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ASSESSMENT REPORT 091855

GEOLOGICAL MAPPING/GEOCHEMICAL SAMPLING
NEW 1-39 CLAIMS
Whitehorse Mining District
NTS 105-D-6

May 29 - June 6, 1986

091855

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 $ 5759.25.

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

ASSESSMENT REPORT

GEOLOGICAL MAPPING AND GEOCHEMICAL SAMPLING
NEW 1-39 CLAIMS
(YA82083-82112 and YA92664-92671)
Whitehorse Mining District

NTS 105-D-6
Latitude 60°18'N
Longitude 135°02'W
May 29 - June 6, 1986

for
HAVILAH GOLD MINES LTD.
208-260 West Esplanade, North Vancouver, B.C. V7M 3G7

by
T. GARAGAN
AURUM GEOLOGICAL CONSULTANTS INC.
1614-675 West Hastings Street, Vancouver, B.C. V6B 4W3

TABLE OF CONTENTS

	Page
INTRODUCTION	1
CLAIM OWNERSHIP	1
LOCATION, ACCESS AND PHYSIOGRAPHY	1
HISTORY	1
REGIONAL GEOLOGY	2
PROPERTY GEOLOGY	2
MINERALIZATION AND ALTERATION	3
EXPLORATION	3
DISCUSSION	3
REFERENCES	4

List of Figures

Figure 1: Location Map: NEW 1-39 Claims
Figure 2: Claim Map: NEW 1-39 Claims
Figure 3: NEW 1-39 Claims: Geology and Geochemistry

List of Appendices

Appendix A: Analytical Results and Methods
Appendix B: Aurum Personnel
Appendix C: Statement of Costs
Appendix D: Statement of Qualifications

INTRODUCTION

This report describes the exploration work done for assessment purposes as carried out by AURUM GEOLOGICAL CONSULTANTS INC. on the NEW 1-39 claims (May 29-31 and June 6, 1986). The exploration was performed at the request of L. Bratvold of Havilah Gold Mines Ltd. This work program consisted of stream sediment and talus fine sampling, prospecting and geological mapping. Anomalous gold, silver and lead values were found in talus fine samples taken on the south side of the property.

CLAIM OWNERSHIP

The NEW 1-39 claims consist of 39 contiguous quartz claims located within Claim Sheet 105-D-6 of the Whitehorse Mining District. The claims are currently owned by Barker Creek Placer Exploration Corporation of Vancouver but will soon be transferred to Havilah Gold Mines.

LOCATION, ACCESS AND PHYSIOGRAPHY

The NEW claims are located in the Whitehorse Mining District (Claim Sheet 105-D-6, latitude 60°18'N and longitude 135°02'W), approximately 40 km southwest of Whitehorse (Figure 1). The property is located on Folle Mountain and is bordered by the Wheaton River to the southeast, Annie Lake to the east and Idaho Hill to the north (Figure 2).

Access to the property is by helicopter from Whitehorse or from a seasonal base (Frontier Helicopters) located at the Wheaton River strip 8 km to the southwest. Alternative access is by the Annie Lake road which cuts along the southern border of the property between the Wheaton River and the base of Folle Mountain.

