Exploration Report on the
SHERI CLAIMS
120°48'17"W x 120°56'16"W
51°55'13"N x 51°57'41"N
NTS 92P-15W Clinton M.D.
by M.A. Leonard, under supervision
H.J. Wahl, P. Eng.,
November 29, 1973

92P/15W

MAPS

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4734

92P/15W

PICKANDS MATHER & CO.

EXPLORATION REPORT ON SHERI CLAIMS

INDEX

PICKANDS MATHER & CO.

Exploration Report

PROPERTY:	Sheri Claims (92P-15W)
PERIOD:	June 15, 1973 to September 15, 1973
DATE:	November 15, 1972
FIELD WORK BY:	Marc A. Leonard (geologist)
SUPERVISION BY:	H.J. Wahl, P. Eng.

SUMMARY:

The objective of the work carried out during the 1973 program was to evaluate the area defined by the Sheri Claim Group.

A total of 75.77 miles of picket and blazed lines (400,100 feet) were cut and chained, 64.1 miles of which were soil sampled at 100-foot intervals (3270 samples.) In addition, a ground magnetometer survey (approximately 70.9 miles), a mercury vapor survey (4.1 miles) and a geological survey were carried out on the Sheri Claim Group.

The magnetometer survey was useful in determining the presence and extent of more basic intrusive lithologies under drift covered areas.

High soil Cu values, generally trending east-west are scattered throughout the property; however, the central part of the Sheri Claim Group presents more interest due to the size and the number of individual anomalies.

Geological mapping defined various rock types of Triassic and/or Jurassic age and located minor chalcopyrite mineralization and copper stain in medium and fine grained hornblendite near stations 106E-62S and 96E-28N.

A partial mercury vapor survey recorded some anomalous responses, which remain to be verified by an IP survey and/or drilling.

An IP survey is recommended to determine if bedrock conductivity is associated with the soil geochemical anomalies and the Hg-vapor results, in the central part of the property. The IP survey would involve approximately 10 line miles. Based upon the results of survey work to date, and the outcome of the IP surveying, a test drilling program might be recommended.

INTRODUCTION

History:

The 1972 geochemical sediment sampling program revealed a copper anomaly near Susan Lake (approximately 6 miles north of Eagle Creek Village.) This discovery was claimed by staking 123 claims during the period October 21 to October 28, 1972.

OWNERSHIP

Pickands Mather & Co.
Suite 216 - 475 Howe Street
Vancouver 1, B.C.

PROPERTY DESCRIPTION

123 full sized claims being the Sheri Nos. 1 through 97 and Sheri Nos. 99 through 124 inclusive: Record Nos. 30075 through 30197 inclusive.

Date Staked:	October 21-28, 1972
Date Recorded:	October 31, 1972
Date Assessment work due:	October 31, 1973

Additional claims were staked as the field work progressed. These are: Succ Nos. 1 through 20 inclusive, record Nos. 31225 through 31244 inclusive, staked on July 21, 1973 and recorded on July 31, 1973.

Finally, on September 14, 1973, six more claims were staked in the north central part of the property. These are: Sheri Nos. 125 through 130 inclusive.

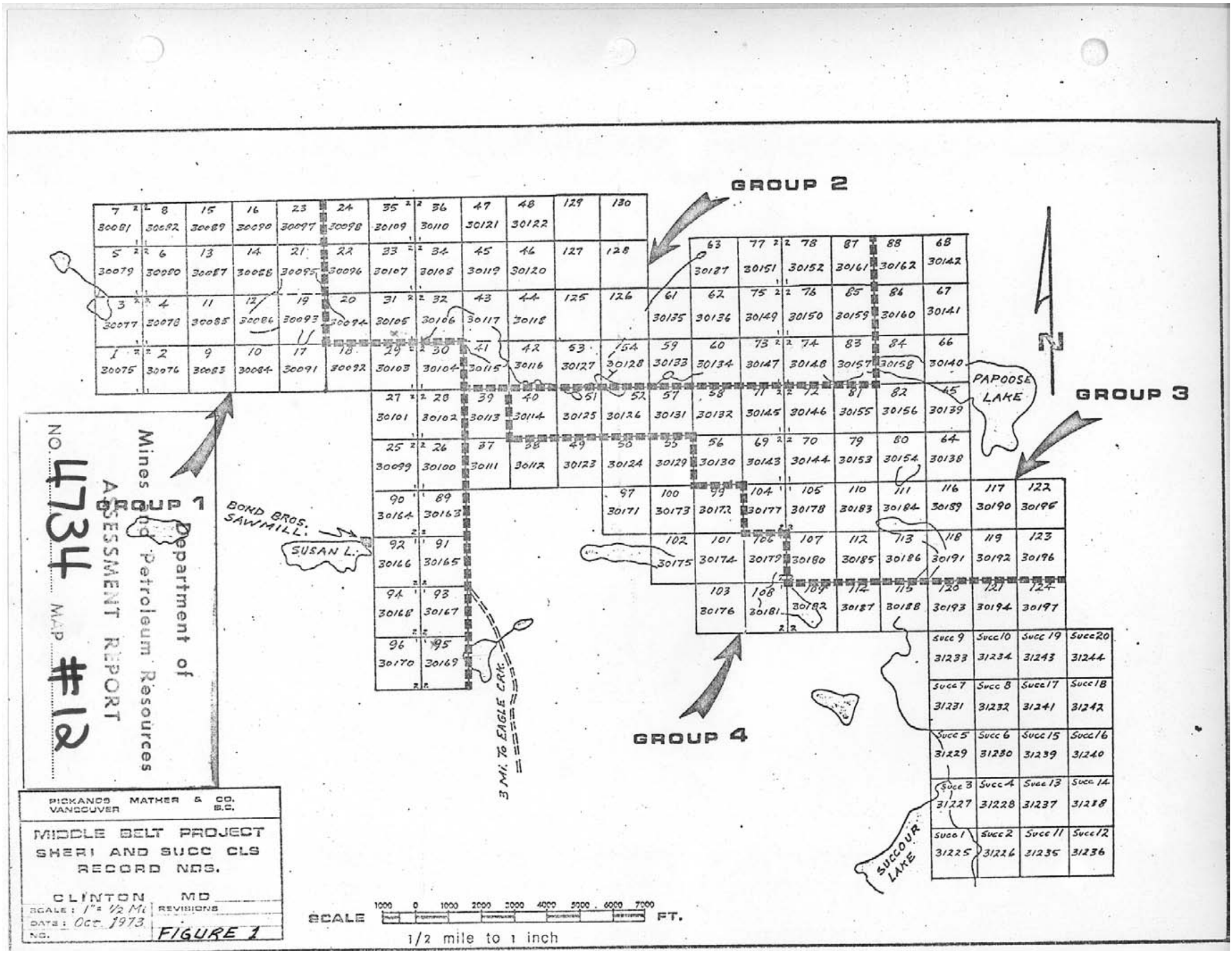
The Sheri Claim Property has been divided into (4) groups (Sheri Group Nos. 1 to 4) containing 35, 39, 35 and 40 claims respectively. (Ref. Figure 1)

LOCATION

Perimeter of Property	120 48'17"W - 120 56'16"W 51 55'13"N - 51 57'41"N
N.T.S Number:	92P - 15W
Country:	Canada
Province:	British Columbia
Mining Division:	Clinton
Distance to Vancouver:	Approximately 220 Air Miles Approximately 340 miles by road

ACCESS

From Vancouver, the property is readily accessible by the Trans-Canada Highway up to Cache Creek, to 100 Mile House by Highway No. 97, and from that town to the Sheri Claim Property by the Forest Grove and Eagle Creek roads: From Eagle Creek (Canim Lake), to the center of the property by the Boss Mountain road and the Succour Lake forest access road.


GROUP 1
GROUP 2
GROUP 3
GROUP 4
Mines and Petroleum Resources
Department of
ASSESSMENT REPORT
NO. 4734 MAP #12
BOND BROS. SAWMILL
SUSAN L.
3 Mi. TO EAGLE CRK.
PAPOOSE LAKE
SUCCOUR LAKE
PICKANDS MATHER & CO. VANCOUVER B.C.
MIDDLE BELT PROJECT
SHERI AND SUCC CLS
RECORD NOS.
CLINTON MD
SCALE: 1" = 1/2 Mi
DATE: Oct 1973
NO.
REVISIONS
FIGURE 1
SCALE 1000 0 1000 2000 3000 4000 5000 6000 7000 FT.
1/2 mile to 1 inch

TOPOGRAPHY

The Sheri Claim Property lies within the northeast sector of the Fraser Plateau, near the Quesnel Highland. The true elevations range from 3000 feet near Susan Lake to a maximum of approximately 4100 feet in the northeast sector of the property, north of Papoose Lake.

The property mainly consist of a series of rounded hills separated by generally swampy low lying valleys.

Locally the relief increases. In the west sector steep ridges occur; these ridges are dissected by relatively straight depressions generally oriented N and NE. The north central and the northeast sectors are marked by an abrupt northward increase in elevations.

Two series of interconnected lakes and swamps, roughly oriented northeast occur across the property. These, along with other linear depressions of various orientations reflect major bedrock faulting.

Overburden covers much of the property. The overburden thickness is highly variable; as a rule, the crests of the hills are thinly covered or completely bare of overburden, especially in the west sector; elsewhere, in low lying valleys and depressions, the overburden thickness may exceed 100 feet. The overburden observed in road cuts consists of glacial drift, which has a poorly developed soil profile.

The vegetation is predominantly evergreens. The entire property has been subject to intense logging up to the end of 1972. The numerous tote roads have facilitated the access to different parts of the property but in general it has been noted that the logging concession could have been left in a much better state. Widespread areas of slash and un-utilized felled timber make normal foot travel exceedingly difficult.

POWER LINE

A main power transmission line (Boss Mountain T.L.) passes 4 miles east of the center of the property.

EXPLORATION

The field exploration program was initiated on June 15, by the establishment of a base camp in the vacated buildings of the logging company near Susan Lake, and by the field lay-out of the base line. The grid lines, amounting to 75.77 miles of picket and blazed lines were then completed. Accompanying and following the line cutting, soil sampling, magnetometer, mercury vapor and geological surveys were carried out.

On July 21, twenty claims were staked in the southeast part of the property. (Succ 1 through 20), and soil samples were taken on the claim staking lines at 200 foot intervals.

The exploration program ended on September 15, with the demobilization of the base camp.

PICKET GRID (172 man-days)

Period June 16 to July 31.

A grid of picket and blazed lines was established over the entire claim group with north-south lines at 800-foot intervals. The grid was controlled by tie-lines running east-west as shown on the accompanying map. The line cutting amounted to 75.77 miles.

GEOCHEMICAL WORK (49 man-days)

Periods: July 4 to July 19, and July 22 to August 10.

A total of 3270 soil samples were collected with a standard Army entrenching tool, or a grub hoe at 100-foot intervals over 65.1 miles of lines. The samples were taken in the B horizon when available, or at a depth of appriximately 10 inches, on or within a 25-foot radius of the sampling point. Samples were placed in Kraft paper soil sample bags and labelled according to line and station. For each soil sample, the relative elevation of the sampling point was recorded, and the soil samples were classified according to the following system.

