

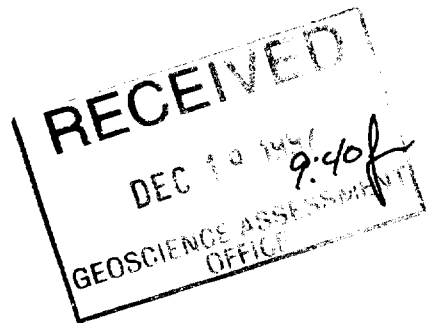


32D04NE2004 2.18032 MCVITTIE

010

**2.18032**

1996 Technical Report  
on the  
1996 Exploration Program  
on the  
Lac McVittie Joint Venture



Submitted by:  
Rodney Barber, B.Sc.  
Project Geologist  
Eastern Canada Exploration  
Royal Oak Mines Inc.

October, 1996



32D04NE2004 2.18032 MCVITTIE

010C

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## Introduction

The 1996 work program featured 1.9 km of new line cutting and 16.8 km of refurbishment of old lines. 19.7 km of Spectral IP were run and forms the basis of a separate report by J VX (1996). Geology on the new line cutting was mapped and 2 rock samples taken for 32 element ICP and gold analysis. As well, 38 samples of cut diamond drill core were taken for ICP and gold analysis.

## Location and Access

The Lac McVittie property is located in west-central McVittie township and is roughly bounded on three sides by the Misema River, and the Beaverhouse-Spectacle Lake drainage system. The claim group lies 3 km west of Larder Lake, 6 km north of Highway 66, and is accessible along the west boundary by the Fork Lake Road (Figure 1). Numerous trails and drill roads, as well as Spectacle, Moosehead and Beaverhouse Lakes provide access to the north and east portions of the property.

Access can also be had by the Beaverhouse Road which begins at the village of Dobie, Ontario, and winds its way to the Upper Beaver Mine site and Beaverhouse Lake. There it joins up with the northern limit of the Fork Lake Road across a set of rapids on the Misema River.

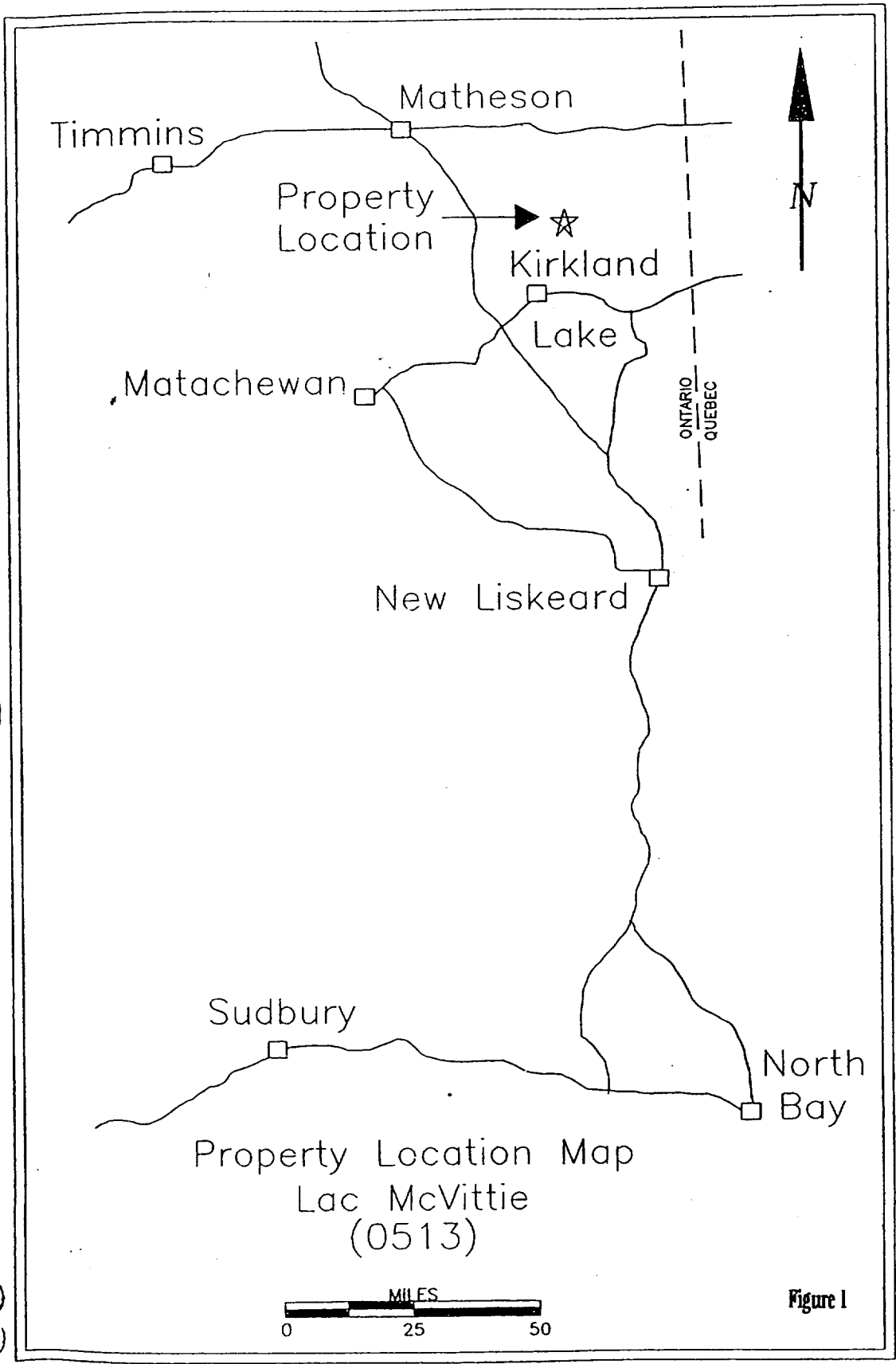
## Claim Status

The property consists of 58 contiguous, unpatented single-unit claims for a total of approximately 2320 acres. The Joint Venture hold the mineral rights to the claims. A number of surface rights only claims, held by others, overlap part of the property,

## Previous Work

A brief summary of previous work is as follows:

- 1967: Upper Canada Mines, magnetometer and EM surveys, diamond drilling, 2 holes
- 1980: Queenston Gold Mines Inc., diamond drilling 4 holes
- 1985-88: Lac Minerals Ltd., airborne VLF surveys, magnetometer survey, diamond drilling, 8 holes total 4,644 ft, geological mapping.
- 1989-91: Pamorex Minerals Ltd., magnetic and HEM surveys, diamond drilling, 6 holes total 5,168 ft, stripping and trenching, 3 sites



Property Location Map  
Lac McVittie  
(0513)

Figure 1

# Katrine Tp.

MUNICIPALITY OF LARDER LAKE

Gauthier Tp.

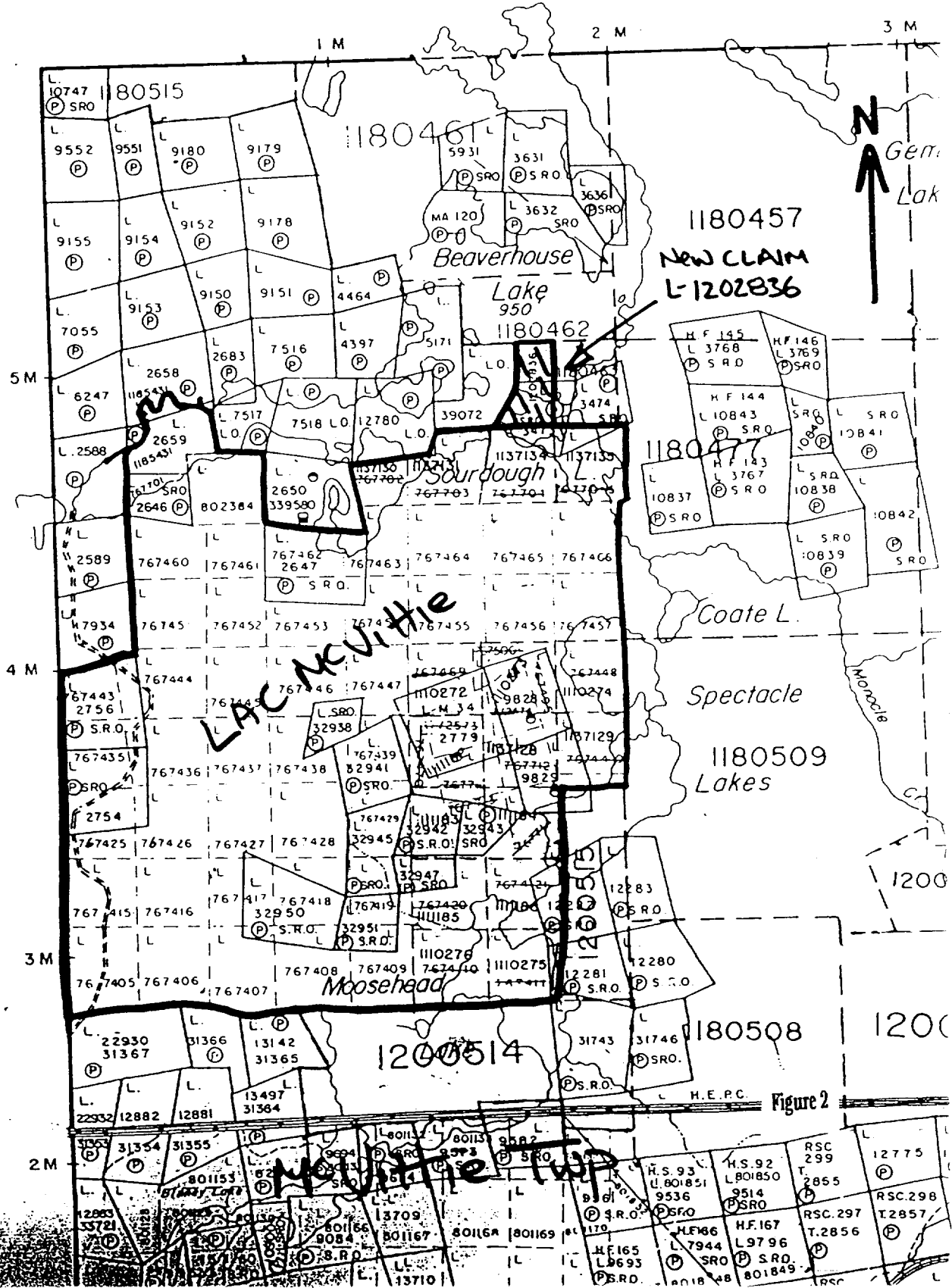


Figure 2

- 1993-94: Sudbury Contact Mines Ltd., limited geological mapping, reverse circulation drilling (22 holes on the Upper Beaver and Lac McVittie properties), limited magnetic and Induced Polarization surveys, diamond drilling, 5 holes total 631.13m (2,070.6ft).
- 1994: Royal Oak Mines Ltd., limited IP survey, 5 diamond drill holes for 5354.4 feet.

## Regional Geology

Pressacco (1994) describes the regional geology as follows:

“The stratigraphy in the eastern portion of the Abitibi Belt in Ontario has been subdivided into two supergroups by Jensen and Langford (1985) - see Figure 3 and Table 1. The two supergroups represent successive volcanic cycles from ultramafic komatiitic volcanism to acid calc-alkalic volcanism. Each cycle is topped by a dominantly sedimentary-tuffaceous sequence which reflects relative quiescence in volcanic activity.

The tectonic regime in which the majority of these rocks are located is one of regional subsidence. The formation of a broad, east-trending synclinal basin is attributed to this subsidence. The Destor-Porcupine Fault Complex forms the north boundary of this basin, and south side is marked by the Larder Lake Fault Complex forms the north boundary of this basin, and the south side is marked by the Larder Fault Complex.

Late intrusives locally dissect the volcanic/sedimentary stratigraphy. Compositionally, these intrusive rocks range from ultramafic, pyroxenite, diabase and lamprophyre to diorite, granite and syenite. The mafic and ultramafic varieties tend to be found as sills and/or dikes, whereas the intermediate and felsic varieties form as stocks or batholiths.

The Kirkland Lake gold mines are hosted by the Timiskaming Group which is the upper alkalic part of the second cycle. It is comprised of both volcanic, intrusive and sedimentary rocks. Gold mineralization is associated with a steeply dipping, easterly trending structural discontinuity known as the Larder Lake Break. In the Kirkland Lake area the Larder Lake Break is at or close to the south edge of the Timiskaming Group (Coad, 1992).”

