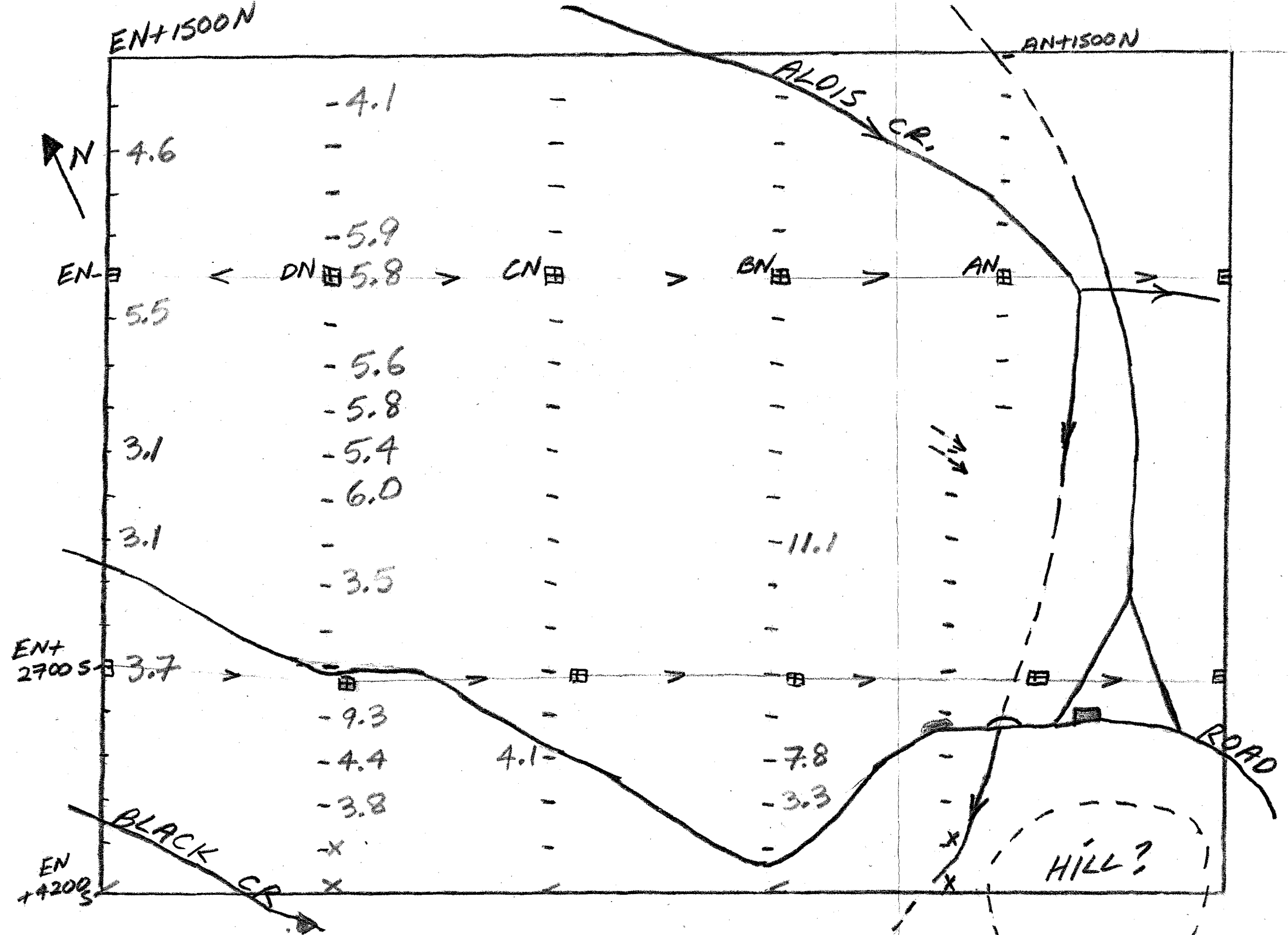


FIGURE #8  
 SOIL SAMPLE LOCATION(SB)  
 MAYO MINING DISTRICT  
 NTS. 105 M 13  
 - 4 = PPM ANTIMONY (+3 PPM)  
 DATE 20 NOV 2003; DRAWN BY JP ROSS  
 SAMPLES (300' APART - ON CLAIM LINES)



## Chapter Two: INTRODUCTION

### 2.1 Introductory Statement

On the dates May 25, 27 – 31 and June 1, 14 and July 3, 5, 15 – 17, 19 – 24, 2003, J.P. Ross staked and recorded claims and took soil samples and float samples on the claims. May 25, June 14, July 3 and July 29 were travel days for J.P. Ross.

The FARA 1-12 claims were staked on August 31, 2003 and recorded on September 15, 2003 by Ron Berdahl of Whitehorse, Yukon. The CLARKSTON 1-12 claims were staked on September 18, 2003 and recorded on September 19, 2003 by Ron Berdahl of Whitehorse, Yukon. The FARA 1-12 and CLARKSTON 1-12 claims were transferred to J.P. Ross of Whitehorse, Yukon.

Eleven (11) float rock samples were taken and tested by fire assay Au (30g) and 30 element ICP-MS.

Ninety-three (93) soil samples were taken and tested by 37 element ICP-MS (15g), Au detection was 0.2 ppb.

Float sample locations were marked with red flagging. Soil samples were taken along the claim lines (between the #1 and #2 posts) at 300 foot intervals. Claim posts were used as locations for AN, BN, CN, DN and EN sample sites. All were marked with blue and yellow flagging and a lathe with an aluminum tag attached was hammered into the ground near the sample site. At 75, 150, and 225 feet a red tape was placed for alignment. The samples were taken by hand-powered soil auger and the depth of hole and conditions were noted.

### 2.2 Location And Access

The NUR 1 – 20 claims are located in the Mayo Mining District, N.T.S. 105 M/13, latitude 63° 50' N, longitude 135° 50' W. The FARA 1 – 12 claims and CLARKSTON 1 – 12 claims are located at latitude 63° 51' N, longitude 135° 54' W in the Mayo Mining District, N.T.S. 105 M/13.

The claims are approximately 27 km north of Mayo. One drives on an all-season 2 wheel drive gravel highway to Halfway Lakes, where one turns left. A rough unmaintained road (old road to Dublin Gulch gold placer mines) is present here. It is 2.0 km to the edge of the NUR claims and the road goes through the NUR claims another 4.0 km to the edge of the FARA claims (where an old, but still used trappers cabin exists). After this the old road is impassable and one must walk. A power line goes by Halfway Lakes.

### 2.3 History

The area to the north has been explored for Ag Pb mineralization and has underground workings. Tin, tungsten and gold exploration has taken place in the area as well with no “obvious” or “documented” success.

A small amount of gold placer mining has taken place on Ross Creek to the west.

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Ron Berdahl staked and recorded the FARA 1-12 claims on the 19<sup>th</sup> of August and the CLARKSTON 1 – 12 claims on October 1, 2003. The FARA and CLARKSTON claims were transferred to J.P. Ross.

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A small amount of gold placer mining has taken place on Ross Creek to the west.

## **Chapter Three: GEOCHEMICAL SURVEY and PROSPECTING**

### **3.1 Rock Geochemistry**

The best rock sample was 7 ppb Au, 4.27% Fe and 5281 ppm As.

### **3.2 Soil Geochemistry**

Ninety-three (93) soil samples were taken. The best gold value was 63 ppb Au; 23 samples were 10-19 ppb Au, 13 were >20 ppb Au.

The best arsenic value was 9785 ppm As; 24 were 500 – 900 ppm, 9 were 1000 - 1999 ppm and 6 were >2000 ppm As.

The best antimony value was 11.1 ppm; 10 were 3 – 4.9 ppm, 12 were >5 ppm.

### **3.3 Interpretation**

There is a strong correlation between Au and As anomalies; weak for Au and Sb. Rock NR3, As 5281 ppm and Fe 4.27%, was “wad” and probably coming from a thrust fault.

Numerous gold – arsenic or gold trends are present up to 2000 yards (1800m) long and open in both directions. Deep ground to the east may “mask” anomalous areas. Permafrost was observed at AN+1200S, so the AN line was moved over.

The results from 2003 and past work show that mineralization similar to the Wayne – Aurex Au occurrences is present on the NUR claims.

Past soil sample results on the FARA and CLARKSTON claims produced Au (low As) anomalies.

The NUR, FARA and CLARKSTON claims have potential to host long narrow Au replacement (skarn) deposits and mineralization along faults.

More work, staking more claims and doing more soil sampling is warranted here. The results are very encouraging and a few companies have expressed an interest in the claims. Hopefully the claims will be optioned before the 2004 exploration season.



## **Appendix 1**

### References

Assessment Report 090325, Geochemical Report (Joumbira group), 105 M/13 (1972) by A. Woodsend.

