

GM 45788

GEOLOGICAL REPORT, MELBOURNE PROPERTY

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Énergie et Ressources
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GEOLOGICAL REPORT
ON THE
MELBOURNE PROPERTY
OF
INTERNATIONAL THUNDERWOOD EXPLORATIONS LTD.
MELBOURNE TOWNSHIP, QUEBEC
NTS: 31 H

Ministère de l'Énergie et des Ressources
Service de la Géoinformation
Date: 10 MAR 1988
No G.M.: 45788

Joe B. Hinzer
6455 Stamford Green Drive
Niagara Falls, Ontario
L2J 1T7

September 1987

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2	- Geology and Soil Geochemistry (Cu)	back pocket

1.0 INTRODUCTION

This report on the Melbourne gold-copper property is based on a recently completed field mapping and sampling program carried out under the author's supervision during the period of September 2-11, 1987. Field surveys and sampling was done by L. Kovacs, assisted by P. Halasz. The survey was undertaken to follow up literature reports of assays of 24% Cu and 0.45 oz/ton Au from grab samples of old workings, active prior to 1903.

2.0 LOCATION AND ACCESS

The property is located along the southwest boundary of Melbourne Township, approximately 5 miles (8 km) west of the village of Kingsbury, Quebec, situated 25 miles (40km) east of Montreal) (see Figure 1).

Secondary rural gravel roads provide access to all parts of the claim group.

Hydro, road and rail facilities, are available at Sherbrooke only 9 miles (15 km) to the southeast.

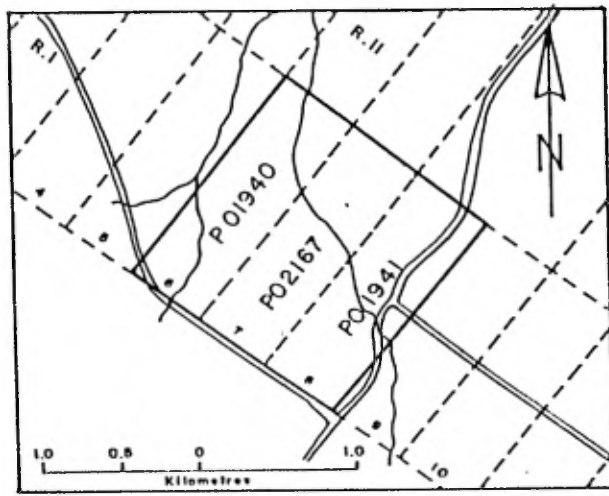
3.0 PROPERTY STATUS

The Melbourne property consists of three lots No. 6, 7 and 8 in Range I comprising 240 ha. The claims are held by International Thunderwood Explorations Ltd. under current exploration licences No.'s P1940, 1941 and 2167 (Figure 1) as verified by Q.D.N.R data file dated 24/08/87.