## Local Geology

The property covers the folded contact between the Kinojevis and Gauthier Groups, forming the Spectacle Lake Anticline. The Kinojevis Group consists of iron and magnesium tholeiitic, massive and pillowed mafic volcanics. The younger Gauthier

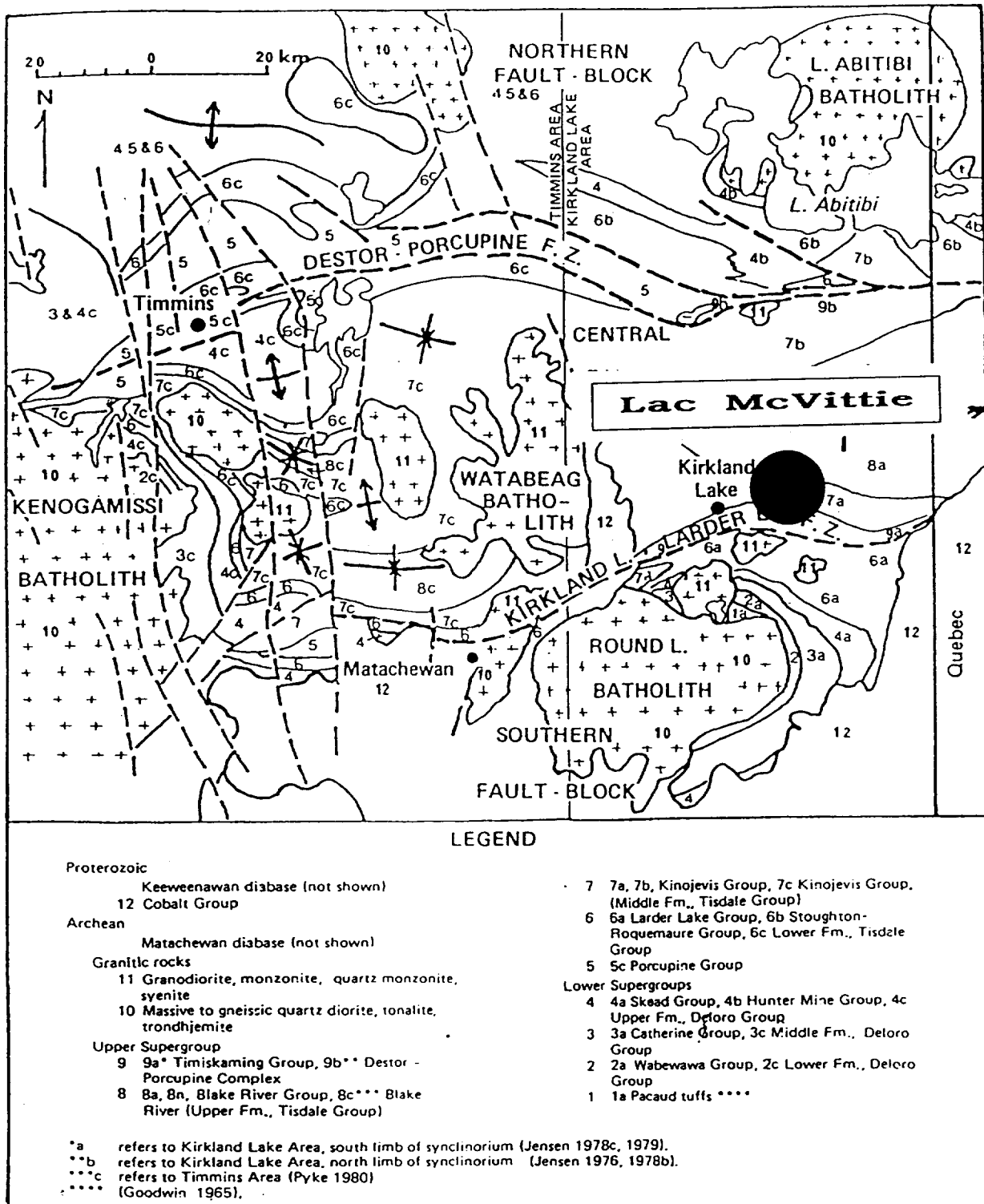


Figure 3 : Geological map of the Timmins - Kirkland Lake area.

**TABLE 1**

**STRATIGRAPHY IN EASTERN ABITIBI BELT**

**UPPER SUPERGROUP**

TIMISKAMING GROUP

BLAKE RIVER GROUP

KINOJEVIS GROUP

STOUGHTON-ROCQUEMAURE GROUP

**LOWER SUPERGROUP**

PORCUPINE GROUP

HUNTER MINE GROUP (SKEAD GROUP EQUIVALENT)

CATHERINE GROUP

WABEWAWA GROUP

\* after Jensen and Langford, 1985



Group consists of intermediate to felsic, calc-alkaline pyroclastics, including ash tuffs to agglomerates, with some conglomerate sections.

## **Summary of 1996 Program**

The bulk of the work performed in 1996 was taken up by the IP survey, reported separately (JVX, 1996). The geology of the new Linecutting was mapped and found to consist of Kinojevis Group mafic volcanics intruded by syenite and diabase. Two grab samples were taken and assayed 10 ppb and <5ppb Au, respectively. The ICP results are shown in Appendix 2.

Portions of holes LM 94-6, LM 94-7, and LM 91-3 were relogged and sampled at Royal Oak Mines Schumacher facility. This was to follow-up on anomalous gold values from "composite" samples and/or favourable geology. This resulted in an assay of 2020 ppb Au from 717 to 719.8 feet in hole LM 94-7. The same hole returned 316 ppm Cu and 31 ppb Au from 741.5 to 742.5, from a ½ inch-wide magnetite-chalcopyrite stringer. These results are encouraging considering that the recent I.P. survey has defined an anomaly which continues for another 1200 feet to the east of this drill hole. Also, this style of mineralization is similar to that found at the Upper Beaver Mine.

## **Conclusions and Recommendations**

Resampling of previously drilled core has resulted in the discovery of a new gold occurrence on the property, 2020 ppb Au/2.8 feet in hole LM94-7. As well, the Spectral IP survey was successful in locating a number of interesting anomalies. The following steps are recommended to follow-up on these results:

1. Soil sampling over the IP anomalies to determine which parts of the anomalies are more likely to be caused by gold mineralization.
2. Diamond Drilling of the coincident IP and soil anomalies.

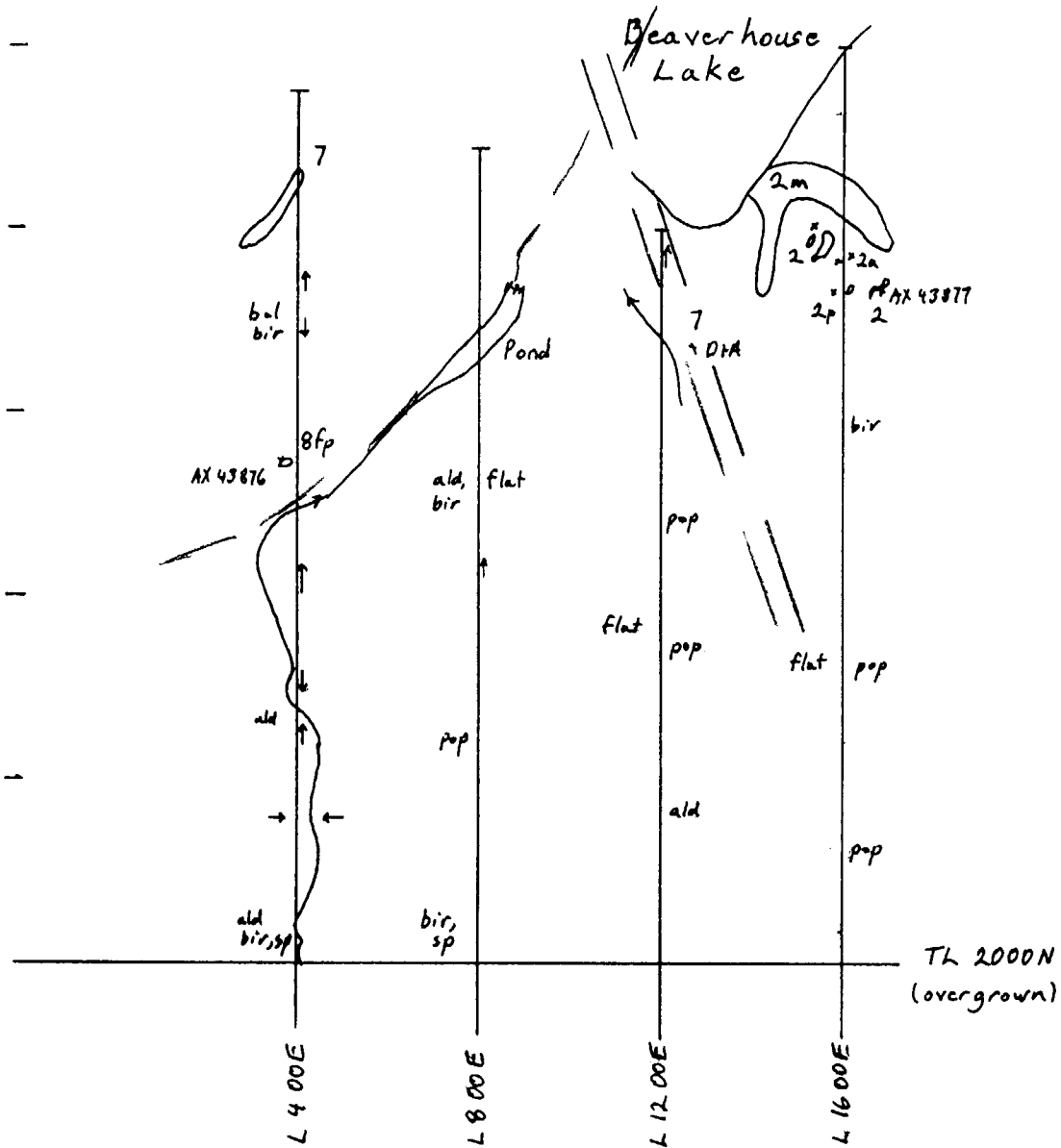
40 00 N

36 00 N

32 00 N

28 00 N

24 00 N



N

LEGEND

- 2 Mafic volcanics, unsubdivided
- 2a Amygdaloidal mafic volcanics
- 2m Massive mafic volcanics
- 2p Pillowed mafic volcanics
- 7 Diabase
- 8fp Syenite, feldspar-phyric
- AX 43876 X Rock sample location
- O x Outcrop
- Stream
- Slope along grid line
- bal Balsam
- bir Birch
- sp Spruce
- pop Poplar
- ald Alder

