MAP No.

105 D 6

ASSESSMENT REPORT [X]
PROSPECTUS [ ]
CONFIDENTIAL [X]
OPEN FILE [ ]

DOCUMENT NO.: 091738
MINING DISTRICT: WHITEHORSE
TYPE OF WORK: GEOLOGICAL, GEOCHEMICAL

REPORT FILED UNDER: Havilah Gold Mines Ltd.

DATE PERFORMED: July 5-8/85; May 24-June 5/86 DATE FILED: August 28, 1987

LOCATION	
LAT.	60°21'N
LONG.	135°10'W

AREA: WHEATON RIVER

CLAIM NAME & NO.

FOUR F 1-109 YA86930 - YA87035

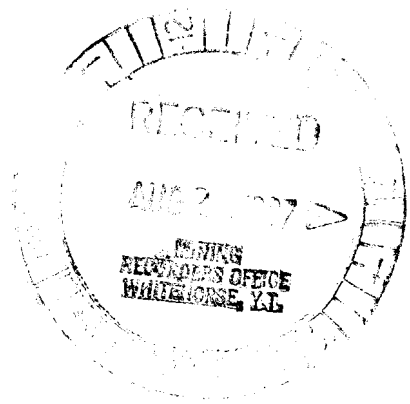
VALUE $ 15,075.00

WORK DONE BY: H.J. Keyser

WORK DONE FOR: Aurum Geological Consultants Inc.

DATE TO GOOD STANDING

REMARKS: #224 RED RIDGE



091738

GEOLOGICAL AND GEOCHEMICAL ASSESSMENT REPORT ON THE RED RIDGE PROPERTY

Whitehorse M.D., Yukon
July 4, 1985-June 5, 1986

Claims: Four F 1-64 (YA 86930-6993)
Four F 67-109 (YA 86994-7035)

Location: 1. NTS Map No. 105 D/6
2. 40 km S of Whitehorse, Y.T.
3. Latitude 60° 21'N
Longitude 135° 10'W

For: **Havilah Gold Mines Ltd.**
208-260 West Esplanade St.
North Vancouver, B.C.
V7M 3G7

By: Harmen J. Keyser, B.Sc.
Aurum Geological Consultants Inc.
604-675 West Hastings Street
Vancouver, B.C.
V6B 1N2

August 25, 1986

This report has been examined by
the Geological Evaluation Unit
under Section 53 (4) Yukon Quartz
Mining Act and is allowed as
representation work in the amount
of $ 15,075.00.

D D Emond

for Regional Manager, Exploration and
Geological Services for Commissioner
of Yukon Territory.

SUMMARY

The Red Ridge property consists of 107 contiguous mineral claims in the Whitehorse Mining District, Yukon. It is accessible by road from Whitehorse.

Situated in the gold-bearing Wheaton River/Watson River area, the property is underlain by two thick sequences of volcanic and sedimentary rocks which have been intruded by granitoid rocks of the Coast Plutonic Complex. Tertiary felsic dikes cut all other lithologies on the ground, and this is interpreted as a suitable host for precious metal deposits.

The current work program has consisted of geological mapping, geochemical sampling, prospecting, and preliminary trenching. Results of the work have identified new silver-gold mineralization in clay-quartz-carbonate-sulfide filled shear zones located near the eastern part of the property. Preliminary sampling has yielded assay results of up to 180.9 opt silver and 0.038 opt gold from selected grab samples in a 3.0 m wide vein-type structure. Mineralization appears to be controlled by both the shear zones and andesitic dikes in granodiorite. Additional vein-type structures and geochemically anomalous stream sediments and soil samples have been located.

Based on these results, geological mapping, geochemical sampling, and trenching are recommended as follow-up.

TABLE OF CONTENTS

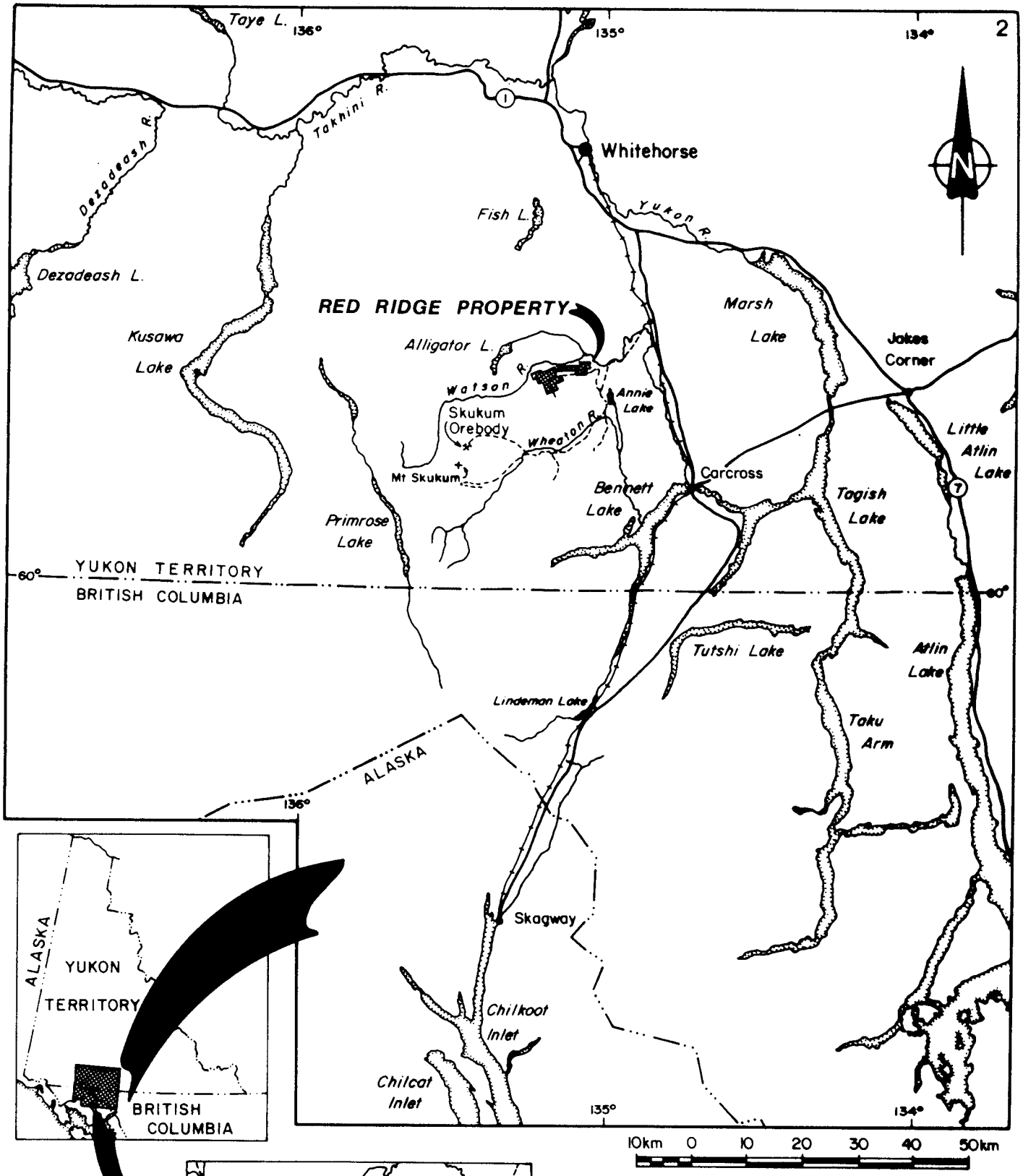
INTRODUCTION

This report was prepared at the request of Mr. L. Bratvold, President of Havilah Gold Mines Ltd. Its purpose is to satisfy assessment requirements of the Yukon Quartz Mining Act through a description of an exploration program carried out July 5-8, 1985, and May 24 to June 5, 1986 on the Red Ridge property.

The property is located 40 kilometres south of Whitehorse, Y.T. (Figure 1) and is accessible by road.

Gold and silver were first sought in the Wheaton River/Watson River areas in the early 1900's. No documentation of previous exploration programs are available on the Red Ridge property. The claims became an attractive exploration target with the discovery of a gold orebody at nearby Mt. Skukum in 1981.

Exploration work carried out in 1985 consisted of a reconnaissance program of prospecting, geological mapping, and geochemical rock, soil, and stream sediment sampling by R. Hulstein and H. Keyser. Follow-up work in 1986 consisted of geological mapping, geochemical sampling, and trenching by H. Keyser, T. Garagan, D. David, and P. Garagan; all of Aurum Geological Consultants Inc.



