SOIL GEOCHEMICAL SURVEY
AND
ROCK SAMPLING REPORT
ON THE
P AND Z MINERAL CLAIMS
LOCATED ON LIGHTNING PEAK

-for-

ZALMAC MINES LTD.,

3117 - 30th. AVE.,

VERNON, B.C.

82L/5E

-location-

LATITUDE 49° 53' N, LONGITUDE 118° 32' W

VERNON MINING DIVISION

Province of British Columbia

-prepared by-

R. W. Yorke-Hardy, A.Sc.T.

Y-H Technical Services Ltd.,

Box 298,

Vernon, B.C. V1T 6M2

Dated: January 22, 1992

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INTRODUCTION:

Mr. Barry Amies, on behalf of the Directors of Zalmac Mines Ltd., a private company based in Vernon, B.C., commissioned the writer to arrange for the analysis of 311 soil samples collected during the 1991 exploration program and to prepare a report describing the results; and further, to conduct a fieldwork program of chain and compass surveying and rock sampling on and in the vicinity of the recently acquired Rampalo Fraction which controls the ground once held by the Rampalo crown grant (Lot 2408 - the first claim located in the Lightning Peak area).

The objectives of the work conducted during 1992 was to more accurately define the location of the various old workings in the vicinity of the historic Rampalo/Silver Lump and Victoria workings and to determine which locations within the surveyed area of the claim block are best suited for continued exploration for a mineral deposit containing economic values of gold, silver and base metals.

SUMMARY:

Zalmac Mines Ltd's claims are located in a geological favorable district which has seen sporadic exploration and localized small scale production from high grade silver and gold prospects since before the turn of the century. The region has been structurally well prepared for mineralizing and is lithological well suited to host significant precious and base metal deposits. As well, the geology indicates that potential exists for the discovery of substantial industrial garnet and/or wollastonite deposits as a result of skarn alteration associated with extensive limestone occurances.

The soil samples gathered in late 1991 were analysed in 1992 and the results of this survey form the basis for this report. A chain and compass survey and an air photo lineation study were also conducted in the early fall of 1992. The definition of mineralized zones and the related interpretation presented on the Composite Data Map (Drawing No. 12) show the central portion of this property has very good economic mineral potential.

Work conducted in 1992 has defined four main areas which indicate good potential for discovering economically viable mineral reserves. Three of these four areas occur in close proximity to historic working which have seen little exploration since 1930 but which prior to that time had been the focus of extensive surface and underground exploration, development and some production.

Surveys using modern mineral exploration techniques have been conducted intermittently over parts of the property, but until the 1992 program was conducted; it was not possible to correlate the old work, performed by many different owners, with recent work. A combination of VLF-EM, soil geochemistry, rock sampling and an airphoto lineation study conducted by Zalmac have been successful in defining mineralized targets which warrant follow-up by trenching, sampling and detailed mapping to define specific targets for diamond drilling.

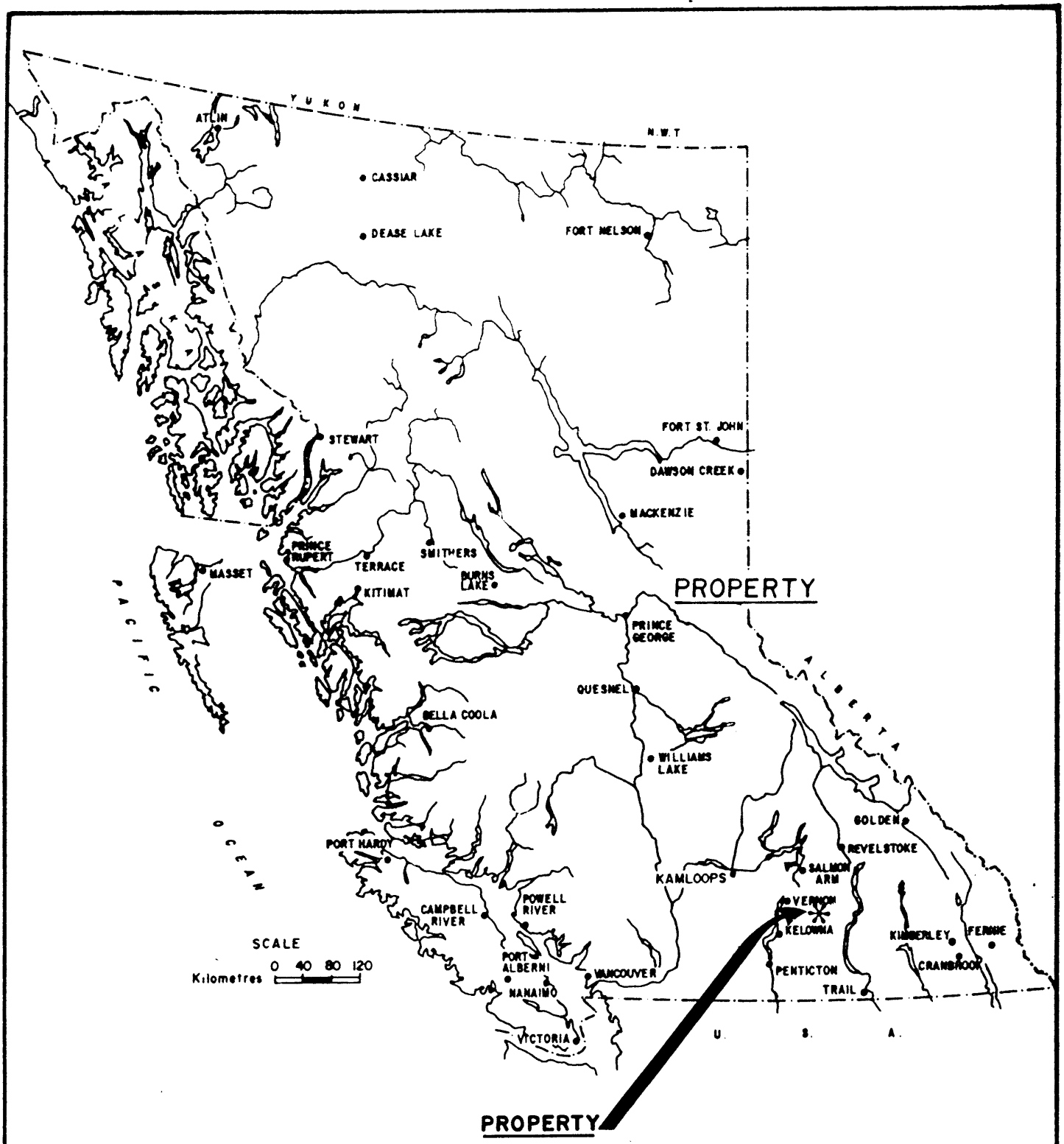
LOCATION AND ACCESS:

Zalmac's P & Z mineral claims are located on Lightning Peak which is situated about 67.8 kms. south-east of the City of Vernon, British Columbia. The claims are located in the Vernon Mining Division - N.T.S. Map Sheets 82E/15E & 16W. Geographic coordinates of the center of the Zalmac claim block are about 49° 53'N; 118° 32'W.

The property is accessible via forestry access roads off the main Kettle River Forest Access road which is linked to Hwy #6 immediately south of the Spruce Grove Cafe, near the Monashee Pass summit, some 52 kms. by road from the City of Lumby, British Columbia. Lumby is located on Hwy #6 about 25 kms. east of the City of Vernon, British Columbia.

The K 50 road at 62 km. on the Kettle River Forest Access road provides access to the east-central portion of the claim block. The Rendell Ck. road, starting at 77 km. on the K50 road provides good access to the western portions of the claims. The Waterloo and Dictator Mine access roads provide connection from east to west within the claim block. Vehicle access to the southern portion of the claim block is provided by the Pay Day and Lightning Peak roads off the Waterloo Mine Road.

The property is presently accessible via four wheel drive during the period July to November (snow removal to provide good year round access is feasible). Some road work would be required to provide access suitable to year round operations; however, existing roads provide adequate access for most exploration and preliminary development needs.



REVISED AND UPDATED JANUARY 1993

ZALMAC MINES LTD.

P & Z CLAIMS

LIGHTNING PEAK AREA, B.C.

LOCATION MAP

Y.-H. Technical Services Ltd.

DATE:	SCALE:	DRAWING No.
MARCH 1991	1:8,000,000	1

PHYSIOGRAPHY AND VEGETATION:

The property is situated in mountainous country and ranges in elevation from 1500 to 2000 metres above sea level. The property is generally tree covered although there are extensive swampy areas which support little growth other than grasses and brush. Rock outcrops are limited and occur mainly in creek gullys and on ridges. Locally there is in excess of 5 metres of overburden however many areas are covered with less than 1 metre of overburden often allowing one to infer the underlying rock types from sub-outcrop material.

Portions of the property are being actively logged and other areas are subject to being logged over the next several years. This logging activity generally improves access to and within the property although it tends to obscure grid and location lines. It is specifically noted that a new logging road access has been developed which accesses the area west and south-west of the Waterloo C.G..

PROPERTY DESCRIPTION:

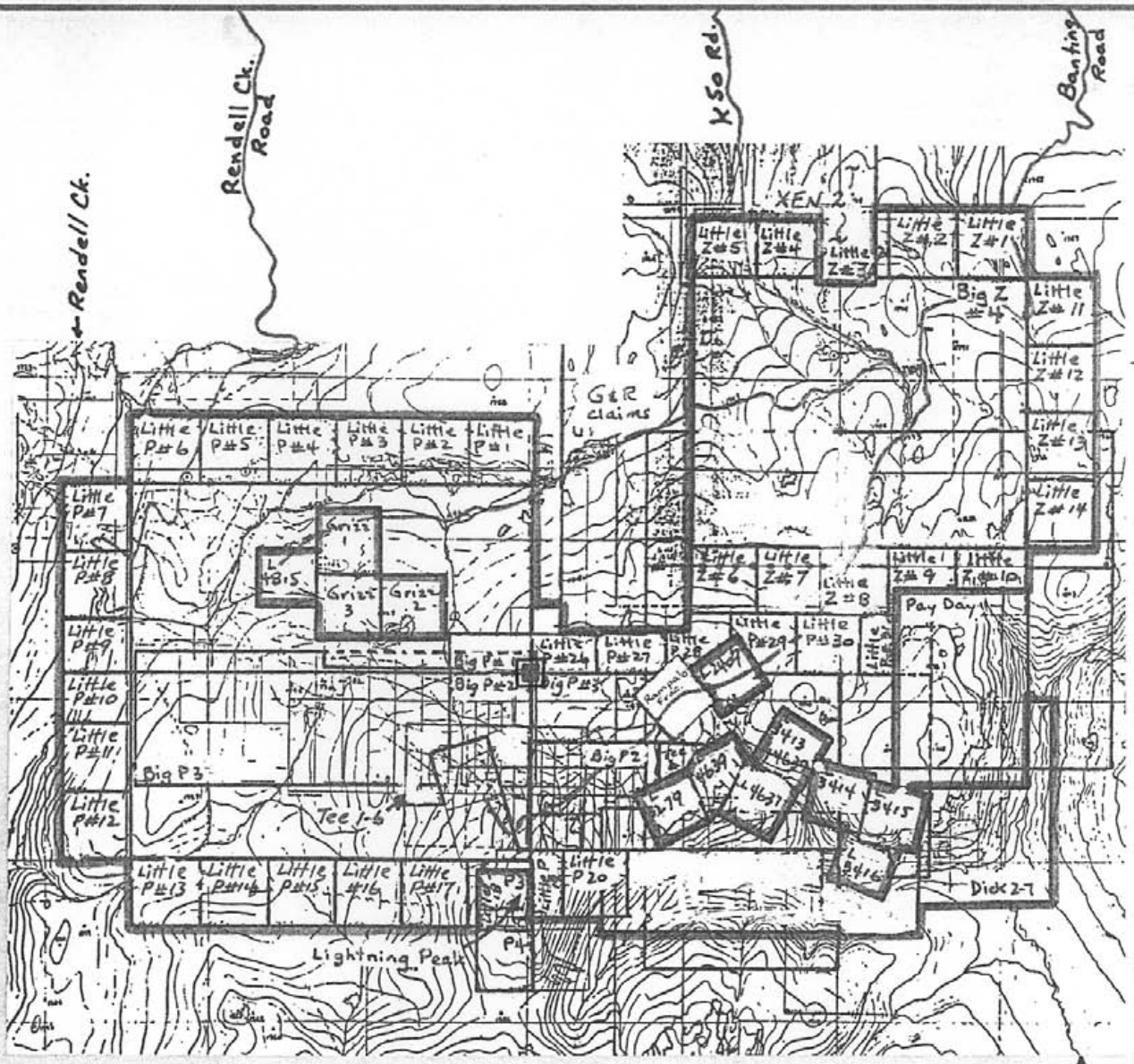
An up to date list of the claims owned by Zalmac is provided below. See also the claim map, Drawing No. 2 for further information.

ZALMAC MINERAL CLAIMS

Claim Name	Units	Record #s	Expiry Date
Dick 2 - 7	6	259087	July 21, 1994
Big P # 1 (old)	10	259090	Nov. 10, 1994
Big P # 1 (new)	18	260021	Feb. 16, 1995
Big P # 2	18	260022	Feb. 22, 1995
Big P # 3	18	260023	Feb. 21, 1995
Big Z # 4	20	260024	Feb. 17, 1995
Little P # 1 - 6	6	260025 - 30	Feb. 15, 1995
Little P # 7 - 9	3	260031 - 33	Feb. 16, 1995
Little P # 10 - 18	9	260034 - 42	Feb. 22, 1995
Little P # 19 - 20	2	260043 - 44	Feb. 21, 1995
Little P # 26 - 31	6	260049 - 54	Feb. 16, 1995
Little Z # 1 - 7	7	260055 - 61	Feb. 15, 1995
Little Z # 8 - 9	2	260062 - 63	Feb. 16, 1995
Little Z # 10 - 14	5	260064 - 68	Feb. 17, 1995
Rampalo Fraction	1	310724	June 18, 1994

Title to these claims is recorded in the name of Zalmac Mines Ltd., Box 298, Vernon, B.C.. The expiry dates shown herein reflect the application of two years of work from the 1991 program in addition to the work applied and supported by this report. The claims are all located and recorded in the Vernon Mining Division of British Columbia. All claims have been located in accordance with the requirements of the Mineral Act of British Columbia.

The mineral claims were grouped into two groups (the Zal and the Mac Groups) in November 1991; to facilitate distribution of assessment work under the 1991 program. The Rampalo Fraction has been added to the Mac Group in order to help to equalize the work done on each group. Were necessary, PAC account credits will be used to balance between the two groups, work applied for assessment credits.



External claim boundary

Internal claim boundary

SCALE: 500 0 1000 2500
Metres

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ZALMAC MINES LTD.

P & Z CLAIMS

LIGHTNING PEAK AREA, B.C.

Claim Map

Y.-H. Technical Services Ltd.

Date:	Scale:	DRAWING No.
JAN. 1993	1:50,000	2

REGIONAL GEOLOGY: (from Yorke-Hardy (1991)

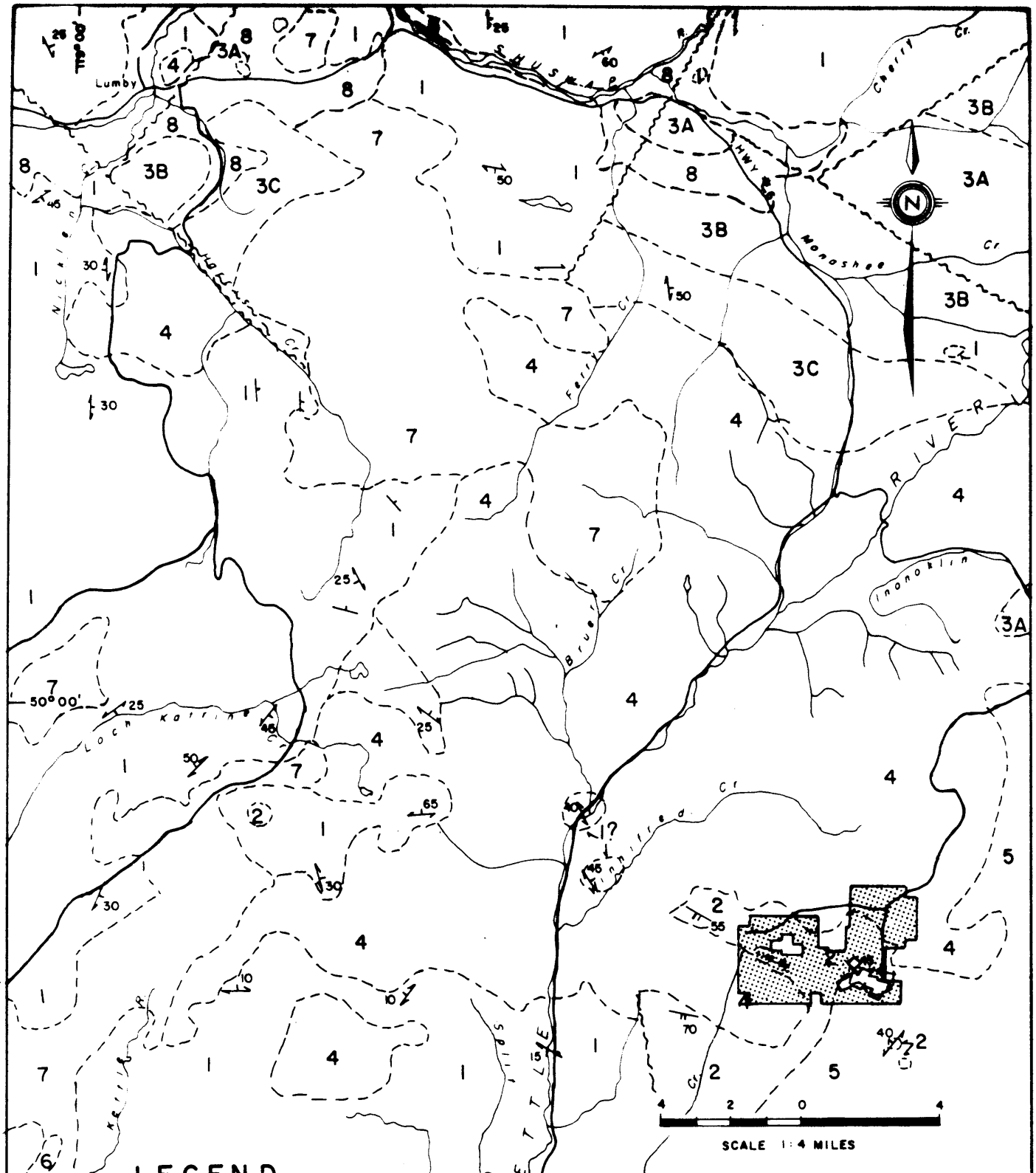
The geology of this region and on Lightning Peak is extensively discussed by C. E. Cairnes (1930) and mapped by Little (1957) and is therefore only briefly summarized herein.

Reference to the above publications shows the Lightning Peak area to be underlain by rocks of the Anarchist Group of Permian age and by intrusive rocks of the Valhalla and Nelson Intrusions of late Jurassic and mid Cretaceous age (see Drawing #3). The Anarchist Group consists of greenstones, greywacke, tuffs, limestone, and paragneiss which form a roof pendant which has been variably intruded and/or is underlain by the granitic intrusives.

The central core of Lightning Peak itself is composed of dark colored basalt lavas.

Structurally the area is quite complex. The roof pendant comprised of Anachist group rocks is described by Cairnes as a west to north-westerly plunging synclinal structure.

Major regional faulting is evident from examination of satellite (E.R.T.S.) photos of the area and regional air photos. At least three main fault sets cut the generally north-west trending lithological units comprising the roof pendant. The main north-south Kettle River valley fault can be traced south beyond the United States border and north to the vicinity of Revelstoke, B.C.. North-easterly, north-westerly and east-west trending faults splay off this main structure. The upper Kettle River, Winnifred Creek, Mohr Creek and Rendell Creek have been cut down along north-easterly trending fault lineaments. Other regional faults are evidenced by north-westerly trending topographic features such as Damfino Creek and Haggart Creek. Dictator Creek and numerous small drainages have north-south trends parallel to the main Kettle River fault. East-west trends are locally evident as splays off the other main trends. Silver Spot Creek is an example of this trend and the Waterloo Vein parallels this trend.



LEGEND

8	Pleistocene and Recent
7	Tertiary Basalts
6	Phoenix Volcanics Group
5	Valhalla Intrusions
4	Nelson Intrusions
3	Cache Creek Group (DIV. A, B, C,)
2	Anarchist Group
1	Monashee Group

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ZALMAC MINES LTD.

P & Z CLAIMS

LIGHTNING PEAK AREA, B.C.

REGIONAL GEOLOGY

Y.-H. Technical Services Ltd.

Date	Scale	DRAWING No.
MARCH 1991	1" = 4 miles	3

These structures appear locally to have acted as a plumbing system along which intrusive dykes and mineralization have been emplaced. Numerous mineral occurances have been documented by Cairnes in 1930 (see Dwg. #4) and subsequently by others, as occuring along the longitudinal section of the roof pendant. Some of these occurances, mainly easterly and north-easterly trending vein type deposits, have seen limited production. The main commodities are gold and silver associated with base metals.

PROPERTY GEOLOGY: (revised from Yorke-Hardy 1991)

The greater portion of the Zalmac claim block is underlain by various volcanic and sedimentary lithologies and granitoid rock units which form part of the Anarchist Group roof pendant.

Extensive, often thick crystalline limestone and locally minor tuffaceous and argillaceous sedimentary units occur conformably between volcanic units consisting of andesites, flow breccias and recrystallized limy tuffs. Locally, ankerite alteration(?), quartz and calcite veining occur in the volcanic horizons. These main lithologic units seem to form (Cairnes, 1930) "a syncline plunging west or north-westerly" (across the property). "The strata in the vicinity of the edges of the main batholithic bodies tends to strike parallel to the line of contact and to dip away from the granitic bodies." According to Cairnes the massive volcanic flows in the east and south-east are the oldest of the Anarchist group rocks; succeeded by coarse and then fine-grained tuffaceous rocks and other sedimentary types. The limestone units in the west and north-west are the youngest of the roof pendant rocks.

The Anachist group rocks are locally intruded and are elsewhere underlain by Nelson Intrusives comprised of granite, porphyritic granite, diorite, monzonite and quartz monzonite to the north and west; and by Valhalla Intrusives comprised of granite and porphyritic granite to the south-east.

Quartz porphyry rocks were distinguished by Cairnes. It is uncertain to which, if any, of the Intrusive groups these belong. It is entirely possible that these units represent granitiod flows which occurred sequentially with the other volcanic flows rather than having been later intruded.

Cairnes stated (ap. cit. 1930 GSC Summary Report - Part A - p. 83A - 84A):

> "Rocks classified as quartz porphyry are abundant within areas of the pre-batholithic formations. They form long dyke shaped masses mostly only a few feet wide, but traceable in some instances for at least several hundred feet."
>
> "The quartz porphyry dykes were found intruding the pre-batholithic formations, but were not observed cutting batholithic rocks. They are in many cases closely associated with quartz veins carrying values in gold and other metals."

Mineralization occurs mainly within the highly altered volcanic and sedimentary rocks which form a belt about 1.5 kms. wide by greater than 7 kms. in length. There are several mineral prospects which have been located in the intrusive rock units.

Mineralization noted by Cairnes (1930) occured mostly as veins related to fault/shear structures cross-cutting the lithology. Two main vein sets were discussed by Cairnes: east-west veins, dipping steeply north (ie Waterloo Mine) or nearly north-south trending veins (ie the Rampalo workings and the Dictator Mine). The relationship between these veins is uncertain as no intersection of the two has been reported; although the north-south veins have in places been offset along east-west shears suggesting that at least some post mineralization movement has occured in this plane.

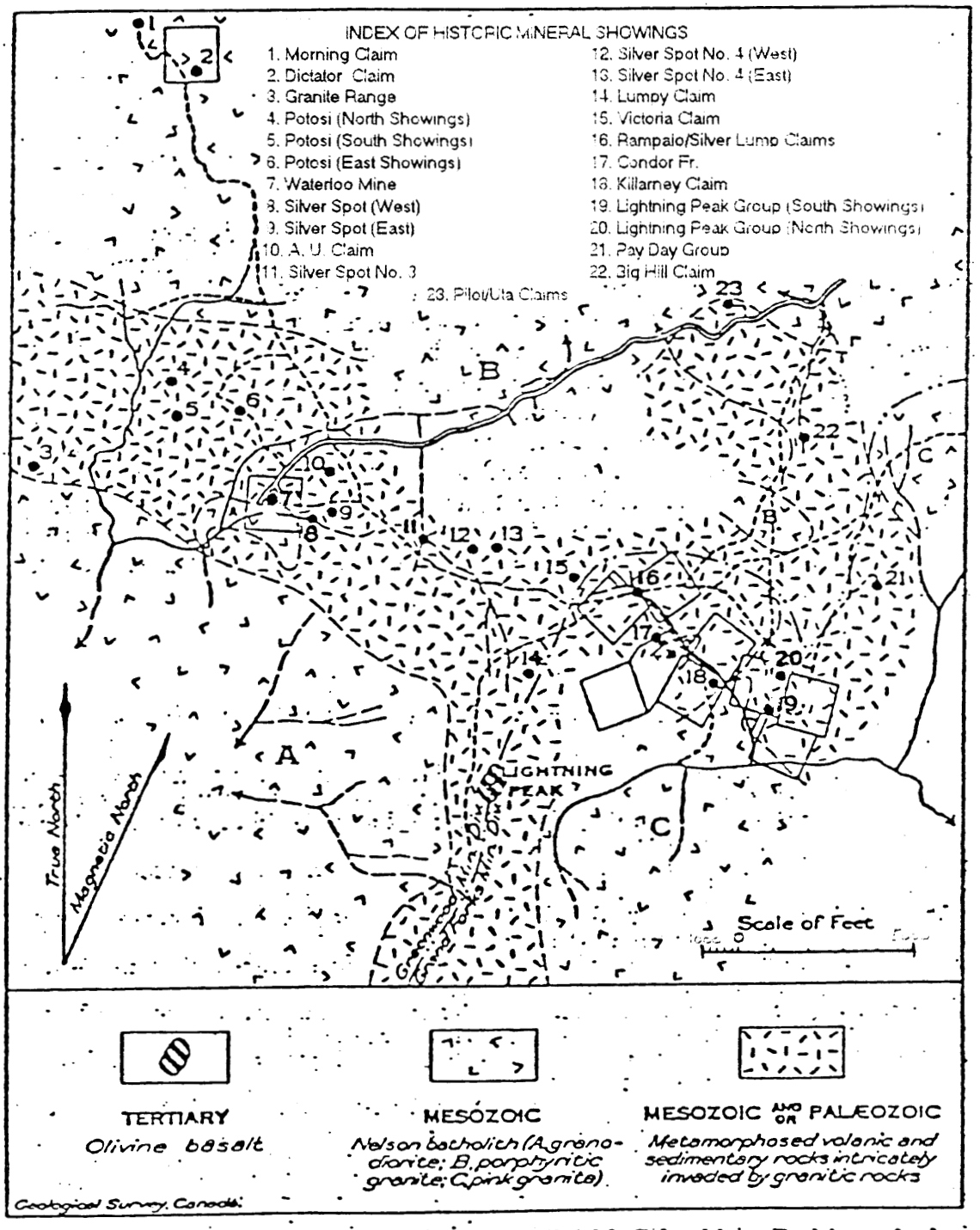
Cairnes inferred that the veins on the Killarney C.G. have been step faulted successively northward. These veins (Killarney) have the same general strike trend and dip characteristics as do the main vein on the adjoining Lightning Peak Group to the south-east and at the Waterloo Mine two and one-half miles to the north-west; and may represent the same zone of shearing and mineralization on all three properties. This theory is strongly supported by 1985 VLF-EM surveys conducted earlier on the Big P claims, by regional airborne magnetic lineaments of the area and by airphoto lineations - see appropriate segment later in this report).

Mineralization on the Big Z # 4 claim locally occurs as disseminations and as coatings and stringers along joints and fractures in the intrusives (and in the Anarchist Group rocks - ie. Pilot and Uta showings, Cairnes 1930) occuring adjacent to the intersection of major north-west and north-south faults.

LIGHTNING PEAK HISTORY:

The early history of mineral exploration on Lightning Peak has been well documented by others. The earliest activities on record relate to the staking of the Rampalo claim in 1897. The history of activities has most recently been summarized by the writer in his report on the Zalmac property dated November 1991.

Of the twenty three mineral occurances documented by Cairnes in 1930, Zalmac Mines Ltd. now controls twelve. Additional mineral showings, encountered by more recent work are also controlled by Zalmac. Descriptions of these showings and the scope of work conducted on them varies from minor surface trenching to considerable underground exploration, development and mining. Generally speaking, most work was conducted along a general east-west trend in search of extensions to the Waterloo vein system which was mined for its high grade silver content. Gold mineralization was the target mineral on only two of the historic workings; the Dictator and the A.U. showings.



Lightning Peak area, Osoyoos district, British Columbia. Positions of mines, prospects, and other mineral discoveries are indicated by solid circles numbered as in text.

Figure from 1930 report by Cairnes. Numbers also relate to this report.

REVISED AND UPDATED JANUARY 1993

ZALMAC MINES LTD.		
P & Z CLAIMS		
LIGHTNING PEAK AREA, B.C.		
Historic Properties & Mineral Discoveries		
Y.-H. Technical Services Ltd.		
Date: MARCH 1991	Scale: 1" = 5000'	DRAWING No. 4

The most recent acquisition by Zalmac is those workings once covered by the Rampalo crown grant from which limited quantities of silver rich ore were reportedly shipped. These showings are now covered by the Rampalo Fraction (Rec# 310724) which was staked in June of 1992 after the crown grant was forfeit as a result of a missed assessment payment.

Most recently, Mohawk Oil Co. Ltd., Zalmac Mines Ltd., the Waterloo Syndicate and Grazina Resources Ltd. have been the most active companies on the southern part of the roof pendant. Some work has been conducted by Cannax Ventures Inc. on the claims surrounding the historic Dictator C.G. located north of the Waterloo C.G.; however, no review has been conducted on this material by the writer.

There has been little work conducted over the central core of the Zalmac ground. Until 1991 no soil geochemical sampling and only limited geophysical surveying had been conducted with the exception of two old test pits now referred to as the Rich Rock skarn showings. The results of analyses on the 311 samples, collected in September 1991, forms the backbone of this report.

SOIL GEOCHEMISTRY PROGRAM:

A soil geochemical survey was conducted over portions of the Zalmac claims during late September of 1991. The samples were collected over a newly established grid prepared over portions of the ground previously explored using a VLF-EM survey and over newly acquired ground to the north of the old survey area. The sampling was confined to areas in which VLF-EM conductors were previously detected and over areas in which extensive hand dug trench work was conducted prior to 1930.

Flagged traverse lines were surveyed at 100 metres intervals in the most prospective areas of the proposed new grid. The baselines for this new grid were hand slashed and blazed earlier in 1991. A 10+00N tie-line was established running north-westerly (parallel to the main 0+00 N/S baseline) from the Stn. 10+00N on the 0+00E/W baseline. The surveyed lines run north-east and south-west off the 10+00N tie line. Samples were collected at 30 metre intervals along the surveyed lines. A total of 311 samples were collected. The soil samples were taken from the lower "B" horizon whenever possible. If there was no "B" horizon developed the underlying "C" horizon was sampled. Some locations were covered in heavy layers of swampy "A" horizon material. In these cases the samples were taken from the "A" horizon at depths of at least 40 cm..

The "B" horizon soils were generally reddish-brown in color and were encountered at depths of 10 to 30 cm. from surface. The "B" horizon is generally 15 cm. thick. A small mattock was used to dig the holes. The samples were collected with a stainless steel scoop and the coarse debris and organic material was discarded. Samples were taken at all locations even in swampy areas and at outcrops.

Each sample was placed into a kraft paper wet strength envelope which had been marked with the grid location. The grid location, soil type and color, depth, surface slope angle and direction at each sample site was noted in field books. All samples were air dried, segregated into lines and stored until August of 1992.

In August of 1992 the samples were delivered to Bondar-Clegg & Company Ltd. for analysis. The lab preparation included breaking up dried lumps by hammering with a mallet prior to screening to minus 80 mesh. A measured amount of the minus 80 mesh fraction was then subjected to a multi-element geochemical analysis. Specifically, a "Gold + 29" element package was chosen which utilizes fire assay techniques followed by an AAS finish for gold; acid digestion followed by a multi-element I.C.P. scan for 27 elements and a cold vapor AAS analysis for mercury. It is noted that the digestion used in the analysis package selected may be incomplete for certain mineral forms of some elements (see Appendix I for specifics).

Assay data for the main economic minerals known to occur in this region, namely gold, silver, lead, zinc, copper and the trace element arsenic; have been plotted on single element maps at a scale of 1:5000 (see Drawings 6 to 11). Also, this data and other trace element data has been subjected to a statistical analysis utilizing statistical functions available in the software package Microsoft Excel 4 (see Statistical Table # 1) and cumulative frequency histograms (Charts 1 - 7) have been created for the main economic and trace element minerals (gold, silver, lead, zinc, copper; and the trace elements arsenic and mercury). The statistically treated data has been used to determine contour intervals which equate to levels defined as sub-anomalous and 1st., 2nd., and 3rd. order anomalous values. The sub-anomalous levels have been determined as the mean plus one-half standard deviation which when contoured outline areas of interest and often helps to determine strike trends. 1st, 2nd, and 3rd. order anomalous levels are defined as shown in the following table (see Statistics Table # 2).

In addition to the contoured data, bar graphs have been produced for each surveyed line. These graphs (see Graphs 1 - 77) display graphically the soil geochemical data for the five economic elements and two trace elements closely analysed. The remaining 23 elements, after close scrutiny, were deemed of little value for mineral exploration at this stage and were therefore not further assessed.

MERCURY STATS.			SILVER STATS.		SILVER STATS (adj.)			ARSENIC STATS.	
Column 1			*Column 1*		*Column 1*			*Column 1*	
Mean	0.067199		Mean	0.590675	Mean	0.546302		Mean	12.32476
Std. Error	0.001271		Std. Error.	0.020848	Std. Error	0.014791		Std. Error	0.468267
Median	0.065		Median	0.5	Median	0.5		Median	11
Mode	0.076		Mode	0.4	Mode	0.4		Mode	3
Std. Dev.	0.022407		Std. Dev.	0.367656	Std. Dev.	0.26085		Std. Dev.	8.257977
Variance	0.000502		Variance	0.135171	Variance	0.068043		Variance	68.19419
Kurtosis	1.475345		Kurtosis	3.2678	Kurtosis	-0.78176		Kurtosis	1.528532
Skewness	0.727323		Skewness	1.575213	Skewness	0.312273		Skewness	1.134961
Range	0.15		Range	2.1	Range	0.9		Range	42
Minimum	0.015		Minimum	0.1	Minimum	0.1		Minimum	3
Maximum	0.165		Maximum	2.2	Maximum	1		Maximum	45
Sum	20.899		Sum	183.7	Sum	169.9		Sum	3833
Count	311		Count	311	Count	311		Count	311

GOLD STATS.		GOLD STATS. (adj.)		GOLD STATS. (adj.)				COPPER STATS.	
Column 1		*Column 1*		*Column 1*				*Column 1*	
Mean	11.2701	Mean	10.56592	Mean	10.20257			Mean	28.41479
Std. Error	1.248251	Std. Error	0.9733	Std. Error	1.272124			Std. Error	0.936061
Median	3	Median	3	Median	1			Median	24
Mode	3	Mode	3	Mode	1			Mode	18
Std. Dev.	22.01314	Std. Dev.	17.16433	Std. Dev.	22.43415			Std. Dev.	16.50762
Variance	484.5784	Variance	294.6142	Variance	503.2911			Variance	272.5016
Kurtosis	41.08047	Kurtosis	13.63399	Kurtosis	38.89829			Kurtosis	6.374962
Skewness	5.566002	Skewness	3.59369	Skewness	5.377565			Skewness	2.083853
Range	230	Range	96	Range	232			Range	117
Minimum	3	Minimum	3	Minimum	1			Minimum	7
Maximum	233	Maximum	99	Maximum	233			Maximum	124
Sum	3505	Sum	3286	Sum	3173			Sum	8837
Count	311	Count	311	Count	311			Count	311

MANGANESE STATS.			LEAD STATS.			ZINC STATS.		ZINC STATS. (adj.)	
Column 1			*Column 1*			*Column 1*		*Column 1*	
Mean	516.2444		Mean	6.971061		Mean	62.02572	Mean	59.92926
Std. Error	22.04894		Std. Error	0.182605		Std. Error	1.49842	Std. Error	1.175196
Median	430		Median	7		Median	58	Median	58
Mode	245		Mode	7		Mode	41	Mode	100
Std. Dev.	388.8372		Std. Dev.	3.220268		Std. Dev.	26.42493	Std. Dev.	20.72481
Variance	151194.4		Variance	10.37013		Variance	698.2768	Variance	429.5176
Kurtosis	16.90841		Kurtosis	37.19269		Kurtosis	3.886291	Kurtosis	-0.6555
Skewness	3.284944		Skewness	4.235579		Skewness	1.512126	Skewness	0.299248
Range	3405		Range	39		Range	173	Range	85
Minimum	88		Minimum	1		Minimum	15	Minimum	15
Maximum	3493		Maximum	40		Maximum	188	Maximum	100
Sum	160552		Sum	2168		Sum	19290	Sum	18638
Count	311		Count	311		Count	311	Count	311

STATISTICS TABLE # 1

CHART 1

HISTOGRAM OF GOLD VALUES - PPB

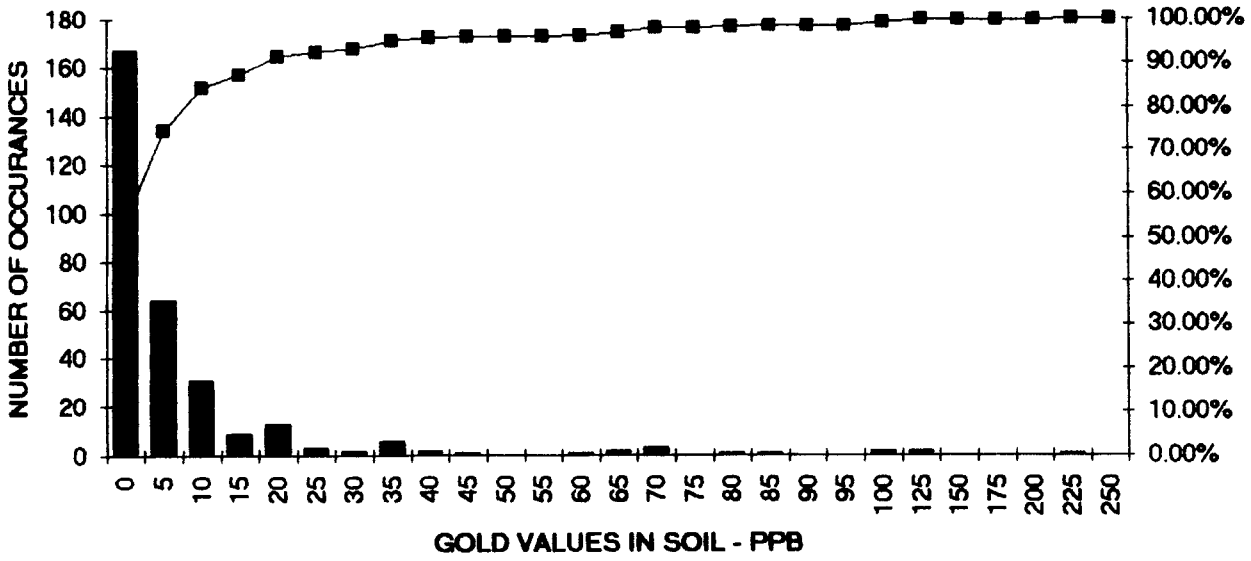


CHART 2

HISTOGRAM OF SILVER VALUES - PPM

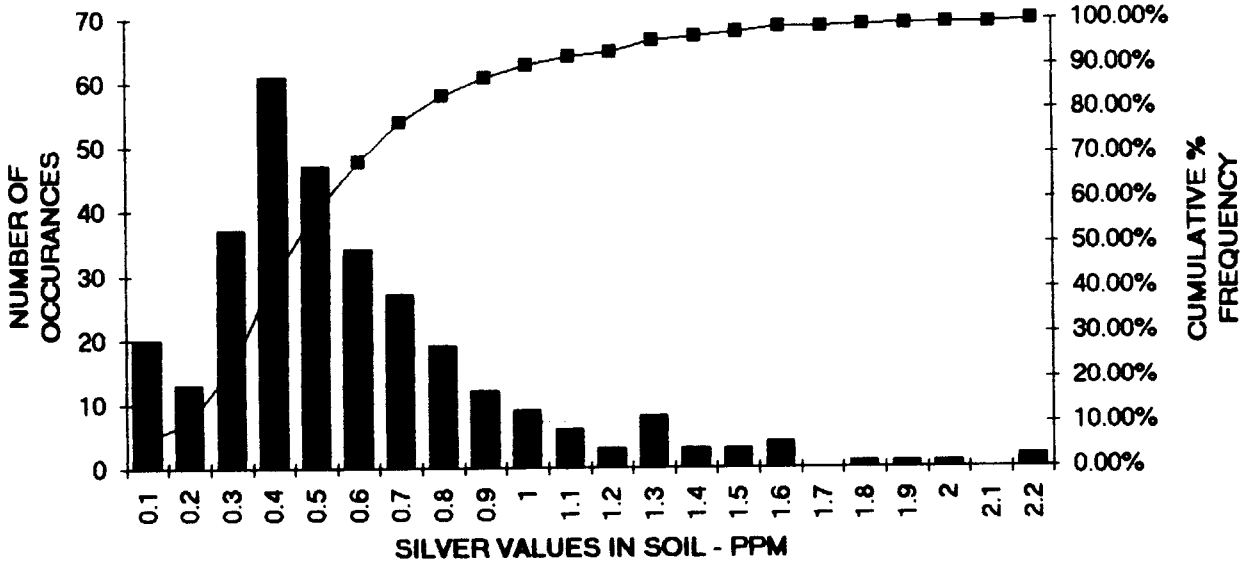


CHART 3

HISTOGRAM OF LEAD - PPM

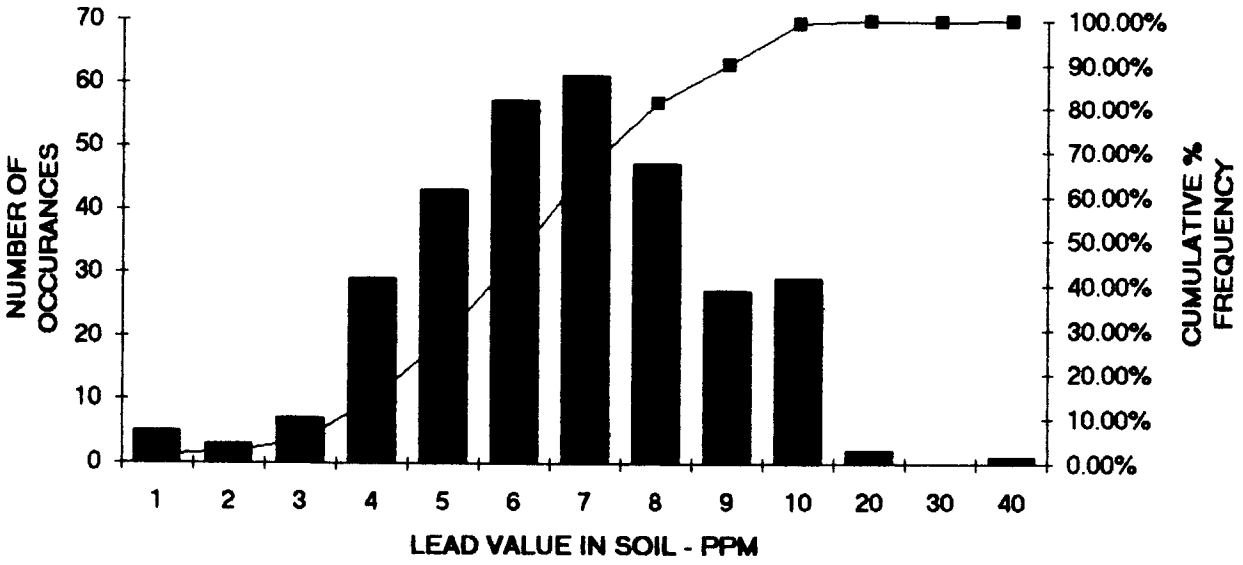


CHART 4

HISTOGRAM OF ZINC - PPB

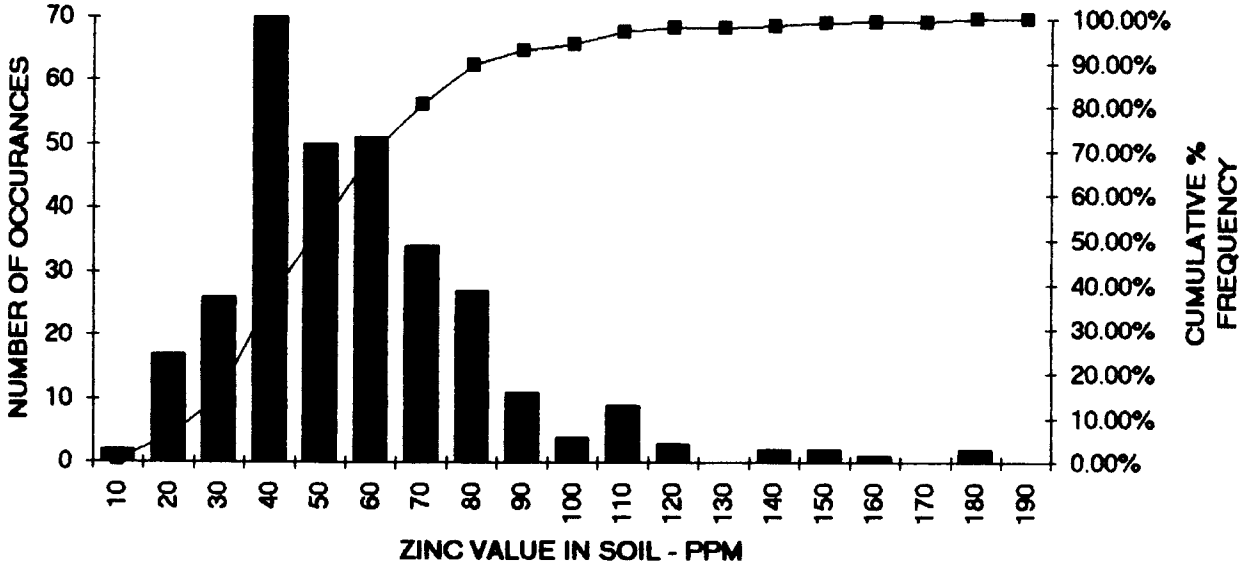


CHART 5

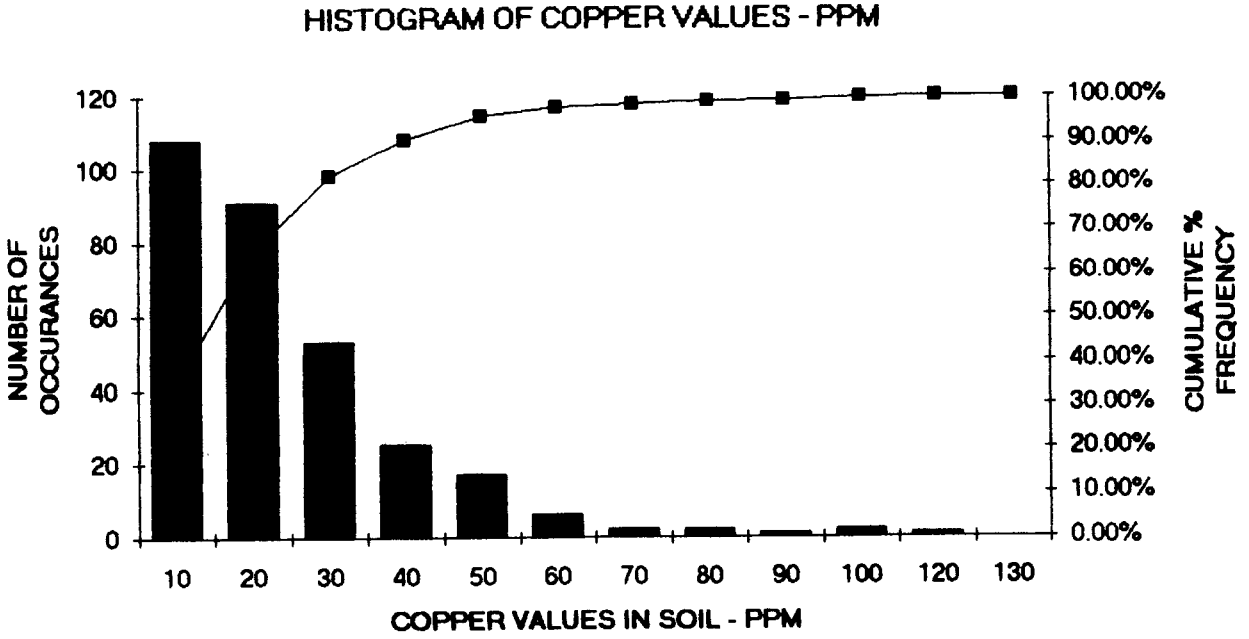


CHART 6

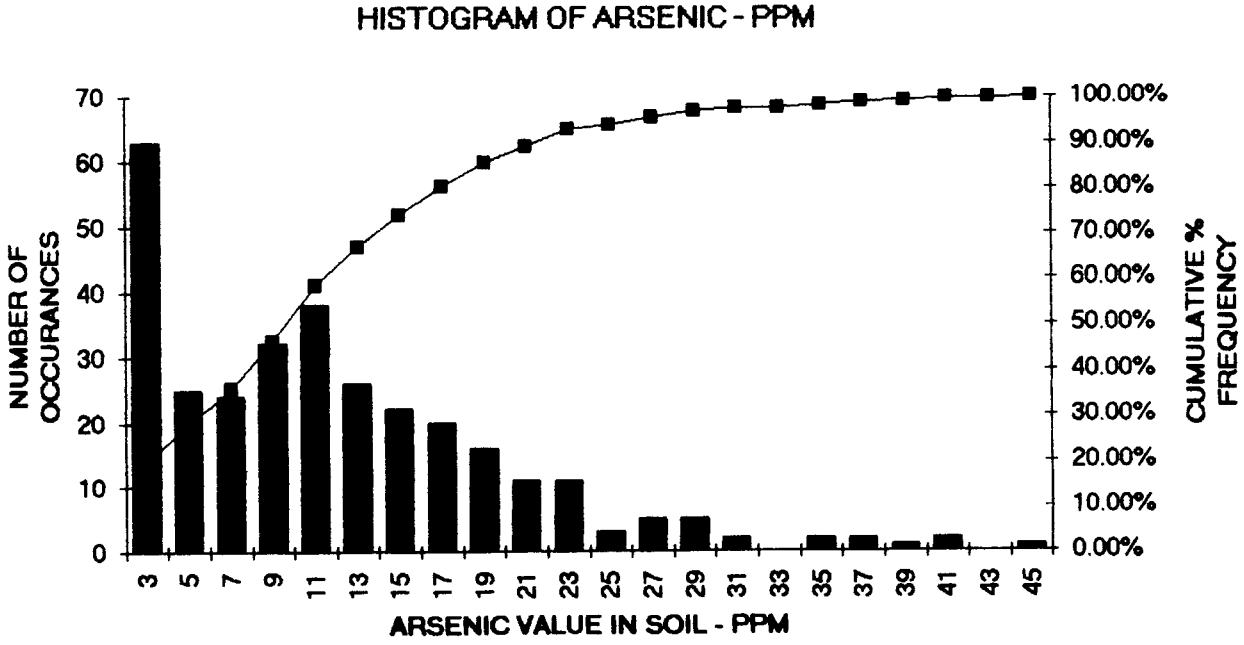
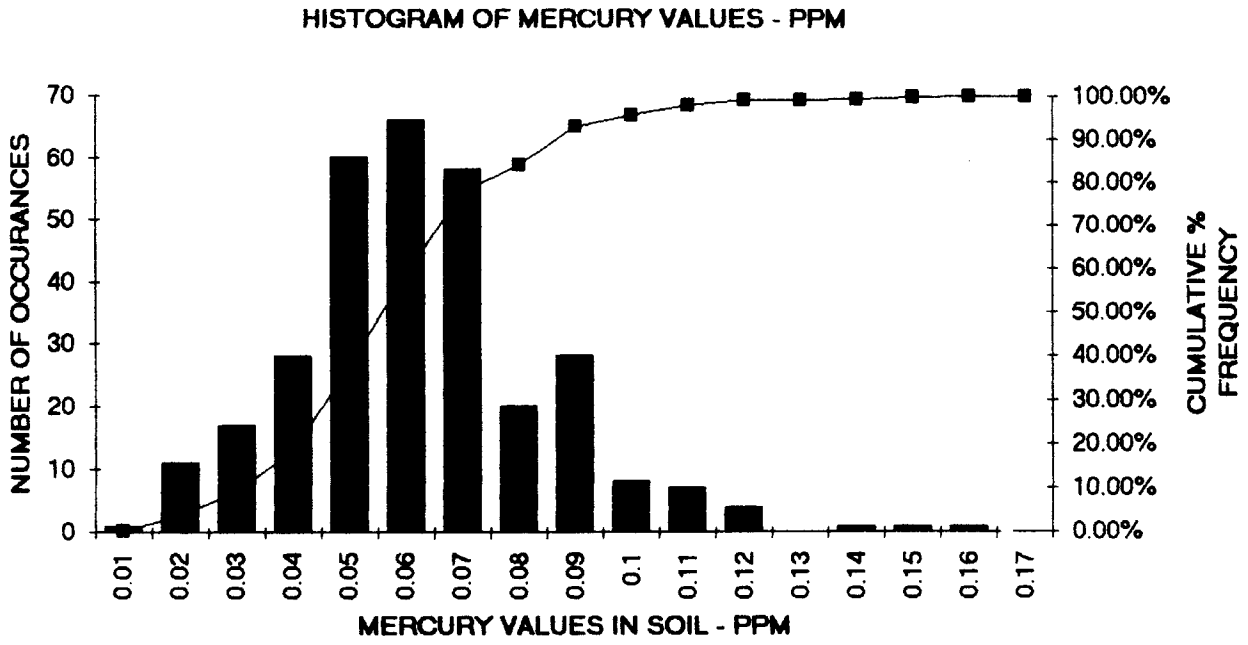


CHART 7


HISTOGRAM OF MERCURY VALUES - PPM
NUMBER OF OCCURANCES
0
10
20
30
40
50
60
70
CUMULATIVE % FREQUENCY
0.00%
10.00%
20.00%
30.00%
40.00%
50.00%
60.00%
70.00%
80.00%
90.00%
100.00%
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1
0.11
0.12
0.13
0.14
0.15
0.16
0.17
MERCURY VALUES IN SOIL - PPM

STATISTICAL ANALYSIS - COMPILATION

			Anomalous Levels		Selected	
Element	Mean	Std. Dev.	1st. Order	2nd. Order	3rd. Order	Selected Contour Intervals
Gold	22.01314	11.2701	33.28324	44.55334	55.82344	
Gold (adj.)	10.56592	17.16433	27.73025	44.89458	62.05891	
Gold (adj.)	22.43415	10.2057	32.63985	42.84555	53.05125	10 ppb, 20 ppb, 30 ppb, 40 ppb, 50 ppb, 100ppb
Silver	0.590675	0.367656	0.958331	1.325987	1.693643	
Silver(adj)	0.546302	0.26085	0.807152	1.068002	1.328852	.85 ppm, .90 ppm, 1.05 ppm, 1.30 ppm
Lead	6.971061	3.220268	10.19133	13.4116	16.63187	7.5 ppm, 10 ppm, 13 ppm, 16 ppm
Zinc	62.02572	26.42493	88.45065	114.8756	141.3005	
Zinc (adj.)	59.92926	20.72481	80.65407	101.3789	122.1037	80 ppm, 80 ppm, 100 ppm, 120 ppm
Copper	28.41479	16.50762	44.92241	61.43003	77.93765	30 ppm, 45 ppm, 60 ppm, 75 ppm
Arsenic	12.32476	8.25977	20.58453	28.8443	37.10407	10 ppm, 20 ppm, 30 ppm, 40 ppm
Mercury	0.067199	0.022407	0.089606	0.112013	0.13442	.07 ppm, .09 ppm, .11 ppm, .13 ppm
Manganes	516.2444	388.8372	905.0816	1293.919	1682.756	750 ppm, 900 ppm, 1300 ppm, 1700 ppm

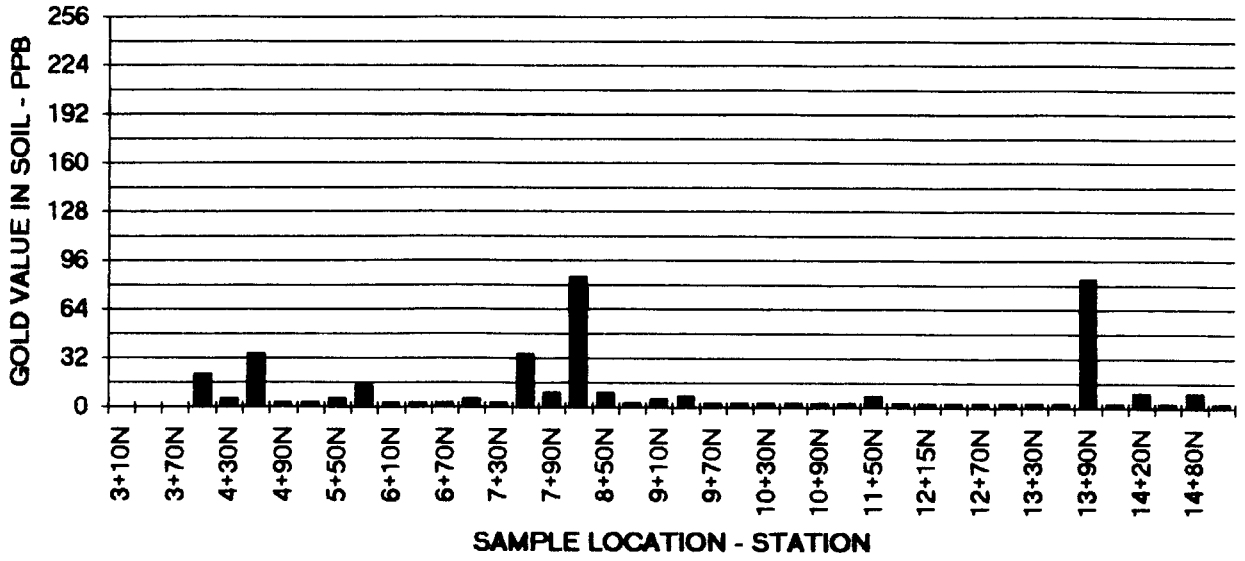
1st. Order Anomaly = Mean + 1 Standard. Deviation
2nd. Order Anomaly = Mean + 2 Standard Deviations
3rd. Order Anomaly = Mean + 3 Standard Deviations

NOTE: Adjusted values have been determined by varying maximum or minimum values (see previous table and text).