N	Stony soil - drift with no soil profile development
S	Sand
L	Loam: rich organic - silty soil found in low lying areas.
M	Decomposed moss from swamps and boggy ground.
Ao	Organic litter; non-decomposed to partly decomposed organic matter
A_1	Decomposed organic matter - may contain some mineral soil
A_2	Leached sandy gray horizon
B_1	Accumulation horizon. Consists of mineral soil, usually reddish brown to orange in color due to the high iron content. Accumulates metal from above and below.
B_2	A mineral soil similar to the B horizon but containing much less iron and being consequently yellow brown in color. Does not concentrate metals as well as the B_1 horizon.
C	Parent material; may consist of bedrock, glacial overburden or residual depsoits.

THERE WERE

Number	Class	% Total
1460	N	44.65
22	S	0.67
82	L	2.51
87	M	2.66
114	A_o	3.49
133	A_1	4.07
227	A_2	6.94
519	B_1	15.87
610	B_2	18.65
16	C	0.49
3270		100.00%

The samples were strung on plastic coated wire and hung inside one of the base camp buildings for drying prior to shipment.

In addition to the soil samples, 66 lake sediment samples were collected on September 12, with a drive sampler. A Bell Model 47G-3B1 helicopter was used for this program. The lake sediments mainly consisted of clay, organic, and silt material.

All the samples were assayed for copper and silver by:

Fraser Laboratories Ltd.
1175 West 15th Street
North Vancouver, B.C.
(Registered Assayer, Province of British Columbia)

GEOLOGICAL MAPPING (46 man-days)

Periods: July 16, July 19 to July 29, August 1 to August 14.

A geological survey has been conducted over 9.2 square miles of the property. Particular attention was paid to the rock type, alteration, fracture and joint pattern, and mineralization.

MAGNETOMETER SURVEY (37 man-days)

Periods: July 13, July 20 to July 23, August 11 to August 16, August 23 to August 27, August 30 to September 11.

A ground, vertical intensity, magnetometer survey was performed at 100-foot intervals over 70.93 miles of picket and blazed lines. Two

M700 McPhar fluxgate model magnetometers (Sr. Nos. 7033 and 6610) were used for this survey.

The magnetometers were zeroed at the base station near the base camp. During the survey one of the magnetometers was maintained at the base station and readings were taken at one hour intervals to establish the diurnal variation curve, while the other was used in the field. The survey was started by establishing the magnetic values on the base line at 800 foot intervals. Each of these values were used as a reference datum to correct the cross line values.

A maximum diurnal variation of 130 gammas occurred on September 9.

MERCURY VAPOR SURVEY (4 man-days)

Periods: September 1, 3, 13, 14

A mercury vapor survey was carried out on 4.1 miles of blazed lines at 200-foot intervals. This survey covered part of lines 136E, 160E, 168E, 176E, 200E and 232E.

Most of the soil gas samples were collected during a period exceeding 20 hours on -80 Mesh gold plated silver screens placed in the chimneys of plastic domes (Figure 2). The collector screens were then wrapped in "Saran Wrap" to prevent contamination, placed in kraft paper envelopes, and labelled according to line and station. The collector grids were taken to the base camp and analyzed with a "Geomet" Mercury Air Montitor Model 103 (Sr. No. 024), (Figure 3), complete with an induction furnace.

For the analysis, the screen is placed in the induction furnace and heated for a period of 4 minutes at a temperature varying between 750 and 825 F.

At that temperature, the electrical bond between the precious metal screen and the Hg is broken and the mercury is liberated in a vapor state. The Hg vapor is then forced through a tube having at one end an Ultra Violet light and at the other end a photo cell.

The amount of light absorbed by the Hg vapor is recorded on a Digital Volt Meter. The corrected DVM reading is measured against a reference curve, specific to the instrument being used, to obtain the values in nanograms of mercury.

FIGURE 2. Dome with screen in chimney

FIGURE 3. "Geomet" model 103 c/w induction furnace

GEOLOGY

General Geology

Regional Setting:

Most of the Sheri Property is located within the central-east part of the Takomkane batholith of late Triassic or early Jurassic age. Some rocks are part of the Nicola Group, also of Late Triassic age, but the Nicola Group was found not to be as extensive as mapped by the G.S.C.

According to the G.S.C., the bulk of the rocks of the Takomkane batholith are hornblendite, biotite granodiorite, and quartz diorite; however, other types of rocks such as diorite, syenodiorite, and quartz monzonite, are also encountered.

Faults and joints are observed throughout the Sheri Claims; the major faults are located in the east portion of the property. According to the G.S.C. faulting and jointing may have occurred repeatedly over a long period from early Jurassic to Miocene time. Some of the breccia and dyke rocks may possibly have been emplaced during the faulting period.

ROCK TYPES

Most of the outcrops are located either in the east or west parts of the property: The center sector is more heavily and/or extensively drift covered. (Figure 4). As observed, the general geology is complex, and the area appears to have hosted multiple intrusions. Volcanics and sediments are also present to a lesser extent. The different rock types are described in order of apparent age relationship.

Aplite: A buff coloured rock characterized by uniform sugary crystals of fine grain size. The aplite dykes, mostly trending northwest, are observed in the west and central portions of the property. In one dyke, the aplite was foliated near its contact with the quartz-monzonite. The weathered surface of the aplite is whitish. Iron oxide staining may be observed along some fractures.

Trachyte porphyry: Has a uniformly fine grained, light brown to pinkish ground mass, containing dark brown phenocrysts. In similarity with the aplite dykes, the trachyte porphyry dykes are observed in the western and central portions of the property and trend predominantly northeast. The weathered surface is pinkish to light brown and sometimes whitish.

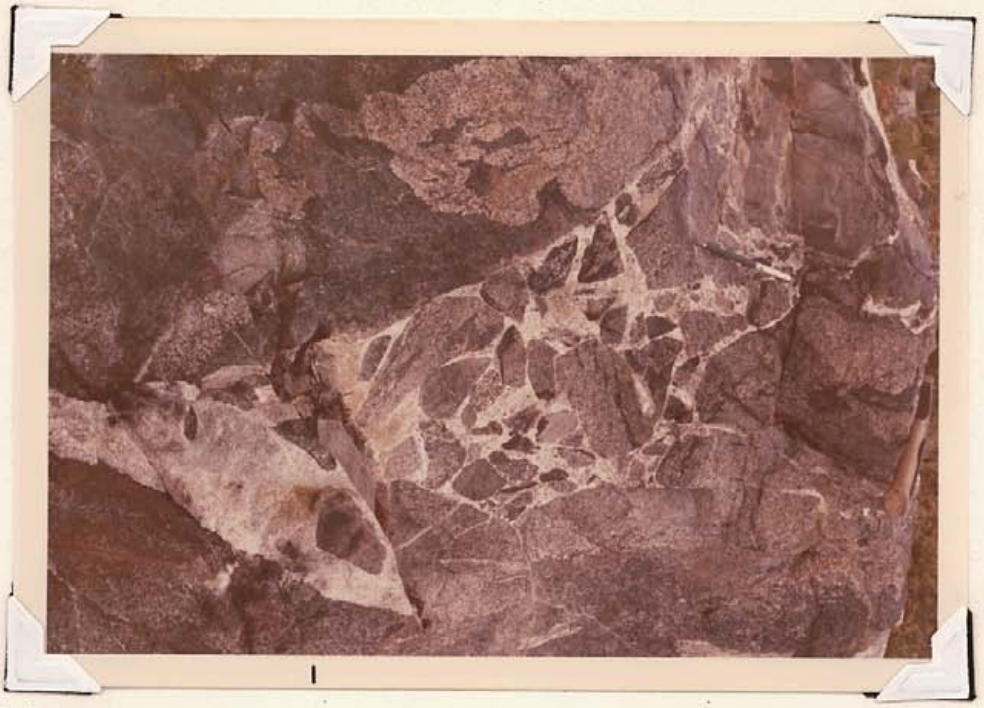
TRIASSIC OR EARLY JURRASSIC

Brecciated rocks: (intrusive)

Hornblendite and diorite breccia have been observed in the central and eastern parts of the property. (Figures 5 & 6). Large angular hornblendite fragments are imbedded in a fine to "pegmatitic" feldspathic matrix (diorite), occasionally showing flow structure. The diorite breccia occurs only in the southeast part of property.

In many places brecciated hornblendite can be observed at the contact of diorite-hornblendite. The breccia may be associated with faulting, although it is suspected that the breccia is more likely related to intrusive pulsations of a differentiated hornblendite stock.

Diorite: The diorite is a gray, unaltered granitic quartz diorite having a ground mass of whitish feldspar with scattered crystals of mafics. The weathered surface of the diorite is usually bleached white. Most diorite outcrops are found in the southeast part of the property.



(Figure (5) Hornblendite Breccia, at the contact hornblendite-diorite.

Figure (6) Coarse hornblendite showing intense epidotization.

Hornblendite: The dark green to black hornblendite, occurs primarily as fine, medium, and coarse grained varieties. A pegmatatic phase is also present and a porphyritic variety is sometimes observed in outcrop. The crystals of hornblende are generally in random orientation; however a preferential orientation can be observed where the hornblendite is foliated. In the coarse grained variety, 1/2 inch long hornblende crystals are frequently present, often accompanied by large sodic feldspar crystals. The weathered surface of the hornblendite is dark to light gray, sometimes whitish, or marked by iron oxide staining. In the porphyry variety, the phenocrysts offer more resistance to erosion than the finer grained ground mass.

The hornblendite is the predominant lithology underlying the Sheri claims.

Quartz Monzonite: A medium to coarse grained speckled gray rock, with scattered coarse phenocrysts of pinkish potash feldspar, and variable amounts of hornblende and biotite crystals. The weathered surface is generally grayish to brownish in colour, and the potash feldspar often has a dusting of clay minerals.

The quartz monzonite is only observed in the west part of the property where it outcrops abundantly.

LATE TRIASSIC: (Nicola Group ?)

Porphyritic Amygdaloidal Basalt:

Dark gray, fine grained ground mass containing phenocrysts of pyroxenes(augite), amygdules of quartz and epidote, and minor disseminated pyrite. The weathered surface is dark to light gray and the amygdules are largely weathered - out revealing the primary vesicules which they replace.

The basalts are observed in the east central part of the property.

Andesite: A light gray to brownish aphanitic rock with minor sulphides (pyrite). The weathered surface is rusty to dark brown in colour and near the surface one can observe pyrite crystals oxidized into limonite.

Only one outcrop of andesite has been observed on the property (232E-15N)

Graywacke: Dark gray medium to fine grained feldspathic graywacke with abundant disseminated pyrite crystals. The graywacke appears to be slightly metamorphosed and displays foliation. On surface its colour is brownish, due to the oxidation of the pyrite crystals. The graywacke was only observed in the west part of the property.

Tuff: A buff to brown coloured fine-grained, even bedded tuff (Figure 7). The bedding is regular and the layers are approximately 1 inch thick. The outcrops are whitish due to surface oxidation. This unit only outcrops in the eastern sector of the property.