HAVILAH GOLD MINES LTD.			
RED RIDGE PROPERTY			
LOCATION			
Aurum Geological Consultants Inc.		AUGUST, 1986	
Drawn by N.H.	Checked by R.H.	Scale 1:1,000,000	FIGURE 1

LOCATION AND ACCESS

The Red Ridge property is located in southwestern Yukon Territory, about 40 kilometres south of Whitehorse. Centred at latitude 60°21'N and longitude 135°10'W, the claims cover part of the ridge known as Red Ridge, separating Thompson and Morrison Creeks from Watson River.

Access to the property is by gravel road to Annie Lake from the Whitehorse-Carcross Highway, and then by four-wheel drive road along Thompson Creek. Alternatively, access is provided by helicopters based at Whitehorse and seasonally at the abandoned Wheaton River airstrip.

HISTORY

Considerable prospecting was carried out in the Wheaton and Watson River areas starting in the early 1900's, culminating in the discovery of numerous gold and silver (and related metals) deposits and occurrences.

In 1981, AGIP Canada Ltd. discovered a gold orebody at Mt. Skukum, some 23 kilometres southwest of the Red Ridge property. This deposit is presently producing 3000-5000 ounces of gold per month since production started in March 1986. Published proven reserves stand at 235,000 tonnes (258,970 tons) grading 20 g/t (0.58 oz/t) gold (R.A. Doherty in D.I.A.N.D. Exploration and Geology 1983, p.163). A second significant gold-silver deposit was discovered by Omni Resources Inc. at Skukum Creek, 7 km southeast of Mt. Skukum in 1985.

The eastern part of the present Red Ridge property was explored as a porphyry copper-molybdenum target in the late 1970's by Inco Limited (D.I.A.N.D. Geology and Exploration 1979-80, p. 163). Results of this program are not publicly available.

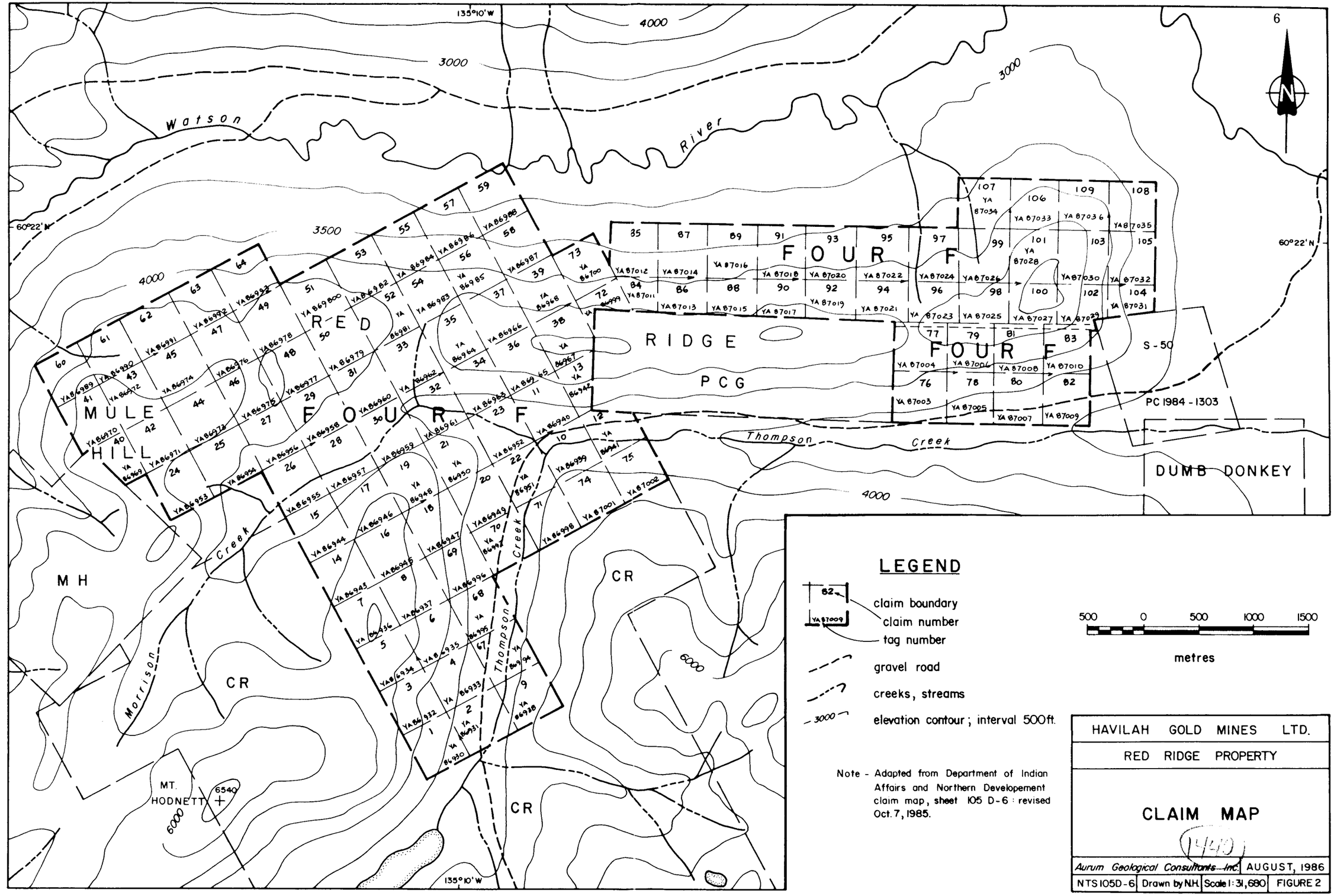
The present property was staked by MBW Surveys Ltd. for Havilah Gold Mines Ltd. to cover potential gold- and silver-bearing ground in June 1985.

PROPERTY

The property consists of 107 contiguous two-post unsurveyed mineral claims (Figure 2) staked under the Yukon Quartz Mining Act totalling approximately 2200 hectares (5400 acres). Claim data are as follows:

Claim Name	Grant No.'s	Recording Date	Expiry Date
Four F 1-64	YA86930-86993	June 10, 1985	Sept. 10, 1987
Four F 67-109	YA86994-87035	June 10, 1985	Sept. 10, 1987

As of August 21, 1986, the recorded owners of the Four F claims are the stakers, subject to transfer with Havilah Gold Mines Ltd. The claims are shown on D.I.A.N.D. quartz and placer sheet 105D-6, and are known collectively as the Red Ridge property.



LEGEND

- claim boundary
- claim number
- tag number
- gravel road
- creeks, streams
- elevation contour; interval 500ft.

500 0 500 1000 1500
metres

Note - Adapted from Department of Indian Affairs and Northern Developement claim map, sheet 105 D-6 : revised Oct. 7, 1985.

HAVILAH GOLD MINES LTD.			
RED RIDGE PROPERTY			
CLAIM MAP			
Aurum Geological Consultants Inc.		AUGUST, 1986	
NTS 105D-6	Drawn by N.H.	Scale 1:31,680	FIGURE 2

CLIMATE, TOPOGRAPHY, AND VEGETATION

The climate in the area of the Red Ridge property is variable with hot summers and long cold winters. Precipitation is light, averaging about 40 cm (16") annually with heavy snowfalls occurring during the winter months.

Situated at the eastern flank of the Coast Mountains, topography in the area is rugged. Elevations on the Red Ridge property range from 1050 to 1650 meters (3500 to 5400 feet) above sea level. Pleistocene glaciation has greatly modified the area, and glacial features such as U-shaped valleys, aretes and cirques are common.

Vegetation consists of stunted spruce and poplar typical of southwestern Yukon. Alpine shrubs and grasses occur above an elevation of 1150 meters. Ridge tops are typically covered with felsenmeer.

GEOLOGY

Regional Geology

The Red Ridge property is situated on the eastern flank of the Coast Plutonic Belt. Wheeler (1961) has adequately described the regional geology.

The Coast Plutonic Belt is composed of foliated and non-foliated granitoid rocks of primarily upper(?) Mesozoic age flanked by older metamorphosed and unmetamorphosed sedimentary and volcanic strata. Granodiorite, granite, and quartz diorite are characteristic of the composite plutons. Gabbro and syenite are rare. Irregular belts of lower Mesozoic to Paleozoic (and possibly Precambrian) metasedimentary and metavolcanic rocks occur as roof pendants.