STATISTICS TABLE # 2

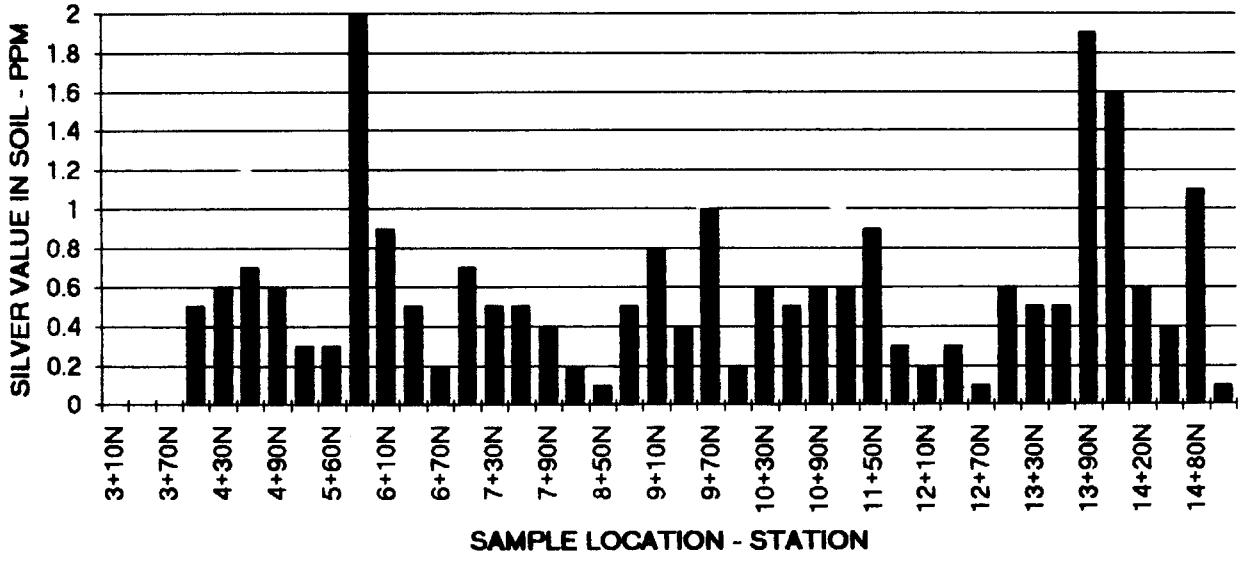
GRAPH 1

GOLD (PPB) - LINE 0+00E/W



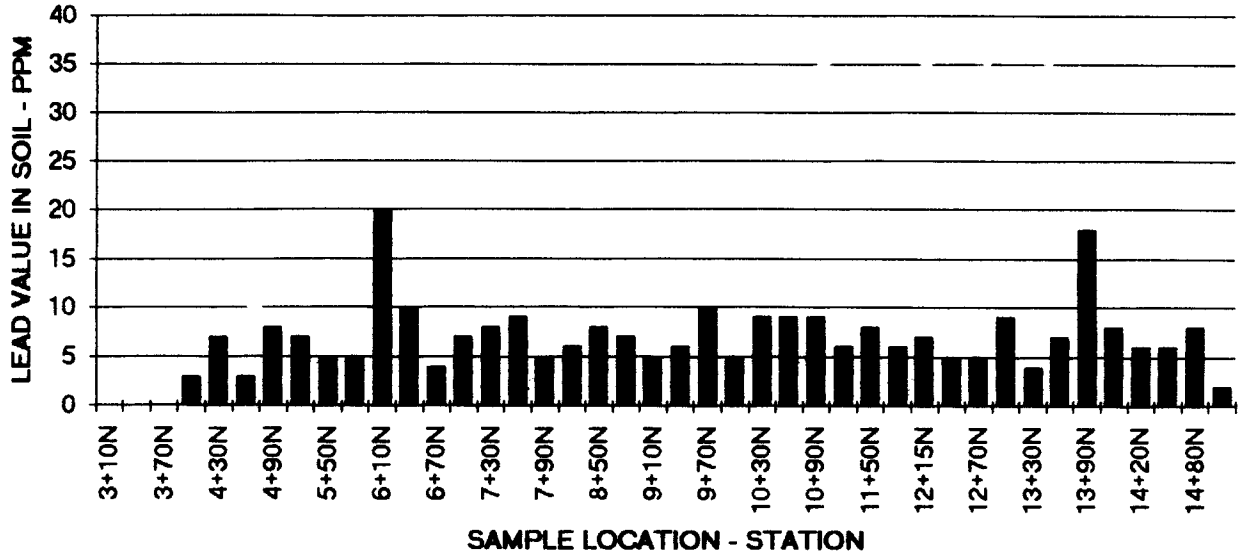
GRAPH 2

SILVER (PPM) - LINE 0+00E/W



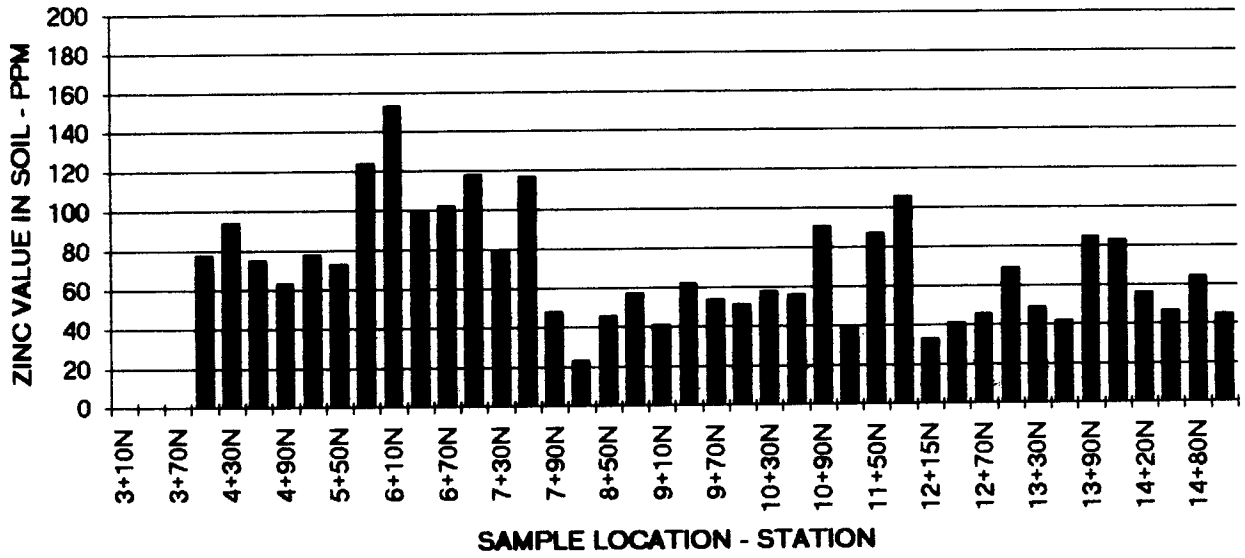
GRAPH 3

LEAD (PPM) - LINE 0+00E/W



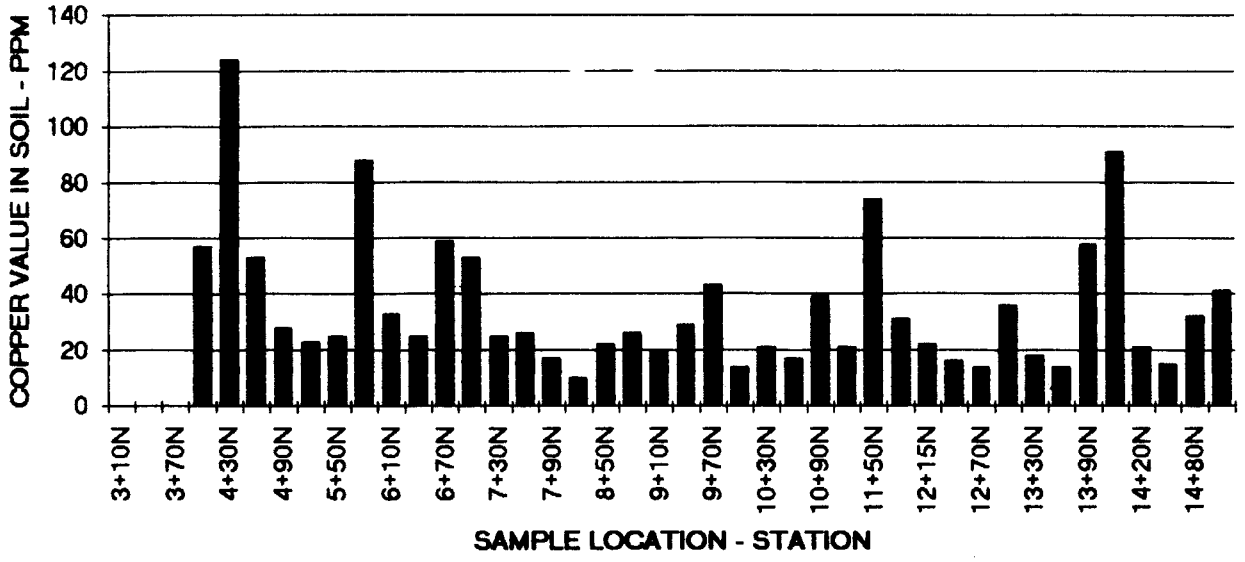
GRAPH 4

ZINC (PPM) - LINE 0+00E/W



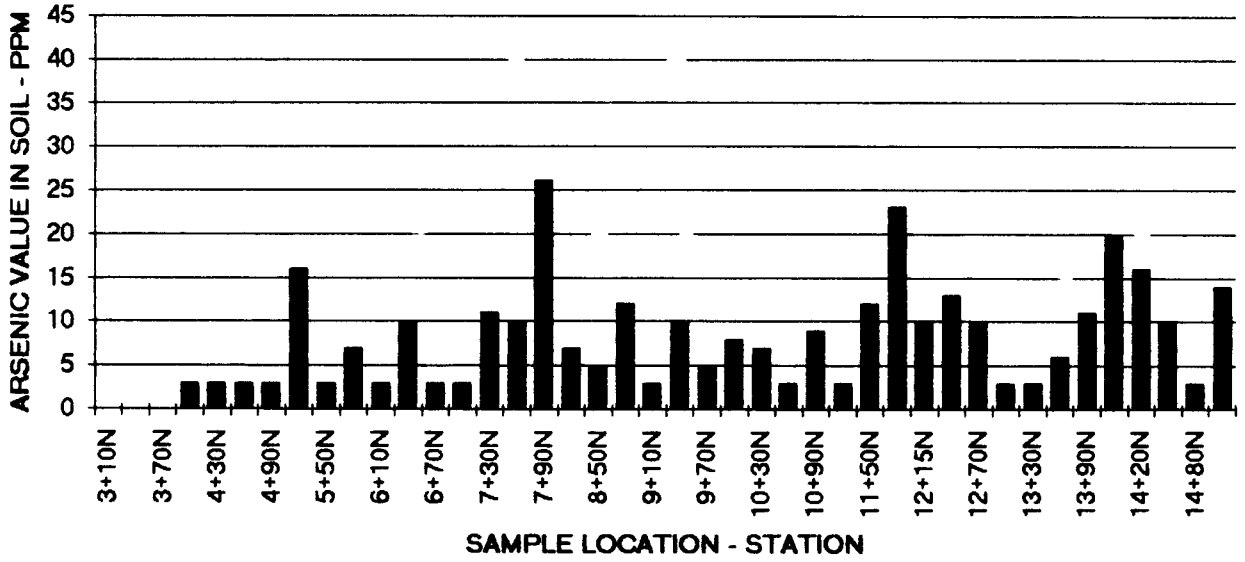
GRAPH 5

COPPER (PPM) - LINE 0+00E/W

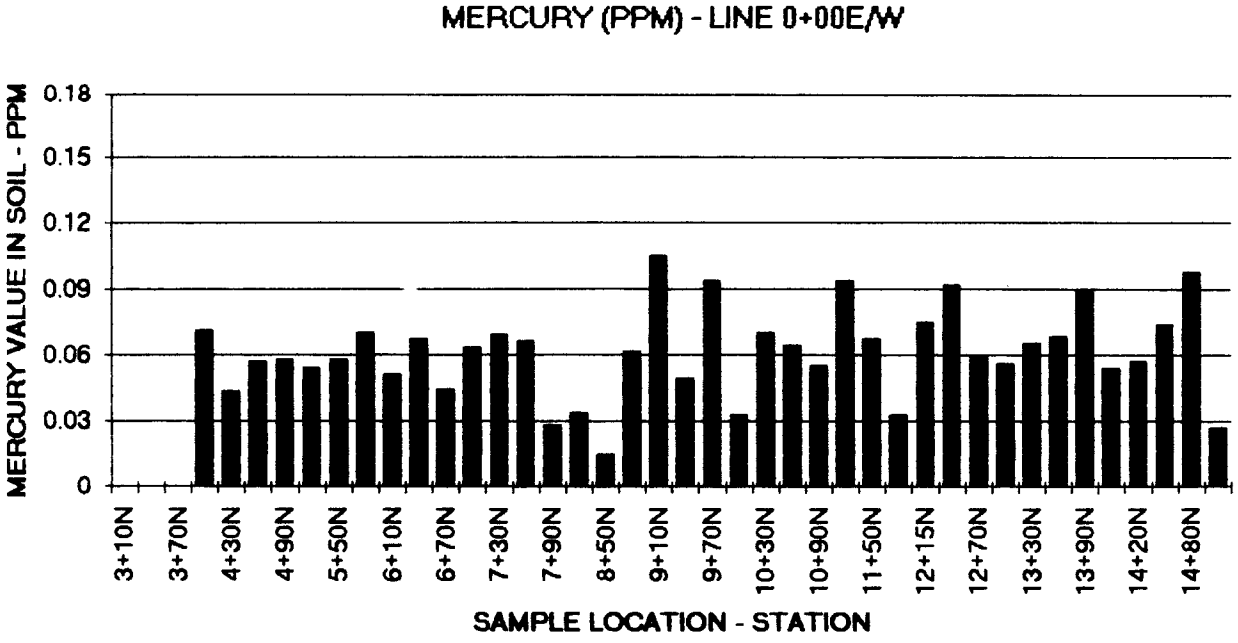


GRAPH 6

ARSENIC (PPM) - LINE 0+00W

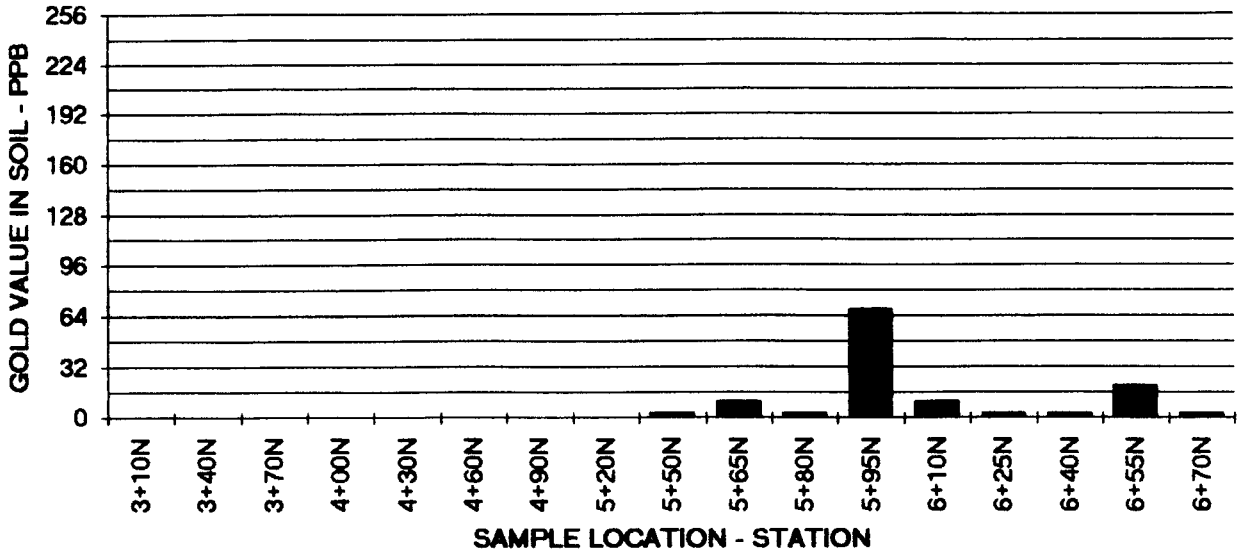


GRAPH 7


MERCURY (PPM) - LINE 0+00E/W
MERCURY VALUE IN SOIL - PPM
0.18
0.15
0.12
0.09
0.06
0.03
0
3+10N
3+70N
4+30N
4+90N
5+50N
6+10N
6+70N
7+30N
7+90N
8+50N
9+10N
9+70N
10+30N
10+90N
11+50N
12+15N
12+70N
13+30N
13+90N
14+20N
14+80N
SAMPLE LOCATION - STATION

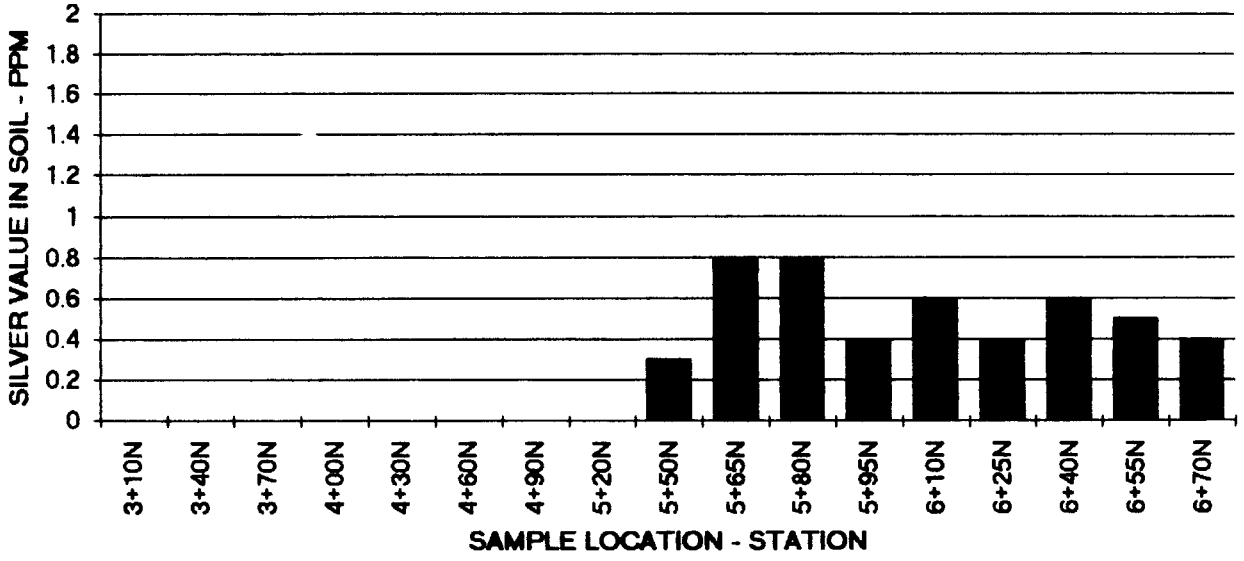
GRAPH 8

GOLD (PPB) - LINE 0+50W



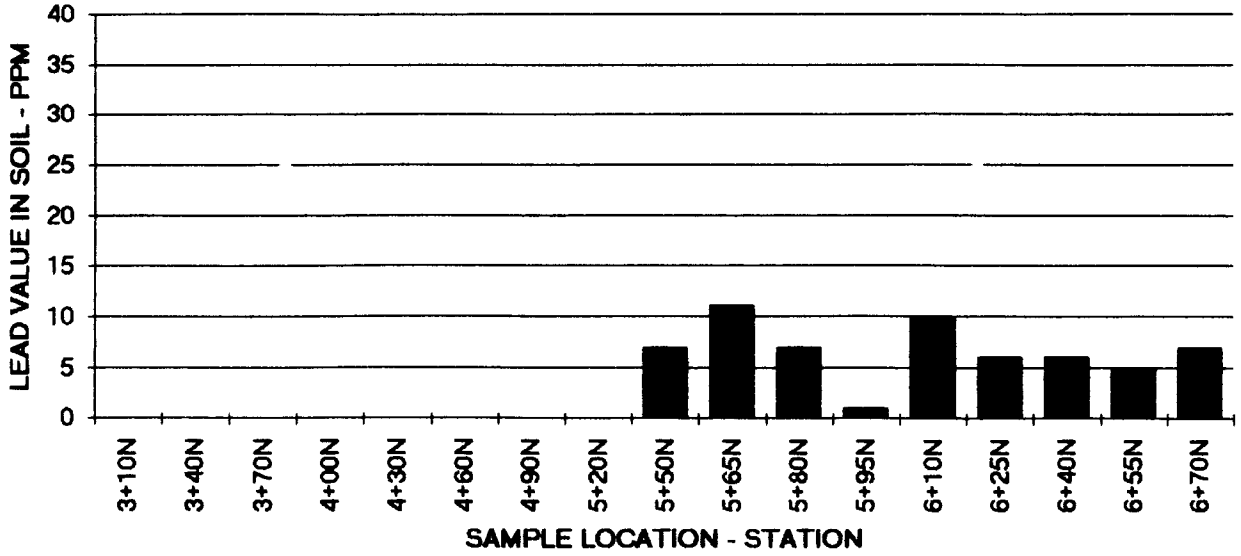
GRAPH 9

SILVER (PPM) - LINE 0+50W



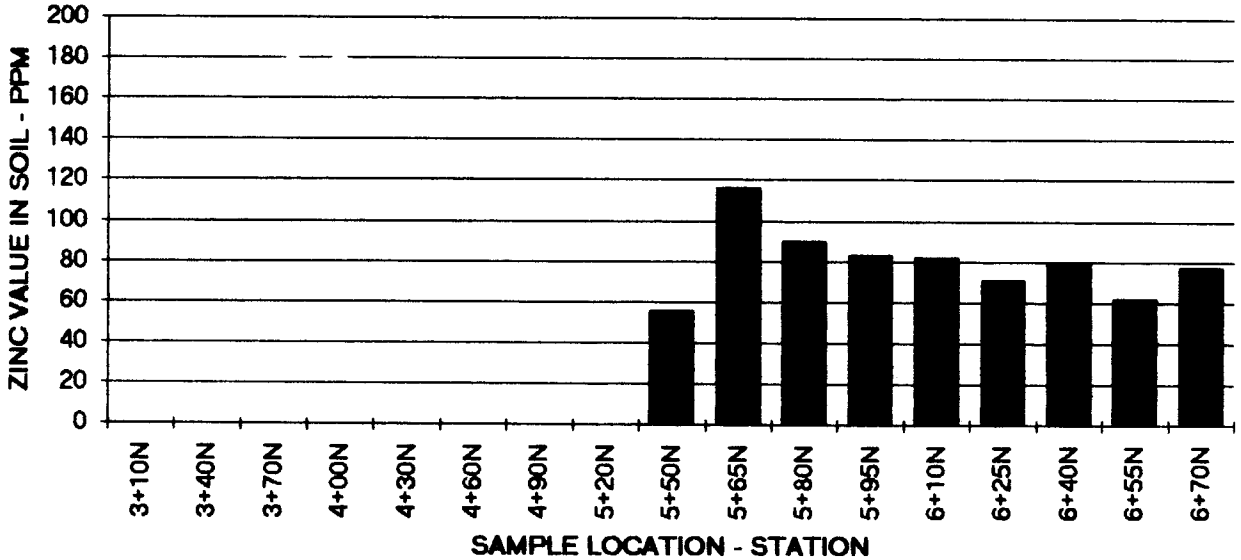
GRAPH 10

LEAD (PPM) - LINE 0+50W

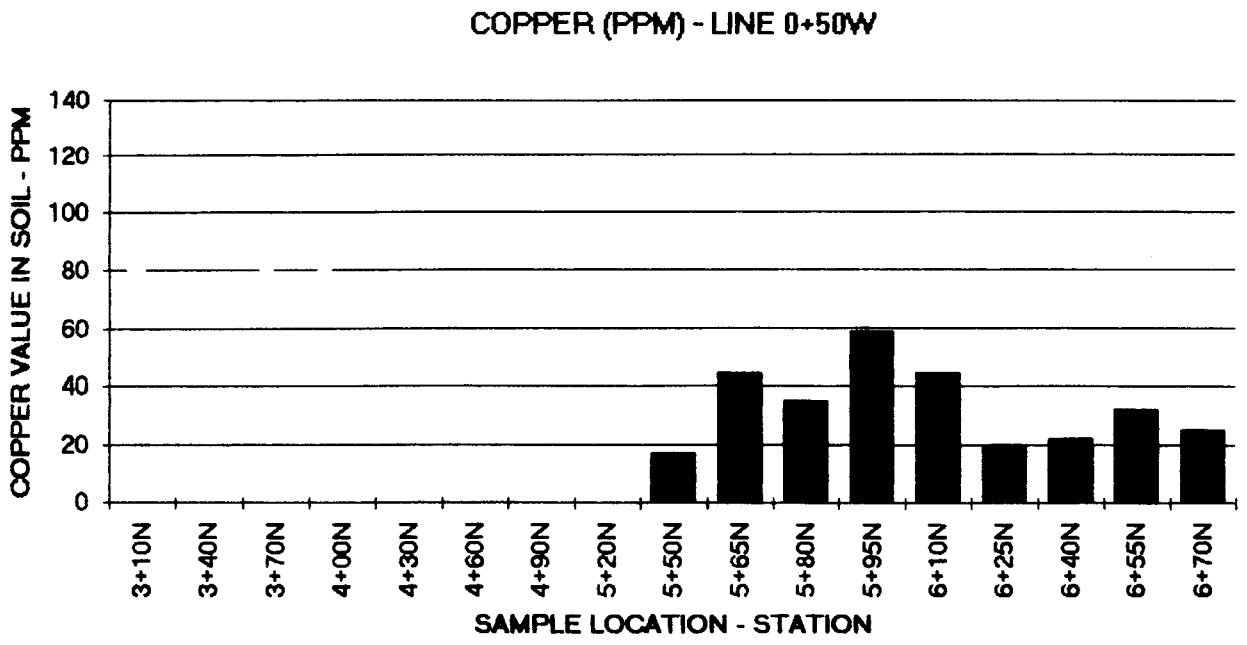


GRAPH 11

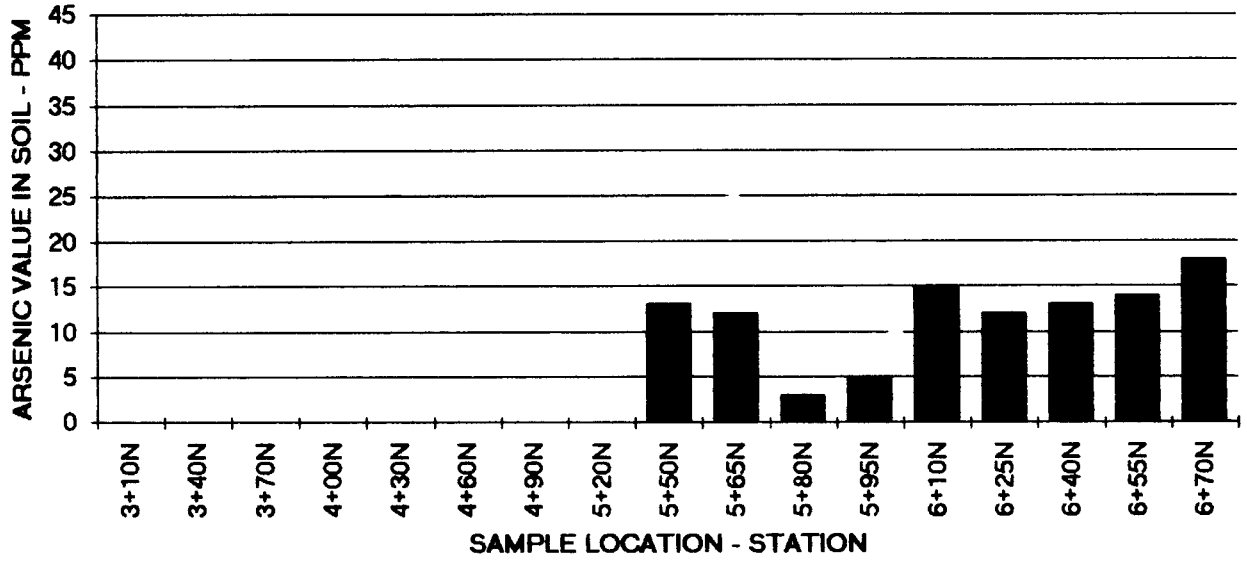
ZINC (PPM) - LINE 0+50W



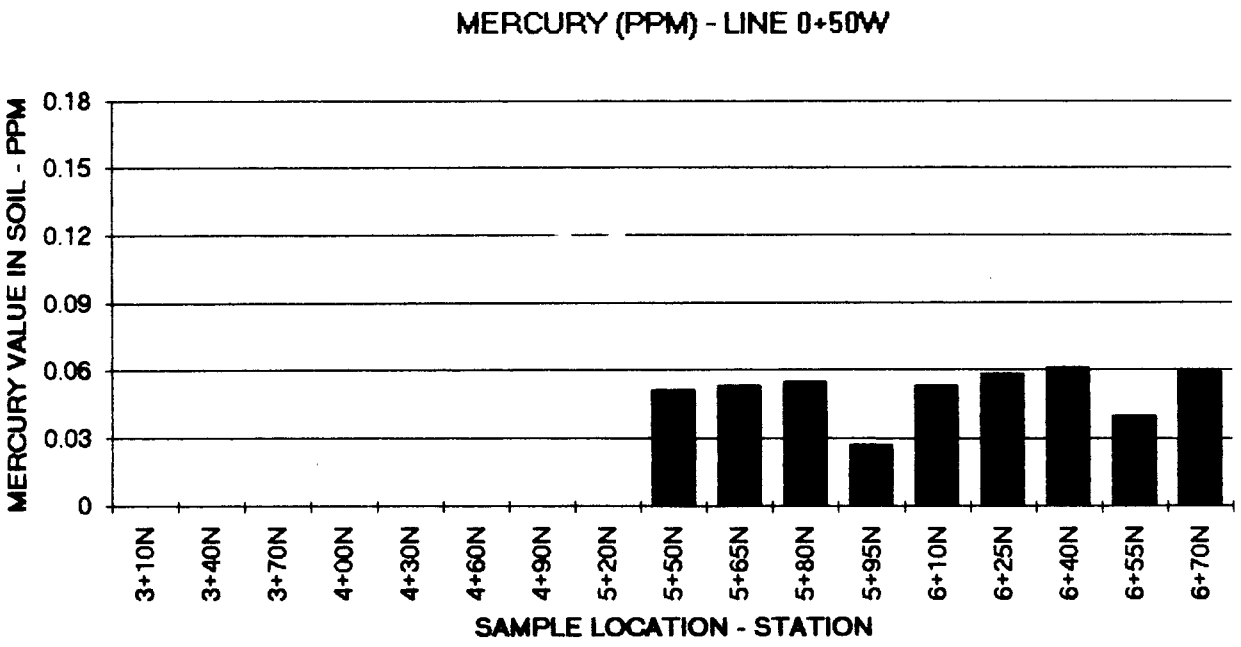
GRAPH 12



GRAPH 13

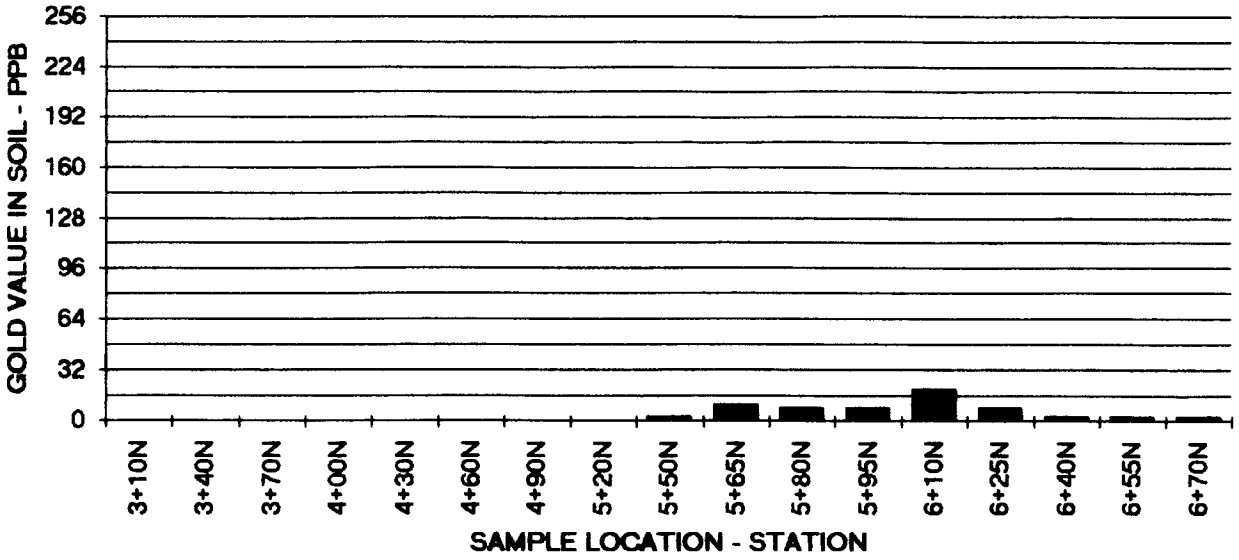


GRAPH 14


MERCURY (PPM) - LINE 0+50W
MERCURY VALUE IN SOIL - PPM
0.18
0.15
0.12
0.09
0.06
0.03
0
3+10N
3+40N
3+70N
4+00N
4+30N
4+60N
4+90N
5+20N
5+50N
5+65N
5+80N
5+95N
6+10N
6+25N
6+40N
6+55N
6+70N
SAMPLE LOCATION - STATION

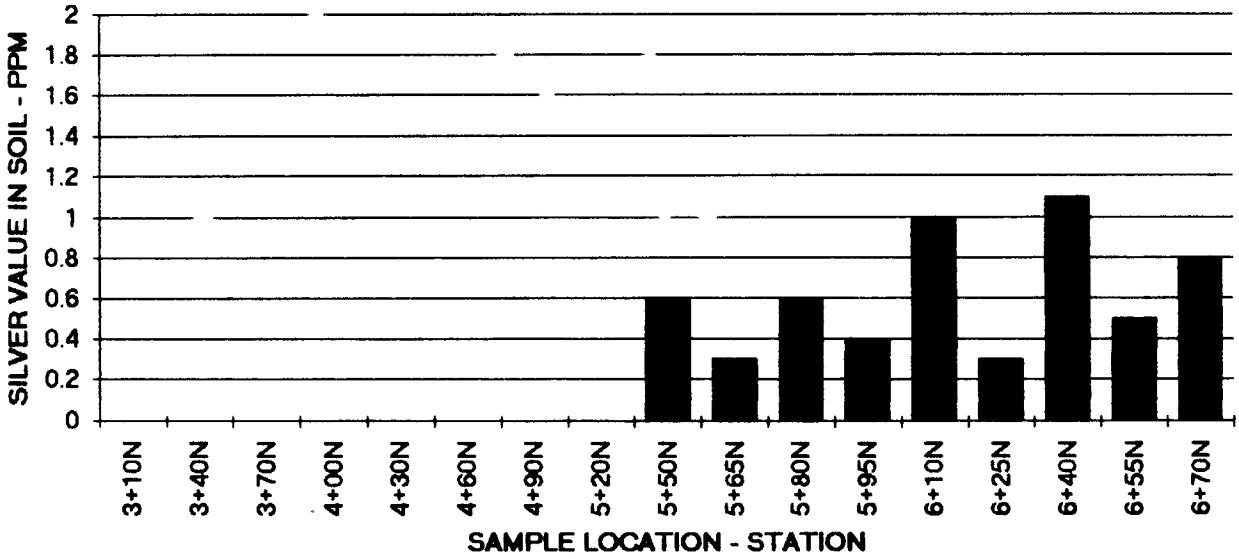
GRAPH 15

GOLD (PPB) - LINE 1+00W



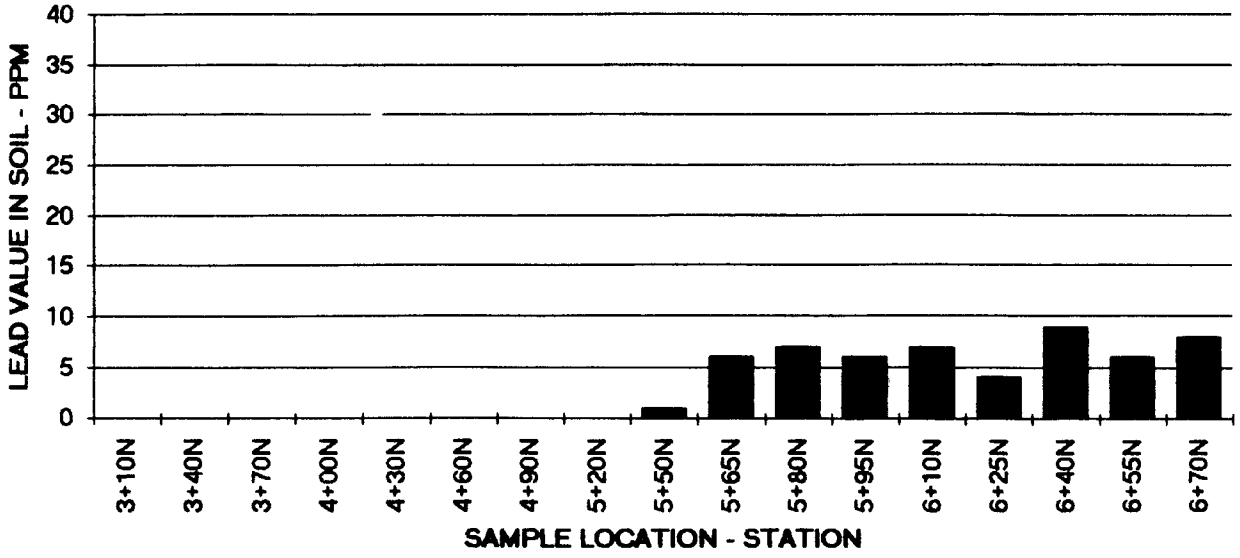
GRAPH 16

SILVER (PPM) - LINE 1+00W



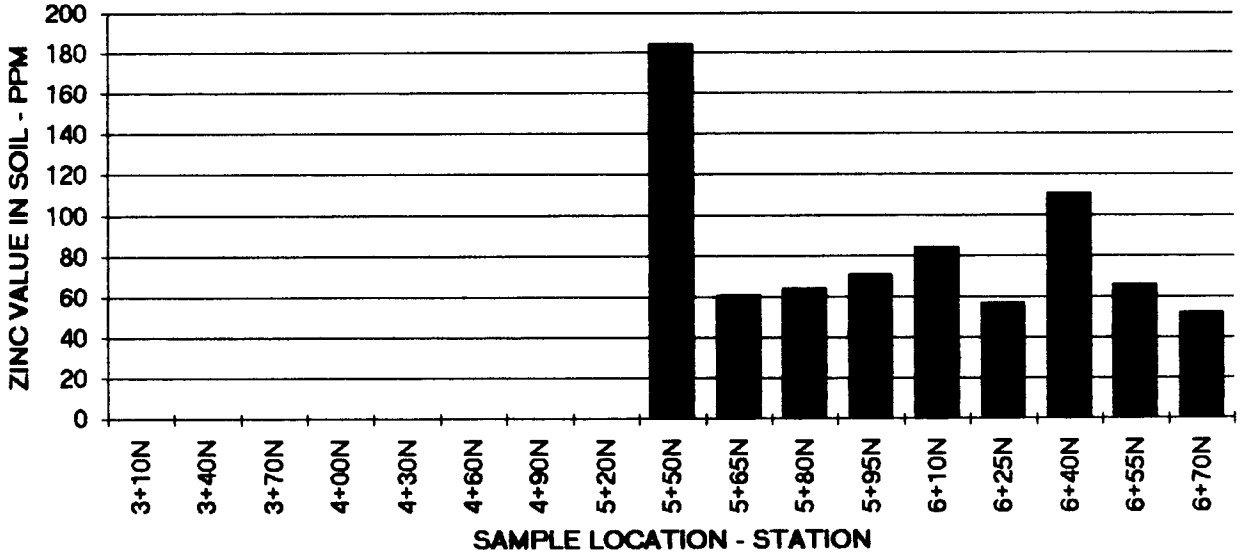
GRAPH 17

LEAD (PPM) - LINE 1+00W



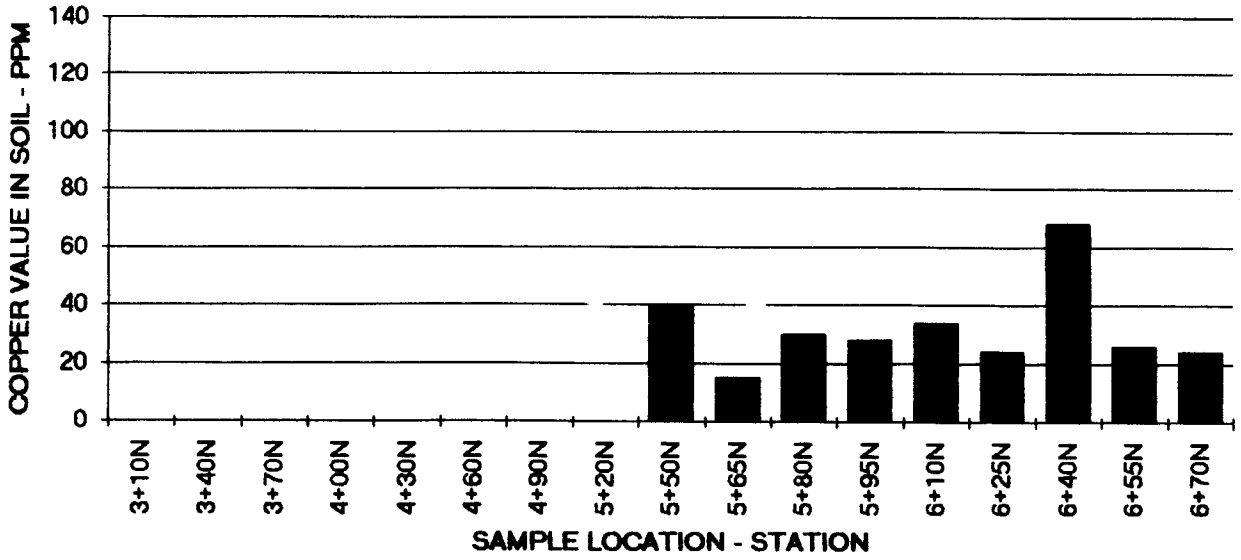
GRAPH 18

ZINC (PPM) - LINE 1+00W



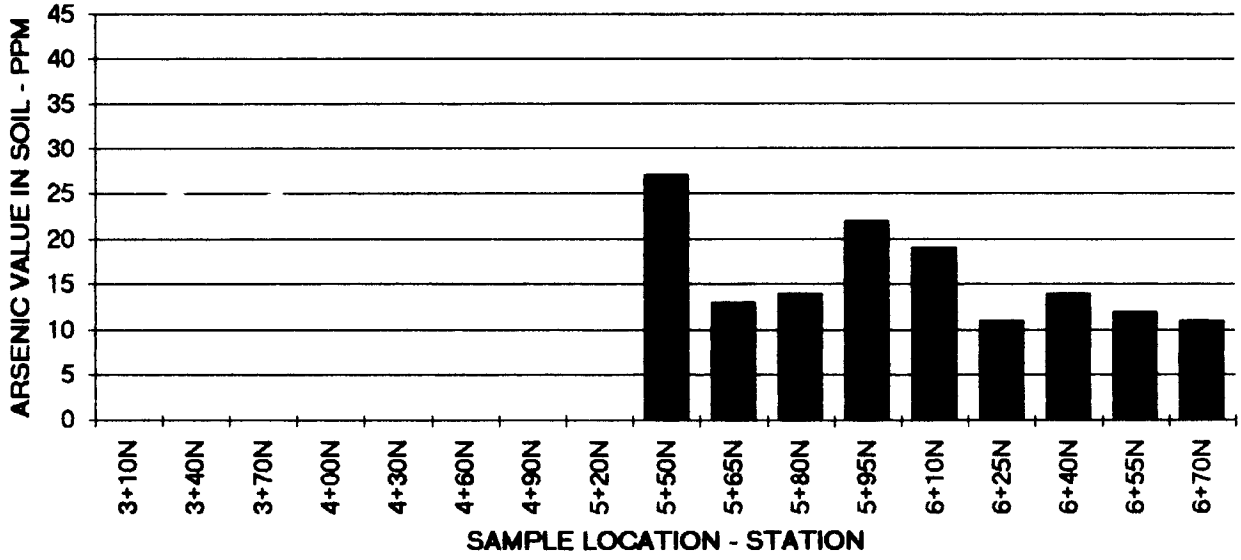
GRAPH 19

COPPER (PPM) - LINE 1+00W

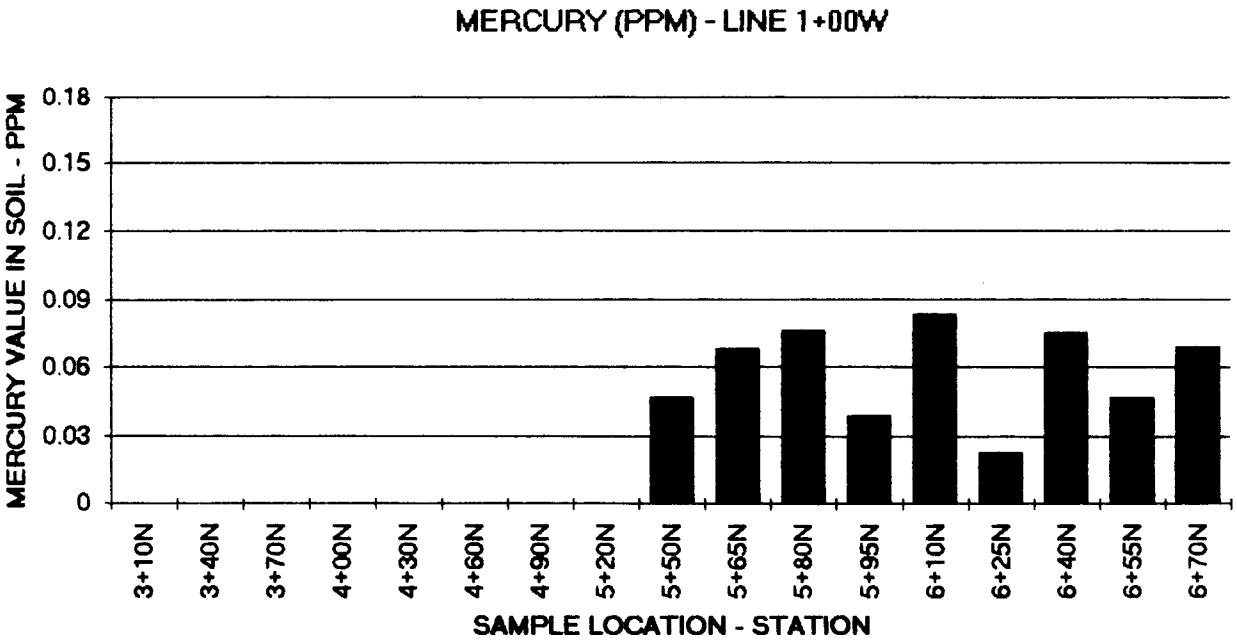


GRAPH 20

ARSENIC (PPM) - LINE 1+00W

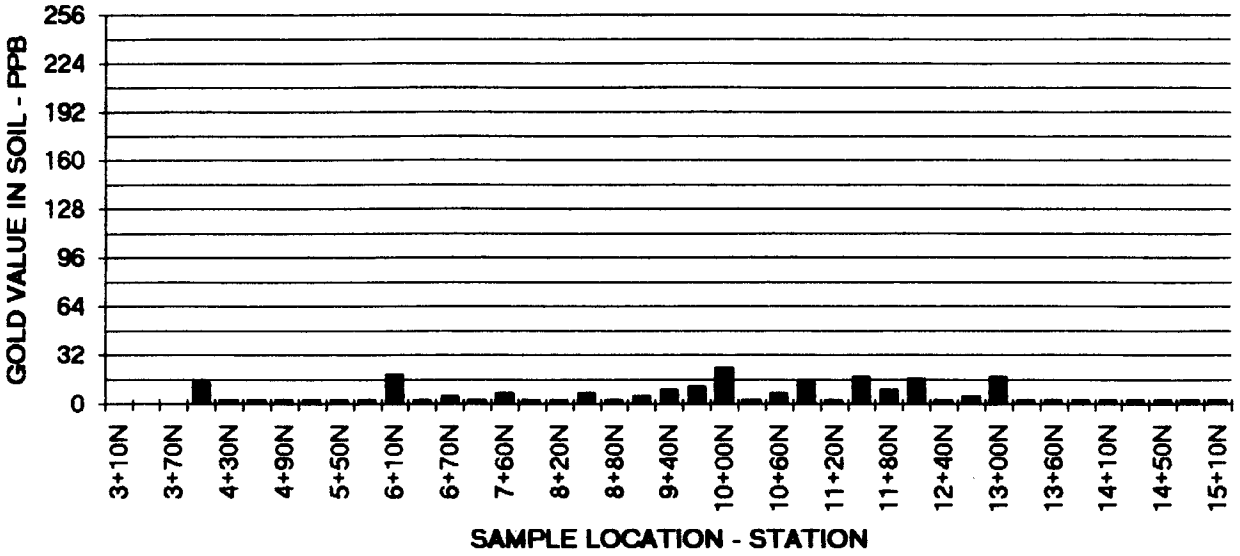


GRAPH 21


MERCURY (PPM) - LINE 1+00W
MERCURY VALUE IN SOIL - PPM
0.18
0.15
0.12
0.09
0.06
0.03
0
3+10N
3+40N
3+70N
4+00N
4+30N
4+60N
4+90N
5+20N
5+50N
5+65N
5+80N
5+95N
6+10N
6+25N
6+40N
6+55N
6+70N
SAMPLE LOCATION - STATION

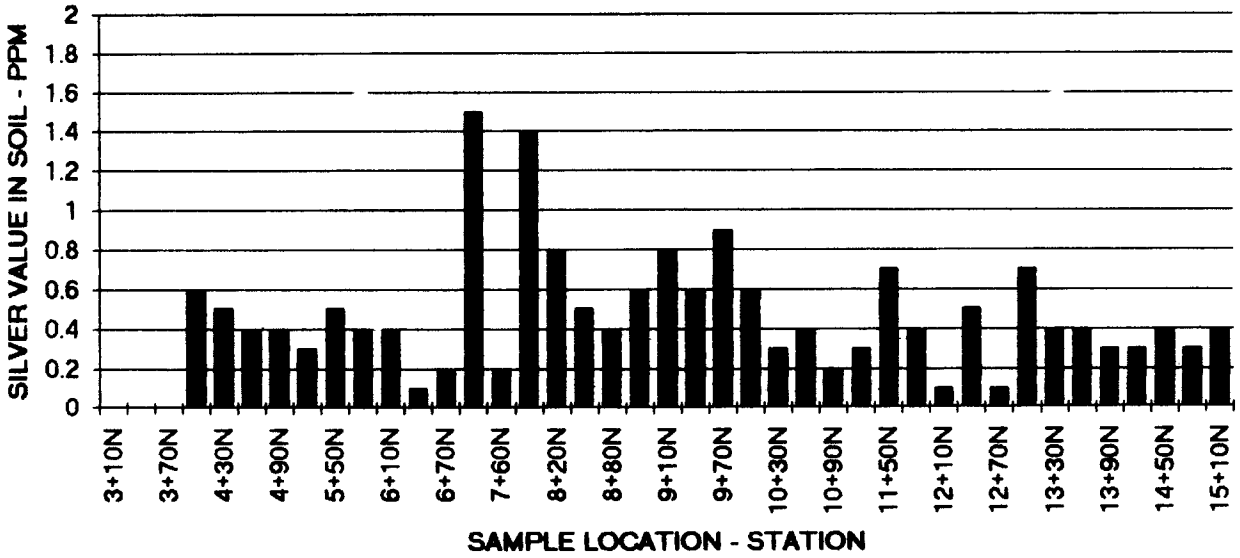
GRAPH 22

GOLD (PPB) - LINE 2+00W



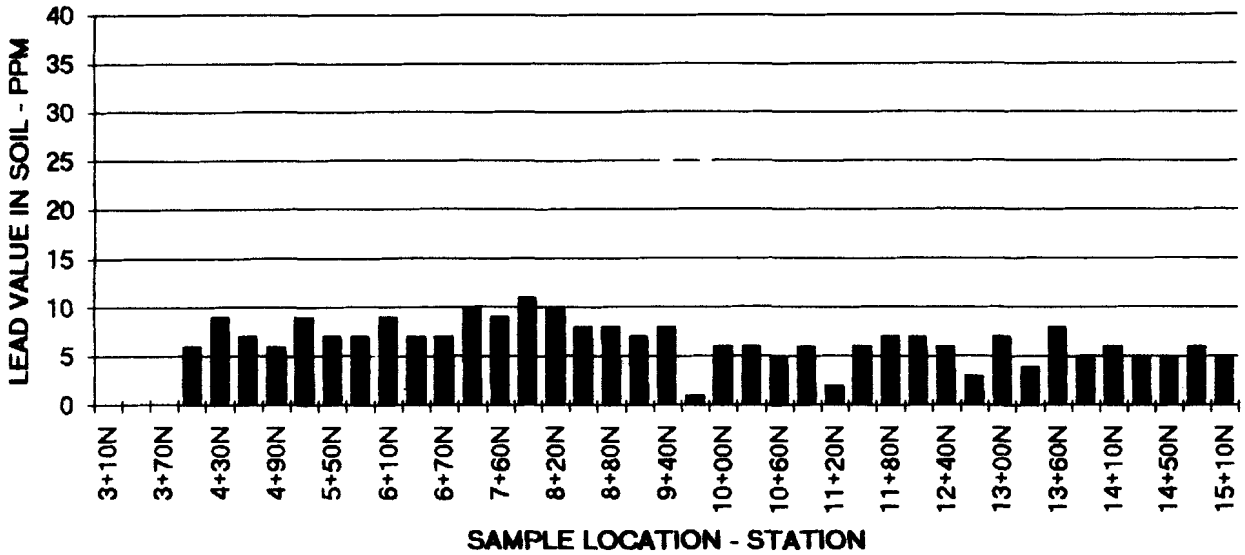
GRAPH 23

SILVER (PPM) - LINE 2+00W



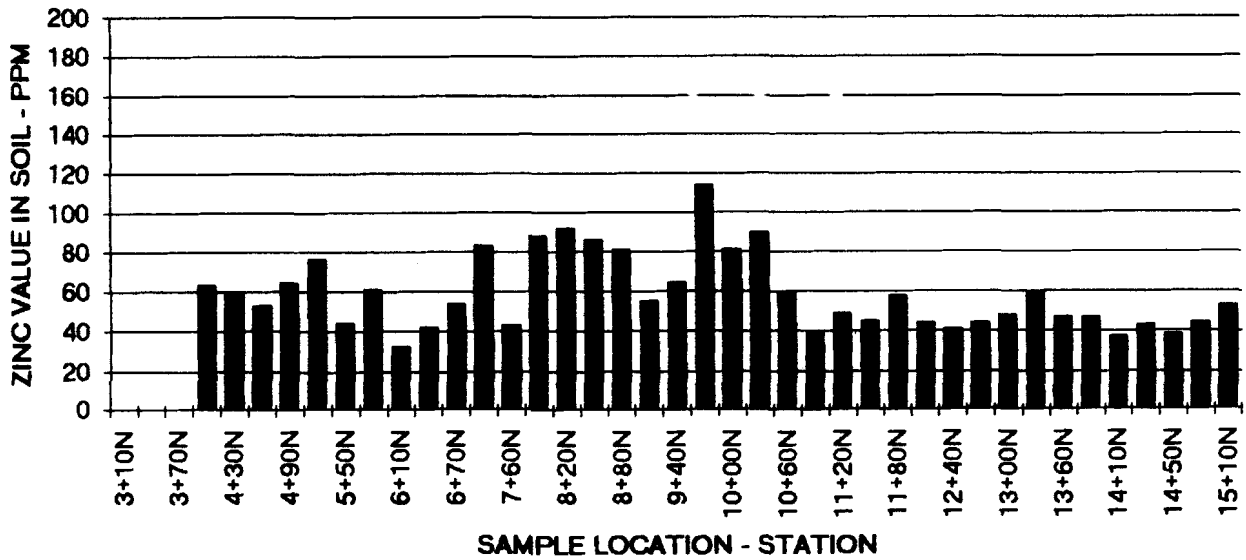
GRAPH 24

LEAD (PPM) - LINE 2+00W



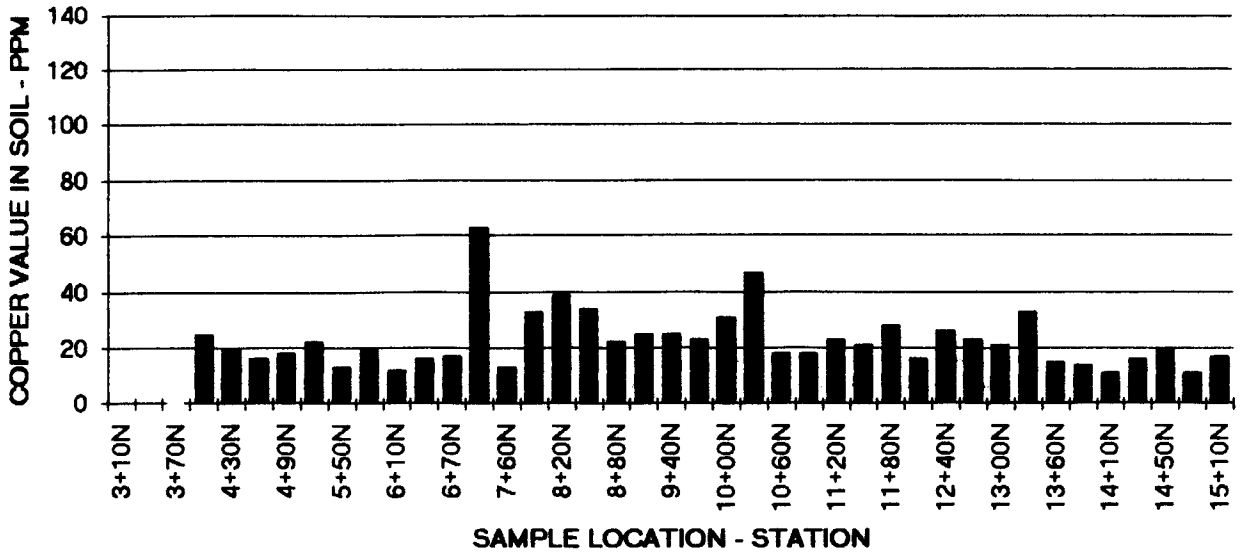
GRAPH 25

ZINC (PPM) - LINE 2+00W



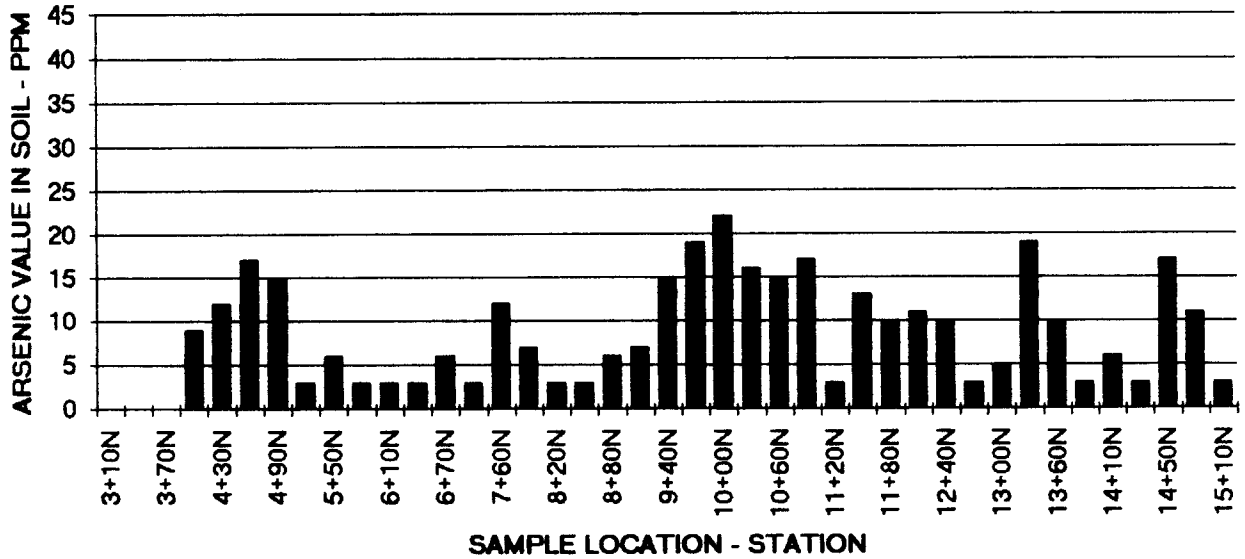
GRAPH 26

COPPER (PPM) - LINE 2+00W

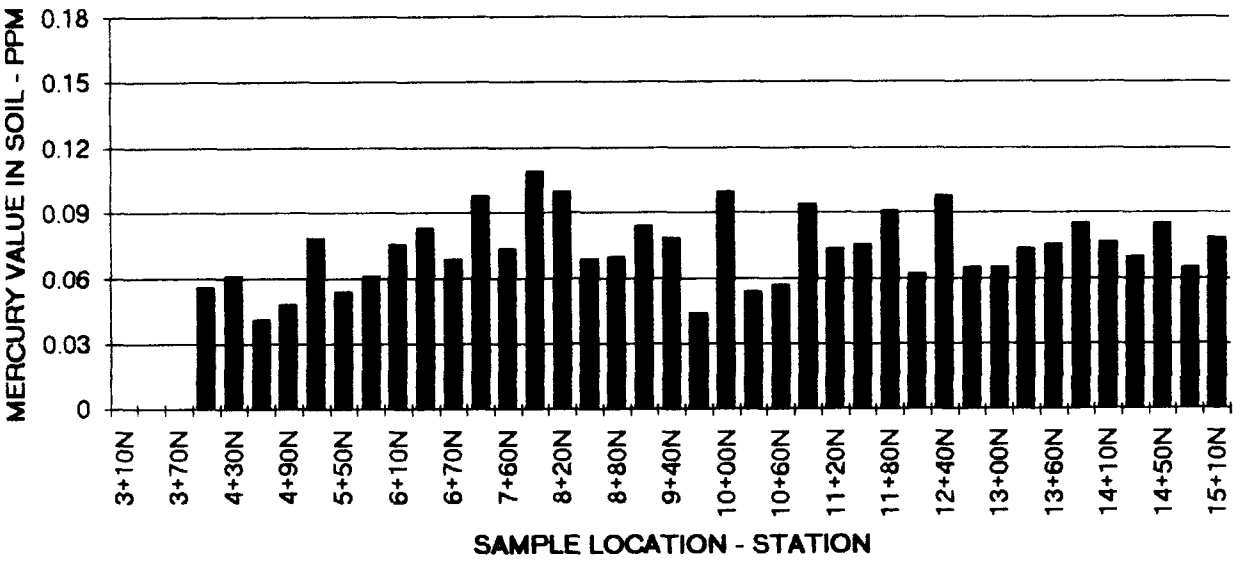


GRAPH 27

ARSENIC (PPM) - LINE 2+00W

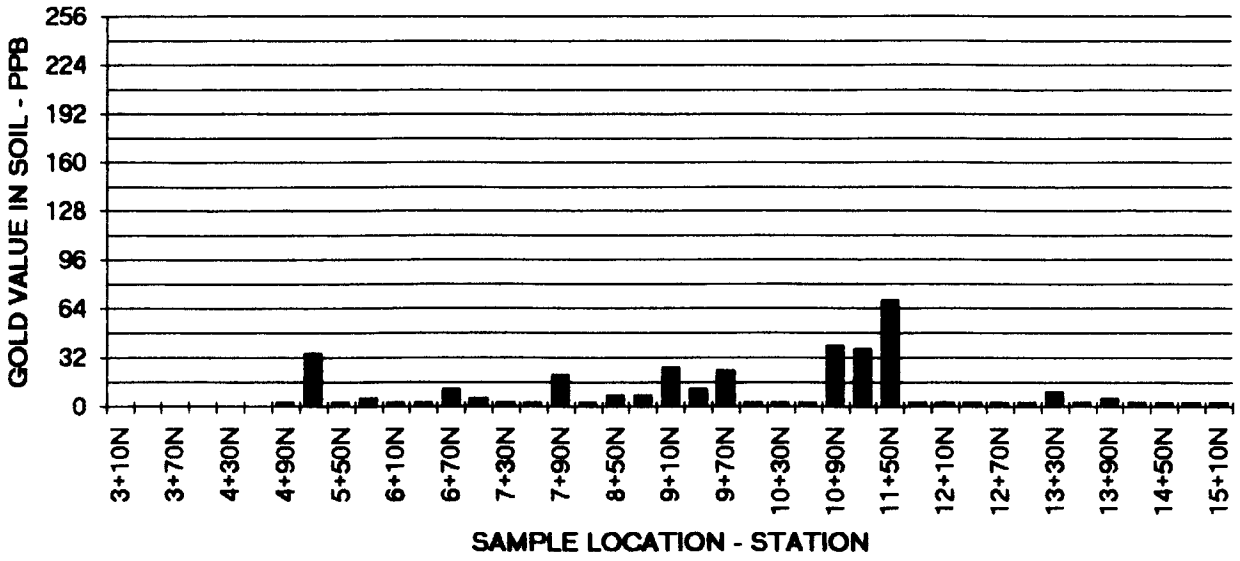


GRAPH 28


MERCURY (PPM) - LINE 2+00W
MERCURY VALUE IN SOIL - PPM
0.18
0.15
0.12
0.09
0.06
0.03
0
3+10N
3+70N
4+30N
4+90N
5+50N
6+10N
6+70N
7+60N
8+20N
8+80N
9+40N
10+00N
10+60N
11+20N
11+80N
12+40N
13+00N
13+60N
14+10N
14+50N
15+10N
SAMPLE LOCATION - STATION