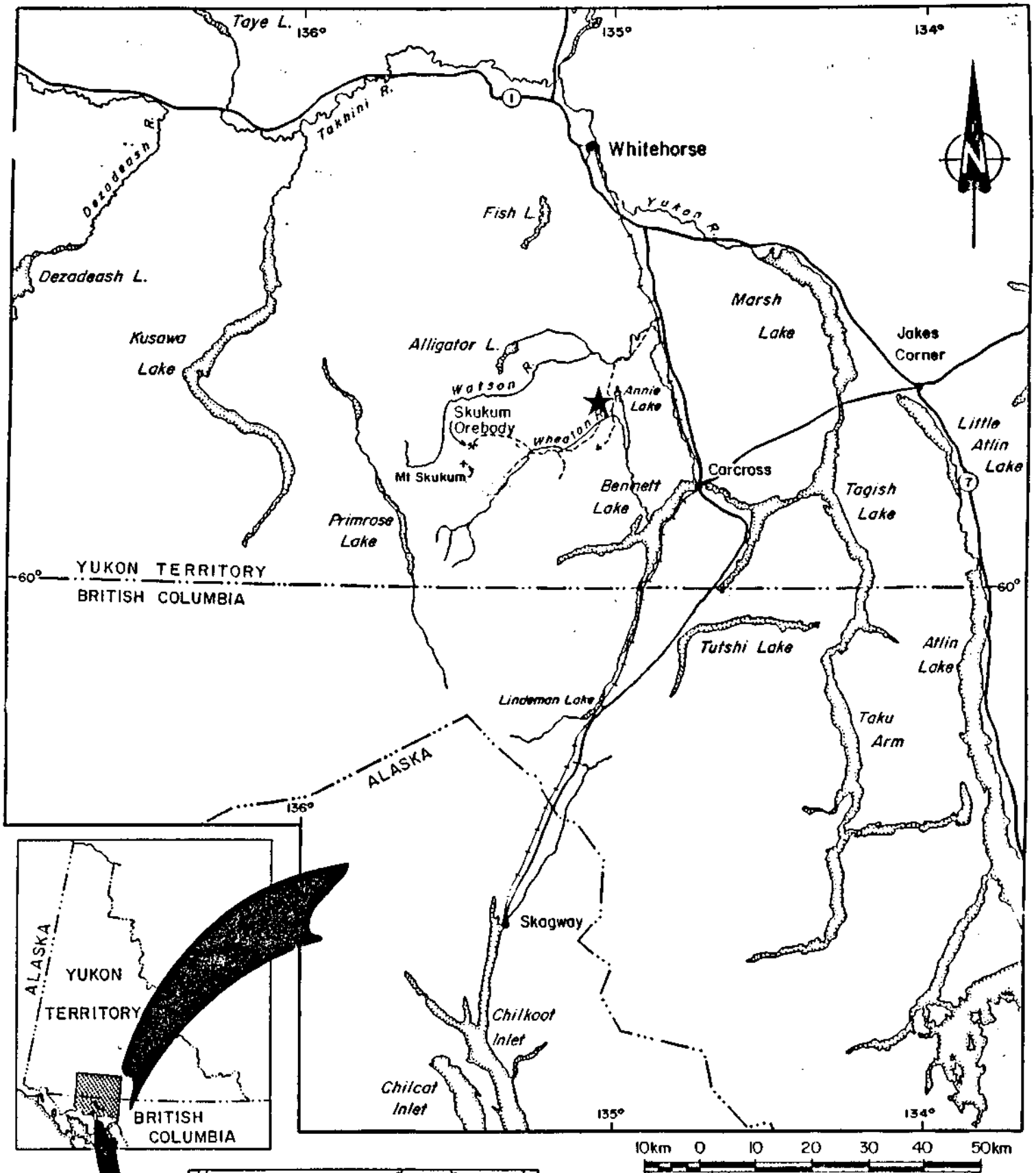
The property is underlain by Folle Mountain which has a broad ridge with steep slopes. The altitude varies between 850 m in the Wheaton River valley to 1850 m at the top of Folle Mountain. The slopes are mainly talus covered with sparse vegetation.

HISTORY

Exploration in the Wheaton River area commenced during the early 1900's with the discovery of silver-lead and free gold-telluride bearing quartz veins on Idaho and Gold Hills, respectively (Cairnes, 1906).

Activity in the area was sporadic from the 1920's to the 1970's. A dramatic increase in activity occurred in 1983 with the discovery of the Mt. Skukum epithermal gold deposit (164,000 tons at 0.73 oz/ton gold and 0.63 oz/ton silver. Total Erickson, 1985 annual report).

The NEW claims were originally staked in 1982 as the OLLIE claims (YA61020-YA61044) by Du Pont of Canada Exploration Limited to cover an area containing lead, zinc and silver stream sediment anomalies. The NEW 1-39 claims were staked in June 1986 to cover the same ground.