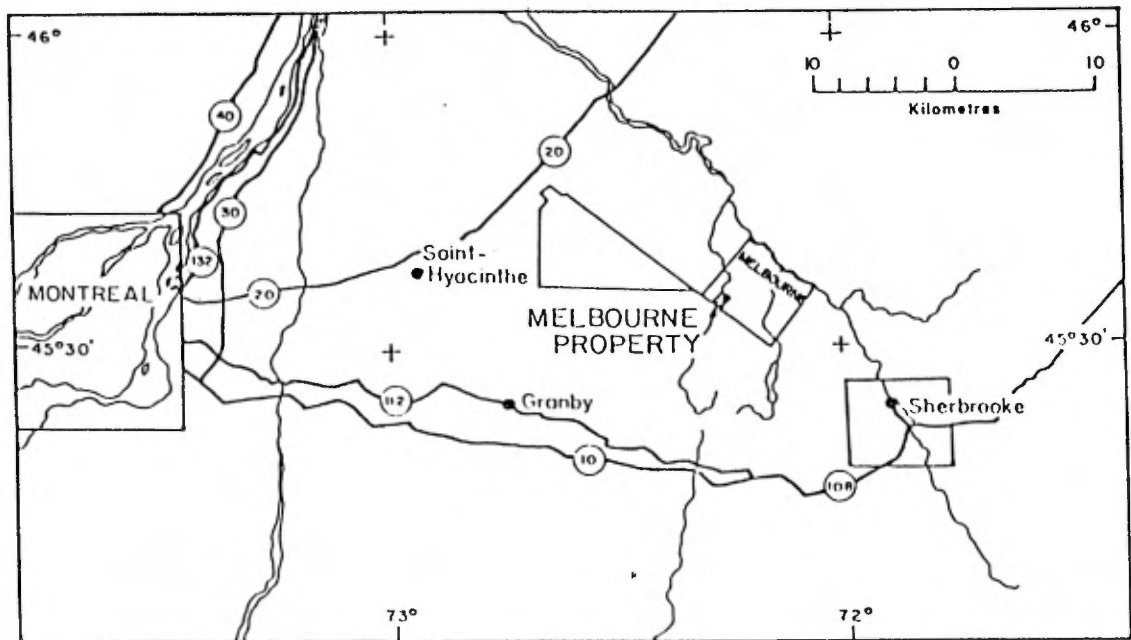
4.0 GENERAL GEOLOGY

The region is underlain by Hadrynian to Lower Paleozoic, miogeosynclinal and eugeosynclinal belts and ophiolitic rocks to the southeast (Harron 1973), belonging to the northwestern part of the Appalachian structural province (see Figure 2).

The underlying rocks are all generally northeast trending and have been affected by three orogenic episodes, namely the pre-Normanskill (L. Ordovician), the Taconian (M. Ordovician) and the Acadian (Devonian) orogenies (Tremblay 1976).