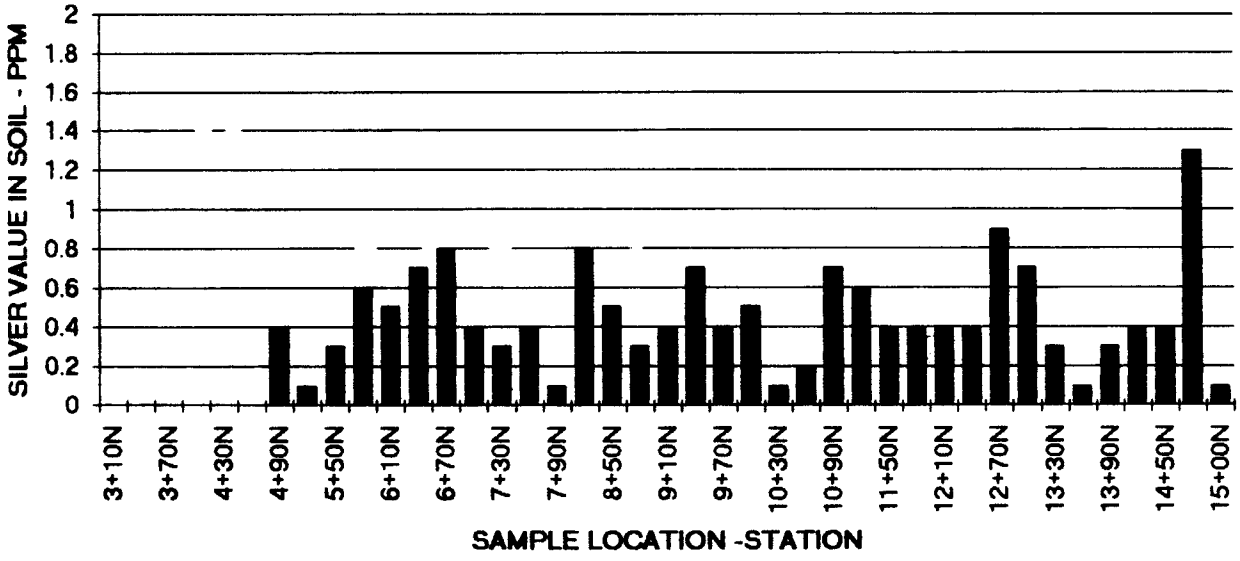
GRAPH 29

GOLD (PPB) - LINE 3+00W



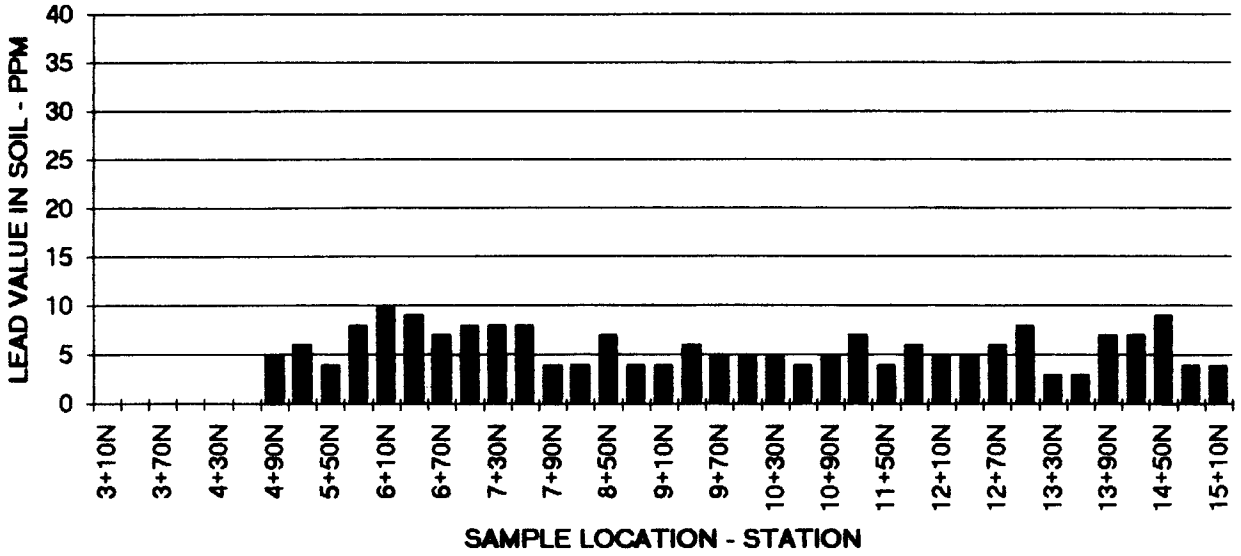
GRAPH 30

SILVER (PPM) - LINE 3+00W



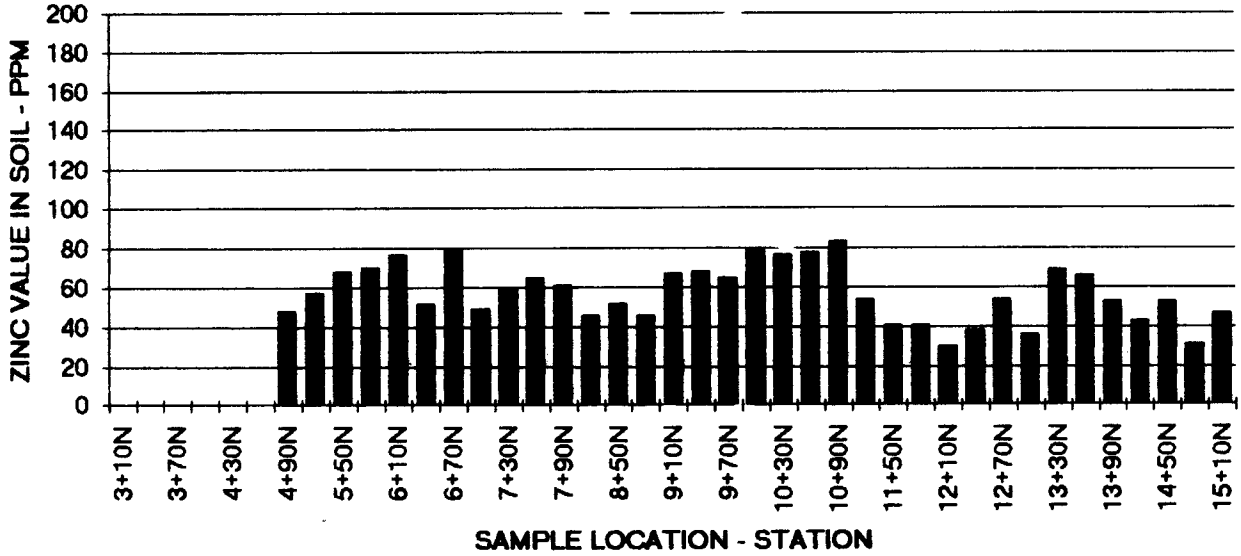
GRAPH 31

LEAD (PPM) - LINE 3+00W



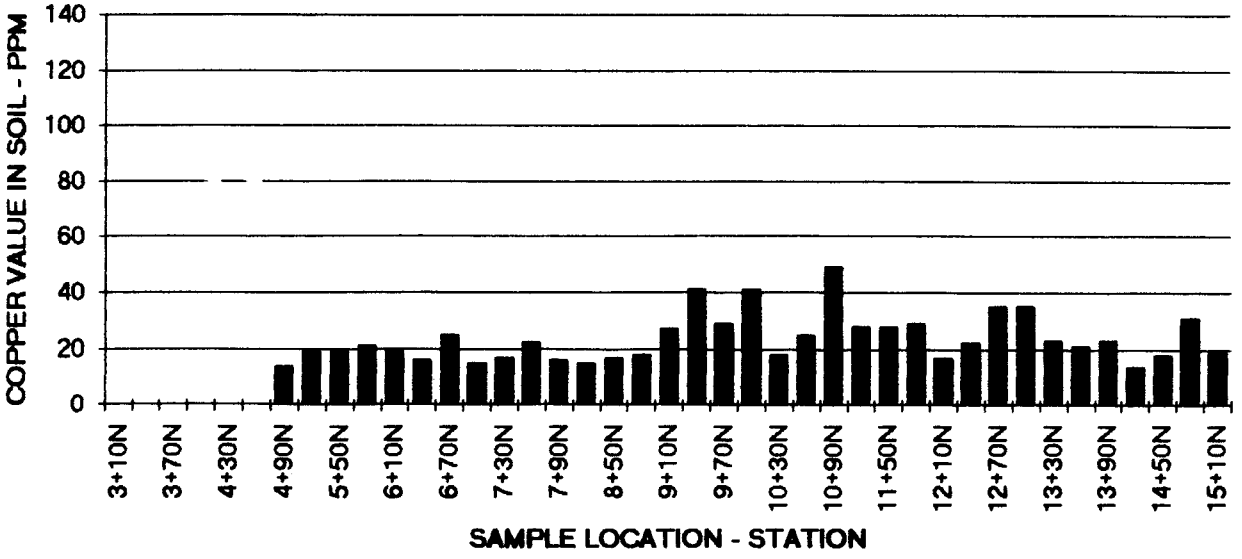
GRAPH 32

ZINC (PPM) - LINE 3+00W



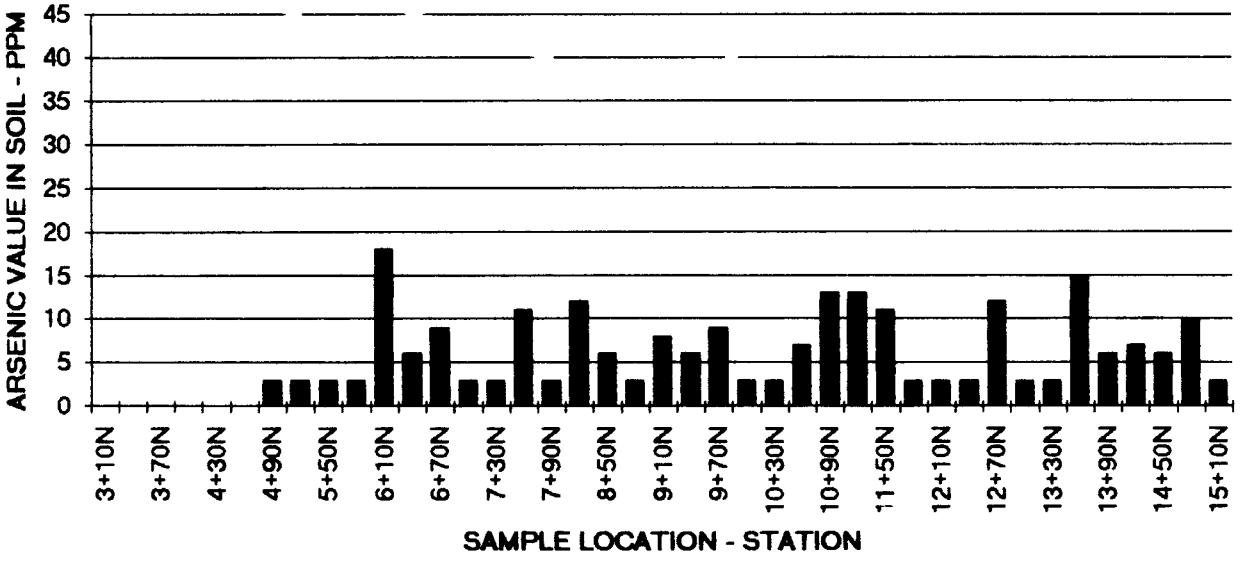
GRAPH 33

COPPER (PPM) - LINE 3+00W



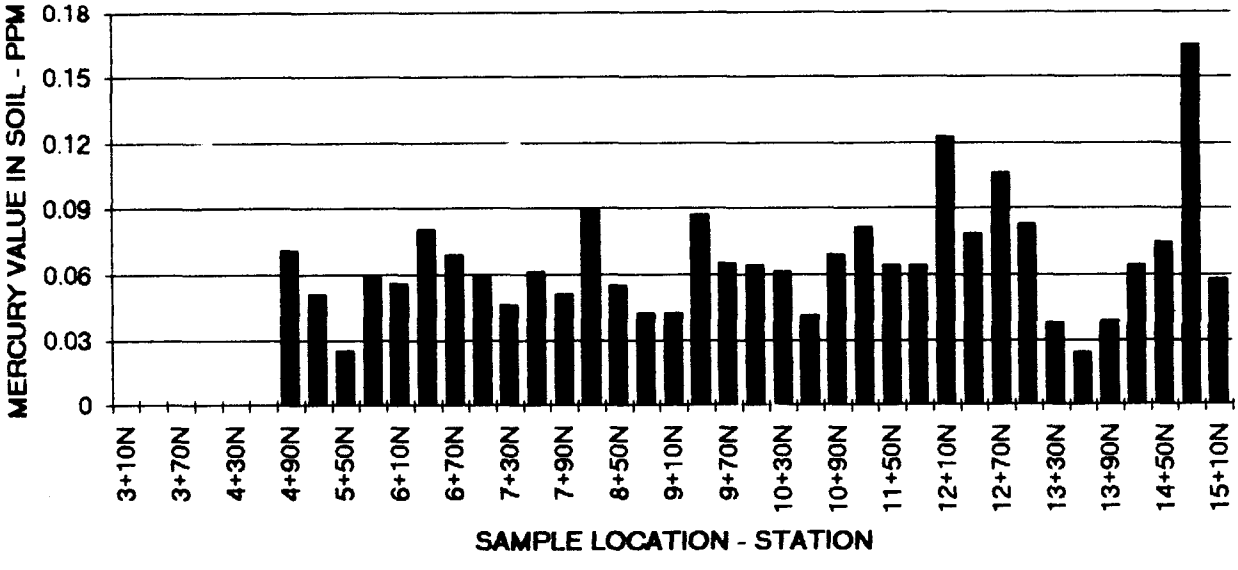
GRAPH 34

ARSENIC (PPM) - LINE 3+00W



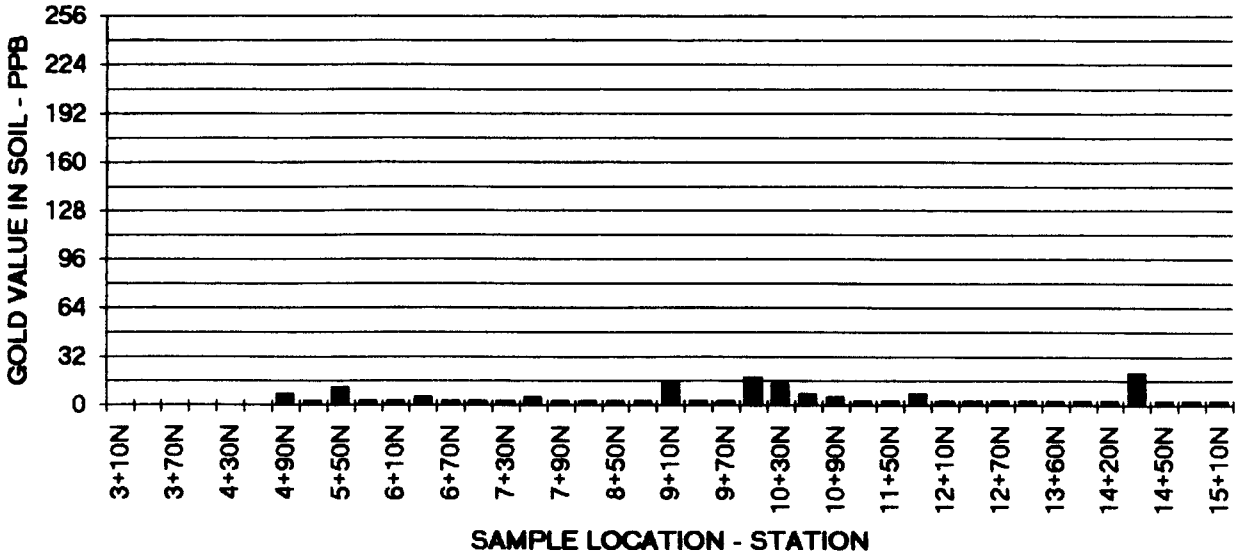
GRAPH 35

MERCURY (PPM) - LINE 3+00W



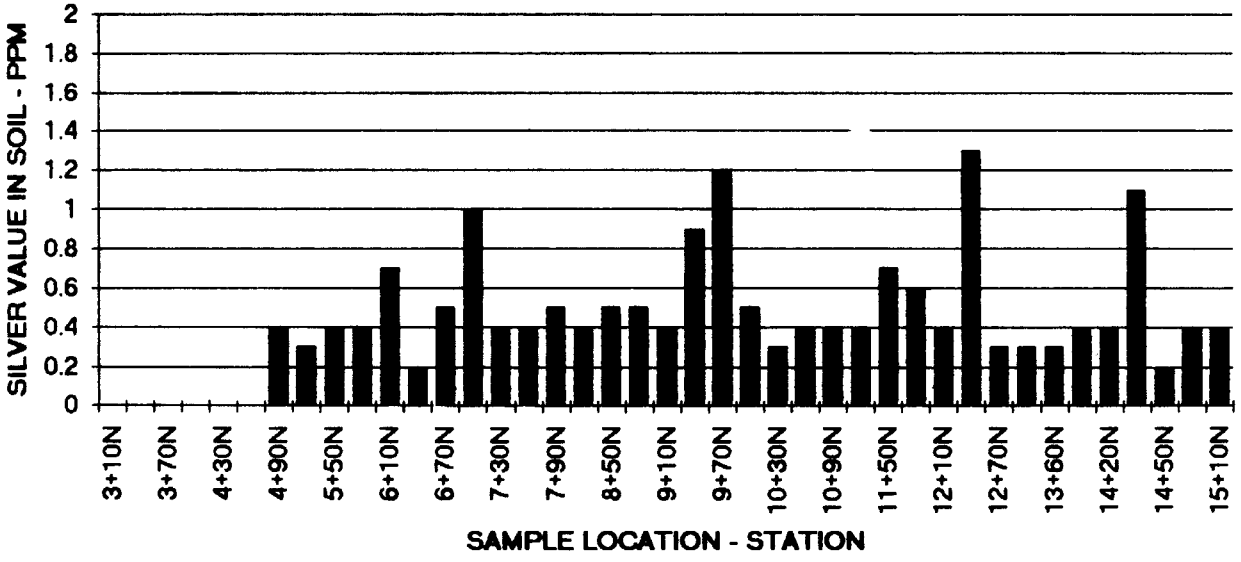
GRAPH 36

GOLD (PPB) - LINE 4+00W



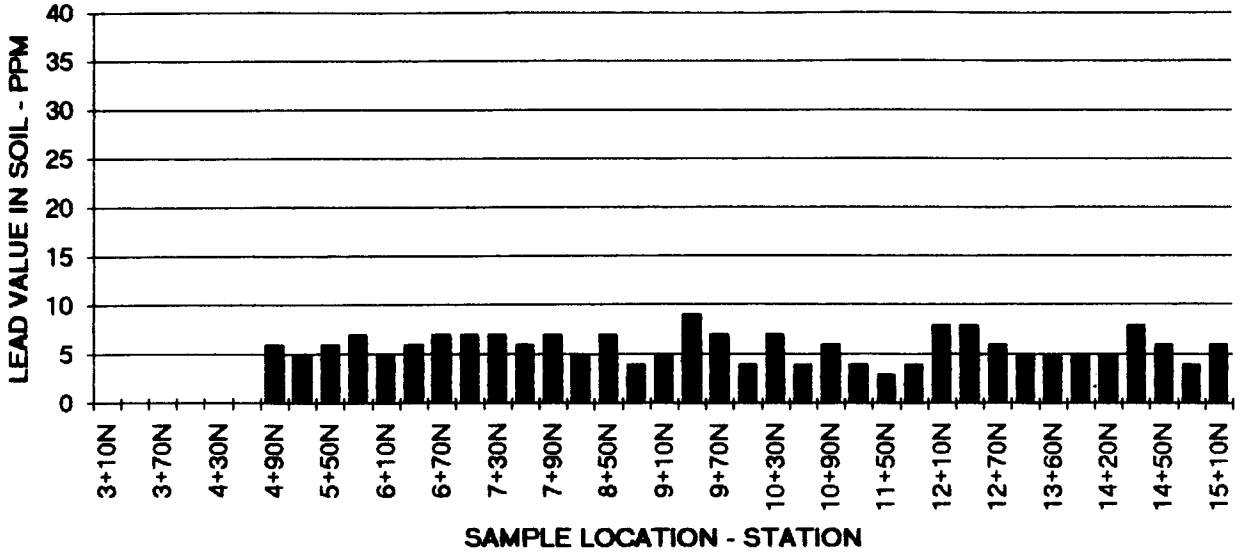
GRAPH 37

SILVER (PPM) - LINE 4+00W



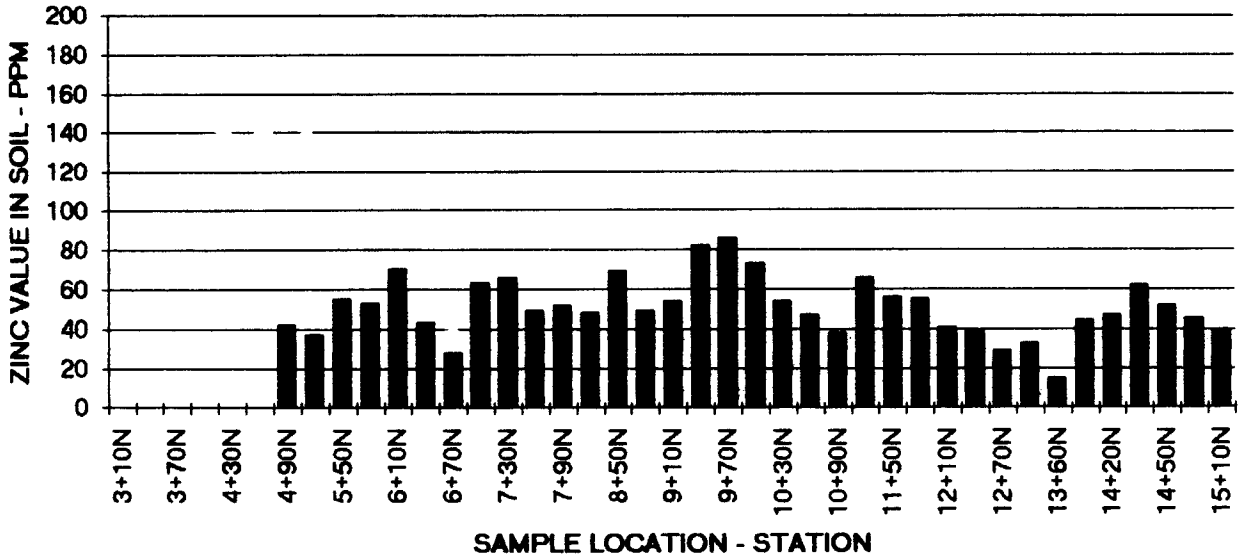
GRAPH 38

LEAD (PPM) -LINE 4+00W



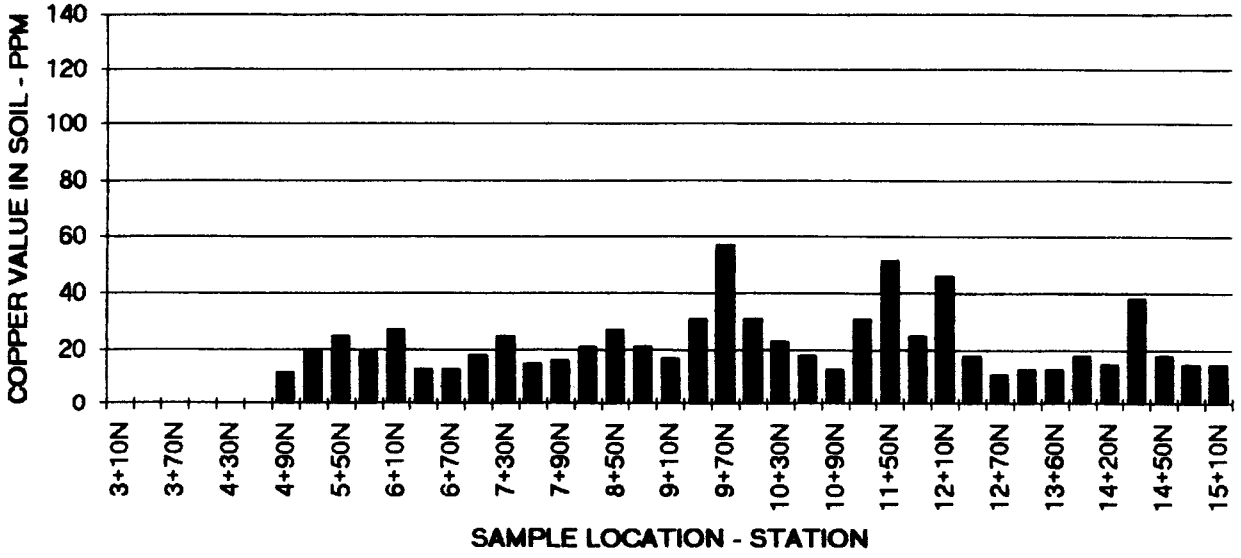
GRAPH 39

ZINC (PPM) - LINE 4+00W



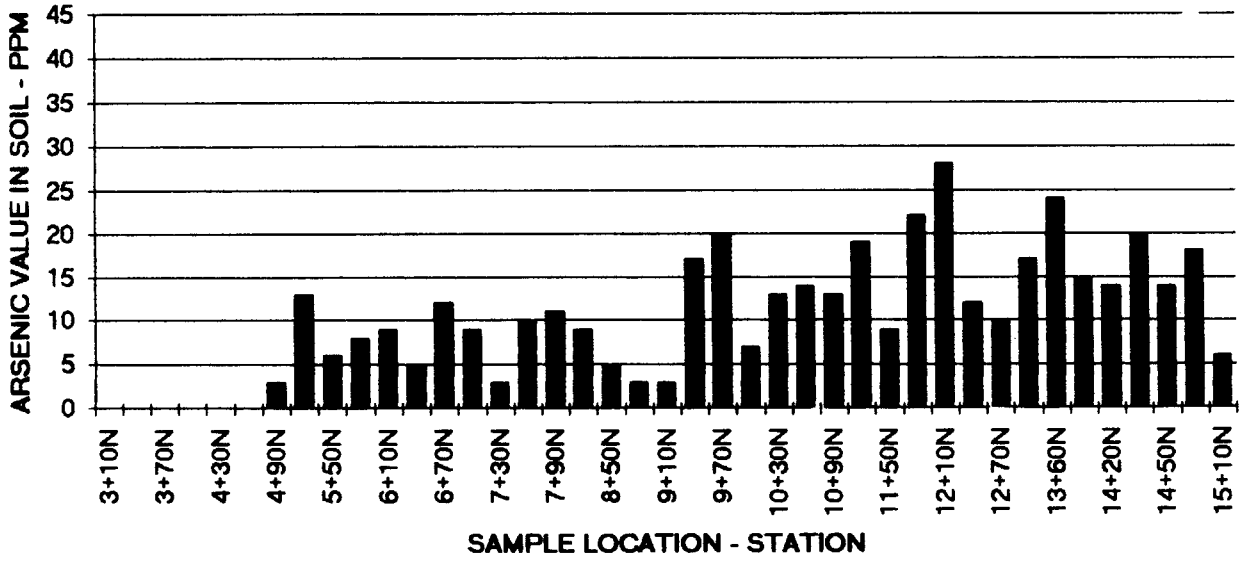
GRAPH 40

COPPER (PPM) - LINE 4+00W

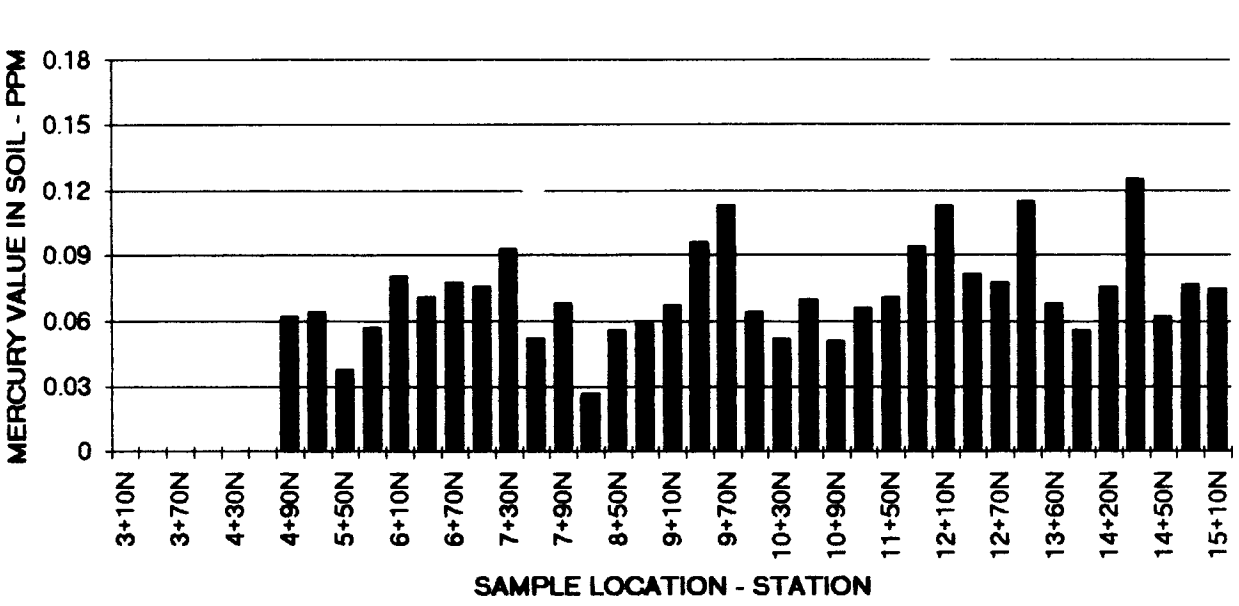


GRAPH 41

ARSENIC (PPM) - LINE 4+00W

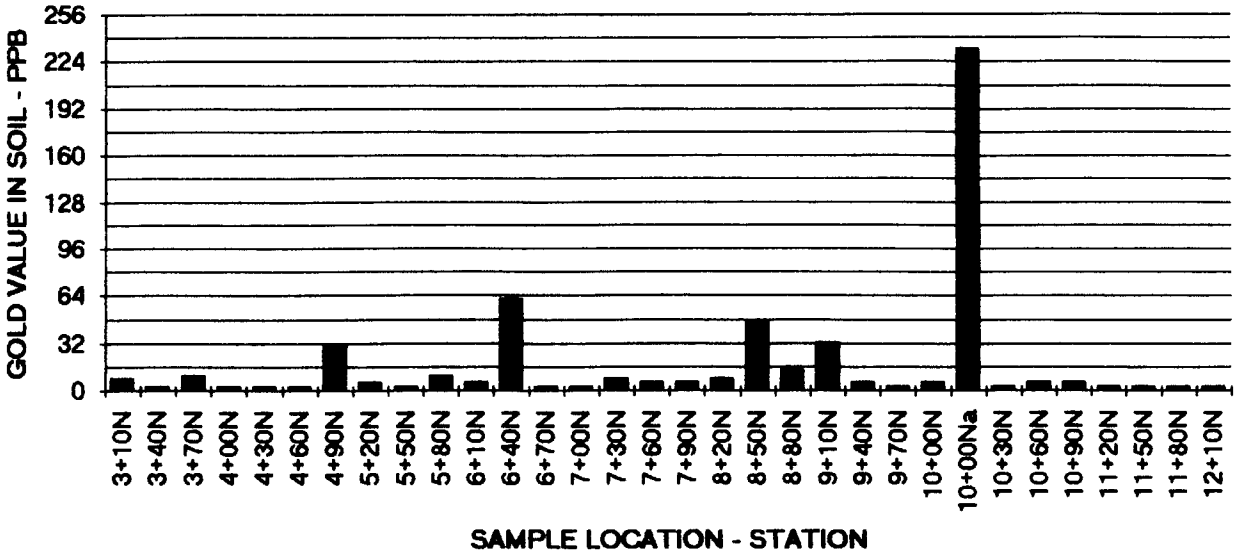


GRAPH 42


MERCURY (PPM) - LINE 4+00W
MERCURY VALUE IN SOIL - PPM
0.18
0.15
0.12
0.09
0.06
0.03
0
3+10N
3+70N
4+30N
4+90N
5+50N
6+10N
6+70N
7+30N
7+90N
8+50N
9+10N
9+70N
10+30N
10+90N
11+50N
12+10N
12+70N
13+60N
14+20N
14+50N
15+10N
SAMPLE LOCATION - STATION

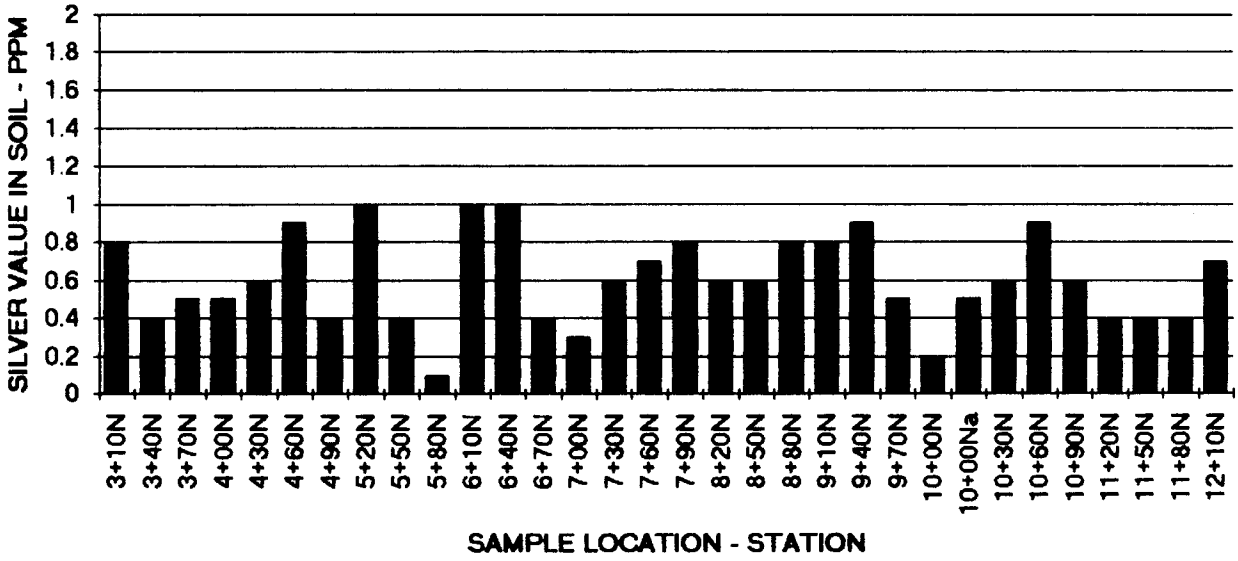
GRAPH 43

GOLD (PPB) - LINE 10+00W



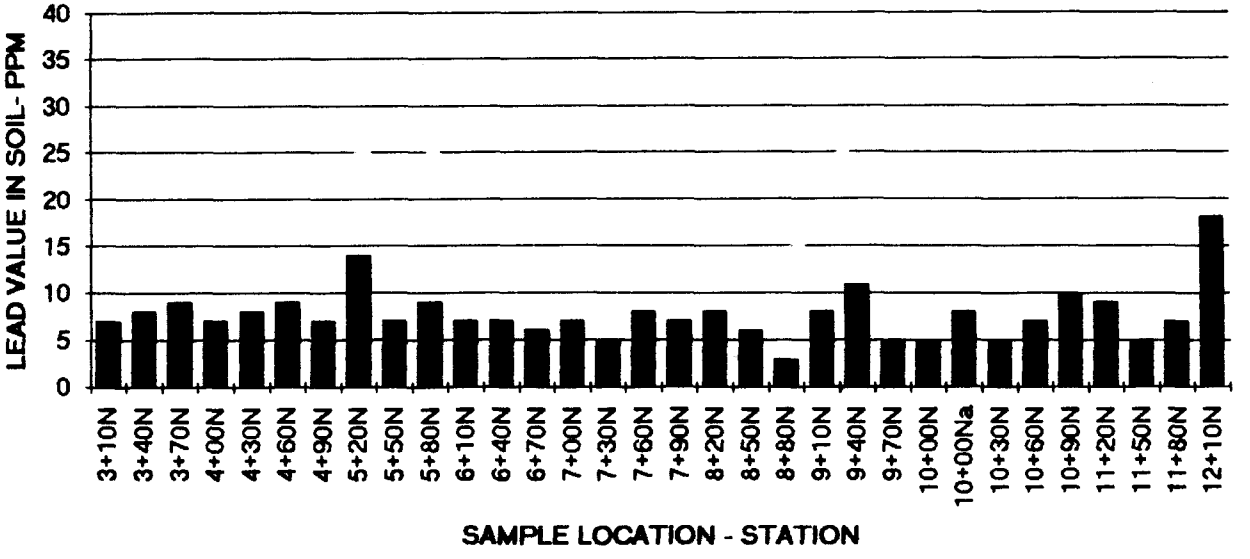
GRAPH 44

SILVER (PPM) - LINE 10+00W



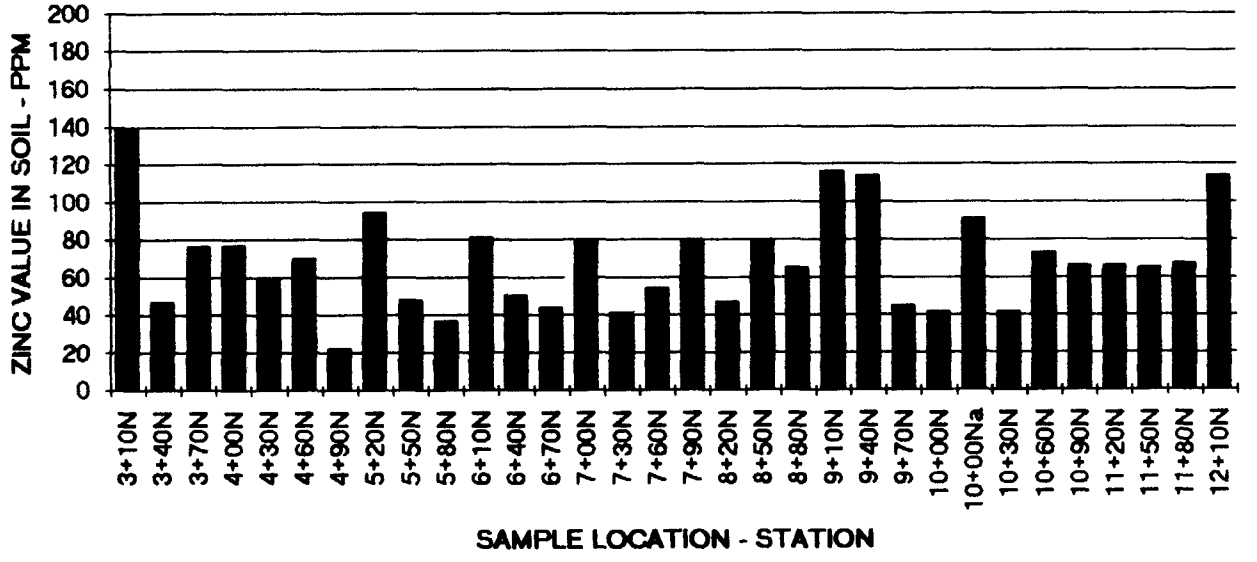
GRAPH 45

LEAD (PPM)- LINE 10+00W



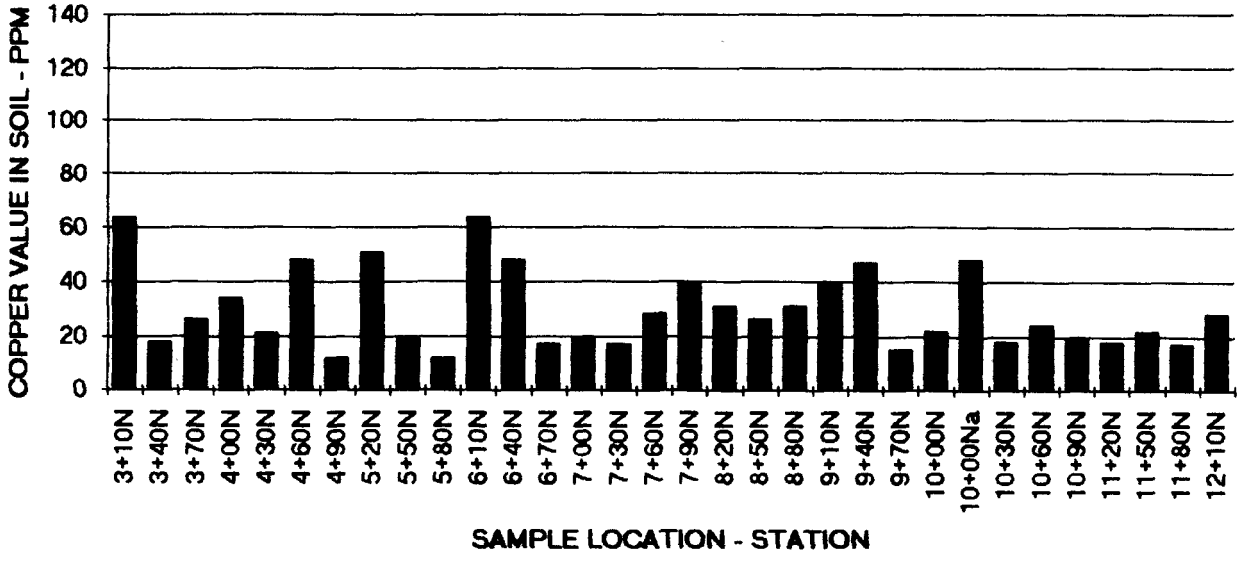
GRAPH 46

ZINC (PPM) - LINE 10+00W



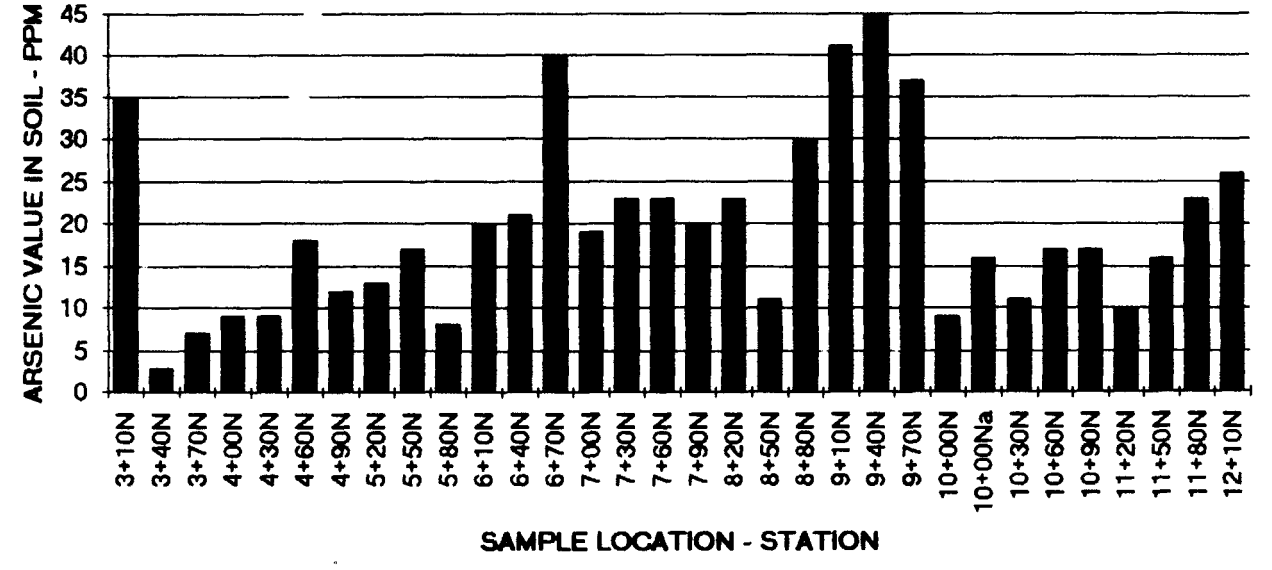
GRAPH 47

COPPER (PPM) - LINE 10+00W

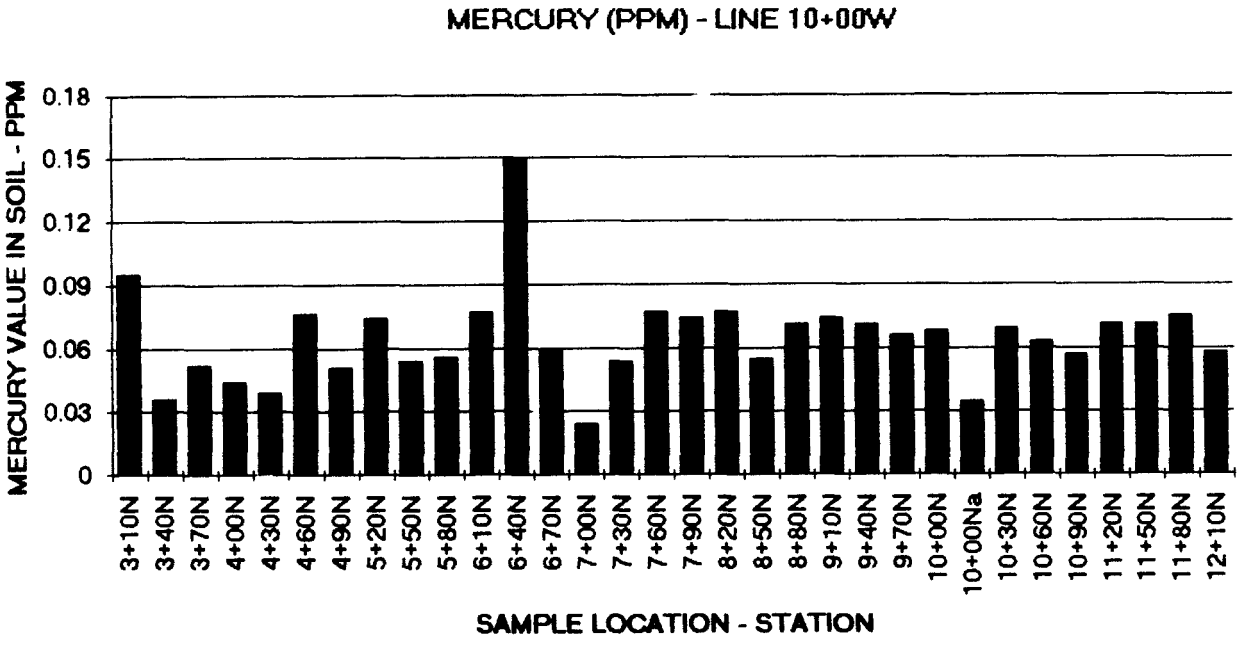


GRAPH 48

ARSENIC (PPM) - LINE 10+00W

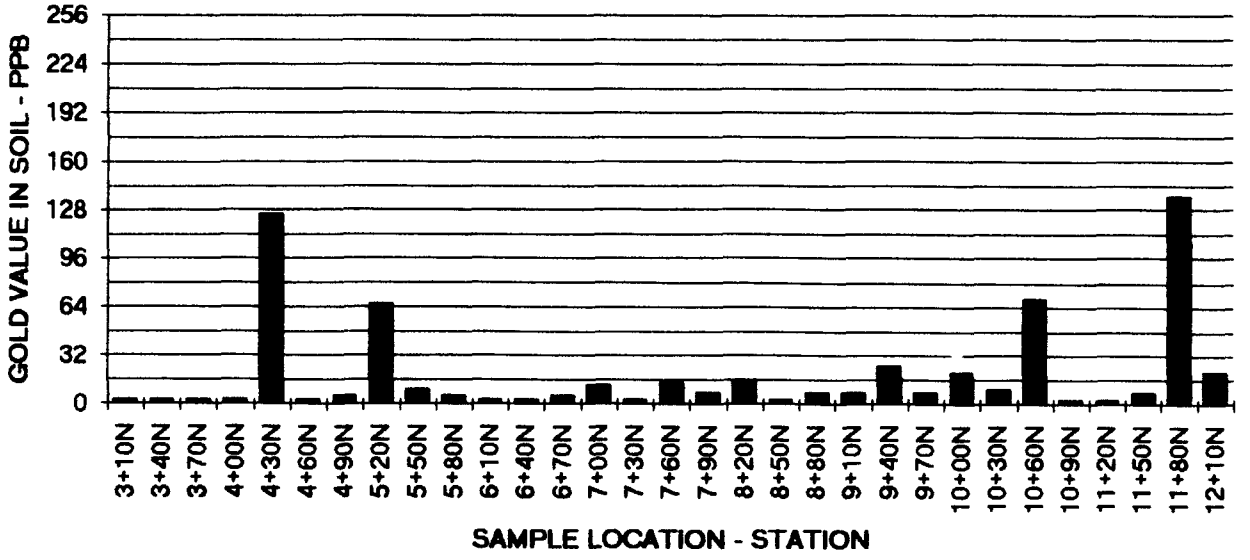


GRAPH 49


MERCURY (PPM) - LINE 10+00W
MERCURY VALUE IN SOIL - PPM
0.18
0.15
0.12
0.09
0.06
0.03
0
3+10N
3+40N
3+70N
4+00N
4+30N
4+60N
4+90N
5+20N
5+50N
5+80N
6+10N
6+40N
6+70N
7+00N
7+30N
7+60N
7+90N
8+20N
8+50N
8+80N
9+10N
9+40N
9+70N
10+00N
10+00Na
10+30N
10+60N
10+90N
11+20N
11+50N
11+80N
12+10N
SAMPLE LOCATION - STATION