Of particular interest is the location of a northeast trending felsic dike swarm along Red Ridge (Cairnes, 1912), of probable Tertiary age.

Faulting, lithologic attitudes, and other regional trends are generally northwest.

Geology of the Red Ridge Property

Property geology (Figure 3) is much more complex than can be shown on the previously described regional mapping. Rock outcrops are restricted to ridge flanks, and probably constitute less than 20% of the total property area.

Mafic to intermediate unnamed volcanic rocks (map unit Mv) of probable lower Mesozoic age are the most commonly exposed lithology on the Red Ridge property. They are typically black, fine grained basaltic andesite flows. Minor volcanic breccias and intervolcanic sediments are known. Alteration includes silicification and propylitization.

Fine grained sedimentary rocks of the Jurassic Laberge Group (map unit JL) are exposed at the east-central part of the ground. Argillites, limestones, cherts and quartzites comprise this unit. Silicification and skarnification are present, particularly near intrusive contacts. Relative ages between these volcanic (Mv) and sedimentary (JL) successions have not been clearly established.

Leucocratic medium grained equigranular to porphyritic granitoid rocks (map unit Kgd) intrude the lower Mesozoic strata in several locations on the Red Ridge property. Based on an overall mineralogy of feldspar (% plagioclase > % orthoclase), 60%; quartz, 25%; and mafic minerals, 15%, they can be classified as granodiorite, locally approaching diorite. Hornblende usually predominates over biotite, and both typically exhibit some degree of chloritization. These rocks are thought to be late Cretaceous to early Tertiary in age.

Light coloured, sometimes rusty weathering, rhyolite (map unit Tr) and andesite (map unit Ta) has intruded all other rock units on the property as dikes and possible sills. These are probably a hypabyssal equivalent to the Eocene Skukum Group. Remnant porphyritic to subporphyritic and flow banded textures are present, but they are commonly aphanitic. Pyrite, usually weathered, is a common constituent.

Many structures including bedding and dikes display a preferred steeply dipping northeast trend, discordant with the regional trend. Mafic minerals in the granodiorite locally show parallelism, suggesting that regional deformation took place after the intrusion. Creeks and gullies facing northerly into Watson River are much more deeply incised than at the south slope facing Thompson Creek, possibly indicating underlying structural weaknesses.

A large prominent gossan occurs along the central part of Red Ridge, northeast of the junction of Thompson and Morrison Creeks. It is attributed to hornfelsed metasediments where primary pyrite has been reduced to

pyrrhotite during contact metamorphism with subsequent surface oxidation.

A tabulated geological history of the property and area is given as Table 1.

TABLE 1. Tabulated geologic history of the Red Ridge property area. Relative ages of JL and Mv are uncertain.

UNIT	AGE*	Event/Lithology
----	Quaternary	Unconsolidated glacial debris.
----	Pleistocene	Glacial erosion; unconformity.
Tr, Ta	Eocene	Intermediate to felsic volcanism. Emplacement of rhyolite and andesite dikes. Block faulting. Mineralization (?).
Kgd	Cretaceous	Coast Plutonic Belt. Granitoid intrusions, folding, faulting, metamorphism, erosion. Mineralization(?).
JL	Jurassic	Laberge Group. Deposition of fine grained sediments disconformably on Lewes River Group.
Mv	Lower Mesozoic(?)	Deposition of mafic to intermediate volcanic flows on unknown basement.

*modified from Wheeler 1961, and Pride and Clark 1985.

MINERALIZATION

There is no record of previous discoveries of mineralization on the Red Ridge property. Reconnaissance prospecting as part of the 1985 exploration program was carried out in an attempt to locate mineralized zones, with follow-up work completed in 1986.

EAST ZONE

The most significant mineralization located to date is a series of mineralized shear zones known as the East Zone (Figure 4). Gossanous frost boils containing sulfide-bearing quartz rubble were located in felsenmeer during the 1985 exploration program. A typical sample of the quartz returned 0.009 opt Au and 4.29 opt Ag. The gossanous soil was anomalous in gold and silver as well as copper, lead, zinc, arsenic, antimony, and mercury. Very little bedrock is exposed in this area.

Hand trenching through overburden was initiated on June 4, 1986 in an attempt to expose the source of the mineralized material. Clay, quartz, carbonate, and galena-pyrite-tetrahedrite typify the mineralogy of at least three subparallel shear zones located in the trenches. The shear zones appear to be controlled by older magnetic andesitic to basaltic dikes in granodiorite and are intensely leached and oxidized. Phyllic and propylitic alteration characterize the granodiorite, while the non-sheared dikes appear to be silicified. The trenches are not deep enough to expose fresh unweathered bedrock.

Galena chips up to 3 cm^3 have been found in rubble at Trench 5A; but to date have not been located in place. Assays of this material have returned 180.9 opt silver, 0.017 opt gold, and 57.5% lead. Disseminated galena and minor tetrahedrite have been found in the clay gouge, in discontinuous crushed quartz veining in the clay gouge, and in altered granodiorite. The main intensely leached and oxidized clay gouge shear zone in Trench 5A has returned up to 13.18 opt silver and 0.038 opt gold. Soil

from this same trench has returned 42.3 opt silver and 1150 ppb gold in the -80 (inch) mesh fraction; possibly reflecting the size component carrying the silver and gold values. The shear zone has an overall apparent width of 3.5 metres with a true width, based on a westerly dip estimate of 60^{o}, of 3.0 metres.

Trenches 1 to 4 also exposed leached and oxidized clay gouge shear zones in granodiorite, giving the shears a known strike length exceeding 40 metres. Material exposed in these trenches appears similar to that found at Trench 5A. Silver values range up to 4.81 opt. The high silver values encountered in Trench 5A were not repeated elsewhere.

It is possible that a strike projection of the mineralized vein-type structure found in Trench 5A occurs west of Trenches 2 and 3. No trenching has been completed north of Trench 5. Combined with known cross-faulting and limited bedrock exposures, this structure may have a significant strike length.

The recessive weathering nature of the mineralized shears makes sampling and interpretation difficult. Numerous north-trending recessive weathering lineaments have been identified in the trenched area and remain untested.

OTHER MINERALIZATION

Tetrahedrite-bearing quartz veins have been identified in several areas within 1 km of the East Zone trenches. They are characterized by fine grained smoky quartz in veins up to 1 m wide in granodiorite with a bleached argillic alteration envelope. Pyrite, tetrahedrite, and malachite are irregularly distributed in the veins. Potential ore-grade mineralization has not been found in these structures to date.

Quartz, carbonate, and quartz-carbonate veins and vein-type float have been located in several areas elsewhere on the property. Structures vary from massive veins up to 1 m in thickness to numerous subparallel veinlets

individually 4 cm comprising stockworks. Metal values of these structures are geochemically barren to low-order anomalous.

GEOCHEMICAL RESULTS

A total of 185 soil, 32 sediment, and 112 rock samples were collected during the 1985 and 1986 Red Ridge exploration programs. All samples were analyzed for gold, silver, and lead by Bondar-Clegg and Company Ltd. or CDN Resource Laboratories Ltd., both of Vancouver, B.C. Selected samples were also analyzed for copper, zinc, arsenic, antimony, and mercury. Sample locations and analytical results for selected samples are shown on Figure 3.

Briefly, the results show two discrete anomalous areas, in addition to isolated single sample anomalies: (1) stream sediments and soil samples taken along the north and south flanks of Red Ridge indicate a 500 metre long section of the ridge shedding anomalous values in gold and/or silver; and (2) soil samples taken on a detailed grid covering 20 x 50 metres in area over the East Zone trenches show that silver mineralization there is readily identified by soil geochemistry. Values at area (1) range up to 700 ppb gold and 7.2 ppm silver, while at area (2) they range up to 340 ppb gold and 50 ppm silver. The change in Au/Ag ratios presumably reflects different elemental abundances in separate areas of the property.

CONCLUSIONS AND RECOMMENDATIONS

The regional geological setting of the Red Ridge property is a thick Mesozoic volcano-sedimentary package which has been intruded during the upper Cretaceous by granodiorites of the Coast Plutonic Belt. Tertiary hypabyssal rhyolitic dikes were emplaced in all of these rock units. Vein-type gold and gold-silver mineralization in the Wheaton River/Watson River district is typically dike-controlled. Felsic diking on the Red Ridge property therefore provides a setting that is highly permissive for the development of precious metal deposits.