Assessment Report 090325, Geochemical Report (Joumbira group), 105 M/13 (1981) by B. Paul, D. Rota

Assessment Report 092785 Report on the 1989 geochemical assessment work on the Joumbira and Lookout claims, 105 M/13 (1989) by R. Hulstein

Assessment Report 094179, Assessment Report describing the gold mapping and geochemical surveys on the Black Property 105 M/13 (2000) by T.C. Becker

Yukon MINFILE 105M 029 Wayne

Yukon MINFILE 105M 031 Strebchuk

Yukon MINFILE 105M 032 Mt. Haldane

Yukon MINFILE 105M 056 Sundown

Geoscience Map 1996-4. Geological Map of Mt. Haldane area, Yukon 105 M/13. J.A. Hunt, D.C. Murphy, C.F. Roots, W.H. Poole

Expatriate Resources and Stratagold press release December 2002, p.2

### Personal Communication

Ken Galambos, Mineral Development Geologist, Yukon Geological Survey

Don Murphy, Senior Project Geologist, Yukon Geological Survey

Mike Burke, Staff Geologist, Yukon Geological Survey

Charlie Roots, GSC Research Scientist, Yukon Geological Survey

Jim McFaull, Geologist (Aurex occurrence)

Roland Ronaghan (ex-mining recorder, Mayo Mining District)

## **Appendix 2**

### **Yukon Minfile References**

**MINFILE:** 105M 029  
**PAGE:** 1 of 4  
**UPDATED:** 4/23/2002

**YUKON MINFILE  
YUKON GEOLOGICAL SURVEY  
WHITEHORSE**

**MINFILE:** 105M 029  
**NAME:** WAYNE  
**STATUS:** OPEN PIT PAST PRODUCER  
**TECTONIC ELEMENT:** SELWYN BASIN  
**DEPOSIT TYPE:** PLUTONIC RELATED AU

**NTS MAP SHEET:** 105M13  
**LATITUDE:** 63° 53' 0" N  
**LONGITUDE:** 135° 40' 44" W

**OTHER NAME(S):** MCQUESTEN  
**MAJOR COMMODITIES:** GOLD, LEAD, SILVER, ZINC  
**MINOR COMMODITIES:** BISMUTH  
**TRACE COMMODITIES:**

---

**CLAIMS (PREVIOUS & CURRENT)**

ALBERTA, LAKEHEAD, MARY, WAYNE, YUKON

**WORK HISTORY**

Staked in Sep/55 by G. Rich as the Wayne cl (62902), which were partially overstaked by J. Strebchuk in Jul/56 as the Alberta cl (62998) and in Sep/56 as the Yukon cl (80078). L.T. Chisholm purchased 50% of the Wayne cls in Jul/64. The Alberta group was optioned by Rio Plata Silver Mines Ltd in 1962 and explored by bulldozer trenching and 76.2 m of rotary drilling. The Alberta and Yukon groups were optioned from Sep/67 to Jul/70 by Fort George Mining & Exploration Ltd, which added Joe cl (Y6927) in Nov/67 and performed bulldozer trenching in 1968, shipped 5.88 tonnes to the Trail Smelter and drilled 61 m.

Reoptioned by Silver Spring Mines Ltd in Dec/70 and explored in a joint venture with Canadian Reserve Oil & Gas Ltd by geophysical surveys in 1971-1972 and bulldozer trenching and 2 drill holes (about 137 m) in 1972. Silver Spring staked additional Alberta cl (Y56184) in Sep/71 and Evelyn cl (Y68340) in Jun/72.

Adjoining claims, which have been explored by minor hand and bulldozer trenching in a few cases, include Don cl (62884) in Aug/55 by J. Boyle; Mary E cl (80531) in Aug/60 by G. Rich; Rusty cl (Y14803) in May/68, MLS cl (Y26975) in Sep/68 and Duke cl (Y68498) in Aug/72 by W.T. Synott. The nearby Snowdrift cl (Y87462) were added by United Keno Hill Mines Ltd in Mar/74 and Oct/75 and explored with 80 percussion holes (3195.8 m) in 1975 and 46 percussion holes (1606.3 m) in 1982, and approximately 3 658 m of percussion drilling and 4 diamond drillholes totalling approximately 610 m in 1984.

More than 600 Zap cl (YA38362) were tied on to the northeast in Mar/79 by Canada Tungsten Mining Corporation Ltd which carried out geochemical and geophysical surveying in 1979-80. The Wayne group was optioned to Island Mining & Exploration Company Ltd in Feb/80, which drilled 14 holes (1 212 m) in 1981 and 7 holes (795 m) in 1983.

Restaked September and Nov/92 as Mary cl 1-6 (YB29393) by B. Kreft. Placer Dome Inc tied on 178 Doug claims (YB29472) in Jan/93. Kreft carried out trenching and collected a bulk sample in the fall of 1994. In Mar/95 Kreft optioned the claims to Hemlo Gold Mines Inc. Hemlo cut a grid on the property, added the Solstace cl 1-5 (YB64175) 1 km to the north and the

Lakehead cl 1-13 (YB64188) 1 km to the southwest. In Oct/95 Hemlo carried out magnetic, VLF-EM and HLEM geophysical surveying on the property before dropping the option in 1996.

In 1997 the claims were optioned to Eagle Plains Resources Ltd and Miner River Resources Ltd, which carried out reverse circulation drilling of 6 holes (500 m) later that year. Viceroy Resources Corporation optioned the claims in Oct/97 and immediately carried out excavator trenching and chip sampling. In 1998, Viceroy carried out further excavator trenching and magnetometer and IP surveying.

In mid 1999 Viceroy sold its interest in the property to NovaGold Resources Inc, which assumed all option agreement obligations associated with the claims. Later in the year NovaGold carried out a limited geochemical sampling program to assist in data interpretation of previous sampling completed east of the main trenched area.

In Apr/2000 Newmont Exploration of Canada Ltd (a wholly owned subsidiary of Newmont Mining Corporation) entered an agreement with NovaGold to explore the claims and carried out regional airborne surveying, auger drilling, geological mapping and prospecting of this and several other newly acquired and contiguous properties (Minfile Occurrences #105M 027 and #105M 060) and drilled 5 holes (883 m) on this occurrence.

## GEOLOGY

A branching, north-striking vein cuts Mississippian Keno Hill Quartzite near its contact with schist of the Late Proterozoic-Early Cambrian Hyland Group. The vein has been traced for 121.9 m by bulldozing and up to 61 m below surface by drilling. Mineralization consists of galena, sphalerite and tetrahedrite in a carbonate gangue. The 1968 shipment assayed 4 580.4 g/t Ag, 56.0% Pb, 4.4% Zn and 2.02 g/t Au.

The 1981 drill program, carried out at the western end of the mineralized trend (West zone), returned low silver values with only a 1:1 silver to lead ratio and showed that the vein dips west rather than east. This suggests that the vein is not of the favourable transverse-type which produces ore shoots in this district. The 1981 drilling unexpectedly intersected two stratiform gold-tungsten-bearing horizons, one on either side of the quartzite-schist contact. The schist-hosted horizon is a weakly foliated, pyrrhotite-chalcopyrite-pyrite-quartz-calcite-diopside skarn with coarse scheelite, while the second horizon is a brecciated and graphitic section within the quartzite that is cemented with pyrite and scheelite. Core assays returned up to 33.3 g/t Au and 2.07% W<sub>3</sub>O<sub>8</sub> over widths ranging from 46 cm to 3.17 m. In addition, four holes cut pyritic zones in rhyolite dykes and/or sills which returned assays up to 5.0 g/t Au over a core length of 3.5 m. The 1983 drilling was directed toward the skarns and focused on the eastern end of the mineralized trend (East zone). D. Emond (1992) obtained bismuth values up to 450 ppm from the skarn and demonstrated that there is a strong positive correlation between bismuth and gold.

Hemlo Gold's geophysical survey outlined several conductors on the property, but none over known zone of mineralization. Hemlo recommended field checks of all conductors to ensure that they do not have a cultural origin e.g. power lines, buried wire. Upon confirmation of the anomalies possessing a bedrock source the company recommended detailed prospecting and trenching in areas of shallow cover followed by drilling.

Drilling and trenching in 1997 and 1998 along the mineralized trend returned significant values from a major quartz monzonite dyke and the adjacent skarn which it has intruded in the West zone. Hole 97-2 (collared in dyke material) returned 1.77 g/t Au over 35.3 m, including 1.36 g/t Au over 15.2m from the dyke. Drilling in the area bulk sampled by Kreft, about 40 m north of the dyke, returned 3.23 g/t Au over 21.3 m. Trench sampling of the East zone yielded lower values than those returned from the West zone with a best interval of 1.45 g/t Au over 10 m



from Trench 97-6, while the best drill intersection was 0.92 g/t Au over 45.7 m including 1.51 g/t Au over 18.3 m.

Two other occurrences, one south of the trend of the East and West zones and the other 2.4 km east of the West zone, returned values of 2.5 g/t Au and 1.03 g/t Au respectively from similarly altered and mineralized host rock. Viceroy concluded that the East zone is likely an extension of the West zone, that the other two occurrences indicate a lateral extent of the mineralization of at least 2.4 km and that the mineralization occurs in separate, parallel reactive members that overlie the West and East zones.

Newmont's drilling tested a 1.2 km section of the same trend that hosts the East and West zones and intersected significant mineralization in all five holes with grades and widths consistent with earlier drilling.

#### REFERENCES

CANADIAN RESERVE OIL AND GAS LTD, Mar/73. Assessment Report #060159 by E.R. Rockel.

EMOND, D.S., 1992. Petrology and geochemistry of tin and tungsten mineralized plutons, McQuesten River region, Central Yukon. In: Yukon Geology Vol. 3, Exploration and Geological Services Division, DIAND, p. 167-195.

EMOND, D.S., and LYNCH, T., 1992. Geology, mineralogy and geochemistry of tin and tungsten mineralized veins, breccias and skarns, McQuesten River Region (115P(North)) and 105 M 13), Yukon. In: Yukon Geology Vol. 3, Exploration and Geological Services Division, DIAND, p. 133-159.

GEOLOGICAL SURVEY OF CANADA, Paper 63-38, p. 9.

GEOLOGICAL SURVEY OF CANADA, Paper 68-68, p.26

HEMLO GOLD MINES INC, Mar/95. Assessment Report #093408 by G. Bidwell and R. Sharpe.

ISLAND MINING AND EXPLORATION COMPANY LTD, Apr/84. Assessment Report #091538 by T.M. Elliotte.

MURPHY, D.C., HUNT, J.A., ROOTS, C.F., AND POOLE, W.H., 1993. Geological map of Mount Haldane (105M/13), Central Yukon. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1993-6.

NORTHERN MINER, 24 Jun, 28 Aug/80.

NOVAGOLD RESOURCES INC, Aug/2000. Assessment Report #094162 by C. Schulze.

NOVAGOLD RESOURCES INC, 05 Apr/2000, News Release.

ROOTS, C.F., AND MURPHY, D.C., 1992. Geology of Mayo Map Area (105M). Geological Survey of Canada Open File 2483.

VICEROY RESOURCE CORPORATION, Mar/98. Assessment Report #093752 by C. Schulze.

VICEROY RESOURCE CORPORATION, Feb/99. Assessment Report #093985 by C. Schulze.

WHITEHORSE STAR, 27 Sep/71, 17 May/72

YUKON EXPLORATION AND GEOLOGY 1981, p. 167; 1983, p. 206; 1997, p. 28-29, 38;  
1998, p. 11-12; 2000, p. 18.