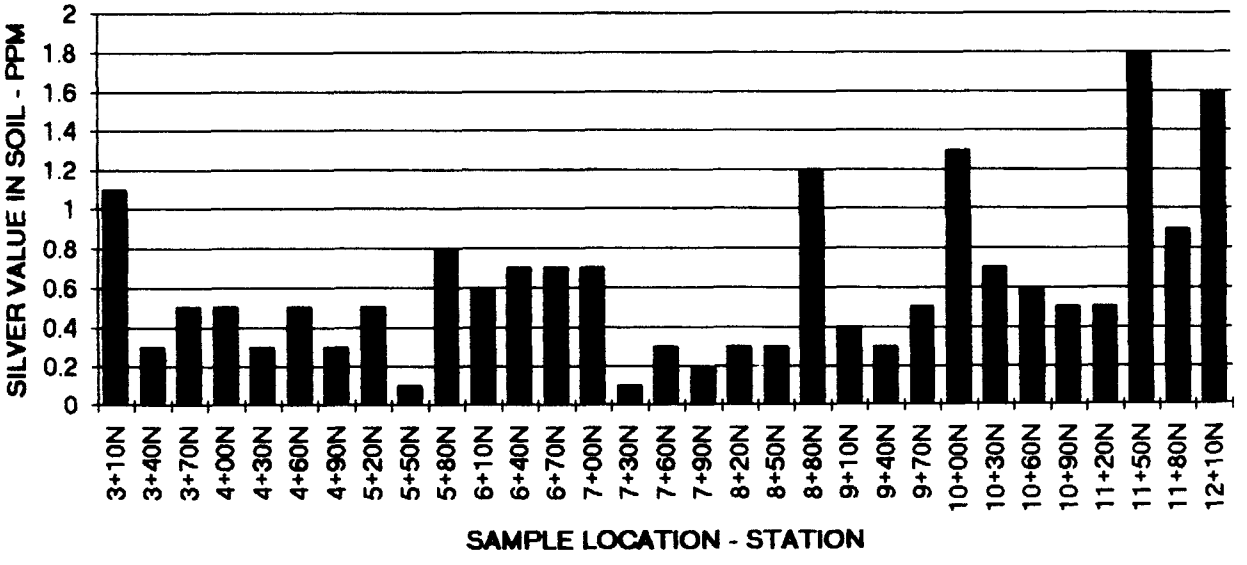
GRAPH 50

GOLD (PPB) - LINE 12+00W



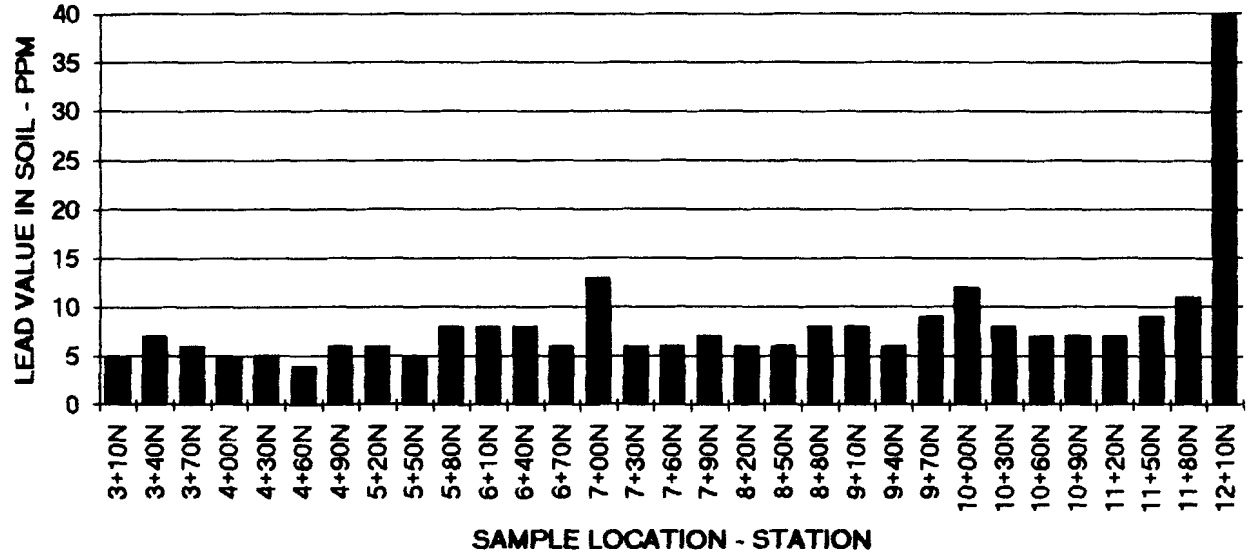
GRAPH 51

SILVER (PPM) - LINE 12+00W



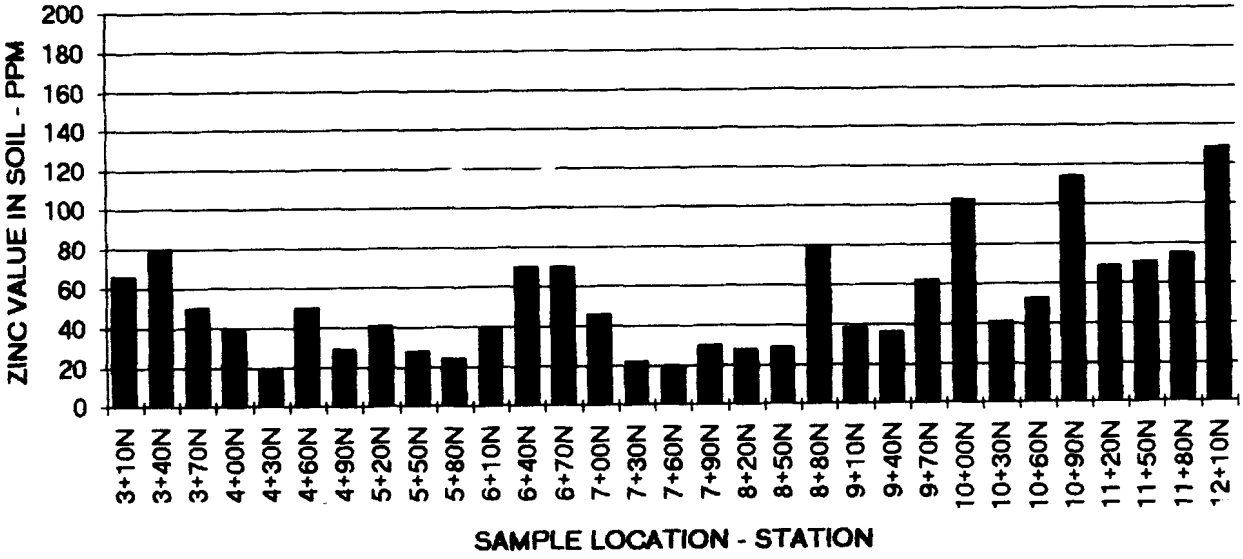
GRAPH 52

LEAD (PPM) - LINE 12+00W



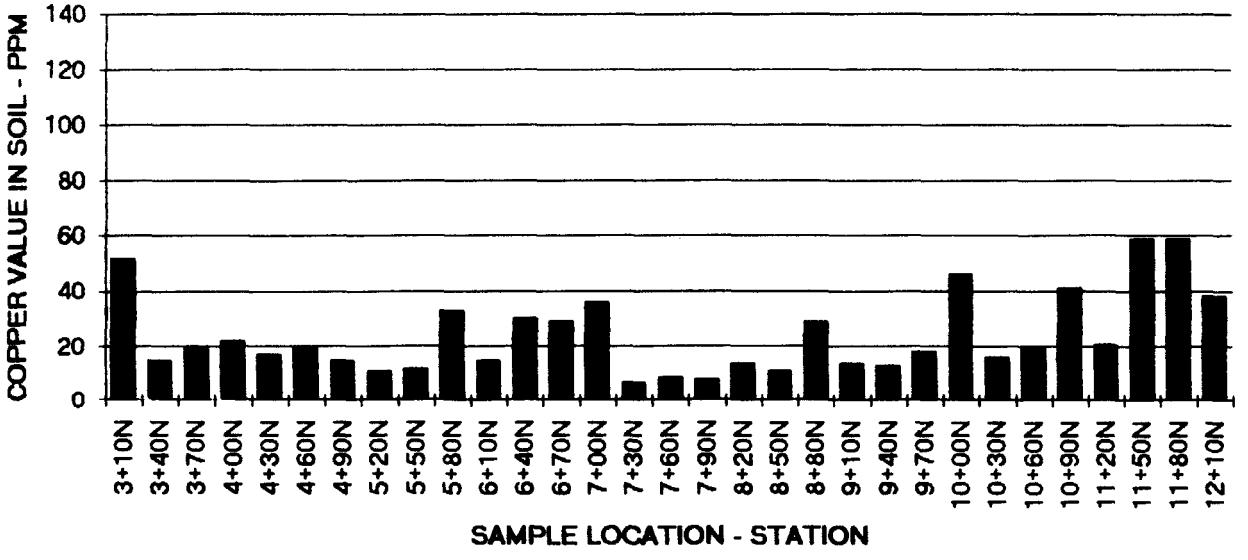
GRAPH 53

ZINC (PPM) - LINE 12+00W



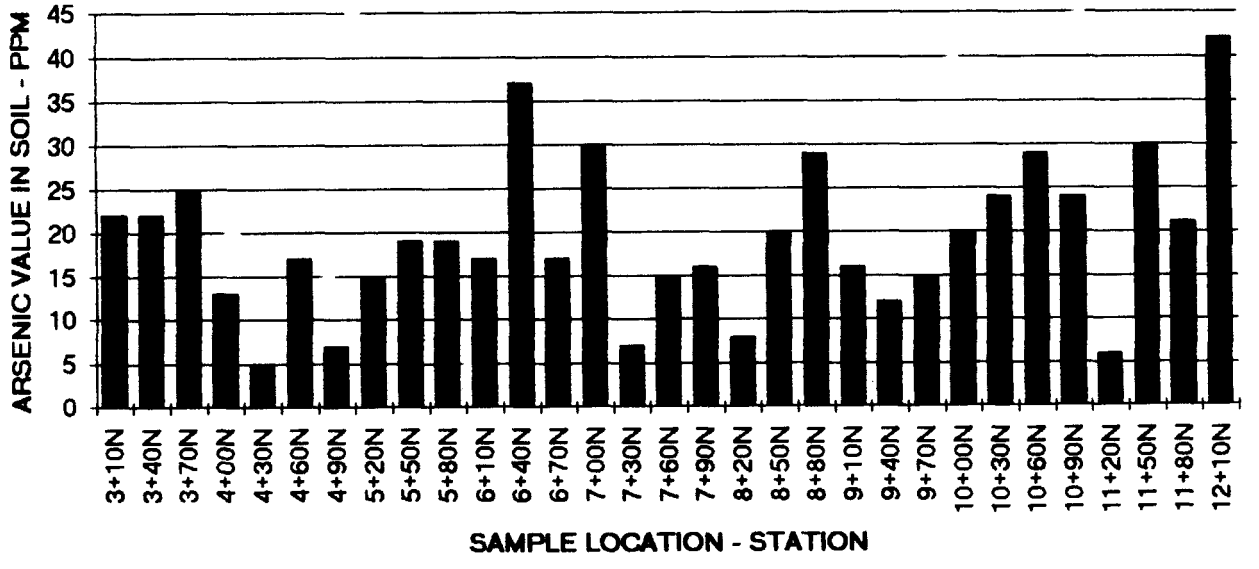
GRAPH 54

COPPER (PPM) - LINE 12+00W



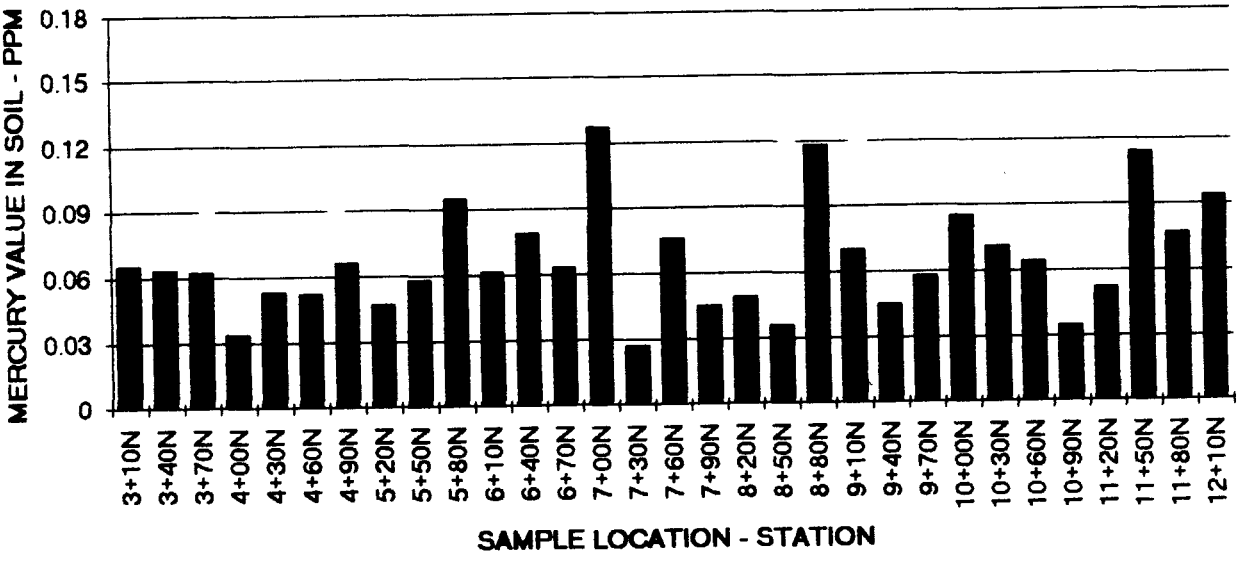
GRAPH 55

ARSENIC (PPM) - LINE 12+00W



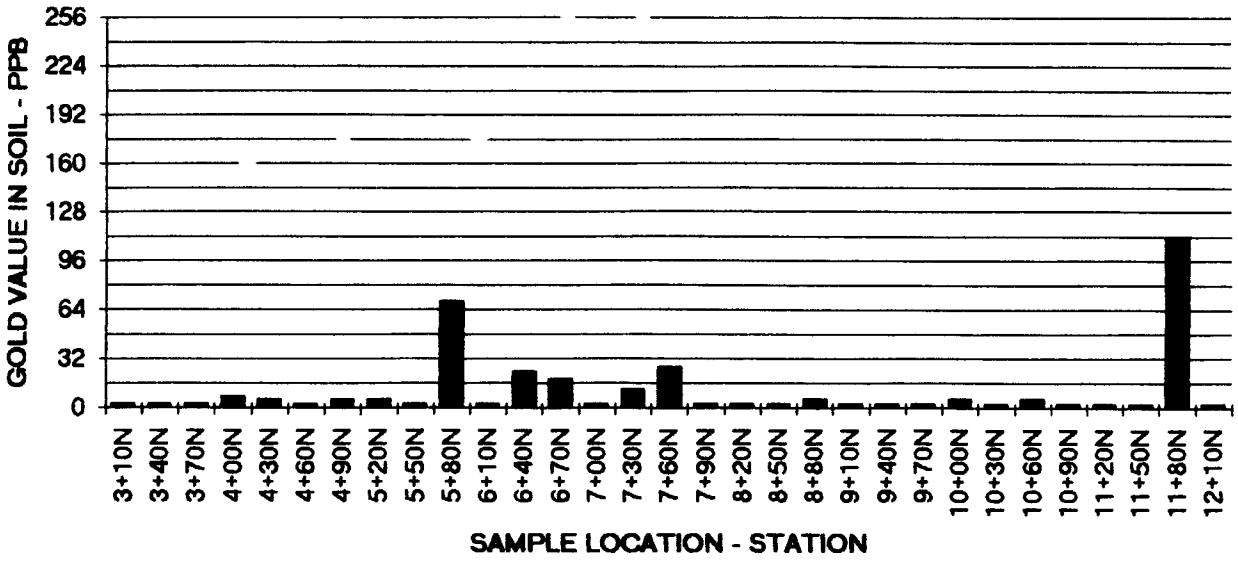
GRAPH 56

MERCURY (PPM) - LINE 12+00W



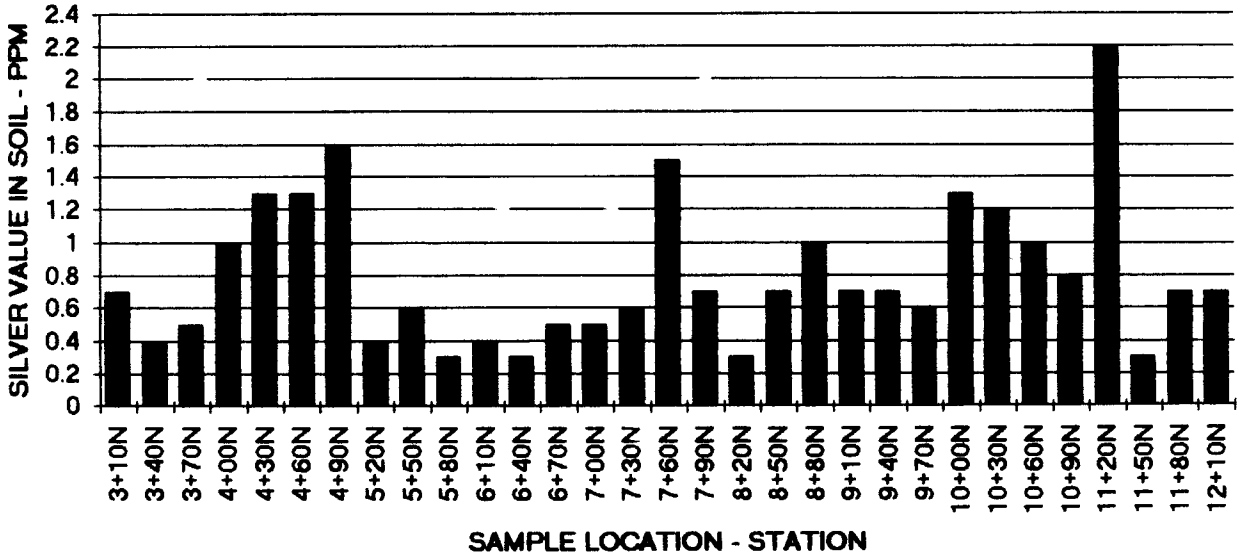
GRAPH 57

GOLD (PPB) - LINE 13+00W



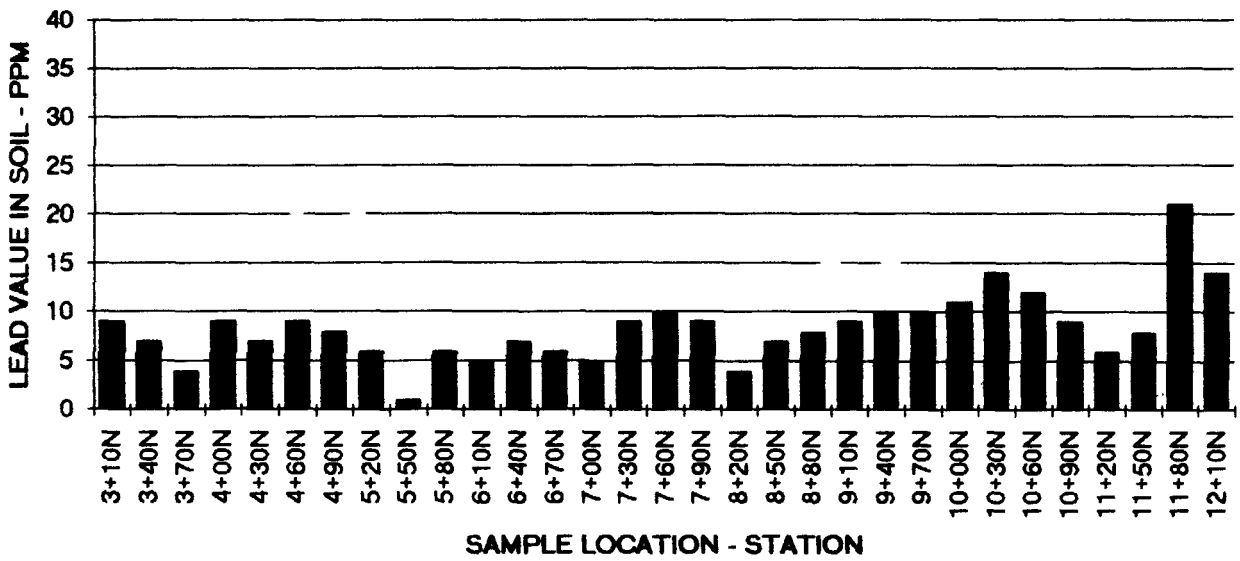
GRAPH 58

SILVER (PPM) - LINE 13+00W



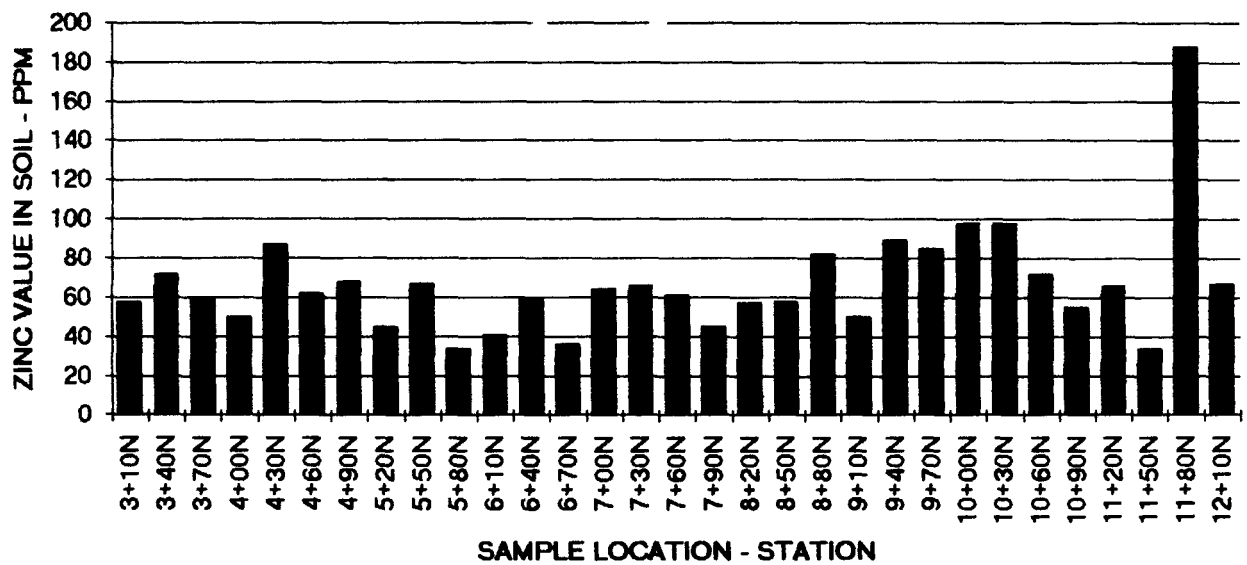
GRAPH 59

LEAD (PPM) - LINE 13+00W



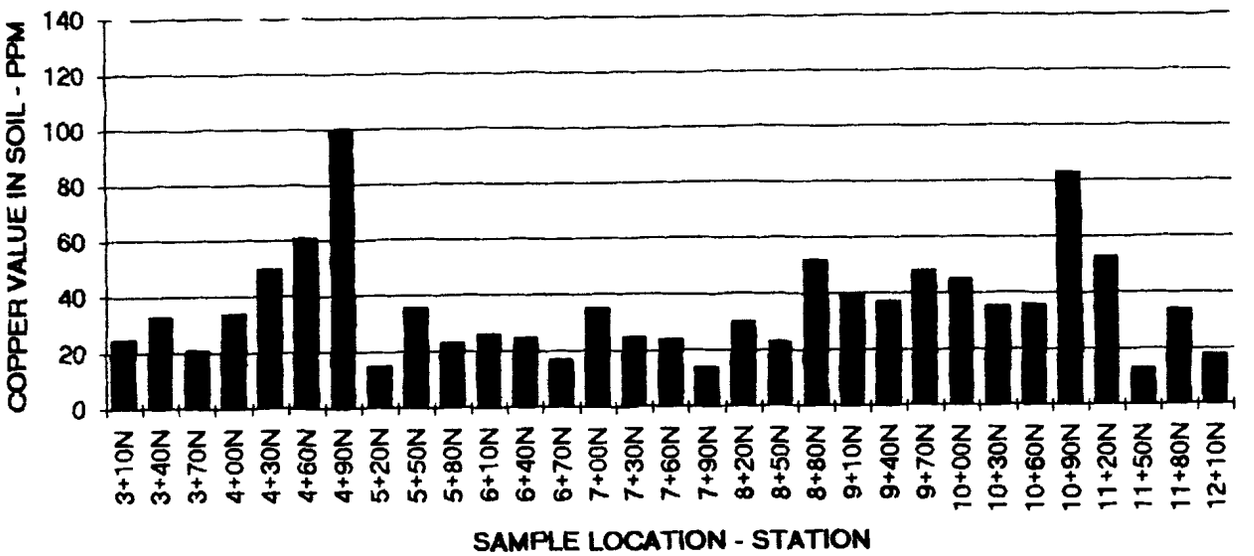
GRAPH 60

ZINC (PPM) - LINE 13+00W



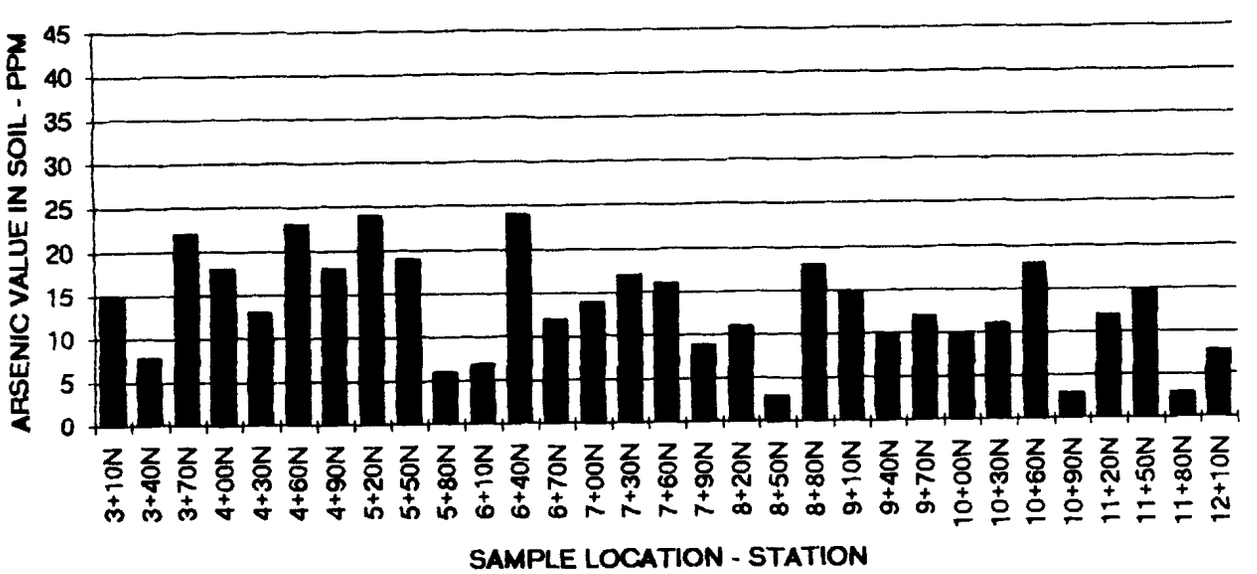
GRAPH 61

COPPER (PPM) - LINE 13+00W



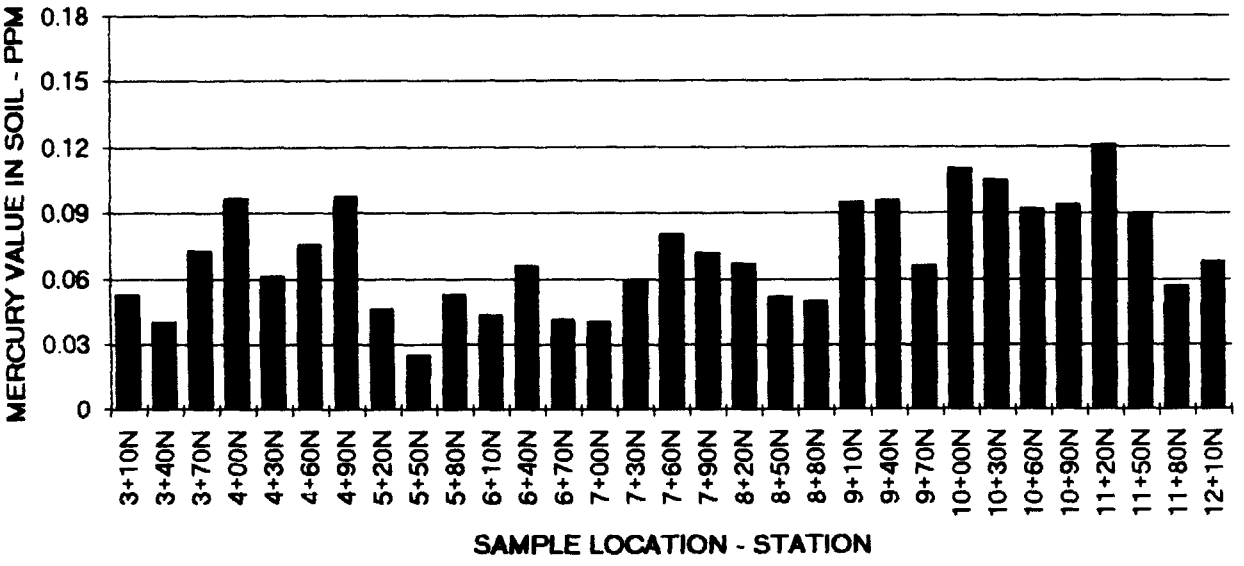
GRAPH 62

ARSENIC (PPM) - LINE 13+00W



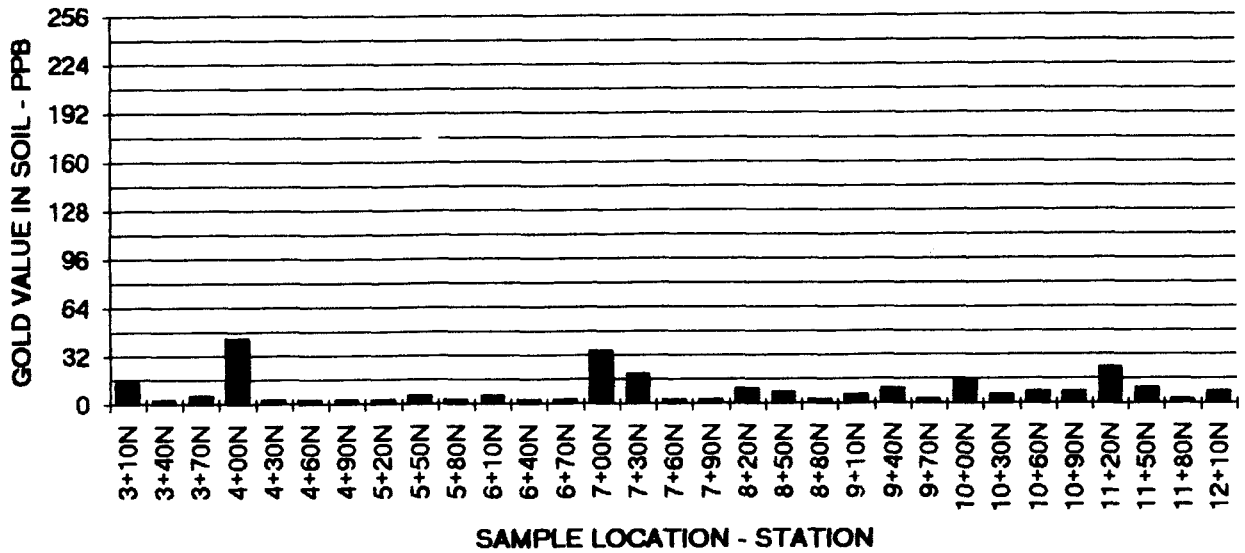
GRAPH 63

MERCURY (PPM) - LINE 13+00W



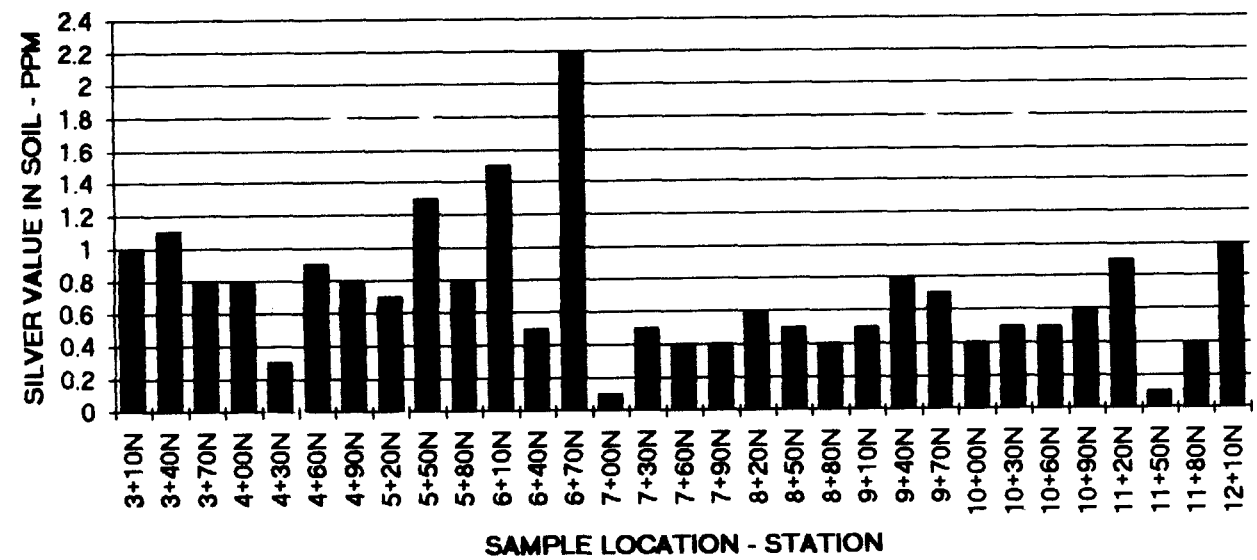
GRAPH 64

GOLD (PPB) - LINE 14+00W



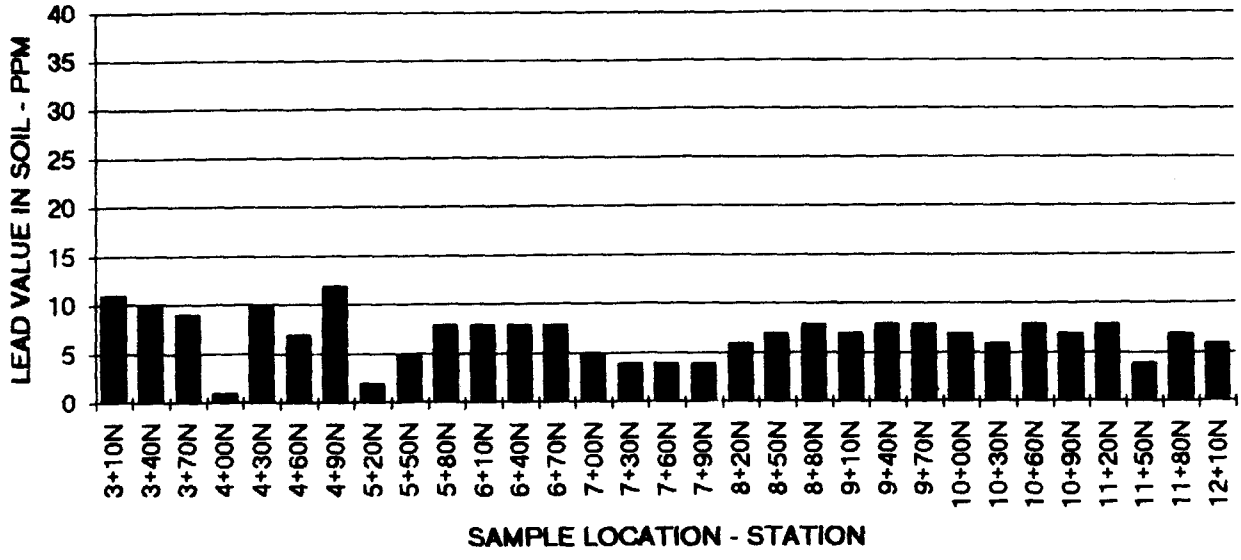
GRAPH 65

SILVER (PPM) - LINE 14+00W



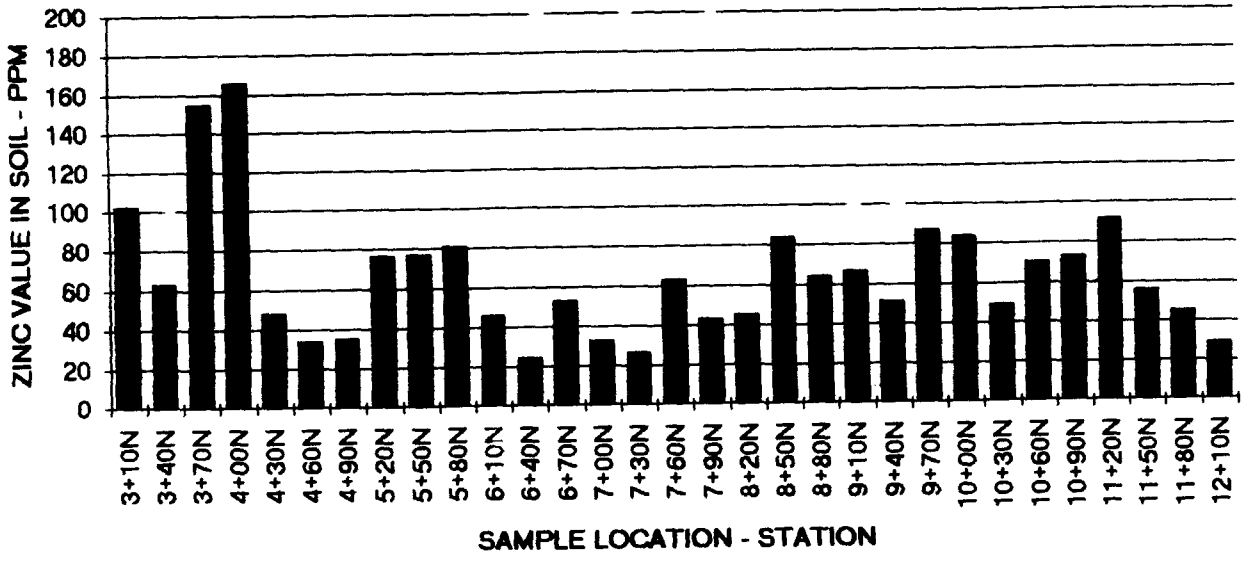
GRAPH 66

LEAD (PPM) - LINE 14+00W



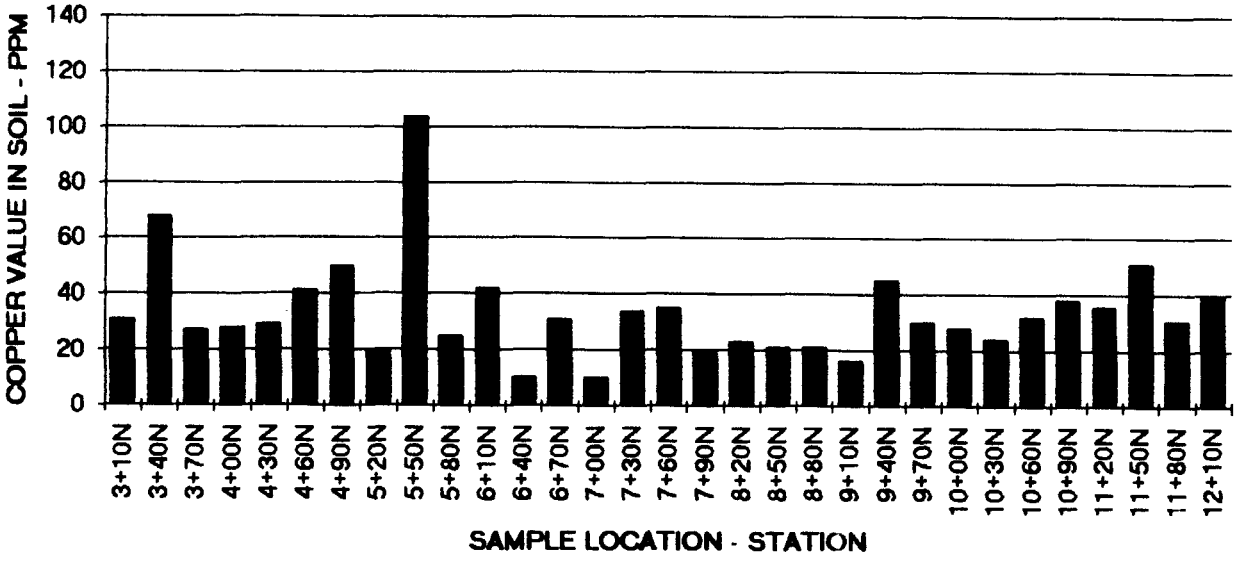
GRAPH 67

ZINC (PPM) - LINE 14+00W



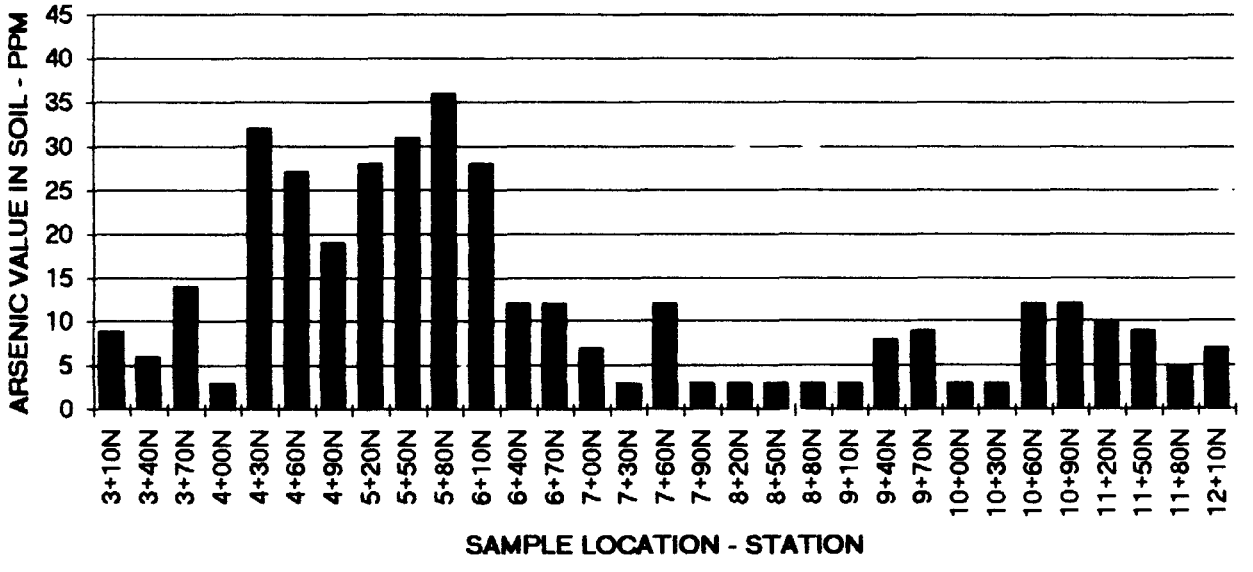
GRAPH 68

COPPER (PPM) - LINE 14+00W



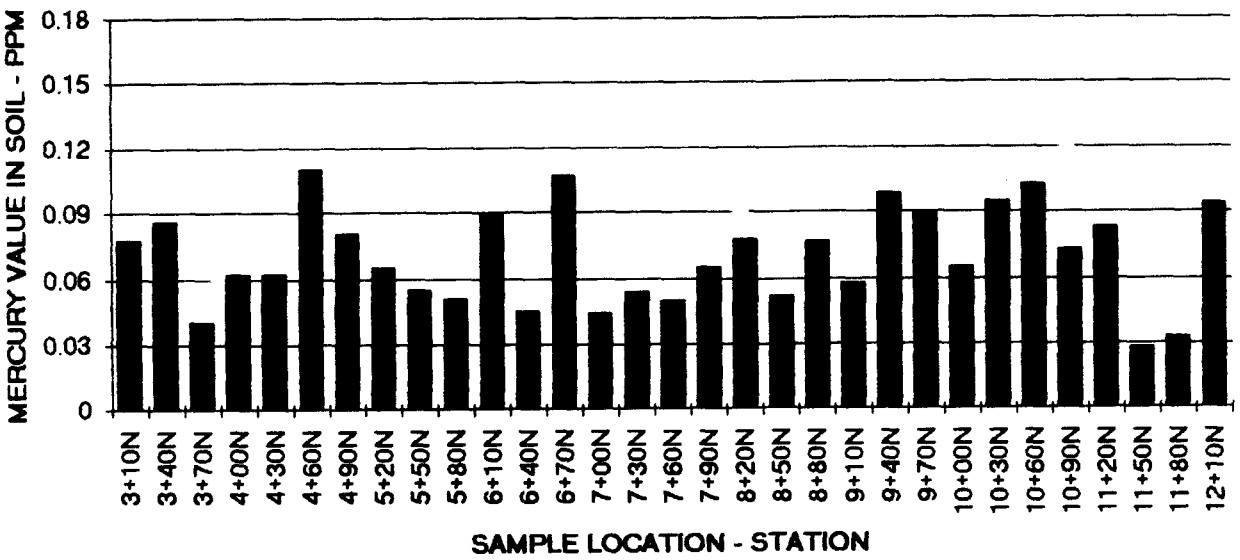
GRAPH 69

ARSENIC (PPM) - LINE 14+00W



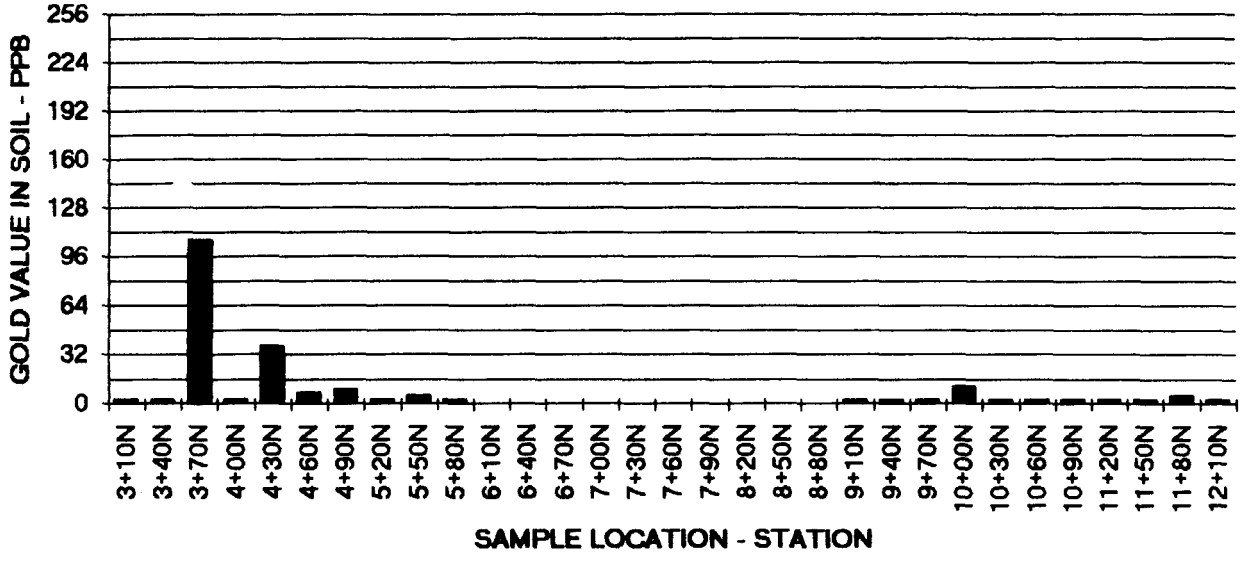
GRAPH 70

MERCURY (PPM) - LINE 14+00W



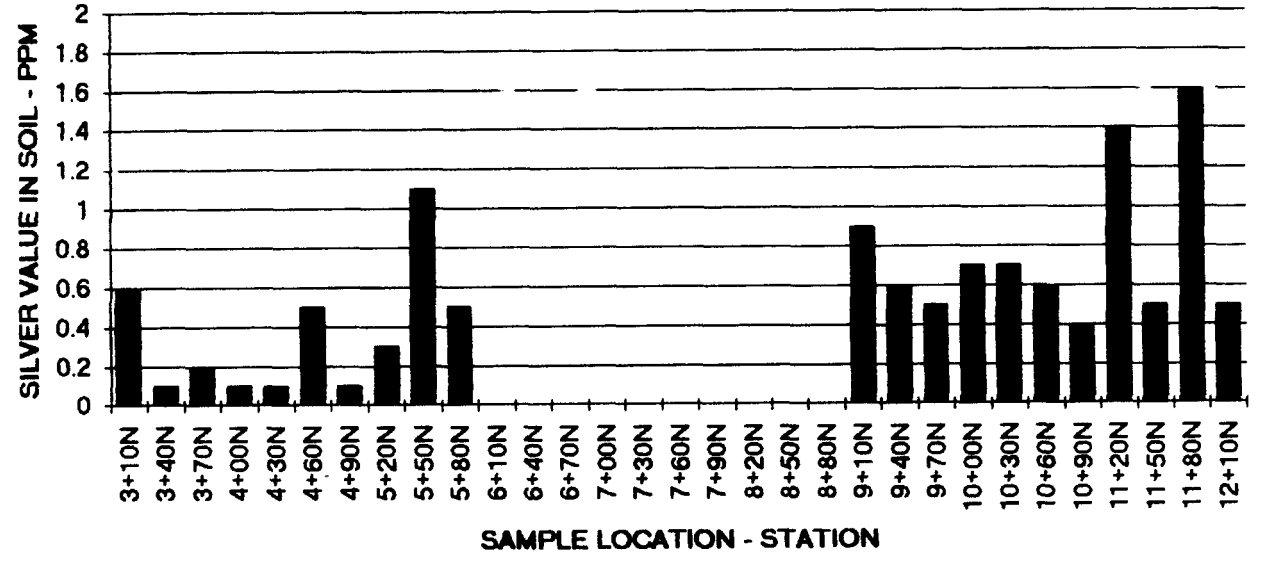
GRAPH 71

GOLD (PPB) - LINE 15+00W



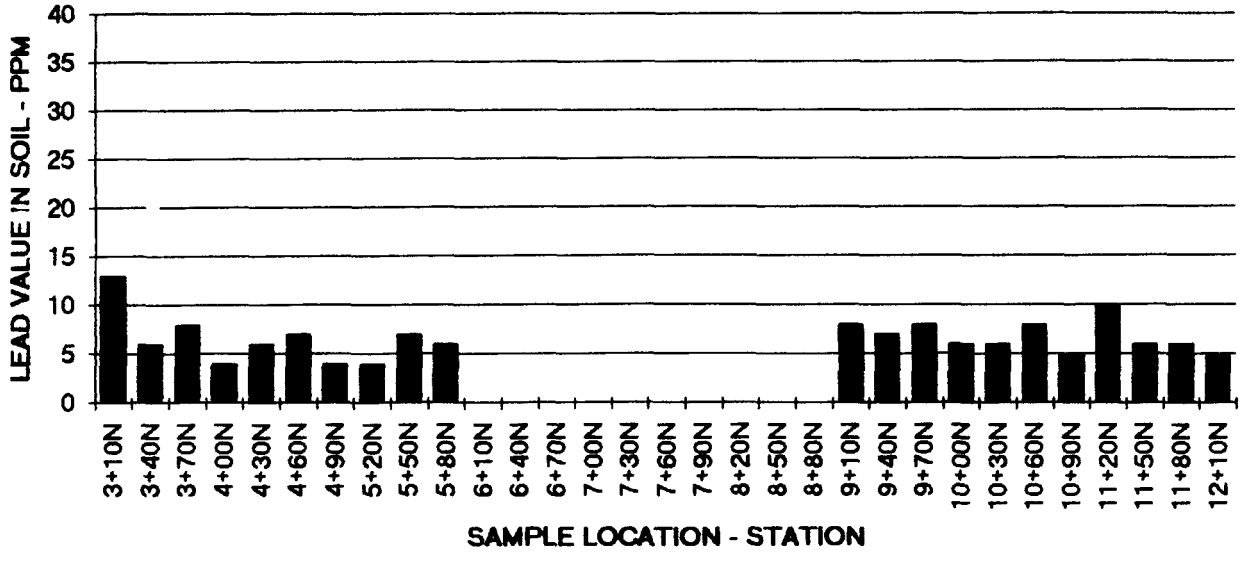
GRAPH 72

SILVER (PPM) - LINE 15+00W



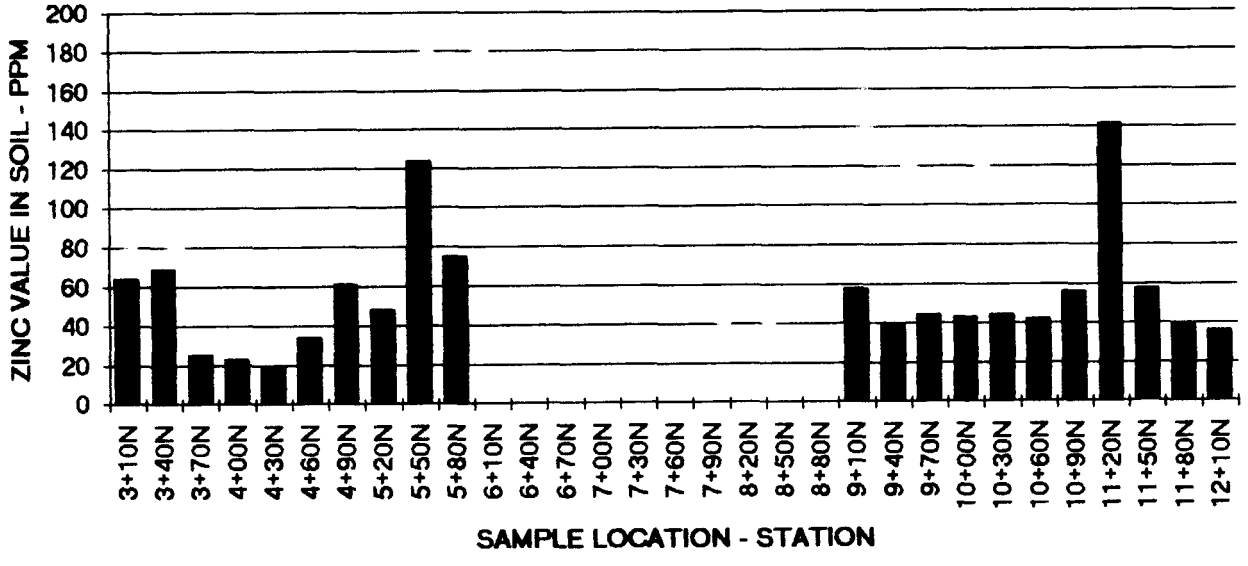
GRAPH 73

LEAD (PPM) - LINE 15+00W



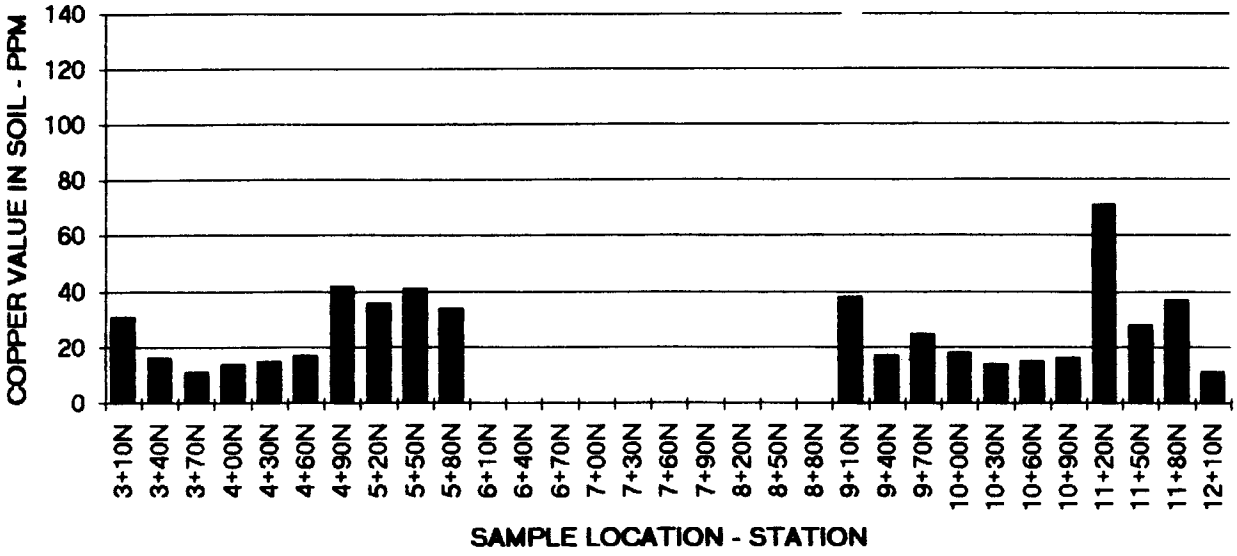
GRAPH 74

ZINC (PPM) - LINE 15+00W



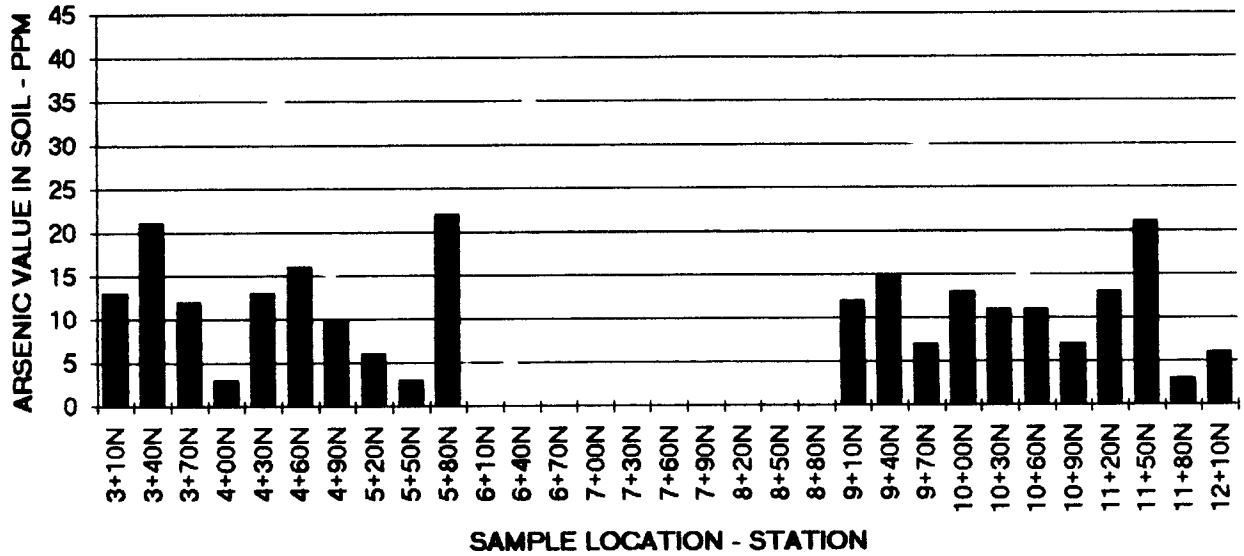
GRAPH 75

COPPER (PPM) - LINE 15+00W



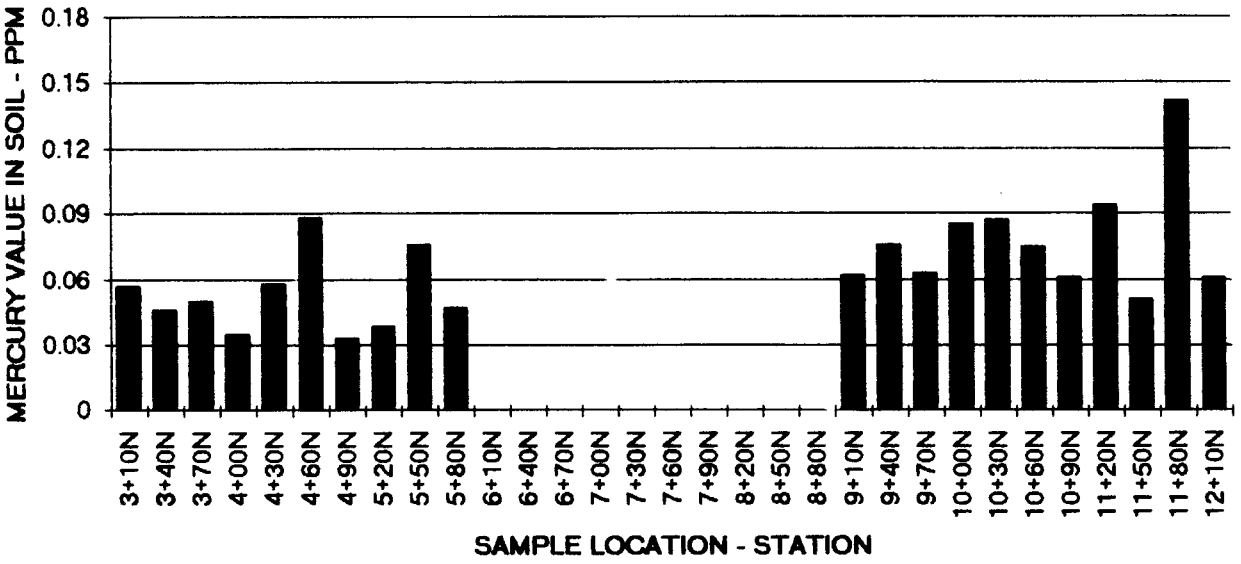
GRAPH 76

ARSENIC (PPM) - LINE 15+00W



GRAPH 77

MERCURY (PPM) - LINE 15+00W



INTERPRETATION OF SOIL GEOCHEMISTRY:

A preliminary soil geochemical survey was undertaken in 1991 in order to confirm that this exploration technique would provide information which would help in determining were to concentrate detailed physical exploration programs. The soil geochemical survey was not intended to be a stand alone survey but was instead intended to be interpreted in conjunction with planned VLF-EM and magnetometer surveys to be conducted over the same grid. As of this date the planned geophysical surveys have not been conducted so the geochemical survey is herein interpreted in conjunction with an airphoto lineation study, previously conducted VLF-EM survey data from another (1985 Zalmac) grid, which has been tied in or fitted to the new grid as accurately as possible; and other available data. The geological data obtained from previous reports considered in conjunction with recently acquired information from underground workings on the Rampalo Fraction and on the Silver Lump C.G. has proven valueable and has greatly assisted in the interpretation of the soil geochemical survey data. An airphoto lineation study conducted as part of the 1992 work has greatly assisted in interpretation of structural and stratagraphic features.

The Gold soil geochemistry data is illustrated on Drawing No. 6. Of the 311 samples analysed 18 samples returned values of over 50 ppb and of these 10 samples returned values of over 100 ppb. Those values over 100 ppb are considered to be highly anomalous. Of the ten gold values over 100 ppb. five were classified as erratics by Bondar-Clegg. These samples have been assayed three times because of wide variations in readings, erratic values. The first explanation given by the lab technician was that all gold geochemical values returning >100 ppb on the first pass were automatically re-run two more times. A second explanation by the lab is that the "erratics" were detected as a part of routine computer generated check on a random basis. The first value reported is the value obtained on the first analysis. If a random check results in an erratic value a third reading is generated. All three values are then reported. All three values have been entered on the plan map and all have been contoured to show that the high values exist.

For statistical purposes in this report, all values reported on certificates which are over 100 ppb. gold were reduced to a value of 99 ppb.. This still results in a first order anomalous value of 32.65 ppb. which is considered to be almost twice as high as level generally considered anomalous. Upon considering this high number and after discussions with associates regarding levels considered anomalous or of significance in tracing gold bearing systems; a base contour of 10 ppb. was determined. Contouring of gold soil geochem data was commenced at 10 ppb. and progressed to 20, 30, 40, and 50 ppb., while a 100 ppb. contour was added to further emphasize locations with these high values.

Although there is some correlation between gold and silver, gold appears rather to surround or flank silver values. Exceptions to this occur on Line 10W at Stn. 6+40N, on Lines 12W & 13W at Stn. 11+80N and on Line 0+00E/W at Stn. 13+90N. Although there is generally good correlation between silver and lead, zinc, copper; these base metals are as well not directly associated with gold. There are strong geological indications, based on historic data and first hand information gathered in the underground workings at the Rampalo and Silver Lump historic workings that the gold is related to a seperate mineralizing event(s) associated with north-east and/or north-south faults and shear systems while the base metals and silver appear to correlate well with the north-west lithological trends and east-west fault/shears systems.

It is however, of significant immportance to see the apparent direct correlation between VLF-EM conductors in the south-eastern quadrant of the grid and anomalous gold soil geochem values. The VLF-EM is interpreted to relate to stratigraphy and this is the first apparent correlation between stratigraphy and gold values. A silver, base metal multi-element anomaly occurs immediately north of this "gold bearing unit" while a second "gold bearing unit" flanks this multi-element unit to its north. This correlation suggests there is a strong possibility that one or more gold bearing lithological units occurs in this south-eastern quadrant; or alternately gold mineralization is occuring on the flanks of a silver bearing multi-element lithological unit; ie statabound gold and/or silver, multi-element mineralization.

A third north-west trending gold soil anomaly starts at Stn. 10+00N on Line 10W and extends to Stn. 12+60N on Line 12W. This unit may extend eastward to Line 4W, Stn. 9+10N to Stn. 10+00N and on to Line 0+00E/W, Stn. 9+10N or Stn. 8+20N.

The Silver soil geochemistry data is illustrated on Drawing No. 7. Of the 311 soil samples analysed a large number were over 1.0 ppm which is generally considered to be an anomalous value for silver. For statistical purposes in this report a maximum value of 0.9 ppm. was entered for all samples reporting 1.0 ppm. or higher. Examination of the cumulative % frequency graph for silver shows that 10% of the samples reported 1.0 ppm. or greater. Even after adjustment the anomalous level for silver was determined at 0.81 ppm. A starting level contour of 0.65 ppm silver was determined as sub anomalous. See the statistical tables for further information.

The largest and most significant silver soil geochemical anomaly occurs in the south-west quadrant of the surveyed grid. This anomaly is irregularly shaped having a based width of some 400 metres, a height of some 400 metres and an average width of over 100 metres. This anomaly trends northwesterly along its base from Stn. 3+10N on Line 10W to Stn 3+10N on Line 14W and then easterly to Line 13W from Stns. 4+30N to 4+90N and then northerly to Line 14 W from Stns. 5+50N to 6+10N along Line 14 W. There is good correlation between silver values and values for copper, zinc, lead and arsenic. The silver anomaly is flanked by gold anomalies to the west , east and northeast.

Three other silver soil geochemical anomalies occur on the west half of the grid. These appear to strike parallel to lithology (north-west), have strike lengths that exceed 500 metres and widths up to 150 metres. There is no direct correlation between silver anomalies and VLF-EM in the south-west quadrant area although discontinuous correlation is evident with north-westerly trending airphoto lineations.

In the eastern half of the surveyed grid there are four silver soil geochemical anomalies. One of these anomalies commences at the Lumpy workings at Stn 6+00N on Line 0+00E/W and extends north-westerly to Stn 7+00N on Line 4W., a strike length of 500 metres. Extension of this strike trend would connect with a silver anomaly occuring at Line 10W, Stn 6+10N which continues for an additional 300 metres to Line 12W, Stn. 5+80N. If connected this anomaly would have a 1300 metre stike length at which point a gold anomaly is encountered prior to intersecting the silver anomaly encountered at Line 14W, 5+80N.

Other silver anomalies occur from Line 0+00E/W, Stn. 9+70N to LIne 4W, Stns. 9+40 to 9+70N; Line 0+00E/W, Stn. 13+90 & 14+10N which may connect to the either of the anomalies occuring on Line 4W at Stn. 12+50N or 13+30N. This anomaly could extend to join the anomaly encountered on Line 10W at Stn. 10+60N; and at Line 0+00E/W, Stn. 14+80N; Line 2W, Stn. 7+90N; Line 4W, Stn. 14+80N.

The Lead soil geochemistry data is illustrated on Drawing No. 8. Generally good correlation with other base metals and with silver. Good correlation is seen with anomalies in the south west quadrant of the surveyed grid. The highest lead value is 42 ppm. which occurs at Stn. 15+10N on Line 12W which is adjacent to the historic Silver Spot #4 workings (Historic Site 12). This anomaly extends from Line 10W to between Lines 13 and 14W. The probable extension of this anomaly occurs at Stn. 11+20N on Line 15W which is adjacent to the historic Silver Spot #3 workings (Historic Site 11). This anomaly may also extend north-easterly to Historic Site #13.

Other high values for lead, 20 ppm. and 18 ppm. occur at Stn. 6+10N on Line 0+00E/W adjacent to the Silver Lump workings (Historic Site 14) and at Line 0+00E/W, Stn. 13+80N respectively.

The Zinc soil geochemistry data is illustrated on Drawing No. 9. The highest zinc value obtained from the soils in this geochemical survey is 188 ppm. For statistical purposes all values of over 100 ppm. were given the value of 100 ppm. This

reduced the anomalous value for Zinc from 88.5 to 80.5 ppm.. A sub anomlaous value of 60 ppm. was used as the lowest contour interval.

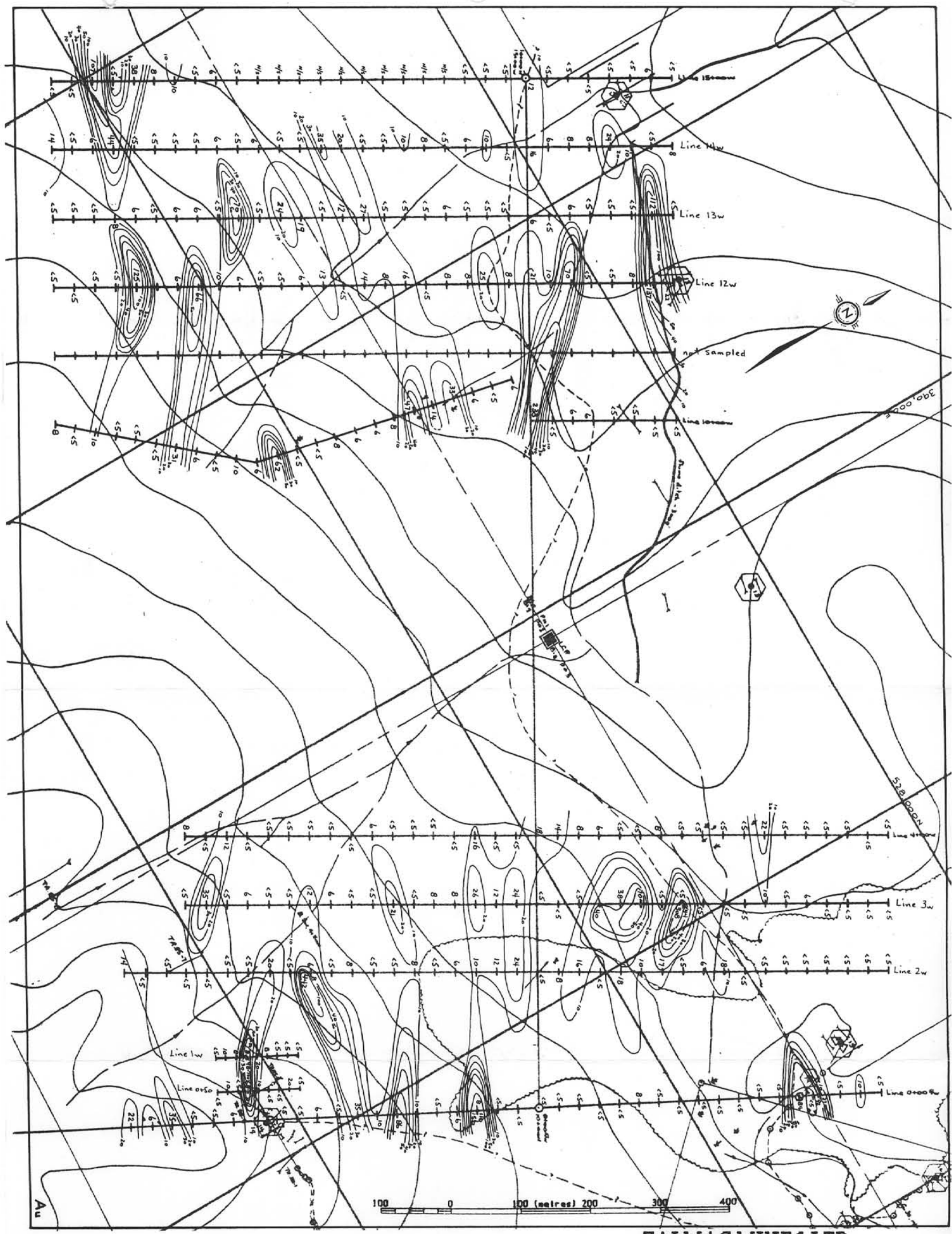
There is excellent correlation between zinc and silver and with zinc and the other base metals. The main zinc anomalies are centered at Stn. 15+10N on Line 12W, Stns. 11+20N and 5+50N on Line 15 W, Stn 4+00N on Line 14W, Stns. 9+10N and 3+10N on Line 10W, Stn 9+40 on Line 2W and Stn. 6+10N on Line 0+00N.

It should be noted here, because of the association between zinc and cadmium, that only four analyses for cadmium exceeded 1.0 ppm. and all of these values occured at anomalous zinc sites. The highest cadmium value, 2.4 ppm., occurs at Line 0+00E/W, Stn. 5+80N. Others high cadmiums also occur along Line 0+00E/W at Stn. 11+50 (1.2 ppm), Stns. 13+90 and 14+10N (1.1 & 1.3 ppm. respectively).

The Copper soil geochemistry data is illustrated on Drawing No. 10. Good correlation is seen between copper anomalous values and the other anomalies in the south east quadrant of the surveyed grid and in the vicinity of the Lumpy workings. In the north west quadrant of the surveyed grid copper anomalous values occur between the two zones oulined by the othe base metals and silver. In this area, the copper values seem to correlate best with gold values. This correlation could have great significance as it suggests a possible copper gold skarn occurance. There is evidence of skarn alteration, ie garnet and wollastonite associated with limestone units just north of this particular area on the grid.

Other copper anomalies are associated with the previously noted base metal anomalies.

The Arsenic soil geochemistry data is illustrated on Drawing No. 11. In order to determine its value as a trace element for gold, arsenic soil values were processed statistically and were plotted on plan. There is only one noticeable direct correlation between gold and arsenic. This occurs are Stn. 8+20N on Line 0+00E/W. Arsenic should not be considered as a trace element for detecting gold on this property.



Geochemical Map Legend

Contour Lines
Grid Lines
Sample Locations
Assay Value
Roads
Trails
Historic Workings

Statistical Information - Gold

Contour Intervals: 10 ppb., 20 ppb., 30 ppb., 40 ppb., 50 ppb., 100 ppb.
Sub Anomalous Value - 20 ppb., 1st. Order Anomalous Value - 30 ppb.
2nd. Order and 3rd. Order Anomalous Values - 40 ppb. and 50 ppb.
Other Contour Intervals: 10 ppb. and 100 ppb.

ZALMAC MINES LTD.

Lightning Peak Area, B.C.

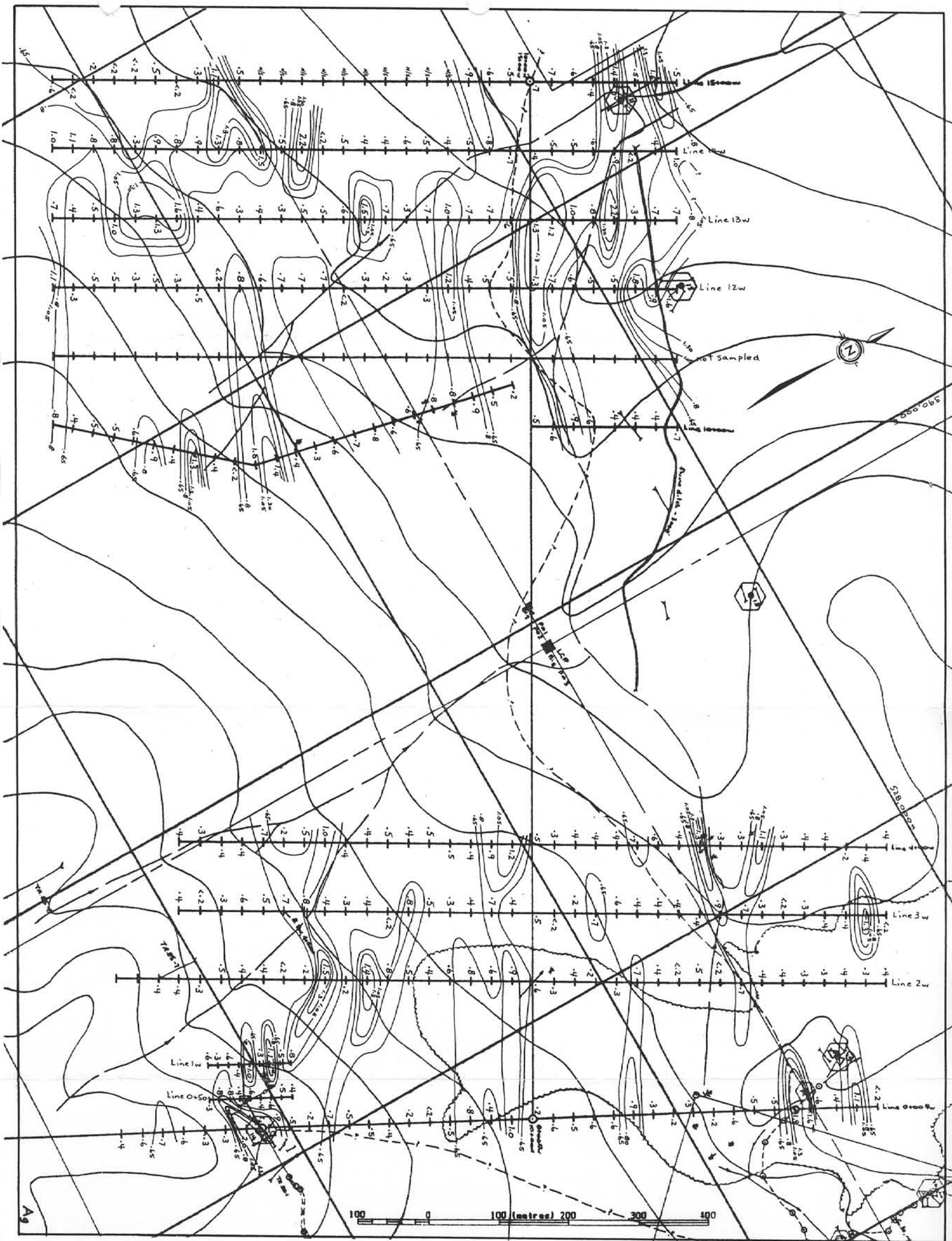
P AND Z CLAIMS

GEOCHEMICAL SURVEY PLAN

GOLD

Y-H TECHNICAL SERVICES LTD.