The property is a silver-gold prospect. Mineralization located to date consists of galena-pyrite-tetrahedrite bearing clay-quartz-carbonate veins at the East Zone. Chip sampling of weathered clay gouge material has returned a weighted assay average of 6.67 opt silver over a true width of 3.0 metres, including 0.7 metres assaying 13.18 opt silver and 0.038 opt gold. Selected grab samples of galena found in trench rubble assayed 180.9 opt silver and 0.017 opt gold.

Precious metal values, wallrock associations, structural control, and surface expressions of mineralization are considered to be consistent with those that lead to the discovery of the Rainbow-Road Zone at Omni Resources Inc.'s nearby Skukum Creek property (Forster, et al 1986) and several silver deposits in the Rancheria District (Abbott 1983).

The high clay component of the vein-type structures results in a recessive weathering pattern. Recognition and sampling are therefore difficult. Intense surface weathering further complicates exploration by presenting the probability that sulfides associated with precious metal mineralization have been leached out of the veins near surface. However, soil geochemistry is able to resolve anomalous amounts of gold, silver and lead associated with the mineralization, and known recessive lineaments may indicate further mineralization of the same type.

Geological mapping, carried out as part of this report, has located vein-type structures over a wide area elsewhere on the property. Economically significant mineralization has not yet been found in these structures but they demonstrate the presence of hydrothermal activity, most likely associated with felsic dike emplacement during the Tertiary. The main exploration target on the Red Ridge property is considered to be dike-controlled precious metal veins.

Stream sediment and soil geochemistry has outlined a 500 metre long section of Red Ridge shedding anomalous values in gold and silver. The source of the metals yielding these values is attributed to unusually enriched gold and silver contents in gossanous hornfelsed metasediments, perhaps as vein type structures or disseminated gold in the sediments. Because of a low sampling density for rock, soil, and stream sediments, large unsampled areas remain to be tested.

Results of the 1985 and 1986 exploration programs on the Red Ridge property warrant additional work. Continued geological mapping, soil geochemistry, and trenching are recommended.

Respectfully submitted,

August 25, 1986

Harmen J. Keyser, B.Sc.

REFERENCES

Abbott, J.G., 1983:
Silver-bearing veins and replacement deposits of the Rancheria District. In Yukon Geology and Exploration 1983. D.I.A.N.D. pp 34-44.

Cairnes, D.D., 1912:
Wheaton District, Yukon Territory G.S.C. Memoir 31.

Forster, C.N., Hulstein R.W., and Keyser, H.J., 1986:
Report on the Skukum Creek Property. Private report for Omni Resources Inc. by Aurum Geological Consultants Inc.

Pride, M.J., amd Clark, G.S., 1985:
An Eocene Rb-Sr Isochron for Rhyolite Plugs, Skukum Area, Yukon Territory. C.J.E.S. Vol. 22, pp. 1747-1753.

Wheeler, J.O., 1961:
Whitehorse Map-Area, Yukon Territory. 105 D. G.S.C. Memoir 312.

STATEMEMT OF QUALIFICATIONS

I, Harmen J. Keyser, hereby certify that:

1. I am a geologist with AURUM GEOLOGICAL CONSULTANTS INC., 604-675 West Hastings Street, Vancouver, British Columbia.

2. I am a graduate of Saint Mary's University, Halifax, Nova Scotia with a degree in geology (B.Sc., 1981) and have been involved in geology and mineral exploration continuously since then.

3. I am a member of the Geological Association of Canada (A3759).

4. I have no direct or indirect interest in the claims or securities of Havilah Gold Mines Ltd., and I do not expect to receive any interest.

5. I am the author of this report on the Red Ridge property, Yukon, which is based on my personal examination of the property during fieldwork conducted July 5-8, 1985 and May 24-June 5, 1986.

6. This report is intended to satisfy assessment requirements only.

August 25, 1986

HARMEN J. KEYSER, B.Sc.

APPENDIX

CDN RESOURCE LABORATORIES LTD.

#8, 7550 RIVER ROAD, DELTA, B.C. V4G 1C8 / TEL. (604) 946-4448

** ASSAY REPORT **

To: Aurum Geological ConsultantsInc.
1614 - 675 West Hastings Street
Vancouver, B.C.
V6B 4W3

Number: 86-226
Date: July 25, 1986
Proj.: 4F

Attn: Harmen Keyser cc. Larry Bratvold

	Au o/T	Ag o/T	Pb %
864110	<0.002	1.34	0.50
864111	0.003	2.10	0.61
864112	<0.002	4.31	0.80
864113	0.003	10.15	1.82
864114	0.006	5.48	1.02
864115	0.038	13.18	1.76
864116	<0.002	0.18	0.07
864117	<0.002	1.69	<0.01
864118	0.017	180.9	57.5
T5A 7		5.65	0.49
T5A 8		6.14	0.93
T5A 9		14.59	6.00
T5A 10		14.29	3.20
T5A 11		11.14	2.50
T5A 12		42.3	10.4
T5A 13		26.25	7.80
T5A 14		7.99	2.50
T5A 15		4.08	1.67
T5A 16		1.51	0.67

Duncan Sanderson
Licensed Assayer of British Columbia

CDN RESOURCE LABORATORIES LTD.
#8, 7550 RIVER ROAD, DELTA, B.C. V4G 1C8 / TEL. (604) 946-4448

GEOCHEMICAL REPORT

To: Aurum Geological Consultants Inc.
1614 - 675 West Hastings Street
Vancouver, B.C.
V6B 4W3

Number: 86-226
Date: July 25, 1986
Proj.: 4F

Attn: Harmen Keyser cc. Larry Bratvold

	Cu ppm	Zn ppm	As ppm	Sb ppm
864110	680	16300	80	70
864111	730	5500	70	50
864112	880	7000	70	80
864113	1780	8500	90	260
864114	1550	11200	130	150
864115	720	5400	380	650
864116	100	500	< 10	< 10
864117	3200	150	110	340
864118	6900	5400	310	6300

Duncan Sanderson

CDN RESOURCE LABORATORIES LTD.
#8, 7550 RIVER ROAD, DELTA, B.C. V4G 1C8 / TEL. (604) 946-4448

GEOCHEMICAL REPORT

To: Aurum Geological ConsultantsInc.
1614 - 675 West Hastings Street
Vancouver, B.C.
V6B 4W3

Number: 86-226
Date: July 25, 1986
Proj.: 4F

Attn: Harmen Keyser cc. Larry Bratvold

		Au ppb	Ag ppm	Pb ppm
TSA	1	50	11.3	780
TSA	2	30	9.9	740
TSA	3	60	19.4	2120
TSA	4	90	27.0	1930
TSA	5	70	33.3	2200
TSA	6	90	37.4	2000
TSA	7	180	>100	5000
TSA	8	100	>100	>5000
TSA	9	360	>100	>5000
TSA	10	240	>100	>5000
TSA	11	330	>100	>5000
TSA	12	1150	>100	>5000
TSA	13	610	>100	>5000
TSA	14	350	>100	>5000
TSA	15	130	>100	>5000
TSA	16	100	42	>5000
TSA	17	80	22.5	1380

Duncan Sanderson

Bondar-Clegg & Company Ltd.
130 Pemberton Ave.
North Vancouver, B.C.
Canada V7P 2R5
Phone: (604) 985-0681
Telex: 04-352667

BONDAR-CLEGG

Geochemical Lab Report

REPORT: 126-1891 | PROJECT: NONE GIVEN | PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Pb PPM	Ag PPM	Au PPB	Au/wt G
31 FFSS-78		84	1.0	5	
31 FFSS-86		44	0.3	25	
S1 FFSS-87		49	0.2	5	
31 FFSS-88		55	0.5	15	
31 FFSS-89		27	0.4	15	
S1 FFSS-90		14	0.6	<5	
31 FFSS-92		47	0.3	25	
31 FFSS-93		15	0.4	5	
S1 FFSS-94		63	0.5	20	
1 FFSS-95		38	<0.2	10	
S1 FFSS-96		34	0.8	30	
31 FFSS-97		21	0.4	15	
1 FFSS-98		16	0.3	<5	
31 FFSS-99		24	0.3	10	
S1 FFSS-108		14	<0.2	<5	
FFSS-109		20	0.4	15	
31 FFSS-110		15	0.4	10	
1 FFSS-111		15	0.3	15	
1 FFSS-112		18	0.2	10	
S1 FFSS-113		12	0.4	15	
1 FFSS-114		21	0.3	10	
31 FFSS-115		7	0.2	20	
S1 FFSS-116		35	0.3	5	
FFSS-117		37	0.3	<5	
FFSS-118		37	0.3	<5	
FFSS-119		100	0.3	<5	
FFSS-120		47	0.4	<5	
31 FFSS-121		54	0.5	<5	4.00
S1 FFSS-122		29	0.5	<5	
FFSS-123		27	0.4	10	
S1 FFSS-124		51	0.3	20	
FFSS-125		28	0.2	10	
FFSS-150		57	0.2	<5	
S1 FFSS-151		39	0.2	<5	5.00
FFSS-152		120	0.3	5	
31 FFSS-153		110	0.2	<5	
860107		275	7.0	200	