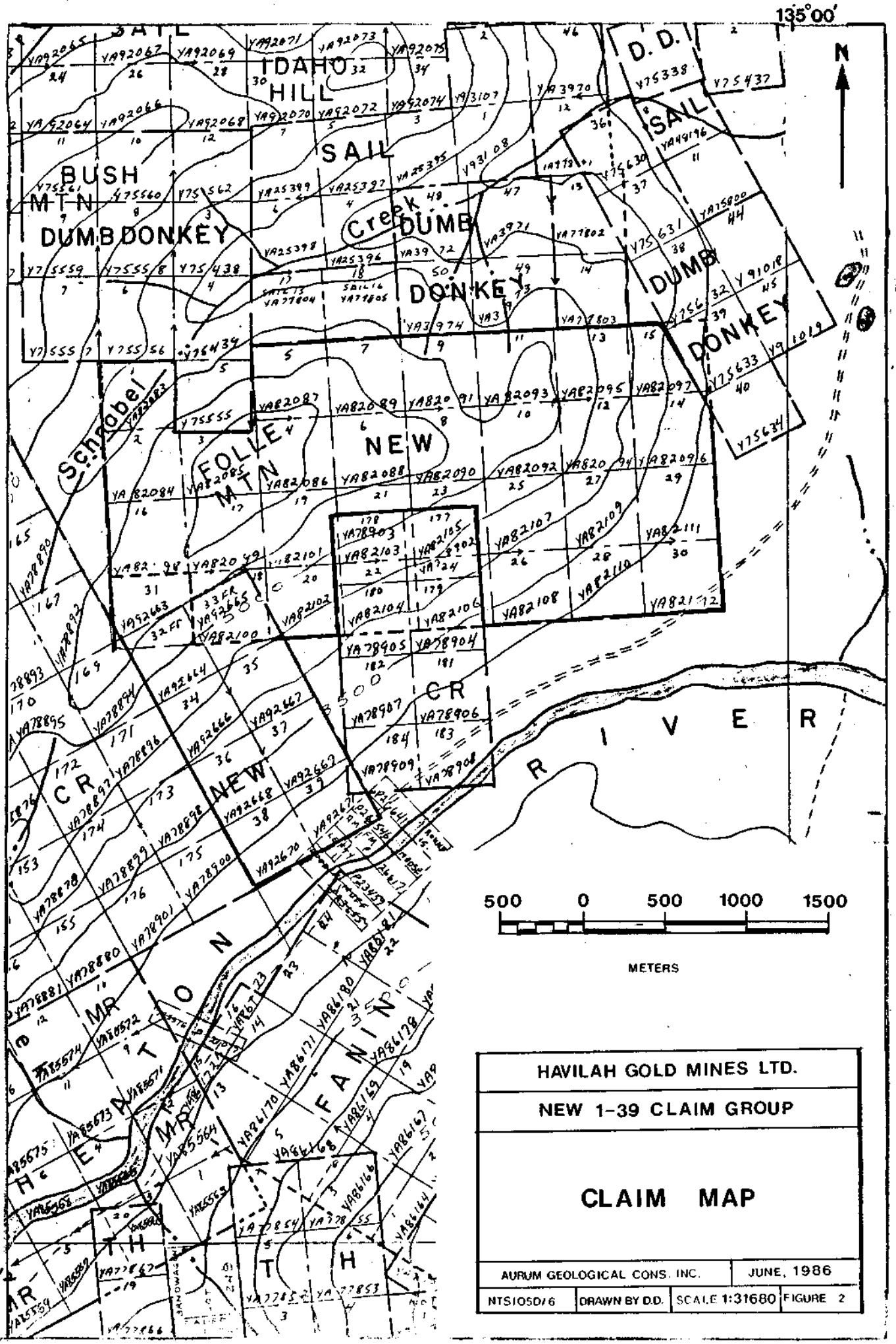
HAVILAH GOLD MINES LTD.