Date:	Scale:	Drawing No.
JANUARY 1992	1:5000	6



Geochemical Map Legend

Contour Lines
Grid Lines
Sample Locations
Assay Value
Roads
Trails
Historic Workings

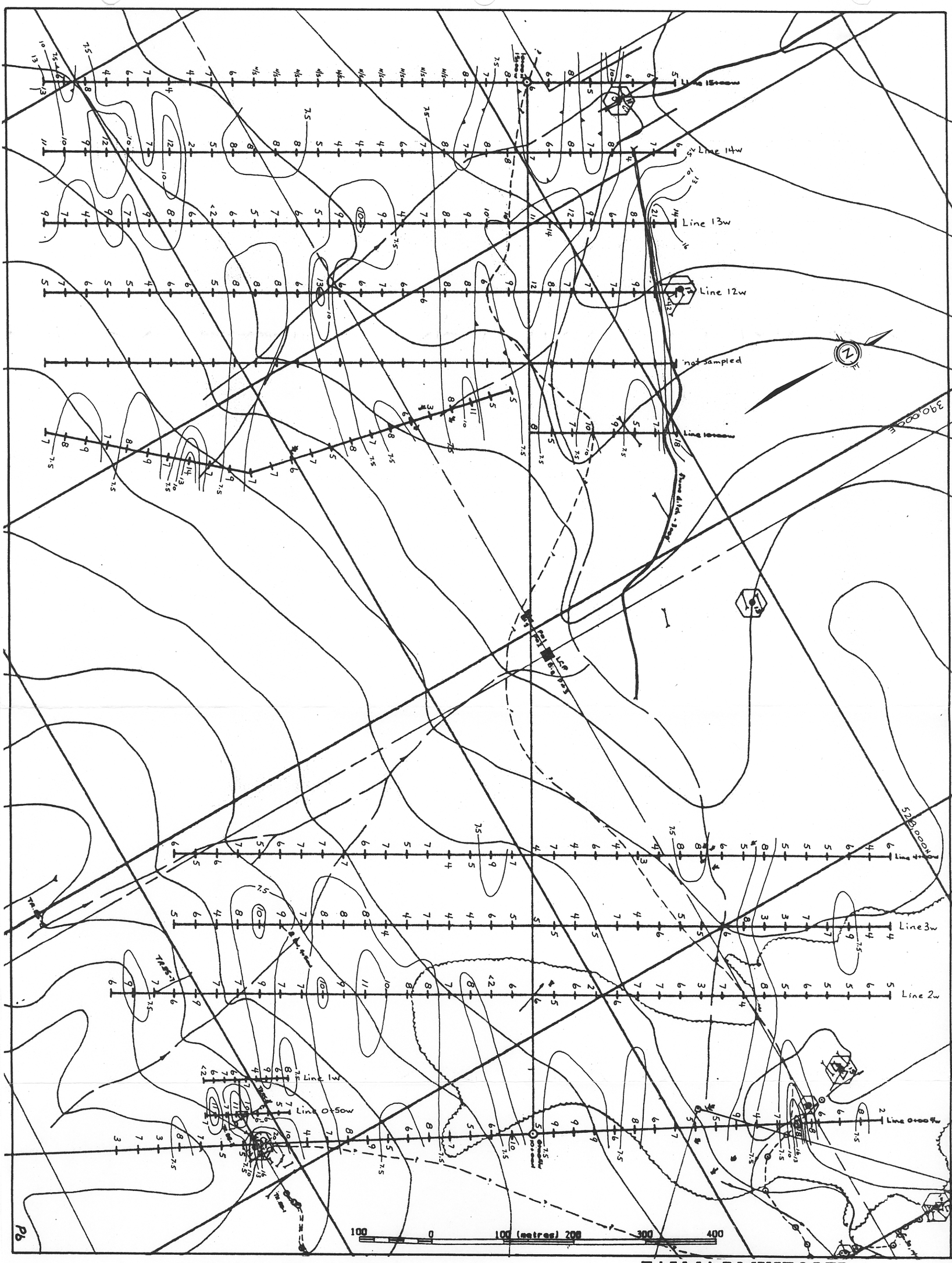
Statistical Information - Silver

Contour Intervals: 0.65 ppm., 0.80 ppm., 1.05 ppm., 1.30 ppm.
Sub Anomalous Value - 0.65 ppm., 1st. Order Anomalous Value - 0.80 ppm.
2nd. Order and 3rd. Order Anomalous Values - 1.05 ppm. and 1.30 ppm.

ZALMAC MINES LTD.

Lightning Peak Area, B.C.
P AND Z CLAIMS
GEOCHEMICAL SURVEY PLAN
SILVER
Y-H TECHNICAL SERVICES LTD.

Date:	Scale:	Drawing No.
JANUARY 1992	1:5000	7



Geochemical Map Legend

Contour Lines
Grid Lines
Sample Locations
Assay Value
Roads
Trails
Historic Workings

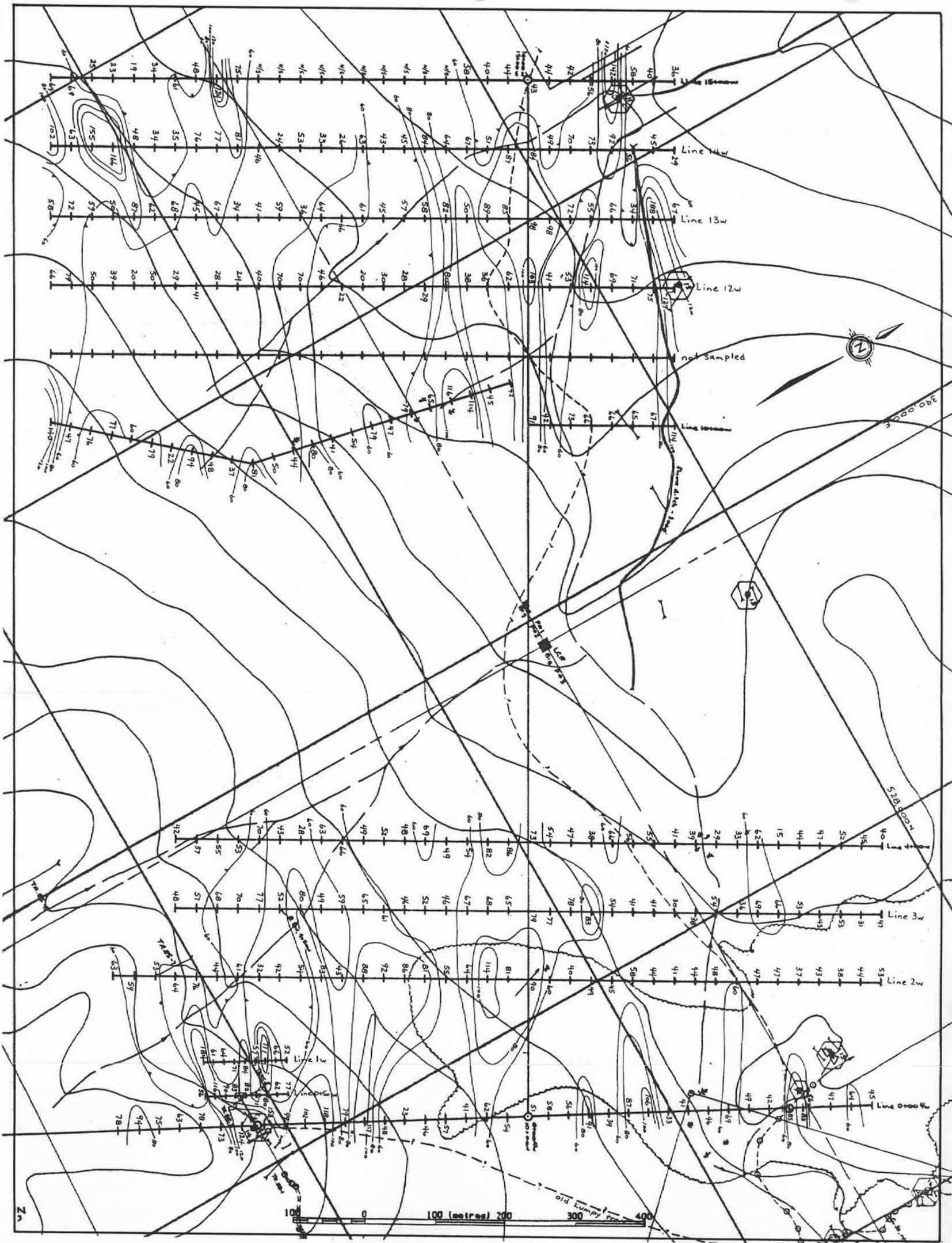
Statistical Information - Lead

Contour Intervals: 7.5 ppm., 10 ppm., 13 ppm., 16 ppm.
Sub Anomalous Value - 7.5 ppm., 1st. Order Anomalous Value - 10 ppm.
2nd. Order and 3rd. Order Anomalous Values - 13 ppm. and 16 ppm.

ZALMAC MINES LTD.

Lightning Peak Area, B.C.
P AND Z CLAIMS
GEOCHEMICAL SURVEY PLAN
LEAD
Y-H TECHNICAL SERVICES LTD.

Date:	Scale:	Drawing No.
JANUARY 1992	1:5000	8



Geochemical Map Legend

- Contour Lines
- Grid Lines
- Sample Locations
- Assay Value
- Roads
- Trails
- Historic Workings

Statistical Information - Zinc

Contour Intervals: 60 ppm., 80 ppm., 100 ppm., 120 ppm.
Sub Anomalous Value - 60 ppm., 1st. Order Anomalous Value - 80 ppm.
2nd. Order and 3rd. Order Anomalous Values - 100 ppm. and 120 ppm.

ZALMAC MINES LTD.

Lightning Peak Area, B.C.

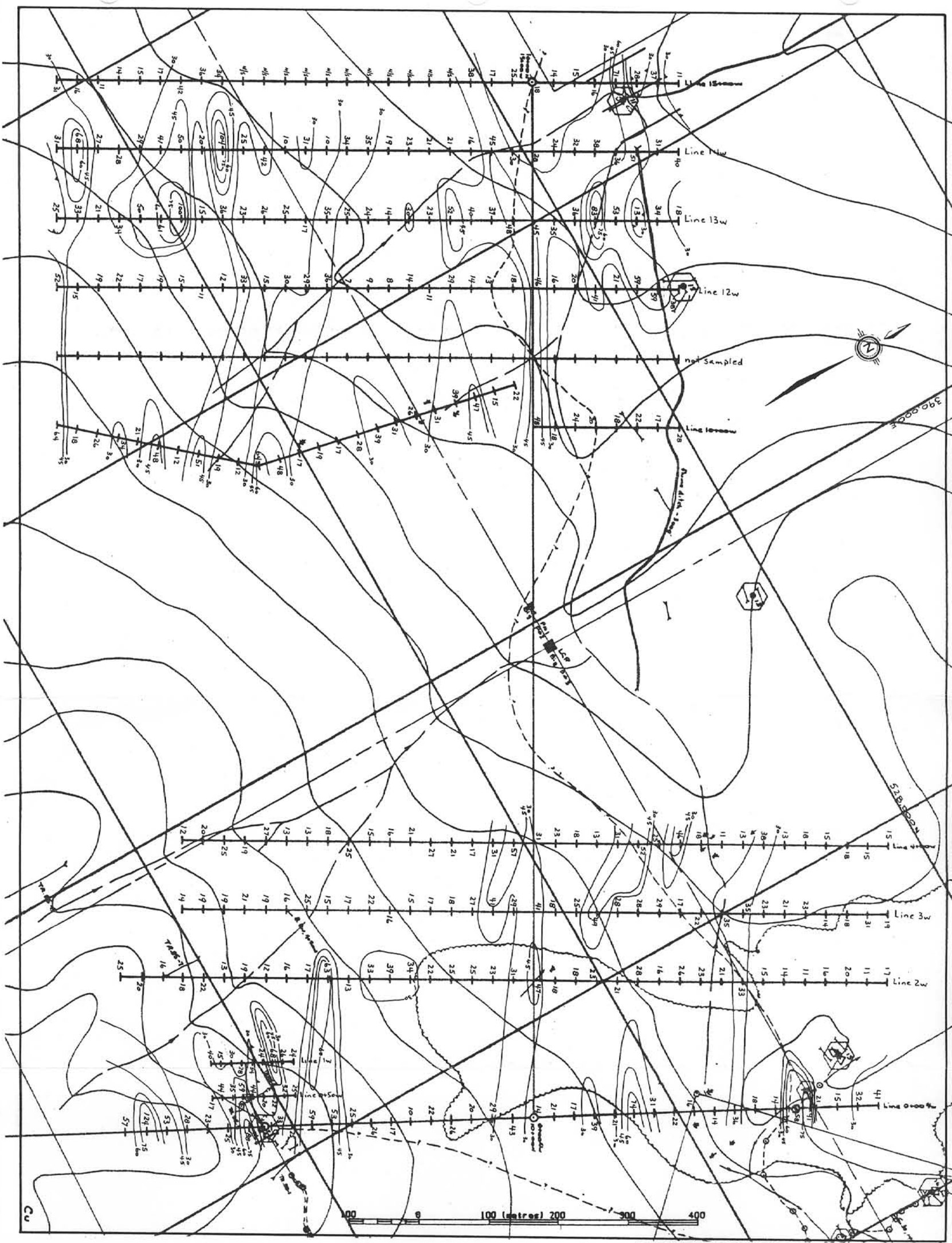
P AND Z CLAIMS

GEOCHEMICAL SURVEY PLAN

ZINC

Y-H TECHNICAL SERVICES LTD.

Date:	Scale:	Drawing No.
JANUARY 1992	1:5000	9



Geochemical Map Legend

- Contour Lines (20)
- Grid Lines
- Sample Locations
- Assay Value (32)
- Roads
- Trails
- Historic Workings (14)

Statistical Information - Copper

Contour Intervals: 30 ppm., 45 ppm., 60 ppm., 75 ppm.
Sub Anomalous Value - 30 ppm., 1st. Order Anomalous Value - 45 ppm.
2nd. Order and 3rd. Order Anomalous Values - 60 ppm. and 75 ppm.

ZALMAC MINES LTD.

Lightning Peak Area, B.C.

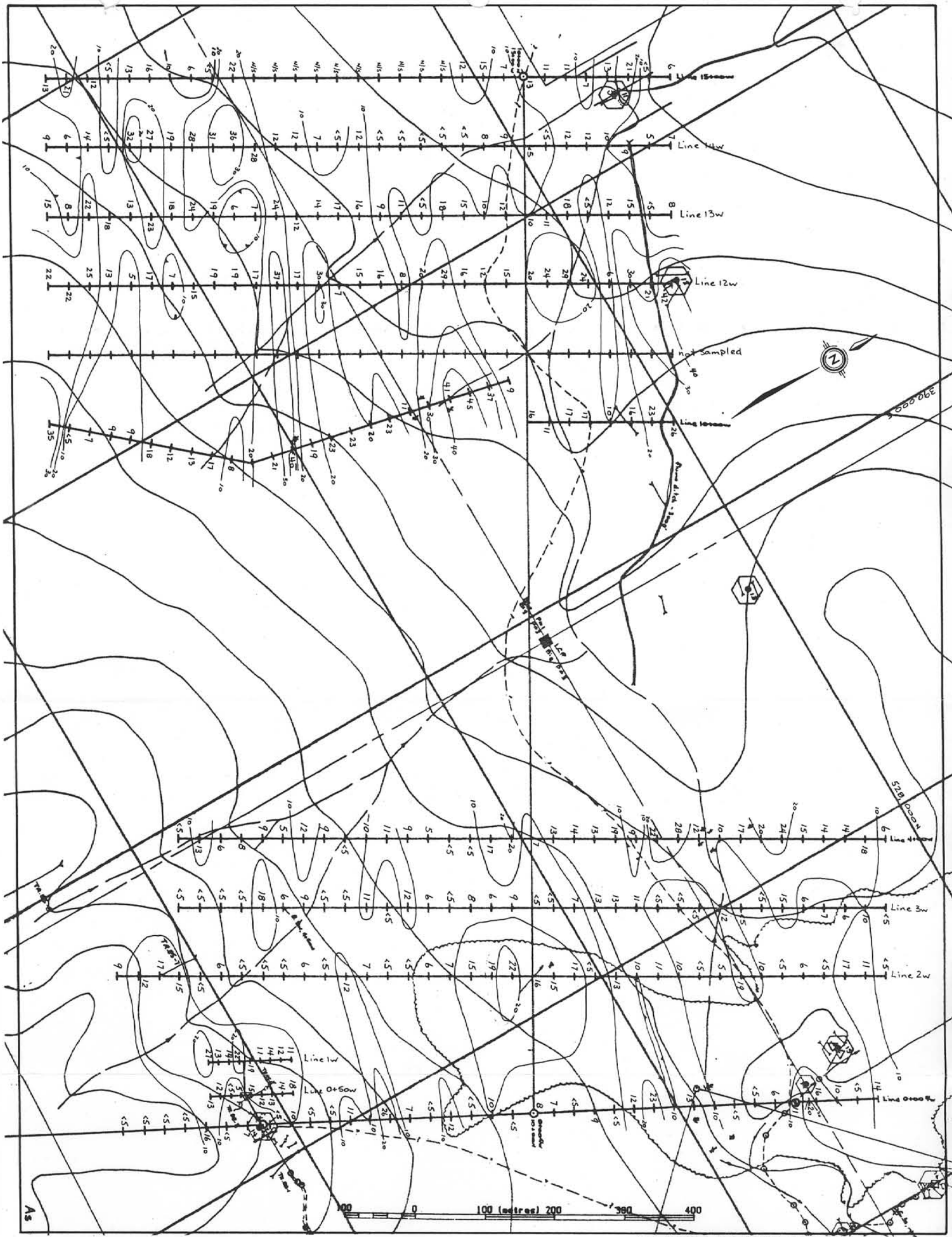
P AND Z CLAIMS

GEOCHEMICAL SURVEY PLAN

COPPER

Y-H TECHNICAL SERVICES LTD.

Date:	Scale:	Drawing No.
JANUARY 1992	1:5000	10



Geochemical Map Legend

- Contour Lines (20, 10)
- Grid Lines
- Sample Locations
- Assay Value (12)
- Roads
- Trails
- Historic Workings

Statistical Information - Arsenic

Contour Intervals: 10 ppm., 20 ppm., 30 ppm., 40 ppm.
Sub Anomalous Value - 10 ppm., 1st. Order Anomalous Value - 20 ppm.
2nd. Order and 3rd. Order Anomalous Values - 30 ppm. and 40 ppm.

ZALMAC MINES LTD.

Lightning Peak Area, B.C.

P AND Z CLAIMS

GEOCHEMICAL SURVEY PLAN

ARSENIC

Y-H TECHNICAL SERVICES LTD.

Date:	Scale:	Drawing No.
JANUARY 1992	1:5000	11

Although not always present in anomalous levels arsenic is closely associated with silver and the base metal group studied.

Another trace element, mercury was examined in graphical form. This examination shows some flanking of gold highs but only a few direct correlations. These exceptions are at Stn. 14+30N on Line 4W, Stn. 6+10N on Line 1W and Stn. 13+90W on Line 0+00E/W. As with arsenic, mercury should not be used as a trace element for detecting gold on theis property.

CHAIN AND COMPASS SURVEY PROGRAM:

On October 15th. and 16th. 1992 a series of chain and compass surveys were undertaken in order to better tie together known workings, define road and claim locations and to tie in various grid locations.

A total of 4,469.2 metres of traverse were surveyed using hip-chain and compass methods. The coordinates for each surveyed station were calculated from a base station point established just west of Horseshoe Lake. See Chain and Compass Survey Tables 1 to 7 for further details. Coordinates for this base station were established from 1:12,000 scale base maps originally prepared by Mohawk Oil Co. Ltd. during their work on Lightning Peak in the early 1980's.

The calculated coordinate points were used to plot each surveyed station (traverse) onto a 1:5000 scale base map which was prepared by enlarging the 1:12,000 scale base map. All control points, known mineral occurances and grids were plotted on the this base map. The outline of the original Rampalo C.G., now the Rampalo Fraction was plotted after reducing the crown grant survey information to Zalmac's base coordinates. This was possible because the original # 1 Post for the Rampalo C.G. used for the crown grant survey was located.

TITLE: ZAL TRAVERSE - OCTOBER 15, 1992								COSINE * DISTANCE		SINE * DISTANCE		Latitude	Departure		
From Stn.	To Stn.	Bearing	Radians	Distance	Cosine	Sine	North +	South -	East +	West -	528,610 N	392,410 E	Station	Grazina LCP = 0+00	
0+00	0+30.3	129	2.251475	30.3	-0.62932	0.777146		-19.06841	23.54752		528590.9	392433.5	0+30.3		
0+30.3	0+88.5	188	3.281219	58.2	-0.990268	-0.139173		-57.6336		-8.099874	528533.3	392425.4	0+88.5		
0+88.5	1+33.5	189	3.298672	45	-0.987688	-0.156434		-44.44598		-7.039551	528488.9	392418.4	1+33.5		
1+33.5	1+93.0	186	3.246312	59.5	-0.994522	-0.104528		-59.17405		-6.219444	528429.7	392412.2	1+93.0		
1+93.0	2+27.3	184	3.211406	34.3	-0.997564	-0.069756		-34.21645		-2.392647	528395.5	392409.8	2+27.3		
2+27.3	2+54.0	204	3.560472	26.7	-0.913545	-0.406737		-24.39166		-10.85987	528371.1	392398.9	2+54.0	Pay Day Rd. Jnt.	
2+54.0	3+17.5	207	3.612832	63.5	-0.891007	-0.45399		-56.57891		-28.8284	528314.5	392370.1	3+17.5		
3+17.5	3+71.1	197	3.438299	53.6	-0.956305	-0.292372		-51.25793		-15.67112	528263.2	392354.4	3+71.1		
3+71.1	4+09.3	237	4.13643	38.2	-0.544639	-0.838671		-20.80521		-32.03722	528242.4	392322.4	4+09.3		
4+09.3	4+71.9	185	3.228859	62.6	-0.996195	-0.087156		-62.36179		-5.455949	528180.1	392316.9	4+71.9		
4+71.9	5+46.0	180	3.141593	74.1	-1			-74.1		0	528106	392316.9	5+46.0		
5+46.0	5+71.2	149	2.600541	25.2	-0.857167	0.515038		-21.60062	12.97896		528084.4	392329.9	5+71.2		
5+71.2	5+88.7	219	3.822271	17.5	-0.777146	-0.62932		-13.60005		-11.01311	528070.8	392318.9	5+88.7		
5+88.7	6+31.0	260	4.537856	42.3	-0.173648	-0.984808		-7.345318		-41.65737	528063.4	392277.3	6+31.0		
6+31.0	6+89.5	274	4.782202	58.5	0.069756	-0.997564	4.080754			-58.3575	528067.5	392218.9	6+89.5		
6+89.5	7+44.0	265	4.625123	54.5	-0.087156	-0.996195		-4.749988		-54.29261	528062.8	392164.6	7+44.0		
7+44.0	7+81.0	243	4.24115	37	-0.45399	-0.891007		-16.79765		-32.96724	528046	392131.6	7+81.0		
7+81.0	8+56.0	257	4.485496	75	-0.224951	-0.97437		-16.87133		-73.07775	528029.1	392058.6	8+56.0		
8+56.0	9+27.0	228	3.979351	71	-0.669131	-0.743145		-47.50827		-52.76328	527981.6	392005.8	9+27.0		
9+27.0	10+21.5	233	4.066617	94.5	-0.601815	-0.798636		-56.87152		-75.47106	527924.7	391930.3	10+21.5		
10+21.5	10+75.0	254	4.433136	53.5	-0.275637	-0.961262		-14.7466		-51.4275	527910	391878.9	10+75.0		
10+75.0	11+09.0	231	4.031711	34	-0.62932	-0.777146		-21.39689		-26.42296	527888.6	391852.5	11+09.0		
11+09.0	11+76.2	216	3.769911	67.2	-0.809017	-0.587785		-54.36594		-39.49917	527834.2	391813	11+76.2		
11+76.2	12+19.2	225	3.926991	43	-0.707107	-0.707107		-30.40559		-30.40559	527803.8	391782.6	12+19.2		
12+19.2	13+24.0	221	3.857178	104.8	-0.75471	-0.656059		-79.09356		-68.75499	527724.7	391713.8	13+24.0		
13+24.0	13+92.5	187	3.263766	68.5	-0.992546	-0.121869		-67.98941		-8.34805	527656.7	391705.5	13+92.5	Killarney Rd. Jnt.	
13+92.5	14+15.2	292	5.096361	22.7	0.374607	-0.927184	8.50357			-21.04707	527666.2	391684.4	14+15.2		
14+15.2	14+60.5	269	4.694936	45.3	-0.017452	-0.999848		-0.790594		-45.2931	527664.4	391639.1	14+60.5		
14+60.5	14+78.2	237	4.13643	17.7	-0.544639	-0.838671		-9.640111		-14.84447	527654.8	391624.3	14+78.2		
14+78.2	15+11.3	307	5.358161	33.1	0.601815	-0.798636	19.92008			-26.43484	527674.7	391597.8	15+11.3		
15+11.3	15+38.2	269	4.694936	26.9	-0.017452	-0.999848		-0.46947		-26.8959	527674.2	391570.9	15+38.2		
15+38.2	15+78.7	249	4.34587	40.5	-0.358368	-0.93358		-14.5139		-37.81001	527659.7	391533.1	15+78.7		
15+78.7	16+21.0	239	4.171337	42.3	-0.515038	-0.857167		-21.78611		-36.25818	527637.9	391496.9	16+21.0		
16+21.0	16+63.6	255	4.45059	42.6	-0.258819	-0.965926		-11.02569		-41.14844	527626.9	391455.7	16+63.6		
16+63.6	16+92.0	219	3.822271	28.4	-0.777146	-0.62932		-22.07095		-17.8727	527604.8	391437.9	16+92.0		
16+92.0	17+17.2	249	4.34587	25.2	-0.358368	-0.93358		-9.030872		-23.52623	527595.8	391414.3	17+17.2		
17+17.2	17+49.1	240	4.18879	31.9	-0.5	-0.866025		-15.95		-27.62621	527579.8	391386.7	17+49.1		
17+49.1	17+85.4	283	4.939282	36.3	0.224951	-0.97437	8.165723			-35.36963	527588	391351.3	17+85.4		
17+85.4	18+15.4	292	5.096361	30	0.374607	-0.927184	11.2382			-27.81552	527599.3	391323.5	18+15.4	Silver Lump Adit Trav. Stn 0+00	
18+15.4	18+66.2	320	5.585054	50.8	0.766044	-0.642788	38.91506			-32.65361	527638.2	391290.9	18+66.2		
18+66.2	18+81.4	242	4.223697	15.2	-0.469472	-0.882948		-7.135968		-13.4208	527631	391277.4	18+81.4		
18+81.4	19+07.4	190	3.316126	26	-0.984808	-0.173648		-25.605		-4.514853	527605.4	391272.9	19+07.4		
19+07.4	19+22.3	231	4.031711	14.9	-0.62932	-0.777146		-9.376874		-11.57947	527596.1	391261.4	19+22.3		
19+22.3	19+47.1	281	4.904375	24.8	0.190809	-0.981627	4.732063			-24.34435	527600.8	391237	19+47.1	Jnt. of trail to Rampalo/Victoria	

Table #3

TITLE: RM TRAVERSE - OCTOBER 15, 1992							COSINE * DISTANCE		SINE * DISTANCE		Latitude	Departure	Station	
From Stn.	To Stn.	Bearing	Radians	Distance	Cosine	Sine	North +	South -	East +	West -	527600.8N	391237.0E	RM 0+00	(ZAL 19+47.1)
0+00	0+50.5	288	5.026548	50.5	0.309017	-0.951057	15.60536			-48.02835	527616.4	391189	RM 0+50.5	
0+50.5	0+66.6	339	5.916666	16.1	0.93358	-0.358368	15.03064			-5.769724	527631.4	391183.2	RM 0+66.6	
0+66.6	0+84.0	60	1.047198	17.4	0.5	0.866025	8.7		15.06884		527640.1	391198.3	RM 0+84.0	
0+84.0	0+97.8	54	0.942478	13.8	0.587785	0.809017	8.111436		11.16443		527648.2	391209.4	RM 0+97.8	
0+97.8	1+10.8	61	1.064651	13	0.48481	0.87462	6.302525		11.37006		527654.5	391220.8	RM 1+10.8	
1+10.8	1+20.6	124	2.164208	9.8	-0.559193	0.829038		-5.48009	8.124568		527649.1	391228.9	RM 1+20.6	open cut Rampalo#2 Adit
1+20.6	1+31.7	103	1.797689	11.1	-0.224951	0.97437		-2.496957	10.81551		527646.6	391239.7	RM 1+31.7	ID Post Rampalo Fr.
1+31.7	1+40.0	319	5.5676	8.3	0.75471	-0.656059	6.26409			-5.44529	527652.8	391234.3	RM 1+40.0	
1+40.0	1+56.0	306	5.340708	16	0.587785	-0.809017	9.404564			-12.94427	527662.2	391221.4	RM 1+56.0	
1+56.0	1+68.5	327	5.707227	12.5	0.838671	-0.544639	10.48338			-6.807988	527672.7	391214.5	RM 1+68.5	
1+68.5	1+98.7	310	5.410521	30.2	0.642788	-0.766044	19.41219			-23.13454	527692.1	391191.4	RM 1+98.7	IP Rampalo Fr.
1+98.7	2+10.3	324	5.654867	11.6	0.809017	-0.587785	9.384597			-6.818309	527701.5	391184.6	RM 2+10.3	#1 Post Rampalo C.G.
TITLE: CL TRAVERSE - OCTOBER 15, 1992							COSINE * DISTANCE		SINE * DISTANCE		Latitude	Departure	Station	
From Stn.	To Stn.	Bearing	Radians	Distance	Cosine	Sine	North +	South -	East +	West -	527646.6N	391239.7E	CL 0+00	(RM 1+31.7)
0+00	0+18.8	135	2.356194	18.8	-0.707107	0.707107		-13.29361	13.29361		527633.3	391253	CL 0+18.8	
0+18.8	0+38.0	135	2.356194	19.2	-0.707107	0.707107		-13.57645	13.57645		527619.7	391266.6	CL 0+38	
0+38.0	0+67.4	135	2.356194	29.4	-0.707107	0.707107		-20.78894	20.78894		527598.9	391287.4	CL 0+67.4	shaft collar 1m. NE
0+67.4	0+87.1	135	2.356194	19.7	-0.707107	0.707107		-13.93	13.93		527585	391301.3	CL 0+87.1	
0+87.1	1+00.7	81	1.413717	13.6	0.156434	0.987688	2.127509		13.43258		527587.1	391314.7	CL 1+00.7	
1+00.7	1+12.5	112	1.954769	11.8	-0.374607	0.927184		-4.420358	10.94077		527582.7	391325.7	CL 1+12.5	
1+12.5	1+26.7	345	6.021386	14.2	0.965926	-0.258819	13.71615			-3.67523	527596.4	391322	CL 1+26.7	(ZAL 18+15.4)
											527599.3	391323.5	(ZAL 18+15.4)	
									Error of Closure		2.865703	1.512899		
TITLE: SILVER LUMP ADIT TRAVERSE - OCTOBER 15, 1992							COSINE * DISTANCE		SINE * DISTANCE		Latitude	Departure	Station	
From Stn.	To Stn.	Bearing	Radians	Distance	Cosine	Sine	North +	South -	East +	West -	527599.3N	391323.5E	CL1+26.7=ZAL18+15.4=Open cut to SL Adit	
0+00	0+9.5	263	4.590216	9.5	-0.121869	-0.992546		-1.157759		-9.429188	527598.1	391314.1	Portal Silver Lump Adit	
0+9.5	0+24.7	278	4.852015	15.2	0.139173	-0.990268	2.115431			-15.05207	527600.3	391299		
0+24.7	1+13.3	276	4.817109	88.6	0.104528	-0.994522	9.261222			-88.11464	527609.5	391210.9		
1+13.3	1+33.6	276	4.817109	20.3	0.104528	-0.994522	2.121928			-20.18879	527611.6	391190.7	Face Silver Lump Adit	
TITLE: UPPER RAMPALO ADIT TRAVERSE - OCTOBER 15, 1992							COSINE * DISTANCE		SINE * DISTANCE		Latitude	Departure	Station	
From Stn.	To Stn.	Bearing	Radians	Distance	Cosine	Sine	North +	South -	East +	West -	527616.4N	391189.0E	URA0+00	= (RM 0+50.5)
0+00	0+19.5	223	3.892084	19.5	-0.731354	-0.681998		-14.2614		-13.29897	527602.1	391175.7		
0+19.5	0+31.5	223	3.892084	12	-0.731354	-0.681998		-8.776244		-8.18398	527593.4	391167.5		
0+31.5	0+39.2	217	3.787364	7.7	-0.798636	-0.601815		-6.149493		-4.633976	527587.2	391162.9		
TITLE: MISC. POINTS - OCT 15-16, 1992							COSINE * DISTANCE		SINE * DISTANCE		Latitude	Departure	Station	
Rampalo Area:											527649.1N	391228.9E	RM1+20.6	
RM1+20.6	LRM Adit	236	4.118977	23.5	-0.92846	-0.371432		-21.81881		-8.728654	527627.3	391220.2	Lower Rampalo Adit Portal	
Lumpy Showings:											526962.4N	390520.6E	Lumpy Grid Stn. 6+00N, 0+80E	
6+00,0+80	6+00,0+00	270	4.712389	80	0	-1				-80	526962.4	390440.6	1991 Grid Stn. 6+00N, 0+00E/W	
Belik Grid Tie-in:											527084.6N	390767.4E	LUM 8+42.6	
LUM842.6	L24,5+00N	51	0.890118	17.5	0.62932	0.777146	11.01311		13.60005		527075.6	390781	Belik Grid L. 24, 5+00N	

Table #4

TITLE: LUM TRAVERSE - (LP road Ram. to Lum.) OCTOBER 16, 1992							COSINE*DISTANCE		SINE * DISTANCE		Latitude	Departure	Station		
From Stn.	To Stn.	Bearing	Radians	Distance	Cosine	Sine	North +	South -	East +	West -	527600.8N	391237.0E	LUM 0+00	(ZAL 19+47.1)	
0+00	0+16.9	238	4.153884	16.9	-0.529919	-0.848048		-8.955636		-14.33201	527591.8	391222.7	0+16.9		
0+16.9	0+51.0	190	3.316126	34.1	-0.984808	-0.173648		-33.58194		-5.921403	527558.3	391216.7	0+51.0		
0+51.0	0+75.1	157	2.740167	24.1	-0.920505	0.390731		-22.18417	9.41662		527536.1	391226.2	0+75.1	Grazina grid line?	
0+75.1	1+25.3	198	3.455752	50.2	-0.951057	-0.309017		-47.74304		-15.51265	527488.3	391210.7	1+25.3		
1+25.3	1+47.1	145	2.530727	21.8	-0.819152	0.573576		-17.85751	12.50397		527470.5	391223.2	1+47.1		
1+47.1	1+86.7	202	3.525565	39.6	-0.927184	-0.374607		-36.71648		-14.83442	527433.8	391208.3	1+86.7		
1+86.7	2+10.1	152	2.6529	23.4	-0.882948	0.469472		-20.66097	10.98563		527413.1	391219.3	2+10.1		
2+10.1	2+44.7	199	3.473205	34.6	-0.945519	-0.325568		-32.71494		-11.26466	527380.4	391208	2+44.7		
2+44.7	2+98.2	208	3.630285	53.5	-0.882948	-0.469472		-47.2377		-25.11673	527333.1	391182.9	2+98.2		
2+98.2	3+38.7	226	3.944444	40.5	-0.694658	-0.71934		-28.13366		-29.13326	527305	391153.8	3+38.7		
3+38.7	3+81.0	239	4.171337	42.3	-0.515038	-0.857167		-21.78611		-36.25818	527283.2	391117.5	3+81.0		
3+81.0	4+38.9	250	4.363323	57.9	-0.34202	-0.939693		-19.80297		-54.4082	527263.4	391063.1	4+38.9		
4+38.9	4+57.5	182	3.176499	18.9	-0.999391	-0.034899		-18.88849		-0.6596	527244.5	391062.5	4+57.5		
4+57.5	4+83.3	248	4.328417	25.8	-0.374607	-0.927184		-9.66485		-23.92134	527234.9	391038.5	4+83.3		
4+83.3	5+32.1	255	4.45059	48.8	-0.258819	-0.965926		-12.63037		-47.13718	527222.2	390991.4	5+32.1		
5+32.1	5+80.3	233	4.066617	48.2	-0.601815	-0.798636		-29.00748		-38.49423	527193.2	390952.9	5+80.3		
5+80.3	6+32.7	222	3.874631	52.4	-0.743145	-0.669131		-38.94079		-35.06244	527154.3	390917.8	6+32.7		
6+32.7	6+58.4	197	3.438299	25.7	-0.956305	-0.292372		-24.57703		-7.513953	527129.7	390910.3	6+58.4		
6+58.4	6+78.5	153	2.670354	20.1	-0.891007	0.45399		-17.90923		9.125209	527111.8	390919.5	6+78.5		
6+78.5	6+96.2	228	3.979351	17.7	-0.669131	-0.743145		-11.84361		-13.15366	527100	390906.3	6+96.2		
6+96.2	7+32.0	253	4.415683	35.8	-0.292372	-0.956305		-10.46691		-34.23571	527089.5	390872.1	7+32.0		
7+32.0	7+70.1	266	4.642576	38.1	-0.069756	-0.997564		-2.657722		-38.00719	527086.8	390834.1	7+70.1		
7+70.1	8+04.0	258	4.502949	33.9	-0.207912	-0.978148		-7.048206		-33.1592	527079.8	390800.9	8+04.0		
8+04.0	8+25.8	230	4.014257	21.8	-0.642788	-0.766044		-14.01277		-16.69977	527065.8	390784.2	8+25.8		
8+25.8	8+42.6	266	4.642576	16.8	-0.069756	-0.997564		-1.171909		-16.75908	527064.6	390767.4	8+42.6		
8+42.6	8+74.9	219	3.822271	32.3	-0.777146	-0.62932		-25.10181		-20.32705	527039.5	390747.1	8+74.9		
8+74.9	9+13.2	248	4.328417	38.3	-0.374607	-0.927184		-14.34743		-35.51114	527025.2	390711.6	9+13.2		
9+13.2	9+61.4	204	3.560472	48.2	-0.913545	-0.406737		-44.03289		-19.60471	526981.1	390692	9+61.4		
9+61.4	9+90.5	221	3.857178	29.1	-0.75471	-0.656059		-21.96205		-19.09132	526959.2	390672.9	9+90.5		
9+90.5	10+30.8	194	3.385939	40.3	-0.970296	-0.241922		-39.10292		-9.749452	526920.1	390663.2	10+30.8	(LRd. 0+00)	
10+30.8	10+70.4	166	2.897247	39.6	-0.970296	0.241922		-38.42371		9.580107	526881.6	390672.7	10+70.4		

TITLE: LRd. TRAVERSE (LP road to Lumpy) - OCTOBER 16, 1992							COSINE*DISTANCE		SINE * DISTANCE		Latitude	Departure	Station		
From Stn.	To Stn.	Bearing	Radians	Distance	Cosine	Sine	North +	South -	East +	West -	526920.1N	390663.2E	LRd.0+00	(LUM 10+30.8)	
0+00	0+25.9	240	4.18879	25.9	-0.5	-0.866025		-12.95		-22.43006	526907.2	390640.8	0+25.9		
0+25.9	0+42.2	336	5.864306	16.3	0.913545	-0.406737	14.89079			-6.629807	526922	390634.1	0+42.2		
0+42.2	0+71.3	310	5.410521	29.1	0.642788	-0.766044	18.70512			-22.29189	526940.7	390611.8	0+71.3		
0+71.3	0+83.5	270	4.712389	12.2	0	-1	0	0		-12.2	526940.7	390599.6	0+83.5		
0+83.5	1+46.0	297	5.183628	62.5	0.45399	-0.891007	28.37441			-55.68791	526969.1	390544	1+46.0		
1+46.0	1+54.3	238	4.153884	8.3	-0.529919	-0.848048		-4.39833		-7.038799	526964.7	390536.9	1+54.3		
1+54.3	1+70.8	262	4.572763	16.5	-0.139173	-0.990268		-2.296356		-16.33942	526962.4	390520.6	1+70.8	Lumpy Grid 6+00N,0+80E	

Table #5

TITLE: VIC TRAVERSE - OCTOBER 16, 1992							COSINE*DISTANCE		SINE * DISTANCE		Latitude	Departure	Station	
From Stn.	To Stn.	Bearing	Radians	Distance	Cosine	Sine	North +	South -	East +	West -	527616.4N	391189.0E	VIC 0+00	(RM 0+50)
0+00	0+27.6	276	4.817109	27.6	0.104528	-0.994522	2.884986			-27.4488	527619.3	391161.6	0+27.6	
	0+52.1	253	4.415683	24.5	-0.292372	-0.956305		-7.163107		-23.42947	527612.1	391138.1	0+52.1	
	0+65.4	252	4.39823	13.3	-0.309017	-0.951057		-4.109826		-12.64905	527608	391125.5	0+65.4	
	0+83.2	264	4.607669	17.8	-0.104528	-0.994522		-1.860607		-17.70249	527606.2	391107.8	0+83.2	
	1+19.0	264	4.607669	35.8	-0.104528	-0.994522		-3.742119		-35.60388	527602.4	391072.2	1+19.0	
	1+33.8	253	4.415683	14.8	-0.1455	-0.956305		-2.153401		-14.15331	527600.3	391058	1+33.8	
	1+70.7	267	4.660029	36.9	-0.052336	-0.99863		-1.931197		-36.84943	527598.3	391021.2	1+70.7	trail jnt. to Lumpy
	2+02.7	255	4.45059	32	-0.839072	-0.965926		-26.85029		-30.90963	527571.5	390990.3	2+02.7	creek
	2+19.9	268	4.677482	17.2	-0.034899	-0.999391		-0.600271		-17.18952	527570.9	390973.1	2+19.9	
	2+35.5	289	5.044002	18.6	0.325568	-0.945519	6.055568			-17.58665	527576.9	390955.5	2+35.5	
	2+69.0	264	4.607669	30.5	-0.104528	-0.994522		-3.188118		-30.33292	527573.7	390925.1	2+69.0	edge of clearing
	3+35.8	262	4.572763	66.8	-0.139173	-0.990268		-9.296763		-66.14991	527564.4	390859	3+35.8	
	3+84.4	302	5.270894	48.6	0.529919	-0.848048	25.75408			-41.21514	527590.2	390817.8	3+84.4	
	4+26.2	341	5.951573	41.8	0.945519	-0.325568	39.52268			-13.60875	527629.7	390804.2	4+26.2	
	4+48.7	343	5.986479	22.5	0.956305	-0.292372	21.51686			-6.578363	527651.2	390797.6	4+48.7	
	4+96.5	346	6.038839	47.8	0.970296	-0.241922	46.38014			-11.56387	527697.6	390786	4+96.5	
	5+50.8	339	5.916666	54.3	0.93358	-0.358368	50.69342			-19.45938	527744	390766.6	5+50.8	Victoria West Dump
	5+63.4	252	4.39823	12.6	-0.309017	-0.951057		-3.893614		-11.98331	527740.1	390754.6	5+63.4	1991 Sample PR5-S1

TITLE: VET TRAVERSE - Victoria East Showings - OCTOBER 16, 1992							COSINE*DISTANCE		SINE * DISTANCE		Latitude	Departure	Station	
From Stn.	To Stn.	Bearing	Radians	Distance	Cosine	Sine	North +	South -	East +	West -	527571.5N	390990.3E	VET 0+00	(VIC 2+02.7)
0+00	0+42.3	360	6.283185	42.3	1	0	42.3		0		527613.8	390990.3	0+42.3	
	0+64.1	16	0.279253	21.8	0.961262	0.275637	20.9555		6.008894		527634.7	390996.3	0+64.1	old trench
	1+16.0	22	0.383972	51.8	0.927184	0.374607	48.02812		19.40462		527682.8	391015.7	1+16.0	
	1+47.3	334	5.8294	31.3	0.898794	-0.438371	28.13225			-13.72102	527710.9	391001.9	1+47.3	
	1+70.3	1	0.017453	23	0.999848	0.017452	22.9965		0.401405		527733.9	391002.3	1+70.3	
	1+91.0	341	5.951573	20.7	0.945519	-0.325568	19.57223			-6.739261	527753.5	390995.6	1+91.0	old trench
	2+07.7	21	0.366519	16.7	0.93358	0.358368	15.59079		5.984745		527769	391001.6	2+07.7	(1991 Sample 9216)

TITLE: MISC. POINTS - OCTOBER 15-16, 1992							COSINE*DISTANCE		SINE * DISTANCE		Latitude	Departure	Station	
From Stn.	To Stn.	Bearing	Radians	Distance	Cosine	Sine	North +	South -	East +	West -	527769.0N	391001.6E	VET 2+07.7	
VET207.7	G2S/1450	355	6.195919	43.5	0.996195	-0.087156	43.33447			-3.791275	527812.4	390997.8	Grazina Grid 2S/14+50W	

From Stn.	To Stn.	Bearing	Radians	Distance	Cosine	Sine	North +	South -	East +	West -	527064.6N	390767.4E	LUM 8+42.6	
LUM842.7	B24/500N	51	0.890118	17.5	0.62932	0.777146	11.01311		13.60005		527075.6	390781	Belik Grid L24E/5+00N	

From Stn.	To Stn.	Bearing	Radians	Distance	Cosine	Sine	North +	South -	East +	West -	527651.2N	390797.6E	VIC 4+48.7	
VIC448.7	VIC447.3	163	2.844887	1.4	-0.956305	0.292372		-1.338827	0.40932		527649.9	390798	1991 Grid Stn. 13+90N,0+00E/W	
13+90,0+0(	10+00,0+0(	207.4679	3.620997	382.5439	-0.88727	-0.461251		-339.4196		-176.4488	527310.5	390621.6	1991 Grid Stn. 10+00N, 0+00E/W	
10+00,0+0(	10+00,15+(	300	5.235988	1500	0.5	-0.866025	750			-1299.038	528060.5	389322.5	1991 Grid Stn. 10+00N, 15+00W	
10+00,15+(	0+00,15+0(	210	3.665191	1000	-0.866025	-0.5		-866.0254		-500	527194.5	388822.5	1991 Grid Stn. 0+00N, 15+00W	
0+00,15+0(	0+00,10+0(	120	2.094395	500	-0.5	0.866025		-250	433.0127		526944.5	389255.5	1991 Grid Stn. 0+00N, 10+00W	
0+00,10+0(	0+70,10+0(	30	0.523599	70	0.866025	0.5	60.62178		35		527005.1	389290.5	1991 Grid Stn. 0+70N, 10+00W	
0+70,10+0(	17W,250N	55	0.959931	15	0.573576	0.819152	8.603647		12.28728		527013.7	389302.8	Belik Grid L17W,2+50N	

Table #6

VERTANGL.XLS

TITLE. VERTICAL ANGLES - ELEVATION DIFFERENCES							
From Stn.	To Stn.	Vert. Angle	Radians	Sine	Distance	Vert. Dist.	Cumulative
RM0+50.5	0+66.6	-6.6667	-0.11636	-0.11609	16.1	-1.86911	-1.86911
	0+84.0	-13	-0.22689	-0.22495	17.4	-3.91415	-5.78325
	0+97.8	-15.5	-0.27053	-0.26724	13.8	-3.68789	-9.47114
	1+10.8	-10.5	-0.18326	-0.18224	13	-2.36906	-11.8402
	1+20.6	-1	-0.01745	-0.01745	9.8	-0.17103	-12.0112
	1+31.7	-6.6667	-0.11636	-0.11609	11.1	-1.28864	-13.2999
	0+18.8	0.6667	0.011636	0.011636	18.8	0.218754	-13.0811
	0+38.0	0.6667	0.011636	0.011636	19.2	0.223408	-12.8577
	0+67.4	4.5	0.07854	0.078459	29.4	2.306697	-10.551
	0+87.1	-1.3333	-0.02327	-0.02327	19.7	-0.45839	-11.0094
	1+00.7	-15.1667	-0.26471	-0.26163	13.6	-3.55814	-14.5675
	1+12.5	-23.8333	-0.41597	-0.40408	11.8	-4.76811	-19.3357
	1+26.7	1.1667	0.020363	0.020361	14.2	0.289131	-19.0465

Table #9

The accessable underground workings on the Silver Lump and the Rampalo claims were surveyed and vertical angle readings were taken in order to determine elevation differences between the collar of the Upper Rampalo Adit and the Silver Lump Adit. These surveys were tied in to the survey of the Rampalo C.G. boundary to determine the location of these adit with reference to the old claim boundaries. It was determined that although the Silver Lump Adit is collared on the Silver Lump C.G. (which is owned by Grazina Resources Ltd.), the undergroung working pass onto the Rampalo claim at a point approximately 35 metres from the collar. This adit extends a further 100 metres under the Rampalo claim. This underground working will provide very valuable information about the geology of the area and also provides access to the area some 20 metres down dip from the Rampalo vein. It is as yet uncertain whether the vein encountered some 9.2 metres back from the face is the down dip extension of the Rampalo Vein or a second vein. Further investigation will be required.

ROCK SAMPLING PROGRAM:

In addition to the 311 soil samples analysed, 10 rock samples were submitted for analysis. Of these samples three were collected from locations at the Lumpy workings in late 1991 and one was collected from the Victoria West showing in late 1991. The remaining six samples were collected from the in and near the Upper Rampalo Adit and from in the Silver Lump Adit beyond the point were this adit passes onto the Rampalo claim.

The results of these assays were initially submitted as rock geochemical sample to be analysed for the same "Gold+29" assay package as was conducted on the soil samples. Upon receiving some very high gold and silver analyses, five of these samples were submitted for combined gold/silver fire assays and metallic screening. It is evident from the screen analyses that some metallic gold and silver material was collected in the +150 mesh fraction which would normally have bee discarded. Although these metallic fractions assayed very high values for gold and silver the weight of the material collected on the screen was very small and resulted in on a small increase in the over all assay value when added back in. See the appropriate assay certificates for further information.

Sample Descriptions-

Samples Collected in 1991-

9236 - Lumpy # 2 Adit Area - Trench approximately 10 metres south of adit headwall. Three and one half metre sample collected as a continuous chip along the south side of the trench. Limestone unit with local pyrite and minor galena/sphalerite mineralization; minor quartz stringers. Slightly elevated value in zinc and strontium otherwise no elevated values from the other 27 elements tested.

#9237 - Lumpy # 2 Adit Area - Portal open cut, west wall. Grab from along a 3.2 metre length of the west wall starting outside portal . Limestone dipping 45 degrees south-westerly, striking approximately south-east. No visible sulphides. Weakly anomalous zinc values and elevated strontium values, otherwise no elevated values from the other 28 elements tested.

#9239 - Lumpy # 1 Adit (U/G) - East wall across from side drift. Grab from across a 2 metre segment of the wall. Numerous small shears with minor quartz stringers and minor pyrite. Only the level of mercury and strontium, which returned 0.099 ppm and 282 ppm respectively were weakly anomalous; no elevated values from the other 27 elements tested.

#9238 - Victoria West Area - Grab across approximately four metres along the north side of the old trench; between the two veins previously sampled. Minor pyrite occuring in rusty meta-volcanics and porphyry dyke material. Gold, silver, lead, zinc, arsenic and cadmium reported elevated values indicating the presence of these elements. A more detailed sampling of the individual rock units may isolate the causative source of these anomalous readings. Assays returned 0.008 o.p.t. gold and 0.27 o.p.t. silver.

Samples Collected in 1992-

Rampalo Vein - Adit # 1 - Sample chipped from ~60 cm. (two foot) wide portion of the Rampalo Vein. Stike of vein is 217 degrees; dip is 63 degrees to the east. The vein widens to three feet at the face where in bend to strike 228 degrees. The sample was collected from the vein near the floor line on the east side of the adit approximately two metres back from the face. The vein consists mainly of quartz with minor calcite stringers and is mineralized with pyrite, tetrahedrite and minor galena and sphalerite. This sample returned high values in gold, silver, copper, lead, zinc, arsenic and cadmium. The sample was assayed for gold and silver giving total gold values of 0.350 o.p.t. and total silver values of 34.88 o.p.t..

Rampalo Stk. Pile - Adit # 1 - Sample of material collected from a pile of mineralized vein material piled on the north-west corner of the Rampalo Adit # 1 dump. This material had obviously been selected for shipping by the historic miners. Close examination of this material shows this moderately rusty and malachite stained quartz and calcite vein material; with tetrahedrite, pyrite and native silver with minor galena and sphalerite. The sample has high values in silver, gold, lead, zinc, arsenic, copper and cadmium; with assays for a total silver content of 42.87 o.p.t. and total gold content of 0.135 o.p.t..

Rampalo Dump - Adit # 1 - Sample of quartz vein material from the main dump of the Rampalo Adit # 1. This material had been obviously discarded by the historic miners and covers a significant portion of the top of the old dump. The white to rust stained quartz material contains significant blebs and patches of massive pyrite (similar to Dictator C.G. located ~5 km. north-west). The sample has high values in gold, silver, lead, zinc, arsenic, cadmium and minor copper. Assays gave total gold values of 0.454 o.p.t. and total silver values of 9.18 o.p.t.. The old time miners were obviously keying in to the copper/silver combination and felt that the quartz with pyrite contained little silver.

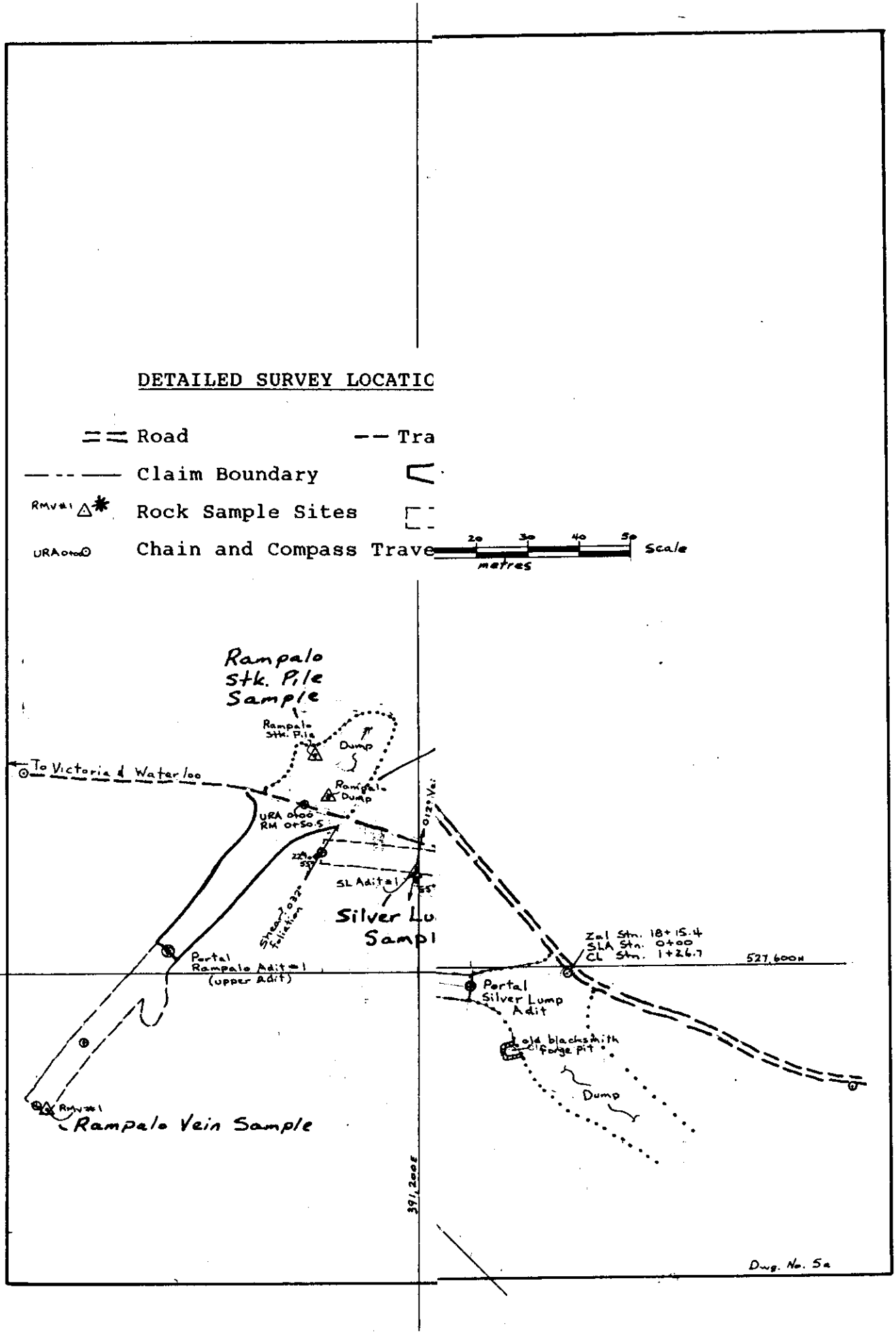
Silver Lump Adit -

Sample # 1 SL Adit - Down dip extension of Rampalo vein?? Grab sample collected from a narrow vein occuring 9.2 metres back from the face of the Silver Lump Adit which occurs some 19 metres below and some 40 to 50 metres north-east of the face in the Rampalo Adit # 1. The vein dips 55 to 85 degrees and strikes approximately 012 degrees. The quartz - minor calcite matrix vein contained minor sulphides; mainly pyrite with some galena and sphalerite. The sample runs high in arsenic, silver, gold; with lesser lead and zinc. Assays returned total silver of 4.62 o.p.t. and total gold of 0.084 o.p.t..

Sample #2 SL Adit - Strata bound, altered, volcanic flow?? or dyke?? with calcite stringers and minor pyrite. Similar in appearance to material remaining in walls of that portion of the adit which has been stoped out (see below). The flow or dyke is conformable to the adjacent lithology and has a strike of 032 degrees, with a dip of 42 degrees easterly. The system was sampled across the full 85 cm. thickness at a location 85.9 metres in from the portal. This system is anomalous in silver and mercury; and is weakly anomalous in gold, manganese nickel, cobalt and strontium.

Sample #3 SL Adit - Stata bound, altered, volcanic flow?? of dyke?? with clay (kaolin alteration?) and pyrite. Similar in appearance/occuance to Sample #2 SL Adit described above. Strike is 018 degrees and dip is 32 degrees easterly. Located 11.5 metres in from the portal. System was sampled across the full 35 cm. width. This system is anomalous in silver, gold and mercury and has elevated values of manganese and strontium.

The stoped out location in the Silver Lump Adit is at a point 12.9 metres in from the portal and is on the Silver Lump claim. There is no record of values contained, nor were there any good specimens accessible to examine what was removed from this stope; although it is evident that a great effort was made to extract the down to only a few inches in width. The maximum thickness of the mined unit appears to have been about two metres. The stoped area is about 15 metres long, at which point it breaks through to surface; and it is about 10 metres wide. Old timbers and loose rock made it to dangerous to attempt to get a specimen for examination or analysis.


DETAILED SURVEY LOCATIC
Road
Tra
Claim Boundary
Rock Sample Sites
Chain and Compass Trave
20
30
40
50
metres
Scale
Rampalo
Stk. Pile
Sample
Rampalo Stk. Pile
Dump
Rampalo Dump
To Victoria & Waterloo
URA 0+00
RM 0+50.5
SL Adit #1
Silver Lu
Sampl
Shear 032°
Foliation
Portal
Rampalo Adit #1
(upper Adit)
Zal Stn. 18+15.4
SLA Stn. 0+00
CL Stn. 1+26.7
527,600N
Portal
Silver Lump
Adit
old blacksmith
forge pit
Dump
RMV #1
Rampalo Vein Sample
391,200E
Dwg. No. 5a

APPENDIX 2

It is important to note that whatever was removed from this stope appears to have been transported from the site as there is no evidence of a stockpile outside the portal. The mineral content of the material removed should be determined by sampling underground. It is probable, considering the amount of work done, that this system contained significant values. This information may lead to the determination that significant statabound mineralization occurs in the area.

AIRPHOTO LINEATION STUDY:

To assist in determining geological trends and lithological contacts an airphoto lineation study was undertaken. This was facilitated by Zalmac having obtained a large scale (1:12,000) airphoto mosaic of the entire roof pendant area surrounding Lightning Peak. The airphoto mosaic and corresponding topographic map work was performed on behalf of Mohawk Oil Co. by Pacific Survey Corporation in 1981.

Only a portion of this photo was studied, that being the part within the current survey area. The most prominent lineations visible on the photo mosaic were highlighted on the airphoto and thereafter traced onto the 1:12,000 topographic base map that was prepared for the same area. These lineations have all been enlarged and transposed onto the new 1:5,000 scale base map and are shown on Drawing #12 located in the back pocket of this report.

There are four main sets of geological structures evident, which are:

1. North/South trending faults and/or shears;
2. North-east/South-west trending faults and/or shears;
3. North-west/South-east trending lithologies and/or shears;
4. East-West trending faults and/or shears.

Sets 1 and 2 above represent those trends interpreted to most likely host gold mineralization (Dictator, Au, Rampalo and Victoria). The best locations for concentrations of mineralization to occur is at the intersection of these and crossing structures from Sets 3 and 4.

Set 3 above are interpreted to represent trends of the underlying lithological units and are most likely demarkations of the boundaries of limestone units. These trends coincide with the trace of the most prominent VLF-EM anomalies. Intersections of these trends with trends representing Set 2 structures are considered most favourable.

Set 4 above are interpreted to represent structural trends which may host "Waterloo Type" veins. The Silver Spot #3 vein appears to be associated with this trend but has been offset by north/south faulting. It is possible that the Silver Spot #3 is itself an extension of the Waterloo vein itself.