Bondar-Clegg & Company Ltd.
130 Pemberton Ave.
North Vancouver, B.C.
Canada V7P 2R5
Phone: (604) 985-0681
Telex: 04-352667

BONDAR-CLEGG

Certificate of Analysis

REPORT: 626-1773 | PROJECT: NONE GIVEN | PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Ag OPT	Pb PCT
S1 T2-S 0		2.30	
S1 T2-S 3		1.77	
S1 T3-S 01		4.11	2.25
S1 T3-5 02		3.22	1.52
S1 T4-S 01		4.62	
S1 T5-S 01		78.58	11.72
S1 0+00 0+35E		2.19	
S1 0+10N 0+25E		3.05	
R2 T-2-1		2.00	
R2 T-3-4			2.50
R2 T-3-5		1.69	
R2 T-4-2		2.11	
R2 T-5-1		4.81	
R2 T-5-2			1.40
R2 T-5-3		3.29	
R2 860105		1.53	

Registered Assayer, Province of British Columbia

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Geochemical Lab Report

REPORT: 126-1773

PROJECT: NONE GIVEN PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Pb PPM	Ag PPM	Au PPB	Au/wt G
S1 ARR 001			40	0.5	130	
S1 ARR 002			201	1.1	50	
S1 ARR 003			60	1.0	30	
S1 ARR 004			40	2.6	30	
S1 ARR 005			50	1.4	50	
S1 ARR 006			34	1.2	10	
S1 ARR 007			46	1.2	15	
S1 ARR 008			253	2.8	45	
S1 ARR 009			55	2.0	15	
S1 ARR 010			32	1.5	90	
S1 ARR 011			24	1.8	20	
S1 ARR 012			17	1.4	10	
S1 ARR 013A			16	0.6	10	
S1 ARR 013B			39	1.4	25	
S1 ARR 014			24	1.6	20	
S1 ARR 015			34	0.8	10	
S1 ARR 016			22	0.8	15	
S1 ARR 017			90	2.2	70	
S1 ARR 018			59	1.6	40	
S1 ARR 019			22	0.9	25	
S1 ARR 020			25	1.0	35	
S1 ARR 021			24	0.6	240	
S1 ARR 022			36	0.8	75	
S1 ARR 023			26	1.2	20	
S1 ARR 024			17	0.9	100	
S1 ARR 025			33	0.6	10	
S1 ARR 050			58	1.4	200	
S1 ARR 051			130	2.5	95	
S1 ARR 052			49	1.0	30	
S1 ARR 053			190	2.2	55	
S1 ARR 054			44	1.2	30	
S1 ARR 055			42	1.3	30	
S1 ARR 056			46	2.6	25	
S1 ARR 057			31	2.0	2700	
S1 ARR 058			32	1.4	30	
S1 ARR 059			28	2.1	80	
S1 ARR 060			15	1.3	20	
S1 ARR 061			26	0.9	10	
S1 ARR 062			33	1.1	15	
S1 ARR 063			20	1.0	10	

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Geochemical Lab Report

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Pb PPM	Ag PPM	Au PPB	Au/wt G
S1 ARR 064			20	1.0	10	
S1 ARR 065			23	0.8	45	
S1 ARR 066			37	1.0	10	
S1 ARR 067			45	1.0	20	
S1 ARR 068			31	0.4	10	
S1 ARR 069			26	0.4	45	
S1 ARR 070			52	2.5	65	
S1 ARR 071			34	1.2	15	
S1 ARR 072			22	0.6	1050	
S1 ARR 073			28	1.2	20	
S1 FF-SS 20			27	0.3	5	
S1 FF-SS 21			80	0.3	<5	
S1 FF-SS 22			39	0.4	<5	
S1 FF-SS 23			48	0.3	<5	
S1 FF-SS 24			121	1.0	<5	
S1 FF-SS 25			45	0.2	<5	
S1 FF-SS 26			44	<0.2	5	
S1 FF-SS 27			39	0.2	5	
S1 FF-SS 28			48	0.4	<5	
S1 FF-SS 29			30	0.2	<5	
S1 FF-SS 30			58	0.9	25	
S1 FF-SS 31			36	0.8	25	
S1 FF-SS 32			48	0.7	30	
S1 FF-SS 33			38	0.7	45	5.00
S1 FF-SS 34			40	0.8	35	
S1 FF-SS 35			33	0.5	15	
S1 FF-SS 36			36	0.4	10	
S1 FF-SS 37			35	0.4	15	
S1 FF-SS 38			34	0.2	10	
S1 FF-SS 39			188	1.7	15	
S1 FF-SS 40			59	0.6	10	
S1 FF-SS 41			47	0.7	15	
S1 FF-SS 42			54	0.8	10	
S1 FF-SS 43			56	5.0	25	
S1 FF-SS 44			31	0.6	5	
S1 FF-SS 45			45	0.7	10	
S1 FF-SS 46			82	1.3	15	
S1 FF-SS 47			92	0.9	10	
S1 FF-SS 48			76	1.3	15	
S1 FF-SS 49			87	1.2	40	

pc G

Four F

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Pb PPM	Ag PPM	Au PPB	Au/wt G
S1 FF-SS 50A			75	0.8	10	
S1 FF-SS 50B			159	0.5	<5	
S1 FF-SS 51			193	0.3	<5	
S1 FF-SS 52			42	0.6	<5	
S1 FF-SS 53			130	0.4	<5	8.00
S1 FF-SS 54			188	1.2	<5	
S1 FF-SS 55			63	0.2	<5	
S1 FF-SS 56			22	<0.2	<5	
S1 FF-SS 57			56	0.2	5	
S1 FF-SS 58			31	0.2	<5	
S1 FF-SS 59			203	0.5	<5	
S1 FF-SS 60			49	0.6	20	
S1 FF-SS 61			50	0.6	15	
S1 FF-SS 62			65	0.7	10	
S1 FF-SS 63			56	0.3	<5	
S1 FF-SS 64			47	0.6	<5	
S1 FF-SS 65			49	0.4	5	
S1 FF-SS 66			55	0.5	<5	
S1 FF-SS 67			46	0.6	<5	
S1 FF-SS 68			96	1.1	65	
S1 FF-SS 69			90	0.6	10	
S1 FF-SS 70			239	1.7	20	
S1 FF-SS 71			865	3.4	200	
S1 FF-SS 72			1445	7.2	340	
S1 FF-SS 73			261	1.6	25	
S1 FF-SS 74			141	0.7	10	
S1 FF-SS 75			100	0.9	10	
S1 FF-SS 76			90	0.7	<5	
S1 FF-SS 77			81	1.0	<5	
S1 FF-SS 79			222	1.9	110	
S1 FF-SS 80			980	5.5	380	
S1 FF-SS 81			470	3.9	20	
S1 FF-SS 82			249	3.2	35	
S1 FF-SS 83			198	1.9	700	8.00
S1 FF-SS 84			54	0.8	10	3.00
S1 FF-SS 85			35	0.9	20	
S1 FF-SS 100			106	1.0	15	
S1 FF-SS 101			98	1.1	15	
S1 FF-SS 102			93	0.4	20	
S1 FF-SS 103			98	0.4	85	