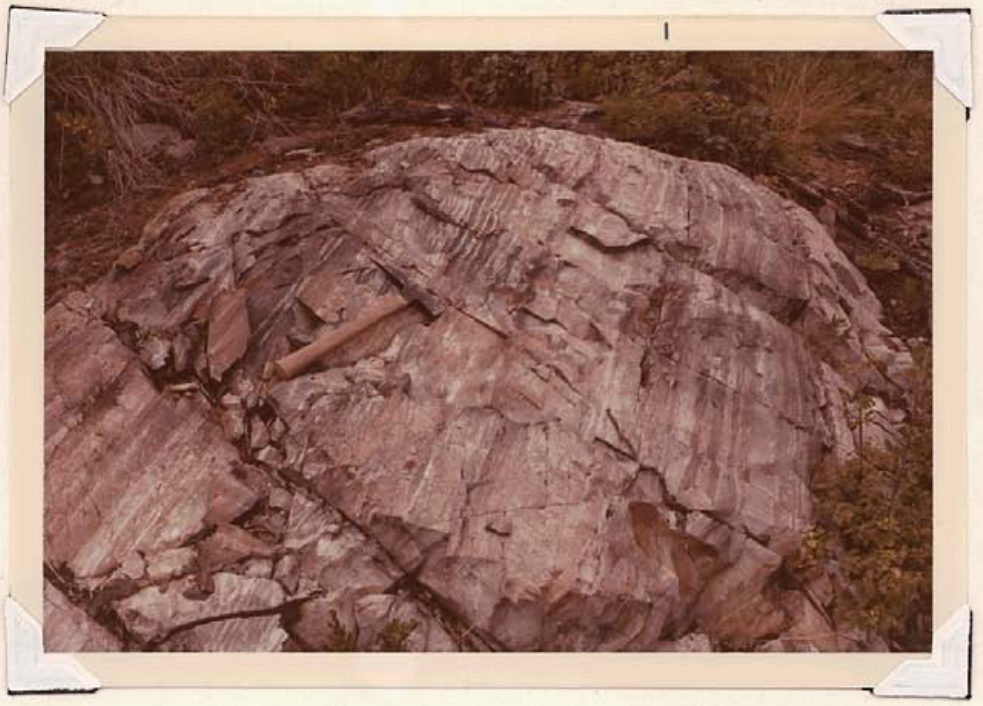


Figure (7) Outcrop of Tuff.

Alteration:

Silicification:

Intense silicification, has been observed in the eastern region of the property. In many outcrops between Papoose Lake and the area south of Boomerang Lake, the silicification has completely obliterated the original rock minerals. The rocks are mainly light gray to white and are composed of aphantitic (glassy) quartz with abundant disseminated pyrite. The weathered surface of the silicified outcrops is rusty due to the oxidation of the pyrite.

In other parts of the property silicification was observed in a few outcrops, but to a much lesser extent.

Epidotisation:

Epidote alteration has been observed in most of the rock types on the property. In the quart-monzonite and hornblendite, epidotization has been observed along fracture planes. Intense epidotization has been observed in some areas of breccia (Figure 5).

Biotite and Chlorite:

Secondary biotite and chlorite are also noteworthy alteration products observed in some areas of the hornblendite.

Mineralization:

Chalcopyrite and copper stain:

Chalcopyrite mineralization and copper stain were observed in medium and fine grained hornblendite near stations 106E-62S and 96E-28N.

Collected rock samples from various parts of the property (refer Appendix, petrographic descriptions, 1972) also revealed traces of chalcopyrite, and copper stain. This mineralization was mainly observed in the light coloured feldspar-rich phase of the pegmatitic hornblendite rock variety.

Pyrite and pyrrhotite:

Dissiminated and fracture filling pyrite occurs abundantly in the silicified rocks of the east part of the property and in the graywacke located in the west portion of the property. Minor amounts of disseminated pyrite and/or pyrrhotite are observed in other rock types throughout the property; however, the only pyrite observed in the quartz monzonite outcrops was south of the base line near the quartz-monzonite-hornblendite contact.

Magnetite & hematite (specularite)

Magnetite is observed in some medium and coarse (pegmatitic) hornblendite types. The magnetite occurs as medium and coarse disseminated crystals, as well as fracture fillings. The total iron content of one magnetite-rich hornblendite was found to be in excess of 14 percent (refer rock assay, Appendix).

Specular hematite was observed in one highly fractured fine grained, hornblendite outcrop, located at 66E, 4S. The specularite occured as a fracture filling.

GEOCHEMICAL INTERPRETATION

On the basis of overburden exposures found along road cuts, the soil profile within the Sheri Claims is poorly developed, and consists predominantly of stony soil (glacial drift, "N" horizon).

The results of the 1973 soil geochemical program have confirmed the Cu anomalies revealed during the 1972 sediment sampling program.

The Cu data have been contoured at levels of 40, 70, 100, 300, and +500 ppm. (Figure 8)

The Cu values range from 1 to 1460 ppm, but as indicated in Figure 8, the background in the Sheri Claims area is very low (0-50 ppm).

A series of Cu-soil anomalies trending east-west can be observed throughout the property. The width of these anomalies varies from 100 to 1200 feet and the length, highly variable, sometimes reaches 1 1/2 miles.

The highest and most persistant Cu anomalies are located within a more or less rectangular area defined by the following coordinates; 56E-00N, 64E-47N, 152E-20S and 160E-28N. In this area are 3 main anomalies averaging 450 feet in width and over 2000 feet in length, as well as numerous smaller co-associated, anomalous trends.

Chalcopyrite was observed near station 96E-28N, where the soil Cu value is 64 ppm.

GEOPHYSICAL INTERPRETATION

The magnetometer survey was useful in determining the approximate contact between the quartz-monzonite and the hornblendite in the north western sector of the property, and 2 possible faults; one located within the quartz-monzonite and the other located in the north east part of the central portion of the property.

The magnetic values have been contoured at ± 500, ± 1000, ± 2000, ± 3000, ± 5000 and ± 10,000 gammas. (Figure 9).

In general, the magnetic values are low except for an area of triangular shape defined by the following coordinates 32E-70N, 144E-20S and 176E-60N. In this area the values range from + 2000 gammas to over + 10,000 gammas, and appear to be related to the magnetic content of the hornblendite which was over 20% in the sample tested. (refer App.)

MERCURY VAPOR SURVEY INTERPRETATION

The objective of the Hg-Vapor survey technique is to identify areas of higher mercury content in soil gas as contrasted to surrounding areas, where the Hg content is negligible. Its application as an exploration technique is still in a very elementary stage. It has however, given encouraging results over known porphyry-type copper deposits in British Columbia, as documented by earlier (1972-73) test work conducted by PM & Co. Its use in the current project is based on:

1. Successful results by J.H. McCarthy (USGS Circular 609).

2. Successful tests over Valley Copper and Highmont with PM & Co. equipment in 1972.

3. The known co-association of trace Hg in British Columbia porphyry-tyep deposits (BCDM 1966).

4. Development of portable, efficient, and highly sensitive analytical equipment (Geomet M-103). In addition, a survey over the Maggie deposit was found to give positive results. The survey results are subject to a wide variety of variables including air temperature, soil temperature, atomospheric pressure, cloud cover, and surface winds.

At the present state of the art, no corrective factors can be applied to take account of survey conditions which vary from day to day. PM & Co. work has shown that results are repeatable, although the magnitude of values will vary.

RESULTS OF THE SHERI CLAIMS SURVEY:

Difficulty was encountered with the precious metal collector grids during the subject survey. It is felt that the bonding ability of the screens probably deteriorates with repeated exposures in the induction furnace, and that the useful life of the collector grids may be shorter than anticipated.

The vapor survey was performed at 200 foot intervals over 4.1 line miles within the central and western part of the property. (Figure 10). Basically low results were found on all the lines except on line 168E, where the values were over 4 nanograms of mercury between stations 22S and 30S. On this line, the high results are supported by anomalous Cu-soil values.

The total significance of the Hg responses remains for the present unknown, and awaits final confirmation by IP survey and test drilling.

CONCLUSIONS

The sediment anomaly detected during the 1972 reconnaissance program has been confirmed by anomalous soil copper concentrations accompanied by favorable alteration and bedrock copper showings in limited exposures.

In the center of the property a roughly rectangular area measuring 5,000 by 10,000 feet contains the highest and most persistant geochem responses. This area is largely low ground with little outcrop.

A significant factor in the interpretation of the geochemical results is the absence of any soil profile development in many areas. Some 45 percent of the total samples were raw glacial drift un-modified by any soil forming processes.

In essence, the soil geochemistry has outlined a more or less specific target area which might contain significant copper mineralization. The magnetude of the Cu values, in the glacial drift environment, may not correlate with the tenor of potential bedrock sulphides.

Overall the significant geological features on the Sheri property are multiple basic intrusions with fracturing and hydrothermal alteration, accompanied by chalcopyrite and magnetite mineralization.

RECOMMENDATIONS

1. A preliminary IP survey, totalling 10 line miles, is recommended over the highest and more persistent geochem soil anomalies. Additional IP survey should be carried out if the results of the preliminary survey are positive; however, caution should be exercised when interpreting the results because the high magnetite content of the rock in some places will likely produce IP effects not necessarily related to sulphides.

2. Contingent on, but not necessarily dependant on the results of (1), a core drilling program consisting of 6 or 7 holes and totalling approximately 2000 feet should be instituted. This program would be designed to test both IP, geochemical, and magnetic targets.

Submitted by: Marc A. Leonard, Senior Geologist

Approved by: H.O. Wahl, Regional Geologist
P. Eng., British Columbia 8990

ATTACHMENTS

1. Map, (Figure 4), 1"=400 feet, Sheri Claims Geology(in 3 parts,
2. Map, (Figure 8), 1"=400 feet, Sheri Claims Cu plot (in 3 parts)
3. Map (Figure 9), 1"=400 feet, Sheri Claims Magnetic Survey (in 3 parts)
4. Map (Figure 10), 1"=400 feet, Sheri Claims Hg-Vapor Survey (in 2 parts)

REFERENCE

1. G.S.C., Memoir 363, Geology of the Bonaparte Lake Map Area, British Columbia, by R.B. Campbell and H.W. Tipper, 1972
2. Petrographic report for Pickands Mather & Co. by Geotec Consultants Ltd., November 16, 1972.

PICKANDS MATHER & CO.
Detail of Exploration Expense
Non ferrous Project - British Columbia
Sheri Claims - Field Costs
January 1 to September 30, 1973
(Canadian Funds)

Field costs:		
Labor:		
Geologist and assistants	$10,311.51	
Line cutters	11,232.93	
Cooks	2,381.80	$23,926.24
Equipment		44.78
Supplies		3,821.35
Contracts:		
Air service	500.00	
Assaying	4,129.60	
Equipment rental and insurance	1,240.07	
Line cutting	100.00	
Services, geophysics	45.00	6,014.67
Other		441.56
		$34,248.60

The above statement of field costs for the Sheri Claims presents fairly expenditures for the nine months ended September 30, 1973, subject to year-end audit adjustments, in accordance with generally accepted accounting principles.