DISCUSSION OF RESULTS:

The good direct correllation and/or flanking relationship between anomalous economic minerals in the soil sampled in the survey area has resulted in highly potential targets being discovered. Were additional information is available from either the 1985 VLF-EM survey, from geological information on the ground, from air photo lineation study or from historic data, there is a repeated indication that mineralized faults/shears and mineralized rocks units occur within and likely adjacent to the surveyed area. The main target areas defined are listed below:

1. The old Rampalo and Silver Lump C.G. areas are the first sites explored by prospectors before the turn of the century. Once again this area should be the focus of mineral exploration. Gold bearing veins in the Upper Rampalo and Silver Lump Adits are associated with a series of north-east trending shears of faults. These shears are part of a broad and extensive shear zone which extends from Lightning Peak in the south-west to beyond the Silver Lump C.G. in the north-east. It is probable that this shear zone extends to the northern boundary of the Anarchist Group rocks which host most of the mineral deposits known to date in the area. Other gold bearing vein systems are known to occur to the west of the Rampalo vein system. The Victoria East and Victoria West are two examples. Here veins give gold values ranging up to 0.5 oz. per ton and silver values up to 44 oz. per ton plus minor associated zinc, lead and copper base minerals. Reports from the 1930's note float samples reportedly grading 0.74 oz. per ton gold and 160 oz. per ton silver from this same area. The northern extent of the VLF-EM survey conducted by Zalmac in 1985 appears to have detected some of these north-east trending structures despite the adverse angle of the surveyed signal in Annapolis, Maryland (virtually at right angles with the conductor). Detection even at this adverse angle suggests a very strong conductor is present. Extension of these conductors on strike with the north-easterly trending shears, determined from air photo lineations, suggest that these VLF-EM conductors could be the extension of the Victoria showings and that the Rampalo vein extension could occur in the vicinity of the Lumpy showings. These findings make this area a prime target for a significant gold (silver-base metal) mineral deposit.

2. Additionally, the 1985 VLF-EM survey appears to correlate very well with gold values in the western half of the surveyed area and with stratigraphy. The

direct correlation between VLF-EM conductors, stratigraphy and gold values strongly supports the theory previously presented by the writer that stratabound gold mineralization and possibly copper-gold skarn mineralization occur on the property. Extensive silver-base metal soil anomalies appear to parallel the gold occurances. Good correlation between air photo lineations and soil geochemical anomalies suggest that further, more detailed VLF-EM and Magnetometer surveys will be very beneficial in mapping stratigraphy and tracing mineralized zones. As yet no physical work has been conducted in these areas. The main areas of interest appear to be centered at Stn. 4+00N on Line 14W, Stn. 5+80N on Line 13W, Stn. 10+00N on Line 10W and at Stn. 11+80N on Line 12W.

3. It remains necessary to extend the soil geochemical survey over the full area not previously completed; as recommended in 1991 reports by the writer. This will allow for determination of continuity of soil anomalies from the east half to the west half of the grid. It also remains necessary to conduct previously recommended VLF-EM and Magnetometer surveys. This will allow definition of structures and lithological units which have been shown to be associated with significant precious and base metal occurances. The proposed survey areas must now be extended to cover the Rampalo workings and portions of the ground once covered by Grazina's claims. Additional VLF-EM survey work, oriented to best pick up the north-easterly trends, should be conducted over the Rampalo-Victoria-Lumpy target area.

4. Physical work such as trenching, mapping and sampling can commence in areas of known mineral occurances and in the Rampalo and Silver Lump underground workings.

Valuable information about the structural geology and stratigraphy can be obtained by detailed mapping and sampling of the Silver Lump adit. This would require the walls to be washed and "barred" down to remove accumulated dirt and any loose rock, ditching to drain water, hand mucking to expose some contacts at the adit floor line.

Trenching, geological mapping and sampling in the vicinity of the Victoria East, Victoria West and Victoria South showings as well as in the vicinity of the various Silver Spot showings could commence immediately after ground conditions allow access in 1993.

CONCLUSIONS AND RECOMMENDATIONS:

Based on interpretation of Airphoto Lineations, 1985 VLF-EM Data, 1992 Soil Geochemical Data and other available information it has been determined that three main areas show very favorable indications of gold, silver and base metal mineralization. Spot locations within these areas have already been the focus of "historic" exploration, although the majority of this work was done before 1930 and there is little or no specific information available. The airphoto lineation and soil geochemical work conducted by Zalmac in 1991-92 and the partial VLF-EM survey conducted by Zalmac in 1985 have been instrumental in the detection of these zones which now warrant follow-up work in order to fully assess there economic potential.

The areas not yet covered by soil geochemical surveys must be completed as there is a high probability that other highly potential areas have yet to be detected; likewise, this will provide the information necessary to determine the continuity of various anomalies.

The recommended two station VLF-EM survey and the recommended magnetometer survey will be very beneficial when it comes to tracing mineralized shear/fault zones and/or lithological units. The occurance of gold, silver and base metal values in the soils in the vicinity of lithological contacts and along interpreted shear/fault zones indicate that two seperate geologic controls have to be considered at all times. The multi-directional shear/fault systems have provided excellent plumbing along which mineralizing fluids could enter the overlying Anarchist Group rock units.

The three main zones detected to date occur at locations where multiple structural/lithological controls coincide and/or extend along major structural trends. The broad north-east trending zone extending from north-east of the Silver Lump C.G. to south-west of the Lumpy Showings appears to be the most favourable zone in which to explore for gold and associated silver-base metal mineralization. Considering the encouraging assay results obtained from the vicinity of the numerous old workings and the associated soil geochemical values and geophysical anomalies discovered to date it is expected that significant gold-silver-base metal will be located associated with the north-east trending structures.

The other two areas of interest appear to be more multi-metallic and more closely associated with lithology which suggests the possiblity of a large replacement or skarn type deposit and/or Waterloo Type mineralization. Good success can be expected utilizing combined VLF-EM, magnetometer, soil geochemistry and geological mapping to detect and trace these type of occurances. Physical work such as trenching, drilling and sampling will be required to further assess their economic potential but should not be conducted until the basic exploration surveys have all been completed.

COST STATEMENT

Contract Services:

Y-H Technical Services Ltd.
For the period October 8, 1992 to January22, 1993

Reagent Cleanup at Waterloo Mill site - Oct. 8 & 22/92		
- 1 man day R.W.Yorke-Hardy - A.Sc.T.	$ 250.00	
- 2 man days helpers at $150/man day	$ 300.00	
- 1 man day to dispose of reagents	$ 250.00	
- 2 days vehicle rental at $50/day	$ 100.00	
- supplies - containers and plastic bags	$ 20.00	
- gas	$ 62.50	
Sub Total	$ 982.50	$ 982.50
Chain and Compass Surveys Sampling - Oct. 15 & 16/92		
- 2 man days R.W. Yorke-Hardy	$ 500.00	
- 2 man days surveyor helper at $175/man day	$ 350.00	
- 2 days vehicle at $50/day	$ 100.00	
- gas	$ 62.50	
- supplies - flagging, pens, notebook & thread	$ 105.54	
Sub Total	$ 1,218.04	$ 1,218.04
Sample Analyses		
311 Soil samples all in	$ 4,492.40	
10 Rock geochem	$ 175.69	
5 Gold/Silver Assays and screen tests	$ 151.41	
Sub Total	$ 4,819.50	$ 4,819.50
Data compilation, program planning :		
- 12 man days R.W. Yorke-Hardy at $250/day	$ 3,000.00	
- 1 man day labourer at $125.00/day	$ 125.00	
Sub Total	$ 3,125.00	$ 3,125.00
Drafting and plotting:		
- 8 man days R.W. Yorke-Hardy at $250.00/day	$ 2,000.00	$ 2,000.00
Report Writing:		
- 3 man days R.W. Yorke-Hardy at $250.00/day	$ 750.00	$ 750.00
Office Expenses:		
- Report Typing and copying	$ 250.00	
- Shipping	$ 75.00	
- Misc. equipment rental	$ 100.00	
- map printing and photo enlarging	$ 300.00	
Sub Total	$ 725.00	$ 725.00
Total Value of Work Performed		$13,920.04

BIBLIOGRAPHY:

Cairnes, C.E. (1930): Lightning Peak Area, Osoyoos District, B.C. G.S.C. Annual Report 1930, Part A, pp. 79-115.

Bayrock, L.A. (1980): Dick and Big P Claims, Lightning Peak Ag-Pb-Zn Mineralization Area; Private Report for Zalmac Mines Ltd.

Yorke-Hardy, R.W.(1991): Report on Zalmac Mines Ltd's P & Z Mineral Claims Located on Lightning Peak. Private report prepared for Zalmac Mines Ltd.

Yorke-Hardy, R.W.(1992): Assessment Report on the P & Z Mineral Claims Located on Lightning Peak. Vernon M.D. of B.C. Report dated Nov. 17, 1991.

Certificate of Qualifications

I, Robert W. Yorke-Hardy, of Vernon British Columbia, do hereby certify that:

1. I am a Mining Technologist residing at 330 Stepping Stones Road, Vernon, B. C. and I am the owner/operator of Y-H Technical Services Ltd. of P.O. Box 298, Vernon, B. C., an exploration services company. In total I have accumulated 27 years of experience in Mining/Mining Exploration and related industries.

2. I am a graduate of the British Columbia Institute of Technology, Burnaby, British Columbia and a registered charter member of the Association of Applied Science Technologists and Technicians of British Columbia. I have practiced my profession for 22 years.

3. This report is based on work performed by myself or under my direction. The total value of the work performed has been detailed in the forgoing Cost Statement. This sum is to be applied for assessment credits.

4. This report is based on knowledge and experience gained over the period 1980 to 1981 and the period from January 1991 to the present. I am familiar with the geology and mineralization of the Lightning Peak Area and surrounding district. The program and report preparations have been, in part, completed with the guidance of F. Marshall Smith, P. Eng. and David G. Mark, Geophysicist.

5. I am a shareholder in Zalmac Mines Ltd. as of Nov. 2, 1991 and was elected to the Board of Directors of the Company as of that date.

Y-H Technical Services Ltd.,

R. W. Yorke-Hardy, A.Sc.T.
January 22, 1992

APPENDIX I

ASSAY CERTIFICATES

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

BONDAR-CLEGG

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

ZALMAC MINES LTD.
C/O MR. BARRY AMIES
3117 - 30TH AVE.
VERNON, B.C.
V1T 2C4

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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

REPORT: V92-01063.0 (COMPLETE)

REFERENCE:

CLIENT: ZALMAC MINES LTD.
PROJECT: NONE GIVEN

SUBMITTED BY: R. Y-HARDY
DATE PRINTED: 15-SEP-92

ORDER		ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Au	Gold	165	5 PPB	FIRE ASSAY	FIRE ASSAY @ 10 G
2	Ag	Silver	165	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
3	Cu	Copper	165	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
4	Pb	Lead	165	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
5	Zn	Zinc	165	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
6	Mo	Molybdenum	165	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
7	Ni	Nickel	165	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
8	Co	Cobalt	165	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
9	Cd	Cadmium	165	1.0 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
10	Bi	Bismuth	165	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
11	As	Arsenic	165	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
12	Sb	Antimony	165	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
13	Hg	Mercury	165	0.010 PPM	HCL:HNO3 (3:1)	COLD VAPOR AA
14	Fe	Iron	165	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
15	Mn	Manganese	165	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
16	Te	Tellurium	165	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
17	Ba	Barium	165	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
18	Cr	Chromium	165	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
19	V	Vanadium	165	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
20	Sn	Tin	165	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
21	W	Tungsten	165	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
22	La	Lanthanum	165	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
23	Al	Aluminum	165	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
24	Mg	Magnesium	165	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
25	Ca	Calcium	165	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
26	Na	Sodium	165	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
27	K	Potassium	165	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
28	Sr	Strontium	165	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
29	Y	Yttrium	165	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA

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SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
S SOIL	165	1 -80	165	DRY, SIEVE -80	165

REMARKS: Erratic gold results noted for the following:
SAN L0+00E/N 9+10N: Checks= 110ppb and 152ppb.
SAN L0+00E/N 14+20N: Checks= 92ppb and 127ppb.
SAN L1+00W 5+95N: Checks= 98ppb and 130ppb.
SAN L2W 6+70N: Checks= 8ppb and 442ppb.
SAN L3W 12+10N: Checks= 44ppb and 308ppb.

REPORT COPIES TO: c/o Y-H TECHNICAL SER LTD
C/O MR. BARRY AMIES

INVOICE TO: C/O MR. BARRY AMIES

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM
S1 SAN L0+00E/N 4+00N		22	0.5	57	3	78	4	17	15	<1.0	<5	<5
S1 SAN L0+00E/N 4+30N		6	0.6	124	7	94	4	29	35	<1.0	5	<5
S1 SAN L0+00E/N 4+60N		35	0.7	53	3	75	3	24	16	<1.0	<5	<5
S1 SAN L0+00E/N 4+90N		<5	0.6	28	8	63	2	9	11	<1.0	<5	<5
S1 SAN L0+00E/N 5+20N		<5	0.3	23	7	78	3	9	10	<1.0	<5	16
S1 SAN L0+00E/N 5+60N		6	0.3	25	5	73	3	24	13	<1.0	<5	<5
S1 SAN L0+00E/N 5+80N		14	2.0	88	5	124	5	104	28	2.4	<5	7
S1 SAN L0+00E/N 6+10N		<5	0.9	33	20	153	4	25	16	<1.0	<5	<5
S1 SAN L0+00E/N 6+40N		<5	0.5	25	10	99	4	10	9	<1.0	<5	10
S1 SAN L0+00E/N 6+70N		<5	0.2	59	4	102	4	12	15	<1.0	<5	<5
S1 SAN L0+00E/N 7+00N		6	0.7	53	7	118	2	19	14	<1.0	<5	<5
S1 SAN L0+00E/N 7+30N		<5	0.5	25	8	79	4	8	11	<1.0	<5	11
S1 SAN L0+00E/N 7+60N		35	0.5	26	9	117	4	11	13	<1.0	<5	10
S1 SAN L0+00E/N 7+90N		10	0.4	17	5	48	2	8	10	<1.0	<5	26
S1 SAN L0+00E/N 8+20N		86	0.2	10	6	23	1	5	4	<1.0	<5	7
S1 SAN L0+00E/N 8+50N		10	<0.2	22	8	46	2	10	11	<1.0	<5	<5
S1 SAN L0+00E/N 8+80N		<5	0.5	26	7	57	3	8	11	<1.0	<5	12
S1 SAN L0+00E/N 9+10N		6	0.8	20	5	41	3	5	9	<1.0	<5	<5
S1 SAN L0+00E/N 9+40N		8	0.4	29	6	62	3	9	11	<1.0	<5	10
S1 SAN L0+00E/N 9+70N		<5	1.0	43	10	54	4	9	11	<1.0	<5	<5
S1 SAN L0+00E/N 10+00N		<5	0.2	14	5	51	2	6	10	<1.0	<5	8
S1 SAN L0+00E/N 10+30N		<5	0.6	21	9	58	4	7	10	<1.0	<5	7
S1 SAN L0+00E/N 10+60N		<5	0.5	17	9	56	5	7	10	<1.0	<5	<5
S1 SAN L0+00E/N 10+90N		<5	0.6	39	9	91	6	12	14	<1.0	<5	9
S1 SAN L0+00E/N 11+20N		<5	0.6	21	6	39	4	6	5	<1.0	<5	<5
S1 SAN L0+00E/N 11+50N		8	0.9	74	8	87	5	11	11	1.2	<5	12
S1 SAN L0+00E/N 11+80N		<5	0.3	31	6	106	4	16	18	<1.0	<5	23
S1 SAN L0+00E/N 12+10N		<5	0.2	22	7	33	3	7	7	<1.0	<5	10
S1 SAN L0+00E/N 12+40N		<5	0.3	16	5	41	3	7	7	<1.0	<5	13
S1 SAN L0+00E/N 12+70N		<5	<0.2	14	5	46	2	4	7	<1.0	<5	10
S1 SAN L0+00E/N 13+00N		<5	0.6	36	9	69	2	8	11	<1.0	<5	<5
S1 SAN L0+00E/N 13+30N		<5	0.5	18	4	49	3	7	8	<1.0	<5	<5
S1 SAN L0+00E/N 13+60N		<5	0.5	14	7	42	2	5	6	<1.0	<5	6
S1 SAN L0+00E/N 13+90N		84	1.9	58	18	85	4	12	11	1.1	<5	11
S1 SAN L0+00E/N 14+10N		<5	1.6	91	8	83	6	16	15	1.3	<5	20
S1 SAN L0+00E/N 14+20N		10	0.6	21	6	56	3	7	10	<1.0	<5	16
S1 SAN L0+00E/N 14+50N		<5	0.4	15	6	47	3	5	8	<1.0	<5	10
S1 SAN L0+00E/N 14+80N		10	1.1	32	8	64	5	8	14	<1.0	<5	<5
S1 SAN L0+00E/N 15+10N		<5	<0.2	41	2	45	2	11	11	<1.0	<5	14
S1 SAN L0+50W 5+50N		<5	0.3	17	7	56	3	6	9	<1.0	<5	13

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SAMPLE NUMBER	ELEMENT UNITS	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM
S1 SAN L0+00E/N 4+00N		7	0.071	4.44	525	<10	44	39	101	<20	<20	17
S1 SAN L0+00E/N 4+30N		10	0.043	6.17	3493	<10	104	81	152	<20	<20	26
S1 SAN L0+00E/N 4+60N		9	0.057	3.46	569	<10	58	69	72	<20	<20	23
S1 SAN L0+00E/N 4+90N		5	0.058	2.92	535	<10	57	18	56	<20	<20	24
S1 SAN L0+00E/N 5+20N		<5	0.054	3.01	470	<10	54	14	54	<20	<20	17
S1 SAN L0+00E/N 5+60N		<5	0.058	3.07	449	<10	43	27	53	<20	<20	20
S1 SAN L0+00E/N 5+80N		<5	0.070	5.77	2592	<10	37	85	143	<20	<20	26
S1 SAN L0+00E/N 6+10N		<5	0.051	4.13	1327	<10	63	37	77	<20	<20	20
S1 SAN L0+00E/N 6+40N		<5	0.067	2.87	543	<10	53	15	50	<20	<20	17
S1 SAN L0+00E/N 6+70N		6	0.044	3.87	760	<10	46	16	78	<20	<20	18
S1 SAN L0+00E/N 7+00N		6	0.063	3.18	686	<10	53	19	58	<20	<20	28
S1 SAN L0+00E/N 7+30N		<5	0.069	3.02	486	<10	56	12	51	<20	<20	19
S1 SAN L0+00E/N 7+60N		<5	0.066	3.35	524	<10	46	16	62	<20	<20	20
S1 SAN L0+00E/N 7+90N		<5	0.028	2.64	478	<10	50	17	49	<20	<20	21
S1 SAN L0+00E/N 8+20N		<5	0.034	1.22	216	<10	18	4	22	<20	<20	11
S1 SAN L0+00E/N 8+50N		<5	0.015	2.48	576	<10	60	15	48	<20	<20	20
S1 SAN L0+00E/N 8+80N		<5	0.061	3.05	462	<10	52	15	48	<20	<20	24
S1 SAN L0+00E/N 9+10N		7	0.105	2.54	416	<10	39	9	39	<20	<20	19
S1 SAN L0+00E/N 9+40N		<5	0.049	2.81	454	<10	59	15	49	<20	<20	19
S1 SAN L0+00E/N 9+70N		<5	0.094	2.38	767	<10	65	13	36	<20	<20	27
S1 SAN L0+00E/N 10+00N		<5	0.033	2.40	492	<10	61	10	42	<20	<20	19
S1 SAN L0+00E/N 10+30N		5	0.070	2.64	513	<10	51	9	38	<20	<20	20
S1 SAN L0+00E/N 10+60N		6	0.064	2.45	503	<10	60	11	43	<20	<20	19
S1 SAN L0+00E/N 10+90N		<5	0.055	3.30	734	<10	77	21	53	<20	<20	26
S1 SAN L0+00E/N 11+20N		5	0.094	1.59	257	<10	43	6	23	<20	<20	21
S1 SAN L0+00E/N 11+50N		<5	0.067	2.98	754	<10	77	14	42	<20	<20	32
S1 SAN L0+00E/N 11+80N		6	0.033	3.66	688	<10	77	21	65	<20	<20	22
S1 SAN L0+00E/N 12+10N		<5	0.075	2.14	158	<10	37	12	36	<20	<20	18
S1 SAN L0+00E/N 12+40N		<5	0.092	2.56	265	<10	45	13	39	<20	<20	13
S1 SAN L0+00E/N 12+70N		<5	0.060	2.22	333	<10	38	8	39	<20	<20	13
S1 SAN L0+00E/N 13+00N		<5	0.056	2.81	426	<10	43	12	52	<20	<20	16
S1 SAN L0+00E/N 13+30N		<5	0.065	2.61	384	<10	47	11	45	<20	<20	14
S1 SAN L0+00E/N 13+60N		<5	0.068	2.43	308	<10	38	11	40	<20	<20	12
S1 SAN L0+00E/N 13+90N		<5	0.089	3.00	878	<10	69	22	54	<20	<20	46
S1 SAN L0+00E/N 14+10N		<5	0.054	3.41	1411	<10	101	17	59	<20	<20	46
S1 SAN L0+00E/N 14+20N		<5	0.057	2.91	388	<10	48	9	55	<20	<20	16
S1 SAN L0+00E/N 14+50N		<5	0.074	2.58	281	<10	38	9	44	<20	<20	15
S1 SAN L0+00E/N 14+80N		6	0.098	2.59	1202	<10	56	10	44	<20	<20	40
S1 SAN L0+00E/N 15+10N		<5	0.027	2.93	425	<10	65	20	84	<20	<20	10
S1 SAN L0+50W 5+50N		<5	0.051	2.81	404	<10	52	12	49	<20	<20	19

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SAMPLE NUMBER	ELEMENT UNITS	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM
S1 SAN L0+00E/N 4+00N		2.90	1.44	0.17	0.02	0.05	13	3
S1 SAN L0+00E/N 4+30N		3.22	1.77	0.35	0.02	0.09	23	6
S1 SAN L0+00E/N 4+60N		3.24	1.47	0.35	0.02	0.07	22	8
S1 SAN L0+00E/N 4+90N		2.81	0.77	0.73	0.02	0.07	39	8
S1 SAN L0+00E/N 5+20N		2.68	0.77	0.20	0.02	0.07	14	5
S1 SAN L0+00E/N 5+60N		3.08	0.90	0.22	0.02	0.05	13	7
S1 SAN L0+00E/N 5+80N		3.18	1.84	0.70	<0.01	0.01	14	12
S1 SAN L0+00E/N 6+10N		2.54	1.06	0.24	0.02	0.04	11	6
S1 SAN L0+00E/N 6+40N		2.29	0.68	0.19	0.02	0.05	14	4
S1 SAN L0+00E/N 6+70N		2.39	1.00	0.14	0.02	0.05	11	5
S1 SAN L0+00E/N 7+00N		3.22	0.97	0.41	0.03	0.08	23	13
S1 SAN L0+00E/N 7+30N		3.18	0.64	0.18	0.02	0.05	15	6
S1 SAN L0+00E/N 7+60N		2.58	0.87	0.34	0.02	0.06	23	6
S1 SAN L0+00E/N 7+90N		1.66	0.74	0.53	0.03	0.07	33	7
S1 SAN L0+00E/N 8+20N		3.47	0.10	0.66	0.06	0.02	44	6
S1 SAN L0+00E/N 8+50N		1.69	0.82	0.52	0.03	0.12	30	5
S1 SAN L0+00E/N 8+80N		2.36	0.67	0.53	0.02	0.06	37	8
S1 SAN L0+00E/N 9+10N		3.05	0.34	0.22	0.02	0.05	18	6
S1 SAN L0+00E/N 9+40N		2.70	0.85	0.27	0.02	0.10	19	5
S1 SAN L0+00E/N 9+70N		3.30	0.45	0.36	0.03	0.07	29	10
S1 SAN L0+00E/N 10+00N		1.54	0.70	0.61	0.03	0.08	38	5
S1 SAN L0+00E/N 10+30N		3.08	0.44	0.58	0.03	0.04	39	7
S1 SAN L0+00E/N 10+60N		2.43	0.49	0.51	0.03	0.05	35	5
S1 SAN L0+00E/N 10+90N		3.09	0.98	0.46	0.02	0.10	37	8
S1 SAN L0+00E/N 11+20N		3.72	0.25	0.53	0.04	0.04	40	9
S1 SAN L0+00E/N 11+50N		2.63	0.58	0.79	0.03	0.07	56	14
S1 SAN L0+00E/N 11+80N		2.72	1.36	0.54	0.03	0.10	34	7
S1 SAN L0+00E/N 12+10N		2.72	0.38	0.17	0.02	0.04	14	7
S1 SAN L0+00E/N 12+40N		3.11	0.37	0.15	0.02	0.04	12	2
S1 SAN L0+00E/N 12+70N		2.64	0.32	0.15	0.03	0.04	12	3
S1 SAN L0+00E/N 13+00N		2.72	0.64	0.16	0.03	0.05	13	4
S1 SAN L0+00E/N 13+30N		2.94	0.45	0.13	0.03	0.05	11	4
S1 SAN L0+00E/N 13+60N		2.21	0.36	0.16	0.02	0.05	14	2
S1 SAN L0+00E/N 13+90N		3.55	0.84	0.70	0.03	0.12	55	22
S1 SAN L0+00E/N 14+10N		3.34	0.82	0.51	0.03	0.09	46	19
S1 SAN L0+00E/N 14+20N		2.90	0.70	0.30	0.03	0.06	23	5
S1 SAN L0+00E/N 14+50N		3.11	0.47	0.21	0.03	0.05	16	4
S1 SAN L0+00E/N 14+80N		4.58	0.53	0.38	0.03	0.06	27	16
S1 SAN L0+00E/N 15+10N		1.61	0.93	0.30	0.03	0.10	17	1
S1 SAN L0+50W 5+50N		2.41	0.63	0.26	0.03	0.07	22	5

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM
S1 SAN L0+50W 5+65N		10	0.8	44	11	116	4	12	15	<1.0	<5	12
S1 SAN L0+50W 5+80N		<5	0.8	35	7	90	3	15	13	<1.0	<5	<5
S1 SAN L0+50W 5+95N		68	0.4	59	11	83	3	21	12	<1.0	<5	5
S1 SAN L0+50W 6+10N		10	0.6	44	10	82	3	16	13	<1.0	<5	15
S1 SAN L0+50W 6+25N		<5	0.4	20	6	71	3	7	9	<1.0	<5	12
S1 SAN L0+50W 6+40N		<5	0.6	22	6	80	4	10	10	<1.0	<5	13
S1 SAN L0+50W 6+55N		20	0.5	32	5	62	2	11	12	<1.0	<5	14
S1 SAN L0+50W 6+70N		<5	0.4	25	7	77	4	9	10	<1.0	<5	18
S1 SAN L1+00W 5+50N		<5	0.6	40	<2	184	4	9	22	<1.0	<5	27
S1 SAN L1+00W 5+65N		10	0.3	15	6	61	2	6	8	<1.0	<5	13
S1 SAN L1+00W 5+80N		8	0.6	30	7	64	3	7	11	<1.0	<5	14
S1 SAN L1+00W 5+95N		8	0.4	28	6	71	3	10	12	<1.0	<5	22
S1 SAN L1+00W 6+10N		20	1.0	34	7	84	3	8	11	<1.0	<5	19
S1 SAN L1+00W 6+25N		8	0.3	24	4	57	2	8	10	<1.0	<5	11
S1 SAN L1+00W 6+40N		<5	1.1	68	9	111	3	12	14	<1.0	<5	14
S1 SAN L1+00W 6+55N		<5	0.5	26	6	66	3	8	10	<1.0	<5	12
S1 SAN L1+00W 6+70N		<5	0.8	24	8	52	3	7	10	<1.0	<5	11
S1 SAN L2W 4+00N		14	0.6	25	6	63	3	10	11	<1.0	<5	9
S1 SAN L2W 4+30N		<5	0.5	20	9	59	3	8	9	<1.0	<5	12
S1 SAN L2W 4+60N		<5	0.4	16	7	53	3	7	9	<1.0	<5	17
S1 SAN L2W 4+90N		<5	0.4	18	6	64	2	6	10	<1.0	<5	15
S1 SAN L2W 5+28N -510		<5	0.3	22	9	76	4	7	9	<1.0	<5	<5
S1 SAN L2W 5+50N		<5	0.5	13	7	44	2	4	7	<1.0	<5	6
S1 SAN L2W 5+80N		<5	0.4	19	7	61	3	7	8	<1.0	<5	<5
S1 SAN L2W 6+10N		20	0.4	12	9	32	3	5	5	<1.0	<5	<5
S1 SAN L2W 6+40N		<5	<0.2	16	7	42	3	4	7	<1.0	<5	<5
S1 SAN L2W 6+70N		6	0.2	17	7	54	3	5	8	<1.0	<5	6
S1 SAN L2W 7+30N		<5	1.5	63	10	83	4	10	12	<1.0	<5	<5
S1 SAN L2W 7+60N		8	0.2	13	9	43	3	6	6	<1.0	<5	12
S1 SAN L2W 7+90N		<5	1.4	33	11	88	4	9	11	<1.0	<5	7
S1 SAN L2W 8+20N		<5	0.8	39	10	92	5	10	11	<1.0	<5	<5
S1 SAN L2W 8+50N		8	0.5	34	8	86	4	10	12	<1.0	<5	<5
S1 SAN L2W 8+80N		<5	0.4	22	8	81	4	9	10	<1.0	<5	6
S1 SAN L2W 9+00N		6	0.6	25	7	55	3	6	9	<1.0	<5	7
S1 SAN L2W 9+10N		10	0.8	25	8	64	3	9	10	<1.0	<5	15
S1 SAN L2W 9+40N		12	0.6	23	<2	114	4	9	14	<1.0	<5	19
S1 SAN L2W 9+70N		24	0.9	31	6	81	3	7	9	<1.0	<5	22
S1 SAN L2W 10+00N		<5	0.6	47	6	90	6	10	12	<1.0	<5	16
S1 SAN L2W 10+30N		8	0.3	18	5	60	8	7	10	<1.0	<5	15
S1 SAN L2W 10+60N		16	0.4	18	6	40	5	6	7	<1.0	<5	17

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SAMPLE NUMBER	ELEMENT UNITS	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM
S1 SAN L0+50W 5+65N		<5	0.053	3.62	1000	<10	89	18	61	<20	<20	33
S1 SAN L0+50W 5+80N		<5	0.055	2.92	639	<10	56	17	51	<20	<20	25
S1 SAN L0+50W 5+95N		<5	0.027	3.01	430	<10	43	22	52	<20	<20	26
S1 SAN L0+50W 6+10N		<5	0.053	2.83	902	<10	50	19	54	<20	<20	23
S1 SAN L0+50W 6+25N		<5	0.058	2.74	401	<10	58	11	47	<20	<20	17
S1 SAN L0+50W 6+40N		<5	0.061	2.97	383	<10	69	14	54	<20	<20	23
S1 SAN L0+50W 6+55N		<5	0.040	3.05	605	<10	72	19	57	<20	<20	27
S1 SAN L0+50W 6+70N		<5	0.059	2.87	484	<10	57	14	51	<20	<20	22
S1 SAN L1+00W 5+50N		<5	0.047	6.42	1484	<10	141	15	95	<20	<20	42
S1 SAN L1+00W 5+65N		<5	0.068	2.61	328	<10	49	12	45	<20	<20	17
S1 SAN L1+00W 5+80N		<5	0.076	2.62	530	<10	61	13	46	<20	<20	28
S1 SAN L1+00W 5+95N		<5	0.039	3.18	621	<10	98	16	57	<20	<20	25
S1 SAN L1+00W 6+10N		<5	0.083	2.86	736	<10	65	13	47	<20	<20	29
S1 SAN L1+00W 6+25N		<5	0.023	2.71	523	<10	76	14	50	<20	<20	23
S1 SAN L1+00W 6+40N		<5	0.075	3.41	1231	<10	116	17	56	<20	<20	35
S1 SAN L1+00W 6+55N		<5	0.047	2.68	579	<10	70	12	50	<20	<20	24
S1 SAN L1+00W 6+70N		<5	0.069	2.44	479	<10	50	9	41	<20	<20	23
S1 SAN L2W 4+00N		<5	0.056	2.97	560	<10	53	16	56	<20	<20	17
S1 SAN L2W 4+30N		<5	0.061	2.55	479	<10	50	14	48	<20	<20	18
S1 SAN L2W 4+60N		<5	0.041	2.42	664	<10	52	12	45	<20	<20	18
S1 SAN L2W 4+90N		<5	0.048	2.62	728	<10	55	13	50	<20	<20	22
S1 SAN L2W 5+28N		5	0.079	2.75	325	<10	66	14	48	<20	<20	26
S1 SAN L2W 5+50N		<5	0.054	2.33	294	<10	38	9	42	<20	<20	14
S1 SAN L2W 5+80N		<5	0.061	2.74	287	<10	57	12	49	<20	<20	16
S1 SAN L2W 6+10N		<5	0.076	2.10	184	<10	39	9	36	<20	<20	14
S1 SAN L2W 6+40N		5	0.083	2.35	270	<10	43	9	38	<20	<20	15
S1 SAN L2W 6+70N		<5	0.069	2.31	393	<10	58	10	42	<20	<20	19
S1 SAN L2W 7+30N		8	0.098	2.93	975	<10	89	14	45	<20	<20	30
S1 SAN L2W 7+60N		<5	0.074	2.26	266	<10	42	10	42	<20	<20	13
S1 SAN L2W 7+90N		7	0.109	2.73	1190	<10	89	12	44	<20	<20	33
S1 SAN L2W 8+20N		6	0.100	2.96	819	<10	74	15	49	<20	<20	34
S1 SAN L2W 8+50N		5	0.069	3.09	770	<10	77	15	56	<20	<20	29
S1 SAN L2W 8+80N		<5	0.070	2.76	769	<10	65	12	49	<20	<20	20
S1 SAN L2W 9+00N		<5	0.084	2.40	675	<10	49	9	40	<20	<20	20
S1 SAN L2W 9+10N		<5	0.079	2.66	634	<10	52	11	43	<20	<20	23
S1 SAN L2W 9+40N		<5	0.044	3.62	545	<10	75	12	61	<20	<20	25
S1 SAN L2W 9+70N		<5	0.100	2.55	805	<10	65	8	42	<20	<20	27
S1 SAN L2W 10+00N		<5	0.054	3.09	970	<10	68	13	54	<20	<20	28
S1 SAN L2W 10+30N		<5	0.057	2.69	816	<10	63	12	50	<20	<20	21
S1 SAN L2W 10+60N		<5	0.094	2.27	262	<10	40	10	37	<20	<20	16

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S1 SAN L0+50W 5+65N		3.10	1.09	0.52	0.03	0.12	31	11
S1 SAN L0+50W 5+80N		2.22	0.84	0.67	0.03	0.07	31	9
S1 SAN L0+50W 5+95N		2.91	0.80	0.69	0.03	0.07	27	11
S1 SAN L0+50W 6+10N		2.63	0.84	0.83	0.03	0.08	32	9
S1 SAN L0+50W 6+25N		3.08	0.62	0.18	0.03	0.07	14	4
S1 SAN L0+50W 6+40N		2.99	0.76	0.24	0.03	0.08	21	7
S1 SAN L0+50W 6+55N		2.21	1.05	0.61	0.03	0.11	32	9
S1 SAN L0+50W 6+70N		3.03	0.70	0.41	0.03	0.08	25	7
S1 SAN L1+00W 5+50N		3.96	1.83	1.31	0.03	0.40	67	9
S1 SAN L1+00W 5+65N		2.88	0.61	0.19	0.03	0.08	17	4
S1 SAN L1+00W 5+80N		3.02	0.63	0.22	0.03	0.09	19	9
S1 SAN L1+00W 5+95N		2.46	1.07	0.57	0.03	0.16	31	7
S1 SAN L1+00W 6+10N		2.96	0.67	0.66	0.03	0.09	31	10
S1 SAN L1+00W 6+25N		2.09	0.92	0.53	0.03	0.11	27	6
S1 SAN L1+00W 6+40N		3.71	0.96	0.95	0.03	0.15	35	11
S1 SAN L1+00W 6+55N		2.35	0.87	0.64	0.03	0.11	30	7
S1 SAN L1+00W 6+70N		3.07	0.52	0.44	0.03	0.07	23	8
S1 SAN L2W 4+00N		2.78	0.85	0.21	0.02	0.08	17	5
S1 SAN L2W 4+30N		2.91	0.67	0.21	0.02	0.07	16	5
S1 SAN L2W 4+60N		1.98	0.70	0.45	0.03	0.07	26	4
S1 SAN L2W 4+90N		2.43	0.78	0.28	0.03	0.10	20	6
S1 SAN L2W 5+28N		3.24	0.68	0.19	0.02	0.11	19	8
S1 SAN L2W 5+50N		2.12	0.46	0.20	0.03	0.05	14	3
S1 SAN L2W 5+80N		2.47	0.65	0.21	0.03	0.09	17	3
S1 SAN L2W 6+10N		2.19	0.25	0.12	0.02	0.05	12	3
S1 SAN L2W 6+40N		2.49	0.40	0.16	0.02	0.06	15	4
S1 SAN L2W 6+70N		2.23	0.52	0.30	0.03	0.07	20	5
S1 SAN L2W 7+30N		3.77	0.69	0.62	0.03	0.11	32	11
S1 SAN L2W 7+60N		2.01	0.38	0.16	0.02	0.05	14	3
S1 SAN L2W 7+90N		3.91	0.66	0.54	0.03	0.11	33	13
S1 SAN L2W 8+20N		3.51	0.72	0.58	0.03	0.10	35	13
S1 SAN L2W 8+50N		2.97	0.82	0.65	0.03	0.09	38	10
S1 SAN L2W 8+80N		2.91	0.66	0.82	0.03	0.07	37	6
S1 SAN L2W 9+00N		2.63	0.51	0.42	0.03	0.07	23	7
S1 SAN L2W 9+10N		3.81	0.56	0.75	0.04	0.06	36	9
S1 SAN L2W 9+40N		2.92	1.06	0.70	0.04	0.11	38	7
S1 SAN L2W 9+70N		3.45	0.52	1.02	0.03	0.07	52	11
S1 SAN L2W 10+00N		2.98	0.67	0.79	0.03	0.08	45	12
S1 SAN L2W 10+30N		2.30	0.86	0.46	0.03	0.08	31	7
S1 SAN L2W 10+60N		2.93	0.43	0.17	0.03	0.06	15	4

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM
S1 SAN L2W 10+90N		<5	0.2	23	2	49	4	7	10	<1.0	<5	<5
S1 SAN L2W 11+20N		18	0.3	21	6	45	7	6	8	<1.0	<5	13
S1 SAN L2W 11+50N		10	0.7	28	7	58	6	9	12	<1.0	<5	10
S1 SAN L2W 11+80N		17	0.4	16	7	44	5	5	8	<1.0	<5	11
S1 SAN L2W 12+10N		<5	<0.2	26	6	41	5	6	7	<1.0	<5	10
S1 SAN L2W 12+40N		6	0.5	23	3	44	3	9	9	<1.0	<5	<5
S1 SAN L2W 12+70N		18	<0.2	21	7	48	2	17	9	<1.0	<5	5
S1 SAN L2W 13+00N		<5	0.7	33	4	60	4	10	12	<1.0	<5	19
S1 SAN L2W 13+30N		<5	0.4	15	8	47	2	6	6	<1.0	<5	10
S1 SAN L2W 13+60N		<5	0.4	14	5	47	2	6	6	<1.0	<5	<5
S1 SAN L2W 13+90N		<5	0.3	11	6	37	2	3	5	<1.0	<5	6
S1 SAN L2W 14+20N		<5	0.3	16	5	43	2	4	7	<1.0	<5	<5
S1 SAN L2W 14+50N		<5	0.4	20	5	38	3	4	7	<1.0	<5	17
S1 SAN L2W 14+80N		<5	0.3	11	6	44	3	4	6	<1.0	<5	11
S1 SAN L2W 15+10N		<5	0.4	17	5	53	4	6	7	<1.0	<5	<5
S1 SAN L3W 4+90N		<5	0.4	14	5	48	2	5	7	<1.0	<5	<5
S1 SAN L3W 5+20N		35	<0.2	19	6	57	3	7	9	<1.0	<5	<5
S1 SAN L3W 5+50N		<5	0.3	19	4	68	2	9	10	<1.0	<5	<5
S1 SAN L3W 5+80N		6	0.6	21	8	70	4	8	12	<1.0	<5	<5
S1 SAN L3W 6+10N		<5	0.5	19	10	77	3	8	11	<1.0	<5	18
S1 SAN L3W 6+40N		<5	0.7	16	9	52	3	5	6	<1.0	<5	6
S1 SAN L3W 6+70N		12	0.8	25	7	80	3	12	11	<1.0	<5	9
S1 SAN L3W 7+00N		6	0.4	15	8	49	3	6	7	<1.0	<5	<5
S1 SAN L3W 7+30N		<5	0.3	17	8	59	3	7	8	<1.0	<5	<5
S1 SAN L3W 7+60N		<5	0.4	22	8	65	2	9	11	<1.0	<5	11
S1 SAN L3W 7+90N		21	<0.2	16	4	61	3	7	9	<1.0	<5	<5
S1 SAN L3W 8+20N		<5	0.8	15	4	46	3	5	7	<1.0	<5	12
S1 SAN L3W 8+50N		8	0.5	17	7	52	4	7	8	<1.0	<5	6
S1 SAN L3W 8+80N		8	0.3	18	4	46	2	7	9	<1.0	<5	<5
S1 SAN L3W 9+10N		26	0.4	27	4	67	2	10	12	<1.0	<5	8
S1 SAN L3W 9+40N		12	0.7	41	6	68	5	10	9	<1.0	<5	6
S1 SAN L3W 9+70N		24	0.4	29	5	65	3	7	10	<1.0	<5	9
S1 SAN L3W 10+00N		<5	0.5	41	5	79	4	11	12	<1.0	<5	<5
S1 SAN L3W 10+30N		<5	<0.2	18	5	77	4	8	10	<1.0	<5	<5
S1 SAN L3W 10+60N		<5	0.2	25	4	78	3	10	12	<1.0	<5	7
S1 SAN L3W 10+90N		40	0.7	49	5	83	4	9	14	<1.0	<5	13
S1 SAN L3W 11+20N		38	0.6	28	7	54	5	6	9	<1.0	<5	13
S1 SAN L3W 11+50N		70	0.4	28	4	41	3	7	7	<1.0	<5	11
S1 SAN L3W 11+80N		<5	0.4	29	6	41	4	6	8	<1.0	<5	<5
S1 SAN L3W 12+10N		<5	0.4	17	5	30	3	7	5	<1.0	<5	<5

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SAMPLE NUMBER	ELEMENT UNITS	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM
S1 SAN L2W 10+90N		<5	0.074	3.13	374	<10	44	12	47	<20	<20	21
S1 SAN L2W 11+20N		<5	0.076	1.99	591	<10	46	12	41	<20	<20	18
S1 SAN L2W 11+50N		<5	0.091	2.62	1117	<10	50	15	47	<20	<20	21
S1 SAN L2W 11+80N		<5	0.062	2.76	338	<10	41	9	41	<20	<20	18
S1 SAN L2W 12+10N		<5	0.098	2.53	174	<10	47	11	39	<20	<20	18
S1 SAN L2W 12+40N		<5	0.065	2.55	262	<10	57	17	50	<20	<20	14
S1 SAN L2W 12+70N		<5	0.065	2.49	868	<10	61	35	47	<20	<20	14
S1 SAN L2W 13+00N		<5	0.074	2.89	396	<10	51	16	54	<20	<20	20
S1 SAN L2W 13+30N		<5	0.076	2.27	353	<10	52	9	40	<20	<20	13
S1 SAN L2W 13+60N		<5	0.085	2.40	392	<10	38	12	41	<20	<20	12
S1 SAN L2W 13+90N		<5	0.077	2.08	291	<10	34	6	34	<20	<20	12
S1 SAN L2W 14+20N		<5	0.070	2.08	399	<10	34	6	35	<20	<20	16
S1 SAN L2W 14+50N		<5	0.085	2.20	279	<10	37	8	35	<20	<20	17
S1 SAN L2W 14+80N		<5	0.065	2.20	358	<10	33	7	38	<20	<20	13
S1 SAN L2W 15+10N		<5	0.079	2.25	329	<10	40	8	39	<20	<20	17
S1 SAN L3W 4+90N		6	0.071	2.31	261	<10	51	10	40	<20	<20	16
S1 SAN L3W 5+20N		<5	0.051	2.70	381	<10	61	12	46	<20	<20	19
S1 SAN L3W 5+50N		<5	0.025	2.85	525	<10	99	14	51	<20	<20	20
S1 SAN L3W 5+80N		<5	0.059	2.97	736	<10	72	16	51	<20	<20	25
S1 SAN L3W 6+10N		<5	0.056	2.85	634	<10	66	14	50	<20	<20	19
S1 SAN L3W 6+40N		<5	0.081	2.18	247	<10	47	10	37	<20	<20	19
S1 SAN L3W 6+70N		<5	0.069	2.95	769	<10	68	24	59	<20	<20	25
S1 SAN L3W 7+00N		<5	0.060	2.40	254	<10	46	10	41	<20	<20	17
S1 SAN L3W 7+30N		<5	0.046	2.53	380	<10	47	14	47	<20	<20	19
S1 SAN L3W 7+60N		<5	0.061	2.98	835	<10	57	17	54	<20	<20	19
S1 SAN L3W 7+90N		<5	0.051	2.77	286	<10	48	12	46	<20	<20	20
S1 SAN L3W 8+20N		<5	0.090	2.51	218	<10	47	11	40	<20	<20	15
S1 SAN L3W 8+50N		<5	0.055	2.64	333	<10	48	13	46	<20	<20	18
S1 SAN L3W 8+80N		<5	0.042	2.38	343	<10	32	11	43	<20	<20	22
S1 SAN L3W 9+10N		<5	0.042	2.90	671	<10	83	18	52	<20	<20	22
S1 SAN L3W 9+40N		<5	0.087	2.53	573	<10	81	12	47	<20	<20	26
S1 SAN L3W 9+70N		<5	0.065	2.57	614	<10	53	11	48	<20	<20	22
S1 SAN L3W 10+00N		<5	0.064	2.86	894	<10	82	15	59	<20	<20	26
S1 SAN L3W 10+30N		<5	0.061	3.01	415	<10	62	14	58	<20	<20	14
S1 SAN L3W 10+60N		<5	0.041	2.87	580	<10	64	16	53	<20	<20	22
S1 SAN L3W 10+90N		<5	0.069	3.45	866	<10	88	11	56	<20	<20	30
S1 SAN L3W 11+20N		<5	0.082	2.51	582	<10	64	9	38	<20	<20	25
S1 SAN L3W 11+50N		<5	0.064	2.20	264	<10	53	10	37	<20	<20	17
S1 SAN L3W 11+80N		<5	0.064	2.21	362	<10	38	12	41	<20	<20	16
S1 SAN L3W 12+10N		<5	0.123	1.91	194	<10	35	14	35	<20	<20	11

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SAMPLE NUMBER	ELEMENT UNITS	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM
S1 SAN L2W 10+90N		2.36	0.76	0.29	0.03	0.07	20	5
S1 SAN L2W 11+20N		2.08	0.50	0.26	0.03	0.06	23	5
S1 SAN L2W 11+50N		2.28	0.73	0.29	0.03	0.07	23	6
S1 SAN L2W 11+80N		1.92	0.49	0.24	0.03	0.05	20	5
S1 SAN L2W 12+10N		3.20	0.37	0.16	0.03	0.05	17	5
S1 SAN L2W 12+40N		2.43	0.54	0.20	0.03	0.05	14	4
S1 SAN L2W 12+70N		1.80	0.80	0.22	0.03	0.09	14	2
S1 SAN L2W 13+00N		2.57	0.67	0.35	0.03	0.07	27	7
S1 SAN L2W 13+30N		2.32	0.32	0.17	0.03	0.05	14	3
S1 SAN L2W 13+60N		1.95	0.34	0.14	0.02	0.05	11	2
S1 SAN L2W 13+90N		2.28	0.23	0.14	0.02	0.04	12	3
S1 SAN L2W 14+20N		2.77	0.31	0.15	0.03	0.04	12	4
S1 SAN L2W 14+50N		3.00	0.34	0.15	0.03	0.05	13	5
S1 SAN L2W 14+80N		2.74	0.36	0.18	0.03	0.04	14	3
S1 SAN L2W 15+10N		3.58	0.47	0.19	0.03	0.05	14	5
S1 SAN L3W 4+90N		2.99	0.47	0.20	0.03	0.06	17	5
S1 SAN L3W 5+20N		2.24	0.72	0.32	0.03	0.08	25	5
S1 SAN L3W 5+50N		2.29	1.00	0.40	0.03	0.12	31	5
S1 SAN L3W 5+80N		2.73	0.87	0.41	0.03	0.12	34	7
S1 SAN L3W 6+10N		2.69	0.76	0.20	0.02	0.11	19	4
S1 SAN L3W 6+40N		2.49	0.36	0.17	0.03	0.07	18	6
S1 SAN L3W 6+70N		3.13	0.94	0.62	0.03	0.10	41	8
S1 SAN L3W 7+00N		2.70	0.47	0.21	0.03	0.07	19	4
S1 SAN L3W 7+30N		2.67	0.68	0.21	0.03	0.10	18	4
S1 SAN L3W 7+60N		2.42	0.87	0.31	0.03	0.11	28	3
S1 SAN L3W 7+90N		2.32	0.66	0.31	0.03	0.06	24	4
S1 SAN L3W 8+20N		2.84	0.38	0.20	0.03	0.05	15	4
S1 SAN L3W 8+50N		2.34	0.57	0.20	0.02	0.07	18	4
S1 SAN L3W 8+80N		1.89	0.75	0.46	0.03	0.06	28	6
S1 SAN L3W 9+10N		2.40	1.03	0.47	0.03	0.08	30	7
S1 SAN L3W 9+40N		2.81	0.69	0.86	0.03	0.08	47	10
S1 SAN L3W 9+70N		2.43	0.69	0.65	0.03	0.07	37	8
S1 SAN L3W 10+00N		2.41	0.92	0.99	0.03	0.11	51	9
S1 SAN L3W 10+30N		2.11	0.65	0.23	0.02	0.06	15	3
S1 SAN L3W 10+60N		2.20	0.96	0.44	0.03	0.08	26	6
S1 SAN L3W 10+90N		2.72	0.88	0.84	0.03	0.14	45	11
S1 SAN L3W 11+20N		2.59	0.47	0.73	0.03	0.05	43	10
S1 SAN L3W 11+50N		1.82	0.59	0.25	0.03	0.06	20	5
S1 SAN L3W 11+80N		2.31	0.50	0.21	0.03	0.05	14	4
S1 SAN L3W 12+10N		2.32	0.30	0.12	0.02	0.05	10	2

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S1 SAN L3W 12+40N		<5	0.4	22	5	38	5	8	8	<1.0	<5	<5
S1 SAN L3W 12+70N		<5	0.9	35	6	54	8	9	9	<1.0	<5	12
S1 SAN L3W 13+00N		<5	0.7	35	8	36	4	12	11	<1.0	<5	<5
S1 SAN L3W 13+30N		10	0.3	23	3	69	3	19	11	<1.0	<5	<5
S1 SAN L3W 13+60N		<5	<0.2	21	3	66	3	13	9	<1.0	<5	15
S1 SAN L3W 13+90N		6	0.3	23	7	53	5	11	11	<1.0	<5	6
S1 SAN L3W 14+20N		<5	0.4	14	7	43	3	12	7	<1.0	<5	7
S1 SAN L3W 14+50N		<5	0.4	18	9	53	5	6	14	<1.0	<5	6
S1 SAN L3W 14+80N		<5	1.3	31	4	31	5	5	5	<1.0	<5	10
S1 SAN L3W 15+00N		<5	<0.2	19	4	47	4	6	9	<1.0	<5	<5
S1 SAN L4W 4+90N		8	0.4	12	6	42	3	6	8	<1.0	<5	<5
S1 SAN L4W 5+20N		<5	0.3	20	5	37	3	6	6	<1.0	<5	13
S1 SAN L4W 5+50N		12	0.4	25	6	55	4	8	10	<1.0	<5	6
S1 SAN L4W 5+80N		<5	0.4	19	7	53	3	7	8	<1.0	<5	8
S1 SAN L4W 6+10N		<5	0.7	27	5	70	3	12	9	<1.0	<5	9
S1 SAN L4W 6+40N		<5	0.2	13	6	43	3	5	6	<1.0	<5	5
S1 SAN L4W 6+70N		<5	0.5	13	7	28	2	4	5	<1.0	<5	12
S1 SAN L4W 7+00N		<5	1.0	18	7	63	3	6	8	<1.0	<5	9
S1 SAN L4W 7+30N		<5	0.4	25	7	66	4	8	8	<1.0	<5	<5
S1 SAN L4W 7+60N		6	0.4	15	6	49	2	7	8	<1.0	<5	10
S1 SAN L4W 7+90N		<5	0.5	16	7	52	2	7	9	<1.0	<5	11
S1 SAN L4W 8+20N		<5	0.4	21	5	48	4	6	9	<1.0	<5	9
S1 SAN L4W 8+50N		<5	0.5	27	7	69	3	11	12	<1.0	<5	5
S1 SAN L4W 8+80N		<5	0.5	21	4	49	3	7	8	<1.0	<5	<5
S1 SAN L4W 9+10N		16	0.4	17	5	54	3	7	7	<1.0	<5	<5
S1 SAN L4W 9+40N		<5	0.9	31	9	82	5	12	11	<1.0	<5	17
S1 SAN L4W 9+70N		<5	1.2	57	7	86	5	11	12	<1.0	<5	20
S1 SAN L4W 10+00N		18	0.5	31	4	73	3	7	11	<1.0	<5	7
S1 SAN L4W 10+30N		14	0.3	23	7	54	3	7	9	<1.0	<5	13
S1 SAN L4W 10+60N		8	0.4	18	4	47	3	6	8	<1.0	<5	14
S1 SAN L4W 10+90N		6	0.4	13	6	38	3	4	6	<1.0	<5	13
S1 SAN L4W 11+20N		<5	0.4	31	4	66	3	8	9	<1.0	<5	19
S1 SAN L4W 11+50N		<5	0.7	52	3	56	4	10	13	<1.0	<5	9
S1 SAN L4W 11+80N		8	0.6	25	4	55	5	7	9	<1.0	<5	22
S1 SAN L4W 12+10N		<5	0.4	46	8	41	2	11	6	<1.0	<5	28
S1 SAN L4W 12+50N		<5	1.3	18	8	39	2	7	5	<1.0	<5	12
S1 SAN L4W 12+70N		<5	0.3	11	6	29	2	4	5	<1.0	<5	10
S1 SAN L4W 13+00N		<5	0.3	13	5	33	4	4	5	<1.0	<5	17
S1 SAN L4W 13+60N		<5	0.3	13	5	15	2	4	3	<1.0	<5	24
S1 SAN L4W 13+90N		<5	0.4	18	5	44	2	10	9	<1.0	<5	15

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SAMPLE NUMBER	ELEMENT UNITS	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM
S1 SAN L3W 12+40N		<5	0.079	1.75	422	<10	39	13	37	<20	<20	18
S1 SAN L3W 12+70N		<5	0.106	2.32	543	<10	51	14	47	<20	<20	39
S1 SAN L3W 13+00N		<5	0.083	2.18	236	<10	41	22	39	<20	<20	28
S1 SAN L3W 13+30N		<5	0.038	2.62	471	<10	47	34	48	<20	<20	17
S1 SAN L3W 13+60N		<5	0.024	2.37	679	<10	52	26	48	<20	<20	20
S1 SAN L3W 13+90N		<5	0.039	2.84	523	<10	53	19	50	<20	<20	19
S1 SAN L3W 14+20N		<5	0.064	2.12	202	<10	43	26	38	<20	<20	16
S1 SAN L3W 14+50N		<5	0.075	2.35	593	<10	61	10	43	<20	<20	18
S1 SAN L3W 14+80N		5	0.165	1.68	244	<10	33	5	28	<20	<20	34
S1 SAN L3W 15+00N		<5	0.058	2.63	435	<10	45	9	41	<20	<20	18
S1 SAN L4W 4+90N		<5	0.062	2.48	321	<10	42	11	45	<20	<20	14
S1 SAN L4W 5+20N		<5	0.064	1.90	246	<10	41	9	35	<20	<20	17
S1 SAN L4W 5+50N		<5	0.038	2.56	425	<10	47	15	45	<20	<20	19
S1 SAN L4W 5+80N		<5	0.057	2.30	456	<10	38	15	42	<20	<20	17
S1 SAN L4W 6+10N		<5	0.081	2.20	676	<10	65	18	47	<20	<20	25
S1 SAN L4W 6+40N		<5	0.071	2.33	209	<10	39	9	38	<20	<20	16
S1 SAN L4W 6+70N		<5	0.078	2.10	182	<10	31	7	32	<20	<20	16
S1 SAN L4W 7+00N		<5	0.076	2.68	376	<10	54	11	47	<20	<20	20
S1 SAN L4W 7+30N		<5	0.093	2.44	435	<10	68	15	45	<20	<20	20
S1 SAN L4W 7+60N		<5	0.052	2.62	455	<10	50	12	47	<20	<20	15
S1 SAN L4W 7+90N		<5	0.068	2.92	327	<10	38	14	48	<20	<20	16
S1 SAN L4W 8+20N		<5	0.027	3.59	323	<10	46	13	50	<20	<20	18
S1 SAN L4W 8+50N		<5	0.056	2.63	527	<10	68	19	50	<20	<20	23
S1 SAN L4W 8+80N		<5	0.059	2.70	278	<10	50	12	47	<20	<20	20
S1 SAN L4W 9+10N		<5	0.067	2.26	376	<10	61	12	42	<20	<20	15
S1 SAN L4W 9+40N		<5	0.096	3.07	506	<10	102	19	52	<20	<20	25
S1 SAN L4W 9+70N		<5	0.113	3.12	1439	<10	130	17	52	<20	<20	47
S1 SAN L4W 10+00N		<5	0.064	2.56	733	<10	69	12	44	<20	<20	27
S1 SAN L4W 10+30N		<5	0.052	2.47	469	<10	57	10	46	<20	<20	18
S1 SAN L4W 10+60N		<5	0.070	2.55	320	<10	51	8	44	<20	<20	17
S1 SAN L4W 10+90N		<5	0.051	2.19	264	<10	38	7	40	<20	<20	12
S1 SAN L4W 11+20N		<5	0.066	2.39	515	<10	62	11	46	<20	<20	28
S1 SAN L4W 11+50N		<5	0.071	2.89	536	<10	61	13	47	<20	<20	27
S1 SAN L4W 11+80N		<5	0.094	2.63	495	<10	57	8	40	<20	<20	24
S1 SAN L4W 12+10N		<5	0.113	0.89	180	<10	57	17	24	<20	<20	30
S1 SAN L4W 12+50N		<5	0.082	1.26	173	<10	68	12	27	<20	<20	16
S1 SAN L4W 12+70N		<5	0.078	2.41	135	<10	41	7	38	<20	<20	12
S1 SAN L4W 13+00N		<5	0.115	2.94	149	<10	50	7	38	<20	<20	15
S1 SAN L4W 13+60N		<5	0.068	0.66	146	<10	24	3	18	<20	<20	14
S1 SAN L4W 13+90N		<5	0.056	2.47	282	<10	37	23	39	<20	<20	18

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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

DATE PRINTED: 15-SEP-92

REPORT: V92-01063.0 (COMPLETE)

PROJECT: NONE GIVEN PAGE 4C

SAMPLE NUMBER	ELEMENT UNITS	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM
S1 SAN L3W 12+40N		2.32	0.46	0.19	0.02	0.05	18	5
S1 SAN L3W 12+70N		2.95	0.59	0.41	0.02	0.05	28	12
S1 SAN L3W 13+00N		2.46	0.52	0.27	0.03	0.04	22	10
S1 SAN L3W 13+30N		1.84	1.12	0.45	0.03	0.06	32	6
S1 SAN L3W 13+60N		1.98	0.87	0.40	0.03	0.05	30	6
S1 SAN L3W 13+90N		1.76	0.76	0.31	0.03	0.06	29	5
S1 SAN L3W 14+20N		1.77	0.61	0.24	0.02	0.05	23	5
S1 SAN L3W 14+50N		2.07	0.53	0.26	0.02	0.06	28	5
S1 SAN L3W 14+80N		4.13	0.27	0.25	0.03	0.03	22	16
S1 SAN L3W 15+00N		2.06	0.60	0.34	0.03	0.05	25	5
S1 SAN L4W 4+90N		1.81	0.53	0.29	0.02	0.05	20	3
S1 SAN L4W 5+20N		2.80	0.44	0.19	0.02	0.05	15	5
S1 SAN L4W 5+50N		2.26	0.72	0.24	0.02	0.06	18	5
S1 SAN L4W 5+80N		2.30	0.63	0.16	0.02	0.06	16	4
S1 SAN L4W 6+10N		2.59	0.73	0.85	0.03	0.07	51	10
S1 SAN L4W 6+40N		2.37	0.41	0.16	0.02	0.06	13	3
S1 SAN L4W 6+70N		2.35	0.22	0.10	0.02	0.04	10	4
S1 SAN L4W 7+00N		2.73	0.73	0.22	0.02	0.08	16	4
S1 SAN L4W 7+30N		3.02	0.73	0.16	0.02	0.09	19	5
S1 SAN L4W 7+60N		2.21	0.54	0.19	0.02	0.07	16	2
S1 SAN L4W 7+90N		2.81	0.56	0.16	0.02	0.07	13	3
S1 SAN L4W 8+20N		2.28	0.53	0.12	0.02	0.07	12	4
S1 SAN L4W 8+50N		2.95	0.87	0.25	0.02	0.09	21	7
S1 SAN L4W 8+80N		2.40	0.70	0.23	0.02	0.07	16	5
S1 SAN L4W 9+10N		2.23	0.58	0.17	0.02	0.07	17	3
S1 SAN L4W 9+40N		3.69	0.86	0.44	0.03	0.12	34	9
S1 SAN L4W 9+70N		3.58	0.86	0.77	0.02	0.14	49	19
S1 SAN L4W 10+00N		2.32	0.68	0.70	0.03	0.07	39	12
S1 SAN L4W 10+30N		2.02	0.56	0.36	0.03	0.07	25	5
S1 SAN L4W 10+60N		1.98	0.46	0.21	0.02	0.05	15	4
S1 SAN L4W 10+90N		1.83	0.33	0.19	0.02	0.05	13	3
S1 SAN L4W 11+20N		2.33	0.70	0.58	0.03	0.09	31	10
S1 SAN L4W 11+50N		2.35	0.61	0.65	0.03	0.08	39	11
S1 SAN L4W 11+80N		2.70	0.65	0.46	0.03	0.07	31	9
S1 SAN L4W 12+10N		3.25	0.47	0.25	0.02	0.04	22	11
S1 SAN L4W 12+50N		1.41	0.45	0.43	0.02	0.05	39	4
S1 SAN L4W 12+70N		1.99	0.24	0.12	0.02	0.04	10	2
S1 SAN L4W 13+00N		3.41	0.25	0.12	0.02	0.04	13	3
S1 SAN L4W 13+60N		3.82	0.08	0.26	0.04	0.02	21	7
S1 SAN L4W 13+90N		2.18	0.67	0.32	0.03	0.05	21	6