NEW 1-39 Claims

Figure 1:

LOCATION

Aurum Geological Consultants Inc. | January, 1986



HAVILAH GOLD MINES LTD.			
NEW 1-39 CLAIM GROUP			
CLAIM MAP			
AURUM GEOLOGICAL CONS. INC.			JUNE, 1986
NTS 105D/6	DRAWN BY D.D.	SCALE 1:31680	FIGURE 2

REGIONAL GEOLOGY

The NEW claims are situated near the eastern margin of the Coast Plutonic complex. The regional geology is described by Wheeler (1961) and Lambert (1974).

The Coast Plutonic complex consists of foliated and non-foliated granitoid rocks which intrude and underlie (roof pendants) low-grade metamorphosed sediments and volcanics of the Mesozoic Whitehorse-Nechako trough and quartzites, schists and gneisses of the Early Paleozoic Yukon Group.

Subaerial rhyolite and andesite flows and pyroclastics of the Tertiary Skukum Group unconformably overlie the above units. Late stage rhyolite and basaltic-andesite dykes and plugs related to the Skukum volcanics cut the Skukum Group and surrounding rocks.

The deposition of the Quaternary Miles Canyon flood basalts followed by glaciation and present-day erosion are the most recent geological events in the region.

The structural trend in the Wheaton area is northwest with the probable exception of northeast trending Tertiary faulting.

PROPERTY GEOLOGY

Quartz diorite to granodiorite of the Coast Plutonic complex intrude Jurassic clastic sediments and Mesozoic volcanics on the NEW claims. A Tertiary rhyolite plug intrudes the quartz diorite and the volcanics at the west end of the property.

The oldest units on the property consist of rusty weathering hornfelsed siltstones and greywackes of the Jurassic Laberge Group (Wheeler, 1961). The hornfels forms resistant ridges and extensive talus slopes on the east half of the property. A thin unit of chert and quartz pebble conglomerate unconformably overlies the siltstones and greywackes on the north central part of the claims. The conglomerate appears to belong to the Jurassic Tantalus formation (Wheeler, 1961).

A major fault (presumed normal fault) separates the Jurassic sediments from the basalt and andesite flows and pyroclastics of Wheeler's (1961) volcanics of unknown age (Unit A). The volcanics consist of massive to feldspar and augite porphyritic basaltic and andesitic flows with interbedded ash tuffs and lithic lapilli tuffs. The volcanics form resistant cliffs, are fresh looking (occasional epidote veinlet) and are presumed to be younger than the sediments.

Medium-grained biotite-hornblende quartz diorite to granodiorite of the Coast Plutonic complex intrude the volcanics and sediments. The intrusive complex outcrops in gullys and hornfels on the lower slopes of Folle Mountain and probably underlies the whole mountain.

A late stage fine-grained Tertiary rhyolite plug related to the Skukum volcanics intrudes the basaltic volcanics and the Coast Plutonic complex on the west end of the claims. Several fine-grained rhyolite dykes and porphyritic andesite dykes related to the Skukum Group cut all other units on the property.

MINERALIZATION AND ALTERATION

Only one zone of potential mineralization has been found on the property to date. The zone is located in the gully situated immediately east of the CR 177-184 claims. A 2-3 m wide zone of silicification, brecciation and quartz veining enclosed within a 5 m wide zone of clay altered granodiorite is exposed for at least 20 m within the gully. No sulphides were noticed, but the vein zone occurs in the same area where Du Pont obtained anomalous lead (up to 1500 ppm), zinc (up to 990 ppm) and silver (up to 3.8 ppm) results in three soil samples (Strain and Neelands, 1982). The alteration and quartz vein zone trends 070°/45°S and has not yet been delineated along-strike.

Several other small quartz veins and breccia zones have been found within the rhyolite plug, volcanics and hornfels zone.