Scale: 1 inch = 400 feet

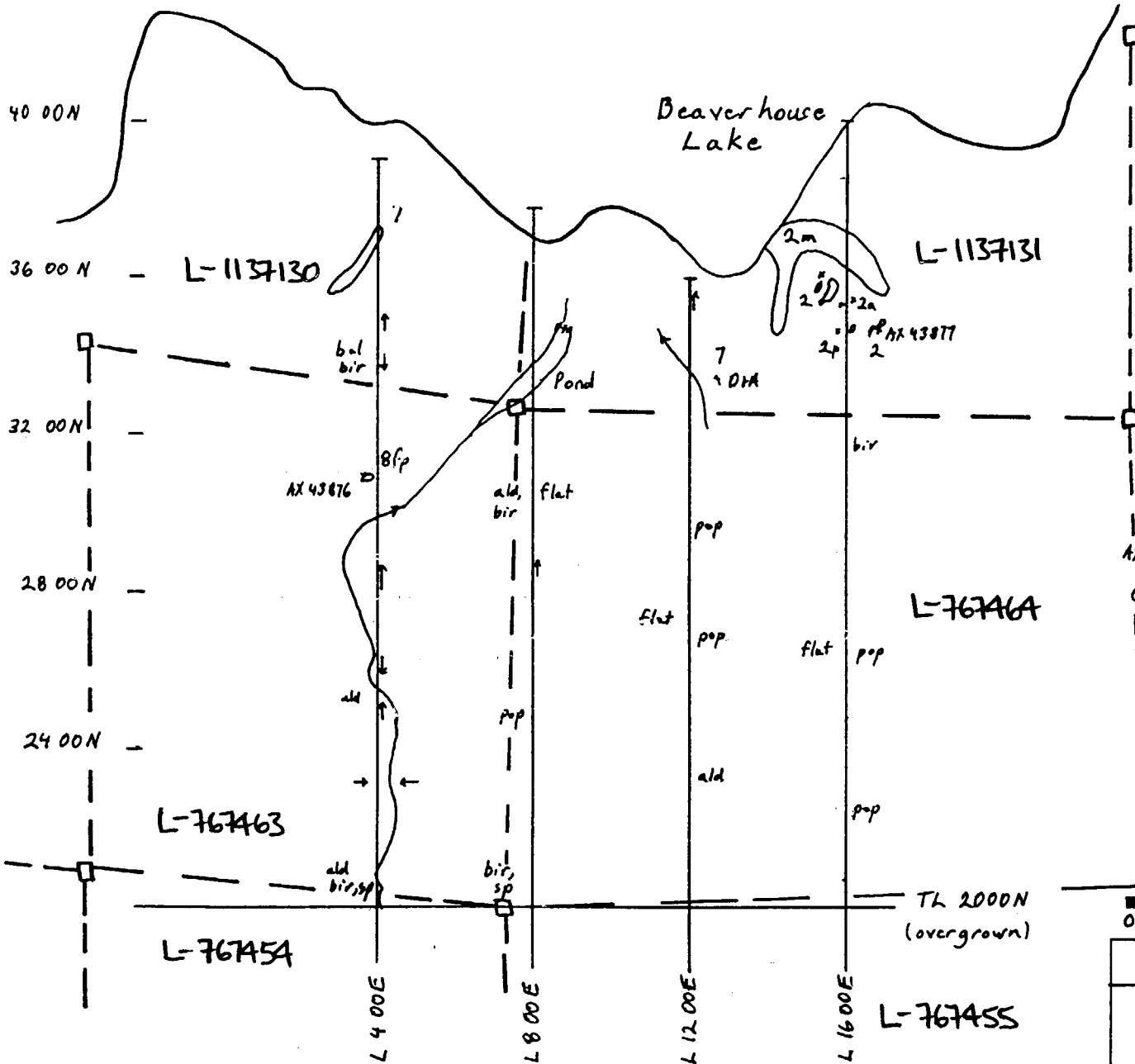
0 500 1000 ft

Lac McVittie Joint Venture

Lac McVittie Property  
New Linecutting and Geological Mapping

Oct. 1996

R.B.



**LEGEND**

- 2 Mafic Volcanics, unsubsdivided
- 2a Amygdaloidal mafic volcanics
- 2m Massive mafic volcanics
- 2p Pillowed mafic volcanics
- 7 Diabase
- 8fp Syenite, feldspar-phyrlic
- AX43876X Rock sample location
- x Outcrop
- stream
- slope along grid line
- bal Balsam
- bir Birch
- sp Spruce
- pop Poplar
- ald Alder

Scale: 1 inch = 400 feet



Lac McVittie Joint Venture	
Lac McVittie Property	
New Linecutting and Geological Mapping	
Oct. 1996	R.B.

## References

Coad, P.R., 1992, Royal Oak Mines Inc., Lac McVittie (1513) Year End Technical Report - 1991; internal document.

JVX Ltd., 1996, A Logistical and Interpretive Report on Spectral IP/Resistivity conducted on the Lac McVittie Joint Venture Property, McVittie Township, Ontario, internal document.

Jensen, L.S., and Langford, F.F., 1985, Geology and Petrogenesis of the Archean Abitibi Belt in the Kirkland Lake Area, Ontario Geological Survey Misc. Paper 123

Pressacco, 1994, Technical Report on the 1994 Exploration Program on the Lac McVittie Joint Venture, internal documents.

## Certificate of Qualifications

I, Rodney Alan Barber, residing at 119 Lois Crescent, Timmins, Ontario, do hereby certify that:

1. I hold the degree of Bachelor of Science (Honours) in geology, obtained from Laurentian University, Sudbury, Ontario in 1988.
2. I have practiced my profession since 1988.
3. I personally supervised or conducted the work forming the subject of the preceding report.
4. The information contained in this report is true accurate to the best of my knowledge.
5. I hold no interest, either direct or indirect in the Lac McVittie Joint Venture, nor do I expect to receive any compensation, other than salaries, for the work performed here.



Rod Barber  
Project Geologist  
Eastern Canada Exploration

# Appendix 1

## Assay Data



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers

5175 Timberlea Blvd., Mississauga  
Ontario, Canada L4W 2S3  
PHONE: 905-624-2806 FAX: 905-624-6163

To: ROYAL OAK MINES INC.  
TIMMINS DIVISION  
P.O. BOX 2010  
TIMMINS, ON  
P4N 7X7

A9635613

Comments: ATTN: ROD BARBER

**CERTIFICATE**

**A9635613**

(JWW) - ROYAL OAK MINES INC.

Project:  
P.O. #:

Samples submitted to our lab in Mississauga, ON.  
This report was printed on 19-OCT-96.

## SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
299	2	Pulp; prepped on other workorder
229	2	ICP - AQ Digestion charge

\* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

## ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
2118	2	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
2119	2	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	2	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	2	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	2	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	2	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	2	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	2	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	2	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	2	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	2	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	2	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	2	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	2	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	2	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	2	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	2	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	2	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	2	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	2	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	2	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	2	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	2	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	2	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	2	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	2	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	2	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	2	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	2	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	2	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	2	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	2	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000



# Chemex Labs Ltd.

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5175 Timberlea Blvd., Mississauga  
Ontario, Canada L4W 2S3  
PHONE: 905-624-2806 FAX: 905-624-6163

To: ROYAL OAK MINES INC.  
TIMMINS DIVISION  
P.O. BOX 2010  
TIMMINS, ON  
P4N 7X7

Project :  
Comments: ATTN: ROD BARBER

Page Number : 1-A  
Total Pages : 1  
Certificate Date: 19-OCT-96  
Invoice No. : 19635613  
P.O. Number :  
Account : JWW

## CERTIFICATE OF ANALYSIS

### A9635613

SAMPLE	PREP CODE		Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo
			ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm
AX43876	299	229	< 0.2	0.34	< 2	1730	< 0.5	< 2	1.87	< 0.5	15	307	12	1.83	< 10	< 1	0.21	10	0.66	500	< 1
AX43877	299	229	0.2	2.80	18	50	< 0.5	2	0.99	< 0.5	31	189	95	5.52	< 10	< 1	0.01	< 10	2.03	620	< 1

CERTIFICATION:

*Hart Bichler*





# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
5175 Timberlea Blvd., Mississauga  
Ontario, Canada L4W 2S3  
PHONE: 905-624-2806 FAX: 905-624-6163

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TIMMINS, ON  
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Total Pages : 1  
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Invoice No. : 19635613  
P.O. Number :  
Account : JWW

Project :  
Comments: ATTN: ROD BARBER

## CERTIFICATE OF ANALYSIS

### A9635613

SAMPLE	PREP CODE		Na	Ni	P	Pb	Sb	Sc	Sr	Ti	Tl	U	V	W	Zn
			%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
AX43876	299	229	0.05	12	700	8	< 2	4	654	< 0.01	< 10	< 10	18	< 10	38
AX43877	299	229	< 0.01	51	880	< 2	< 2	4	11	0.42	< 10	< 10	140	< 10	60

CERTIFICATION:

*Rod Barber*



# Chemex Labs Ltd.

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5175 Timberlea Blvd., Mississauga  
 Ontario, Canada L4W 2S3  
 PHONE: 905-624-2806 FAX: 905-624-6163

To: ROYAL OAK MINES INC.  
 TIMMINS DIVISION  
 P.O. BOX 2010  
 TIMMINS, ON  
 P4N 7X7

A9636212

Comments: ATTN: ROD BARBER

**CERTIFICATE**

**A9636212**

(JWW) - ROYAL OAK MINES INC.

Project:  
 P.O. #:

Samples submitted to our lab in Mississauga, ON.  
 This report was printed on 24-OCT-96.

## SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	38	Geochem ring to approx 150 mesh
226	38	0-3 Kg crush and split
3202	38	Rock - save entire reject
229	38	ICP - AQ Digestion charge

\* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

## ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
3993	38	Au ppb: Fuse 30 gram-EXT-AA fin.	FA-EXT-AA	1	1000
983	1	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	38	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
2119	38	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	38	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	38	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	38	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	38	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	38	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	38	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	38	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	38	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	38	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	38	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	38	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	38	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	38	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	38	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	38	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	38	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	38	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
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2138	38	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	38	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	38	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	38	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	38	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	38	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	38	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	38	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	38	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	38	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	38	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	38	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000



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Analytical Chemists \* Geochemists \* Registered Assayers  
 5175 Timberlea Blvd., Mississauga  
 Ontario, Canada L4W 2S3  
 PHONE: 905-624-2806 FAX: 905-624-6163

To: ROYAL OAK MINES INC.  
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 Invoice No. : 19636212  
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 Account : JWW