**YUKON MINFILE  
YUKON GEOLOGICAL SURVEY  
WHITEHORSE**

MINFILE: 105M 031  
NAME: STREBCHUK  
STATUS: PROSPECT  
TECTONIC ELEMENT: SELWYN PLUTONIC SUITE  
DEPOSIT TYPE: POLYMETALLIC VEINS AG-PB-ZN+/-AU

NTS MAP SHEET: 105M13  
LATITUDE: 63° 51' 6" N  
LONGITUDE: 135° 49' 12" W

OTHER NAME(S): JOUMBIRA  
MAJOR COMMODITIES: LEAD, SILVER, TIN, TUNGSTEN  
MINOR COMMODITIES: COPPER, ZINC  
TRACE COMMODITIES: ARSENIC

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**CLAIMS (PREVIOUS & CURRENT)**

JOUMBIRIA, LOOKOUT

**WORK HISTORY**

Probably staked initially as Timberline & Swallow cl (12709) in Jul/18 by L. Beauvette and J.V. Smith, who hand pitted later that year. No further work was recorded until the Star and Joe cl (82712) were staked to the northwest in Nov/61 by J.C. Foley.

The showing was restaked as Star cl (83557) in Jul/64 by J. Strebchuk and optioned in Apr/65 to Peso Silver ML. The H cl (84232) were added to the northwest in Apr/65 by United Keno ML on heavy metal stream anomalies located by the GSC's Operation Keno in 1964, and were explored with geochemical surveys and mapping later in the year. Strebchuk added the North cl (Y6361) in Jul-Sep/66 and optioned the property in Dec/67 to Silver Spring ML, which explored with geochem surveys and bulldozer trenching and added more Star cl (Y14966) in Jul/68, and later explored with geophysical surveys and bulldozer trenching from 1971 to 1973 in a joint venture with Can Reserve 0 & GL.

The North group was restaked by J. Barker as Jane cl (Y68425) in Aug/72. Fringe staking has included Ranger, etc cl (YI4855) by W.T. Synott in May/68 and Hol cl (Y88930) in Jun/74 by B. Fitch and J. Strebchuk.

The Jane group was restaked as Joubira cl (YA15151) in Jun/77 by CCH Res L (Campbell Chibougamau ML) & Inco, which performed mapping, sampling and hand trenching in 1977 and 1978. In 1979, Billiton E Can L joined the project, named the Cortin Project, and the property was explored with soil sampling and mapping. In 1980, CCH changed its name to Campbell Res L. Cortin performed more mapping and geochem surveys in 1981.

Restaked as Joubira (YB2261) and Lookout cl (YB2313) in Jun/88 by J. Moreau, who performed trenching, mapping and sampling and added more Lookout cl in Jun/89.

Restaked as Beauvette 1-12 cl (YB28716) in Jul/92 by M.J. Moreau, who prospected and sampled in Aug/93.



## GEOLOGY

Mineralized quartz veins are associated with a 30.5 m thick rhyodacite porphyry dyke which cuts the Mississippian Keno Hill Quartzite. Old pits dating from the 1920's exposed an arsenopyrite vein.

Several poorly mineralized quartz veins containing a trace of galena were found by United Keno. The best vein is about 0.6 m wide, contains discontinuous 1.3 cm stringers of galena, and was traced for almost 213.4 m. A selected specimen assayed 6171.3 g/t Ag and 3.5% Pb. Geochemical surveys by Silver Spring ML located lead, zinc, silver and copper soil anomalies that were explored by bulldozer trenching with little success. One gossan is reported to have assayed 0.55% Cu over a 15.3 m width.

A narrow quartz-pyrrhotite-arsenopyrite vein trenched by J. Moreau in 1989 returned low gold and silver values.

Although tungsten stream sediment anomalies were found by the GSC in 1964, a greisen zone containing cassiterite and scheelite was first recognized by CCH in 1977. Tin and tungsten-bearing veins were found at three locations.

The Pro showing consists of 1-5 mm tourmaline veinlets with about 2% cassiterite and minor fluorite, cutting the margin of a sericitized quartz-biotite porphyry dyke. Specimens of these and associated quartz-muscovite veins assayed up to 1200 ppm Sn and 798 ppm W. The dyke returned a K-Ar age of 86 Ma.

At the Fed showing 0.5 km south of the Pro showing, cassiterite crystals occur with radiating aggregates of tourmaline along vertical joints in quartzite. Specimens from this showing contained up to 740 ppm Sn and 1460 ppm W.

The third showing consists of numerous quartz-muscovite veins cutting muscovite-biotite granite in Fortune Creek. These veins also contain tourmaline, sphalerite, arsenopyrite and galena. A specimen contained 15 000 ppm Zn, 1500 ppm Sn, 283 ppm W, 15 ppm Ag and 8120 ppm As.

## REFERENCES

BILLITON METALS CANADA LTD, May/82. Assessment Report #091053 by B. Pavl & D. Roth.

CCH RESOURCES LTD, May/79. Assessment Report #090325 by A. Woodsend.

EMOND, D.S., 1985. Tin and tungsten veins and skarns in the McQuesten River Area. Yukon Mining and Exploation Overview, DIAND Open File, Appendix C.

EMOND, D.S., 1992. Geology, mineralogy and geochemistry of tin and tungsten mineralized veins, breccias and skarns, McQuesten River Region (115P(North)) and 105 M 13), Yukon. In: Yukon Geology Vol. 3, Exploration and Geological Services Division, DIAND, p. 133-159.

EMOND, D.S., 1992. Petrology and geochemistry of tin and tungsten mineralized plutons, McQuesten River region, Central Yukon. In: Yukon Geology Vol. 3, Exploration and Geological Services Division, DIAND, p. 167-195.

M.J. MOREAU ENTERPRISES LTD, Oct/89. Assessment Report #092785 by R. Hulstein.

MINERAL INDUSTRY REPORT, 1977, p. 30; 1978, p. 6.

MURPHY, D.C., HUNT, J.A., ROOTS, C.F., AND POOLE, W.H., 1993. Geological map of Mount Haldane (105M/13), Central Yukon. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1993-6.

ROOTS, C.F., AND MURPHY, D.C., 1992. Geology of Mayo Map Area (105M). Geological Survey of Canada Open File 2483.

SILVER SPRING MINES LTD, Nov/68. Assessment Report #019022 by T. Sadlier-Brown.

UNITED KENO HILL MINES LTD, Apr/66. Assessment Report #017477 by T. Heard.

YUKON EXPLORATION AND GEOLOGY 1982, p. 156-157.

YUKON EXPLORATION 1988, p. 124; 1989, p. 72.

MINFILE: 105M 032

PAGE: 1 of 3

UPDATED: 7/29/2003

**YUKON MINFILE  
YUKON GEOLOGICAL SURVEY  
WHITEHORSE**

**MINFILE:** 105M 032

**NAME:** MT HALDANE

**STATUS:** UNDERGROUND PAST PRODUCER

**TECTONIC ELEMENT:** SELWYN BASIN

**DEPOSIT TYPE:** POLYMETALLIC VEINS AG-PB-ZN+/-AU

**NTS MAP SHEET:** 105M\13

**LATITUDE:** 63° 51' 53" N

**LONGITUDE:** 135° 52' 8" W

**OTHER NAME(S):** LOOKOUT

**MAJOR COMMODITIES:** LEAD, SILVER, ZINC

**MINOR COMMODITIES:** GOLD

**TRACE COMMODITIES:** ARSENIC

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**CLAIMS (PREVIOUS & CURRENT)**

BLACK, DB, GOPHER, LOOKOUT, MAY, MIDDLECOFF ETC., TED

**WORK HISTORY**

Silver-lead mineralization was probably found on Mt Haldane prior to 1906 and was staked as Lookout, etc cl (2332) in Mar/15 by A. Johnson and J.V. Smith. The south (Middlecoff) zone was explored by surface trenching and two short adits prior to 1918 and was optioned in 1919 to Yukon Silver-Lead Mining Company Ltd, which drove a third adit and shipped 24.7 tonnes grading 3 101.7 g/t silver and 59% lead in 1920. On the Johnson Zone, about 457 m north of Middlecoff Zone, A. Johnson drove a short adit in 1918 and shipped some 2.1 tonnes grading 4 800 g/t silver and 60% lead to a smelter in 1926-27.

Restaked by E. Bleiler and M. Ewing in Oct/44 as Middlecoff cl (55320) which was optioned in 1952 to Lookout Mountain Mines Ltd, and in 1964 to Silver Titan Mines Ltd, which added DB, May, Ted, etc cl (83403) in May/64 and conducted geochem sampling, bulldozer trenching and adit rehabilitation and found the Main Zone about 457 m north of the Johnson Zone in 1964-65.

The property was transferred to Haldane Silver Mines Ltd in 1966 and the Middlecoff and Johnson Zones were explored by 701 m of overburden drilling, 487.7 m of drifting and 533.4 m of underground drilling. In 1968, Paramount Mining Ltd acquired control of Haldane Silver Mines Ltd.

Restaked as Middlecoff, etc cl (YA1913) in Apr/67 by M.H. Ewing and optioned in 1978 by Barry Way, who added Gopher, etc cl (YA17722) in April and performed grid soil sampling in 1978-79.

The property was examined briefly in 1978 by Cortin Project (Billiton Canada Ltd, CCH Resources Ltd, Inco Ltd). Ewing trenched in 1980 and 1985 and optioned the property to Barandium Resources Ltd, which bulldozer trenched in 1988 and did road work, prospecting and linecutting in 1989. Barandium changed its name to IGC International Golf Corporation. in Mar/90. The claims were returned to Ewing in Feb/91.

Restaked as Black cl 1-163 (YC02090) in Nov/99 by Expatriate Resources Ltd which carried out soil sampling and a cursory examination of the veins in 2000.

## GEOLOGY

The area is located within the Selwyn Basin. Geological mapping by Hunt et al., (1996) shows that Upper Proterozoic to Lower Cambrian Hyland Group rocks have been thrust over Devonian to Mississippian Earn Group metasediments and metavolcanic rocks and Mississippian Keno Hill quartzite. Numerous Triassic age metadiorite sills intrude both the Keno Hill quartzite and Earn Group rocks located around the occurrence. Several small Cretaceous age granitic dykes and intrusions also intrude the sequence.