EXPLORATION

Exploration on the property consisted of prospecting and soil, stream sediment and rock sampling. Stream sediments were collected from every creek draining the south and east sides of the property and soil samples (talus fines) were collected at 25 m intervals on two lines (25 m vertically apart) in the area of Du Pont's soil anomaly. A total of eight rock samples and 47 soil and stream sediment samples were collected on the property. All samples were sent to Bondar-Clegg in Vancouver for gold, silver and lead analyses. Five rock samples were also analyzed for mercury, antimony and arsenic, and the soil and stream sediment samples were additionally analyzed for arsenic.

Several talus fine samples taken in the area of Du Pont's soil anomaly (clay altered and veined granodiorite) contain anomalous lead and silver. Geochemical values range up to 880 ppm lead and 2.5 ppm silver with several samples containing greater than 200 ppm lead and 1 ppm silver. In addition, one soil sample taken in the same area contained 960 ppb gold. More detailed soil and rock sampling is required in this area. Geochemical values in other samples taken on the property are low.

The sample numbers are listed in Appendix A and are plotted in Figure 3.

DISCUSSION

The NEW claims are underlain by a sequence of Mesozoic sediments and volcanics which have been cut by Cretaceous and Tertiary intrusions. The property was originally staked to cover an area of anomalous silver in stream sediments thought to be related to Tertiary intrusions. The source of the anomaly has not been found, but a zone of clay altered granodiorite with silicification and quartz veining was found and sampled.

Talus fine samples taken in this area were found to be anomalous in lead (up to 880 ppm), silver (up to 2.5 ppm) and gold (one sample 960 ppb). The results confirm Du Pont's anomaly and are very encouraging considering the wide sample spacing (25 m). More detailed soil and rock sampling should be carried out in this area and the alteration and vein zone should be mapped in detail.

REFERENCES

Cairnes, D. D., 1906: Explorations in a portion of the Yukon South of Whitehorse. In Bostock, H. S., 1957: Yukon Territory. Selected field reports of the Geological Survey of Canada, 1898 to 1933. G.S.C. Memoir 284.

Lambert, M. B., 1974: The Bennett Lake Cauldron Subsidence Complex, British Columbia and Yukon Territory. G.S.C. Bulletin 227.

Strain, D. M. and Neelands, J. T., 1982: Du Pont of Canada Exploration Ltd: Assessment report for geological and geochemical exploration on the Ollie Project.

Total Erickson 1985 Annual Report.

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

Appendix A:

ANALYTICAL RESULTS AND METHODS

AURUM GEOLOGICAL CONSULTANTS INC. Property: NEW claims

Sample Type	Sample No.	Chemical Analysis			
Stream sed. and soil	NSS-01	Au: <5	Ag: 0.4	Pb: 75	As: 3
Ditto	NSS-02	Au: <5	Ag: 0.3	Pb: 25	As: 5
Ditto	NSS-03	Au: <5	Ag: 0.4	Pb: 77	As: 20
Ditto	NSS-04	Au: 10	Ag: 0.8	Pb: 300	As: 50
Ditto	NSS-05	Au: 40	Ag: 1.0	Pb: 24	As: 80
Ditto	NSS-06	Au: <5	Ag: 2.5	Pb: 300	As: 30
Ditto	NSS-07	Au: <5	Ag: 0.3	Pb: 32	As: 10
Ditto	NSS-08	Au: <5	Ag: 0.3	Pb: 39	As: 7
Ditto	NSS-09	Au: <5	Ag: 0.7	Pb: 125	As: 22
Ditto	NSS-010	Au: <5	Ag: 0.7	Pb: 61	As: 57
Ditto	NSS-011	Au: <5	Ag: 0.2	Pb: 17	As: 13
Ditto	NSS-012	Au: <5	Ag: 0.7	Pb: 300	As: 20
Ditto	NSS-013	Au: <5	Ag: 1.8	Pb: 280	As: 36
Ditto	NSS-014	Au: <5	Ag: 0.9	Pb: 340	As: 20
Ditto	NSS-016	Au: <5	Ag: 1.6	Pb: 650	As: <2
Ditto	NSS-017	Au: <5	Ag: 0.2	Pb: 42	As: <2
Ditto	NSS-018	Au: <5	Ag: 0.2	Pb: 22	As: 5
Ditto	NSS-019	Au: <5	Ag: 0.2	Pb: 18	As: 4
Ditto	NSS-020	Au: <5	Ag: 0.4	Pb: 27	As: 5
Ditto	NSS-021	Au: 5	Ag: 0.5	Pb: 32	As: 78
Ditto	NSS-022	Au: <5	Ag: 0.8	Pb: 60	As: 30
Ditto	NSS-023	Au: 20	Ag: 0.4	Pb: 20	As: 10
Ditto	NSS-024	Au: 10	Ag: 0.5	Pb: 30	As: 36
Ditto	NSS-025	Au: 5	Ag: 0.8	Pb: 95	As: 30
Ditto	NSS-026	Au: -	Ag: 1.4	Pb: 110	As: 33
Ditto	NSS-027	Au: 25	Ag: <0.2	Pb: 18	As: 2
Ditto	NSS-028	Au: <5	Ag: 0.2	Pb: 12	As: <2
Ditto	NSS-029	Au: <5	Ag: 2.7	Pb: 330	As: 22
Ditto	NSS-030	Au: 5	Ag: 1.2	Pb: 280	As: 33
Ditto	NSS-031	Au: <5	Ag: 0.5	Pb: 20	As: <2