CLAIM MAP



LOCATION MAP



Figure 1

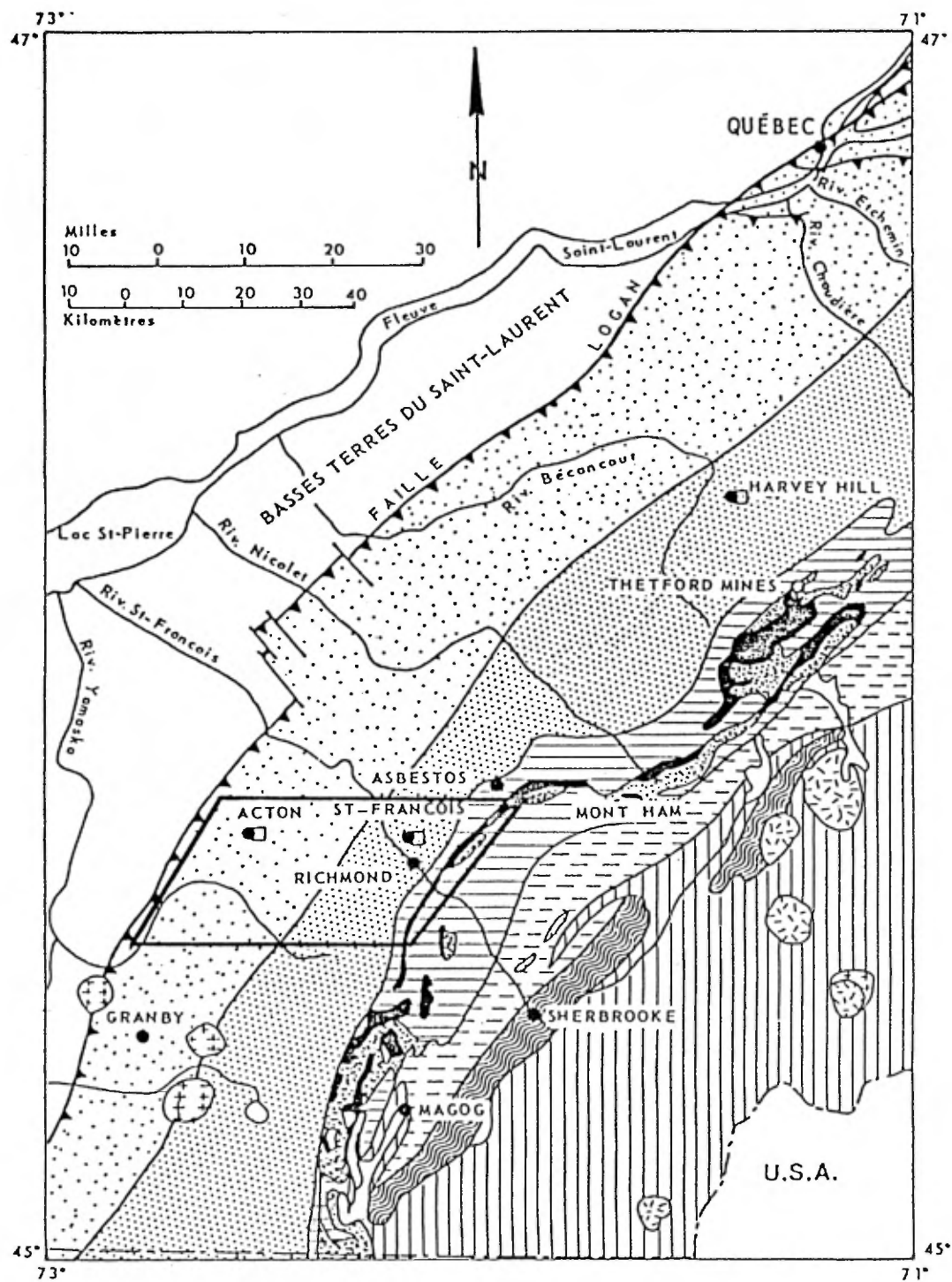


FIGURE 2 - Géologie générale des Appalaches du sud du Québec. / General geology of the Appalachians in southern Québec.
 Tiré de St-Julien (1972) / After St-Julien (1972)

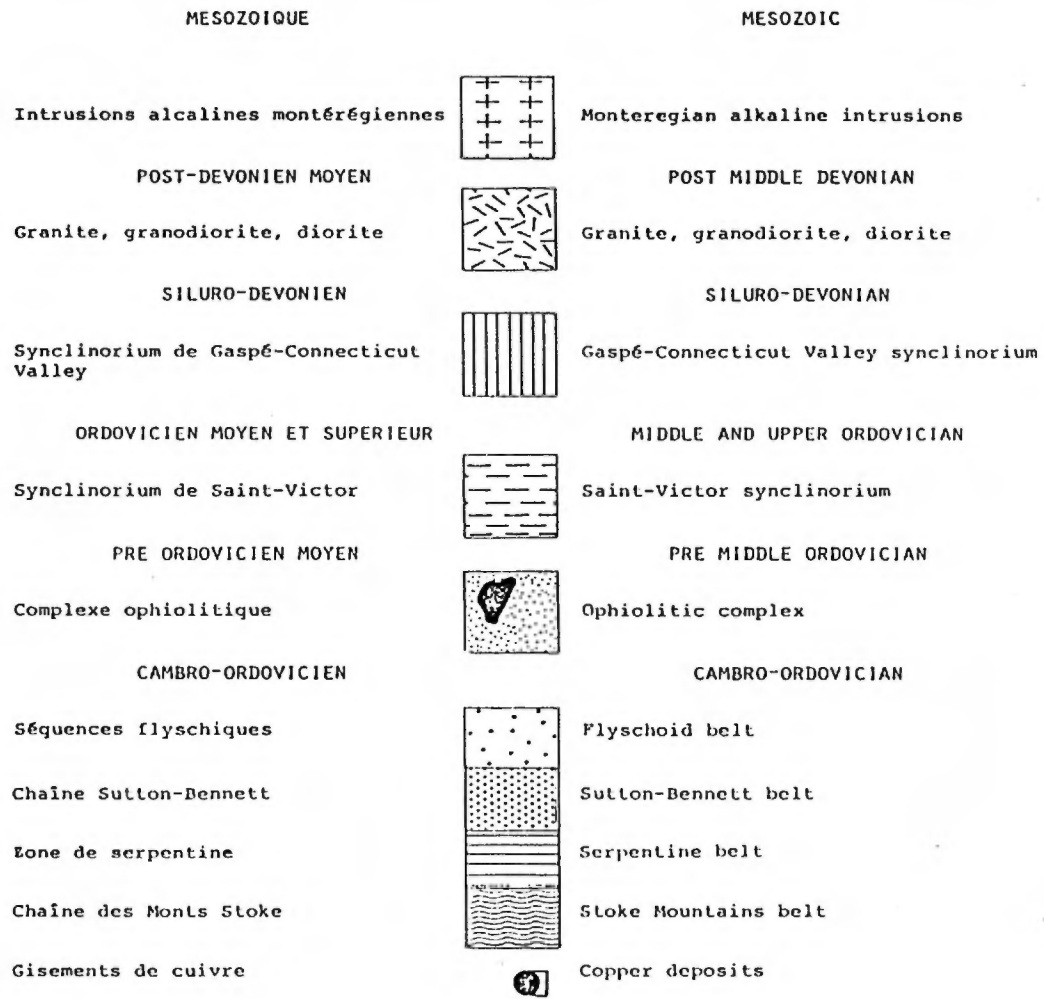


Figure 3 - Map Legend

Metallogenic studies by Harron (1973) have identified distinct mineralization (deposit) types for each of the four major belts, the Flyschoid belt, the Sutton-Bennett belt, the Serpentine belt and the Stoke Mountains belt (see Figure 2).

The Melbourne property is underlain by the Sutton-Bennett belt which is composed primarily of phyllite, slate, quartzite and minor local metavolcanic rocks. Typical mineralization (Harron 1973) consists of quartz vein controlled bornite, chalcopryrite and minor pyrite, molybenite and chalcocite along fractures, interbeds, crosscutting quartz-calcite veins and in chlorite sericite schists.