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## CERTIFICATE OF ANALYSIS

A9636212

SAMPLE	PREP CODE		Au ppb	Au ppb	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg
	EXT-AA	FA+AA	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%
AX43878	205	226	5	-----	< 0.2	0.95	< 2	40	< 0.5	< 2	3.22	< 0.5	11	50	23	2.06	< 10	< 1	0.31	10	0.57
AX43879	205	226	10	-----	< 0.2	1.21	2	30	< 0.5	< 2	4.29	< 0.5	14	45	38	2.98	< 10	< 1	0.24	10	0.82
AX43880	205	226	5	-----	< 0.2	1.61	4	30	< 0.5	< 2	2.99	< 0.5	10	57	6	3.83	< 10	< 1	0.25	10	1.14
AX43881	205	226	3	-----	< 0.2	1.68	< 2	20	< 0.5	< 2	3.08	< 0.5	12	56	6	4.26	< 10	< 1	0.17	10	1.27
AX43882	205	226	1	-----	< 0.2	1.51	2	10	< 0.5	< 2	4.16	< 0.5	10	48	8	3.63	< 10	< 1	0.20	10	1.06
AX43883	205	226	1	-----	< 0.2	1.71	< 2	10	< 0.5	< 2	2.43	< 0.5	12	57	10	3.89	< 10	< 1	0.14	< 10	1.18
AX43884	205	226	4	-----	< 0.2	1.61	< 2	10	< 0.5	< 2	2.79	< 0.5	17	67	124	3.45	< 10	< 1	0.16	< 10	1.02
AX43885	205	226	6	-----	< 0.2	2.23	< 2	10	< 0.5	< 2	2.12	< 0.5	15	25	11	3.28	< 10	< 1	0.15	< 10	1.53
AX43886	205	226	1	-----	< 0.2	1.93	< 2	30	< 0.5	< 2	3.80	< 0.5	14	29	18	2.57	< 10	< 1	0.29	< 10	1.18
AX43887	205	226	< 1	-----	< 0.2	2.37	2	10	< 0.5	< 2	1.61	< 0.5	18	24	75	3.68	< 10	< 1	0.16	< 10	1.45
AX43888	205	226	300	-----	< 0.2	1.79	2	30	< 0.5	< 2	2.75	< 0.5	12	16	46	2.93	< 10	< 1	0.23	10	1.00
AX43889	205	226	>1000	2020	0.2	1.95	< 2	10	< 0.5	10	4.48	< 0.5	14	41	23	3.50	< 10	< 1	0.12	< 10	1.36
AX43890	205	226	7	-----	< 0.2	1.67	< 2	30	< 0.5	< 2	2.40	< 0.5	7	16	1	2.62	< 10	< 1	0.22	10	1.00
AX43891	205	226	4	-----	< 0.2	1.05	< 2	10	< 0.5	< 2	8.89	< 0.5	5	24	8	1.77	< 10	< 1	0.16	10	1.02
AX43892	205	226	4	-----	< 0.2	1.53	< 2	20	< 0.5	< 2	2.01	< 0.5	9	24	6	2.21	< 10	< 1	0.16	< 10	0.90
AX43893	205	226	31	-----	< 0.2	2.05	6	10	< 0.5	< 2	1.81	< 0.5	26	30	138	3.48	< 10	< 1	0.11	< 10	1.27
AX43894	205	226	110	-----	< 0.2	2.14	4	30	< 0.5	< 2	1.60	< 0.5	22	39	123	3.54	< 10	< 1	0.14	< 10	1.27
AX43895	205	226	53	-----	< 0.2	2.50	6	10	< 0.5	< 2	1.86	< 0.5	41	39	270	4.80	< 10	< 1	0.05	< 10	1.55
AX43896	205	226	57	-----	< 0.2	2.17	< 2	40	< 0.5	< 2	4.57	< 0.5	18	21	117	3.78	< 10	< 1	0.22	10	1.26
AX43897	205	226	39	-----	< 0.2	1.77	2	30	< 0.5	< 2	1.84	< 0.5	21	26	118	2.90	< 10	< 1	0.17	10	0.94
AX43898	205	226	31	-----	< 0.2	1.97	2	50	< 0.5	< 2	1.43	< 0.5	19	38	316	3.86	< 10	< 1	0.20	< 10	1.21
AX43899	205	226	46	-----	< 0.2	1.53	< 2	30	< 0.5	< 2	1.38	< 0.5	10	34	66	2.16	< 10	< 1	0.16	< 10	0.85
AX43900	205	226	34	-----	< 0.2	1.91	6	30	< 0.5	< 2	1.21	< 0.5	21	25	168	3.72	< 10	< 1	0.17	< 10	1.10
AX43901	205	226	170	-----	0.2	1.93	6	30	< 0.5	< 2	2.57	< 0.5	16	19	209	3.99	< 10	< 1	0.18	< 10	1.19
AX43902	205	226	41	-----	< 0.2	1.62	6	30	< 0.5	< 2	1.60	< 0.5	14	32	126	2.72	< 10	< 1	0.13	< 10	1.14
AX43903	205	226	8	-----	< 0.2	1.83	< 2	30	< 0.5	< 2	1.94	< 0.5	15	92	37	2.53	< 10	< 1	0.07	10	1.72
AX43904	205	226	150	-----	< 0.2	2.76	6	10	< 0.5	< 2	1.83	< 0.5	25	53	244	5.52	< 10	< 1	0.09	< 10	2.01
AX43905	205	226	< 1	-----	0.2	1.32	22	10	< 0.5	< 2	5.18	< 0.5	16	13	42	5.10	< 10	< 1	0.07	< 10	1.74
AX43906	205	226	< 1	-----	< 0.2	0.91	10	10	< 0.5	< 2	5.26	< 0.5	9	15	23	3.90	< 10	< 1	0.07	< 10	1.91
AX43907	205	226	1	-----	< 0.2	1.43	12	10	< 0.5	< 2	4.85	< 0.5	14	15	25	5.07	< 10	< 1	0.05	< 10	1.23
AX43908	205	226	< 1	-----	< 0.2	1.42	12	10	< 0.5	< 2	4.41	< 0.5	11	15	22	4.79	< 10	< 1	0.06	< 10	1.57
AX43909	205	226	< 1	-----	< 0.2	1.37	10	10	< 0.5	< 2	4.20	< 0.5	12	17	23	4.50	< 10	< 1	0.07	< 10	1.47
AX43910	205	226	< 1	-----	< 0.2	0.91	< 2	10	< 0.5	< 2	3.73	< 0.5	7	29	11	3.85	< 10	< 1	0.07	< 10	0.98
AX43911	205	226	15	-----	0.2	0.81	18	10	< 0.5	< 2	7.66	< 0.5	20	43	52	5.72	< 10	< 1	0.06	< 10	2.74
AX43912	205	226	< 1	-----	< 0.2	2.41	10	10	< 0.5	< 2	4.77	< 0.5	19	17	11	7.23	< 10	< 1	0.06	< 10	1.77
AX43913	205	226	< 1	-----	< 0.2	1.53	6	10	< 0.5	< 2	3.53	< 0.5	12	26	27	4.35	< 10	< 1	0.09	< 10	1.29
AX43914	205	226	< 1	-----	< 0.2	1.08	6	30	< 0.5	< 2	3.40	< 0.5	9	20	24	2.80	< 10	< 1	0.11	< 10	0.97
AX43915	205	226	1	-----	< 0.2	2.07	< 2	10	< 0.5	< 2	3.10	< 0.5	22	25	8	6.04	< 10	< 1	0.05	< 10	1.13

CERTIFICATION: \_\_\_\_\_



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
 5175 Timberlea Blvd., Mississauga  
 Ontario, Canada L4W 2S3  
 PHONE: 905-624-2806 FAX: 905-624-6163

To: ROYAL OAK MINES INC.  
 TIMMINS DIVISION  
 P.O. BOX 2010  
 TIMMINS, ON  
 P4N 7X7

Page 1 of 1  
 Total Pages : 1  
 Certificate Date: 24-OCT-96  
 Invoice No. : 19636212  
 P.O. Number :  
 Account : JWW

Project :  
 Comments: ATTN: ROD BARBER

## CERTIFICATE OF ANALYSIS

### A9636212

SAMPLE	PREP CODE		Mn	Mo	Na	Ni	P	Pb	Sb	Sc	Sr	Ti	Tl	U	V	W	Zn
			ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
AX43878	205	226	645	4	0.01	23	830	< 2	< 2	1	82	0.07	< 10	< 10	12	30	18
AX43879	205	226	855	9	0.01	25	880	< 2	< 2	1	88	0.08	< 10	< 10	17	30	26
AX43880	205	226	830	6	0.01	29	860	< 2	< 2	1	54	0.11	< 10	< 10	19	< 10	36
AX43881	205	226	895	4	0.01	28	820	< 2	< 2	1	51	0.10	< 10	< 10	23	< 10	42
AX43882	205	226	980	4	0.02	23	770	< 2	< 2	3	133	0.10	< 10	< 10	22	< 10	34
AX43883	205	226	875	5	0.02	27	820	< 2	< 2	2	56	0.12	< 10	< 10	26	< 10	38
AX43884	205	226	790	5	0.03	26	770	< 2	< 2	2	69	0.13	< 10	< 10	25	< 10	34
AX43885	205	226	840	3	0.01	21	920	< 2	< 2	3	87	0.13	< 10	< 10	26	< 10	44
AX43886	205	226	770	3	0.02	16	820	< 2	< 2	2	95	0.15	< 10	< 10	23	< 10	32
AX43887	205	226	810	4	0.01	20	880	< 2	< 2	3	112	0.17	< 10	< 10	32	< 10	42
AX43888	205	226	340	5	0.01	9	940	< 2	< 2	2	60	0.14	< 10	< 10	20	< 10	16
AX43889	205	226	515	28	< 0.01	9	660	< 2	< 2	1	82	0.01	< 10	< 10	19	< 10	22
AX43890	205	226	370	5	< 0.01	10	970	< 2	< 2	1	41	0.12	< 10	< 10	17	< 10	16
AX43891	205	226	720	1	0.01	7	760	< 2	< 2	2	61	0.05	< 10	< 10	10	< 10	10
AX43892	205	226	305	4	0.01	11	970	< 2	< 2	1	59	0.13	< 10	< 10	23	< 10	14
AX43893	205	226	420	5	0.01	23	900	< 2	< 2	2	82	0.15	< 10	< 10	28	< 10	20
AX43894	205	226	440	6	0.01	15	870	< 2	< 2	3	108	0.17	< 10	< 10	36	< 10	22
AX43895	205	226	570	12	< 0.01	28	790	< 2	< 2	3	139	0.17	< 10	< 10	37	< 10	26
AX43896	205	226	690	6	< 0.01	16	920	< 2	< 2	3	107	0.16	< 10	< 10	32	< 10	24
AX43897	205	226	385	7	0.01	20	900	< 2	< 2	3	117	0.15	< 10	< 10	30	< 10	16
AX43898	205	226	455	5	< 0.01	12	920	< 2	< 2	3	96	0.13	< 10	< 10	31	< 10	20
AX43899	205	226	315	4	0.02	14	1010	< 2	< 2	3	105	0.14	< 10	< 10	27	< 10	14
AX43900	205	226	460	5	0.01	20	980	< 2	< 2	2	97	0.16	< 10	< 10	27	< 10	22
AX43901	205	226	600	7	0.01	17	900	< 2	< 2	2	70	0.13	< 10	< 10	29	< 10	24
AX43902	205	226	435	7	0.02	17	910	< 2	< 2	1	119	0.12	< 10	< 10	23	< 10	22
AX43903	205	226	460	3	0.05	23	1780	< 2	< 2	4	171	0.11	< 10	< 10	62	< 10	30
AX43904	205	226	770	7	< 0.01	28	1010	< 2	< 2	4	85	0.18	< 10	< 10	66	< 10	36
AX43905	205	226	1485	1	0.07	8	840	< 2	< 2	5	71	< 0.01	< 10	< 10	22	< 10	82
AX43906	205	226	1390	< 1	0.06	5	810	< 2	< 2	4	63	< 0.01	< 10	< 10	15	< 10	54
AX43907	205	226	1400	< 1	0.05	6	850	< 2	< 2	5	65	< 0.01	< 10	< 10	22	< 10	92
AX43908	205	226	1305	< 1	0.06	7	790	< 2	< 2	4	57	< 0.01	< 10	< 10	21	< 10	88
AX43909	205	226	1245	1	0.06	7	860	< 2	< 2	4	57	< 0.01	< 10	< 10	18	< 10	82
AX43910	205	226	1340	1	0.07	5	630	< 2	< 2	3	61	< 0.01	< 10	< 10	11	< 10	56
AX43911	205	226	2220	< 1	0.05	9	610	< 2	< 2	4	80	< 0.01	< 10	< 10	11	< 10	62
AX43912	205	226	1735	2	0.06	11	770	< 2	< 2	6	70	< 0.01	< 10	< 10	34	< 10	152
AX43913	205	226	1150	1	0.08	8	900	< 2	< 2	4	56	< 0.01	< 10	< 10	21	< 10	84
AX43914	205	226	970	< 1	0.09	5	1000	< 2	< 2	2	59	< 0.01	< 10	< 10	13	< 10	46
AX43915	205	226	1230	1	0.04	7	700	< 2	< 2	4	46	< 0.01	< 10	< 10	24	< 10	124

CERTIFICATION: \_\_\_\_\_

*Hartl Buchler*

## Appendix 2

### Updated Diamond Drill Logs



PROJECT: LAC McVitie (OS13) ---  
 Logged By: PCAL

START: DEC 8, 1991  
 FINISH: DEC 11, 1991

CAT

Date: 12/08/1991  
 Page 1 of 2

DRILL HOLE	NORTHING	EASTING	ELEVATION	LENGTH	OBI /	OBE	INC	LEASE
<u>LM91-03</u>	<u>1210 S</u>	<u>0E</u>	<u>5000.00</u>	<u>558'</u>	<u>24.0</u>			
<u>McVitie TWP.</u>	<u>3578 N</u>	<u>15770 E</u>	<u>ENGINEERING</u>					
<u>DIST</u>	<u>AZIM</u>	<u>DIP</u>	<u>DIST</u>	<u>AZIM</u>	<u>DIP</u>	<u>DIST</u>	<u>AZIM</u>	<u>DIP</u>
<u>0</u>	<u>315</u>	<u>-50</u>	<u>100'</u>		<u>-48</u>	<u>208'</u>		<u>-44</u>
						<u>500'</u>		<u>-49°</u>

DRILLED BY: COREX EXPLORATION INC. ST. ESTACHE, PQ.  
 CORE STORED: UPPER BEAVER CORE SHACK

PURPOSE: TO TEST NORTHEAST TRENDING HEIM CONDUCTOR  
 RESULTS: Intersected Graphitic and Semi-Massive Pyrite  
 SIZE: Bt