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Pb PPM	Ag PPM	Au PPB	Au/wt G
S1 FF-SS 104			211	1.7	25	
S1 FF-SS 105			285	2.9	25	
S1 FF-SS 106			387	1.6	15	
S1 FF-SS 107			223	0.8	20	
S1 MH-SS 7			10	0.2	10	
S1 MH-SS 8			14	0.3	30	
S1 MH-SS 9			13	0.2	5	
S1 MH-SS 10			30	0.4	<5	
S1 NSS 034			6	<0.2	5	
S1 NSS 035			222	1.2	5	
S1 T1-S 01			2870	24.0	320	
S1 T1-S 02			81	3.7	25	6.00
S1 T2-S 0			4440	>50.0	520	
S1 T2-S 1			7120	47.0	660	
S1 T2-S 2			9220	48.0	640	
S1 T2-S 3			9690	>50.0	580	
S1 T3-S 01			>10000	>50.0	740	
S1 T3-S 02			>10000	>50.0	820	
S1 T4-S 01			1170	>50.0	110	
S1 T5-S 01			>10000	>50.0	1400	
S1 0+00 0+00			70	2.2	10	
S1 0+00 0+10E			50	0.5	5	
S1 0+00 0+15E			137	13.0	40	
S1 0+00 0+20E			44	4.7	10	
S1 0+00 0+25E			73	1.4	10	
S1 0+00 0+30E			31	0.6	<5	
S1 0+00 0+35E			130	>50.0	70	
S1 0+00 0+50E			44	1.8	5	
S1 0+00 0+50W			44	1.0	<5	
S1 0+05N 0+25E			54	2.7	10	
S1 0+10N 0+25E			286	>50.0	300	
S1 0+15N 0+25E			103	7.2	10	
S1 0+15N 0+27E			4380	45.0	340	
S1 0+15N 0+30E			1170	24.0	130	
S1 0+20N 0+25E			590	16.0	90	
S1 0+25N 0+25E			385	7.6	10	6.00
S1 0+25N 0+30E			48	1.7	<5	
S1 0+25N 0+40E			334	6.7	10	
S1 0+25N 0+45E			190	7.4	<5	
S1 0+25N 0+50E			82	4.1	5	

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Pb PPM	Ag PPM	Au PPB	Au/wt G
S1 0+25N 0+50W			35	0.6	<5	
S1 0+25S 0+00			78	0.9	<5	
S1 0+25S 0+10E			132	1.9	15	
S1 0+25S 0+15E			48	1.6	15	
S1 0+25S 0+20E			38	2.2	5	
S1 0+25S 0+25E			35	3.8	5	
S1 0+25S 0+50W			30	0.8	<5	
S1 0+50N 0+50W			36	0.8	<5	
S1 0+75N 0+00			55	1.0	<5	
S1 1+00N 0+00			213	4.9	<5	
S1 1+25N 0+00			67	2.6	<5	
S1 1+25N 0+25E			112	1.3	<5	
S1 1+25N 0+25W			266	9.8	5	
S1 1+25N 0+50W			199	4.5	<5	
S1 1+50N 0+00			107	1.6	<5	
S1 2+00N 0+00			99	1.2	<5	
S1 2+00N 0+25E			41	1.6	5	
S1 2+00N 0+50E			27	0.8	<5	
S1 2+00N 0+25W			271	7.6	10	
S1 2+00N 0+50W			308	6.7	<5	
AN R2 ATN 4			27	<0.2	<5	
R2 ATN 5			10	0.2	<5	
R2 FFP 01			11	0.2	<5	
R2 FFP 02			8	0.2	<5	
R2 FFP 03			10	0.4	<5	
R2 T-1-01		266	960	10.0	55	
R2 T-1-02		305	40	3.3	75	
R2 T-1-03		138	13	0.7	<5	
R2 T-1-04		97	99	2.2	<5	
R2 T-2-0		540	525	17.0	30	
R2 T-2-1		410	4680	>50.0	180	
R2 T-2-2		212	4520	20.0	95	
R2 T-2-3		114	1595	20.0	120	
R2 T-2-4		138	800	20.0	45	
R2 T-2-5		190	3280	22.0	75	
R2 T-2-6		124	2400	21.0	60	
R2 T-2-7		165	1250	15.0	35	
R2 T-3-1		33	98	1.5	5	
R2 T-3-2		204	369	50.0	35	
R2 T-3-3		89	76	1.8	5	

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Pb PPM	Ag PPM	Au PPB	Au/wt G
R2 T-3-4		2020	>10000	>50.0	480	
R2 T-3-5		490	4830	>50.0	260	
R2 T-3-6		140	855	9.6	35	
R2 T-3-7		64	65	3.1	10	
R2 T-3-8		42	37	1.2	<5	
R2 T-3-9		106	4110	32.0	170	
R2 T-4-1		84	38	3.5	5	
R2 T-4-2		910	242	>50.0	20	
R2 T-4-3		350	56	15.0	10	
R2 T-5-1		990	5710	>50.0	130	
R2 T-5-2		970	>10000	>50.0	160	
R2 T-5-3		790	6620	>50.0	60	
R2 T-5-4		242	1745	22.0	45	
R2 860101			132	20.0	240	
R2 860102			7	0.2	<5	
R2 860103			3	0.4	<5	
R2 860104			4	0.4	<5	
R2 860105			57	>50.0	380	
R2 863101			7	1.8	10	
R2 863102			13	1.4	<5	
R2 864301			26	0.4	5	
R2 86-0-1-06			38	0.5	10	
R2 86-2-1-01			10	0.4	25	
R2 86-2-1-02			870	1.0	10	
R2 86-3-1-01			43	0.6	5	
R2 86-3-1-03			15	1.2	5	
R2 86-3-1-04			26	0.4	5	
R2 86-3-1-05			54	0.7	5	
R2 86-3-1-06			9	1.0	5	
R2 86-4-1-07			3	0.4	190	
R2 86-4-1-08			13	1.1	5	
R2 86-4-1-09			17	1.1	80	

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Certificate of Analysis

REPORT: 626-1563

PROJECT: RR PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Ag OPT
R2 864101		3.41

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SAMPLE NUMBER	ELEMENT UNITS	Pb PPM	Ag PPM	As PPM	Hg PPB	Au PPB	Sb PPM
T1 NSS-052		52	0.7	20		<5	
T1 NSS-053		50	0.5	10		<5	
T1 NSS-054		54	0.4	12		<5	
T1 NSS-055		46	0.3	6		<5	
T1 NSS-056		40	0.2	7		<5	
T1 NSS-057		40	0.2	9		15	
T1 NSS-058		58	0.6	20		960	
T1 NSS-059		114	0.9	30		5	
T1 NSS-060		550	2.5	20		5	
T1 NSS-061		123	0.6	21		<5	
T1 NSS-062		280	0.4	20		<5	
T1 NSS-063		35	0.4	21		<5	
T1 NSS-064		880	1.4	30		<5	
T1 RSS-86 01		14	0.4	<2		<5	<2
T1 RSS-86 02		25	0.5	2		<5	<2
R2 860100							<2
R2 864101		240	>50.0	400	375	160	
R2 864102		77	6.0	5	10	15	
R2 864103		29	25.0	5	80	10	
R2 864104		4	0.6	2	5	<5	
R2 864105		9	0.8	<2	5	<5	
R2 864106		<2	0.6	2	<5	50	
R2 APN-1		10	0.2	10	<5	<5	<2
R2 APN-2		10	0.4	5	5	<5	2
R2 ATN-1		16	<0.2	5	<5	<5	<2
R2 ATN-2		12	<0.2	40	<5	<5	<2
R2 ATN-3		24	0.2	100	<5	<5	<2
C2 MH-HM-1			0.3			<5	
C2 MH-HM-2			0.4			<5	