PICKANDS MATHER & CO.

Manager of Accounting

Costs claimed for assessment work differ from total on accounting statement due to equipment amoritization of the mercury vapor monitor and related accessories, which is charged at the rate of $40/per operating day.

H.J. Wahl, P. Eng.

RESUME OF EDUCATION AND FIELD EXPERIENCE

Marc A. Leonard

EDUCATION

1964, graduate of "Universite De Montreal". Geological Sciences. (B.Sc)

FIELD EXPERIENCE

1966 - 1968, part time field mapping in the St-Lawrence Lowlands for the Quebec Department Natural Resourses.

1969 - 1972, Exploration Geologist in Ivory Coast, West Africa, for Pickands Mather & Co., International.

Marc A. Leonard

Date Oct. 24, 1973

Marc A. Leonard

Certified true and correct

H.J. Wahl, P. Eng.

TELEPHONE: 980-1115

FRASER LABORATORIES LIMITED
1175 W. 15th STREET, NORTH VANCOUVER, B.C.

August 17, 1973.

Mr. H. J. Wahl
Pickands Mather & Co.
Ste. 216 - 475 Howe Street
Vancouver 1, B. C.

Re: Analytical Method for Soils and Sediments

Dear Mr. Wahl:

The following is the analytical method used for your geochemical soils and lake sediments program in 1973. The large sample weight enables a good detection of lower range silver and molybdenum values.

Method:

- The samples were dried at approximately 120° F and 10 to 20 grams of minus 80 mesh was sieved.

- A 1.0 gram sample of minus 80 mesh was digested for 3 hours on a hotplate with a mixture of 2 mls nitric acid and 4 mls perchloric acid.

- The samples were diluted to 25 mls with demineralized water, and the concentration determined against matrix standards with a Techtron AA5 atomic absorption spectrophotometer.

Yours very truly,

FRASER LABORATORIES LTD.

R. M. Samuels

R. M. Samuels

Registered Assayer, Province of B. C.

Sawmill Volc.

A fine grained, greenish grey <u>volcanic hornblende porphyry</u>. Abundant disseminated pyrite.

Mineralogy:

Phenocrysts:	hornblende	- 8%
Matrix:	quartz	- 3
	plagioclase	- 51
	hornblende	- 10
	sericite	- 8
	epidote	- 10
	chlorite	- 5
	sphene	- 1
Opaques:	sulphides	- 4

Textures:

Various-sized euhedral and subhedral corroded prisms and laths of hornblende randomly oriented in a fine grained feldspathic matrix. Microlitic hornblende is pervasive throughout the matrix. Granular epidote and opaque blebs are concentrated in and around amphibole sites.

Alteration:

Partial chlorite-epidote replacement of hornblende. Mild sericitization of feldspar constituents.

Discussion:

Mild propylitic alteration of an intermediate volcanic porphyry. Sulphide mineralization associated with chlorite-epidote alteration.

Sawmill Bx

An intrusive hornblende breccia comprised of various-sized subangular to rounded hornblende fragments randomly oriented in feldspar matrix. Trace of sulphides in matrix.

Mineralogy:

Breccia fragments:	hornblendite	- 76%
Matrix:	plagioclase	- 10
	hornblende	- 6
	sericite	- 4
	carbonate	- 4

Textures:

Various-sized subangular to rounded hornblendite. Breccia fragments randomly oriented in plagioclase, hornblende medium grained matrix. The breccia fragments are frequently rimmed with oxy-hornblende. Discontinuous veinlets of carbonate transect the matrix.

Alteration:

Minor sericite replacement of plagioclase. Mild carbonate veining.

Discussion:

Rock specimen represents possibly a contact rock in which a hornblendite is intruded by a hornblende gabbro.

Sawmill
L112E-40N

A microcrystalline, light green grey porphyritic altered gabbro or hornblendite. Minor fracture-filled pyrite.

Mineralogy:

plagioclase	- 55%
amphibole	- 20
carbonate	- 7
chlorite	- 4
sphene	- 2
epidote	- 2
sericite	- 2
sulphide, magnetite	- 2

Textures:

A clouded, poorly defined fine to medium grained dense mass of plagioclase and granular hornblende. Granular and bladed epidote, carbonate and chlorite are sparsely distributed throughout the matrix. A few discontinuous calc-amphibole veinlets crosscut the matrix.

Alteration:

Predominantly carbonate alteration. Probably recrystallization of feldspar constituents.

Discussion:

Sulphide mineralization associated with calc-amphibole veinlets. Original rock textures obliterated by alteration.

Sawmill
DE-8F

A coarse grained, slightly altered gabbro. Minor disseminated chalcopyrite.

Mineralogy:

plagioclase	- 35%
hornblende	- 40
biotite	- 3
epidote	- 7
apatite	- 5
chlorite	- 2
carbonate	- 2
sphene	- 2
magnetite	- 4
sulphides	- tr.

Textures:

Coarse grained euhedral to subhedral poikilitic prisms and plates of hornblende interstitially connected by irregular, wedge-shaped plagioclase crystals. Euhedral and subhedral apatite crystals are distributed throughout the mosaic. Granular epidote and minor carbonate and chlorite occur as massive aggregates and veinlets.

Alteration:

Moderate propylitic [epidote-chlorite-carbonate] alteration of primary constituents.

Discussion:

Sulphide mineralization associated with introduction of propylitic alteration minerals.

Sawmill
DE-80c

A coarse grained, dark green biotite pyroxenite.

Mineralogy:

pyroxene [audite]	- 70%
hornblende	- 6
biotite	- 14
magnetite	- 10

Textures:

Coarse grained, corroded, tabular augite crystals enclosed in a fine to medium grained interlocking pyroxene-biotite-hornblende mosaic. Biotite and hornblende occur together as ragged, poikiolitic plates and blades. Opaque blebs of magnetite are ubiquitous.

Alteration:

Minor pyroxene-hornblende-biotite deuteric alteration.

Discussion:

Rock specimen probably associated with the Sawmill gabbro specimen [i.e.] a differentiated intrusion.

Sawmill gabbro

A brecciated, altered quartz gabbro [?]. Abundant fracture-filled magnetite and minor chalcopyrite.

Mineralogy:

quartz	- 5%
plagioclase	- 44
biotite [secondary]	- 8
epidote	- 25
carbonate	- 3
chlorite	- 5
amphibole	- 10

Textures:

A relic coarse grained mosaic comprised of tabular plagioclase and pseudomorphic hornblende crystals that has been brecciated and veined with epidote and minor carbonate. All primary mafic constituents have been partially to completely replaced by biotite. Massive blebs of magnetite are associated with the epidote.

Alteration:

Propylitic [epidote-carbonate-chlorite] alteration. Biotite-chlorite replacement of amphibole grains.

Discussion:

Sulphide mineralization associated with the introduction of magnetite and propylitic alteration. Original rock textures destroyed.

APPENDIX I

Staff and Labor Statistics

The names and addresses of personnel employed on the project are:

George Dodd: (geologist) $850/month

apt. 206, 6821 Arcola Street, Burnaby, B.C.

Marc A. Leonard (geologist)

260W, 16th Street, North Vancouver, B.C.

Arnold Pollmer (geologist) $850/month

c/o Eagle Creek, B.C.

Abraham Wall (senior field assistant) $850/month

Apt. 4, 1550 Comox Street, Vancouver, B.C.

Rich Atkins (field assistant) $725/month

914 East 4th Street, North Vancouver, B.C.

Patrick Harrington (camp manager) $960/month

66 Fourth Street, Kirkland Lake, Ontario

Caroline LaFontaine (camp cook) $550/month

c/o Eagle Creek, B.C.

Yvon Gendron (camp cook) $850/month

P.O. Box 171, Val d'Or, Quebec

Honorius Brunette (line cutter) piecework rates

4 McCamus Avenue, Kirkland Lake, Ontario

Gordon Huston (line cutter) piecework rates

79 Taylor Avenue, Kirkland Lake, Ontario

John Kelly (line cutter) piecework rates

16 McCamus Avenue, Kirkland Lake, Ontario

Charles Marshall (line cutter) piecework rates

110 Pollock Street, Kirkland Lake, Ontario

Garry McAuley (line cutter) piecework rates

45 Government Road, W. Kirkland Lake, Ontario

Rita Harrington (cook) $850/month

The time distribution of Labor on the various phases of the project is as follows:

LINE CUTTING	(172 man-days) Periods	man/days
Charles Marshall	June 16-18	2
Honorius Brunette	June 29-July 27	31
John Kelly	June 29-July 6	8
Gordon Huston	June 29-July 31	33
Norman Gilmour	July 6-July 31	26
Walter Arsenault	July 6-July 31	26
Garry McAuley	June 16-July 31	40
SOIL SAMPLING	(49 man-days)	
Patrick Harrington	July 22,23,25-29	7
Abraham Wall	July 4-12, 14-19	15
Rich Atkins	July 24-August 10	18
Arnold Pollmer	July 12-15, 17-19	7
George Dodd	July 12,13	2
GEOLOGICAL MAPPING	(46 man-days)	
Arnold Pollmer	July 16,20-24	
	August 1-14	20
George Dodd	July 23-29	
	August 9-13	12
Marc A. Leonard	July 19-23,25-27	
	August 3-8	14
MAGNETOMETER SURVEY	(37 man-days)	
Abraham Wall	July 13,20-23	
	September 4,5,7,9,10	10
Rich Atkins	August 11-15,23-27	
	August 30-Sept. 11	23
Arnold Pollmer	August 15,16	2
George Dodd	August 14,15	2
Hg VAPOR SURVEY	(4 man-days)	
Marc A. Leonard	September 1,3	2
Arnold Pollmer	September 13,14	2
COOKS		
Yvon Gendron	June 18-July 1	
Rita Harrington	July 11 to August 5	
Caroline LaFontaine	July 1 to 10	
	July 21 to September 9	

BONDAR-CLEGG & COMPANY LTD.

geochemists ● assayers ● analytical chemists

1500 PEMBERTON AVENUE, NORTH VANCOUVER, B. C.
PHONE: 985-0681 TELEX: 04-54554

REPORT OF: Materials Analyses REPORT No. IT-22-192

PROJECT: DATE: November 3, 1972

REPORTED TO: Pickands-Mather & Co. Ltd.
795 - 2 Bentall Centre
555 Burrard Street
Vancouver 1, B.C.

SAMPLE: - Total Iron % = 14.3
Magnetic material % = 21.0

Analysis of magnetic concentrate:

Silica (SiO_2)	% = 26.4
Titanium (TiO_2)	% = 0.97
Sulphur (S)	% = 0.010
Phosphorus (P)	% = 0.11

BONDAR-CLEGG & COMPANY LTD.

R. Sawyer
Chief Chemist

mob

PICKANDS MATHER & CO.