5.0 PREVIOUS WORK

Most of the exploration work on the property was completed prior to the year 1903, and reports of exploration activity are sparse. The 1866 G.S.C. report mentions several pits and trenches on Lot 8 prior to 1866 (known as the Bowers Mine). In 1902-03 a 7 1/2 x 7 1/2 foot shaft 50 feet deep was completed on Lot 7. Samples were shipped for assay but no production was achieved.

The area was included in a 1976 M.R.N. stream sediment geochemical survey study, but has had no other work recorded since 1903.

6.0 PROPERTY GEOLOGY

6.1 Topography

The western third of the property consists of a small, mostly forest covered, hill rising up to 65m (200') above the central and eastern portions of the property. The central third is low swampy ground overgrown with heavy tag alder cover with local patches of poison sumach. The eastern portion consists of flat lying open pasture except for a narrow band of forest adjacent to the swamp. Drainage is to the north via a small creek passing through the swamp.

Outcrop exposure is limited and occurs mostly in the west and northwest along the top of the hill and in two isolated outcrops in the northeast and east.

6.2 Lithology

Preliminary field mapping indicates the property to be underlain primarily by phyllites and shales in the east and a mixture of metasediments and metavolcanic rocks in the west.

The phyllites and shales are relatively soft, dark grey to green, fine to very fine grained dense rocks with a slaty wavy to crinkly foliation. Accessory minerals include muscovite, chlorite and minor pyrite. Outcrops areas display relict bedding and locally prolific random quartz veining.

At the site of the old Bowers Mine along the northeast property boundary rocks described as quartzites (L. Kovaks) are in contacts with a chloritic schist marking the contact between the quartzites and the phyllites to the east. The meta-quartzite is medium grained, clastic in appearance with a light beige-brownish colour. Reddish brown hematite-limonite? staining is common. Up to 5% muscovite flakes are observed locally. Irregular quartz veins up to 2 feet wide are hosted in both the phyllite and quartzite units near the contact.

The western and southwestern portion of the property is underlain by altered meta-quartzite described by L. Kovaks as being gradational to quartzites further north. These rocks are beige to bluish green, massive, locally foliated with up to 10-15% muscovite, minor chlorite, visible feldspar grains with distinct blue quartz eyes up to 1mm in size. This rock may be in part a quartz eye felsic tuff or sheared porphyry. Exposures observed host many local quartz patches and stringer type quartz veins from 4" up to 2 feet or more in width.

The northwest portion of the property is underlain by quartzites, similar to those near the Bowers Mine site, which host a narrow band of schistose mafic metavolcanics. The mafic rocks are fine grained, light to medium gray-green fairly soft with large green chlorite patches or flakes, especially on shear surfaces. 1-2% pyrite and hematite or limonite is common.

6.3 Structure

The rocks are all moderately to highly sheared with foliations ranging from 230 to 270 degrees but most commonly at 240 degrees (observed in all outcrops).

Only one fault, striking 128 degrees, was observed in the northwest portion of the property. Displacement and dip were not observed.

Geological contacts are assumed to parallel regional contacts and foliation at a bearing of 54-60 degrees. Dips of strata were not observed but may parallel major quartz veins which dip at 80 to 85 degrees to the north.

6.4 Geochemistry

Eleven rock geochemical samples and 187 soil samples were collected and analysed (see Appendix I). Rock samples were collected from outcrops, former trenches and quartz veins. Soil samples for the most part were podzols and loams collected at 6 to 8" below surface. All samples were assayed for Cu and Au contents only, using standard analytical techniques.

GOLD - All 11 rock samples returned only background values ranging from 6-17 ppb gold. Most of the soil samples (78%) assayed less than 10 ppb gold. Samples assaying greater than 10 ppb gold outlined two broad anomalies in Lot 6 and part of Lot 7. Five samples assaying greater than 25 ppb gold outline four discreet anomalous areas (see Map 1). The most significant anomaly 443 ppb gold occurs near the centre of Lot 6.

COPPER - Rock samples collected all contain less than 30 ppm copper and are therefore considered to be background values only. Copper soil samples reflected the same general pattern as gold. More than (65%) assayed less than 10 ppm copper and only 14 of 187 samples contained greater than 20 ppm Cu. The highest Cu values are concentrated in the west and north west portions of the property (see Map 2) and are closely related to the Au soil geochemical anomalies. The highest Cu soil values are obtained in the northeast corner of Lot 6.