DIST	Id	ROCK DESCRIPTION						STRUCT.			GANGUE			METALLIC			Sp. #	Wdth	T	COMMENTS 1	COMMENTS 2	
		Com	Gr	Text	Co	Alt	Nam	B	A	J	A2	A%	B%	C%	D%	E%						F%
<u>24.0</u>																			<u>CASING: 24.0 feet (BW) left in</u>			
<u>28.0</u>		<u>S</u>	<u>FMG</u>	<u>FRAG</u>	<u>GY</u>	<u>SEM</u>	<u>DF</u>	<u>NIS</u>		<u>QTZ</u>	<u>15.0</u>	<u>CC</u>	<u>2.0</u>	<u>Py</u>	<u>1.5</u>			<u>97113</u>	<u>4.0</u>	<u>S</u>	<u>DEBRIS FLOW - ALTERED</u> <u>Grey-yellow, due to mal. clony</u> <u>albitization des. shaly. grey - to yellow</u> <u>frag. 9" QTZ-CALCITE 10% or o.c. E</u> <u>py and trace grey metallic. Possibly</u> <u>altered lamp.</u>	
<u>61.5</u>		<u>SS</u>	<u>FMG</u>	<u>FRAG</u>	<u>GY</u>	<u>SEM</u>	<u>DF</u>	<u>F40</u>		<u>QTZ</u>	<u>0.5</u>	<u>CC</u>	<u>0.5</u>	<u>Py</u>	<u>1.5</u>			<u>96560</u>	<u>33.5</u>	<u>G</u>	<u>DEBRIS FLOW - ALTERED OR ALT. LAMP.</u> <u>Grey-yellow, firm. E local RE. 1-5%</u> <u>variably sized yell. frag. E delicate</u> <u>casual. outlines. local green mica wisps.</u> <u>Py. dissem. as fig. in. &amp; Mats</u> <u>local vish-timberling. (0-10")</u> <u>In ch. str. shear @ 35. unit speckled by</u> <u>mauve lens.</u>	
<u>68.0</u>							<u>DF</u>			<u>QTZ</u>	<u>0.5</u>	<u>ALB</u>	<u>1.0</u>	<u>Py</u>	<u>1.0</u>			<u>97114</u>	<u>6.5</u>	<u>S</u>	<u>DEBRIS FLOW - ALT. LAMP.</u> <u>Green mica. 2lt.</u>	
<u>73.0</u>										<u>QTZ</u>	<u>0.5</u>	<u>ALB</u>	<u>1.5</u>	<u>Py</u>	<u>1.5</u>			<u>97115</u>	<u>5.0</u>	<u>S</u>		
<u>75.0</u>				<u>Por</u>			<u>DF</u>							<u>Py</u>	<u>0.2</u>			<u>97116</u>	<u>2.0</u>	<u>S</u>	<u>DEBRIS FLOW OR ALT. LAMP.</u> <u>Comp. yellow, yell-green. semi-circular wisps /</u> <u>frag (1-5%). Section with mauve</u> <u>lens.</u>	

DIST	ROCK QUALITY				
	Rc1	Pc	Pcs1	Rq	Re%
24					
28.0					
61.5					
68.0					
73.0					
75.0					

ASSAY DATA							
Spl #	Width T	Au	Au	Ag	Cu	Zn	As
		gpt	ppm	ppm	ppm	ppm	ppm
97113	2.0	<.001	<.35	1.2	4	31	5000
96569	33.5	<.001	<.35	1.9	60	46	4900
97114	6.5	<.001	<.35	1.8	75	42	5200
97115	5.0	<.001	<.35	1.9	83	46	6000
97116	2.0	<.001	<.35	1.8	77	41	5100

DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS						Spl #	Width	T	COMMENTS 1	COMMENTS 2								
		Com	Gr	Text	Co	Alt	Nam	B	A1	J	A2	GANGUE			METALLIC															
78.0		SSS	FG	FRMG	YL	Sen	QSS	D50					QZ	60.0	MUS	10.0				Py	2.5	Tau	0.2	GRAN	0.5	97117	3.0	S	QUARTZ - SERICITE - SCHIST Folded QZ-MUS veins with streaks of sheel-yellow ser. lamellae 1/4-3" mud/gauge seams (65°) Protolith - silic + sericitized lamp?	
83.0		SSS			YL	Sen	QSS	D60					QZ	70.0	SIL	35.0	Sen	10.5		Py	2.0				97118	5.0	S	QZ - SERICITE - SCHIST (SILICIFIED) DRAG folding with partings (yellow) in QZ. Frequent mud/gauge seams (60°)		
88.0		S	FG		YL	Sen	QSS	F60					QZ	20.0	MUS	2.0	CL	2.0		Py	0.4	SIL	25.0		97119	5.0	S	QZ - SERICITE - SCHIST NOT AS INTENSELY STRUCTURED - w/ csc protolith - silic/ser, alt. lamp (aphan) At FG 4" mylonic zone (60°)		
93.0		SS	FG		YL	Sen	LAMP						QZ	0.2						Py	2.0	SIL	40.0		97120	5.0	S	LAMPROPHYRE - SILICIFIED + SERICITIZED aphan matrix with 1-3/8 fig - to csc well-preserved (wedges); locally bi-layer seric - thin alt partings (brown?), local part of alk. porphy. @ BT (50')		
98.0		S	FG		YL	SIL	LAMP						QZ	1.5	MUS	2.5	CC	1.0		Py	0.3				97121	5.0	S	LAMP - SILICIFIED + SERICITIZED aphan - local zils / inclusions 12" of mud/gauge rubble (96°)		
108.0		S	FG		YL	SIL	BRN						QZ	1.0	Sen	7.0	SIL	K		Py	1.0				96561	10.0	G	BRNIT - ALTERED cp LAMP ALT yellow aphan with local chlorite-box and green shaly trays (alluvial) - due to diffuse chlor? Py or towards local cgl/green zils - local QZ Textured: URB felsic tuff - pyritic or ALT LAMP E vfg. py. following foliation		
109.0		S	FG	TUE	YL	SIL	FTE	BGS							Sen	K	SIL	4.0		Py	15.0				97122	1.0	S			



DIST	ROCK QUALITY					ASSAY DATA									
	Recl	Pc	Pcs1	Rq	Re%	Spl #	Width	T	Au	Ag	Cu	Zn	As		
									opt	ppb	ppm	ppm	ppm		
76.6						97117	3.0		<.001	<35	16	25	22	6000	
82.0						97118	5.0		<.001	<35	18	28		6000	
88.0						97119	5.0		<.001	<35	16	17		6400	
93.0						97120	5.0		<.001	<35	16	25	27	5800	
98.0						97121	5.0		<.001	<35	15	18	26	6000	
102.0						97121	10.0		<.001	<35	10	20	20	4400	
109.0						97122	1.0		<.001	<35	2.5	65	107	6800	

DIST	Id	ROCK DESCRIPTION						STRUCT.			MINERALS									Spl #	Width	T	COMMENTS 1	COMMENTS 2			
		Com	Gra	Text	Co	Alt	Nam	B	A1	J	A2	GANGUE			METALLIC												
												C%	B%	C%	D%	E%	F%										
114.5		SS	FG		YL	SIL	FTF					QTZ	2.5	MLB	2.5		Py	3.0				97123	5.5	S	"Felsic Tuff" or ALT CAMP Yell, aphan, relatively hard to scratch; local banded due to conc. sericite. Diss. E zils (fg) of py - Assoc bands, finely crumpled & F <sub>1</sub> /F <sub>2</sub> local thin veins of alb/silica/py local F <sub>1</sub> (0.0-3.0) WRA Request		
121.5		SS	FG		YL	SIL	FTF					QTZ	1.5	MLB	2.0	CC	1.5	Py	3.0				97124	7.0	S	"Felsic Tuff" or ALT CAMP Yell, aphan with delicate banding (ser. foliation) crumpled. local isolated well/spl zils/bags Progressively harder to scratch WRA Request	
146.0		S	FG		YL	SIL	FTF					QTZ	1.5	CHL	1.5	CC	3.5	Py	1.0				96562	24.5	G	"Felsic Tuff" or ALT CAMP buff-well, aphan, relatively hard to scratch. local delicate banding F <sub>1</sub> and crackle-box text, local brown pink staining (Zns?) follows banding local QTZ-chlor veins py in delicate part of silica/albite. local well zils WRA * QTZ not in sample; X-ray of brown mineral = muscovite	
149.0		S	FG		"	"	"	FSS				QTZ	2.5				Py	4.0					97125	2.0	S	"Felsic Tuff" Fg: mg. py, alb, E QTZ/MLB/pink veins 1-3% brown staining	

DIST	ROCK QUALITY					ASSAY DATA								
	Recl	Pc	Pcsl	Rq	Re%	Spl #	Width	T	Au	Au	Pg	Cu	Zn	As
									apk	ppb	ppm	ppm	ppm	ppm
114.5						96123	5.5		<.001	<35	1.2	24	30	6400
121.5						97124	7.0		<.001	<35	1.2	16	29	6800
146.0						96562	24.5		<.001	<35	0.9	19	16	4400
148.0						97125	2.0		.002	70	1.5	14	24	6800

DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS						Spl #	Width	T	COMMENTS 1	COMMENTS 2				
		Com	Grs	Text	Co	Alt	Nam	B/S	J/F	GANGUE			METALLIC													
										B	A1	J	A2	C%	D%	C%	O%						E%	F%		
187.0		S	Aph	band	Yl	Sil	FTF	P	10								96565	29.0	6	tabular (alt) - on AT. WMP V. clay - with banding (tectonic) local banding marked by brown spinel or hematite (?) Pyrite (P) are Al. 150' - possibly see banding cut by F <sub>2</sub> or F <sub>3</sub> foliation F <sub>2</sub> rolling (0°) cut by SP-60° F <sub>2</sub> local v. py (grey) - bluish wmp						
214.0		SSS	Fg	band	Yl	Sen	QSS	F	60	Qtz	150	Mg	40	CC	40	Py	95	Tour	15.0	Grph	4.0	96564	29.0	6	QUARTZ - SERICITE - TOURMALINE - SCHIST local structure (40-75°) and locally Qtz - Tourmal veins (chert-seed) with local dragfolding and lots of Qtz + Tourmaline - more sericitized local gneiss	
226.0		SS			Yl	Sen	QSS	F	75	Qtz	40	Mg	1.5	CC	1.0	Py	92	Tour	0.5			96565	12.0	6	QUARTZ - SERICITE SCHIST V. silty ground, discolored - local green mica etc.	
229.5		SS	Fg		Yl		Grph	B	50	Qtz	3.0					Py	5.0					96566	3.5	6	GRAPHITIC SEDIMENT - RUBBY blk. fg. v. conductive - dirty + Py balls & silica pieces shadows R. brown white Qtz in	
231.0		S	Fg				SMS	B	55							Py	95					97126	1.5	5	Semi-mss. sulphides Py mss. & local calc. balls - silica gangue assoc. Also v. graded/bedded py - also Py with fg. mss. in calc. matrix - poss OE, local red kern. staining	

DIST	ROCK QUALITY					ASSAY DATA								
	Recl	Pc	Pcsl	Rq	Re%	Spl #	Width	T	Au	Pu	Ag	Cu	Zn	Px
									gpt	ppz	ppm	ppm	ppm	ppm
187.0						96563	39.0		<.001	<35	1.0	32	15	4600
214.0						96564	27.0		<.001	<35	1.2	37	13	5200
226.0						96565	12.0		<.001	<35	1.9	30	34	5000
229.5						96566	3.5		<.001	<35	2.4	119	35	5200
231.0						97126	15		.005	170	6.7	155	103	6600

DIST	Id	ROCK DESCRIPTION						STRUCT.			MINERALS									Spl #	Width	T	COMMENTS 1	COMMENTS 2	
		Com	Grs	Text	Co	Alt	Nom	B/S J/F			GANGUE			METALLIC											
								B	A1	J	A2	c%	B%	c%	D%	E%	F%								
268.0		S	PHC	AGGL	GY	SEN	DF	B	40			QZ	1.5	SEN	20	Py	1.5			96567	32.0	G	Debris Flow		
278.0		S	"	AGGL		SEN	DF	F	35			QZ	1.0	SEN	100	Py	0.5			96568	10.0	G	Pred. "lamp" clasts / frags in carbonaceous matrix - white sericitized Py as clasts + local banding next to QZ P 294 (5"). Near in-cl. patches of OE-rich sed. w/ grey matrix - or broken angular silic. frags (micro) CRACKING - FACING UP face forecast Ampl. Xls in white matrix NB: In-cl. marked S/S + spotted albite Feeding in close to... Py (low kid. dump) ... dissim with alb Xls = reddish/pink that near mix py cl. This section WRA. (x 56568-2) Y 97127 *		
280		SS			N	SEN	GV	V	30			QZ	300		CC	50	Py	1.5		97128	2.0	S	QZ - CHL - CARBON - TOUR VEIN Str. ser. alt halo - local green mica zils		
318.0		S		"AGGL"	N	SEN	"DF"	B	40			QZ	0.5	SEN	40	Py	1.0		GRA 25	96569	38.0	G	"Debris Flow" - ALTERED LAMP Mat. str. sericitic, grey-yellow, powdery in pheno + w/ green zils. Local brecciated with fit-back-together frags (ave. 1/2 - 1") - local this texture is variably sericitized + 10) pseudo clasts		
343.0		S		"AGGL"	GY	SEN	"DF"	B	40			QZ	2.5	SEN	30	CC	15	Py	2.5		96570	25.0	G	"Debris Flow" - wk mod. alt lamp 1-10% dk chl frags in grey matrix Local OE or "sweet" Py as zils / frags?	