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REPORT: V92-01063.0 (COMPLETE)

PROJECT: NONE GIVEN PAGE 5A

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM
S1 SAN L4W 14+20N		<5	0.4	15	5	47	3	8	9	<1.0	<5	14
S1 SAN L4W 14+30N		22	1.1	38	8	62	2	12	7	<1.0	<5	20
S1 SAN L4W 14+50N		<5	0.2	18	6	52	4	7	9	<1.0	<5	14
S1 SAN L4W 14+80N		<5	0.4	15	4	45	4	5	7	<1.0	<5	18
S1 SAN L4W 15+10N		<5	0.4	15	6	40	3	5	7	<1.0	<5	6

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SAMPLE NUMBER	ELEMENT UNITS	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM
S1 SAN L4W 14+20N		<5	0.076	2.46	391	<10	48	16	37	<20	<20	21
S1 SAN L4W 14+30N		<5	0.125	1.33	532	<10	73	23	29	<20	<20	30
S1 SAN L4W 14+50N		<5	0.062	2.43	287	<10	54	12	46	<20	<20	19
S1 SAN L4W 14+80N		<5	0.077	2.46	228	<10	47	10	41	<20	<20	15
S1 SAN L4W 15+10N		<5	0.075	2.44	270	<10	41	8	42	<20	<20	14

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SAMPLE NUMBER	ELEMENT UNITS	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM
S1 SAN L4W 14+20N		2.63	0.55	0.22	0.02	0.05	18	7
S1 SAN L4W 14+30N		2.69	0.62	0.36	0.02	0.06	30	11
S1 SAN L4W 14+50N		2.63	0.60	0.23	0.02	0.05	17	6
S1 SAN L4W 14+80N		2.22	0.41	0.13	0.02	0.05	11	4
S1 SAN L4W 15+10N		2.63	0.39	0.11	0.02	0.05	10	3

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Geochemical Lab Report

ZALMAC MINES LTD.
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Geochemical Lab Report

REPORT: V92-01064.0 (COMPLETE)

REFERENCE:

CLIENT: ZALMAC MINES LTD.
PROJECT: NONE GIVEN

SUBMITTED BY: R. Y-HARDY
DATE PRINTED: 17-SEP-92

ORDER	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Au	Gold	146	5 PPB	FIRE ASSAY	FIRE ASSAY @ 10 G
2	Ag	Silver	146	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
3	Cu	Copper	146	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
4	Pb	Lead	146	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
5	Zn	Zinc	146	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
6	Mo	Molybdenum	146	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
7	Ni	Nickel	146	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
8	Co	Cobalt	146	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
9	Cd	Cadmium	146	1.0 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
10	Bi	Bismuth	146	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
11	As	Arsenic	146	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
12	Sb	Antimony	146	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
13	Hg	Mercury	146	0.010 PPM	HCL:HNO3 (3:1)	COLD VAPOR AA
14	Fe	Iron	146	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
15	Mn	Manganese	146	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
16	Te	Tellurium	146	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
17	Ba	Barium	146	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
18	Cr	Chromium	146	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
19	V	Vanadium	146	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
20	Sn	Tin	146	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
21	W	Tungsten	146	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
22	La	Lanthanum	146	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
23	Al	Aluminum	146	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
24	Mg	Magnesium	146	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
25	Ca	Calcium	146	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
26	Na	Sodium	146	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
27	K	Potassium	146	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
28	Sr	Strontium	146	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
29	Y	Yttrium	146	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA

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S1 SAN L10W 3+10N		8	0.8	64	7	140	4	10	12	<1.0	<5	35
S1 SAN L10W 3+40N		<5	0.4	18	8	47	3	6	8	<1.0	<5	<5
S1 SAN L10W 3+70N		10	0.5	26	9	76	5	9	10	<1.0	<5	7
S1 SAN L10W 4+00N		<5	0.5	34	7	77	3	12	13	<1.0	<5	9
S1 SAN L10W 4+30N		<5	0.6	21	8	60	3	8	10	<1.0	<5	9
S1 SAN L10W 4+60N		<5	0.9	48	9	70	3	11	12	<1.0	<5	18
S1 SAN L10W 4+90N		31	0.4	12	7	22	1	5	4	<1.0	<5	12
S1 SAN L10W 5+20N		6	1.3	51	14	94	5	14	14	<1.0	<5	13
S1 SAN L10W 5+50N		<5	0.4	19	7	48	3	6	9	<1.0	<5	17
S1 SAN L10W 5+80N		10	<0.2	12	9	37	2	4	5	<1.0	<5	8
S1 SAN L10W 6+10N		6	1.0	64	7	81	3	15	13	<1.0	<5	20
S1 SAN L10W 6+40N		62	1.4	48	7	50	5	8	8	<1.0	<5	21
S1 SAN L10W 6+70N		<5	0.4	17	6	44	3	5	7	<1.0	<5	40
S1 SAN L10W 7+10N		<5	0.3	19	7	80	6	7	10	<1.0	<5	19
S1 SAN L10W 7+30N		8	0.6	17	5	41	3	4	8	<1.0	<5	23
S1 SAN L10W 7+60N		6	0.7	28	8	54	5	8	10	<1.0	<5	23
S1 SAN L10W 7+90N		6	0.8	39	7	79	3	7	9	<1.0	<5	20
S1 SAN L10W 8+20N		8	0.6	31	8	47	4	8	8	<1.0	<5	23
S1 SAN L10W 8+50N		47	0.6	26	6	79	4	9	9	<1.0	<5	11
S1 SAN L10W 8+80N		14	0.8	31	3	65	4	7	10	<1.0	<5	30
S1 SAN L10W 9+10N		33	0.8	39	8	116	5	6	14	<1.0	<5	41
S1 SAN L10W 9+40N		6	0.9	47	11	114	7	15	15	<1.0	<5	45
S1 SAN L10W 9+70N		<5	0.5	15	5	45	3	5	6	<1.0	<5	37
S1 SAN L10W 10+00N		6	0.2	22	5	42	2	5	9	<1.0	<5	9
S1 SAN L10W 10+00N A		233	0.5	48	8	91	4	15	15	<1.0	<5	16
S1 SAN L10W 10+30N		<5	0.6	18	5	42	3	5	7	<1.0	<5	11
S1 SAN L10W 10+60N		6	0.9	24	7	73	3	10	11	<1.0	<5	17
S1 SAN L10W 10+90N		6	0.6	20	10	66	3	7	10	<1.0	<5	17
S1 SAN L10W 11+20N		<5	0.4	18	9	66	3	8	11	<1.0	<5	10
S1 SAN L10W 11+50N		<5	0.4	22	5	65	3	8	9	<1.0	<5	16
S1 SAN L10W 11+80N		<5	0.4	17	7	67	3	6	8	<1.0	<5	23
S1 SAN L10W 12+00N		<5	0.7	28	18	114	4	10	13	<1.0	<5	26
S1 SAN L12W 3+00N		<5	1.1	52	5	66	3	6	11	<1.0	<5	22
S1 SAN L12W 3+40N		<5	0.3	15	7	79	2	7	8	<1.0	<5	22
S1 SAN L12W 3+70N		<5	0.5	19	6	50	2	7	8	<1.0	<5	25
S1 SAN L12W 4+00N		<5	0.5	22	5	39	2	8	9	<1.0	<5	13
S1 SAN L12W 4+30N		125	0.3	17	5	20	2	5	4	<1.0	<5	5
S1 SAN L12W 4+60N		<5	0.5	19	4	50	3	7	11	<1.0	<5	17
S1 SAN L12W 4+90N		6	0.3	15	6	29	3	5	6	<1.0	<5	7
S1 SAN L12W 5+20N		66	0.5	11	6	41	3	5	8	<1.0	<5	15

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S1 SAN L10W 3+10N		13	0.095	3.03	403	<10	38	15	53	<20	<20	33
S1 SAN L10W 3+40N		5	0.036	2.35	212	<10	38	11	42	<20	<20	14
S1 SAN L10W 3+70N		7	0.052	2.30	1323	<10	67	13	46	<20	<20	24
S1 SAN L10W 4+00N		<5	0.044	2.81	849	<10	82	21	51	<20	<20	26
S1 SAN L10W 4+30N		<5	0.039	2.62	495	<10	74	13	49	<20	<20	21
S1 SAN L10W 4+60N		6	0.076	2.89	796	<10	83	20	54	<20	<20	33
S1 SAN L10W 4+90N		6	0.051	1.13	327	<10	20	3	17	<20	<20	13
S1 SAN L10W 5+20N		8	0.074	3.66	689	<10	103	24	65	<20	<20	31
S1 SAN L10W 5+50N		6	0.054	2.38	278	<10	42	11	44	<20	<20	18
S1 SAN L10W 5+80N		<5	0.056	1.63	245	<10	36	6	32	<20	<20	11
S1 SAN L10W 6+10N		10	0.077	3.25	691	<10	98	15	54	<20	<20	35
S1 SAN L10W 6+40N		7	0.150	2.21	782	<10	62	11	50	<20	<20	41
S1 SAN L10W 6+70N		11	0.060	2.51	172	<10	50	8	46	<20	<20	18
S1 SAN L10W 7+10N		10	0.024	2.54	2550	<10	52	11	51	<20	<20	21
S1 SAN L10W 7+30N		10	0.054	2.35	245	<10	39	7	40	<20	<20	17
S1 SAN L10W 7+60N		12	0.077	2.27	1601	<10	60	11	44	<20	<20	25
S1 SAN L10W 7+90N		11	0.074	2.69	745	<10	78	12	46	<20	<20	35
S1 SAN L10W 8+20N		10	0.077	2.36	593	<10	76	9	36	<20	<20	28
S1 SAN L10W 8+50N		7	0.055	2.77	463	<10	92	15	50	<20	<20	25
S1 SAN L10W 8+80N		12	0.071	3.37	451	<10	54	10	51	<20	<20	34
S1 SAN L10W 9+10N		19	0.074	4.09	1048	<10	70	9	58	<20	<20	44
S1 SAN L10W 9+40N		17	0.071	4.11	983	<10	108	25	72	<20	<20	28
S1 SAN L10W 9+70N		11	0.066	2.35	206	<10	41	8	42	<20	<20	15
S1 SAN L10W 10+00N		<5	0.068	2.07	276	<10	42	9	42	<20	<20	17
S1 SAN L10W 10+00N A		7	0.035	3.26	454	<10	97	27	63	<20	<20	20
S1 SAN L10W 10+30N		11	0.069	2.28	238	<10	42	8	40	<20	<20	15
S1 SAN L10W 10+60N		8	0.063	3.62	286	<10	36	20	78	<20	<20	14
S1 SAN L10W 10+90N		9	0.057	3.06	283	<10	42	13	57	<20	<20	15
S1 SAN L10W 11+20N		9	0.071	2.71	404	<10	46	14	49	<20	<20	15
S1 SAN L10W 11+50N		8	0.071	2.67	582	<10	47	11	50	<20	<20	14
S1 SAN L10W 11+80N		9	0.075	2.73	275	<10	70	10	45	<20	<20	14
S1 SAN L10W 12+00N		14	0.058	2.86	345	<10	50	17	57	<20	<20	18
S1 SAN L12W 3+00N		10	0.065	3.54	1020	<10	65	16	75	<20	<20	15
S1 SAN L12W 3+40N		13	0.063	2.48	332	<10	55	9	43	<20	<20	15
S1 SAN L12W 3+70N		10	0.062	2.47	298	<10	41	12	46	<20	<20	16
S1 SAN L12W 4+00N		6	0.034	2.31	228	<10	53	13	43	<20	<20	16
S1 SAN L12W 4+30N		7	0.053	1.45	147	<10	32	6	25	<20	<20	13
S1 SAN L12W 4+60N		<5	0.052	2.82	473	<10	43	13	49	<20	<20	17
S1 SAN L12W 4+90N		10	0.066	2.28	185	<10	33	8	37	<20	<20	15
S1 SAN L12W 5+20N		<5	0.047	2.38	434	<10	43	7	37	<20	<20	13

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SAMPLE NUMBER	ELEMENT UNITS	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM
S1 SAN L10W 3+10N		3.44	0.60	0.44	0.02	0.05	25	26
S1 SAN L10W 3+40N		2.51	0.45	0.19	0.03	0.04	14	4
S1 SAN L10W 3+70N		2.22	0.62	0.53	0.03	0.05	27	7
S1 SAN L10W 4+00N		2.40	0.89	0.48	0.02	0.07	27	7
S1 SAN L10W 4+30N		2.33	0.79	0.27	0.02	0.09	20	5
S1 SAN L10W 4+60N		3.14	0.90	0.61	0.02	0.10	36	11
S1 SAN L10W 4+90N		3.06	0.13	0.55	0.05	0.03	35	6
S1 SAN L10W 5+20N		3.68	1.09	0.34	0.02	0.14	31	8
S1 SAN L10W 5+50N		2.53	0.55	0.24	0.02	0.06	16	5
S1 SAN L10W 5+80N		2.04	0.23	0.13	0.02	0.04	11	2
S1 SAN L10W 6+10N		3.71	0.83	0.73	0.03	0.12	39	15
S1 SAN L10W 6+40N		3.27	0.42	0.97	0.03	0.06	42	17
S1 SAN L10W 6+70N		2.53	0.41	0.46	0.03	0.05	30	6
S1 SAN L10W 7+10N		1.90	0.69	0.61	0.03	0.08	40	6
S1 SAN L10W 7+30N		2.45	0.38	0.58	0.03	0.05	34	5
S1 SAN L10W 7+60N		2.40	0.60	0.64	0.03	0.07	38	8
S1 SAN L10W 7+90N		2.86	0.65	0.65	0.03	0.10	41	13
S1 SAN L10W 8+20N		3.58	0.48	0.63	0.04	0.08	41	12
S1 SAN L10W 8+50N		2.53	0.91	0.58	0.03	0.11	35	8
S1 SAN L10W 8+80N		2.92	0.98	0.47	0.03	0.08	28	12
S1 SAN L10W 9+10N		3.56	1.10	0.64	0.02	0.11	36	14
S1 SAN L10W 9+40N		3.50	1.11	0.32	0.02	0.12	31	6
S1 SAN L10W 9+70N		2.92	0.41	0.19	0.03	0.04	15	3
S1 SAN L10W 10+00N		2.57	0.52	0.24	0.03	0.06	17	4
S1 SAN L10W 10+00N A		2.42	1.26	0.38	0.02	0.09	27	5
S1 SAN L10W 10+30N		2.54	0.56	0.27	0.02	0.05	18	3
S1 SAN L10W 10+60N		2.10	0.86	0.14	0.02	0.07	9	1
S1 SAN L10W 10+90N		2.84	0.73	0.16	0.02	0.05	11	2
S1 SAN L10W 11+20N		3.01	0.78	0.29	0.03	0.04	16	3
S1 SAN L10W 11+50N		2.81	0.58	0.23	0.03	0.05	15	3
S1 SAN L10W 11+80N		2.64	0.47	0.15	0.02	0.04	14	2
S1 SAN L10W 12+00N		3.46	1.65	0.25	0.02	0.04	14	7
S1 SAN L12W 3+00N		2.14	0.47	0.19	0.02	0.04	18	2
S1 SAN L12W 3+40N		3.24	0.55	0.13	0.02	0.07	11	3
S1 SAN L12W 3+70N		2.46	0.56	0.17	0.02	0.06	13	4
S1 SAN L12W 4+00N		2.06	0.52	0.24	0.02	0.05	18	3
S1 SAN L12W 4+30N		2.05	0.23	0.19	0.02	0.03	14	3
S1 SAN L12W 4+60N		2.03	0.70	0.22	0.02	0.04	18	4
S1 SAN L12W 4+90N		2.01	0.29	0.17	0.02	0.04	17	4
S1 SAN L12W 5+20N		1.48	0.30	0.14	0.03	0.04	16	3

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM
S1 SAN L12W 5+50N		10	<0.2	12	5	28	3	3	6	<1.0	<5	19
S1 SAN L12W 5+80N		6	0.8	33	8	24	4	6	7	<1.0	<5	19
S1 SAN L12W 6+10N		<5	0.6	15	8	40	5	8	9	<1.0	<5	17
S1 SAN L12W 6+40N		<5	0.7	30	8	70	5	9	12	<1.0	<5	37
S1 SAN L12W 6+70N		6	0.7	29	6	70	4	8	9	<1.0	<5	17
S1 SAN L12W 7+00N		13	0.7	36	13	46	4	8	11	<1.0	<5	30
S1 SAN L12W 7+30N		<5	<0.2	7	6	22	1	3	5	<1.0	<5	7
S1 SAN L12W 7+60N		14	0.3	9	6	20	2	2	4	<1.0	<5	15
S1 SAN L12W 7+90N		8	0.2	8	7	30	2	2	5	<1.0	<5	16
S1 SAN L12W 8+20N		16	0.3	14	6	28	2	4	6	<1.0	<5	8
S1 SAN L12W 8+50N		<5	0.3	11	6	29	3	4	7	<1.0	<5	20
S1 SAN L12W 8+80N		8	1.2	29	8	80	3	11	9	<1.0	<5	29
S1 SAN L12W 9+10N		8	0.4	14	8	38	4	4	7	<1.0	<5	16
S1 SAN L12W 9+40N		25	0.3	13	6	36	3	4	6	<1.0	<5	12
S1 SAN L12W 9+70N		8	0.5	18	9	62	4	7	8	<1.0	<5	15
S1 SAN L12W 10+00N		21	1.3	46	12	103	15	18	13	<1.0	<5	20
S1 SAN L12W 10+30N		10	0.7	16	8	41	3	6	6	<1.0	<5	24
S1 SAN L12W 10+60N		70	0.6	20	7	53	3	6	9	<1.0	<5	29
S1 SAN L12W 10+90N		<5	0.5	41	7	114	2	13	15	<1.0	<5	24
S1 SAN L12W 11+20N		<5	0.5	21	7	69	3	9	9	<1.0	<5	6
S1 SAN L12W 11+50N		8	1.8	59	9	71	3	9	9	<1.0	<5	30
S1 SAN L12W 11+80N		137	0.9	59	11	75	4	12	16	<1.0	<5	21
S1 SAN L12W 12+10N		22	1.6	38	40	129	4	13	13	<1.0	<5	42
S1 SAN L13W 3+10N		<5	0.7	25	9	58	2	9	10	<1.0	<5	15
S1 SAN L13W 3+40N		<5	0.4	33	7	72	2	12	12	<1.0	<5	8
S1 SAN L13W 3+70N		<5	0.5	21	4	59	3	9	10	<1.0	<5	22
S1 SAN L13W 4+00N		8	1.0	34	9	50	3	8	10	<1.0	<5	18
S1 SAN L13W 4+30N		6	1.3	50	7	87	5	11	9	<1.0	<5	13
S1 SAN L13W 4+60N		<5	1.3	61	9	62	4	14	14	<1.0	<5	23
S1 SAN L13W 4+90N		6	1.6	100	8	68	3	89	10	<1.0	<5	18
S1 SAN L13W 5+20N		6	0.4	15	6	45	3	6	7	<1.0	<5	24
S1 SAN L13W 5+50N		<5	0.6	36	<2	67	3	33	26	<1.0	<5	19
S1 SAN L13W 5+80N		70	0.3	23	6	34	4	6	12	<1.0	<5	6
S1 SAN L13W 6+10N		<5	0.4	26	5	41	4	7	10	<1.0	<5	7
S1 SAN L13W 6+40N		24	0.3	25	7	59	2	8	13	<1.0	<5	24
S1 SAN L13W 6+70N		19	0.5	17	6	36	2	5	8	<1.0	<5	12
S1 SAN L13W 7+00N		<5	0.5	35	5	64	4	8	12	<1.0	<5	14
S1 SAN L13W 7+30N		12	0.6	25	9	66	3	6	10	<1.0	<5	17
S1 SAN L13W 7+60N		27	1.5	24	10	61	5	8	11	<1.0	<5	16
S1 SAN L13W 7+90N		<5	0.7	14	9	45	3	4	7	<1.0	<5	9

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SAMPLE NUMBER	ELEMENT UNITS	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM
S1 SAN L12W 5+50N		7	0.058	2.24	177	<10	34	6	37	<20	<20	14
S1 SAN L12W 5+80N		10	0.095	1.74	384	<10	39	7	28	<20	<20	24
S1 SAN L12W 6+10N		10	0.061	3.30	207	<10	68	16	52	<20	<20	22
S1 SAN L12W 6+40N		17	0.079	3.74	302	<10	70	13	56	<20	<20	24
S1 SAN L12W 6+70N		10	0.063	2.02	416	<10	69	14	45	<20	<20	28
S1 SAN L12W 7+00N		14	0.127	2.83	366	<10	57	15	46	<20	<20	31
S1 SAN L12W 7+30N		<5	0.027	1.72	115	<10	26	7	36	<20	<20	11
S1 SAN L12W 7+60N		7	0.076	2.03	88	<10	25	6	33	<20	<20	12
S1 SAN L12W 7+90N		8	0.045	1.94	130	<10	24	7	34	<20	<20	11
S1 SAN L12W 8+20N		7	0.049	2.10	131	<10	25	8	36	<20	<20	15
S1 SAN L12W 8+50N		8	0.036	3.05	142	<10	22	9	44	<20	<20	18
S1 SAN L12W 8+80N		13	0.118	1.95	343	<10	111	17	38	<20	<20	29
S1 SAN L12W 9+10N		8	0.070	3.33	210	<10	47	11	48	<20	<20	17
S1 SAN L12W 9+40N		8	0.045	2.43	213	<10	34	10	45	<20	<20	14
S1 SAN L12W 9+70N		12	0.058	2.65	412	<10	53	14	46	<20	<20	17
S1 SAN L12W 10+00N		13	0.085	4.22	485	<10	155	27	68	<20	<20	29
S1 SAN L12W 10+30N		11	0.071	2.31	230	<10	38	12	44	<20	<20	12
S1 SAN L12W 10+60N		11	0.064	3.08	408	<10	40	15	56	<20	<20	15
S1 SAN L12W 10+90N		11	0.035	3.64	499	<10	59	20	77	<20	<20	23
S1 SAN L12W 11+20N		7	0.052	2.71	215	<10	37	13	51	<20	<20	17
S1 SAN L12W 11+50N		15	0.114	2.54	442	<10	39	11	52	<20	<20	32
S1 SAN L12W 11+80N		8	0.077	5.14	559	<10	62	30	103	<20	<20	27
S1 SAN L12W 12+10N		9	0.094	3.92	660	<10	56	22	88	<20	<20	44
S1 SAN L13W 3+10N		8	0.053	2.71	451	<10	66	16	50	<20	<20	25
S1 SAN L13W 3+40N		8	0.040	3.04	565	<10	129	18	58	<20	<20	23
S1 SAN L13W 3+70N		12	0.073	3.03	229	<10	85	16	48	<20	<20	18
S1 SAN L13W 4+00N		13	0.097	2.62	549	<10	71	13	46	<20	<20	32
S1 SAN L13W 4+30N		13	0.061	1.69	300	<10	125	18	34	<20	<20	41
S1 SAN L13W 4+60N		14	0.076	3.29	526	<10	122	19	55	<20	<20	36
S1 SAN L13W 4+90N		7	0.098	2.65	981	<10	71	26	42	<20	<20	28
S1 SAN L13W 5+20N		10	0.046	2.67	158	<10	50	12	48	<20	<20	13
S1 SAN L13W 5+50N		11	0.025	4.41	737	<10	106	56	95	<20	<20	23
S1 SAN L13W 5+80N		5	0.053	2.50	534	<10	41	9	34	<20	<20	21
S1 SAN L13W 6+10N		6	0.043	2.75	573	<10	47	11	45	<20	<20	20
S1 SAN L13W 6+40N		16	0.066	3.28	416	<10	37	13	56	<20	<20	19
S1 SAN L13W 6+70N		5	0.041	2.68	206	<10	32	9	45	<20	<20	15
S1 SAN L13W 7+00N		8	0.040	3.83	412	<10	64	15	60	<20	<20	27
S1 SAN L13W 7+30N		7	0.060	2.86	464	<10	55	11	50	<20	<20	14
S1 SAN L13W 7+60N		11	0.081	3.45	354	<10	51	15	58	<20	<20	22
S1 SAN L13W 7+90N		<5	0.072	3.25	245	<10	41	10	52	<20	<20	15

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SAMPLE NUMBER	ELEMENT UNITS	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM
S1 SAN L12W 5+50N		1.51	0.24	0.15	0.02	0.03	14	3
S1 SAN L12W 5+80N		2.94	0.23	0.32	0.03	0.03	27	9
S1 SAN L12W 6+10N		2.35	0.39	0.35	0.02	0.05	33	7
S1 SAN L12W 6+40N		3.64	0.63	0.22	0.02	0.05	20	6
S1 SAN L12W 6+70N		2.47	0.71	0.82	0.03	0.08	42	11
S1 SAN L12W 7+00N		3.79	0.62	0.71	0.03	0.07	34	13
S1 SAN L12W 7+30N		0.77	0.16	0.11	0.02	0.03	10	1
S1 SAN L12W 7+60N		2.23	0.11	0.10	0.02	0.02	10	2
S1 SAN L12W 7+90N		2.14	0.18	0.11	0.02	0.03	9	2
S1 SAN L12W 8+20N		2.37	0.26	0.13	0.02	0.03	12	3
S1 SAN L12W 8+50N		2.60	0.28	0.16	0.02	0.03	12	4
S1 SAN L12W 8+80N		3.39	1.01	0.39	0.02	0.14	32	8
S1 SAN L12W 9+10N		2.36	0.35	0.16	0.02	0.04	16	3
S1 SAN L12W 9+40N		2.08	0.30	0.13	0.02	0.04	13	2
S1 SAN L12W 9+70N		2.35	0.66	0.17	0.02	0.07	17	3
S1 SAN L12W 10+00N		4.43	1.19	0.20	0.02	0.15	29	10
S1 SAN L12W 10+30N		2.63	0.38	0.09	0.02	0.04	9	2
S1 SAN L12W 10+60N		2.70	0.53	0.11	0.02	0.04	11	2
S1 SAN L12W 10+90N		2.85	1.24	0.48	0.02	0.08	24	11
S1 SAN L12W 11+20N		2.59	0.54	0.14	0.02	0.04	12	5
S1 SAN L12W 11+50N		4.33	0.43	0.50	0.03	0.04	25	15
S1 SAN L12W 11+80N		2.81	1.07	0.27	0.02	0.07	30	6
S1 SAN L12W 12+10N		3.80	0.76	0.55	0.02	0.06	26	16
S1 SAN L13W 3+10N		3.02	0.72	0.43	0.03	0.09	22	7
S1 SAN L13W 3+40N		2.62	1.10	0.65	0.03	0.13	32	7
S1 SAN L13W 3+70N		2.99	0.65	0.21	0.02	0.06	15	6
S1 SAN L13W 4+00N		3.10	0.52	0.64	0.03	0.07	33	11
S1 SAN L13W 4+30N		3.49	0.85	0.78	0.03	0.12	45	16
S1 SAN L13W 4+60N		4.06	0.95	0.55	0.03	0.13	35	13
S1 SAN L13W 4+90N		2.97	0.59	0.82	0.03	0.09	35	25
S1 SAN L13W 5+20N		2.31	0.33	0.13	0.02	0.03	11	2
S1 SAN L13W 5+50N		2.93	2.02	0.80	0.02	0.16	26	4
S1 SAN L13W 5+80N		2.07	0.32	0.22	0.03	0.04	21	8
S1 SAN L13W 6+10N		2.31	0.50	0.18	0.02	0.05	18	6
S1 SAN L13W 6+40N		3.43	0.74	0.20	0.02	0.06	14	3
S1 SAN L13W 6+70N		1.82	0.39	0.14	0.02	0.05	11	2
S1 SAN L13W 7+00N		2.27	0.85	0.26	0.02	0.06	27	7
S1 SAN L13W 7+30N		3.03	0.55	0.13	0.03	0.05	12	2
S1 SAN L13W 7+60N		3.28	0.92	0.18	0.02	0.05	19	5
S1 SAN L13W 7+90N		2.12	0.30	0.10	0.02	0.05	10	2

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SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM
S1 SAN L13W 8+20N		<5	0.3	30	4	57	8	11	14	<1.0	<5	11
S1 SAN L13W 8+50N		<5	0.7	23	7	58	3	7	9	<1.0	<5	<5
S1 SAN L13W 8+80N		6	1.0	52	8	82	5	11	13	<1.0	<5	18
S1 SAN L13W 9+10N		<5	0.7	40	9	50	4	9	7	<1.0	<5	15
S1 SAN L13W 9+40N		<5	0.7	37	10	89	5	12	12	<1.0	<5	10
S1 SAN L13W 9+70N		<5	0.6	48	10	85	4	12	12	<1.0	<5	12
S1 SAN L13W 10+00N		6	1.3	45	11	98	7	10	10	<1.0	<5	10
S1 SAN L13W 10+30N		<5	1.2	35	14	98	8	8	9	<1.0	<5	11
S1 SAN L13W 10+60N		6	1.0	36	12	72	8	6	20	<1.0	<5	18
S1 SAN L13W 10+90N		<5	0.8	83	9	55	4	12	14	<1.0	<5	<5
S1 SAN L13W 11+20N		<5	2.2	53	6	66	3	7	9	<1.0	<5	12
S1 SAN L13W 11+50N		<5	0.3	13	8	34	3	4	5	<1.0	<5	15
S1 SAN L13W 11+80N		112	0.7	34	21	188	3	10	14	<1.0	<5	<5
S1 SAN L13W 12+10N		<5	0.7	18	14	67	3	6	8	<1.0	<5	8
S1 SAN L14W 3+10N		14	1.0	31	11	102	2	12	13	<1.0	<5	9
S1 SAN L14W 3+40N		<5	1.1	68	10	63	3	11	13	<1.0	<5	6
S1 SAN L14W 3+70N		6	0.8	27	9	155	7	10	11	<1.0	<5	14
S1 SAN L14W 4+00N		44	0.8	28	<2	166	6	9	19	<1.0	<5	<5
S1 SAN L14W 4+30N		<5	0.3	29	10	48	5	6	5	<1.0	<5	32
S1 SAN L14W 4+60N		<5	0.9	41	7	34	4	10	6	<1.0	<5	27
S1 SAN L14W 4+90N		<5	0.8	50	12	35	3	9	10	<1.0	<5	19
S1 SAN L14W 5+20N		<5	0.7	20	2	76	4	7	14	<1.0	<5	28
S1 SAN L14W 5+50N		6	1.3	104	5	77	3	18	16	<1.0	<5	31
S1 SAN L14W 5+80N		<5	0.8	25	8	81	3	7	11	<1.0	<5	36
S1 SAN L14W 6+10N		6	1.5	42	8	46	4	9	11	<1.0	<5	28
S1 SAN L14W 6+40N		<5	0.5	10	8	24	2	3	4	<1.0	<5	12
S1 SAN L14W 6+70N		<5	2.2	31	8	53	5	8	7	<1.0	<5	12
S1 SAN L14W 7+00N		35	<0.2	10	5	33	2	4	5	<1.0	<5	7
S1 SAN L14W 7+30N		20	0.5	34	4	26	2	4	6	<1.0	<5	<5
S1 SAN L14W 7+60N		<5	0.4	35	4	63	3	9	12	<1.0	<5	12
S1 SAN L14W 7+90N		<5	0.4	19	4	43	2	6	8	<1.0	<5	<5
S1 SAN L14W 8+20N		10	0.6	23	6	45	3	5	8	<1.0	<5	<5
S1 SAN L14W 8+50N		8	0.5	21	7	84	4	11	12	<1.0	<5	<5
S1 SAN L14W 8+80N		<5	0.4	21	8	64	4	9	11	<1.0	<5	<5
S1 SAN L14W 9+10N		6	0.5	16	7	67	3	7	8	<1.0	<5	<5
S1 SAN L14W 9+40N		10	0.8	45	8	51	5	8	11	<1.0	<5	8
S1 SAN L14W 9+70N		<5	0.7	30	8	87	6	8	8	<1.0	<5	9
S1 SAN L14W 10+00N		16	0.4	28	7	84	5	9	11	<1.0	<5	<5
S1 SAN L14W 10+30N		6	0.5	24	6	49	3	7	7	<1.0	<5	<5
S1 SAN L14W 10+60N		8	0.5	32	8	70	6	8	11	<1.0	<5	12

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SAMPLE NUMBER	ELEMENT UNITS	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM
S1 SAN L13W 8+20N		9	0.067	3.36	637	<10	76	18	61	<20	<20	34
S1 SAN L13W 8+50N		6	0.052	2.33	613	<10	66	12	46	<20	<20	27
S1 SAN L13W 8+80N		9	0.050	3.57	769	<10	117	18	62	<20	<20	41
S1 SAN L13W 9+10N		13	0.095	2.03	209	<10	71	12	35	<20	<20	38
S1 SAN L13W 9+40N		6	0.096	3.03	1022	<10	138	16	53	<20	<20	39
S1 SAN L13W 9+70N		9	0.066	3.25	497	<10	97	17	56	<20	<20	46
S1 SAN L13W 10+00N		8	0.110	2.88	481	<10	74	16	51	<20	<20	44
S1 SAN L13W 10+30N		6	0.105	2.81	494	<10	58	12	42	<20	<20	28
S1 SAN L13W 10+60N		8	0.092	2.20	1666	<10	54	11	42	<20	<20	29
S1 SAN L13W 10+90N		6	0.094	3.37	401	<10	78	19	63	<20	<20	60
S1 SAN L13W 11+20N		8	0.121	2.24	595	<10	48	12	53	<20	<20	47
S1 SAN L13W 11+50N		7	0.090	2.17	142	<10	34	7	37	<20	<20	11
S1 SAN L13W 11+80N		5	0.057	3.33	910	<10	59	16	63	<20	<20	23
S1 SAN L13W 12+10N		<5	0.068	2.73	256	<10	42	9	48	<20	<20	18
S1 SAN L14W 3+10N		9	0.078	3.12	681	<10	77	18	51	<20	<20	24
S1 SAN L14W 3+40N		6	0.086	3.04	553	<10	63	18	53	<20	<20	28
S1 SAN L14W 3+70N		6	0.040	2.67	1087	<10	55	53	59	<20	<20	32
S1 SAN L14W 4+00N		7	0.062	5.86	1074	<10	70	10	81	<20	<20	40
S1 SAN L14W 4+30N		12	0.062	1.16	430	<10	26	5	33	<20	<20	16
S1 SAN L14W 4+60N		14	0.110	1.94	448	<10	38	9	28	<20	<20	26
S1 SAN L14W 4+90N		11	0.081	2.91	245	<10	42	15	47	<20	<20	30
S1 SAN L14W 5+20N		13	0.065	3.88	1196	<10	65	20	91	<20	<20	34
S1 SAN L14W 5+50N		14	0.055	3.80	747	<10	113	23	58	<20	<20	35
S1 SAN L14W 5+80N		14	0.051	3.14	360	<10	94	11	51	<20	<20	26
S1 SAN L14W 6+10N		12	0.090	2.68	607	<10	61	12	41	<20	<20	34
S1 SAN L14W 6+40N		<5	0.045	1.62	116	<10	58	8	32	<20	<20	11
S1 SAN L14W 6+70N		10	0.107	2.15	453	<10	66	11	38	<20	<20	34
S1 SAN L14W 7+00N		<5	0.044	1.96	143	<10	33	8	39	<20	<20	14
S1 SAN L14W 7+30N		<5	0.054	2.12	197	<10	34	8	34	<20	<20	47
S1 SAN L14W 7+60N		<5	0.050	3.22	307	<10	56	17	54	<20	<20	17
S1 SAN L14W 7+90N		<5	0.065	2.76	214	<10	37	11	46	<20	<20	14
S1 SAN L14W 8+20N		<5	0.078	3.00	273	<10	40	10	49	<20	<20	13
S1 SAN L14W 8+50N		<5	0.052	3.07	615	<10	68	17	56	<20	<20	16
S1 SAN L14W 8+80N		6	0.077	2.92	348	<10	78	17	51	<20	<20	17
S1 SAN L14W 9+10N		6	0.058	3.01	216	<10	55	12	48	<20	<20	14
S1 SAN L14W 9+40N		6	0.099	2.71	349	<10	62	15	44	<20	<20	28
S1 SAN L14W 9+70N		<5	0.090	2.47	517	<10	69	13	43	<20	<20	22
S1 SAN L14W 10+00N		5	0.065	3.07	432	<10	58	16	51	<20	<20	18
S1 SAN L14W 10+30N		<5	0.095	2.23	305	<10	40	8	33	<20	<20	25
S1 SAN L14W 10+60N		<5	0.103	2.54	1448	<10	66	14	50	<20	<20	32

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SAMPLE NUMBER	ELEMENT UNITS	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM
S1 SAN L13W 8+20N		3.16	0.91	0.27	0.02	0.09	26	10
S1 SAN L13W 8+50N		2.13	0.73	0.53	0.03	0.09	32	8
S1 SAN L13W 8+80N		2.94	1.03	0.52	0.02	0.14	34	13
S1 SAN L13W 9+10N		4.41	0.56	0.36	0.03	0.08	27	14
S1 SAN L13W 9+40N		3.75	0.87	0.27	0.02	0.10	24	13
S1 SAN L13W 9+70N		4.08	0.90	0.17	0.02	0.10	16	19
S1 SAN L13W 10+00N		3.64	0.79	0.27	0.03	0.09	26	17
S1 SAN L13W 10+30N		3.24	0.52	0.20	0.03	0.05	23	11
S1 SAN L13W 10+60N		2.61	0.50	0.24	0.02	0.05	27	10
S1 SAN L13W 10+90N		3.91	0.86	0.52	0.02	0.08	24	21
S1 SAN L13W 11+20N		3.27	0.65	1.02	0.03	0.06	40	19
S1 SAN L13W 11+50N		3.37	0.23	0.09	0.02	0.04	10	2
S1 SAN L13W 11+80N		3.05	1.00	0.46	0.03	0.06	24	7
S1 SAN L13W 12+10N		2.71	0.47	0.19	0.03	0.04	14	5
S1 SAN L14W 3+10N		3.46	0.75	0.82	0.03	0.06	34	8
S1 SAN L14W 3+40N		2.74	0.62	0.79	0.03	0.04	32	10
S1 SAN L14W 3+70N		2.11	0.91	1.07	0.04	0.11	46	17
S1 SAN L14W 4+00N		3.19	1.64	1.61	0.03	0.12	45	10
S1 SAN L14W 4+30N		5.26	0.07	1.02	0.05	0.02	44	9
S1 SAN L14W 4+60N		3.95	0.24	0.44	0.04	0.04	29	14
S1 SAN L14W 4+90N		2.98	0.37	0.39	0.03	0.03	27	11
S1 SAN L14W 5+20N		3.28	1.53	1.14	0.03	0.13	44	14
S1 SAN L14W 5+50N		3.35	1.06	1.17	0.03	0.14	70	11
S1 SAN L14W 5+80N		3.29	0.68	0.77	0.02	0.11	42	8
S1 SAN L14W 6+10N		3.02	0.47	0.65	0.03	0.07	45	13
S1 SAN L14W 6+40N		1.10	0.18	0.24	0.02	0.04	19	2
S1 SAN L14W 6+70N		2.86	0.47	0.34	0.02	0.06	31	11
S1 SAN L14W 7+00N		2.11	0.30	0.15	0.02	0.04	13	3
S1 SAN L14W 7+30N		2.20	0.31	0.18	0.02	0.04	19	24
S1 SAN L14W 7+60N		3.08	0.91	0.18	0.02	0.08	14	3
S1 SAN L14W 7+90N		2.38	0.48	0.15	0.02	0.04	16	2
S1 SAN L14W 8+20N		2.66	0.42	0.12	0.02	0.04	11	2
S1 SAN L14W 8+50N		3.15	0.84	0.19	0.02	0.08	18	4
S1 SAN L14W 8+80N		3.34	0.75	0.15	0.02	0.07	14	4
S1 SAN L14W 9+10N		3.35	0.45	0.10	0.02	0.04	12	2
S1 SAN L14W 9+40N		3.38	0.46	0.15	0.02	0.06	18	12
S1 SAN L14W 9+70N		2.93	0.54	0.17	0.02	0.06	20	6
S1 SAN L14W 10+00N		3.03	0.77	0.15	0.02	0.06	15	4
S1 SAN L14W 10+30N		3.44	0.36	0.16	0.03	0.04	17	9
S1 SAN L14W 10+60N		3.07	0.70	0.25	0.02	0.07	22	11

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S1 SAN L14W 10+90N		8	0.6	38	7	73	5	13	12	<1.0	<5	12
S1 SAN L14W 11+20N		24	0.9	36	8	92	5	11	15	<1.0	<5	10
S1 SAN L14W 11+50N		10	<0.2	51	4	56	3	17	18	<1.0	<5	9
S1 SAN L14W 11+80N		<5	0.4	31	7	45	2	7	11	<1.0	<5	5
S1 SAN L14W 12+10N		8	1.0	40	6	29	2	7	4	<1.0	<5	7
S1 SAN L15W 3+10N		<5	0.6	31	13	64	4	20	13	<1.0	<5	13
S1 SAN L15W 3+40N		<5	<0.2	16	6	69	3	9	7	<1.0	<5	21
S1 SAN L15W 3+70N		107	0.2	11	8	25	2	5	3	<1.0	<5	12
S1 SAN L15W 4+00N		<5	<0.2	14	4	23	1	6	4	<1.0	<5	<5
S1 SAN L15W 4+30N		38	<0.2	15	6	19	1	4	3	<1.0	<5	13
S1 SAN L15W 4+60N		8	0.5	17	7	34	3	7	3	<1.0	<5	16
S1 SAN L15W 4+90N		10	<0.2	42	4	61	3	12	12	<1.0	<5	10
S1 SAN L15W 5+20N		<5	0.3	36	4	48	4	9	9	<1.0	<5	6
S1 SAN L15W 5+50N		6	1.1	41	7	124	14	12	13	<1.0	<5	<5
S1 SAN L15W 5+80N		<5	0.5	34	6	75	4	12	14	<1.0	<5	22
S1 SAN L15W 9+10N		<5	0.9	38	8	58	4	8	9	<1.0	<5	12
S1 SAN L15W 9+40N		<5	0.6	17	7	40	2	5	6	<1.0	<5	15
S1 SAN L15W 9+70N		<5	0.5	25	8	44	3	6	7	<1.0	<5	7
S1 SAN L15W 10+00N		12	0.7	18	6	43	3	6	6	<1.0	<5	13
S1 SAN L15W 10+30N		<5	0.7	14	6	44	2	5	5	<1.0	<5	11
S1 SAN L15W 10+60N		<5	0.6	15	8	42	3	5	6	<1.0	<5	11
S1 SAN L15W 10+90N		<5	0.4	16	5	56	2	4	7	<1.0	<5	7
S1 SAN L15W 11+20N		<5	1.4	71	10	142	5	10	14	1.7	<5	13
S1 SAN L15W 11+50N		<5	0.5	28	6	58	3	7	10	<1.0	<5	21
S1 SAN L15W 11+80N		6	1.6	37	6	40	3	6	4	<1.0	<5	<5
S1 SAN L15W 12+15N		<5	0.5	11	5	36	3	4	6	<1.0	<5	6

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S1 SAN L14W 10+90N		<5	0.073	3.55	368	<10	67	24	66	<20	<20	18
S1 SAN L14W 11+20N		<5	0.083	3.24	667	<10	84	19	57	<20	<20	28
S1 SAN L14W 11+50N		<5	0.028	3.54	837	<10	66	34	77	<20	<20	24
S1 SAN L14W 11+80N		<5	0.033	2.50	397	<10	40	15	50	<20	<20	18
S1 SAN L14W 12+10N		<5	0.094	1.67	215	<10	35	7	29	<20	<20	35
S1 SAN L15W 3+10N		<5	0.057	3.15	267	<10	48	23	54	<20	<20	18
S1 SAN L15W 3+40N		<5	0.046	1.74	573	<10	38	4	27	<20	<20	15
S1 SAN L15W 3+70N		<5	0.050	1.04	134	<10	21	2	16	<20	<20	14
S1 SAN L15W 4+00N		<5	0.035	1.08	215	<10	25	3	16	<20	<20	12
S1 SAN L15W 4+30N		<5	0.058	0.86	385	<10	25	3	14	<20	<20	11
S1 SAN L15W 4+60N		<5	0.088	1.12	206	<10	29	5	20	<20	<20	16
S1 SAN L15W 4+90N		<5	0.033	3.46	567	<10	84	18	59	<20	<20	28
S1 SAN L15W 5+20N		<5	0.039	2.45	396	<10	49	16	46	<20	<20	22
S1 SAN L15W 5+50N		<5	0.076	3.19	2445	<10	116	19	52	<20	<20	21
S1 SAN L15W 5+80N		<5	0.047	3.18	542	<10	127	15	54	<20	<20	24
S1 SAN L15W 9+10N		<5	0.062	2.48	806	<10	55	13	47	<20	<20	30
S1 SAN L15W 9+40N		<5	0.076	2.46	170	<10	38	12	43	<20	<20	10
S1 SAN L15W 9+70N		<5	0.063	1.99	244	<10	45	12	45	<20	<20	21
S1 SAN L15W 10+00N		5	0.085	2.57	158	<10	38	14	44	<20	<20	17
S1 SAN L15W 10+30N		<5	0.087	2.33	197	<10	34	8	40	<20	<20	10
S1 SAN L15W 10+60N		<5	0.075	2.61	221	<10	37	8	40	<20	<20	11
S1 SAN L15W 10+90N		<5	0.061	2.34	205	<10	52	9	41	<20	<20	12
S1 SAN L15W 11+20N		<5	0.094	2.75	1443	<10	55	17	47	<20	<20	31
S1 SAN L15W 11+50N		<5	0.051	2.70	318	<10	54	12	48	<20	<20	19
S1 SAN L15W 11+80N		<5	0.142	1.44	210	<10	45	8	26	<20	<20	22
S1 SAN L15W 12+15N		<5	0.061	3.04	157	<10	32	8	50	<20	<20	15

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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

DATE PRINTED: 17-SEP-92

REPORT: V92-01064.0 (COMPLETE)

PROJECT: NONE GIVEN PAGE 4C

SAMPLE NUMBER	ELEMENT UNITS	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM
S1 SAN L14W 10+90N		3.01	0.99	0.17	0.02	0.07	15	3
S1 SAN L14W 11+20N		3.53	0.94	0.24	0.02	0.08	22	10
S1 SAN L14W 11+50N		2.47	1.42	0.53	0.03	0.10	36	7
S1 SAN L14W 11+80N		1.94	0.90	0.45	0.03	0.04	24	5
S1 SAN L14W 12+10N		4.62	0.23	0.79	0.04	0.03	37	17
S1 SAN L15W 3+10N		3.42	0.69	0.24	0.02	0.04	14	6
S1 SAN L15W 3+40N		4.47	0.37	0.92	0.05	0.04	38	8
S1 SAN L15W 3+70N		4.32	0.07	0.52	0.05	0.02	28	7
S1 SAN L15W 4+00N		3.34	0.13	0.43	0.05	0.03	26	6
S1 SAN L15W 4+30N		3.45	0.06	0.47	0.04	0.02	27	6
S1 SAN L15W 4+60N		4.13	0.12	0.60	0.06	0.03	39	8
S1 SAN L15W 4+90N		2.32	1.06	0.51	0.03	0.12	30	9
S1 SAN L15W 5+20N		1.98	0.72	0.48	0.03	0.04	30	8
S1 SAN L15W 5+50N		3.45	0.68	1.16	0.03	0.08	71	8
S1 SAN L15W 5+80N		3.61	0.92	0.54	0.03	0.13	40	7
S1 SAN L15W 9+10N		3.52	0.52	0.13	0.03	0.05	15	14
S1 SAN L15W 9+40N		2.63	0.33	0.08	0.02	0.04	8	2
S1 SAN L15W 9+70N		2.58	0.38	0.14	0.03	0.04	13	7
S1 SAN L15W 10+00N		3.26	0.36	0.09	0.02	0.03	11	5
S1 SAN L15W 10+30N		3.14	0.26	0.06	0.02	0.03	7	2
S1 SAN L15W 10+60N		3.44	0.24	0.07	0.02	0.04	8	2
S1 SAN L15W 10+90N		2.87	0.32	0.11	0.02	0.04	12	3
S1 SAN L15W 11+20N		3.66	0.53	0.29	0.02	0.05	25	14
S1 SAN L15W 11+50N		2.18	0.80	0.24	0.02	0.06	21	5
S1 SAN L15W 11+80N		4.03	0.27	0.20	0.03	0.04	19	8
S1 SAN L15W 12+15N		2.14	0.36	0.16	0.02	0.04	14	2

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Geochemical Lab Report

Inchcape Testing Services

REPORT: V92-01446.0 (COMPLETE)

DATE PRINTED: 14-DEC-92
PROJECT: NONE GIVEN PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM
LUMPY 2 ADIT 9236		<5	0.3	22	4	71	13	27	5	<1.0	6	14	<5	<.010	1.61	291	<10	71	121	45	<20	<20	4	0.93	0.99	>10.00	0.02	0.06	118	2
LUMPY 2 ADIT 9237		<5	0.9	28	25	120	2	12	3	<1.0	<5	16	<5	<.010	0.76	327	<10	25	72	34	<20	<20	3	0.46	0.49	>10.00	<.01	0.04	237	<1
RAMPALO VEIN ADIT 1		>10000	>50.0	542	3013	970	6	6	2	7.3	<5	1144	57	0.052	1.03	68	<10	7	345	8	<20	<20	<1	0.08	0.05	1.42	<.01	0.02	17	<1
RAMPALO STK PILE		3759	>50.0	490	2475	1533	8	11	4	12.3	<5	1427	163	0.033	2.86	32	<10	2	279	<1	<20	<20	<1	0.03	<.01	0.13	<.01	0.01	2	<1
RAMPALO DUMP 1		>10000	>50.0	104	2686	2083	6	9	7	36.0	<5	1442	25	0.044	5.27	26	<10	5	278	<1	<20	<20	2	0.13	<.01	0.01	<.01	0.10	6	<1
SL ADIT 1		2537	>50.0	28	290	306	5	16	8	<1.0	<5	>2000	21	0.043	3.06	422	<10	4	278	<1	<20	<20	<1	0.29	0.25	3.46	<.01	0.05	68	<1
SL ADIT 2		25	2.6	86	12	103	1	65	30	<1.0	8	54	<5	0.243	5.05	1357	<10	31	208	158	<20	<20	9	3.52	2.17	>10.00	<.01	0.18	367	10
SL ADIT 3		55	3.4	45	13	33	2	10	6	<1.0	5	82	6	0.135	2.85	803	<10	28	58	37	<20	<20	9	1.78	1.61	9.75	<.01	0.21	214	9
9238		298	9.1	42	265	195	<1	7	9	3.3	<5	262	<5	<.010	3.23	1147	<10	54	156	12	<20	<20	14	0.98	0.24	1.20	<.01	0.51	29	11
9239		<5	0.5	11	4	9	2	22	4	<1.0	<5	<5	<5	0.099	0.94	270	<10	36	56	27	<20	<20	2	0.33	0.39	>10.00	0.01	0.02	282	<1

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Geochemical Lab Report

Inchcape Testing Services

REPORT: V92-01446.0 (COMPLETE)

REFERENCE:

CLIENT: ZALMAC MINES LTD.
PROJECT: NONE GIVEN

SUBMITTED BY: UNKNOWN

DATE PRINTED: 14-DEC-92

	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION	EXTRACTION	METHOD
1	Au	Gold	10	5 PPB	FIRE ASSAY	FIRE ASSAY @ 10 G
2	Ag	Silver	10	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
3	Cu	Copper	10	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
4	Pb	Lead	10	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
5	Zn	Zinc	10	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
6	Mo	Molybdenum	10	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
7	Ni	Nickel	10	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
8	Co	Cobalt	10	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
9	Cd	Cadmium	10	1.0 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
10	Bi	Bismuth	10	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
11	As	Arsenic	10	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
12	Sb	Antimony	10	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
13	Hg	Mercury	10	0.010 PPM	HCL:HNO3 (3:1)	COLD VAPOR AA
14	Fe	Iron	10	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
15	Mn	Manganese	10	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
16	Te	Tellurium	10	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
17	Ba	Barium	10	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
18	Cr	Chromium	10	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
19	V	Vanadium	10	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
20	Sn	Tin	10	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
21	W	Tungsten	10	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
22	La	Lanthanum	10	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
23	Al	Aluminum	10	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
24	Mg	Magnesium	10	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
25	Ca	Calcium	10	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
26	Na	Sodium	10	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
27	K	Potassium	10	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
28	Sr	Strontium	10	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
29	Y	Yttrium	10	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
R ROCK	10	2 -150	10	CRUSH/SPLIT <10 LB	10
				PULVERIZATION	10
				DRYING	2

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Certificate of Analysis

Inchcape Testing Services

REPORT: V92-01446.4 (COMPLETE) REFERENCE:

CLIENT: ZALMAC MINES LTD.
PROJECT: NONE GIVEN

SUBMITTED BY: UNKNOWN
DATE PRINTED: 12-JAN-93

ORDER	ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Au Gold	1	0.001 OPT		FA PALLADIUM COLL.
2	AG SILVER	1	0.02 OPT		FA PALLADIUM COLL.
3	Wt-150 Pulp Weight -150	4	0.1 GM		FIRE ASSAY
4	Wt+150 +150 Pulp Weight	4	0.01 g		FIRE ASSAY
5	Au-150 Gold Avg -150 mesh	4	0.001 OPT		FIRE ASSAY
6	Au+150 Gold +150 mesh	4	<0.01 OPT		FIRE ASSAY
7	Au Tot Gold in total sample	4	0.001 OPT		FIRE ASSAY
8	Ag-150 Silver Avg-150 mesh.	4	0.02 OPT		FIRE ASSAY
9	Ag+150 Silver in +150 mesh.	4	<0.1 OPT		FIRE ASSAY
10	Ag Tot Ag in total sample.	4	0.02 OPT		FIRE ASSAY

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
R ROCK	5	2 -150	5	METALLICS SCREENING	4
				AS RECEIVED	1

REMARKS: The reported results for sample Rampalo Stk Pile is the new split from the rejects.

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Bondar-Clegg & Company Ltd.
130 Pemberton Avenue, North Vancouver, B.C., V7P 2R5, Canada
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Registered Assayer, Province of British Columbia

BONDAR-CLEGG

Certificate of Analysis

Inchcape Testing Service

REPORT: V92-01446.4 (COMPLETE) DATE PRINTED: 12-JAN-93
PROJECT: NONE GIVEN PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au OPT	AG OPT	Wt+150 GM	WT+150 g	Au-150 OPT	Au+150 OPT	Au Tot OPT	Ag-150 OPT	Ag+150 OPT	Ag Tot OPT
R2 RAMPALO VEIN ADIT 1				195.5	0.23	0.323	23.46	0.350	34.42	429.7	34.88
R2 RAMPALO STK PILE				383.4	83.57	0.134	0.14	0.135	44.67	34.6	42.87
R2 RAMPALO DUMP 1				229.4	2.27	0.309	15.06	0.454	8.73	55.0	9.18
R2 SL ADIT 1				313.5	6.78	0.073	0.59	0.084	4.47	11.5	4.62
R2 9238		0.008	0.27								

Bondar-Clegg & Company Ltd.
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Registered Assayer, Province of British Columbia

HISTORICAL LIGHTING PEAK PROPERTIES:

A. Those occuring outside the perimeter of Zalmac's claims-

1. MORNING CLAIM
   - presently XEN 1 located within the F.I. claim.
   - Cairnes refers to a north-south striking quartz vein with pyrited, sphalerite and galena, hosted in granite.
   - recently active - scope unknown.

2. DICTATOR CLAIM
   - reverted crown grant L. 4636, crown granted in 1920.
   - now enclosed by the XEN 1 claim - different owners.
   - northerly striking quartz vein hosted in granite containing pyrite, galena and sphalerite carrying values in gold and silver (no assays referenced).
   - no recent work on record.

3. GRANITE RANGE
   - old claims located northwest of the junction of Rendell and Waterloo creeks. No work noted.
   - recently Rich &/or Wat groups. Now Little P #7-9?
   - occurance of east-west striking limestone in highly metamorphosed rocks locally intruded by grey granites.
   - recent work included soil geochemistry, VLF-EM and magnetometer surveys, trenching and geological mapping. Areas anomalous in copper-silver-arsenic and zinc-silver-antimony were detected.

21. PAY DAY GROUP
   - presently covered by the six unit Pay Day claim.
   - workings consist of numerous trenches and a 60 foot adit. The mineralized zone occurs in metamorphic rocks near the north-westerly trending contact with the intrusives.
   - mineralization consists of pyrite, sphalerite and chalcopyrite occuring as heavy bands of sulphides in quartz, calcite and ankerite, locally with magnetite. A 10 feet width of heavy sulphides returned values of 30 ounces of silver, 4.2% copper and 12% zinc per ton.
   - intermittent work has been conducted to keep the claims in good standing. No research was conducted.

HISTORICAL LIGHTNING PEAK PROPERTIES: (cont'd)

B. Those surrounded by Zalmac claims, but owned by others-

7. WATERLOO MINE
- presently Waterloo #3 C.G. (L. 4815), staked in 1903.
- extensively discussed in Cairnes report.
- refers to high grade silver ore shipments as early as 1903 with some assays running over 700 ounces per ton. The mineralization consists of silver, sphalerite and galena in a quartz and calcite filled vein/shear zone averaging four (4) feet wide. This system, traced for 1,120 feet in adit No. 1, strikes a few degrees south of east and dips steeply to the north. The mineralized shear is hosted primarily in crystalline limestone associated with greenish colored, highly metamorphosed rocks of volcanic origin (locally schistose and soaked with diorite which has partly replaced the older rocks).
- most recent work was conducted in the early 1980's at which time a lower level cross-cut was driven to access a 1960's drill intercept which graded over 100 ounces silver to the ton.

8. SILVER SPOT (Western Showing)
- presently on Grizz #3 claim. No recent work on record.
- referred to as the Silver Spot vein.
- the vein, on which a 65 foot adit has been driven; strikes northerly and dips steeply west. Mineralization is sparse, consisting of grey copper, pyrite and galena.

9. SILVER SPOT (Eastern Showing)
- presently on Grizz #3 claim. No recent work on record.
- Cairnes refers to this as a probable extension of the A.U. vein. The vein carries pyrite and some galena and sphalerite.

10. A.U. CLAIM
- presently Grizz #1 claim. No recent work on record.
- Cairnes mentions considerable surface trenching and a shaft exploring portions of "some half a dozen quartz veins" which had been traced up to 500 feet.
- The quartz veins strike northerly and dip to the west.
- The veins (locally vuggy) carry pyrite, galena, sphalerite and chalcopyrite with assays over one ounce of gold ($36.80/ton at $20/oz.), 25 ounces of silver and 35% lead per ton.

16. RAMPALO/SILVER LUMP CLAIMS
- located on boundary between the Rampalo (L. 2409) and Silver Lump (L. 2408) claims.
- Cairnes describes two sets of quartz veins; one striking N35E and dipping SE, the other striking nearly North and dipping 45 degrees W.

The veins of milky white quartz are mineralized with pyrite and locally with galena and silver-rich sulphides. Values of up to 250 o.p.t silver and 0.5 o.p.t. ($10/ton at $20.oz) gold were reported. The NW striking vein is closely associated with a quartz porphyry dyke.
- there is no recent work on record.

18. KILLARNEY CLAIM
- presently the Killarney C.G. (L. 4637) staked about 1918 and crown granted in 1925.
- work described by Cairnes included five adits drifting on veins which occur in greenish, altered volcanics which have been intensely faulted and sheared.
- vein material consists of quartz carrying argentiferous galena with assay values up to 60% lead, 4% zinc and 62 o.p.t. silver.
- recent work, conducted in the early 1980's consisted of soil geochemistry, VLF-EM and magnetometer plus trenching, geological mapping and several shallow diamond drill holes. Several areas of interest remain to be explored.

19. LIGHTNING PEAK
- This group consists of three crown granted claims; the First Chance (L. 3414), the West Fork (L. 3415) and the Jim Hill (L. 3416). Mineralization was discovered in 1901 or 1902 and these claims were crown granted in 1905.
- mining of high grade silver ore took place as early as 1904. No specific reference is made to the #19 location by Cairnes.
- no recent work of record.

20. LIGHTNING PEAK GROUP (Northern Showing)
- located on the First Chance C.G. (L.3414).
- Altogether 200 tons of silver and silver-lead ore averaging 150 o.p.t. silver and 35% lead were shipped prior to 1930. Equal volumes of milling grade ore were left at the minesite.
- no recent work of record.

HISTORICAL LIGHTNING PEAK PROPERTIES: (cont'd)

C. Those occuring on Zalmac's property-

4. **POTOSI** (Northern Showing)
- Cairnes refers to a several foot wide brecciated zone striking northerly - minor quartz.
- mineralized with minor pyrite.
- recently part of Jon claim, now part of Big P #1.
- recently worked (see below).

5. **POTOSI** (Southern Showing)
- Cairnes refers to calcite and iron sulphides in limestone near a small acid dyke intrusion.
- recently part of Jon claim, now part of Big P #1. Recently worked (see below).

6. **POTOSI** (Eastern Showing)
- Cairnes refers to two northerly striking quartz veins exposed over several hundred feet in length.
- recently part of Jon claim, now part of Big P #1.
- recently worked (see below).

Klahowya Group
- not specifically referenced by Cairnes.
- lay immediately west of the Waterloo #3 C.G.
- recently part of Jon claim, now part of Big P #1.
- recently worked (see below).

Jon Claim - RECENT ACTIVITY
- extensive soil geochemistry, and geological mapping, VLF-EM and some S.P. and I.P.. Strongly anomalous silver, zinc and antimony areas and anomalous lead-zinc and copper-arsenic zones were detected.
- Mohawk discontinued all mining related activities in early 1985. No follow-up work was conducted and the claim was allowed to lapse in 1990.

11. **SILVER SPOT No. 3**
- recently on Ren claim, presently on Big P #1.
- Cairnes relates to an eight (8) foot wide, east-west striking shear zone occuring at the junction of two tributary creeks. The vein material is quartz with fine galena and sphalerite containing silver. Select samples are reported to have run up to one hundred (100) ounces silver to the ton. The shear "lies close to the projected course of the main Waterloo Vein", said Cairnes.
- no recent work on record.

12. SILVER SPOT No. 4 (Western Showing)
- recently on the Geo claim. Now on the Big P #1.
- extensive trenching had been conducted and was examined by Cairnes. At location #12, he stated that limestone "has been altered to a highly garnetiferous rock** in which some vein quartz carrying pyrite was noted". A second vein, striking northerly, carried pyrite and galena, and intersected metamorphosed tuffaceous sediments and intrusives.
- no recent work of record was noted.

** NOTE: The garnet alteration in addition to wollastonite reported south of the Waterloo C.G. suggests the possibility of "Skarn Type" deposits along the north-westerly trending limestone units. Fibrous wollastonite noted by Mohawk geologist Brian Callaghan occurs at a contact between Limestone and Intrusives on Waterloo Creek.

13. SILVER SPOT No. 4 (Easterly Showing)
- recently on the Geo claim. Now on Big P #1.
- Cairnes indicates that a short adit and some surface working was conducted on a quartz vein striking N35W and dipping 15 degrees NE, which is well mineralized with pyrite, galena and sphalerite. A second vein, mineralized with pyrite and galena, striking nearly north, is underlain by a quartz porphyry dyke.
- no recent work of record.