The occurrence covers the Mt. Haldane vein system which contains three main mineralized zones, named from north to south, Middlecoff, Johnson and Main Zones. All three zones appear to be part of a single, north-trending, transverse type vein fault with many branches, which cuts the Mississippian aged, Keno Hill Quartzite. The vein faults are located in the footwall of the Robert Service Thrust and are believed to cut the thrust and continue into the Hyland Group, although no significant silver mineralization has been discovered above the thrust.

The Middlecoff Zone is the best mineralized, containing erratic lenses of galena, sphalerite and minor tetrahedrite. Ore shoots are small with the longest being a 13.7 m length grading 774.8 g/t silver, 18.0% lead, and 1.2% zinc over a 0.975 m width. Haldane Silver Mines Ltd drifted the Middlecoff Vein south to a right hand fault and drilling beyond the fault located the offset which assayed 2 790.8 g/t silver and 18.7% lead over a 1.2 m width followed by 0.9 m grading 342.8 g/t silver and 7.1% lead.

Some 343 m of underground exploration on one level beneath the Johnson Zone surface workings failed to locate the structure.

Surface sampling on the Main Zone in 1964 returned low values, the best being 288 g/t silver, 0.73% lead and 1.48% zinc over a width of 8.5 m. The 1978-79 exploration was mainly directed toward tin and tungsten.

Expatriate Resources explored this occurrence in connection with a larger work program focused on the Sundown occurrence (Minfile Occurrence #105M 056) located approximately 3 km to the south. Work on this occurrence was limited to soil sampling along claim lines. Soil sampling returned a small gold and arsenic anomaly (gold = 85 ppb, arsenic = 264 ppm) located along a ridge crest on the western edge of the claim block (above the mineralized zones) which coincides with the location of a north trending normal fault mapped by Murphy.

## REFERENCES

CCH RESOURCES LTD, Apr/79. Assessment Report #090425 by A. Woodsend.

EXPATRIATE RESOURCES LTD, Oct/2000. Assessment Report #094179 by T. Becker.

GEOLOGICAL SURVEY OF CANADA, 1965. Paper 65-19, p. 16-18.

GEOLOGICAL SURVEY OF CANADA, 1918. Summary Report, Part B, p. 4-6. Reprinted in Geological Survey of Canada Memior 284, p 464-466 and 486-487.

HART, C.J.R. ET AL., 2000. New exploration concepts for country-rock hosted, intrusion-related gold systems, Tintina gold belt in Yukon. In: The Tintina Gold Belt: Concepts, Exploration and Discoveries, British Columbia and Yukon Chamber of Mines, Special Volume 2, p. 145-172.



HUNT, J.A., MURPHY, D.C., ROOTS, C.F., AND POOLE, W.H., 1996. Geological map of Mount Haldane area, Yukon (105M/13). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Geoscience Map 1996-4.

MAYAG SYNDICATE, May/80. Assessment Report #090623 by B. Way.

MINERAL INDUSTRY REPORT, 1978, p. 6.

MURPHY, D.C., HUNT, J.A., ROOTS, C.F., AND POOLE, W.H., 1993. Geological map of Mount Haldane (105M/13), Central Yukon. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1993-6.

NORTHERN MINER, 28 Aug/52

ROOTS, C.F., AND MURPHY, D.C., 1992. Geology of Mayo Map Area (105M). Geological Survey of Canada Open File 2483.

ROOTS, C.F., 1997. Geology of the Mayo Map Area, Yukon Territory (105M). Exploration and Geological Services Division, Indian and Northern Affairs Canada, Bulletin 7, 82 p.

YUKON GEOLOGY AND EXPLORATION 1979-80, p. 207.

MINFILE: 105M 056  
PAGE: 1 of 2  
UPDATED: 7/29/2003

**YUKON MINFILE  
YUKON GEOLOGICAL SURVEY  
WHITEHORSE**

MINFILE: 105M 056  
NAME: SUNDOWN  
STATUS: SHOWING  
TECTONIC ELEMENT: SELWYN BASIN  
DEPOSIT TYPE: PLUTONIC RELATED AU

NTS MAP SHEET: 105M13  
LATITUDE: 63° 50' 9" N  
LONGITUDE: 135° 53' 12" W

OTHER NAME(S):  
MAJOR COMMODITIES: LEAD, SILVER  
MINOR COMMODITIES: TIN, GOLD, TUNGSTEN  
TRACE COMMODITIES: BISMUTH, ARSENIC

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**CLAIMS (PREVIOUS & CURRENT)**

BLACK, HAPPY DAY, HATFIELD, MCCOY, NOVA, RAINBOW, RAKE, SUNDOWN, VANCOUVER

**WORK HISTORY**

Staked as Rainbow cl (12705) in Aug/18 by L. Beauvette, who dug a few hand pits. Restaked in May/49 as Happy Day cl (59219) by M.H. Ewing, and in Jul/56 by E. Hager as Vancouver, etc cl (62985), which was explored by S. Arbutina with hand pitting and 18.9 m of drifting by 1960. W.T. Synott tied on the Rake and Nova cl (Y14848) in May-Nov/68.

Restaked as Sundown cl 1-12 (Y56107) in Aug/70 by C. Klippert who explored with trenching in 1977. In 1978, the Cortin Project (Billiton Canada Ltd, CCH Resources Ltd, Inco Ltd) performed a brief mapping and sampling program under an option.

Restaked as McCoy cl 1-4 (YC01061) by F. Anderson in May/98. Anderson staked Hatfield cl 1-6 (YC01075) later in the month.

Restaked as Black cl 1-163 (YC02090) in Nov/99 by Expatriate Resources Ltd which carried out geological mapping and soil sampling in 2000.

**GEOLOGY**

The occurrence area is located within the Selwyn Basin. Geological mapping by Hunt et al., (1996) shows that the occurrence is located in Upper Proterozoic Hyland Group stratigraphy which is thrust over Paleozoic metasedimentary units belonging to the Devonian to Mississippian Earn Group and Mississippian Keno Hill Quartzite. All stratigraphic units have been intruded by mid-Cretaceous age Tombstone Suite intrusions.

Geological mapping completed by Expatriate shows that this occurrence is centred on a 3.5 to 4 m wide quartz porphyry dyke that cuts muscovite-chlorite phyllite assigned to the Yusezyu Formation of the Upper Proterozoic Hyland Group. The trace of the Robert Service Thrust lies 1 km to the north.

The early work was prompted by the discovery of minor amounts of argentiferous galena float on trend with the Mt Haldane vein system.

CCH discovered a 4 m wide porphyry dyke that is strongly chloritized and sericitized and cut by tourmalinized veinlets. The dyke is mineralized with disseminated arsenopyrite. The best grab samples from the trenches assayed 58.0 ppm silver and 0.3% lead with 3 ppm tungsten and 19 ppm tin. Soil samples nearby range up to 2.8 ppm silver with low values in other metals.

Expatriate staked the occurrence for its gold mineralization potential. Company geologists examined the dyke and collected three samples. All three returned low gold values but a 1.40 m chip sample across the east side of the dyke that included a 1.5 cm wide quartz-chlorite vein returned 402.0 g/t silver and 0.12% lead.

Soil sampling was conducted along claim lines and on a small grid centred over the occurrence. Soils collected along claim lines generally returned low values for most metals. The highest gold value (85 ppb) was collected along a ridge crest on the western edge of the property that coincides with a known north trending normal fault. Contoured arsenic values display two broad bands that trend parallel to foliation in metasedimentary rocks. Grid soil sampling returned scattered low to moderate gold values while silver and arsenic define a 500 m by 700 m long area of low to moderate response. Several high gold values (highest = 55 ppb) located up hill from the occurrence are thought to mark veins or dykes that have not yet been located. In general soil sampling found gold relates strongly with bismuth but poorly with other pathfinder elements.

#### **REFERENCES**

CCH RESOURCES LTD, Sep/77. Assessment Report #090325 by A. Woodsend.

CCH RESOURCES LTD, Sep/78. Assessment Report #090391 by A. Woodsend.

EXPATRIATE RESOURCES LTD, Oct/2000. Assessment Report #094179 by T. Becker.

HART, C.J.R. ET AL., 2000. New exploration concepts for country-rock hosted, intrusion-related gold systems, Tintina gold belt in Yukon. In: The Tintina Gold Belt: Concepts, Exploration and Discoveries, British Columbia and Yukon Chamber of Mines, Special Volume 2, p. 145-172.

HUNT, J.A., MURPHY, D.C., ROOTS, C.F., AND POOLE, W.H., 1996. Geological map of Mount Haldane area, Yukon (105M/13). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Geoscience Map 1996-4.

MINERAL INDUSTRY REPORT 1978, p. 6.

MURPHY, D.C., HUNT, J.A., ROOTS, C.F., AND POOLE, W.H., 1993. Geological map of Mount Haldane (105M/13), Central Yukon. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1993-6.

ROOTS, C.F., AND MURPHY, D.C., 1992. Geology of Mayo Map Area (105M). Geological Survey of Canada Open File 2483.

ROOTS, C.F., 1997. Geology of the Mayo Map Area, Yukon Territory (105M). Exploration and Geological Services Division, Indian and Northern Affairs Canada, Bulletin 7, 82 p.