Hg. VAPOR SURVEY

LOCALITY: Sheri Claims
DATE: September 2, 1973
LINE: 136E
WEATHER: Sunny
SAMPLING PERIOD: From: 14:00 Sept. 1st To: 14:00 Sept 2nd
SCREEN USED: 80 mesh Ag-Au
Hg. SENSOR COLLECT TIME: 4 minutes
TEMP. START SURVEY 75 F
OPERATOR: Marc A. Leonard
TEMP END SURVEY 64 F
ATMOSPHERIC PRESSURE START: 770 mm
ATMOSPHERIC PRESSURE END: 766mm

STATION	TIME	NOTE	READING DVM	CORRECTION DVM (-)	CORRECTED DVM	Ng. Hg.
BKG	5:37		14	-	-	-
L-136-8N	:43		0	-13	-	-
6N	:50		13	-11	2	0.3
4N	:55		10	-10	0	0
BKG	6:00		10			
2N	:05		20	-11	9	1.6
00	:11		17	-15	2	0.1
2S	:16		24	-17	7	1.2
BKG	6:21		18	-	-	-
4S	:26		13	-17	0	0
6S	:31		13	-15	0	0
8S	:36		17	-13	4	0.6
BKG	6:41		11	-	-	-
10S	:47		19	-10	9	1.6
12S	:52	Screen disturbed	15	-9	6	1.0
14S	:57		11	-8	3	0.5
BKG	7:02		08	-	-	-
16S	:07		16	-9	7	1.2
18S	:17		14	-11	3	0.5
20S	:22		15	-11	4	0.6
BKG	7:27		12	-	-	-

REMARKS: Lamp Check 9.83 volts.
DVM; Digital volt meter; Ng, Nanogram: Ag, Silver: Hg, Mercury: Au, Gold
BKG, Background

PICKANDS MATHER & CO.

Hg. VAPOR SURVEY

LOCALITY: Sheri Claims
DATE: September 2, 1973
LINE: 168E
WEATHER: Sunny
SAMPLING PERIOD: From: 14:00 Sept 1st To: 14:00 Sept. 2nd
SCREEN USED: 80mesh Ag-Au
Hg. SENSOR COLLECT TIME: 4 minutes
TEMP. START SURVEY 75 F
OPERATOR: Marc A. Leonard
TEMP END SURVEY 64 F
ATMOSPHERIC PRESSURE START: 770mm
ATMOSPHERIC PRESSURE END: 766 mm

STATION	TIME	NOTE	READING DVM	CORRECTION DVM (-)	CORRECTED DVM	Ng. Hg.
BKG	7:27	-	12	-	-	-
L-168-00	:33		20	-12	8	1.4
2S	:38		17	-11	6	1.0
4S	:43		20	-11	9	1.6
BKG	7:49		11	-	-	-
6S	:54		20	-12	8	1.4
8S	:59		18	-16	2	0.1
10S	8:04		31	-24	7	1.2
BKG	8:09		28	-	-	-
12S	:14		32	-26	6	1.0
14S	:19		38	-24	14	2.6
16S	:25		38	-23	15	2.9
BKG	8:30		18	-	-	-
18S	:35		32	-11	21	4.4
20S	:40		19	-6	15	2.9
22S	:46		21	-2	19	4.0
BKG	8:51		0	-	-	-
24S	:57		37	-0	37	10.0
26S	9:02		43	-1	42	12.2
28S	:07		39	-1	38	10.4
BKG	9:12		2	-	-	-
30S	:17		27	-4	23	5.0
32S	:23		14	-6	8	1.4
34S	:29		16	-9	7	1.2
BKG	9:34		10	-	-	-

REMARKS:

PICKANDS MATHER & CO.

Hg. VAPOR SURVEY

LOCALITY: Sheri Claims

DATE: September 4, 1973

LINE: 200E

WEATHER: Sunny

SAMPLING PERIOD: From: 11:00 Sept 3rd To: 11:00 Sept 4th

SCREEN USED: -80 mesh. Ag-Au

Hg. SENSOR COLLECT TIME: 4 minutes

TEMP. START SURVEY 60°F

OPERATOR: Marc A. Leonard

TEMP END SURVEY 75 F

ATMOSPHERIC PRESSURE START: 767 mm

ATMOSPHERIC PRESSURE END: 769 mm

STATION	TIME	NOTE	READING DVM	CORRECTION DVM (-)	CORRECTED DVM	Ng. Hg.
BKG	4:17		22	-	-	-
L-200E-00S	:22	-disturbed	29	19	10	1.8
02S	:27		27	17	10	1.8
04S	:32		22	16	6	1.0
BKG	4:37		16	-	-	--
06S	:42		20	16	4	0.6
08S	:47		23	17	6	1.0
10S	:52		20	17	3	0.4
BKG	4:57		17	-	-	-
12S	5:02		18	16	2	0.3
14S	:07		24	15	9	1.6
16S	:12		24	13	11	2.0
BKG	5:17		12	-	-	-
18S	:22		20	13	7	1.2
20S	:27		28	17	11	2.0
No. 24S						
26S	:32		23	25	2	2
BKG	5:37		28	-	-	-
28S	:42		19	29	0	0
30S	:47		32	30	2	0.3
32S	:52		28	31	0	0
BKG	5:57		31	-	-	-
34S	6:02		22	31	0	0
35S	:07		38	30	8	1.4
38S	:12		22	30	0	0

REMARKS: Lamp Check 9.83 Volts

PICKANDS MATHER & CO.

Hg. VAPOR SURVEY

LOCALITY: Sheri Claims DATE: September 4, 1973

LINE: 200E (cont'd) WEATHER:

SAMPLING PERIOD: From: To:

SCREEN USED: Hg. SENSOR COLLECT TIME:

TEMP. START SURVEY OPERATOR:

TEMP END SURVEY ATMOSPHERIC PRESSURE START:

ATMOSPHERIC PRESSURE END:

STATION	TIME	NOTE	READING DVM	CORRECTION DVM (-)	CORRECTED DVM	Ng. Hg.
BKG	6:18		29	-	-	-
200E-40S	:23		24	28	-	0
42S	:28		41	26	15	2.9
44S	:33		26	24	2	0.3
BKG	6:38		23	-	-	-
46S	:43		24	21	3	0.4
48S	:48		39	20	19	4.0
50S	:53		9	19	0	0
BKG	6:59		19	-	-	-
52S	7:04		24	22	2	0.3
54	:09		22	27	0	0
No. 56-S						
58S	:14		23	30	0	0
BKG	7:19		31	-	-	-
60S	:24		16	30	0	0
62S	:29		18	27	0	0
64S	:34		21	21	0	0
BKG	7:39		16	-	-	-

REMARKS:

PICKANDS MATHER & CO.

Hg. VAPOR SURVEY

LOCALITY: Sheri Claims
DATE: September 13, 1973
LINE: 176E
WEATHER: Cloudy and cool
SAMPLING PERIOD: From: 10:00 To: 14:00
SCREEN USED: -80 mesh Ag-Au
Hg. SENSOR COLLECT TIME: 4minutes
TEMP. START SURVEY 45 °F
OPERATOR: A. Pollmer
TEMP END SURVEY 57 °F
ATMOSPHERIC PRESSURE START: 773 mm
ATMOSPHERIC PRESSURE END: 770 mm

STATION	TIME	NOTE	READING DVM	CORRECTION DVM (-)	CORRECTED DVM	Ng. Hg.
BKG	16:10		8	-	-	-
L-176E-00	:15		11	8	3	0.5
02S	:20		12	8	4	0.6
04S	:25		11	9	2	0.1
BKG	16:30		10	-	-	-
06S	:35		9	9	0	0
08S	:40		13	8	5	0.8
10S	:45		8	7	1	0.1
BKG	16:50		6	-	-	-
12S	:55		3	5	0	0
14S	17:00		7	4	3	0.5
16S	:05		3	3	0	0
BKG	17:10		3	-	-	-
18S	:15		6	3	3	0.5
20S	:20		8	4	4	0.6
22S	:25		11	4	7	1.2
BKG	17:30		5	-	-	-
24S	:35		6	6	0	0
26S	:40		2	6	0	0
28S	:45		7	7	0	0
BKG	17:50		7	-	-	-
30S	:55		19	7	12	2.1
32S	18:00		4	7	0	0
34S	:05		7	6	1	0.1
BKG	18:10		6	-	-	-
36S	:15		8	6	2	0.1

REMARKS: Lamp Check 9.83 Volts

PICKANDS MATHER & CO.

Hg. VAPOR SURVEY

LOCALITY: Sheri Claims
DATE: September 13, 1973
LINE: 160E
WEATHER: Cloudy and cool
SAMPLING PERIOD: From: 10:00 To: 14:00
SCREEN USED: -80 mesh Ag-Au
Hg. SENSOR COLLECT TIME: 4 minutes
TEMP. START SURVEY 45 °F
OPERATOR: A. Pollmer
TEMP END SURVEY 57 °F
ATMOSPHERIC PRESSURE START: 773 mm
ATMOSPHERIC PRESSURE END: 770 mm

STATION	TIME	NOTE	READING DVM	CORRECTION DVM (-)	CORRECTED DVM	Ng. Hg.
BKG	18:55		10	-	-	-
160E-20S	19:00	shade	16	10	6	1.0
22S	:05	"	9	10	0	0
24S	:10	"	9	10	0	0
BKG	19:15		10	-	-	-
26S	:20	Shade	10	9	1	0.1
28S	:25	"	8	8	0	0
30S	:30	"	8	8	0	0
BKG	19:35		8	-	-	-

REMARKS:

PICKANDS MATHER & CO.

Hg. VAPOR SURVEY

LOCALITY: Sheri Claims

DATE: September 15, 1973

LINE: 232 E'

WEATHER: Clear & Cool

SAMPLING PERIOD: From: 10:00 Sept. 14th To: 11:00 Sept. 15th

SCREEN USED: -80 Mesh Ag-Au

Hg. SENSOR COLLECT TIME: 4 minutes

TEMP. START SURVEY 40 F

OPERATOR: A. Pollmer

TEMP END SURVEY 80 F

ATMOSPHERIC PRESSURE START: 725 mm

ATMOSPHERIC PRESSURE END: 720 mm

STATION	TIME	NOTE	READING DVM	CORRECTION DVM (-)	CORRECTED DVM	Ng. Hg.
BKG	14:00		11			
232E 00S	:05		8	11	0	0
02S	:10	shade	10	10	0	0
04S	:15	Shade	11	10	1	0.1
BKG	14:20		10			
06S	25	Shade	7	9	0	0
08S	80	Shade	9	9	0	0
10S	35	Shade	7	9	0	0
BKG	14:40		9			
12S	:45	Shade	11	9	2	0.3
14S	:50	Shade	7	9	0	0
16S	:55	Shade	9	8	1	0.1
BKG	15:00		8			
18S	:05		6	8	0	0
20S	:10		5	7	0	0
22S	:15		14	6	8	1.4
BKG	15:20		6			
24S	:25	organic	8	6	2	0.3
26S	:30	ground	9	7	2	0.3
28S	:35		9	8	1	0.1
BKG	15:40		9			
30S	:45		12	9	3	0.5
32S	:50	organic	7	8	0	0
34S	:55	ground	8	7	1	0.1

REMARKS:

PICKANDS MATHER & CO.