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Geochemical Lab Report

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MPLE NUMBER	ELEMENT UNITS	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Au PPB	As PPM	Hg PPB	Sb PPM
RS-1		65	16	40	0.6	5	30	10	<2
RS-2		20	21	104	0.3	<5	3	15	<2
RS-3		20	22	135	0.6	<5	2	55	3
RS-4		34	24	96	0.4	<5	3	30	<2
RS-5		23	15	76	0.3	<5	2	20	4
RS-6		35	24	95	1.0	<5	5	60	4
RS-7		24	19	58	0.4	<5	2	10	<2
RS-7A		58	25	85	1.7	10	38	40	4
RS-8		58	82	175	0.4	5	40	5	6
RS-9		820	3000	4600	47.0	65	300	900	65
RS-10		95	20	60	0.4	15	80	15	5
RS-11		120	10	38	0.2	20	150	20	<2
RS-12		65	16	95	0.9	<5	5	45	<2
RS-13		45	31	130	0.8	<5	5	45	<2
RS-14		39	38	140	0.8	5	4	90	<2
RS-15		44	31	124	0.9	10	60	40	<2
RSS-85-11		142	30	100	0.7	15	6	55	<2
RSS-85-12		157	17	116	0.5	10	53	35	3
RSS-85-13		220	79	94	0.4	20	25	60	<2
RSS-85-14		90	29	110	0.2	<5	10	25	<2
RSS-85-15		44	48	135	0.3	5	22	25	3
RSS-85-16		56	30	124	0.4	5	20	50	<2
RSS-85-17		33	15	85	0.3	15	7	40	<2
RSS-85-18		147	22	58	0.9	50	16	10	3
RSS-85-19		380	88	276	1.8	200	30	30	<2
RSS-85-20		94	47	200	1.0	20	50	15	2
RSS-85-21		160	144	600	1.7	110	115	30	8
RSS-85-22		139	37	880	0.5	35	82	45	4
RSS-85-23		84	28	172	0.6	15	65	25	4
RSS-85-24		107	220	420	2.0	35	100	15	4
RSS-85-25		72	35	144	0.8	30	52	25	<2
RSS-85-26		64	46	168	0.4	10	23	10	2
RSS-85-27		100	38	152	0.4	15	23	10	<2
RSS-85-28		26	37	96	0.2	<5	5	65	<2
RR-85-01		2	24	78	<0.2	<5	3		<2
RR-85-02		40	29	25	5.4	<5	3		7
RR-85-03		320	13	20	0.5	<5	19		<2
RR-85-04		64	17	16	0.7	10	20		<2
RR-85-05		470	13	20	1.0	5	7		<2
RR-85-06		360	10	18	0.6	<5	13		<2

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Au PPB	As PPM	Hg PPB	Sb PPM
2	RR-85-07	7	5	8	<0.2	<5	3		<2
R2	RR-85-08	720	18	53	1.0	10	6		<2
R2	RR-85-09	7	19	32	<0.2	<5	3		4
2	RR-85-10	3	11	14	<0.2	<5	3		<2
2	RR-85-11	114	13	25	0.4	<5	5		<2
2	RR-85-12	132	14	88	0.4	<5	21		<2
2	RR-85-13	75	14	45	0.4	<5	20		4
R2	RR-85-14	14	6	12	<0.2	15	13		<2
R2	RR-85-15	11	180	23	3.0	25	35		4
2	RR-85-16	77	6	20	<0.2	<5	3		<2
R2	RR-85-17	50	110	20	2.2	15	4		7
	RR-85-18	8	4	8	<0.2	<5	3		<2
	RR-85-19	2	46	24	0.6	<5	4		<2
R2	RR-85-19A	95	25	52	0.6	5	9		<2
R2	RR-85-20	230	46	220	0.9	40	11		<2
R2	RR-85-21	150	25	20	0.6	5	20		4
R2	RR-85-22	103	8	60	<0.2	20	57		3
1	RR-85-23	600	28	25	6.2	10	16		21
1	RR-85-24	2000	32	54	26.0	200	170		=
R2	RR-85-25	32	12	76	<0.2	<5	30		<2
1	RR-85-26	360	28	44	0.8	5	3		<2
R2	RR-85-27	18	16	5	1.1	10	3		<2
R2	RR-85-28	22	11	52	0.3	<5	5		3
1	RR-85-29	360	18	105	0.4	10	6		10
R2	RR-85-30	59	20	33	0.4	5	52		<2
1	RR-85-31	6	11	14	0.2	<5	3		19
1	RR-85-32	72	33	68	0.7	15	30		<2
R2	RR-85-33	2	116	11	<0.2	<5	4		<2
R	RR-85-34 AND 35 COMP	30	23	36	1.0	5	5		<2
1	RR-85-50	110	17	45	0.9	10	6		<2
R2	RR-85-51	3	75	84	0.5	10	73		13
R	RR-85-52	195	700	720	>50.0	320	400		270
R2	RR-85-53	5	24	8	0.6	<5	6		<2
R2	RR-85-54	2	20	35	0.5	<5	5		<2
R	RR-85-55	70	4	10	0.5	5	2		2
R2	RR-85-56	9	16	35	0.8	<5	2		<2
R2	RR-85-57	10	32	12	5.8	40	3		<2

Bondar-Clegg & Company Ltd.
130 Pemberton Ave.
North Vancouver, B.C.
Canada V7P 2R5
Phone: (604) 985-0681
Telex: 04-352667

BONDAR-CLEGG

Certificate of Analysis

REPORT: 625-1586 (COMPLETE)

REFERENCE INFO:

CLIENT: AURUM GEOLOGICAL CONSULTANTS INC.
PROJECT: 85-105D-01

SUBMITTED BY: H KEYSER
DATE PRINTED: 22-JUL-85

ORDER	ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Ag Silver	1	0.01 OPT		

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
R ROCK OR BED ROCK	1	2 -150	1	AS RECEIVED, NO SP	1

REPORT COPIES TO: AURUM GEOLOGICAL
BARKER CREEK PLACER EXP.

INVOICE TO: AURUM GEOLOGICAL

Bondar-Clegg & Company Ltd.
130 Pemberton Ave.
North Vancouver, B.C.
Canada V7P 2R5
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BONDAR-CLEGG

Certificate of Analysis

REPORT: 625-1586

PROJECT: 85-105D-01 PAGE 1

AMPLE NUMBER	ELEMENT UNITS	Ag OPT
2 RR-85-52		4.29

APPENDIX B

STATEMENT OF COSTS
Surface Work: FOUR F 1-64 and 67-109 Claims

Operator: Havilah Gold Mines Ltd.
Consultant: Aurum Geological Consultants Inc.

1.	Analytical Costs		
	Analyses by Bondar-Clegg and Co. Ltd., Whitehorse/Vancouver:		
	34 stream sediment samples @ 26.15/sample (Cu, Pb, Zn, Ag, Au, As, Hg, Sb)	$ 889.10	
	150 soil samples @ 10.65/sample (Au, Ag, Pb)	1,597.50	
	43 rock samples @ 24.00/sample (Au, Ag, Cu, Pb, Zn, As, Sb)	1,032.00	
	20 rock samples @ 13.00/sample (Au, Ag, Pb)	260.00	
	1 rock sample @ 26.50/sample (Au, Ag, Pb, As, Hg, Sb)	26.50	
	1 silver assay @ 7.50	7.50	$3,812.60
2.	Helicopter Costs		
	May 24, June 3, 4, 7, 8 and 9, 1986: Hughes 500D on casual charter from Frontier Helicopters at the Wheaton River airstrip; truck access was used during the 1985 field season:		
	2.55 hours @ 440/hr	$1,122.00	
	Fuel: 72.1 litres @ 80¢/litre	57.60	
	234 litres @ 75¢/litre	175.50	1,355.10
3.	Labour Costs		
	Roger Hulstein: geological mapping, geochemical sampling (1985): 5 days @ 175.00/day	$ 875.00	
	Harmen Keyser: geological mapping, geochemical sampling, data compilation (1985): 7 days @ 175.00/day	1,225.00	
	Harmen Keyser: geological mapping, geochemical sampling, data compilation, expediting and report writing (1986): 6.5 days @ 160.00/day	1,040.00	
	Tom Garagan: geological mapping, geochemical sampling, data compilation (1986): 4.5 days @ 200.00/day	900.00	
	Pat Garagan: geological mapping, geochemical sampling, data compilation (1986): 5.5 days @ 150.00/day	825.00	
	Darren David: prospecting, geochemical sampling, map preparation (1986): 6 days @ 105.00/day	630.00	5,495.00
	Subtotal (carry forward)		$10,662.70

Subtotal brought forward			$10,662.70
4. Camp Costs			
Camp and cook supplied during 1986 season by MBW Surveys of Whitehorse @ 40.00/day; 1985 camp costs are estimated at 25.00/man day:			
1985: 10 man days @ 25.00		$250.00	
1986: 22.5 man days @ 40.00		900.00	1,150.00
5. Mobilization			
1985 mobilization provided to Havilah Gold Mines at Aurum's costs. Fixed mobilization charges of $200.00 each for T. Garagan and H. Keyser were invoiced (86-62) to Havilah Gold Mines from Aurum. One-way air fares for P. Garagan and D. David (334.30 and 294.80 respectively). The costs for assessment are divided up between the FOUR F 1-64, 67-109 (107 claims), the MH 1-7 claims, the PCG 1-12 claims and the NEW 1-39 claims (total 165 claims). Therefore:			
Total mobilization costs for FOUR F claims = $1,029.10 x 107/165			667.36
6. Truck Rental			
Nissan 4x4 provided by Aurum to Havilah @ 50.00/day: 1985 and 1986: 13 days @ 50.00/day			650.00
7. Supplies and Map Reproductions			
1985: Sample bags, flagging, tape and reprographics		$700.00	
1986: Gas, maps, field equipment on Aurum invoice to Havilah	$343.00		
Bondar-Clegg sample bags and acid	117.75		
	$461.35		
Costs for 1986 divided up between above-mentioned four claim groups = 461.35 / 107/165		299.18	999.18
TOTAL COSTS of surface work for assessment purposes			$14,129.24