## Appendix 3

### Statement of Qualifications

I, John Peter Ross, do hereby certify that I:

1. Am a qualified prospector with mailing address;  
B1 – 2002 Centennial Street  
Whitehorse, Yukon, Canada Y1A 3Z7
2. Graduated from McGill University in 1970 with a B.Sc. General Science
3. Have attended and finished completely the following courses;  
1974 – BC & Yukon Chamber of Mines, Prospecting Course  
1978 – United Keno Hill Mines Limited, Elsa, Yukon, Prospecting Course  
1987 – Yukon Chamber of Mines, Advanced Prospecting Course  
1991 – Exploration Geochemistry Workshop, GSC Canada  
1994 – Diamond Exploration Short Course, Yukon Geoscience Forum  
1994 – Yukon Chamber of Mines, Alteration and Petrology for Prospectors  
1994 – Applications of Multi-Parameter Surveys (Whitehorse), Ron Shives, GSC  
1994 – Drift Exploration in Glaciated and Mountainous Terrain, BCGS  
1995 – Applications of Multi-Parameter Surveys, (Vancouver) Ron Shives, GSC  
1995 – Diamond Theory and Exploration, Short Course # 20, GSC Canada  
1996 – New Mineral Deposit Models of the Cordillera, MDRU  
1997 – Geochemical Exploration in Tropical Environments, MDRU  
1998 – Metallogeny of Volcanic Arcs, Cordilleran Roundup Short Course  
1999 – Volcanic Massive Sulphide Deposits, Cordilleran Roundup Short Course  
1999 – Pluton-Related (Thermal Aureole) Gold, Yukon Geoscience Forum  
2000 – Sediment Hosted Gold Deposits, MDRU  
2001 – Volcanic Processes, MARUI  
2002 – Enzyme Leach, Actlabs, Cordilleran Roundup Course  
2002 – GPS Course, Yukon College, Whitehorse  
2002 – Gem Exploration Short Course, Yukon Geoscience Forum  
2003 – Gold, Cordilleran Roundup Short Course
4. Did all the work and the writing of this report
5. Have been on the Yukon Prospectors Assistance and Yukon Mining Incentive Program 1986 – 2001, 2003
6. Have been on the British Columbia Prospectors Assistance Program 1989 – 1990, 2001
7. Have a 100% interest in the claims described in this report at the present time

*John Peter Ross*  
4 Dec 2003



## **Appendix 4**

### **Rock Geochemistry Results**



GEOCHEMICAL ANALYSIS CERTIFICATE



Ross, John Peter PROJECT NUR File # A303936

B1 - 2002 Centennial St., Whitehorse YT Y1A 3Z7 Submitted by: John Peter Ross

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	% ppm	% ppm	%	%	%	ppm	ppb		
SI	<1	6	<3	130	<.3	<1	<1	6	.08	<2	<8	<2	<2	2	<.5	<3	3	<1	.10	<.001	<1	1	.01	4	<.01	<3	.02	.48	.01	<2	<2
NR 11	<1	5	6	11	<.3	5	2	319	.97	39	<8	<2	4	46	<.5	<3	4	2	.99	.010	10	5	.18	29	<.01	<3	.23	.01	.07	<2	<2
NR 12	<1	7	23	14	<.3	7	2	1047	1.05	67	<8	<2	2	467	<.5	<3	<3	1	16.37	.013	5	4	.19	12	<.01	<3	.05	.01	.02	<2	<2
NR 13	<1	2	20	5	<.3	2	1	3358	.78	36	<8	<2	2	748	<.5	<3	<3	1	21.30	.011	4	4	.20	8	<.01	<3	.02	.01	.01	<2	2
STANDARD DS5/AU-R	12	133	24	131	<.3	24	11	716	2.75	19	12	<2	3	48	5.2	4	8	56	.71	.089	12	182	.61	134	.10	18	1.95	.04	.14	3	493

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.  
 UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.  
 ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
 - SAMPLE TYPE: ROCK R150 60C AU\*\* GROUP 3B - 30.00 GM SAMPLE ANALYSIS BY FA/ICP.

DATE RECEIVED: AUG 29 2003 DATE REPORT MAILED: *Sep 24/2003* SIGNED BY: *[Signature]* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



GEOCHEMICAL ANALYSIS CERTIFICATE



Ross, John Peter PROJECT NUR File # A305408

B1 - 2002 Centennial St., Whitehorse YT Y1A 3Z7 Submitted by: John Peter Ross

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppb	
SI	<1	<1	<3	<1	<.3	<1	<1	3	.03	<2	<8	<2	<2	3	<.5	<3	<3	<1	.11	<.001	<1	1	<.01	4	<.01	<3	.01	.52	.01	<2	<2
NR 3	12	35	14	124	.5	19	5	380	4.27	5281	<8	<2	4	27	4.1	3	3	27	.18	.173	12	20	.36	158	.01	<3	.88	.02	.14	6	7
NR 8	<1	1	16	5	<.3	1	<1	3693	.99	292	8	<2	<2	1042	<.5	<3	<3	<1	18.33	.013	3	4	.21	13	<.01	<3	.05	.01	.02	<2	<2
NR 9	1	4	13	13	<.3	5	3	363	1.09	50	<8	<2	4	58	<.5	<3	<3	2	1.16	.010	10	7	.21	29	<.01	4	.30	.02	.09	<2	2
NR 15	<1	9	22	39	<.3	9	4	623	1.38	38	<8	<2	3	674	<.5	<3	<3	1	20.21	.041	8	3	.18	23	<.01	<3	.18	.01	.11	<2	4
NR 16	<1	10	33	120	<.3	9	5	623	1.68	15	<8	<2	6	401	2.9	<3	<3	2	11.24	.020	17	4	.21	36	<.01	<3	.35	.01	.15	2	<2
NR 18	9	402	16	66	.6	19	7	>9999	2.15	17	45	<2	3	535	.5	3	5	4	4.51	.068	2	9	.15	752	<.01	<3	.10	.02	.03	<2	4
NR 20	1	25	24	25	<.3	7	3	504	1.94	319	<8	<2	5	6	<.5	<3	3	4	.07	.015	7	14	.15	30	<.01	<3	.43	.03	.06	2	<2
NR 22	1	40	785	327	6.3	8	2	191	1.72	133	<8	<2	4	6	3.9	27	<3	3	.05	.015	9	13	.05	26	<.01	<3	.31	.01	.15	2	2
STANDARD DS5/AU-R	12	146	24	135	.3	24	12	781	2.99	17	<8	<2	3	46	5.4	4	3	60	.72	.092	12	185	.69	138	.09	18	2.15	.03	.16	4	481

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.  
 UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.  
 ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
 - SAMPLE TYPE: ROCK R150 60C AU\*\* GROUP 3B - 30.00 GM SAMPLE ANALYSIS BY FA/ICP.

DATE RECEIVED: OCT 29 2003

DATE REPORT MAILED: Nov 17/03

SIGNED BY: *C. Leong* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

## Appendix 5

### Rock Sample Descriptions

<u>Sample Number</u>	<u>Description</u>
NR3	Wad: limonite plus rock chunks in side
NR8	Calcite, quartz and black areas
NR9	Phyllite – light grey, small amount of hematite stain, fizzes/acid
NR11	Phyllite – light grey, small amount of hematite stain, fizzes/acid
NR12	Limonitic phyllite, grey areas, fizzes/acid
NR13	Marble? Limestone? Large grey/white zones
NR15	Phyllite with black carbonaceous layers
NR16	Phyllite with black carbonaceous layers
NR18	Quartz with manganese and pyrrhotite, fizzes/acid
NR20	Phyllite – orange stain, vugs, fizzes/acid
NR22	Phyllite – grey, platey, limonite areas, calcite



## **Appendix 6**

### **Soil Geochemistry Results**



GEOCHEMICAL ANALYSIS CERTIFICATE



Ross, John Peter PROJECT NUR File # A303935 Page 1  
Economic Dev. (K-10), P.O. Whitehorse YT Y1A 2C6 Submitted by: John Peter Ross