7.0 DISCUSSION

Previously reported grab sample results (Dresser 1903) of 24% Cu and 0.45 oz Au per ton could not be duplicated from surface grab samples collected during this survey. However, old pits and trenches were badly overgrown and infilled with debris and could not be re-sampled. The soil geochemical survey outlined several nearly coincidental Au and Cu anomalies in the north western portion of the property. Outcrop exposures concentrated in this area contain 1-2% disseminated sulphides, abundant narrow 2-4" quartz (minor carbonate) veins hosted in an altered (chloritized) and locally silicified quartzite. Overgrown trenches reflect evidence of previous exploration and sampling.

The geological environment is similar to other mineralized (Cu-deposits) areas in the Sutton-Bennett belt. The possible presence of adularia (Bancroft 1916) on the adjacent property to the north and mafic volcanics along the Lot 6 boundary suggest a possible epithermal setting.

8.0 CONCLUSIONS AND RECOMMENDATIONS

The northwestern portion of the Melbourne property hosts several moderate Cu and Au soil geochemical anomalies in a geological environment favourable for vein type gold mineralization.

Geological mapping however failed to locate any mineralized vein structures on the outcrop areas examined.

Considering the lack of observed surface mineralization and the small size of the property no further work is recommended on this property at the present time.

Respectfully submitted...

Joe B. Hinzer



9.0 REFERENCES

DRESS, J.A.; 1902-1903: G.S.C. Annual Report, Vol. XV, Part A, p. 309A.

BANCROFT, J.A.; 1916: Gisements de Cuivre Des Cantons de L'est de la Province de Québec. Ministère de la Colonisation, des Mines des Pecheries.

HARRON, G.A.; 1973: The Metallogeny of Sulphide Deposits in the Eastern Townships. Q.D.N.R. Special Paper D.P. 253.

TREMBLEY, R.L.; 1976: Stream Sediment Geochemistry St-Hyacinthe-Richmond Area. M.R.N.Q. Report E.S. 22 pp. 27.

HINZER, J.B.; 1985: Melbourne Property, Melbourne Township, Quebec, pp. 8.

CERTIFICATE

I, JOE HINZER, am a consulting geologist and reside at 6455 Stamford Green Drive in the city of Niagara Falls, Ontario.

I have been practicing my profession for 15 years and am a graduate of the University of Waterloo, 1971 B.Sc. and the University of Western Ontario, 1977 M.Sc. and am a Fellow of the Geological Association of Canada.

The author warrants that he personally did visit the property and supervised the work performed. Data for this report is based on field data collected under the author's supervision. Conclusions and recommendations are based on the author's interpretation of the data generated by this study.

The author warrants that he has not directly or indirectly received or expects to receive any interest direct or indirect in the property of the company or any affiliate or beneficially owns directly or indirectly any securities of the company or any affiliate.



Joe B. Hinzer

CERTIFICATE OF ANALYSIS



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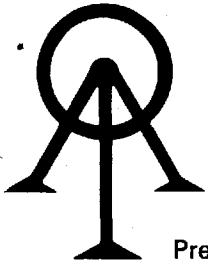
Work Order 870600

Assay results are as follows:

SAMPLE NUMBER		Copper
Accurassay	Customer	ppm
59475	ML1	6.0
59476	ML2	6.8
59477	ML3	3.8
59478	ML4	4.0
59479	ML5	15.6
59480	ML6	5.8
59481	ML7	4.8
59482	ML8	5.4
59483	ML9	4.4
59484	ML10	6.5
59485	ML11	7.2
59486	ML12	2.3
59487	ML13	4.4
59488	ML14	34.1
59489	ML15	5.6
59490	ML16	5.2
59491	ML17	9.2
59492	ML18	6.2
59493	ML19	3.6
59494	ML20	3.2
59495	ML21	6.5
59496	ML22	2.4
59497	ML23	7.7
59498	ML24	8.4
59499	ML25	6.5
59500	ML26	9.6
59501	ML27	3.8
59502	ML28	7.2
59503	ML29	6.5
59504	ML30	24.8
59505	ML31	44.4
59506	ML32	15.7
59507	ML33	132.8

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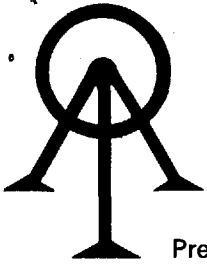
Work Order 870600

Assay results are as follows:

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Accurassay	Customer	ppm
59508	ML34	12.4
59509	ML35	11.1
59510	ML36	11.9
59511	ML37	58.1
59512	ML38	21.2
59513	ML39	6.8
59514	ML40	25.0
59515	ML41	38.9
59516	ML42	12.8
59517	ML43	3.1
59518	ML44	9.6
59519	ML45	14.0
59520	ML46	3.2
59521	ML47	12.8
59522	ML48	12.4
59523	ML49	3.7
59524	ML50	8.8
59525	ML51	8.8
59526	ML52	6.8
59527	ML53	4.4
59528	ML54	7.7
59529	ML55	10.4
59530	ML56	4.2
59531	ML57	6.5
59532	ML58	10.7
59533	ML59	3.8
59534	ML60	7.2
59535	ML61	5.6
59536	ML62	4.0
59537	ML63	6.0
59538	ML64	7.2
59539	ML65	2.8
59540	ML66	8.0

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Assay results are as follows:

SAMPLE NUMBER		Copper
Accurassay	Customer	ppm
59541	ML67	<1.0
59542	ML68	6.7
59543	ML69	<1.0
59544	ML70	6.4
59545	ML71	8.8
59546	ML72	12.0
59547	ML73	5.8
59548	ML74	3.7
59549	ML75	3.2
59550	ML76	4.0
59551	ML77	3.2
59552	ML78	4.6
59553	ML79	4.8
59554	ML80	7.3
59555	ML81	4.8
59556	ML82	5.6
59557	ML83	5.9
59558	ML84	sample missing
59559	ML85	6.9
59560	ML86	5.0
59561	ML87	8.4
59562	ML88	6.4
59563	ML89	1.9
59564	ML90	5.8
59565	ML91	3.8
59566	ML92	12.8
59567	ML93	14.0
59568	ML94	4.8
59569	ML95	18.4
59570	ML96	6.3
59571	ML97	1.5
59572	ML98	4.4
59573	ML99	25.0

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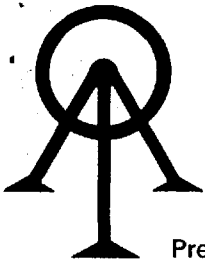
Work Order 870600

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59574	ML100	5.2
59575	ML101	7.7
59576	ML102	5.0
59577	ML103	5.8
59578	ML104	8.1
59579	ML105	9.5
59580	ML106	6.8
59581	ML107	8.5
59582	ML108	6.4
59583	ML109	5.8
59584	ML110	17.6
59585	ML111	5.2
59586	ML112	7.2
59587	ML113	16.8
59588	ML114	10.8
59589	ML115	23.2
59590	ML116	17.7
59591	ML117	25.2
59592	ML118	6.5
59593	ML119	9.6
59594	ML120	9.2
59595	ML121	8.2
59596	ML122	16.0
59597	ML123	8.0
59598	ML124	17.3
59599	ML125	9.2
59600	ML126	7.6
59601	ML127	8.0
59602	ML128	12.7
59603	ML129	11.2
59604	ML130	11.6
59605	ML131	12.4
59606	ML132	13.2

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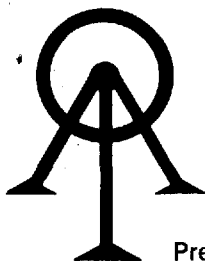
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Assay results are as follows:

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Accurassay	Customer	ppm
59607	ML133	16.7
59608	ML134	8.8
59609	ML135	6.4
59610	ML136	4.8
59611	ML137	6.8
59612	ML138	6.8
59613	ML139	3.9
59614	ML140	7.7
59615	ML141	8.1
59616	ML142	3.1
59617	ML143	4.8
59618	ML144	5.6
59619	ML145	2.4
59620	ML146	6.9
59621	ML147	sample missing
59622	ML148	sample missing
59623	ML149	sample missing
59624	ML150	8.8
59625	ML151	18.4
59626	ML152	6.0
59627	ML153	8.4
59628	ML154	21.2
59629	ML155	9.6
59630	ML156	34.4
59631	ML157	5.2
59632	ML158	7.2
59633	ML159	12.0
59634	ML160	5.6
59635	ML161	7.2
59636	ML162	10.4
59637	ML163	10.0
59638	ML164	8.5
59639	ML165	12.1

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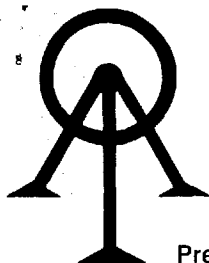
Assay results are as follows:

SAMPLE NUMBER		Copper
Accurassay	Customer	ppm
59640	ML166	13.2
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59642	ML168	12.3
59643	ML169	8.8
59644	ML170	9.6
59645	ML171	6.8
59646	ML172	7.1
59647	ML173	10.8
59648	ML174	13.1
59649	ML175	16.4
59650	ML176	14.3
59651	ML177	7.1
59652	ML178	12.2
59653	ML179	20.0
59654	ML180	24.0
59655	ML181	13.2
59656	ML182	18.5
59657	ML183	20.8
59658	ML184	22.0
59659	ML185	18.0
59660	ML186	9.6
59661	ML187	16.7
59662	101	20.0
59663	102	10.4
59664	103	10.4
59665	104	12.2
59666	105	26.8
59667	106	21.2
59668	107	5.2
59669	108	12.0
59670	109	24.0
59671	110	4.4
59671A	111	5.2

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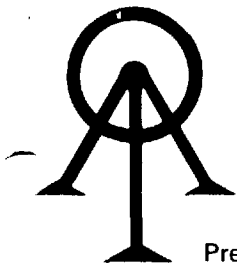
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Assay results are as follows:

SAMPLE NUMBER		Copper
Accurassay	Customer	ppm
59671B	no tag	3.2
59671C	ML133B	9.2
59671D	ML136B	6.3
59671E	ML178B	14.0

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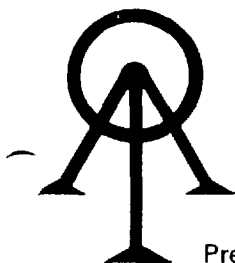
Work Order 870600

Assay results are as follows:

SAMPLE NUMBER		Gold
Accurassay	Customer	ppb
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59476	ML2	10
59477	ML3	13
59478	ML4	8
59479	ML5	9
59480	ML6	7
59481	ML7	6
59482	ML8	<5
59483	ML9	<5
59484	ML10	6
59484	ML10	6 Check
59485	ML11	<5
59486	ML12	<5
59487	ML13	6
59488	ML14	<5
59489	ML15	<5
59490	ML16	<5
59491	ML17	<5
59492	ML18	6
59493	ML19	<5
59493	ML19	<5 Check
59494	ML20	<5
59495	ML21	<5
59496	ML22	6
59497	ML23	13
59498	ML24	13
59499	ML25	13
59500	ML26	11
59501	ML27	13
59502	ML28	15
59502	ML28	20 Check
59503	ML29	<5
59504	ML30	5

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Date: 09/22/87 19

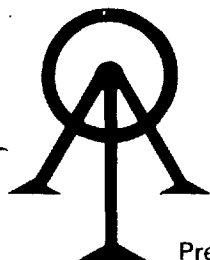
Work Order 870600

Assay results are as follows:

SAMPLE NUMBER	Gold
Accurassay Customer	ppb
59505 ML31	<5
59506 ML32	<5
59507 ML33	<5
59508 ML34	<5
59509 ML35	<5
59510 ML36	6
59511 ML37	13
59511 ML37	ins. sample
59512 ML38	<5
59513 ML39	<5
59514 ML40	<5
59515 ML41	<5
59516 ML42	<5
59517 ML43	50
59518 ML44	<5
59519 ML45	<5
59520 ML46	<5
59520 ML46	<5 Check
59521 ML47	<5
59522 ML48	<5
59523 ML49	<5
59524 ML50	<5
59525 ML51	result to be forwarded
59526 ML52	<5
59527 ML53	<5
59528 ML54	<5
59529 ML55	<5
59529 ML55	<5 Check
59530 ML56	6
59531 ML57	<5
59532 ML58	<5
59533 ML59	<5
59534 ML60	10

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Date: 09/22/87 19

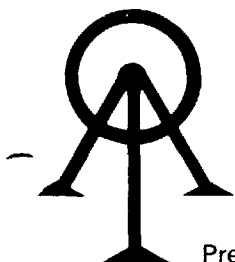
Work Order 870600

Assay results are as follows:

SAMPLE NUMBER	Gold
Accurassay Customer	ppb
59535 ML61	8
59536 ML62	7
59537 ML63	<5
59538 ML64	<5
59538 ML64	ins. sample
59539 ML65	<5
59540 ML66	<5
59541 ML67	<5
59542 ML68	<5
59543 ML69	11
59544 ML70	<5
59545 ML71	6
59546 ML72	13
59547 ML73	<5
59547 ML73	<5 Check
59548 ML74	<5
59549 ML75	<5
59550 ML76	<5
59551 ML77	<5
59552 ML78	<5
59553 ML79	<5
59554 ML80	<5
59555 ML81	<5
59556 ML82	<5
59556 ML82	<5 Check
59557 ML83	<5
59558 ML84	sample missing
59559 ML85	<5
59560 ML86	<5
59561 ML87	<5
59562 ML88	<5
59563 ML89	<5
59564 ML90	<5