DIST	ROCK QUALITY					ASSAY DATA										CHECKS	
	Recl	Pc	Pcal	Rq	Re%	Spl #	Width	T	Au	Ag	Pb	Cu	Zn	As	Au		Ag
									opt	ppz	ppm	ppm	ppm	ppm	ppm	ppm	
264.0						96567	37.0		<.001	<35	1.6	31	31	5800	NIL	0.1	
276.0						96568	10.0		<.001	<35	1.4	23	30	5600			
280.0						97128	2.0		<.001	<35	1.7	26	46	800			
318.0						96569	38.0		<.001	<35	1.6	42	35	4800			
343						96570	25.0		<.001	<35	1.8	36	126	5200			

(SWASTIKA)  
 Cu Zn  
 ppm ppm  
 36 35

DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS									Spl #	Width	T	COMMENTS 1	COMMENTS 2								
		Com	Gr	Text	Co	Alt	Nam	B	A1	J	A2	GANGUE			METALLIC																		
														C%	B%	C%	D%	E%	F%														
408.0		S	FG	FRG	YG	Sen	DF	B40												96570	3.0	6								Local dr. calc. veins - w/ zircon. Calc. debris from alt. lamp. Green matrix (matrix) - siliceous. Relatively abundant in silicate. Crystals dark, cuprate-outlines fragments - local phenos. Local pit-back - together frags float in dr. carbon matrix near upper in-cut area. (WAS)			
451.0		SS					DF	B40						GO	PS	CC	PS				96572	3.0	6									Matrix - siliceous. Matrix - siliceous. 1-5% frags + c. pseudo-frags. Local green mica - minor, plus py. zils.	
451.5		SSS					F2	F40																								35' F2 @ 451.0 - surge/rubble	
46.0							DF	F35								CC	10				96573	9.5	6									DRIFT - ALT. LAMP. Matrix - siliceous.	
464.0		SS	FG			GY	Sen	F2	F10					GO	OS	CC	10				96574	3.0	6									FRUIT POND - RUBBLE. Flat slip & brittle brx. and local gouge.	
496.0		S	FRG			GY	Sen	MT	B40					GO	OS	CC	OS				96575	32.0	6									MARK TUFF / DEBRIS (LOW) / ALT LAMP. Green matrix and dr. calc. veins.	
504.0		SSS	FG			GY	Sen	MT	F50					GO	OS	CC	OS				96576	8.0	6									MARK TUFF - SECTION STR. STRIKE (40s). Local dr. matrix - frags - F1/F2, in-cut.	







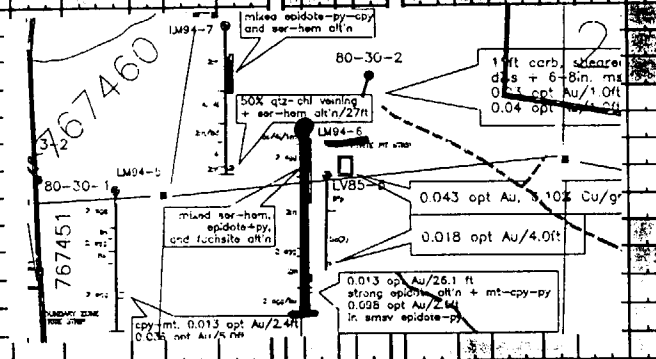
DIST	ID	ROCK DESCRIPTION							STRUCTURE				GANGUE			METALLIC		SAMPLE #	WIDTH	T	AU gms	COMMENTS
		Com	Gr	Text	Co	Alt	Name 1	Name 2	B	A1	J	A2	As	Ag	Cu							
	511																				508-520.3 Alt'd Volc	
	516	M	M	MSV	CR	BLD	4m									42	AX 43905		41	F-mg, msv, lt buff strong seric'd + carb'd		
	520.3			"	"	"	4m					1				23	906		41	Loc med gn chl'd patches wt ant-gtz stages near %		
	524			FM		GG	CHL	3m								25	907		1			
	528			"	"	"	"									22	908		41			
	533.1			"	SHD	"	"									23	909		41	520.3-533.1 Mafic Volc		
	534.3	B	F	SHD	TN	SER	4bx		F. 10							11	910		41	F-mg, msv much as above, but med gngy strong chl'd, carb'd Grad more		
	536.8						LC														Fold toward %	
	539.4	B	F	GRX	CR		4bx					5		2	52	911		15				
	541.2						LC															
	544	M	FM	MSV	GG	CHL	2					2				11	912		41	533.1-541.2 Mineralized Zone		
	548			"	"	"	"									27	913		41	Initially strong fold + bx'd (pbx or		
	552			SHD	TN	BLD	"					5		5	24	914		41	lapilli-stone). Becoming vt-x lt buff			
	555.7			MSV	GG	CHL	"									8	915		1	bx'd + broken w strong clay msa's(?)		
																					or some strongly carb'd throughout	
																					F-mg cubic py conc'd int near	
																					gtz-ant stage. Loc gauge sects	
																					R&D = 0	
																					541.2-555.7 Alt'd Volc	
																					Fg, wk'y fol'd, lt gy - gngy, strongly	
																					carb'd, seric'd to chl'd, decrease	
																					alt'n decreasing down hole. Loc gtz-ant-	
																					black sh(?) stage. Abundant fg leucocline	
																					near end.	

DRILL HOLE	NORTHING	EASTING	ELEVATION	LENGTH	OBI	OBE	INC	LEASE CLAIM
<u>LM 94-06</u>	<u>28150N</u>	<u>32100W</u>	<u>surface</u>	<u>1416 ft</u>				<u>767461 + 767452</u>

DIST	AZIM	DIP	DIST	AZIM	DIP	DIST	AZIM	DIP	DIST	AZIM	DIP	DIST	AZIM	DIP
0 ft	180	-45	800	202	-45									
206	185	-46	1000	201	-46									
400	180	-46	1200											
600	193	-47	1400	209	-46									

Core Storage: Beaverhouse Core Shack

DIST	Id	ROCK DESCRIPTION						STRUCT.			MINERALS				METALLIC						Spl #	Width	T	COMMENTS 1	COMMENTS 2			
		Com	GrS	Text	Co	All	Nom	B	A1	J	A2	qtz	A%	B%	C%	Py	D%	Cp	Ex	Au						F%		
30																												Core casing to 30ft. No casing to 23ft. with 767461 section being cased by BII casing. This core was recovered and consists of what appears to be a mixture of gbf. stratified transitional fuchsite material and coarse sericitic fragmental material (see table comp 2). The gbf fuchsite is present to approximately 25ft. with the sericitic material being present below 25ft. to 30ft. The sericitic material contains 10-15% gbf. stratified and is oriented in a conjugate set at roughly 45° to the fuchsite material. The fuchsite material contains 10-15% gbf. stratification, rare gbf. pyrite and trace of CHALCOPYRITE in a gbf. veinlet. The contact at 30ft. is at a high angle to the main strike.
2-23																												
25.0		m	vt	fin	1	ser	41															5127	2.0				Strong gbf. pyrite, talc-chlorite altered section.	
30.0		m	vt	fin	1	ser	41															5128	5.0				weak sericitic fragments sericitic matrix 1% gbf. box.	
																												SEICITIC LAPILLI TYPE (GATHER?) (25-52.6 ft.) Color: medium yellow-green, rock-talpy, soft, non-magnetic, non-calistic, massive to weakly porphyritic and fragmental, irregularly brecciated texture. Some small fragments to 1-2cm. of variable compositions are hosted by the fine-grained sericitic matrix.



DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS									Spl #	Width	T	COMMENTS 1	COMMENTS 2															
		Com	Grs	Text	Co	Alt	Nom	B/S	J/F	B	A <sub>1</sub>	J	A <sub>2</sub>	GANGUE			METALLIC																							
													C%	B%		C%	D%	E%	Au	F%																				
36.0		M	ufg	FRG	Y	HEM	41						7					0.1			0.01																			
41.0						HEM	41						3					0.1			0.01																			
46.0						HEM	41						3					1			0.01																			
48.5						HEM	41						5					-			0.01																			
48.1						-	41						1					-			-																			
52.6						HEM	41						1					1			0.01																			
56.0		M	ufg	MSW	BB	HEM	41						1					0.1			0.01																			

qtz: brown cement to fragments of host rock. overall gln. abundant, estimated at 1-3% mode. Pyrite is present, occurring as very fine, granular, dist. weakly developed, packets of acicular prisms, with prominent lamellar alteration, especially within 1-2.5 cm diameter. (See also 57.6. Sub-surface 2.5 m). 57.6. Sub-surface 2.5 m.

57.30 510. above core, thin in buff. rare dist. of py.

57.31 519. patches of spathic, related to gln. decaying.

57.32 1.5. gln. scale.

57.33 0.6. white, pale shale.

57.34 4.5. weak gln. seen in red. laminated. 1/4"

HEMATIC SYNCHITE DIKE (52.6-68.2 ft)  
Color: red-brown to purpleish, usually soft, non-crystalline, non-ferrous. Massive clay like, granular. Harder, 1-3 in. thin, gln. vein. 1/4" to 3 cm across at the end of all cores to 4. Fine dist. gln. 1/4" to 1/2" in size. (See also 57.34. Sub-surface 2.5 m.)

gln. veins at all angles. T-4

DIST	Id	ROCK DESCRIPTION Com Grs Text Co Alt Nam						STRUCT.			MINERALS										Spl #	Width	T	COMMENTS 1	COMMENTS 2		
								B/S		J/F	GANGUE			METALLIC													
								B	A1	J	A2	C%	B%	C%	D%	E%	Am	F%									
61.0		M	vtz	Msu	RS	Hex	BS													5736	100						
66.0																					5737	100					
69.3																					5738	100					

ULLTRAMAFIC (TALC - SERPENTINING) (68.2-96.8 ft).  
Colour variable from black to apple green depending on alteration - quartz soft and sugary.  
Talc is dominant mineral - massive to micaceous.  
Glaucophane sparsely distributed with hornblende.  
Pyroxene - clinopyroxene - moderate to fine grained with set.  
Hornblende - moderate to fine grained with set.  
except for the altered as discussed below.  
Sericite dikes are located at 75.5-78.8 ft (1.3m)  
sp. veins (box) at 82.0-83.6 ft (1.3m) at 93.0 ft.  
Core hole: 65° to SE at 96.8 ft. Foliation  
CORE ZONE OF QUARTZ - TOURMALINE VEINING AND  
FUCHSITE ALTERATION (68.2-75.5 ft)  
The section from 68.2-75.5 consists of a well  
developed, micaceous texture. Fragments are  
in the order of 1/8-1/4" in size and are heterogeneous  
in composition. This structure is seen as a zone  
of yellow-green color. The alteration zone  
appears to be a replacement zone and consists basically  
of a strongly developed quartz stockwork and a  
system of replacing a fuchsite-sericite alteration  
assemblage with talc.  
The section from 75.5-80 ft is predominately  
altered. The talc stockwork is present in the 75.5-  
80 ft section. Overall gk abundance is  
estimated at 10 and 20 g/kg. Most of the

DIST	Id	ROCK DESCRIPTION						STRUCT.		MINERALS												Spl #	Width	T	COMMENTS 1	COMMENTS 2
								B/S	J/F	GANGUE			METALLIC													
		Com	Grs	Text	Co	Alt	Nam	B	A1	J	A2	C%	B%	C%	D%	E%/M	F%									
71.4		S	M.	FRAK	MG	SCR	Sc				0.1					0.002		5139	3.2		fine micro-emulsions					
72.4		M.	uf	BK	AN	SCR	LM				15				0.1	0.002		5140	1.0		10 cm. gln. in. contains large specimen of					
75.5		M.	uf	BK	AN	FU	IFU				25				0.1	0.003		5141	3.2		5 cm. fractured white					
78.0		M.	uf	BK	AB	MG	BS				70					0.001		5142	3.2		5 cm. white fractured					
83.4		M.	uf	MGT	BK		LM				3					0.001		5143	3.2		white fractured white					
86.0							LM				0.1					0.001		5144	2.6		white fractured white					
86.2							LM											5145	0.2		white fine sample					
89.0							LM									0.001		5146	3.2		white fractured white					
93.6		M.	uf	MG	AB	MG	BS				3					0.001		5147	4.6		15 cm. dark white					
96.8		M.	uf	MGT	BK		LM				1					0.001		5148	3.2		white fractured white					
																						MAFIC FRAGMENTAL (26.8-117.5 ft.) Gln. white-green, non-crystalline, hard, moderate to strong, white. well developed fragments of various sizes, several frequent aggregations, but being dominated by fragments with white or dark white, white being in general more abundant except for the 104.0-106.0 ft. section described below.				





DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS									Spl #			Width	T	COMMENTS 1	COMMENTS 2
		Com	Grs	Text	Co	Alt	Nam	B	A1	J	A2	GANGUE			METALLIC						#	T					
												C%	B%	C%	D%	E% Au	F%										
170.7		F1	U6	M50	Y	SER	2009							0.1			0.1			0002	5756	3.2		massive ser alt? incept hem alt?			
126.0		M				SER	2009							0.1			3			0001	5757	5.3		and ser alt? with hem alt? 5-76 chl packets strong diss. H2O with chl.			
51						SER	2009							0.1						0001	5758	5.0		and ser alt? with hem alt? diss. stage			
126.0		F2				SER	2009	U	40					3						0002	5759	5.0		10 cm ribbon of ser alt? at 131 ft 1-3% hem alt? with ser alt? at 131 ft on 119-126. 70% of 5.35 alt?			
141.0		B				SER	2009							1						0001	5760	5.0		ser alt? decreasing in intensity, have ser alt?			
146.0		B3				SER	2009							1						0002	5761	5.0		weak-red ser alt?			

DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS										Spl #	Width	T	COMMENTS 1	COMMENTS 2
		Com	Grs	Text	Co	Alt	Nam	B	A1	J	A2	GANGUE			METALLIC											
												C%	B%	C%	D%	Q%	E%	Am	F%							
156.0		B	uf	FNAA	4H	SER	2099							0.1				0.01		5162	5.0		weak patchy ser alt =	white blocky		
155.1		B				SER	2099							0.1				0.01		5163	4.1		weak patchy ser alt =	white blocky		
156.0		B				SER	2099							-				-		5164	8.2		white blocky sample			
166.0		B				SER	2099							-				0.04		5165	5.0		weak patchy ser alt =			
166.0		B				SER	2099							-				0.03		5166	5.0		weak ser alt =			
171.0		B				SER	2099	V	15					3				0.02		5167	5.0		trace of pyrite in 1st 1/2 of alt = 166.2 ft weak and ser alt =			
176.0		B				SER	2099							3				0.02		5168	5.0		weak ser alt =			
181.1		B				SER	2099							1				0.02		5169	5.1		paraspinel ser alt =			
																							181.0 - 182.0 ft section of strong massive vls. serite alteration with weak pervasive hematite alt =. Moderate to strongly calcitic. Trace of pyrite visible at all levels. 1-3% patchy to streaky calc alt =. weak base-like vls. disc and/or pyrite. Gradation lower contact into vls. hematite. Hematite. 200.2 - 224.0 ft mostly a massive vls. serite-like alteration section of 5% calcite-filled fractures form a streaky (blocky) texture at all levels. Not very much in vls. hematite alt =. vls. hematite. Fractures extend 3-5m in width. The central portions become filled with quartz. Hematite but fracture zone is 1-2 ft in width. Lower contact of the alteration zone is gradational over 20-30 m. alt = is clear as the last appearance of fracture-controlled serite alteration. Pyrite abundance overall only 3% but locally can achieve 7-10% (e.g. 208 ft). The pyrite occurs both with chert stringers.			



DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS										YAGGA			COMMENTS 1	COMMENTS 2							
		Com	Grs	Text	Co	Alt	Nom	B	A1	J	A2	GANGUE			METALLIC			Spl #	Wth	T													
												C%	B%	C%	D%	E%	F%																
750.5																																	
759.5																																	
759.9																																	
266.0																																	
271.8																																	
272.0																																	
286.0																																	
301.0																																	
304.0																																	
312.3																																	

material. Trace thin thin gln-cc veinlets with occasional ribboned gln-cc. Some veins which are thin. Some veins with rare disseminated subhedral prismatic Fe-silicate. Some thin gln-cc veinlets.

2-5mm gln-cc veinlets, have disseminated ribboned + rhy veins. No ser. alt. along some.

gln-cc with some minor Fe-silicate.

DIST	ID	ROCK DESCRIPTION						STRUCT.				MINERALS												Spl #	Wdth	T	COMMENTS 1	COMMENTS 2			
		Com	Grn	Text	Co	Alt	Nam	B	A1	J	A2	GANGUE			METALLIC																
												C%	B%	C%	D%	E%	Am	F%													
316.0																															

The structure is provided by thin (1-3 mm) fractures and veinlets filled by a very black chlorite. These chlorite fractures vary in abundance up to 20% and are localized mainly in sericitic zones.

Decrease to local matrix fragmental at the upper and lower contacts. Pyrite is quite common in abundance when 1-3% in overall abundance but local sections can contain 5% pyrite. The matrix occurs both with chlorite and pyrite. Sericite is also present in some sections.

Frequent sketches out in the alteration. These veins contain variable amounts of calcite - ankerite - hematite - chlorite and are ribboned in cross sections.

Core hole is 90° to CA at 328. The foliation is parallel to the CA.















DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS										Spl #			COMMENTS-1	COMMENTS 2:IG					
		Com	Grs	Text	Co	Alt	Nam	B	A1	J	A2	GANGUE			METALS				width	T											
												CZ	BZ	C%	D%	E% / W	F%														

















DRILL HOLE NO. LM94-6  
*Resampling*  
 PAGE 1 OF 1

DIST	ID	ROCK DESCRIPTION						STRUCTURE				GANGUE	METALLIC		SAMPLE #	WIDTH	T	<input type="checkbox"/> AU <input checked="" type="checkbox"/> OZ grams	COMMENTS
		Com	Grs	Text	Co	Alt	Name 1	Name 2	B/S	A1	J		A2	Py					
1132																			To 1143.9 Lt-dk gy - gy gn. Mottled
1135		M.	F.	MO	GY	BLD.	2p.							23	AX43878		5.	and/or fract'd text. Min wh lx	
1137.5					GY	CHL.								38	879		10.	1-3% cal filling Fracts wk-strong mag	
1141				FA		GG								.1	6		5.		
1143.9				"		"								.1	6		3.	1143.9-1146.6 Altered Zone - Lt beige (Fsp?)	
1146.6				"	GR	TN	BLD.	2p. bx						.1	8		1.	alt'n forming halo around qtz -	
1151				"	MR	GN	FRID.	"						10	883		1.	and stop at 10'. Alt'n spreads out along	
1152.5				"		TN		"						124	884		4.	fracts at 60'	
1157				"		GN		"						11	885		6.		
1158				"		"		"	V. 45		5	5	18	886		1.	1146.6 and onward Lt-dk gn, mod		
1161				"		"		"						75	887		41.	epid'd. h'd. mildly bx'd unit. Pillow or flow top bx. Non mag.	





DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS							Spl #	Width	T	COMMENTS 1	COMMENTS 2														
		Com	Grs	Text	Co	Alt	Nam	B	A1	J	A2	C%	B%	C%	D%	E%	F%	F%																			
271.0						Op1	Zm											0.008	5553	5.0																	
276.0						Op1	Zm											0.007	5554	5.0																	
281.0						Op1	Zm											0.001	5555	5.0																	
286.0						Op1	Zm											0.001	5556	5.0																	
291.0						Op1	Zm											0.006	5557	5.0																	
296.3						Op1	Zm											0.001	5558	5.0																	
301.0							8d											0.001	5559	5.0																	
303.7							8d											0.001	5560	2.7																	
306.0							Zm											0.002	5561	2.3																	
311.0						Op1	Zm											0.001	5562	5.0																	
316.0						Op1	Zm											0.006	5563	5.0																	
321.0						Op1	Zm											0.003	5564	5.0																	
326.0						Op1	Zm											0.001	5565	5.0																	
360.2						Op1	Zm											0.1	5566	34.2																	

360.2 - 360.3 14297 ALTERATION ZONE  
 color visible from surface is tan to yellow  
 greenish-brown on the surface and in the  
 immediately adjacent zone. It is completely  
 dependent on alteration. It is not a mineral.

DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS												Spl #	Width	T	COMMENTS 1	COMMENTS 2				
		Com	Grs	Text	Co	Alt	Nam	B/S		J/F		GANGUE			METALLIC																	
								B	A1	J	A2	C%	B%	C%	D%	E%	Au	F%														
364.5		M	uf	msu	ns	HEM	ALT	F	SS			5													5567	4.3						
368.3						HCM	AL	V	SP	7															5568	3.8						
373.2		M	uf	msu	6Y	GFL	ZM			3															5569	4.9						
377.9						CAL	ZM			5															5570	4.7						
381.3							8cl			1															5571	3.4						
386.0						CAL	ZM			5															5572	4.7						

368.3 - 396.0 ft: TRANSITIONAL ZONE OF ABUNDANT QUARTZ-AMPHIBOLE VEINLETS. Small violet abundance is estimated at a grade 7.0% occurring at this zone with veinlet sizes ranging from 1-3mm. Some of the veinlets have a pinkish coloration suggestive of hematite. It is strongly calcitic and contains magnetite. Trace amounts of pyrite.

386.0 ft: Hematite + Magnetite veinlets.

381.3 ft: Magnetite veinlets.

377.9 ft: Hematite + Magnetite veinlets.

373.2 ft: Magnetite veinlets.

368.3 ft: Magnetite veinlets.

364.5 ft: Hematite + Magnetite veinlets.









see supplemental sampling at end of log

DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS							Spl #	Width	T	COMMENTS 1	COMMENTS 2									
		Com	Grs	Text	Co	Alt	Nom	B	AI	J	A2	GANGUE			METALLIC																	
												C%	B%		D%	E%	Au	P%														
556.0		M	Mg	FRAG	VG	-	41								0.1		0.003		3524	4.5												
556.8							48																									
606.0			UG	MSU		-	A								0.1		0.02		3525	4.5												
616.0		M	UG	MSU	61	SER	4	V	SS			3			0.1		0.001		5525	5.0												5cm ribboned ore at 60.5ft contains ore disseminated
616.0						SER	4	V	O			3			0.1		0.001		5526	5.0												well permeable ser alt. some trace white K-feldspar
616.0						UG	4	V	O			5			1		0.001		5527	4.1												mixed ser alt. glaucophane quartz between ser alt. all expt. 2.1, 3.5, 4.1 stages, dis. by py
626.0						SER	4	V	W			5			1		0.001		5528	5.0												slan ser alt. glaucophane quartz, dis. by py, ser alt.
630.5						SER	4	V	W			3			3		0.003		5529	3.5												3cm ser alt. dis. by py
632.6						UG	4	V	AO			50			0.1		0.002		5600	2.1												0.7ft glaucophane ser



DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS											Spl #			Width	T	COMMENTS 1	COMMENTS 2			
		Com	Grs	Text	Co	Alt	Nom	B	A1	J	A2	GANGUE			METALLIC				#	W	T											
												C%	B%	C%	D%	E%	Au	F%														
983.8		M	CS	FRAG	RS	4E	20%																			57.1	13.1	1	Mafic Fragile matrix Color reddish brown hard development of small contains 25-30% reaction on apatite gray black color Trace thin plate crystals inlets at 957.0-958.5ft and 957.5-959.3ft lower and upper contact			
890.9		M	ufg	PRG	6N	HAL	8d																					66.2	31.6	1	Composite Sample Felsic Flow / Flow Color medium yellow green massive non-calitic fragmental or porphyritic absent throughout distinct granitic irregular shaped fragments in a thin matrix contact clearly defined still other sections contain abundant plagioclase phenocrysts glass matrix	

DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS										Spl #	Width	T	COMMENTS 1	COMMENTS 2							
		Com	Grs	Text	Co	Alt	Nam	B	A1	J	A2	GANGUE			METALLIC																		
												C%	B%	C%	D%	E%	A	F%															
945.3		M.	uf	mixed	Ys	SER	4								0.1			0.02	5013	5.0												core disc - hand held - sampled over the surface possible - note - 1094-7 - 133 ft core Composite sample	
946.0							4													5014	0.7											Whole Rock Sample	
946.0							4								3				0.03	5015	5.0											Composite sample	
1046.0							4								0.1				0.02	5016	5.0											Composite sample - note - 1094-7 - 133 ft core disc - 1094-7	
1051.0							4								0.1				0.01	5017	5.0											disc - 1094-7	
1056.0						SER	4								0.1				0.01	5018	5.0											mostly disc of pyrite and siliceous pyrite - weak precipitate - sensitive alteration	
1061.0						SER	4								1				0.01	5019	5.0											3.5 to 4.0 - identical structure in composite pyrite @ 1500A. Disc by pyrite nodules precipitate - sensitive alteration - in strength towards green - 1094-7	
																																	ZONE OF 1094-7 1094-7 (1094-7 - 1088.0 ft) color variable from white to pink to light yellow-green, having a variable amount of (sensitive-rich sections) in very hard (quartz veins), amorphous, non-sensitized in wall rock to veins. Textures are quite variable from rounded, non-breccia to massive to highly foliated. but the wall veins are - dense - brown - 1094-7 The alteration in this section consists of a mixture of alteration - specific where features relationships observed at 1082 ft suggests that the sensitive overprints are 1.5 to 1.6 m the

DIST	Id	ROCK DESCRIPTION						STRUCT.		MINERALS												Spl #	Width	T	COMMENTS 1	COMMENTS 2		
		Com	Grs	Text	Co	Alt	Nom	B	A1	GANGUE			METALLIC															
										C%	B%	C%	D%	E%	A	F%												
								B	A1	J	A2																	
1064.0		M	uf	VEIN	16	SE	VEIN	V	16					50									5620	3.0		quartz veins with ser and rocks, diss vls in		
1067.0							SPR	VEIN							30				0					5621	3.0		massive quartz with coarse, pinkish chlorite, trace of	



DIST	ID	ROCK DESCRIPTION						STRUCT.		MINERALS												Spl #	Width	T	COMMENTS 1	COMMENTS 2													
		Com	Gr	Text	Co	Alt	Nom	B	A1	J	A2	GANGUE			METALLIC																								
										C%	B%	C%	D%	E%	Au	F%																							
1071.9																0.001										56272	4.8												
1076.6																0.001											56273	4.8											
1081.6																0.1	0.01	0.1	0.002								56279	5.0											
1085.7																											56275	5.0											
1088.0																											5626	2.8											
																											56277	*											
1091.0																											5628	3.0											
1096.0																											5629	5.0											

1071.9 - all rock is chlorite  
 1076.6 - all rock is chlorite  
 1081.6 - all rock is chlorite  
 1085.7 - all rock is chlorite  
 1088.0 - all rock is chlorite  
 1091.0 - all rock is chlorite  
 1096.0 - all rock is chlorite  
 \* XRD sample of authigenic clay mineral - address  
 interval (1083 ft). GALENA? AMYGDALITE  
 MASSIVE MAfic FLOW (1088.0-1136.0 ft)  
 Color: red-brown to grey, moderately bedded,  
 non-magnetic, slightly calcitic. Matrix is very  
 fine grained granitic. Bedded 3-5 ft granitic  
 talus lenses are up to 5 cm in width and  
 are oriented at roughly 15° TCA, at times in  
 a conjugate slip set. Bedded silty, py  
 associated with silty calc. tuffaceous shales.  
 Moderate silty calc. tuffaceous shales  
 g-b-siliceous shales affect the bed within the first  
 5-6 ft of upper section  
 thin glass conjugate venters

DIST	Id	ROCK DESCRIPTION						STRUCT.				MINERALS								Spl #	Width	T	COMMENTS 1	COMMENTS 2
		Com	Grs	Text	Co	Alt	Nom	B	A1	J	A2	GANGUE			METALLIC									
												C%	B%	C%	D%	E%	Am	F%						
1101.0						SCR	7-1											5630	5.0		Trace ser all = 6% chl	Abundant iron ore minerals		
1106.0							7-1											5631	5.0		lib-cc stannite + pyrite + hematite			
1135.5							7-1											5632	29.5		Composite sample			
1136.0							7-1											5633	0.5		Whole rock sample			
1136.0																					END OF HOLE			
																		5634			Hand sample of iron ore 5634 (1136.0)	Iron ore sample at 1136.0		
																					SUPPLEMENTARY SAMPLES			
510.6																		5635	5.4		red chl-py veins + patches, pervasive ser all?			
516.0						SCR	4						0.1											
521.0						SCR	4						0.1									pervasive ser all? overprinted by chl-py patches + veins		
526.0						SCR	4						0.1									red pervasive ser all? chl-py patches + veins		
531.0						SCR	4						0.1									weak red pervasive ser all? iron rich veins		
536.0						CHK	4						0.1									pervasive chl py + pyrite + hematite + magnetite		
541.0						CHK	4						0.1									Some glaucous vein at 539' - red chl-py stringers		
546.0						SCR	4						2									more glaucous vein at 540' - pervasive ser all? patchy + stringer chl-py. Some glaucous vein e 0' red @ 541 ft.		

DRILL HOLE NO: LM94-7

PAGE 1 OF 1

DIST	ID	ROCK DESCRIPTION						STRUCTURE				GANGUE			METALLIC			SAMPLE #	WIDTH	T	ppb Au [ ] grams	COMMENTS				
		Com	GrS	Text	Co	Alt	Name 1	Name 2	B/S	A1	J/F	A2	AT	CA	PY	CP	Cu ppm									
714																										
717		M	F	PIL	GY	---	3p									46	AX4388X	3.0	c	300					All lt-med gy-gg f-mg andesite	
719.8				FM	SHD	BLD		F	50			10		1	23	889		2.8		2020					Strongly variegatic 722.4 - approx 750'	
722.4					PL	---									1	890		2.6		7					w. dk chl matrix.	
723.4					VAR	OR	FSP	V	65			10	20		6	891		1.0		4					717-719.8 Strongly fold in 2 directions	
725.1					"	GY	---								6	892		1.7		4					(folded shear?)	
726.5							MC																		722.4-723.4 Strongly K-spar alt'd	
730.2		M	FM	VAR	GG	---	3p						2		138	893		3.7	c	31					halo around 4" cal-gtz brx vein	
731.2						BLD									5.5	894		1.0		110					730.2-730.4 patch of semi-mag	
734															2	895		2.8		53					w. 5% f-mg discs apy, minor py	
738															2	896		4.0		57						
741.5					GY										5	897		3.5		39					741.9 1/2" mag str w. 5% f-cg py,	
742.5						BLD									1	898		1.0		31					min po, apy. str at 60°	
745						BLD									66	899		2.5		46						
756																N.S.									760-767.3 wk gtz-cal str zone at	
760		M	F	PIL	GG	EPID	3p								1	900		4.0	c	34					40-45° 1% fg disc py, min fract	
764.7								V	40			1	2		2	901		4.7		170					filling apy. Mod epid'd.	
767.3															5	902		2.6		41						
770.3				FM	PAR	GY	---	2m								37	903		3.0		8					
752.5																										
756		M	FM	PIL	GG	EPID	2p								3	244	AX439.04	3.5	c	150						

726.5-767.3 136 ppb Au / 40.8'



Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use) W9780.01193 Assessment Files Research Imaging

Personal information collected on this for Mining Act, the information is a public record. Questions about this collection should be directed to 933 Ramsey Lake Road, Sudbury, Ontario



32D04NE2004 2 18032 MCVITTIE

900

Act. Under section 8 of the Mining Act, 1990, as amended, with the mining land holder. Ministry of Northern Development and Mines, 6th Floor.

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240. - Please type or print in ink.

2.18032

1. Recorded holder(s) (Attach a list if necessary)

Form for recorded holder(s) with fields for Name, Address, Client Number, Telephone Number, and Fax Number. Includes handwritten entry for Royal Oak Mines Inc.

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

Geotechnical: prospecting, surveys, assays and work under section 18 (regs) [checked] Physical: drilling, stripping, trenching and associated assays [checked] Rehabilitation [unchecked]

Form for work type and office use with fields for Work Type, Dates Work Performed, Township/Area, Mining Division, and Resident Geologist District.

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required; - provide proper notice to surface rights holders before starting work; - complete and attach a Statement of Costs, form 0212; - provide a map showing contiguous mining lands that are linked for assigning work; - include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Form for person or companies who prepared the technical report with fields for Name, Address, Telephone Number, and Fax Number. Includes handwritten entry for Rodney Barber and a RECEIVED stamp.

4. Certification by Recorded Holder or Agent

I, Rodney Barber, do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature and address fields for Rodney Barber, dated Dec 1/97, with a handwritten note 'Deemed March 19/98'.

5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date.
eg TB 7827	16 ha	\$26,825	N/A	\$24,000	\$2,825
eg 1234567	12	0	\$24,000	0	0
eg 1234568	2	\$8,892	\$4,000	0	\$4,892
1 L 1137131	1	\$1557 ✓	0	0	\$1557
2 L 767439	1	\$594 ✓	0	0	\$594
3 L 767460	1	\$594 ✓	0	0	\$594
4 L 767452	1	\$594 ✓	0	0	\$594
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
Column Totals		\$3339			\$3339

I, Rodney Barber (Print Full Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing: R Barber Date: Dec 1/97

6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- 3. Credits are to be cut back equally over all claims listed in this declaration; or
- 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp	Deemed Approved Date	Date Notification Sent
	Date Approved	Total Value of Credit Approved
Approved for Recording by Mining Recorder (Signature)		

Personal information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Work Type	Units of Work <small>Depending on the type of work, list the number of hours/days worked, metres of drilling, kilo-metres of grid line, number of samples, etc.</small>	Cost Per Unit of work	Total Cost
Assays	40 samples	\$ 18/sample	\$ 705
Salaries (Geology)	5 days	\$ 332/day	\$ 1658
Associated Costs (e.g. supplies, mobilization and demobilization).			
Office supplies/photocopying			\$ 343
Computer services			\$ 493
Transportation Costs			
Food and Lodging Costs			
Meals			\$ 54
Hotel			\$ 86
<b>Total Value of Assessment Work</b>			<b>\$ 3339</b>

**RECEIVED**  
 DEC 19 1997  
 7:40 AM  
 GEOSCIENCE ASSESSMENT  
 OFFICE

**Calculations of Filing Discounts:**

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK  $\times 0.50 =$  Total \$ value of worked claimed.

**Note:**

- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

**Certification verifying costs:**

I, Rodney Barber (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as Project Geologist (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

Signature <u>R Barber</u>	Date <u>Dec 1/97</u>
------------------------------	-------------------------

March 30, 1998

ROYAL OAK MINES INC.  
PO Bag 2010  
Timmins, Ontario  
P4N 7X7 Canada.

Geoscience Assessment Office  
933 Ramsey Lake Road  
6th Floor  
Sudbury, Ontario  
P3E 6B5

Telephone: (888) 415-9846  
Fax: (705) 670-5881

Dear Sir or Madam:

**Submission Number: 2.18032**

**Status**

**Subject: Transaction Number(s):** W9780.01193 Approval After Notice

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We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. **WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.**

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Lucille Jerome by e-mail at [jeromel2@epo.gov.on.ca](mailto:jeromel2@epo.gov.on.ca) or by telephone at (705) 670-5858.

Yours sincerely,



ORIGINAL SIGNED BY  
Blair Kite  
Supervisor, Geoscience Assessment Office  
Mining Lands Section

# Work Report Assessment Results

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**Submission Number:** 2.18032

**Date Correspondence Sent:** March 30, 1998

**Assessor:** Lucille Jerome

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<b>Transaction Number</b>	<b>First Claim Number</b>	<b>Township(s) / Area(s)</b>	<b>Status</b>	<b>Approval Date</b>
W9780.01193	1137131	MCVITTIE	Approval After Notice	March 30, 1998

**Section:**

17 Assays ASSAY  
12 Geological GEOL

The revisions outlined in the Notice dated March 12, 1998, have been corrected.

Assessment work credit has been redistributed, as outlined on the attached Distribution of Assessment Work Credit sheet, to better reflect the location of the work.

**Correspondence to:**

Resident Geologist  
Kirkland Lake, ON

Assessment Files Library  
Sudbury, ON

**Recorded Holder(s) and/or Agent(s):**

Rodney Barber  
TIMMINS, ONTARIO, CANADA

ROYAL OAK MINES INC.  
Timmins, Ontario

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# Distribution of Assessment Work Credit

The following credit distribution reflects the value of assessment work performed on the mining land(s).

Date: March 30, 1998

Submission Number: 2.18032

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Transaction Number: W9780.01193

<u>Claim Number</u>	<u>Value Of Work Performed</u>
1137131	390.00
1137130	130.00
767464	777.00
767463	260.00
767439	594.00
767460	594.00
767452	594.00
	<hr/>
Total: \$	3,339.00

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