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Sample	
	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	gm
G-1	1.53	2.64	2.40	44.2	16	4.6	4.3	585	2.06	.1	2.0	<.2	4.7	83.9	.01	.02	.15	41	.59	.089	9.1	14.5	.57	236.9	.137	1	1.05	.095	.52	2.0	2.2	.28	.01	<.5	<.1	<.02	4.7	15	
AN+1500N	1.40	30.84	9.83	76.2	123	26.9	9.1	334	2.37	22.4	1.1	3.2	4.9	22.0	.17	1.23	.27	40	.25	.065	18.1	23.8	.39	560.1	.027	1	1.09	.006	.04	.5	3.5	.06	<.01	46	.3	.04	3.2	15	
AN+1200N	.92	25.34	7.76	68.8	87	24.8	9.2	595	2.19	19.6	.8	2.6	4.5	21.5	.21	.98	.25	37	.26	.064	15.1	22.8	.37	304.2	.038	<1	1.02	.006	.04	.6	2.9	.05	<.01	40	.2	.02	2.8	15	
AN+900N	.76	31.60	8.23	56.9	56	22.3	8.2	291	1.73	30.3	.8	1.9	5.0	9.9	.20	.97	.21	28	.10	.037	17.8	18.2	.27	217.9	.025	1	.90	.004	.04	1.7	3.2	.07	<.01	39	.3	.02	2.4	15	
AN+600N	1.44	34.18	12.31	89.5	105	28.1	10.2	394	2.65	35.3	.6	3.3	5.9	19.9	.18	1.22	.29	43	.22	.054	18.8	24.1	.42	484.0	.042	1	1.29	.007	.05	1.4	3.6	.06	<.01	59	.3	.04	3.7	15	
AN+300N	1.63	29.85	10.18	92.9	381	32.0	13.6	819	3.46	415.4	1.4	7.1	5.9	14.9	.39	1.37	.48	30	.20	.074	18.7	20.1	.31	147.9	.017	1	1.19	.004	.03	7.5	2.6	.08	.01	39	2.8	.12	3.0	15	
AN	1.76	28.32	13.05	87.1	203	24.5	8.8	306	2.26	190.1	.6	9.4	5.0	16.4	.39	1.19	.31	32	.31	.053	16.2	20.0	.36	312.1	.019	1	1.14	.005	.07	2.0	2.5	.07	.01	32	1.3	.03	3.2	15	
AN+300S	3.35	42.88	51.50	510.4	367	29.0	6.2	230	5.33	686.3	2.3	3.0	21.0	30.5	.34	1.70	.38	9	.12	.062	40.0	13.7	.66	80.6	.001	<1	1.47	.005	.08	.1	1.4	.08	.10	<.5	.3	.03	4.2	15	
AN+600S	1.58	17.15	23.95	129.6	238	25.7	10.5	574	2.07	523.4	.9	3.9	4.8	22.2	1.23	1.20	.30	24	.39	.053	14.9	14.9	.27	233.4	.014	1	.81	.005	.05	1.7	2.1	.06	.03	30	.9	.04	2.6	15	
AN+900S	1.90	33.51	18.30	119.2	265	33.7	12.3	381	2.51	312.9	1.7	19.5	6.3	34.3	1.00	2.00	.32	28	.36	.065	19.1	17.8	.36	256.4	.018	<1	1.11	.005	.06	1.9	2.4	.06	.03	34	1.9	.03	3.2	15	
AN+1200S	1.17	37.40	37.93	107.0	333	33.4	14.2	534	3.15	579.6	1.0	12.6	10.9	21.9	.42	1.49	.39	17	.28	.065	25.1	17.7	.51	171.9	.011	<1	1.18	.003	.06	.8	2.1	.05	<.01	30	.8	.06	3.4	15	
AN+1500S	4.77	66.57	16.43	93.5	276	23.4	11.2	597	2.21	144.3	3.7	48.9	3.8	39.3	2.34	1.92	2.34	35	.50	.080	15.4	73.0	.42	287.1	.039	7	1.32	.013	.07	2.3	2.5	.38	.06	77	3.4	.37	4.0	15	
AN+1800S	1.09	26.07	15.57	65.6	239	23.1	11.5	536	2.21	380.3	1.4	7.7	5.7	33.3	.33	1.97	.27	24	.47	.052	17.0	16.9	.35	198.6	.015	1	.94	.005	.04	.6	2.2	.05	.03	27	1.0	.04	2.9	15	
AN+2100S	.96	30.68	17.85	82.2	335	28.0	11.6	517	2.42	295.7	1.7	4.8	5.6	47.6	.47	1.99	.29	21	.58	.057	20.2	16.7	.37	285.1	.010	1	1.01	.004	.06	.6	2.2	.05	.05	37	.9	.04	2.9	15	
AN+2400S	1.89	36.43	10.02	102.3	123	31.4	10.3	385	2.51	43.1	.8	1.8	4.7	34.4	.43	1.41	.20	50	.38	.086	14.3	26.4	.41	286.0	.039	1	1.02	.011	.08	.5	4.1	.09	.01	33	.4	.04	3.4	15	
AN+2700S	.56	14.56	10.73	41.6	113	13.8	5.9	192	1.49	267.0	.6	4.6	3.5	19.6	.15	.98	.14	19	.24	.043	15.1	11.3	.22	126.8	.014	<1	.62	.003	.03	.4	1.4	.04	.01	16	.3	.02	2.0	15	
AN+3000S	.89	29.08	22.01	78.4	259	23.2	9.3	430	2.50	529.4	.9	9.5	6.8	19.2	.22	1.60	.23	26	.17	.042	22.3	17.7	.38	251.4	.020	1	1.07	.005	.05	.3	2.4	.06	<.01	24	.3	.03	3.4	15	
AN+3300S	.75	26.28	19.90	70.5	285	21.4	9.3	421	2.37	750.4	.9	18.4	6.9	19.2	.25	1.33	.20	21	.16	.051	20.7	15.2	.38	185.8	.019	<1	.94	.004	.04	.3	1.9	.04	.02	20	.3	.04	2.9	15	
AN+3600S	.79	32.69	25.85	74.9	339	23.4	10.3	441	2.69	598.4	1.2	20.8	5.9	25.3	.17	1.39	.28	24	.24	.036	19.7	17.8	.43	237.0	.012	1	1.20	.004	.05	.3	2.4	.05	.01	24	.5	.05	3.6	15	
RE AN+3600S	.82	31.61	25.90	71.9	327	23.3	10.2	434	2.66	593.3	1.2	18.3	5.4	24.8	.14	1.45	.27	24	.23	.034	18.4	17.4	.42	228.9	.011	1	1.16	.004	.05	.2	2.2	.05	<.01	24	.4	.04	3.6	15	
BN+1500N	1.34	13.31	11.83	60.7	225	14.4	16.8	660	2.30	30.7	.5	36.5	3.8	11.7	.17	.64	.25	42	.11	.133	12.8	21.3	.31	182.9	.025	<1	1.13	.004	.05	.8	2.1	.07	<.01	16	.4	.04	4.4	15	
BN+1200N	.89	15.09	8.57	37.9	105	11.2	3.8	108	1.78	34.6	.6	1.6	1.2	8.9	.14	.82	.21	36	.07	.035	13.8	15.7	.20	85.1	.022	1	.81	.003	.03	.7	1.3	.07	.01	38	.3	.03	3.9	15	
BN+900N	1.63	37.61	9.92	84.6	91	27.2	10.3	357	2.29	55.3	.7	4.9	5.1	20.4	.29	1.32	.24	45	.22	.053	18.4	23.1	.38	326.2	.045	1	1.19	.007	.07	1.7	3.4	.10	.01	33	.5	.05	3.6	15	
BN+600N	1.03	34.08	10.80	60.6	74	23.0	10.2	347	2.36	62.5	.9	3.1	5.5	11.3	.12	.97	.20	41	.07	.021	20.7	23.5	.38	286.9	.038	<1	1.29	.004	.04	.4	4.4	.07	<.01	55	.4	.04	3.8	15	
BN+300N	1.38	36.57	10.80	64.7	236	23.0	8.0	293	2.26	86.7	1.5	3.3	5.7	18.5	.25	1.55	.20	45	.12	.044	18.2	23.1	.37	260.2	.034	1	1.10	.005	.04	.8	4.2	.06	<.01	49	.6	.03	3.3	15	
BN	1.02	17.00	8.95	48.3	166	12.4	5.2	167	1.97	117.0	.7	2.0	.9	8.7	.21	.66	.19	35	.08	.053	12.7	17.5	.28	128.6	.016	<1	1.03	.004	.03	.8	1.2	.07	<.01	20	.4	.04	3.4	15	
BN+300S	.83	17.64	8.60	64.2	48	16.1	7.9	249	1.84	52.6	.7	3.5	5.1	13.8	.17	.57	.16	29	.17	.067	18.0	15.4	.30	215.1	.027	1	.84	.004	.03	.5	2.4	.05	<.01	22	.2	.04	2.6	15	
BN+600S	2.06	31.41	12.17	92.4	291	23.0	7.2	228	2.10	257.4	.7	3.8	5.5	23.8	.49	1.19	.39	34	.21	.065	20.4	17.4	.35	664.7	.026	1	1.04	.005	.04	2.3	2.7	.07	<.01	42	.3	.09	3.2	15	
BN+900S	.57	10.09	18.21	48.1	243	10.4	5.4	127	1.69	205.0	.4	2.7	7.4	11.8	.21	.39	.33	25	.08	.019	23.9	9.7	.18	213.9	.007	<1	1.11	.003	.04	.8	1.2	.12	<.01	9	.2	.03	4.3	15	
BN+1200S	1.02	19.86	13.80	56.5	296	16.7	6.4	194	2.26	480.9	.7	7.4	3.7	13.4	.15	.88	.31	30	.12	.060	19.3	16.1	.32	224.3	.014	<1	1.06	.004	.04	1.4	1.9	.07	<.01	24	.5	.14	3.4	15	
BN+1500S	.78	20.27	11.30	51.8	225	16.6	6.2	216	1.92	264.6	.7	13.7	1.5	15.2	.19	.64	.25	32	.16	.060	17.8	17.4	.28	260.9	.016	1	.99	.004	.03	1.5	1.7	.06	<.01	30	.4	.06	3.3	15	
BN+1800S	.40	49.05	50.50	112.8	871	21.0	10.8	443	4.60	4991.3	2.1	22.6	12.4	60.2	.47	11.06	.85	5	.13	.030	23.7	8.7	.46	460.6	.001	<1	.77	.003	.08	.2	1.0	.03	.05	8	.6	.04	2.6	15	
BN+2100S	2.15	37.28	18.24	69.5	239	27.1	11.0	486	2.55	406.3	.8	6.0	8.6	12.9	.29	1.71	.30	27	.19	.044	25.6	16.2	.35	196.9	.017	1	.94	.004	.05	.5	2.7	.06	<.01	28	.5	.04	3.0	15	
BN+2400S	.72	26.00	9.18	55.0	95	19.4	7.4	327	1.94	97.4	.6	29.0	4.8	15.6	.12	.94	.15	32	.18	.050	18.0	16.4	.32	285.0	.031	<1	.84	.004	.03	1.1	2.6	.04	<.01	27	.2	.03	2.8	15	
BN+2700S	.81	26.34	10.94	56.5	58	21.7	9.0	404	1.95	123.3	.5	2.3	5.1	14.6	.09	.91	.16	28	.17	.035	17.0	15.9	.34	226.4	.033	1	.82	.005	.03	.3	2.5	.04	<.01	27	.2	.02	2.7	15	
STANDARD DS5	12.94	144.62	23.71	139.7	283	24.9	12.5	784	2.94	19.5	6.2	42.0	2.8	48.7	5.90	3.97	6.38	59	.71	.096	12.5	185.7	.67	137.8	.097	16	2.09	.034	.14										



SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Sample
	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	gm
G-1	1.63	2.87	2.60	47.0	15	5.1	4.5	604	2.11	.4	2.1	.2	5.0	84.8	.02	.03	.15	43	.60	.088	10.0	14.0	.59	276.2	.145	1	1.12	.112	.55	2.4	2.3	.34	.01	<5	<.1	.02	5.4	15
BN+3000S	1.39	28.36	21.89	71.4	553	22.1	8.7	253	3.27	502.6	.5	7.9	6.0	10.1	.12	1.76	.30	41	.06	.050	15.7	22.5	.36	207.9	.014	<1	1.47	.004	.05	.3	2.0	.09	.01	34	.4	.04	4.5	15
BN+3300S	.89	33.24	79.53	120.7	288	23.9	13.1	537	2.94	765.5	1.1	63.2	7.8	10.9	.97	7.80	.27	25	.06	.020	18.5	15.7	.40	252.4	.016	<1	1.25	.005	.05	1.5	2.8	.06	.01	22	.5	.03	3.5	15
BN+3600S	.70	35.90	35.76	79.9	398	18.7	8.8	360	3.77	2360.6	1.2	23.4	8.0	13.8	.18	3.30	.38	17	.02	.020	16.7	14.3	.41	168.6	.004	<1	1.22	.005	.06	.3	1.6	.06	.05	19	.4	.06	3.6	15
BN+3900S	.80	18.60	17.75	55.8	274	17.2	7.1	452	2.37	561.5	.4	10.6	6.8	10.0	.14	1.85	.21	27	.06	.033	18.0	14.4	.30	199.1	.008	<1	1.09	.003	.06	.4	1.5	.06	<.01	14	.2	.03	3.5	15
BN+4200S	.84	32.91	24.70	58.6	451	17.4	7.2	319	3.23	934.5	.7	15.5	6.6	13.4	.10	1.85	.33	24	.05	.023	16.3	15.9	.47	140.0	.005	<1	1.39	.004	.05	.2	1.5	.06	<.01	17	.4	.06	4.0	15
CN+1500N	1.45	26.77	10.38	70.0	197	18.9	7.9	301	2.36	429.0	1.0	17.7	1.5	12.2	.55	1.45	.36	33	.11	.068	20.0	18.4	.28	113.7	.016	<1	.98	.004	.03	1.3	1.3	.07	.01	23	.7	.09	3.5	15
CN+1200N	1.31	25.29	11.55	64.6	107	22.1	10.4	276	2.49	260.2	.8	21.7	5.6	10.5	.23	.99	.24	44	.08	.042	14.4	24.3	.38	140.0	.026	1	1.59	.005	.04	.7	2.5	.10	<.01	36	.6	.08	4.4	15
CN+900N	1.36	38.50	11.36	68.9	95	28.3	11.4	352	2.47	234.6	1.0	4.7	6.1	10.6	.34	1.14	.23	42	.08	.036	14.8	25.3	.39	133.7	.028	<1	1.49	.005	.04	1.0	2.9	.07	<.01	37	.6	.09	3.5	15
CN+600N	1.11	20.59	10.38	55.5	116	16.1	8.8	317	2.30	125.1	1.0	2.7	5.4	9.5	.16	.78	.21	43	.07	.039	16.0	24.3	.37	205.4	.033	1	1.33	.007	.04	1.1	3.2	.08	<.01	38	.6	.06	4.0	15
CN+300N	1.67	35.96	11.41	64.6	136	19.7	9.1	301	2.35	272.0	1.4	4.9	4.8	14.6	.18	1.11	.26	45	.07	.041	17.2	24.1	.38	294.2	.028	<1	1.36	.005	.03	.7	3.5	.08	<.01	38	.6	.10	4.1	15
CN	2.01	35.43	17.70	76.8	282	20.6	8.4	280	2.42	404.8	2.5	4.9	5.3	29.2	.31	1.28	.31	47	.11	.064	18.0	25.6	.40	329.6	.027	<1	1.42	.005	.04	.7	3.9	.10	<.01	48	.8	.18	4.4	15
CN+300S	2.23	38.13	13.70	85.8	210	27.5	12.6	440	2.65	360.1	1.2	7.5	6.4	19.6	.22	1.20	.28	42	.12	.037	20.5	23.3	.44	493.1	.034	<1	1.37	.006	.05	1.0	4.0	.08	<.01	56	.7	.15	4.1	15
CN+600S	2.00	51.84	16.38	101.4	441	33.0	14.3	751	3.15	650.9	1.1	12.7	7.8	42.9	.48	1.50	.42	38	.43	.074	22.2	22.0	.47	463.0	.025	1	1.46	.007	.07	.9	3.4	.09	.03	37	.9	.20	4.3	15
CN+900S	1.02	33.62	21.25	77.3	322	22.3	9.9	389	3.02	1733.8	1.2	10.8	7.9	19.0	.25	1.85	.66	21	.07	.040	26.4	14.0	.34	157.1	.010	<1	1.03	.004	.06	1.6	1.7	.07	.03	23	.7	.30	3.2	15
RE CN+900S	1.08	36.05	21.97	79.4	337	23.1	10.0	407	3.19	1833.8	1.3	19.8	8.2	20.0	.25	2.03	.68	22	.08	.041	27.6	14.4	.36	169.7	.010	<1	1.09	.004	.06	1.6	1.8	.06	.02	26	.7	.30	3.3	15
CN+1200S	1.51	45.91	26.11	102.5	255	33.5	14.6	625	3.55	1801.2	1.2	10.0	9.6	32.9	.38	2.20	.69	32	.24	.056	22.3	18.2	.44	372.0	.017	<1	1.28	.005	.07	2.3	3.4	.07	.01	43	.7	.44	3.8	15
CN+1500S	1.09	32.76	27.17	83.4	321	24.3	13.7	427	2.91	1100.1	1.2	5.3	9.8	11.2	.23	1.40	.75	37	.07	.021	28.1	22.7	.39	269.7	.028	<1	1.27	.005	.04	3.5	3.5	.07	<.01	33	.8	.27	4.0	15
CN+1800S	.99	33.12	20.88	70.9	176	24.2	10.8	361	2.71	750.6	.9	4.6	8.2	10.9	.14	1.43	.51	41	.07	.016	24.6	23.8	.40	231.0	.030	<1	1.39	.005	.04	3.2	3.8	.08	<.01	45	.6	.18	4.2	15
CN+2100S	1.12	35.04	17.31	69.4	41	27.0	11.6	475	2.46	451.3	.6	7.2	6.1	19.9	.10	1.47	.37	37	.16	.028	21.0	20.6	.38	522.2	.028	<1	1.21	.005	.04	2.3	3.5	.06	<.01	47	.3	.12	3.8	15
CN+2400S	1.22	27.96	18.51	71.8	840	25.4	10.7	283	2.80	224.7	1.1	7.1	7.0	8.6	.16	1.87	.30	50	.06	.028	14.5	33.7	.44	186.7	.036	1	1.96	.004	.05	.6	2.8	.10	<.01	54	.6	.04	5.0	15
CN+2700S	.90	20.36	14.14	57.0	307	17.7	8.8	269	2.35	301.3	1.2	3.6	5.6	12.1	.08	.83	.28	43	.11	.022	17.8	24.9	.37	230.5	.029	<1	1.36	.004	.03	.4	3.4	.09	<.01	31	.5	.03	4.1	15
CN+3000S	.67	29.27	12.10	50.5	182	18.2	9.2	204	2.00	49.1	.6	4.3	6.2	7.1	.13	1.42	.17	28	.07	.029	14.5	17.2	.30	109.6	.026	<1	1.06	.003	.04	.3	2.0	.06	<.01	23	.5	.02	2.8	15
CN+3300S	.92	31.32	14.73	54.9	78	21.7	8.1	185	2.17	218.7	1.1	6.7	5.8	9.7	.07	1.67	.20	37	.05	.013	19.8	21.5	.33	167.7	.033	<1	1.11	.004	.04	.3	4.1	.07	<.01	38	.5	.03	3.4	15
CN+3600S	.83	22.09	17.54	56.9	258	18.3	8.6	248	2.39	375.1	.6	16.1	5.9	10.3	.06	4.14	.25	29	.05	.026	15.7	17.7	.33	176.3	.015	<1	1.19	.003	.05	.3	1.7	.07	<.01	14	.4	.05	3.5	15
CN+3900S	.67	22.38	17.49	49.2	197	17.2	6.5	167	2.04	194.8	.4	8.4	5.1	9.1	.11	2.60	.17	28	.07	.023	13.3	15.9	.28	127.8	.015	<1	1.02	.003	.03	.3	1.6	.06	<.01	21	.2	.03	2.8	15
CN+4200S	.58	24.45	27.81	76.9	274	20.6	7.9	395	2.12	312.4	.8	17.0	6.2	16.6	.40	2.63	.19	21	.17	.055	18.2	14.1	.34	233.4	.017	<1	.84	.004	.04	.3	2.1	.04	<.01	19	.3	.03	2.7	15
DN+1500N	1.18	36.96	11.32	70.9	71	22.9	9.0	282	2.46	609.6	1.4	26.9	4.9	12.7	.21	1.18	.41	41	.09	.046	17.8	24.1	.39	172.8	.026	1	1.34	.005	.04	1.3	3.0	.09	<.01	38	.5	.25	4.2	15
DN+1200N	7.54	75.11	33.40	206.5	721	49.9	17.8	1082	3.44	1614.4	3.9	20.1	7.8	63.1	3.14	4.12	1.60	32	.07	.074	23.9	16.9	.31	281.3	.017	<1	1.01	.004	.05	2.9	3.0	.09	.02	37	1.7	.65	3.4	15
DN+900N	1.38	25.77	13.14	63.3	297	18.1	8.9	266	2.62	672.5	1.2	8.3	5.8	10.5	.15	1.26	.39	45	.08	.046	15.9	28.8	.42	172.9	.029	1	1.52	.005	.04	1.0	3.0	.11	<.01	38	.8	.21	4.6	15
DN+600N	1.79	19.65	15.16	78.0	170	23.2	12.0	388	3.33	145.4	.7	3.2	5.6	10.4	.29	1.01	.27	59	.08	.057	13.9	37.1	.45	237.9	.028	1	2.53	.005	.05	.7	2.9	.12	<.01	39	.7	.08	5.6	15
DN+300N	11.48	91.47	20.27	209.0	744	39.9	9.3	261	3.14	608.9	6.1	10.4	3.5	102.0	2.33	5.94	.64	55	.15	.156	20.3	21.3	.32	1044.9	.019	1	1.31	.005	.06	1.5	2.8	.14	.03	51	4.2	.27	3.4	15
DN	21.54	89.55	31.88	235.7	3631	38.5	2.7	96	3.48	521.2	8.2	17.9	6.4	81.7	1.14	5.79	.77	46	.03	.123	19.8	9.2	.11	248.9	.004	<1	.64	.002	.06	.7	1.1	.19	.04	65	5.7	.20	1.7	15
DN+300S	1.39	44.14	12.16	67.8	161	27.3	10.9	301	2.26	347.0	2.0	6.7	7.4	11.0	.19	1.32	.22	36	.06	.017	21.4	23.5	.39	183.5	.029	<1	1.26	.004	.04	.4	3.6	.10	<.01	42	.9	.14	3.8	15
DN+600S	3.48	45.11	357.95	222.1	1255	44.8	13.5	438	5.02	9785.1	1.6	57.4	12.1	48.8	2.88	5.57	8.74	28	.06	.092	21.0	18.2	.41	452.5	.004	<1	1.44	.005	.08	1.6	2.0	.13	.07	34	3.5	10.30	3.9	15
STANDARD DS5	13.09	140.78	24.14	132.6	282	24.2	11.9	766	2.88	18.5	5.9	42.4	2.7	46.8	5.56	4.09	6.27	58	.72	.094	11.6	182.0	.65	138.2	.093	17	2.03	.034	.14									





SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Sample	
	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	gm
G-1	1.54	2.76	2.50	44.0	14	4.6	4.4	551	1.99	<.1	1.9	<.2	4.4	81.2	.01	.03	.14	41	.56	.083	9.6	13.4	.53	225.1	.131	1	1.02	.084	.45	2.3	2.3	.32	<.01	<.5	.1	<.02	4.7	15	
DN+900S	.63	12.43	24.06	40.3	166	11.8	5.4	1032	1.90	423.8	.5	2.5	12.3	7.1	.18	5.76	.31	4	.10	.031	29.3	4.2	.12	49.2	.001	1	.58	.002	.05	<.1	.5	.04	<.01	12	.2	.07	1.8	15	
DN+1200S	1.18	18.86	26.66	56.5	498	8.8	3.8	121	2.43	687.4	.6	3.1	7.5	11.9	.19	5.44	.45	22	.02	.030	25.5	7.0	.13	67.6	.006	<.1	.80	.003	.05	.2	.8	.10	.03	21	.6	.15	4.1	15	
DN+1500S	.56	32.29	40.75	72.1	541	16.1	6.6	185	4.06	3956.2	1.3	12.1	14.6	31.0	.14	6.02	.98	11	.02	.031	27.5	8.4	.27	119.3	.002	<.1	.83	.003	.07	2.1	.8	.08	.08	21	1.7	.60	2.6	15	
DN+1800S	.54	54.72	41.88	96.4	339	42.8	23.2	937	4.10	1590.5	1.0	10.5	18.9	21.6	.21	2.36	.82	11	.17	.059	38.2	13.2	.54	148.8	.004	<.1	1.21	.002	.04	.4	2.0	.03	<.01	17	.8	.51	3.3	15	
DN+2100S	.83	21.96	51.16	93.3	773	23.5	8.6	474	2.45	982.6	.7	4.2	9.3	14.5	.34	3.49	1.45	27	.20	.039	21.1	15.9	.32	136.3	.009	1	1.23	.003	.07	.7	2.1	.07	<.01	23	.5	.53	3.2	15	
DN+2400S	.77	16.21	22.44	50.5	272	19.3	6.6	210	2.33	520.9	.4	1.6	7.7	8.2	.09	1.50	.57	29	.07	.035	21.2	14.0	.26	101.3	.013	1	1.03	.003	.05	.4	1.6	.06	<.01	13	.4	.26	3.4	15	
DN+2700S	.53	21.63	20.48	51.3	350	21.4	8.0	272	2.27	601.9	.8	8.7	8.4	20.3	.11	2.57	.55	28	.27	.032	22.3	15.6	.28	177.9	.012	1	.87	.003	.04	1.4	2.5	.05	<.01	32	.3	.30	2.6	15	
DN+3000S	.91	39.98	44.82	111.9	895	34.5	16.1	529	3.41	2010.3	.8	13.2	15.4	34.4	.34	9.26	1.39	20	.49	.051	34.1	12.7	.35	206.7	.009	1	.79	.004	.06	1.4	2.5	.05	<.01	36	.9	.72	2.6	15	
DN+3300S	.64	40.48	40.25	99.5	891	31.2	14.5	559	3.43	2261.9	1.1	13.2	15.3	25.6	.33	4.43	1.30	15	.29	.053	35.1	11.4	.36	170.3	.007	8	.84	.005	.05	2.7	1.9	.04	.01	24	.8	.70	2.6	15	
DN+3600S	.65	36.02	30.28	94.5	938	27.7	11.6	1128	2.91	1644.0	1.2	15.3	12.6	27.0	.31	3.83	1.06	16	.36	.050	28.9	11.2	.33	136.3	.005	<.1	.77	.003	.05	2.2	1.8	.04	.02	23	.8	.56	2.5	15	
EN+1500N	1.50	47.94	11.59	85.0	105	30.2	11.8	363	2.60	38.8	.9	6.5	5.6	11.7	.52	1.42	.32	39	.08	.037	17.1	27.2	.42	154.4	.025	1	1.48	.004	.04	.4	2.2	.08	<.01	41	.8	.06	3.6	15	
EN+1200N	3.11	49.40	14.17	64.6	412	18.3	7.0	250	2.67	61.1	1.6	23.8	6.4	12.7	.15	2.41	.48	43	.04	.051	21.5	28.2	.40	121.6	.028	1	1.43	.004	.04	.2	3.1	.08	.01	31	1.5	.19	4.1	15	
EN+900N	2.57	56.13	13.18	65.1	508	20.8	6.0	311	3.44	33.4	1.2	21.0	10.2	16.6	.13	4.56	.76	48	.03	.059	36.5	32.1	.45	132.1	.013	1	1.77	.003	.03	.1	2.5	.06	<.01	29	2.0	.19	5.4	15	
EN+600N	.96	21.43	9.95	56.1	147	20.8	8.2	210	2.33	28.7	.5	5.9	4.0	8.1	.29	.82	.19	44	.06	.047	12.4	26.2	.37	207.2	.026	1	1.55	.004	.03	.3	2.0	.08	<.01	29	.4	.03	3.9	15	
EN+300N	1.21	23.91	10.69	53.0	248	18.5	6.8	175	2.69	83.5	.5	6.2	4.2	7.4	.14	1.09	.21	48	.05	.033	13.0	27.7	.37	162.9	.027	1	1.55	.003	.04	.3	2.0	.09	<.01	26	.5	.08	4.3	15	
EN	1.27	50.25	11.05	71.9	757	20.3	7.8	227	2.98	927.4	.7	19.1	4.6	13.2	.46	1.12	.33	44	.07	.094	14.5	25.3	.39	144.5	.019	1	1.62	.003	.05	.9	2.1	.09	<.01	43	.9	.81	4.3	15	
EN+300S	7.83	46.49	22.49	124.0	663	24.6	9.5	444	2.59	207.2	1.7	8.1	4.7	35.4	.89	5.46	.29	49	.17	.163	20.9	20.2	.31	211.3	.027	1	.84	.004	.05	.7	2.0	.12	.03	32	3.6	.18	2.9	15	
EN+600S	1.12	50.38	9.47	54.3	447	22.9	8.6	227	2.19	86.5	2.0	4.9	5.9	10.0	.29	1.19	.19	39	.06	.026	16.7	23.8	.38	326.5	.032	1	1.38	.004	.03	.2	3.6	.08	<.01	60	.7	.05	3.5	15	
EN+900S	1.34	34.98	15.24	64.0	226	17.2	7.2	188	2.31	447.9	1.7	11.8	5.5	11.5	.30	1.19	.34	40	.06	.033	18.0	25.3	.36	235.2	.026	1	1.35	.004	.04	4.1	2.9	.09	<.01	25	.9	.16	3.6	15	
RE EN+900S	1.31	34.54	15.22	64.0	225	16.8	7.0	187	2.30	439.6	1.6	9.3	5.5	11.6	.29	1.09	.35	39	.06	.033	18.7	25.0	.36	238.8	.027	1	1.36	.004	.04	4.1	2.9	.10	<.01	26	.8	.20	3.6	15	
EN+1200S	2.82	41.24	10.50	78.4	867	21.5	6.7	189	2.32	739.6	2.0	8.3	5.6	11.5	.35	1.81	.23	40	.07	.048	13.4	24.5	.39	151.1	.021	1	1.45	.004	.05	.4	2.3	.09	<.01	46	2.5	.15	3.4	15	
EN+1500S	12.42	35.57	22.57	105.2	1149	19.4	3.6	80	2.08	1021.3	3.4	7.7	4.5	32.3	.84	3.13	.69	63	.08	.077	14.2	11.2	.17	337.2	.007	1	.80	.003	.07	.7	1.4	.17	.06	28	6.3	.40	2.5	15	
EN+1800S	2.04	26.51	16.20	77.5	787	22.9	8.6	166	2.49	724.5	.8	3.8	7.8	15.0	.59	1.41	.40	27	.10	.042	17.7	14.4	.31	244.4	.009	1	1.09	.003	.06	.4	1.6	.07	.01	26	1.0	.31	2.7	15	
EN+2100S	2.58	39.67	21.88	109.4	474	27.4	11.4	436	3.18	1405.3	1.4	8.5	10.6	22.3	.83	3.08	.48	22	.13	.064	26.9	14.6	.47	710.9	.006	1	1.09	.003	.06	1.8	1.7	.05	.01	25	1.0	.45	3.0	15	
EN+2400S	2.43	34.30	16.60	83.5	547	21.5	8.2	263	2.57	990.5	1.4	11.3	5.0	50.3	.44	2.80	.39	28	.53	.051	18.5	14.9	.38	259.6	.008	2	1.11	.004	.05	.9	1.6	.08	.02	24	1.2	.34	3.1	15	
EN+2700S	1.27	47.39	29.75	113.8	619	33.7	13.9	662	3.39	1648.3	1.0	14.9	11.3	44.2	.65	3.70	.52	19	.49	.067	25.4	13.9	.52	174.9	.007	1	1.17	.005	.06	1.3	2.0	.05	.02	16	.9	.39	3.2	15	
EN+3900S	.71	22.00	16.99	67.9	105	25.3	12.3	378	2.44	20.6	.7	16.4	6.0	17.8	.13	.84	.20	30	.25	.052	19.4	32.7	.54	227.1	.015	1	1.30	.004	.04	.2	2.5	.07	<.01	26	.3	.03	3.8	15	
EN+4200S	.80	23.70	16.81	72.7	148	27.1	12.3	479	2.48	25.8	.8	4.8	5.9	20.9	.15	1.20	.21	29	.34	.056	21.1	31.7	.54	272.4	.013	1	1.33	.004	.05	.2	2.7	.07	.01	35	.3	.03	3.7	15	
STANDARD D55	13.20	142.11	23.86	137.8	288	24.2	12.0	765	2.92	17.9	5.9	44.1	2.8	49.1	5.73	3.96	6.35	60	.72	.094	13.0	182.4	.65	138.3	.098	16	2.11	.033	.14	4.9	3.5	1.07	.03	183	5.1	.88	6.6	15	

Sample type: SOIL SS80 60C. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.