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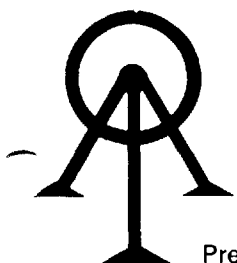
Work Order 870600

Assay results are as follows:

SAMPLE NUMBER		Gold	
Accurassay	Customer	ppb	
59565	ML91	<5	
59565	ML91	ins. sample	Check
59566	ML92	<5	
59567	ML93	<5	
59568	ML94	<5	
59569	ML95	<5	
59570	ML96	<5	
59571	ML97	<5	
59572	ML98	<5	
59573	ML99	97	
59574	ML100	<5	
59574	ML100	<5	Check
59575	ML101	443	
59576	ML102	<5	
59577	ML103	<5	
59578	ML104	<5	
59579	ML105	<5	
59580	ML106	<5	
59581	ML107	<5	
59582	ML108	<5	
59583	ML109	<5	
59583	ML109	ins. sample	Check
59584	ML110	<5	
59585	ML111	<5	
59586	ML112	<5	
59587	ML113	<5	
59588	ML114	6	
59589	ML115	<5	
59590	ML116	<5	
59591	ML117	<5	
59592	ML118	<5	
59592	ML118	<5	Check
59593	ML119	<5	

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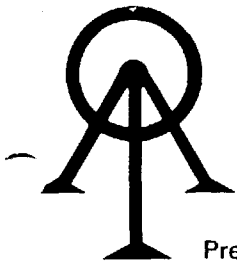
Work Order 870600

Assay results are as follows:

SAMPLE NUMBER	Gold
Accurassay Customer	ppb
59594 ML120	<5
59595 ML121	<5
59596 ML122	<5
59597 ML123	<5
59598 ML124	<5
59599 ML125	<5
59600 ML126	<5
59601 ML127	<5
59601 ML127	<5 Check
59602 ML128	<5
59603 ML129	<5
59604 ML130	<5
59605 ML131	<5
59606 ML132	<5
59607 ML133	<5
59608 ML134	<5
59609 ML135	<5
59610 ML136	<5
59610 ML136	<5 Check
59611 ML137	11
59612 ML138	8
59613 ML139	13
59614 ML140	<5
59615 ML141	<5
59616 ML142	<5
59617 ML143	<5
59618 ML144	<5
59619 ML145	<5
59619 ML145	8 Check
59620 ML146	9
59621 ML147	sample missing
59622 ML148	sample missing
59623 ML149	sample missing

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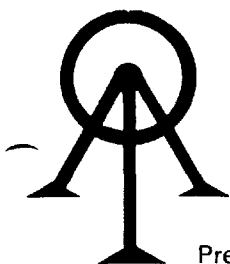
Work Order 870600

Assay results are as follows:

SAMPLE NUMBER	Gold	
Accurassay Customer	ppb	
59624 ML150	13	
59625 ML151	25	
59626 ML152	23	
59627 ML153	19	
59628 ML154	71	
59628 ML154	ins. sample	Check
59629 ML155	19	
59630 ML156	8	
59631 ML157	9	
59632 ML158	<5	
59633 ML159	7	
59634 ML160	<5	
59635 ML161	<5	
59636 ML162	6	
59637 ML163	12	
59637 ML163	ins. sample	Check
59638 ML164	11	
59639 ML165	11	
59640 ML166	15	
59641 ML167	8	
59642 ML168	11	
59643 ML169	11	
59644 ML170	10	
59645 ML171	17	
59646 ML172	9	
59646 ML172	ins. sample	Check
59647 ML173	5	
59648 ML174	14	
59649 ML175	18	
59650 ML176	10	
59651 ML177	8	
59652 ML178	<5	
59653 ML179	5	

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Work Order 870600

Assay results are as follows:

SAMPLE NUMBER		Gold	
Accurassay	Customer	ppb	
59654	ML180	<5	
59655	ML181	6	
59655	ML181	ins. sample	Check
59656	ML182	37	
59657	ML183	15	
59658	ML184	16	
59659	ML185	14	
59660	ML186	13	
59661	ML187	15	
59662	101	14	
59663	102	14	
59664	103	13	
59664	103	15	Check
59665	104	15	
59666	105	17	
59667	106	16	
59668	107	14	
59669	108	14	
59670	109	12	
59671	110	6	
59671A	111	6	
59671B	no tag	6	
59671B	no tag	7	Check
59671C	ML133B	6	
59671D	ML136B	6	
59671E	ML178B	6	

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