Appendix A (cont'd)

ANALYTICAL RESULTS AND METHODS

AURUM GEOLOGICAL CONSULTANTS INC. Property: NEW claims

Sample Type	Sample No.	Chemical Analysis									
Stream sed. and soil	NSS-032	Au: 5	Ag: <0.2	Pb: 10	As: <2						
Ditto	NSS-033	Au: <5	Ag: 0.6	Pb: 28	As: 6						
Ditto	NSS-050	Au: <5	Ag: 1.2	Pb: 140	As: 12						
Ditto	NSS-051	Au: <5	Ag: 0.8	Pb: 92	As: 20						
Ditto	NSS-052	Au: <5	Ag: 0.7	Pb: 52	As: 20						
Ditto	NSS-053	Au: <5	Ag: 0.5	Pb: 50	As: 10						
Ditto	NSS-054	Au: <5	Ag: 0.4	Pb: 54	As: 12						
Ditto	NSS-055	Au: <5	Ag: 0.3	Pb: 46	As: 6						
Ditto	NSS-056	Au: <5	Ag: 0.2	Pb: 40	As: 7						
Ditto	NSS-057	Au: 15	Ag: 0.2	Pb: 40	As: 9						
Ditto	NSS-058	Au: 960	Ag: 0.6	Pb: 58	As: 20						
Ditto	NSS-059	Au: 5	Ag: 0.9	Pb: 114	As: 30						
Dit	NSS-060	Au: 5	Ag: 2.5	Pb: 550	As: 20						
Ditto	NSS-061	Au: <5	Ag: 0.6	Pb: 123	As: 21						
Ditto	NSS-062	Au: <5	Ag: 0.4	Pb: 280	As: 20						
Ditto	NSS-063	Au: <5	Ag: 0.4	Pb: 35	As: 21						
Ditto	NSS-064	Au: <5	Ag: 1.4	Pb: 880	As: 30						
Ditto	FFSS-085	Au: 20	Ag: 0.9	Pb: 35	As: -						
Rock	APN 1	Au: <5	Ag: 0.2	Pb: 10			As: 10	Sb: <2	Hg: <5		
Rock	APN 2	Au: <5	Ag: 0.4	Pb: 10			As: 5	Sb: 2	Hg: 5		
Rock	ATN 1	Au: <5	Ag: <0.2	Pb: 16			As: 5	Sb: <2	Hg: <5		
Rock	ATN 2	Au: <5	Ag: <0.2	Pb: 12			As: 40	Sb: <2	Hg: <5		
Rock	ATN 3	Au: <5	Ag: 0.2	Pb: 24			As: 100	Sb: <2	Hg: <5		
Rock	ATN 4	Au: <5	Ag: <0.2	Pb: 27			As: -	Sb: -	Hg: -		
Rock	ATN 5	Au: <5	Ag: 0.2	Pb: 10			As: -	Sb: -	Hg: -		
Rock	86-4-3-01	Au: 5	Ag: 0.4	Pb: 26			As: -	Sb: -	Hg: -		
tream sed. nd soil	NSS-034	Au: 5	Ag: <0.2	Pb: 6							
Ditto	NSS-035	Au: 5	Ag: 1.2	Pb: 222							