Hg. VAPOR SURVEY

LOCALITY:_____ DATE: September 15, 1973

LINE: 232E (cont'd) WEATHER:_____

SAMPLING PERIOD: From:_____ To:_____

SCREEN USED:_____ Hg. SENSOR COLLECT TIME:_____

TEMP. START SURVEY_____ OPERATOR:_____

TEMP END SURVEY_____ ATMOSPHERIC PRESSURE START:_____

ATMOSPHERIC PRESSURE END:_____

STATION	TIME	NOTE	READING DVM	CORRECTION DVM (-)	CORRECTED DVM	Ng. Hg.
BKG	16:00		7			
232E 36S	:05		13	6	7	1.2
38S	:10		10	5	5	0.8
40S	:15		5	4	1	0.1
BKG	16:20		4			
42S	:25		5	4	1	0.1
44S	:30		12	5	7	1.2
46S	:35		10	6	4	0.6
BKG	16:40		6			
48S	:45		5	6	0	0
50S	:50		11	6	5	0.8
52S	:55		7	5	2	0.3
BKG	17:00		5			
54S	:05	Shade	3	4	0	0
56S	:10		6	3	3	0.5
58S	:15		5	3	2	0.3
BKG	17:20		2			
60S	:25		4	2	2	0.3
62S	:30		9	2	7	1.2
BKG	17:35		2			

REMARKS:

PICKANDS MATHER & CO.

Hg. VAPOR SURVEY

LOCALITY: Sheri Claims

DATE: September 17, 1973

LINE: 152E, 160E and 168E

WEATHER: Clear

SAMPLING PERIOD: From: 11:00 To: 15:00

SCREEN USED: -80 Mesh Ag-Au

Hg. SENSOR COLLECT TIME: 4 minutes

TEMP. START SURVEY 66 F, ground T, 45 F

OPERATOR: A. Pollmer

TEMP END SURVEY

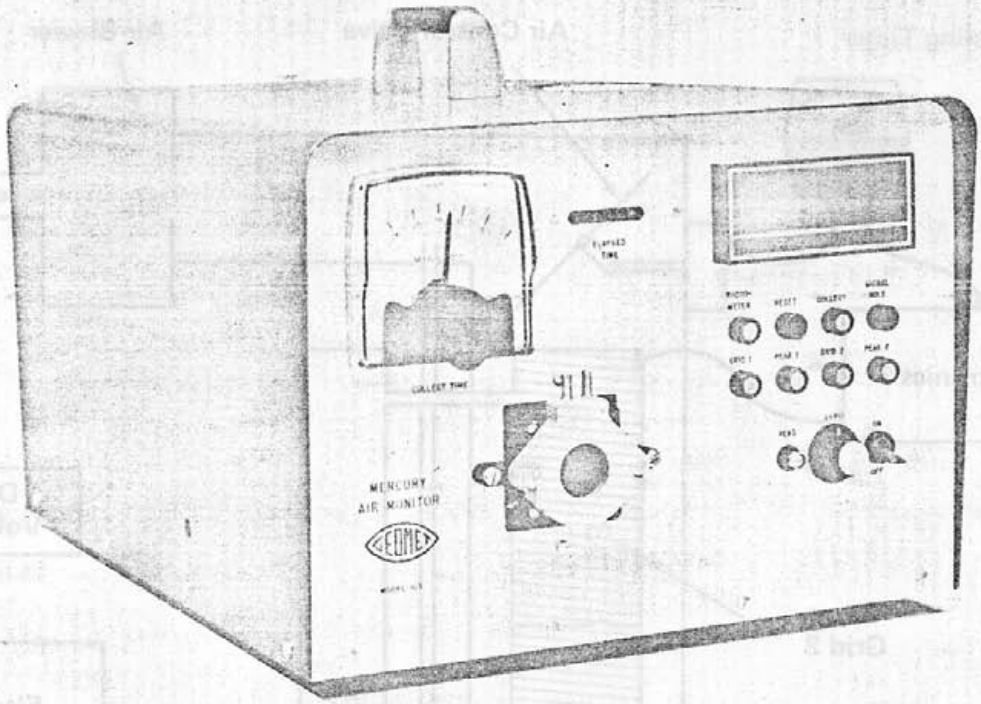
ATMOSPHERIC PRESSURE START: 770 mm

ATMOSPHERIC PRESSURE END:

STATION	TIME	NOTE	READING DVM	CORRECTION DVM (-)	CORRECTED DVM	Ng. Hg.
BKG	20:00		11			
152E 00N	:05		11	11	0	0
02N	:10		12	10	2	0.3
04N	:15		10	8	1	0.1
BKG	20:20		9			
06N	:25		9	9	0	0
08N	:30		10	9	1	0.1
10N	:35		9	9	0	0
BKG	20:40		9			
12N	:45		2	7	0	0
160E 02N	:50		5	5	0	0
04N	:55		7	3	4	0.6
BKG	21:00		2			
06N	:05		2	3	0	0
08N	:10		6	5	1	0.1
10N	:15		5	6	0	0
BKG	21:20		7			
168E 02N	:30		7	7	0	0
04N	:35		11	8	3	0.5
BKG	21:40		8			
06N	:45		8	8	0	0
08N	:50		7	8	0	0
10N	:55		8	8	0	0
BKG	22:00		8			
12N	:05		7	6	1	0.1
BKG	22:10		4			

Remarks: Lamp Check, 9.83 Volts.

MERCURY AIR MONITOR

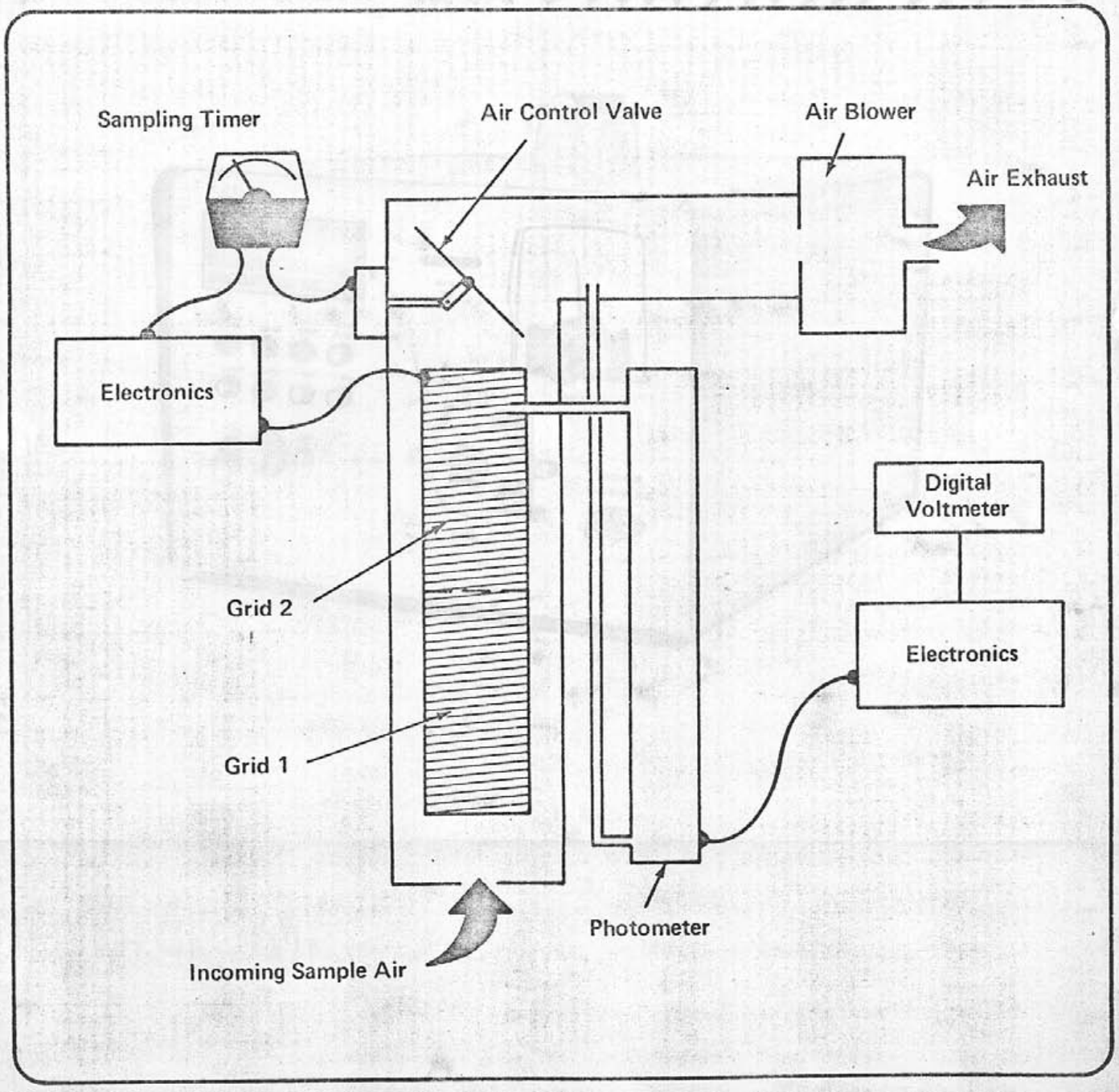


MODEL 103

Principle of Operation

The GEOMET Model 103 Mercury Air Monitor is utilized for sampling, detecting and monitoring mercury vapor and mercury bearing particulates in the atmosphere or in gas samples. Air is drawn into the instrument, at selected flow rates and sampling time cycles, across a collection grid. The instrument utilizes a unique sequential grid assembly which concentrates the mercury by amalgamation. The sequential operation separates signals generated by collected mercury from those arising from interfacing substances. Automatic heating of the grids releases a pulse of mercury vapor into a UV photometer where it is quantitated without attenuation by interferences. The peak signal value is displayed on a digital voltmeter. Connections are provided for simultaneous recording on a strip chart recorder. The collection, readout and data presentation time cycle is adjustable for continuous air monitoring over long periods of time. The instrument is also readily adaptable for automatic readout of batch air samples taken with ancillary collection systems.