STATEMENT OF COSTS
Physical Work: FOUR F 103, Trenches 1-5

1.	**Analytical Costs**		
	Analyses by Bondar-Clegg and Co. Ltd., Whitehorse:		
	10 soil samples @ 10.65/sample (Au, Ag, Pb)	$106.50	
	28 rock samples @ 14.00/sample (Au, Ag, Pb, Cu)	392.00	$ 498.50
2.	**Helicopter Costs**		
	June 4 and 5, 1986: Hughes 500D on casual charter from Frontier Helicopters, Wheaton River strip:		
	0.55 hours @ 440.00/hr	$242.00	
	Plus fuel: 66 litres @ 75¢/litre	49.50	291.50
3.	**Labour Costs**		
	H. Keyser: blasting, mapping, sampling: 2 days @ 160.00/day	$320.00	
	T. Garagan: mapping, sampling: 1 day @ 200/day	200.00	
	D. David: blasting, mapping, sampling: 1 day @ 105.00/day	105.00	625.00
4.	**Camp Costs**		
	Camp and cook supplied by MBW Surveys of Whitehorse @ 40.00/mandays:		
	4 mandays @ 40.00/manday		160.00
5.	**Supplies**		
	Explosives purchased from Yukon Explosives, Whitehorse		415.71
	TOTAL COSTS of physical work for assessment purposes		$1,990.71

LEGEND

LITHOLOGIES

Tertiary

Tr	Rhyolite. Light colored, aphanitic to fine grained-sub porphyritic. Sometimes flow banded. Pyrite is a common constituent.
Ta	Basaltic andesite dykes

Mesozoic

Cretaceous (?)

Kgd	Granodiorite

Jurassic (?)

RELATIVE AGES UNCERTAIN

JL	Laberge Group. Argillite, limestone, quartzite, and metamorphic equivalents.
Mv	Basaltic andesite breccias, flows and minor associated fine grained sediments.

SYMBOLS

Symbol	Meaning
(double line)	Dyke; not necessarily to scale
(strike symbol)	Attitude of structure / bedding
(joint symbol)	Attitude of jointing
G	Gossanous area
X	Rock sample; outcrop
+	Rock sample; float or scree
⊙	Soil sample
O	Stream sediment sample
RS-01/5,0.3	Sample number / Au ppb, Ag ppm, Pb ppm, As ppm, Sb ppm, Hg ppb : note "-" not analyzed (Pb, As, Sb, Hg plotted on selected samples only)
(dashed line)	Assumed lithologic contact
4000	Elevation contour ; interval 100 ft.
(arrowed line)	Creek indicating flow direction
(dashed line)	Road

NOTES

- ✱ composite sample.
- Locations based on topography and 1:40,000 scale airphotos.
- Topography modified from NTS 105D/6E

HAVILAH GOLD MINES LTD.

RED RIDGE PROPERTY
WATSON RIVER AREA, YUKON

144

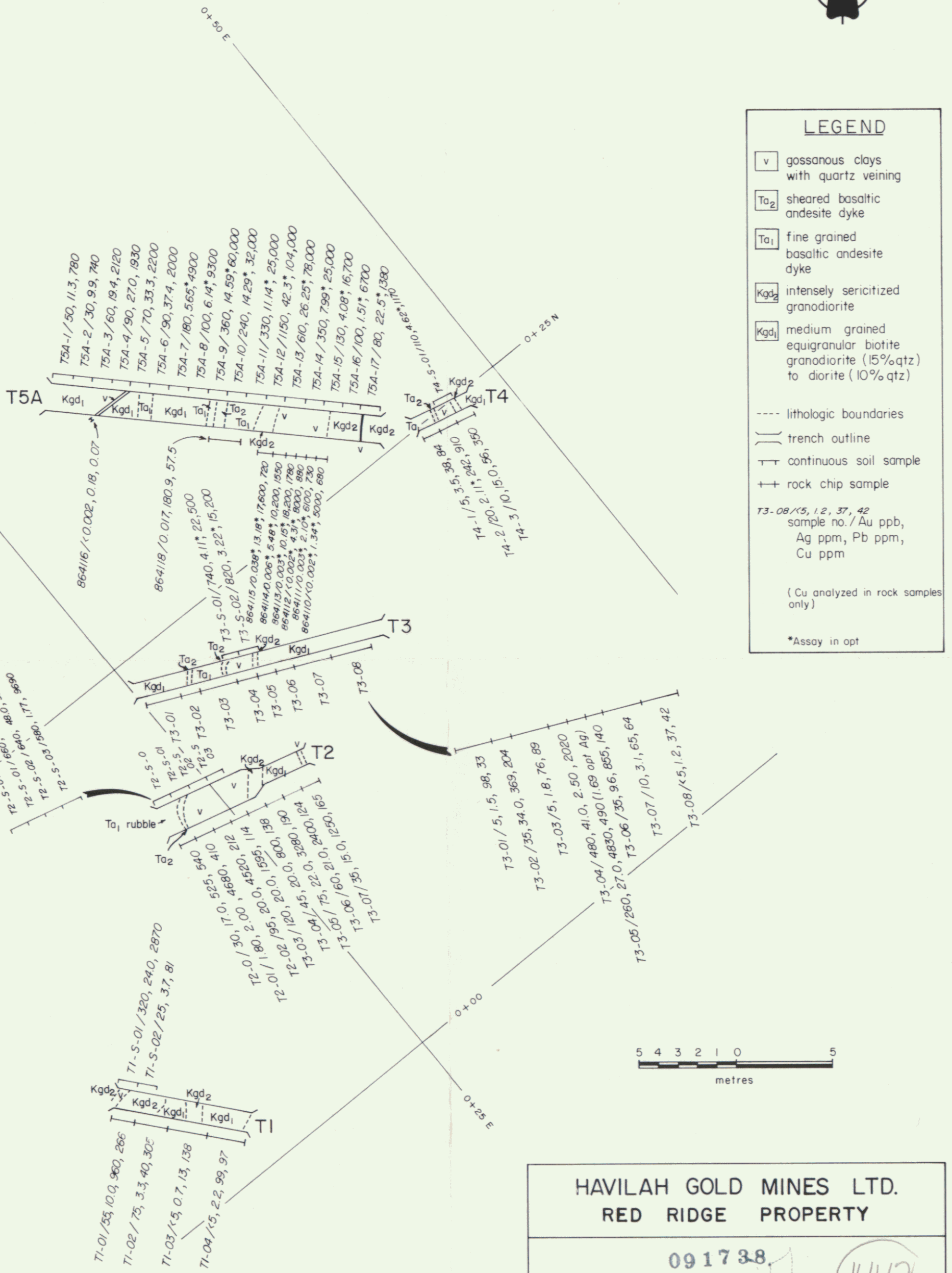
091738

GEOLOGY AND GEOCHEMISTRY

0 200 400 600 800 1000
METRES

AURUM GEOLOGICAL CONSULTANTS INC.	AUGUST, 1986

NTS: 105D/6	Drawn by: L.C.	Scale 1 : 10,000	FIGURE: 3



LEGEND

- v — gossanous clays with quartz veining
- Ta_2 — sheared basaltic andesite dyke
- Ta_1 — fine grained basaltic andesite dyke
- Kgd_2 — intensely sericitized granodiorite
- Kgd_1 — medium grained equigranular biotite granodiorite (15% qtz) to diorite (10% qtz)
- ---- lithologic boundaries
- trench outline
- continuous soil sample
- rock chip sample
- T3-08/<5, 1.2, 37, 42 — sample no. / Au ppb, Ag ppm, Pb ppm, Cu ppm
- (Cu analyzed in rock samples only)
- *Assay in opt

Note - locations based on chain and compass surveying

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1442

EAST ZONE
TRENCH PLAN

Aurum Geological Consultants Inc.			AUGUST, 1986
NTS 105 D/6	Drawn by N.H.	Scale 1:200	FIGURE 4