Analytical Methods

Soil and stream sediment samples are dried and sieved to -80 mesh and a split is analyzed. Rock chip samples are pulverized and a split of the -200 mesh fraction is analyzed.

Gold analyses are by fire assay techniques but, after preparation of the bead, it is dissolved in acid and the gold content is determined by atomic absorption spectrophotometry.

Silver and lead analyses: the sample is dissolved in hot aqua regia and analyzed by atomic absorption spectrophotometry. Silver analyses require a correction for background.

Antimony analyses are by x-ray diffraction using a pressed pellet of pulverized rock.

Arsenic analyses are by perchloric-nitric acid digestion and colourimetric determination.

Mercury analyses are by flameless atomic absorption spectrophotometry after sample digestion.

Appendix B

AURUM PERSONNEL
1614-675 West Hastings Street,
Vancouver, B.C. V6B 4W3

T. GARAGAN, B.Sc.	Director, Geologist.	Project supervision, geological mapping, geochemical sampling, map and report preparation.
H. KEYSER, B.Sc.	Director, Geologist.	Geological mapping, geochemical sampling.
P. GARAGAN, B.Sc.	Geologist.	Geological mapping, geochemical sampling, map preparation.
D. DAVID	Geology Student.	Geochemical sampling.

Appendix C

STATEMENT OF COSTS
Surface work: NEW 1-39 Claims

1. Analytical Costs

Analyses by Bondar-Clegg Co. Ltd., Whitehorse and Vancouver:		
47 stream sediments and soil samples @ 14.40/ sample (Au, Ag, Pb, As)	$676.80	
5 rock samples @ 26.50/sample (Au,Ag,As,Pb,Hg,Sb)	132.50	
3 rock samples @ 13.00/sample (Au, Ag, Pb)	39.00	$ 848.30

2. Helicopter Costs

May 29, 30, June 6: Hughes 500D on casual charter from Frontier Helicopters at the Wheaton River airstrip:		
1.6 hours @ 440/hr	$704.00	
Fuel: 108 litres @ 80¢/litre	86.40	
84 litres @ 75¢/litre	63.00	853.40

3. Labour Costs

T. Garagan: geological mapping, geochemical sampling, expediting, report writing: 6.5 days @ 200/day	$1,300.00	
H. Keyser: geological mapping, prospecting, expediting: 3 days @ 160/day	480.00	
P. Garagan: geological mapping, geochemical sampling, data compilation: 5.5 days @ 150/day	825.00	
D. David: prospecting, geochemical sampling: 2 days @ 105.00/day	210.00	2,815.00

4. Camp Costs

Camp and cook supplied by MBW Surveys of Whitehorse @ 40.00/manday: 17 mandays @ 40.00		680.00

5. Mobilization

Fixed mobilization charge of 200.00 each for T. Garagan and H. Keyser (Aurum invoice 86-62)	$400.00	
One-way air tickets for P. Garagan (Calgary-Whitehorse: 334.30) and D. David (Vancouver-Whitehorse: 294.80)	~~629.10~~	94.55
	~~$1,029.10~~	
	400.00	
The costs for assessment are divided up between the NEW 1-39, PCG 1-12, FOUR F 1-64, 67-109 and MH 1-7 claims (total: 165); therefore, total mobilization costs for the NEW 1-39 claims = ~~1029.1~~ x 39/165		~~448.69~~ ~~243.24~~
	400.	
Subtotal - carry forward		~~$5,439.94~~ $5291.25