Functional Diagram



Applications

THE MODEL 103 PROVIDES AN EFFICIENT LABOR SAVING METHOD FOR:

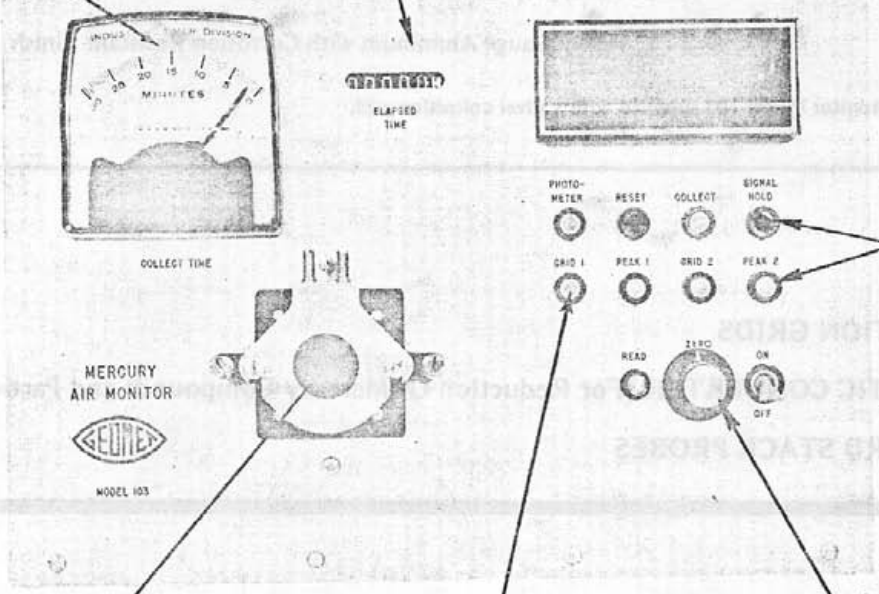
- AMBIENT AIR MONITORING – Source Identification, Boundary Levels, Pollution Control, Field Surveys.
- INDUSTRIAL INSPECTIONS – Chlor/Alkali Operations, Mercury Mining and Retorting, Coal-Burning Installations, Paint Manufacturing, Electrical Products Fabrication, Pesticide and Fungicide Production, Smelting.
- STACK MONITORING – Power Plants, Combustion Processes.
- LABORATORY GAS ANALYSIS
- ENVIRONMENTAL HEALTH MEASUREMENTS

Features

COLLECTION TIME SELECTOR
is manually adjusted for sampling increments of 0 to 30 minutes (0 to 180 min. selection optional). Black indicator shows sampling time. Red shows remaining time for sampling during cycle.

ELAPSED TIME INDICATOR
is used for correlation of instrument performance during continuous sampling operations.

TEST/NORMAL OPERATION SWITCH (Black Panel)
is used to check performance of subsystems



DIGITAL VOLTMETER
displays peak signal pulse of collected mercury. The meter is also used for instrument calibration and evaluation of performance.

SEQUENCE INDICATORS
are sequentially actuated and display instrument handling of sample data during collection cycles.

SPAN ADJUSTMENT (Side)

RECORDER & PRINTER CONNECTORS (Back Panel)

SAMPLE AIR INLET
provides entrance for sampled air onto collection grid surfaces. Limiting orifices provided with the instrument are attached at this point providing selection of proper air intake volumes for specific sample applications.

GRID INDICATOR LIGHTS
show discharge cycles of collected substances from grids. This function is synchronized with upper row of Sequence Indicators.

ZERO ADJ. KNOB
adjusts zero signal level.

Specifications

Detector	Automatic Sampler and Ultraviolet Photometer (253.7 nm)
Response Range	1 - 1,000,000 Nanograms/Meter^3
System Sensitivity	1 Nanogram/Meter^3
System Accuracy	±5%
Air Sampling Ranges	Orifice Controlled - 5, 20, 50, 100 and 175 l/minutes
Sample Timer	Manual Setting 0 - 30 or 0 -180 minutes
Collection Grid*	Three Types Available: Silver,or Gold Plate on Copper, or Gold Plate on Silver
System Response Time	Adjustable, 5 - 180 minutes
Saturation	Electronic - 10 Volt Signal
Electronics	Rapid Response, Solid State Peak-Sensing Circuitry
Light Source	Stabilized Long-Life UV Lamp
Operating Temperature Range	-10° to +125°F
Air Inlet Temperature Range	-10° to +200°F
Calibration	Readout Compared to Elemental Mercury Standard
Physical Dimensions	14" Wide x 10" High x 18" Long
Weight	Net: 35 lbs. Shipping Weight: 80 lbs.
Power Requirement	115 VAC, 60 Hz, 2 KW
Case Construction	Heavy Gauge Aluminum with Corrosion Resistant Finish

* Normally, GEOMET Mercury Air Monitor Model 103 supplied with a silver collection grid.

Options

- COLLECTION GRIDS
- CATALYTIC CONVERTER (For Reduction Of Mercury Compounds and Particulates)
- STANDARD STACK PROBES

Science Serving Society

50 Monroe Street
Rockville, Maryland 20850
301/762-5820

GEOMET

2814A Metropolitan Place
Pomona, California 91767
714/593-1318

LEGEND

- LAKE
- SWAMP
- CREEK
- TOTE ROAD
- CUT LINES
- CLAIM BOUNDARY

GEOLOGICAL LEGEND
(In Order of Apparent Age Relations, 1973)

- a//b — a) Aplite Dyke, b) Trachyte Porphyry Dyke
- △▽△ — Breccia, Hornblendite or Diorite
- D — Diorite
- H — Hornblendite, H_1 – coarse (pegmatitic), H_3 – fine grained, H_2 – medium grained, Hp – porphyry
- QM — Quartz monzonite
- Altered quartz monzonite
- B — Basalt
- A — Andesite
- V V — Tuff
- GW — Graywacke

ABBREVIATIONS

Sil.	Silicified
ep	Epidote
Mag	Magnetite
Spec	Specularite

SYMBOLS

- Rock outcrop area of rock outcrop
- ⊗ Float
- a/ b/ Bedding, a) inclined b) vertical
- a/ , b/ Foliation a) inclined b) vertical
- a/ b/ Joint a) inclined b) vertical
- X Cu. Mineralized outcrop
- Areas of intense silification
- a/ b/ c/ Geological boundary a) defined b) approximate c) assumed
- a/ b/ Fault a) approximate b) assumed

To accompany exploration report on the Sheri Claims, Clinton Mining Division. By H. J. Wahl P.Eng. Period June 15 to Sept. 15, 1973.

Assessment of Mines and Petroleum Resources
NO. 4734 MAP #1

1 | 2 | 3

29 Nov 1973
H J Wahl

PICKANDS MATHER & CO.
VANCOUVER B.C.

MIDDLE BELT PROJECT

SHERI CLAIMS

GEOLOGICAL MAP

SCALE 400 0 400 800 FT.
400 feet to 1 inch

DATE : NOV. 1973
NO. FIG. 4

4734-M1

LEGEND

- LAKE
- SWAMP
- CREEK
- TOTE ROAD
- CUT LINES
- CLAIM BOUNDARY

GEOLOGICAL LEGEND

(In Order of Apparent Age Relations, 1973)

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△▽△	Breccia, Hornblendite or Diorite
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H	Hornblendite; H_1 – coarse (pegmatitic), H_3 – fine grained, H_2 – medium grained, Hp porphyry
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- X Cu Mineralized outcrop
- Areas of intense silification
- a b c Geological boundary a) defined b) approximate c) assumed
- a b Fault a) approximate b) assumed

To accompany exploration report on the Sheri Claims, Clinton Mining Division. By H.J. Wahl P.Eng. Period June 15 to Sept. 15, 1973

1 | 2 | 3

PICKANDS MATHER & CO.
VANCOUVER B.C.

MIDDLE BELT PROJECT

SHERI CLAIMS

GEOLOGICAL MAP

SCALE 400 0 400 800 FT.
400 feet to 1 inch

DATE : NOV. 1973
NO. FIG. 4

Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4734 MAP #2

Nov 1973
H.J. Wahl

4734-M2

PAPOOSE LAKE

BOOMERANG LAKE

TALUS

DEPRESSION

SHEAR ZONE

TUFF

High Cl. content

Epidote

Talus slope

Amyg. Basalt + H porphyry

H porphyry

L-200E L-208E L-216E L-224E L-232E L-240E L-248E L-256E L-264E L-272E L-280E L-288E L-296E

LEGEND

- LAKE
- SWAMP
- CREEK
- TOTE ROAD
- CUT LINES
- CLAIM BOUNDARY

GEOLOGICAL LEGEND

(In Order of Apparent Age Relations, 1973)

- a) Aplite Dyke, b) Trachyte Porphyry Dyke
- Breccia, Hornblendite or Diorite
- D — Diorite
- H — Hornblendite; H_1 – coarse (pegmatitic) H_3 – fine grained H_2 – medium grained H_p – porphyry
- QM — Quartz monzonite
- Altered quartz monzonite
- B — Basalt
- A — Andesite
- V V — Tuff
- GW — Graywacke

ABBREVIATIONS

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SYMBOLS

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- Float
- Bedding, a) inclined b) vertical
- Foliation a) inclined b) vertical
- Joint a) inclined b) vertical
- X Cu. — Mineralized outcrop
- Areas of intense silification
- Geological boundary a) defined b) approximate c) assumed
- Fault a) approximate b) assumed

To accompany exploration report on the Sheri Claims, Clinton Mining Division. By H.J. Wahl P.Eng. Period June 15 to Sept.15, 1973

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4734 MAP #3

29 Nov 1973
H.J. Wahl

1 | 2 | 3

PICKANDS MATHER & CO.
VANCOUVER B.C.