16

	Subtotal - brought forward		$5291.25 ~~$5,439.94~~
6.	Truck Rental		
	Nissan 4x4 pickup supplied by Aurum at a rate of 50~~$~~.00/day: 4 days x $50.00		200.00
7.	Supplies and Map Reproductions		
	Gas, maps, field equipment on Aurum invoice 86-62 to Havilah	$343.60	
	Bondar-Clegg sample bags and HCl	117.75	
		$461.35	
	Costs divided up between before-mentioned four claim groups = 39/165 x 461.35	$109.05	
	Base map preparation by Vancal Reproductions, Vcr.	34.55	
	Airphotos purchased from Thomson & Iles, Whitehorse, for the NEW claims and area: 25% x $500	125.00	268.60
	TOTAL COSTS of surface work for assessment purposes		~~$5,908.54~~ $5759.85

Appendix D

STATEMENT OF QUALIFICATIONS

I, THOMAS GARAGAN, hereby certify that:

1. I am a geologist with Aurum Geological Consultants Inc. of 1614-675 West Hastings Street, Vancouver, B.C. and that I caused to be performed the work described in this report.

2. I obtained a Bachelor of Science degree with Honours in Geology from the University of Ottawa, Ontario, in 1980.

3. I am a member of the Geological Association of Canada and the Mineralogical Association of Canada.

4. I have been engaged in mineral exploration and geological survey mapping on a full and part time basis for 8½ years, of which 5½ have been spent on mineral exploration programs in the Yukon Territory.

5. I have no interest in the claims or securities of Havilah Gold Mines Ltd., nor do I expect to obtain any.

DATED at Whitehorse, Y.T., this 17th day of July 1986.

Thomas Garagan,
Geologist.

135°02'

60°16'

Schnabel Creek

Dumb Donkey Claims

FFSS-85-1(85)
86430

JKT

Dumb Donkey Claims

NSS-030
NSS-031
NSS-032
NSS-029
NSS-033

35°
ATN-2,3

PUGH PEAK

JL

Trg

40°
50°

NSS-22

FOLLE MOUNTAIN

Mv

NSS-34
Trh
ATN-04

Samples W to E NSS-54 to 64
Samples E to W NSS-11 to 14 & NSS-50 to 53

ATN-1
NSS-10
NSS-06
APN-01
APN-02
NSS-07
NSS-09
NSS-08

CR Claims

NSS-21
NSS-04
NSS-03
NSS-20
NSS-19
NSS-18
New Claims
Mgd
NSS-24
NSS-23
NSS-25
NSS-26
NSS-28
NSS-27
New Claims

CR Claims
ATN-05

NSS-17
Trh
NSS-02
NSS-16
NSS-01

WHEATON RIVER

6500
6000
5500
5000
4500
4000
3500
3000

LEGEND

Tertiary

- Trh — Rhyolite dykes and dyke swarms
- Tra — Andesite dykes

Mesozoic to Late Tertiary?

- Mgd — Biotite hornblende Quartz diorite Granodiorite
- Mv — Unknown age; Basalt Andesite

Jurassic? and Cretaceous

- JKT — Tantalus; Arkose Siltstone Conglomerate Argillite

Jurassic

- JL — LABARGE GROUP Greywacke Arkose Quartzite Conglomerate Argillite Hornsfels

- Geological Contact (approximate)
- Fault (approximate)
- 35° Bedding, dyke trend (inclined)
- NSS-01 Talus fines sample location
- NSS-01 Stream sediment sample location
- APN-01 Rock sample location
- Claim post location
- Claim boundary (approximate; according to DIAND claim sheet 105 D-6)

N

0 100m 200m 300m 400m

AURUM GEOLOGICAL CONSULTANTS INC.
FOR
HAVILAH GOLD MINES

GEOLOGY AND GEOCHEMISTRY NEW CLAIMS

N.T.S. No: 105 D-6 091855

Mining District: Whitehorse

Scale: 1 : 10,000

Drawn by	Date	Figure
H.D.P.	86/06/17	3