MIDDLE BELT PROJECT

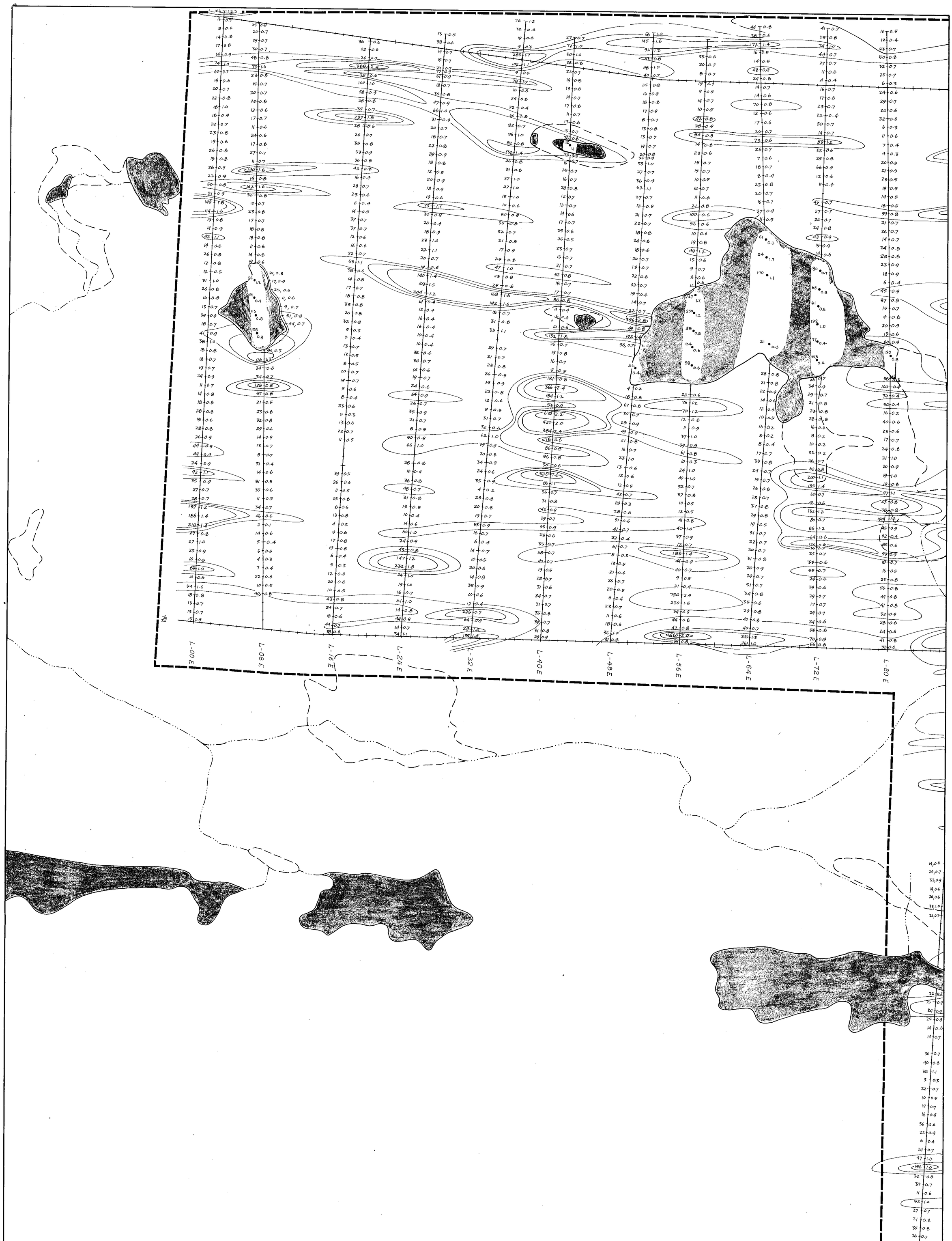
SHERI CLAIMS

GEOLOGICAL MAP

SCALE 400 0 400 800 FT.
400 feet to 1 inch

DATE : NOV. 1973
NO. FIG. 4

4734-M3



LEGEND

- LAKE
- SWAMP
- CREEK
- TOTE ROAD
- CUT LINES
- CLAIM BOUNDARY

CONTOUR INTERVALS

40 - 70 ppm
70 - 100 ppm
100 - 300 ppm
> 500 ppm

LAKE SEDIMENT SAMPLE (ppm)

Cu • Ag

NOTE : CONTOURS FOR Cu ONLY

To Accompany Exploration Report
on SHERI claims,
Sawmill Area, Clinton M.D.,
By H.J. Wahl, Period 29 June to
15 Sept., 1973.

1	2	3

PICKANDS MATHER & CO.
VANCOUVER B.C.

MIDDLE BELT PROJECT

SHERI CLAIMS

Cu-Ag GEOCHEM

SCALE 400 0 400 800 FT.
400 feet to 1 inch

DATE : NOV., 1973
NO. 8

4734 - #4

L-120 E
L-128 E
L-136 E
L-144 E
L-152 E
L-160 E
L-168 E
L-176 E
L-184 E
L-192 E
L-96 E
L-104 E
L-112 E

4734-M5

LEGEND

- LAKE
- SWAMP
- CREEK
- TOTE ROAD
- CUT LINES
- CLAIM BOUNDARY

CONTOUR INTERVALS

40 - 70 ppm
70 - 100 ppm
100 - 300 ppm
>300ppm

LAKE SEDIMENT SAMPLE (ppm)

Cu
Ag

NOTE : CONTOURS FOR Cu ONLY

To Accompany Exploration Report
On The Sheri Claims,
Sawmill Area, Clinton, M.D.,
By H.J. Wahl, Period 29 June To
15 Sept., 1973.

1 | 2 | 3

PICKANDS MATHER & CO.
VANCOUVER B.C.

MIDDLE BELT PROJECT

SHERI CLAIMS

Cu-Ag GEOCHEM

SCALE 400 0 400 800 FT.
400 feet to 1 inch

DATE : NOV., 1973
NO. 8

27 November 1973
H.J. Wahl

L-200 E
L-208 E
L-216 E
L-224 E
L-232 E
L-240 E
L-248 E
L-256 E
L-264 E
L-272 E
L-280 E
L-288 E
L-296 E

N

LEGEND

- LAKE
- SWAMP
- CREEK
- TOTE ROAD
- CUT LINES
- CLAIM BOUNDARY

CONTOUR INTERVALS

40 - 70 ppm
70 - 100 ppm
100 - 300 ppm
>300 ppm

LAKE SEDIMENT SAMPLE (ppm)

Cu
Ag

NOTE : CONTOURS FOR Cu ONLY

To Accompany Exploration Report
On The Sheri Claims,
Sawmill Area, Clinton M.D.,
By H.J. Wahl, Period 29 June To
15 Sept., 1973.

1	2	3

PICKANDS MATHER & CO.
VANCOUVER B.C.

MIDDLE BELT PROJECT

SHERI CLAIMS

Cu-Ag GEOCHEM

SCALE 400 0 400 800 FT.
400 feet to 1 inch

DATE : NOV., 1973
NO. 8

27 November 1973
H.J. Wahl

4734 M6

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4734 MAP #6

L-00 E
L-08 E
L-16 E
L-24 E
L-32 E
L-40 E
L-48 E
L-56 E
L-64 E
L-72 E
L-80 E
L-88 E-24S
L-88 E

1 2 3

LEGEND

- LAKE
- SWAMP
- CREEK
- TOTE ROAD
- CUT LINES
- CLAIM BOUNDARY

CONTOUR INTERVALS (GAMMAS)

0
±500
±1000
±2000
±3000
±5000
±10,000

4734
M7

Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4734 MAP #7

TO ACCOMPANY EXPLORATION REPORT ON THE SHERI CLAIMS, SAWMILL AREA, CLINTON M.D., BY H.J. WAHL, PERIOD 29 JUNE TO 15 SEPT., 1973.

PICKANDS MATHER & CO.
VANCOUVER B.C.

MIDDLE BELT PROJECT

SHERI CLAIMS

GROUND MAGNETIC SURVEY

SCALE 400 0 400 800 FT.
400 feet to 1 inch

DATE : 20 OCT., 1973
NO. 9

27 November 1973
R.J. Wahl

L-128 E
L-136 E
L-144 E
L-152 E
L-120 E
L-160 E
L-168 E
L-176 E
L-96 E
L-104 E
L-184 E
L-192 E

4077
4109

4734
M8

Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4734 MAP #8

1 2 3

LEGEND

- LAKE
- SWAMP
- CREEK
- TOTE ROAD
- CUT LINES
- CLAIM BOUNDARY

TO ACCOMPANY EXPLORATION REPORT
ON THE SHERI CLAIMS,
SAWMILL AREA, CLINTON M.D.,
BY H.J. WAHL, PERIOD 29 JUNE TO
15 SEPT., 1973.

CONTOUR INTERVALS (GAMMAS)
0
±500
±1000
±2000
±3000
±5000
±10,000

PICKANDS MATHER & CO.
VANCOUVER B.C.

MIDDLE BELT PROJECT

SHERI CLAIMS
GROUND MAGNETIC SURVEY

SCALE 400 0 400 800 FT.
400 feet to 1 inch

DATE : 20 OCT., 1973
NO. 9

27 November 1973
R.J. Wahl

L-200E
L-208E
L-216E
L-224E
L-232E
L-240E
L-248E
L-256E
L-264E
L-272E
L-280E
L-288E
L-296E

1 2 3

LEGEND

- LAKE
- SWAMP
- CREEK
- TOTE ROAD
- CUT LINES
- CLAIM BOUNDARY

CONTOUR INTERVALS (GAMMAS)

0
±500
±1000
±2000
±3000
±5000
±10,000

4734
M9

Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4734 MAP #9

TO ACCOMPANY EXPLORATION REPORT ON THE SHERI CLAIMS, SAWMILL AREA, CLINTON M.D., BY H.J. WAHL, PERIOD 29 JUNE TO 15 SEPT., 1973.

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MIDDLE BELT PROJECT

SHERI CLAIMS

GROUND MAGNETIC SURVEY

SCALE 400 0 400 800 FT.
400 feet to 1 inch

DATE : 20 OCT., 1973
NO. 9

27 November 1973

L-96E

L-104E

L-112E

L-120E

L-128E

L-136E

L-144E

L-152E

L-160E

L-168E

L-176E

L-184E

L-192E

0.3 0 1.6 0.1 1.2 0 0 0.6 1.6 1.0 .5 1.2 0.5 0.6

0.1 0 0.1 0.3 0

0.1 0 0 0.6 0 0.1 0 0 0.5 0 1.4 1.0 1.6 1.4 0.1 1.2 1.0 2.6 2.9 4.4 2.9 4.0 10.0 12.2 10.4 50 1.4 1.2

N

LEGEND

LAKE

SWAMP

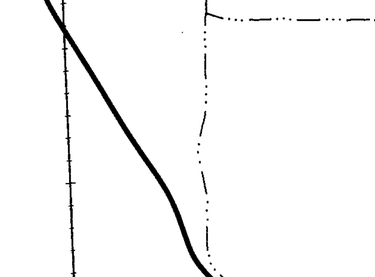
CREEK

TOTE ROAD

CUT LINES

NANOGRAMS OF MERCURY

MERCURY VAPOR PROFILE



GRID LINE

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4734 MAP #10

29 Nov 1973

4734
M10

1 | 2 | 3

To Accompany Exploration Report
on Sheri Claims,
Sawmill Area, Clinton, M.D.,
By H. J. Wahl, P.Eng.,
Period 29 June To 15 Sept., 1973

PICKANDS MATHER & CO.
VANCOUVER B.C.

MIDDLE BELT PROJECT

SHERI CLAIMS

MERCURY VAPOR SURVEY

SCALE 400 0 400 800 FT.
400 feet to 1 inch

DATE : NOV., 1973
NO. 10

L-200E L-208E L-216E L-224E L-232E L-240E L-248E L-256E L-264E L-272E L-280E L-288E L-296E

1.8 1.8 1.0 0.6 1.0 0.4 0.3 1.6 2.0 1.2 2.0 0.3 0 0.3 0 0 1.4 0 0 2.9 0.3 0.4 4.0 0 0.3 0 0 0

0 0.1 0 0 0 0 0.3 0 0.1 0 0 0 1.4 0.3 0.3 0.1 0.5 0 0.1 1.2 0.8 0.1 0.1 1.2 0.6 0 0.8 0.3 0 0.5 0.3 1.2

1 2 3

LEGEND

LAKE

SWAMP

CREEK

TOTE ROAD

CUT LINES

NANOGRAMS OF MERCURY

MERCURY VAPOR PROFILE

GRID LINE

TO ACCOMPANY EXPLORATION REPORT ON SHERI CLAIMS, SAWMILL AREA, CLINTON, M.D., BY H. J. WAHL, P.ENG., PERIOD 29 JUNE TO 15 SEPT., 1973

PICKANDS MATHER & CO.
VANCOUVER B.C.

MIDDLE BELT PROJECT

SHERI CLAIMS

MERCURY VAPOR SURVEY

SCALE 400 0 400 800 FT.
400 feet to 1 inch

DATE : NOV., 1973
NO. 10

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MII

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4734 MAP #11

29 Nov. 1973
H. Wahl