Gold Plate Claim
- located north of Silver Spot #4 is now cover by the Little P 27 claim.
- Cairnes mentions some surface work indicating quartz veins similar to those on the old Silver Spot #4.
- recently part of the Geo claim, there is no recent work on record.

14. LUMPY CLAIM
- Located on the Big P #2 claim staked in 1981.
- Cairnes relates to mineralization associated with a belt of grey, crystalline limestone, that is 100 or more feet wide, which strikes north-westerly towards the Silver Spot #3 and #4 claims. The limestone has in turn been intruded by granitic rocks.
- recent work, which extended across the entire Big P (1981) claim group included VLF-EM, limited I.P. and trenching.

NOTE: No soil geochemistry was done during the recent work on these claims.

15. VICTORIA CLAIM

- recently on the Geo claim, presently on the Little P 27 mineral claim.
- Cairnes relates to two narrow quartz veins; one of which is associated with a small quartz porphyry dyke. Both intersect greenish, metamorphic rocks and granitic intrusives.
- no reference to recent work on record.

17. CONDOR Fr.

- located immediately north of the Lucky Jim Fr., this showing is likely located on the recently staked Big P #3 mineral claim.
- Cairnes reports surface work conducted to explore a rusty colored shear zone which strikes N75W and dips steeply to the north.
- work on the Lucky Jim Fr. in the early 1980's indicated small soil anomalies of Arsenic and Antimony.

22. BIG HILL CLAIM

- recently part of the Geo #3 claim this showing is now located on the Big Z #4 mineral claim.
- minor work conducted on a northerly striking, westerly dipping rusty shear zone with argentite coatings on fractures was noted by Cairnes.
- recent work consisted of geological mapping and a soil geochemistry survey. Anomalous zones of copper-silver, zinc and arsenic were detected in an area of granitic intrusive rocks in the vicinity of Horseshoe Lake.

23. PILOT AND UTA CLAIMS

- recently part of the L.P #3 claim this showing is now part ot the Big Z #4 claim.
- The principle work as describe by Cairnes consisted of surface trenching in metamorphosed rocks which carried disseminated pyrite and locally disseminated chalcopyrite and one occurance with molybdenum.
- recent work (early 1980's) consisted of a soil geochemical, VLF-EM and magnetometer surveys and geological mapping. The results of this work suggest the possible occurance of a "Porphyry Type" copper and/or molybdenum deposit. Considering the high regional background for gold and silver, such a deposit could have a precious metal content (Ag,Au). Other anomalous areas indicate potential for zinc and silver mineralization.

DISCUSSION OF ZALMAC'S MINERAL OCCURANCES/POTENTIALS:

RICH ROCK SHOWING:

This showing, although previously thought to be contained in the original Big P Group; was acquired as a result of staking the new Big P #2 claim. This zone does not relate to any of the historic properties referenced by Cairnes and is therefore considered a recent discovery even though there is some old trenching. Extension of this zone along strike to the north-west could link to soil geochemistry anomalies occuring near the junction of Rendell and Waterloo Creeks in the area between the Waterloo Mine and the Granite Range.

Silver-Lead mineralization, with assay values up to 7.7 ppm silver and 2880 ppm lead (Belik 1985, Trench 85-9), has been located in Anarchist Group rocks adjacent to the contact with Nelson Intrusives. This mineralization correlates directly with VLF-EM and multi-element (Ag, Pb, Zn, As, Sb) soil geochemistry anomalies. The soil anomaly is 350 to 400 meters long and open to the north-west.

Of particular interest are samples from 1988 work conducted on a "skarn zone" (Trench 88-4A). One sample (Higgins 1988) returned 70 ppm. lead, 70 ppm. zinc, 6.6 ppm. silver, 99 ppb. (.002 o.p.t.) gold and 1100 ppm copper. All other samples (4) from this trench also returned .002 o.p.t. gold values. Two grab samples taken by Higgins from the vicinity of Trench 85-9 area returned .003 and .004 o.p.t. gold.

Further work is warranted along the strike of these coincident anomalies. The 1991 fieldwork program consisted of grid preparation and some sampling of the old workings. This area has potential for hosting a copper-gold (+tungsten) skarn deposit. Samples taken in the 1991 program are discussed later in this report.

LUMPY SHOWING:

This showing was covered by the original Big P Group of claims staked in 1980. Silver-Zinc(Lead) mineralization has been located within crystalline limestones of the Anarchist Group rocks at the historic Lumpy Showing. The mineralization, reportedly consisting of high grade silver sulphide minerals, native silver, zinc, minor lead and possible free gold; is confined to joint surfaces and disseminations. Two short adits, trenches and test pits have not been successful in exposing more substantial quatities (mineable vein widths) of mineralization. Trenching in this vicinity was conducted by Zalmac in 1985 (Trenches 6 & 7) and in 1988 (Trenches 1 & 2) with little apparent success; however, very little sampling was done, and this only where the rock was visibly mineralized with disseminated pyrite.

Considering the small concentrations of the above referenced silver minerals necessary to make ore; this area must be further investigated. The 1991 fieldwork program commenced using this showing as a focus point from which the new grid was prepared.

One of the VLF-EM conductors detected during Zalmac's 1985 program is interpreted to relate to the Lumpy zone; with the old workings located at a point where this conductor is quite weak. However, a north-westerly extension of this anomaly develops into a more conductive zone which is coincident with a resistivity low (1985 Frequency Effect I.P./Resistivity survey) which might well relate to alteration and possibly significant quantities of mineralization.

Preliminary sampling and orientation mapping in the vicinity of these workings was conducted as part of the 1991 program. Results are discussed later in this report.

POTOSI SHOWINGS:

Early work on these showings consisted mainly of trenching along, and in the vicinity of, an east-west striking, eight foot wide quartz vein carrying silver, galena and tetrahedrite mineralization. Other trenches exposed north striking, two to six foot wide, quartz veins over a length of 1000 feet. In 1927, a select sample of pyrite mineralization ran .04 o.p.t. gold and 35 o.p.t. silver (Annual Report B.C. Minister of Mines 1927).

A soil anomaly, 210m. by 120m. in dimension, was located in 1983/84 in the vicinity of the old Potosi workings. Soil samples returned values highly anomalous in silver, lead, zinc, copper, antimony and arsenic. Slightly to the east, north-south trending lead-zinc and copper-arsenic soil anomalies were located. Mineralized float running 940 ppb gold and >20 ppm silver (Mohawk sample #4259)was found in the vicinity of a "lamprophyre" sill noted by Marshall Smith. In addition, Smith noted narrow "epithermal alteration" zones associated with northerly trending fault structures in this same area. Minor amounts of pyrite, galena, and shalerite mineralization have been located in amorphous to fine grained and sugary textured quartz veinlets in three of these systems. A grab sample grading 0.76 o.p.t. gold and 0.29 o.p.t. silver was collected from one of these epithermal systems in 1984.

The area in the vicinity of the historic Potosi Showings is associated with metavolcanics and limestone units of the Anarchist Group of rocks in close proximity to intrusive rocks.

The 1991 program included sampling at two of these old workings.

JON SHOWING:

This area relates to the Klahowya group noted by P.B. Freeland (Report of the Minister of Mines 1933) . This area is now covered by the new Big P #1 claim and is located to the south of the Potosi showings and is immediately to the west of the Waterloo C.G..

In 1984 a sample taken across a 48" wide zone of disseminated sulphides ran 20 ppm silver, 1300 ppm lead, 744 ppm zinc, 64 ppm copper and 390 ppm arsenic (Mohawk sample # 4467); while a grab sample ran 145 ppb gold, 14.5 ppm silver, 1940 ppm lead, 1359 ppm zinc, 45 ppm copper and 780 ppm arsenic (Mohawk #4468). Mohawk reported that assays from this zone by others ran as high as 50 o.p.t. silver, 16% lead and 14% zinc with associated high arsenic values. This mineralization is located north of the strike trend of a 300 meter long "float train" of galena and sphalerite mineralized material which can be traced eastward to near the west boundary of the Waterloo claim. Although offset slightly to the north of the Waterloo trend, this train of mineralized float is believed likely to relate to an extension of the Waterloo Vein system onto the new Big P #1 claim.

The float material is essentially a brownish-grey silicified rock containing veins of coarse galena and quartz adjacent to veins of sphalerite and calcite. Galena and sphalerite also occur as small veinlets and disseminations in some samples. Samples run as high as 1.72 o.p.t. silver, 7.10% lead and 23.7% zinc (Mohawk sample #0698) and 0.002 o.p.t. gold, 2.48 o.p.t. silver, 3.00% lead and 24.7% zinc (Mohawk sample #4259).

During the 1991 season several samples of skarn altered material were taken, results of which are discussed later in this report. Some time was spent in the field attempting to locate the mineralized zones located by Mohawk; but to no avail. The mineralized float train referenced above was not located. Further work will be required to re-establish the old grid lines prior to performing work in this area. A portion of the area was logged during the winter of 1991 which obscured the old grid lines and as a result orientation is difficult.

S.E. JON ANOMALY:

A multi-element soil (Ag, Pb, Zn, Cu, As, Sb) and VLF-EM anomalies coincident with S.P. features and elevated magnetics was reported (Anomaly A) by Mohawk in their 1984 Report on the Jon Claims. This anomalous area is located south of the Jon Claims. This anomalous area is located south of the Waterloo C.G. and on the south side of Silver Spot Creek. This anomalous zone appears to correlate to a contact between Anarchist group volcanics and limestones in close proximity to an occurance of quartz diorite intrusive rocks. No source has yet located for this anomaly.

This anomalous zone occurs within 200 meters of, and along the projected strike of; the strongest VLF-EM anomaly encountered by Zalmac in their 1985 program. This VLF-EM anomaly extends to the south-east across the original Big P claim and is suspected to relate closely to a limestone horizon (see "Limestone Units" below).

The 1991 program consisted of extending a new baseline from the Rich Rock area to this area. No grid lines or other work was conducted. An orientation traverse will be required in order to tie the old and new grids together.

LIMESTONE UNITS:

Approximatley 10 kms of "limestone horizon" contacts (combined hangingwall and footwall) are located within the Zalmac claim block. At numerous locations these contacts, which are locally more than 100 meters apart, have been shown to be favorably associated with ore grade mineralization; as in the Waterloo mine and at the Potosi and Lumpy showing. Numerous as yet unexplored geochemical anomalies are located in close association to these contacts on the new Big P #1 claim. Similar targets may yet be located in that portion of the area which has been only partially explored by Zalmac.

"BIG P" VLF-EM ANOMALIES:

Numerous conductive zones have been detected by VLF-EM within the original Big P Group. These VLF-EM anomalies extend for up to 1.5 kms. to the south-east and 1.0 km. to the east from the vicinity of the S.E. Jon Area. The eastward trending anomaly intersects a north-west trending anomaly at a point 1.1 km. from the Lumpy Showing. It is highly probable that these conductive zones relate to specific lithological units and that some portions of these conductors will be mineralized.

Unfortunately, no soil geochemistry was conducted over this area. Extrapolation of the conductive zones along the regionally developed north-west/south-east strike suggests there could be a link between these conductors and the multi-element soil geochemistry anomalous S.E. Jon Area; which also correlates direct with VLF-EM conductors, S.P. and magnetometer anomalies located by Mohawk.

The main focus of the 1991 program was placed on establishing a grid over this area in order to perform soil geochem and various geophysical surveys as discussed later in this report.

SILVER SPOT SHOWINGS:

Three of these showings, described by Cairnes as Localities 11, 12 & 13 are now covered by claims owned by Zalmac. No recent work has been done in this area.
One of the main segments of the 1991 program was to locate these old workings and to gather information and samples. All of these workings were located and tied in by preliminary chain and compass traverse and later they were tied in to the new (1991) grid lines which extended into this area. More information and results of the 1991 sampling is presented later in this report.

VICTORIA SHOWING:

This showing, described by Cairnes as Locality 15, is now covered by claims owned by Zalmac. No recent work has been done in this area. The 1991 program located the old Victoria workings. Several samples were taken and the area was tied into the new grid. Further information is presented later in this report.

BIG Z #4 SHOWINGS:

This showing relates to the historical Pilot & Uta workings as described by Cairnes. This area is now covered by the Big Z #4 claim.

Copper mineralization located in association with "porphyry type" alteration and copper soil geochemistry anomalies are located in the vicinity of the K 50 Road Jct. with the Waterloo Road. To the north-east of this "copper zone" a large area anomalous in molybdenum was detected in the soils. These anomalies appear to relate to intrusive rather than Anarchist group rocks. Additionally, there are three areas which show the soils as significantly anomalous in zinc-silver(lead). These areas are generally underlain by Anarchist Group rocks.

Limited work was conducted in this area during the 1991 program. A control baseline was extended northerly from the Silver Lump showing to a point south of the old workings but other than some orientation traversing and sampling of outcrops and old working conducted by Canamax geologists, as discussed later herein; no further work was done.

OUTLINE OF 1991 EXPLORATION PROGRAM:

A. Office Study and Program Planning:

An extensive office study was completed in early March 1991. This work was necessary prior to recommending a work program for 1991 and beyond. Results and recommendations of this office study were presented in a private report finalized in March 1991. Further work of this type was ongoing throughout the summer as new information from the field was acquired and as additional reports became available. Due to the large amount of information available, the office study part of this program is ongoing.

B. Preliminary Reconnaissance and Access:

Initial access was attempted on July 10, 1991 at which time the upper levels of the property were still blocked by snow. Vehicle access was gained to the northern part of the Pay Day claim area after removal of numerous windfalls which blocked the road. At this point the road became impassible because of a large snow drift and access to 1W post of the Dick 2-7 claim was thereafter gained by foot. This post, according to Paul Zaleski, the original owner, was also the initial post of the now forfeited Dick 1 mineral claim; both of which were staked for Zalmac in 1980. The claim tag is missing and other inscriptions on this post are now illegible. A preliminary pace and compass traverse back to the Pay Day cabin allowed the writer to estimate that this post is approximately 400 metres north of the Pay Day claim south boundary and that the old workings located some 150 metres south of this post are actually held by the Pay Day claim as opposed to the Dick 2-7 claim as thought by Zalmac. As a result of this determination, no work was planned for or conducted in this area. The southern portion of the Dick 2-7, although only projected to date, appears to hold ground over an area which exhibits a strong east-west trending VLF-EM anomaly (see previous reports - Belik 1984 & 1985).

Access to the Waterloo crown grant and the turn off into the historical Potosi Area in the north-western portion of the Big P #1 was also gained on July 10, 1991 after removal of numerous additional windfalls. A powersaw was required in order to cut out many of the windfalls while still others were moved by hand. Access to the southern, higher levels of the property was blocked by snow drifts in the vicinity of the Little P #31 claim line.

Additional reconnaissance, necessitating additional removal of windfalls was undertaken on July 22, 1991. At this time the road was made passible to the turn off to the Rich Rock showings area as well as further to the south and west past Lightning Peak itself. Reconnaissance of the core of the peak confirmed the basalt volcanics as referenced by Cairnes. Reconnaissance in the vicinity of the Rich Rock showings located previous

trenching and confirmed that the rock units in Trench 88 - 4 are intensely skarned with abundant wollastonite and some garnet noted. A representative hand specimen of the massive sulphides and of the skarn alteration were collected. The intrusive plug, as mapped by Mohawk (1983), was located and examined.

Also on July 22, 1991, the road into the old Potosi workings and the recent Jon claims area was opened by removing windfalls. Access was finally blocked at a point approximately straight west of the Waterloo crown grant where a large stump, deposited during the 1990-91 logging operations, blocked the road. Also, the LCP for the Xen # 2 mineral claim was located and tied in to the main K 50 access road.

C. Exploration Field Work:

The main field work portion of the 1991 preliminary program was conducted in several intermittent segments. The first information gathering segment included the establishment of two control baselines, a reconnaissance chain and compass traverse to locate and to tie in old mineral showings, a mini VLF-EM test survey in the immediate vicinity of the historic Silver Spot #3 (Cairnes showing #11), general mapping at the main workings on the Lumpy showing, and the collection of numerous rock samples for identification and analysis. A total of 35 rock and 2 soil samples were submitted for multi-element analysis.

A second information gathering segment of the 1991 preliminary program included the establishment of a 2500 metre tieline at 10+00 N, the establishment of eight partial grid lines (a total of 9.3 kilometres) generally with 30 metre (locally 15 m.) station intervals over the main 1985 VLF-EM anomalies followed by the collection of 309 soil samples. Some hand cleaning of old workings at the Victoria West and Lumpy showings was conducted to facilitate examination and the collection of rock samples. The soil and rock samples collected during this segment have yet to be analysed and therefore the results and interpretation thereof do not form part of this report and the associated costs of analysis, interpretation and reporting are not included for assessment hereunder.

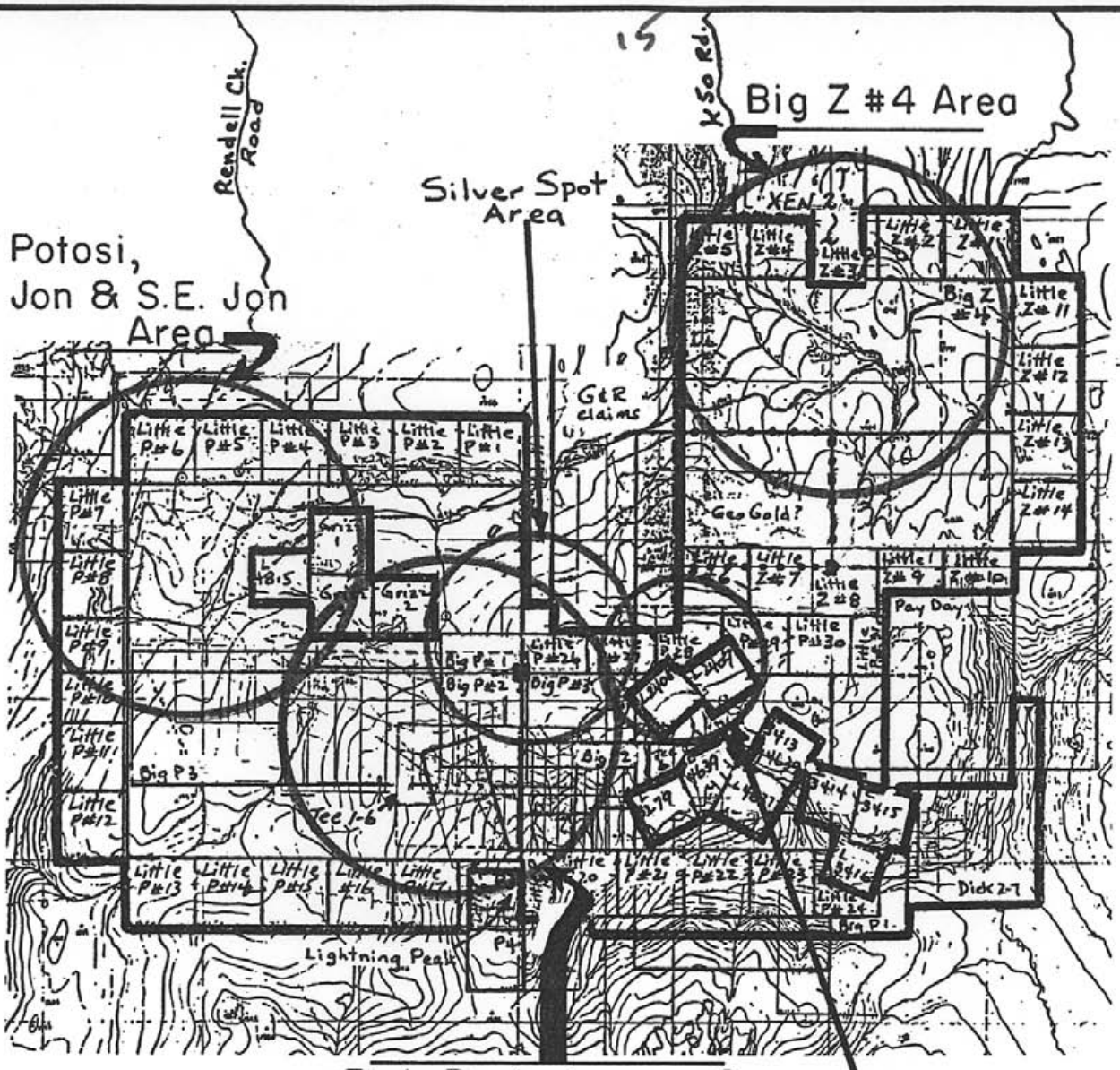
A third segment of the 1991 program included four seperate property examinations by four groups of visiting geologist from companies potentially interested in optioning the claims from Zalmac. These examinations are discussed in segment D below:

D. Property Examination By Others:

A total of four days was spent by the writer escorting geologists from other companies on property examinations. Orvana Resources Corp., Placer Dome Inc., Canamax Resources Inc., Cordilleran Engineering Ltd. visited the property to examine and assist in evaluating the various showings. A second day was spent on the property by two of these companies; Canamax and Placer. During these various property visits particular emphasis was placed on examining the geology in the Rich Rock, Lumpy and Jon areas for evidence of skarn type mineralization and alteration and, to a lesser degree, in the Pilot & Uta area on the Big Z #4 claim for porphyry (Cu-Mo) type mineralization and alteration, and vein occurances at the Potosi and Victoria showings.

Further participation in the exploration of the property by these companies, although not presently expected based on the assay results obtained to date; will be determined by Zalmac's ability to obtain significant assay values, particularly gold values from the regions demonstrating larger tonnage potentials. Cordilleran Engineering, operating on behalf of Fairfield Minerals, took time to examine the vein type occurances which exhibit similarities to Fairfields Elk property near Peachland.

A total of 60 rock samples were collected by these companies and a total of 13 man days of time were spent by them, examining the various showings. The work conducted by these companies has confirmed the location of intense skarn alteration in the vicinity of the Rich Rock, Jon and Lumpy showings. This work has assisted the writer in more clearly understanding the geology of the area and has provided Zalmac with assay and geological information indicating the potential for a copper/tungsten deposit. Analyses for gold were disappointing, but, one must keep in mind that only a limited amount of the potential "skarn zone" was examined. A fair market value has been determined for the costs related to the geological work performed and the assays completed. These costs, outlined below, form part of the assessment application.



External claim boundary

Internal claim boundary

Main areas of interest

SCALE: 500 0 1000 2500 Metres

Revised Nov. 1991

ZALMAC MINES LTD.

P & Z CLAIMS

LIGHTNING PEAK AREA, B.C.

Composite Map
Main Areas of Interest

Y.-H. Technical Services Ltd.

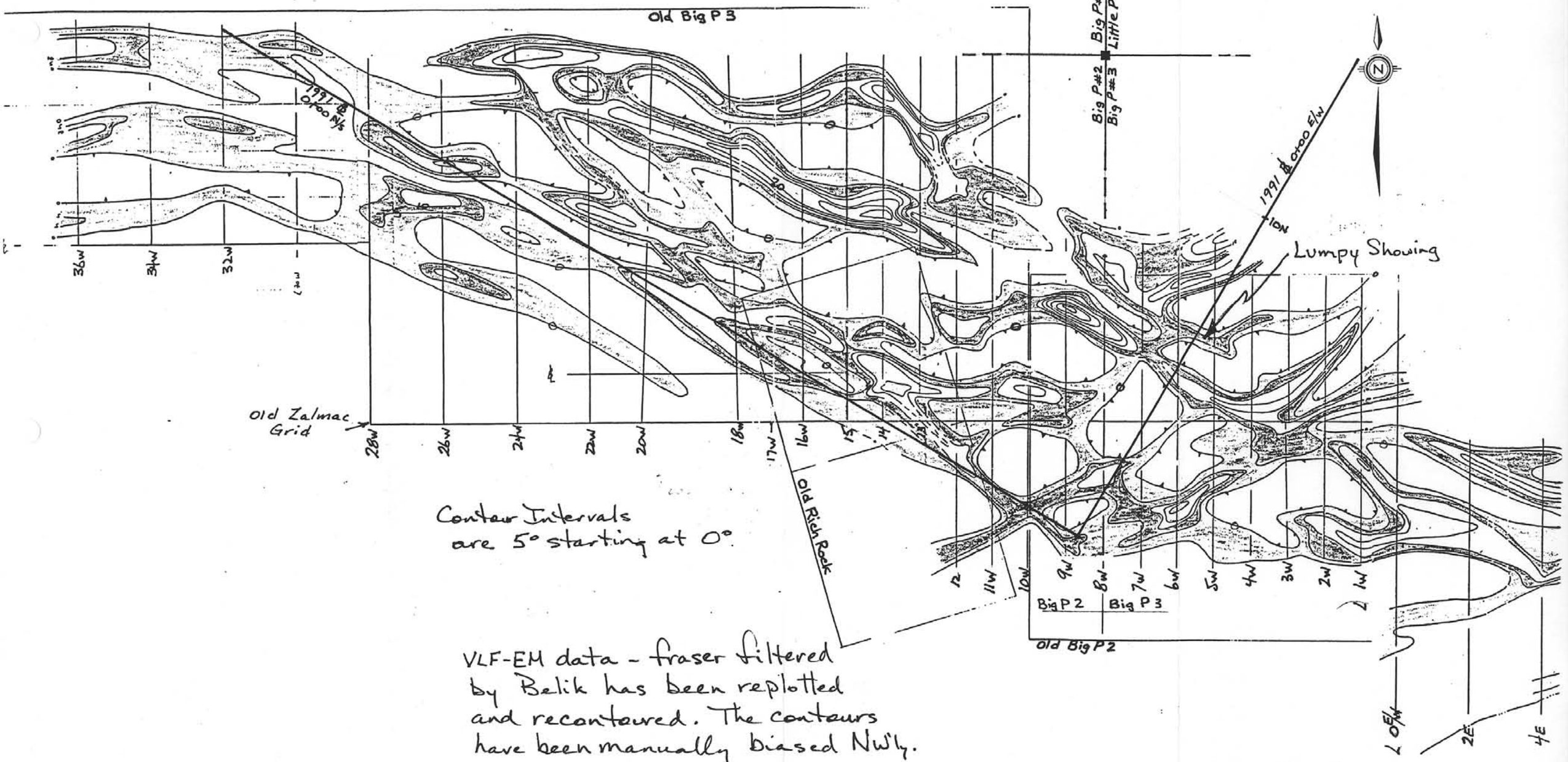
Date:	Scale:	Figure No.
MARCH 1991	1:50,000	8

DISCUSSION OF RESULTS AND INFORMATION:

The assay certificates received as a result of samples analysed during the summer of 1991 are included in this report as part of Appendix II. The significant assay information from these certificates is discussed under each of the designated work area headings. Appendix II also contains the maps, sample descriptions and other information provided by the various visiting geologists. The results and information collected are discussed under the designated work area headings. A list of the most significant assays obtained during the 1991 program is included on Figure # 9.

Rich Rock Area:

The workings in the vicinity of Zalmac's Trench 88 - 4 in the Rich Rock area show definite signs of skarn alteration. The limestone units at the south end, old workings part, of this zone and the limestone unit on the footwall of the sulphide zone exhibit long fibre wollastonite and garnet. The metamorphosed sediments and volcanics are difficult to differentiate due to intense alteration which appears at least in part due to pyrite and pyrrhotite mineralization. A one metre wide semi-massive to massive sulphide zone occurs along the contact between the limestones and the meta-volcanic/sediments. The sulphides are disseminated out into the hangingwall and footwall of the zone. Samples across the semi-massive sulphide zone contain copper (637 ppm. to 1460 ppm.) and tungsten (510 ppm. to 3103 ppm). This sulphide zone is up to 0.5 metre wide. Just to the north of this zone an intrusive plug has been confirmed as mapped by Mohawk. The contact zone between the limestones and the meta-volcanics/sediments appears to extend to the south of the know zone. Similarly metamorphosed rock units occur to the north of this intrusive plug. This skarn altered lithology could extend to the north-west where a multi-element soil anomaly was located by Mohawk (Rich Rock 1984). Trench 85-9 by Zalmac has expose part of this area and it was examined during the 1991 program. Some localities were sampled with one sample taken by Orvana returning 2.95 oz./ton Ag, 1896 ppm Pb and 2073 ppm Zn. Three of the five samples taken at the 85-9 trench by Placer ran 11.8, 17.6 and 18.2 ppm silver with lead values to 332 ppm and zinc values to 216 ppm. These rock units, covered by only a thin mantle of soil are likely the cause of the soil anomalies detected by Mohawk. Intensive geological mapping is warranted in the Rich Rock area. More detailed sampling along this trench and an extension of the trench to the north and additional trenching to the east may well locate more mineralization. The mineralization appears to be associated with the limy tuffaceous rock units in the area. There is a significant depression to the east and north of this trenched area. It is probable that this will correlate with the VLF-EM anomaly detected by Zalmac and that the main zone of interest is as yet un-exposed by trenching.



Contour Intervals are 5° starting at 0°.

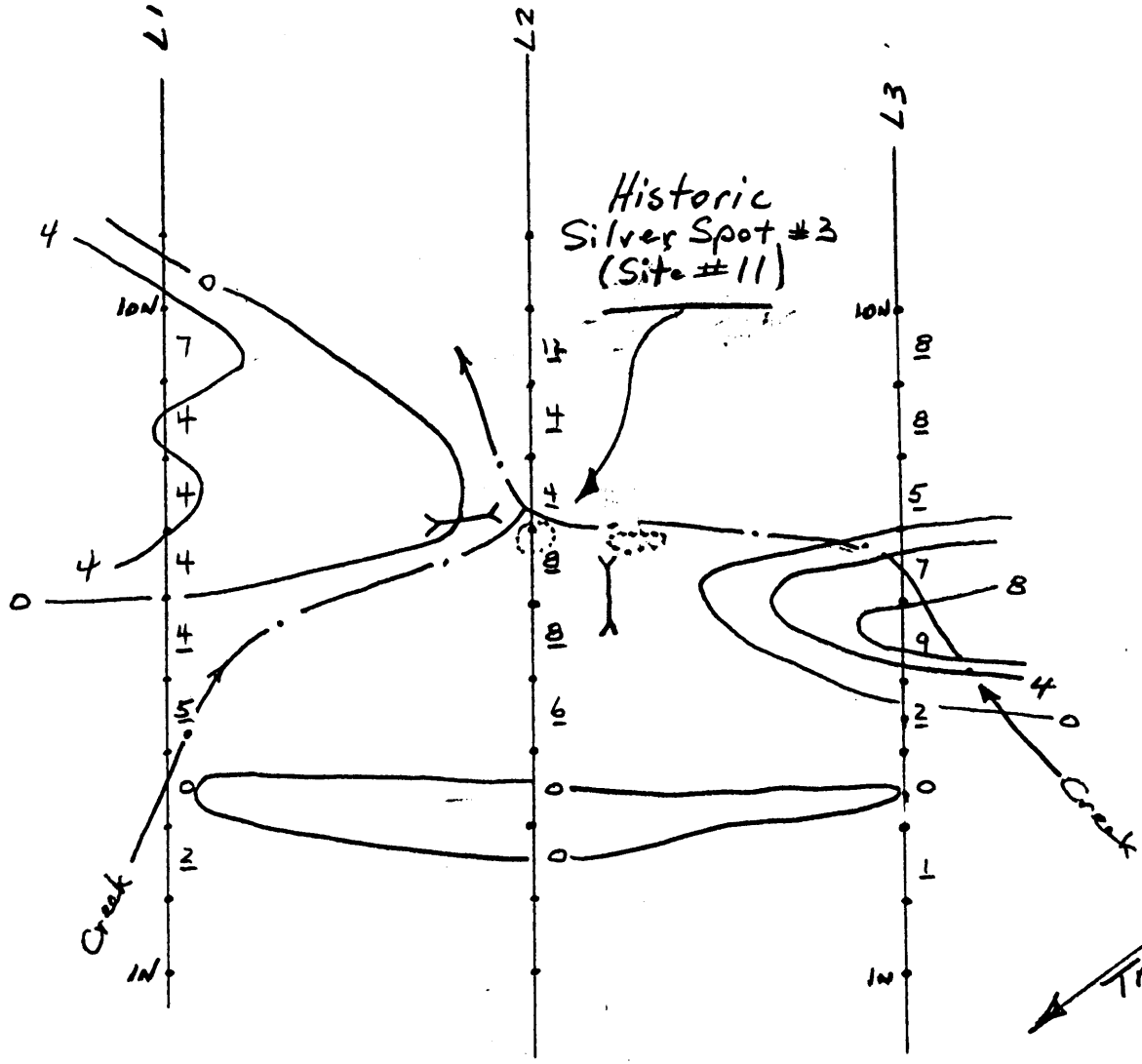
VLF-EM data - fraser filtered by Belik has been replotted and recontoured. The contours have been manually biased NW'ly.

metres 0 50 100 500 1000

To Accompany Assessment Report by Rud Yorke-Hardy for Zalmac Mines Ltd.

Date: Nov. 15, 1991

Figure No. 5A
RE-INTERPRETATION OF 1985 VLF-EM DATA
-after Belik - Assessment Report No. Unknown
- by R.W. Yorke-Hardy A.Sc.T.

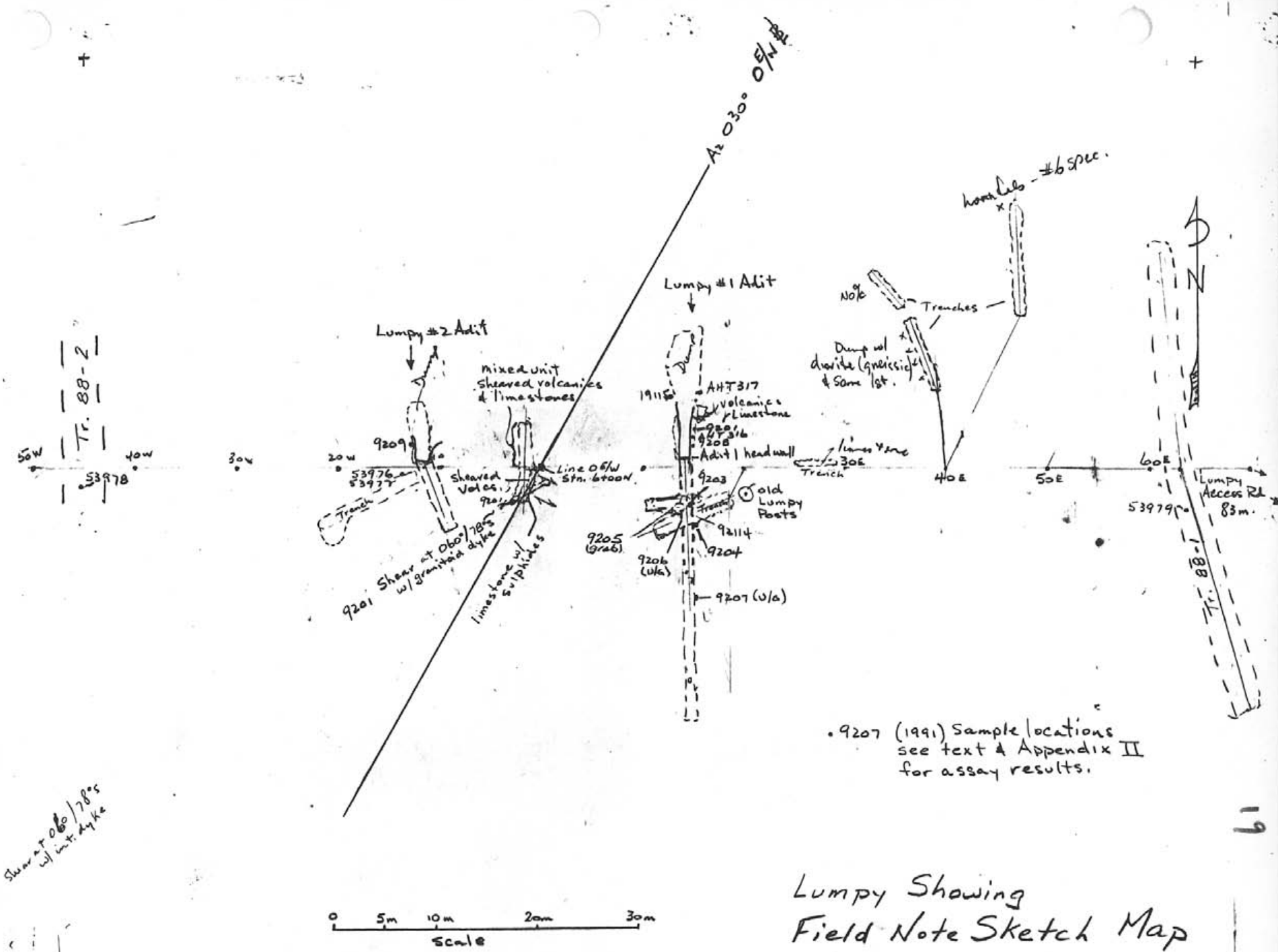


Receiver - Model 27 Sabre
- Serial # 269

Scale: 0 100 500 1000
metres

To Accompany report by R.W. Yorke-Hardy
for Zalmac Mines Ltd.

TEST Area Map
VLF-EM Mini Grid
Fraser Filtered Data
Contoured in 4° intervals
starting at 0°
Figure # 5B



• 9207 (1991) Sample locations see text & Appendix II for assay results.

To accompany assessment report dated Nov. 17, 1991

Lumpy Showing
Field Note Sketch Map
By: Y-H Technical Services Ltd.
Figure 5c

The re-establishment of parts of the Zalmac 1984/85 grid will greatly assist in fixing VLF-EM conductor locations. The old grid should be tied in to the new grid wherever possible.

Lumpy Area:

The 1991 program included preliminary location mapping of the various workings at the historic Lumpy showing (see sketch map, Figure 5c) in conjunction with some sampling at various locations in the old workings in an effort to determine the range of values and within which of the various rock units one can expect to encounter economic mineralization. Assay values were all lower than expected after referring to Cairnes; although a systematic sampling program would isolate any favourable rock units. The highest values were 20.4 ppm Ag, 1.28% Pb, and 0.59% Zn. on a sample collected by Placer and one sample grading 3.13 oz./ton silver collected by the writer. The mineralization seen consists of disseminated shalerite, galena and pyrite with patches of greenokite staining and occasional malachite staining. The best mineralization seemed to favour those limestone units which have been cut by stringers of quartz and calcite; and which exhibit weak skarn alteration consisting of diopside and chlorite. Locally, granitic dykes appear to have intruded along the bedding contacts. Siltstone and meta-volcanic rock units were also noted. Chlorite alteration, minor wollastonite and garnet plus minor replacement of fragments by galena and sphalerite indicate skarn alteration has taken place in this area; although not as intensively as in the Rock Rock area. The Zalmac 1985 VLF-EM anomaly at this location is quite weak; however, the of this data shows an increase in intensity to the north-west and west. Therefore, a close spaced soil sampling program; results of which have not yet been received, was conducted along the projected strike of these anomalies. Further work should be conducted in the vicinity of these VLF-EM anomalies, but only after there location is further defined by the proposed two station VLF-EM survey.

Jon and Potosi Areas:

Insufficient time and funding was available during the 1991 program to conduct any follow-up programs in this area. Several days were spent becoming familiar with the area and attempting to locate mineral showings as documented by Mohawk. One of the historic Potosi workings (Cairnes Site #5) was located and two panel samples by Cordilleran Engineering (Peak R1 & R2), a chip sample and two grab samples by Orvana Resources (10102 -104) were taken from the vein. The values obtained ranged from 410 to 1090 ppb gold and 16.6 to 248.0 ppm silver with up to 2191 ppm zinc and 726 ppm zinc. The vein system has an anomalously high arsenic content ranging from 154 ppm to 518 ppm. which may corroberate Mohawk's determination that these veins are epithermal type veins. It is noted that one of the samples taken by Cordilleran ran a value of 2 ppm gold on the multi-

element scan. This would convert to 2000 ppb or 0.058 oz./ton gold. This sample, Peak R2 was submitted for fire assay for gold. The assay value reported for gold is .026 oz./ton or 891 ppb.; this sample also ran 7.23 oz./ton (248ppb) silver. The variance could relate to free gold, ie. nugget effect in the sample.

Mohawk reported (1983 & 1984) a trail of silver/zinc float, representing the probable extension of the Waterloo vein, on the east side of Waterloo Creek. It will require more detailed prospecting and re-establishment of the Mohawk grid to locate some of the old showings. This grid re-establishment will in part be hampered by the fact that some portions of the property have since been logged. Efforts to locate silver/zinc float on the west side of Waterloo creek were not successful and no effort was made to find the float train during the 1991 program.

Several locations were found where skarn alteration (diopside, garnet and wollastonite) was noted. Several samples were taken by Canamax (AHT317 & 318) and Orvana (19699, 19700 & 19101). Gold values were all <5 ppb and copper values ranged from 70 to 164 ppm. See Figures #6 & 9 for additional information.

Big Z #4 Area:

On September 7, 1991 a preliminary reconnaissance and sampling program was undertaken by Canamax at various locations in the vicinity of the historic Pilot & Uta showings and in the vicinity of soil geochem anomalies noted by Mohawk. A total of 1 soil and 17 rock samples, 91AHT 438 - 446 and 91AFT 299 - 310, were collected and analysed for eleven elements (Mo, Cu, Au, Ag, Zn, Pb, Co, Bi, Hg, Sb, As). No significant copper or molybdenum values were reported with a maximum reading of 338 ppm Cu and a maximum reading of 70 ppm Mo. being obtained. One sample returned values of 120 ppm Zn and 336 ppm Pb; while three other samples returned Zn values over 100 ppm. All gold values except from the one soil sample which ran 20 ppb Au, ran 5 ppb Au. Further investigation of available information shows that Noranda obtained soil geochem values up to 1500 ppm Cu., 1300 ppm Zn. and 180 ppm Mo. to the east of Teepee Ck., some of which area is outside the present boundaries of Zalmac's claims to the east.

Historic Silver Spot and Victoria Showings (Sites 11, 12, 13, & 15):

The occurance of historic mineral properties as depicted by Cairnes in his 1930 report has been confirmed. It appears possible that many of these mineral showings occur along a specific lithological belt of rock. Before the above theory can be tested the proposed geophysical, geochemical and geological surveys must be completed.

This "belt" was tied to the Zalmac 1991 N/S baseline by a preliminary chain and compass traverse just to give a broad fix until the proposed grid was completed. Later several of the grid lines which were established crossed the old trenches to provide a more definite fix as shown on Figure No. 9. All of the old workings discussed by Cairnes were located and descriptive rock samples and samples for analysis were collected from each site. It is apparent that few people have examined these workings in recent times, as there was, with minor exception, no evidence of freshly broken rock or other disturbance. It is possible that many of these sites have not been examined since Cairnes' visit in 1930. We were particularly interested to find an old blacksmith forge near one of these workings.

Cairnes' reference to long trenches (one 3000 feet long and one 1000 feet long) was confirmed. These trenches ("flume ditch") were evidently constructed to carry water to areas further west on which more intensive exploration work was conducted. There is evidence that the flume ditch would be dammed off and the water released into other side trenches in order to wash down debris and to help strip overburden.

Each of the old working examined is discussed below; the locality names and site numbers relate to those used in the report by Cairnes (GSC Annual Report, 1930).

Silver Spot No. 3:(Site #11)

The old workings and dumps at this site were located and examined. Several samples were taken for reference purposes and others for analysis. There was no evidence of recent examination of this site by others. The reported 8 foot wide shear zone was exposed by hand at one level in the old trench. Sample 9220 represents a two metre wide sample across this zone; while sample 9222 represents an additional 0.3 metre width to the south and 9221 represents a grab sample of the gouge contained in the shear zone. Sample 9227 represents a grab from the muck pile adjacent to a trench east of the main workings. Several samples from this and other locations were cut using a lapidary saw.

A test VLF-EM survey was undertaken to determine whether or not the mineralized shear zone would respond to this type of survey. The results of the mini survey are shown on Figure No. 5c in this report. The survey was conducted over a three line mini-grid which include ten readings at ten metre spacings along each of the lines located 50 metres apart. There does appear to be a significant response from an east-west trending system which is either a geologic contact or the "shear zone". A more extensive VLF-EM survey is warranted to further define this conductor. Soil geochemistry would assist in exploring and assessing this area further.

Silver Spot No. 4:(Site #'s 12 & 13)

The garnetiferous limestone in the vicinity of Site #12 also contains some wollastonite. There are three additional trenches occuring to the north of the main "flume trench", one of which, according to Cairnes, has a quartz vein exposed in it. The trenches as located were all badly sloughed in and will require cleaning out prior to geological mapping and sampling. Sample 9219 was collected from the limestone occuring at the main trench. Other specimens were collected and cataloged. Other trenches were discovered to the south of the main trench when grid line 10W was established. It is obvious from the effort that was expended by the oldtimers that they felt this area to be of prime interest. The degree of skarification exhibited in the limestone and the apparent alteration of the meta-volcanic/sedimentary units along with the existence of granitiod intrusives reported by Cairnes makes this a prime area in which to find a "replacement type" mineral deposit. The proposed geophyical, geochemical and geological surveys are much warranted in this area.

Site #13 was located east of Site #12 and to the north of the main trench. There are several small trenches, a shallow shaft and a longer trench which probably marks the site of the adit reported by Cairnes. No definite adit was located although the headwall of the trench is badly sloughed. There is a quartz vein containing some pyrite and galena mineralization in the northern most trench which is located over 200 metres north of the main trench. Sample 9213 was collected at this site. There are numerous outcrops in this area and to the east and north. Geological mapping of this area will provide information which will assist in the interpretation of geophysical and geochemical surveys in areas of limited outcrop.

Victoria Showings:(Site #15)

This area is located in an area that is open and swampy. It is evident that a large "burn" destroyed large portions of the forest at some time in the past. One of the main workings is located immediately west of a northerly trending creek drainage which drains part of the swampy area. Two quartz veins were located and sampled (9210 & 11). The western most vein exposure and the rock to the north and east where exposed by hand mucking. A

grab sample, as yet untested was collected from across a four metre length of the exposure. Vuggy quartz containing varying amounts of pyrite and altered intrusive rocks occur at this site. Several other trenches occur along a trend to the south from this location. Samples 9212, 9216, 9217 & 17A, 9231 & 9232 were collected along this trend. Of this group of samples several returned gold values of significant interest. The two best assays obtained were 9232 (0.121 oz./ton gold, 6.41 oz./ton silver and 6303 ppm lead) and 9216 (0.525 oz./ton gold, 13.78 oz./ton silver, 4080 ppm lead and 1127 ppm zinc). The area to the east also exhibits a distinct "gold/silver" zone as can be seen from the soil sampling information gathered by Grazina in 1987 and 1988. The Victoria area, including the Rampalo crown grant to the south and east and the Lumpy to the south and west appear to form an inverted "V" shaped zone along two intersecting faults (contacts). This area demonstrates the most interesting potential of all the areas examined during the 1991 program. To date the best gold values all relate to quartz veins however it is apparent that there is a significant concentration of gold soil geochem anomalies in addition to soil anomalies in silver, zinc and lead in this area.

General

Since none of the area to the west of the Victoria showings and in all direction around the Lumpy and Rich Rock showings have been subjected to a soil sampling survey since 1968 (Great Horn Syndicate); when the methods of collection, handling and analysis were only in the initial stages of being developed; it is important that the remaining area be tested as proposed. In the Great Horn survey over 10,000 samples were taken; many of which returned significant values in silver and some in lead, zinc and copper. No gold analyses were performed. In that survey the "anomalous" value for silver was statistically determined to be >3.7 ppm over areas underlain by Anarchist group rocks and >4.9 ppm. over areas underlain by intrusive rocks. Work conducted by Mohawk in the period from 1981 to 1984 gave "anomalous" values for silver of >1.4 ppm over both rock types. Similarly there is a significant variance between the Mohawk and Great Horn data when comparing other elements; the Great Horn anomalous values always being higher than Mohawk's; however the variance on the silver soil values was significantly greater. It is the writers opinion that, having talked with David Mark of Geotronics Surveys Ltd. (the person and the company who collected the samples for Great Horn); the samples were collected and handled in a manner acceptable under todays standards. Therefore, it appears that the 1960 silver "anomalous value" is high for some undetermined reason; possibly due to the method of analysis or possibly due to an intensly high background of silver in the soils. It is possible that a large number of high silver values were encountered in regions not sampled by Mohawk in their surveys, ie. the area over the "belt of mineral showings". An attempt was made to correlate data between these two surveys, which did

cover much of the same ground with the exception of that held by Zalmac since 1980. However, the Great Horn data was plotted and compile on an inferior map base and to date it has been impossible to get good control. During the 1991 field work numerous of the "Mohawk" grid lines and many of the "Great Horn" claim posts, all of which show on their grid maps; were noticed. It will be necessary to interconnect these old surveys with Zalmac's new grid in order to obtain meaniful correlation. The best solution to this problem is to conduct the soil sample survey as proposed.

Several zones of skarn alteration have been confirmed as a result of the 1991 program. These areas, all previously known showings, have never been explored with the idea in mind that a large replacement or contact metasomatic type mineral deposit could occur. The Rich Rock showing, the Potosi, Jon and S. E. Jon showings and the entire area in between are favourable for the occurance of such a deposit. Likewise the Lumpy showing and the area to the north-west where Zalmac detected extensive VLF-EM anomalies is also favourable for such deposits.

SUMMARY AND CONCLUSIONS:

1. Numerous zones of interest occur within the Zalmac property boundaries. Those of greatest interest are listed here in descending order:

- Victoria Showing
- Rich Rock Showing
- Jon, S.E. Jon Showings
- Potosi Showings
- Limestone Units and VLF-EM conductors on the original Big P claims.
- Lumpy Showings
- L.P. 3 Showing

The above areas of interest and other showings on Zalmac's claims include eleven (11) of the twenty-three (23) showings described by Cairnes. All of these showings/area warrant having additional work conducted on them. Conditions are considered very favorable for the discovery of one or more economic deposits within these areas.

Massive sulphide "replacement type" and/or "skarn type" deposits as well as the previously discovered "vein type" mineralization could be present. The prime target area for this type of mineral occurance extends from the "S.E. Jon Anomaly" to the "Rich Rock Showing"; although the Silver Spot Area is also a good target.

2. The geologic setting, mineralization and alteration encountered to date indicate that several styles of mineralization occur on the property:

a) The silver-lead-zinc mineralization and anomalies encountered suggest the potential for high grade small to medium tonnage vein and/or replacement type deposits.

b) The Anarchist "limestone units" in contact with intrusives offer the potential for medium to large tonnage "skarn type" deposits enriched with silver and gold.

c) The epithermal type mineralization occuring in zones of alteration adjacent to long, and locally wide, northerly trending fault zones must be explored at depth and along strike using geophysics to define drill targets.

d) The disseminated and fracture filling copper (molybdenum) mineralization, occuring in the intrusives on the Big Z #4 claim to the north-east; offer the potential for a large tonnage-low grade Porphyry Cu-Mo deposit with associated Au-Ag values.

e) Occurances of garnetite and wollastonite offer the potential for developing industrial minerals production either as a by-product or possibly as stand alone economically mineable deposits.

The 1991 program was instrumental in relocating the numerous mineral showings described by Cairnes. These have not been tested with modern methods. There is a large "blank spot" in the grassroots data over that portion of the ground that Zalmac has held since 1980. The more recent data available from adjacent ground infers that there is a high degree of probability that a significant mineral deposit is located within the perimeter of the original Zalmac ground. Additionally, there are two other areas of significant interest that were acquired in the 1991 staking.

The three main areas of interest are:

1. The Rich Rock area and the extension of that lithology to the north-west towards the S.E. Jon area. The primary target is copper-tungsten and other base metal mineralization as well as silver and possibly gold mineralization related to areas of intense skarn alteration which appear to extend along the contact between limestones and meta-volcanic/sedimentary rocks of the Anarchist Group and intrusive rocks of the Nelson and Valhalla Intrusions.

2. The Jon claims area, described herein; which exhibits multiple types of mineralization. The primary targets are:

a) East-west shear controlled vein type silver, zinc, lead mineralization similar to that occuring on Waterloo C.G. adjacent to the west.

b) North-south trending "epithermal" vein type gold/silver mineralization as proposed by Mohawk.

c) The possible extension of north-west trending skarn type mineralization associated with the Anarchist Group rocks which are in contact with intrusive rocks.

3. The newly recognized Victory Zone which encompasses the area from the Lumpy and the Rampalo on the south to the Victoria showings on the north. This area hosts several known vein systems carrying gold and silver values. The area is structurally well prepared and the Anarchist Group rocks have been intruded by granitic intrusions. Numerous soil geochem anomalies infer that this area could well host a large tonnage lower grade gold system. Additional areas of significant interest occur along the "belt of mineral showings" extending from the Victoria showing, north-westerly to the Silver Spot #3 showing adjacent to the Grizz claims. Cairnes suggests that the Silver Spot #3 is on the projected easterly strike of the "Waterloo Vein" system.

The potential for the discovery of a Copper-Molybdenum Porphyry system on the Big Z #4 claim and to the east into the headwaters of Teepee Creek was not seriously investigated during the 1991 season. This area however, remains of interest considering the potential exists to locate a large tonnage deposit.

RECOMMENDATIONS:

A program to investigate the economic mineral potential over the main areas of interest on the property is recommended. The program is layed out in two phases. An exploration budget, prepared as part of the office study; and a copy of a comfort letter provided by F. Marshall Smith, P. Eng., is included as Appendix I.

Phase 1 would include a soil, silt and rock geochemistry survey and preliminary geophysical programs over previously untested areas in addition to detailed geophysical programs, trenching, geological mapping and systematic sampling of anomalous area already exhibiting mineral potential. Phase 1 would conclude with a follow-up trenching program and/or "short hole" drilling program in areas of deep overburden, designed to pin-point diamond drill targets; by determining the outline of masked altered/mineralized zones. The Phase 1 budget is set at $230,000.

1. The first priority of Phase 1 is to conduct, over the original Big P Group area, a program of soil geochemistry, VLF-EM (reading both Hawaii and Annapolis) and magmetometer surveying; all to be conducted on a new grid orientiation (baseline NW-SE, lines NE-SW).
2. The second priority will be to conduct a time domain, double di-pole I.P./Resistivity and S.P. survey of structurally controlled anomalous areas and to conduct a Transient EM survey over statabound anomalous areas.
3. The third priority will be to conduct a program of mechanial cross-trenching and/or overburden drilling to map and test sample along indicated zones of interest.

Phase 2, contingent on part on the results of Phase 1 would include an early stage of follow-up work, including extensive mechanical trenching and rock sampling, based on the results of Phase 1. This would be followed by a program of diamond drilling to test the down dip extension and economic potential of mineralization zones. A Phase 2 buget would be in the order of $360,000.

BIBLIOGRAPHY:

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Little, H.W. (1957): Geology of the Kettle River Area; G.S.C. Map 6 - 1957, Scale 1:253,440.

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Higgins, A. (1988) Trenching Report, Big P Group. B.C. Assessment Report.

Waldner, M.W. (1983) Geolgical, Geochemical, Magnetometer and VLF-EM Surveys on the Rich Rock Claims. B.C. Assessment Report # 11136.

Geological, Geochemical, Magnetometer and VLF-EM Surveys on the L.P. 3 Claims. B.C. Assessment Report # ?

Callaghan, B. (1984): Geological, Geochemical, Magnetometer and VLF-EM Survey on the L.P. 13, 14 & 15 Claims. B.C. Assessment Report #113356 - Part 1 of 5.

Geological, Geochemical, Geophysical and Trenching on the Killarney, Thunder Hill Fr., and the Lucky Jim Fr. Crown Granted Claims B.C. Assessment Report # 13356 - Part 2 of 5.

Geological and Geochemical Survey conducted on the Geo I and III Claims B.C. Assessment Report # 13356 - Part 3 of 5.

Geological, Geochemical, Geophysical Survey conducted on the Rich I and Rich VII Claims B.C. Assessment Report #13356 Part 4 of 5.

Geological, Geochemical, Magnometer, S.P. and VLF-EM Surveys on the Jon Claims B.C. Assessment Report #13356 Part 5 of 5.

Smith, F.M. (1984): Report on the Jon Mineral Claim
Private Report for Mohawk Oil Co. Ltd.

Yorke-Hardy, R.W.(1991): Report on Zalmac Mines Ltd's P & Z
Mineral Claims Located on Lightning Peak.
Private report prepared for Zalmac Mines Ltd.

British Columbia Ministry of Mines Assessment Reports:
817, 1812, 2230, 5200, 6825, 7852. 7862,
8268, 17526, 19011,

Certificate of Qualifications

I, Robert W. Yorke-Hardy, of Vernon British Columbia, do hereby certify that:

1. I am a Mining Technologist residing at 330 Stepping Stones Road, Vernon, B. C. and I am the owner/operator of Y-H Technical Services Ltd. of P.O. Box 298, Vernon, B. C., an exploration services company. In total I have accumulated 26 years of experience in Mining/Mining Exploration and related industries.

2. I am a graduate of the British Columbia Institute of Technology, Burnaby, British Columbia and a registered charter member of the Association of Applied Science Technologists and Technicians of British Columbia. I have practiced my profession for 21 years.

3. This report is based on work performed by myself, under my direction or otherwise in my presence. The total value of the work performed has been detailed in the forgoing Cost Statement. This sum is to be applied for assessment credits.

4. This report is based on knowledge and experience gained over the period 1980 to 1981 and the period from January 1991 to the present. I am familiar with the geology and mineralization of the Lightning Peak Area and surrounding district. The program and report preparations have been, in part, completed with the guidance of F. Marshall Smith, P. Eng..

5. I am a shareholder in Zalmac Mines Ltd. as of Nov. 2, 1991 and was elected to the Board of Directors of the Company as of that date.

Y-H Technical Services Ltd.,

R. W. Yorke-Hardy, A.Sc.T.
November 17, 1991

LIGHTNING PEAK PROJECT EXPLORATION BUDGET

PHASE 1:

Mobilization and demobilization	$ 2,500
Project Support Costs-	
- (3 month project)	
Camp costs	$ 3,000
Room & Board	$ 8,000
Vehicles (2)	$ 9,000
Fuel	$ 3,000
Casual Labour	$ 12,500
Geologist	$ 10,000
Soil Sampling and Initial Geophysics -	
- (about 45 days)	
Grid Preparation - 30 kms. cut line	
- 15 kms. flag line	$ 5,000
VLF-EM - 30 kms. (two stations)	$ 1,600
Magnetometer - 30 kms.	$ 1,600
Soil & Silt Sampling - 1000 samples	$ 1,600
Preliminary Mechanical Trenching-	
- (about 10 days)	
Excavator - 5 days at $1,000/day	$ 5,000
Bulldozer - 5 days at $1,000/day	$ 5,000
Detailing Geophysics-	
- (about 20 days)	
I.P./Resistivity/S.P. - 30 kms.	$ 25,000
Transient EM - 15 kms.	$ 5,000
Data processing, interpretation & report -	$ 5,000

Y-H TECHNICAL SERVICES LTD.
P.O. BOX 298 • VERNON, B.C. • V1T 6M8
TELEPHONE (604) 549-6179 • FAX (604) 549-7116

Follow-up Mechanical Trenching-	
- (about 10 days)	
Excavator - 5 days at $1,000/day	$ 5,000
Bulldozer - 5 days at $1,000/day	$ 5,000
Test Drilling in Deep O.B. Areas-	
- (about 15 days)	
Drill site/road preparation with	
Excavator/Bulldozer -	
50 hrs. at $100/hr.	$ 5,000
Shallow NQ Diamond Drilling -	
1000 feet at $20/ft.	$ 20,000
Sample Prep. & Analysis	
- 1000 soil & silt	
- 250 rock	
1250 samples at $15	$ 18,750
Report Preparation and 5% assessment	$ 12,500
Consultant - P.Eng.	$ 2,500
Project Supervision	$ 15,000
Office and Administration (10%)	$ 20,000
Contingency	$ 13,450
Total Phase 1 *******	$230,000

PHASE 2 (Contingent on Phase 1 results)

Mobilization & demobilization	$ 5,000
Camp and Support Costs	$ 20,000
Mechanical Trenching	
- 300 hrs. at $100/hr.	$ 30,000
Diamond Drilling	
- 1000 m. at $100/m. all incl.	$100,000
Sampling and assaying	$ 40,000
Hardrock Trenching	
- 1000 m. at $ 30/m.	$ 30,000
Sampling and assaying	$ 25,000
Core logging and mapping	$ 25,000
Supervision and Management	$ 20,000
Report Preparation and 5% assessment	$ 20,000
Office and Administration (10%)	$ 30,000
Contingency	$ 15,000
Total Phase 2 ******	$360,000
Grand Total **********	$590,000

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TELEPHONE (604) 542-6178 • FAX (604) 549-7116

F. Marshall Smith, P.Eng.
6580 Mayflower Drive, Richmond, British Columbia, Canada V7C 3X6
Phone: (604) 271-6662 Fax: (604) 271-6607

May 31, 1991

Zalmac Mines Ltd.
Box 1027
Vernon, BC

RE: Report by R.W. Yorke-Hardy on P&Z Mineral Claims, Lightning Peak, Vernon MD, BC.

Dear Sirs:

I have undertaken to review the report by Mr. Yorke-Hardy, A.Sc.T., and can recommend to you that the conclusions, recommendations and related budget are in keeping with the merits of the property and the exploration effort to evaluate the property. As you are aware, I am familiar with the work of Mr. Yorke-Hardy for the last 7 years and worked with him as a consultant to Mohawk Oil Co. when he managed their efforts in the Lightning Peak district.

I have examined property owned by several clients and individual owners, in the Lightning Peak district including showings currently controlled by your company. I have reviewed Mr. Yorke-Hardy's report in the early stages and recommended additions and changes to bring it to the level of a report equivalent of a "Qualifying Report" as defined by the Superintendent of Brokers of the Province of British Columbia.

I believe the focus of the company's effort must be directed to evaluate two aspects of the claims. The primary aspect is the potential for small tonnage high-grade silver-lead mineralization similar to the Lightning Peak mined zone, or epithermal gold bearing veins recognized in 1983 but as yet not systematically evaluated. This target type is relatively inexpensive to locate and to determine its economic potential. Many targets of this sort have already been defined, in part, on the company claims. The programme as detailed by Mr. Yorke-Hardy should locate the subcropping mineralization of this sort.

These deposits yield strong VLF-EM anomalies due to their location in strong faults with wide wallrock alteration. Magnetometer lows commonly occur over the altered hangingwall of significant mineralization. Geochemical soil surveys can be very effective in locating both silver-lead and gold bearing veins.

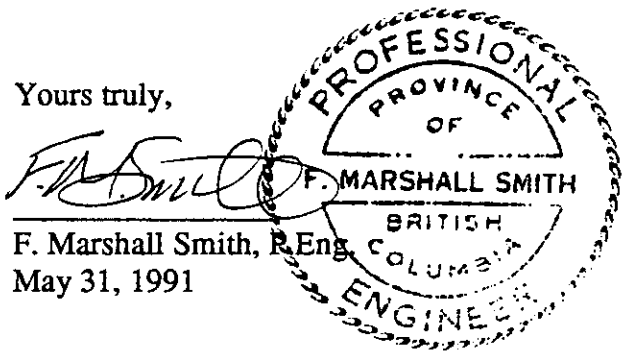
One of the important descriptions of mineralization in the area is the tendency for veins to fill either a north-south or east-west set of veins. If a north-south vein is offset the mineralization terminates at an east-west break. This type of faulting is common in this district and should be used as a guide to the layout of grid lines for geophysical and geochemical surveys.

The secondary target should be the estimation of the significance of the porphyry copper (molybdenite?) zone in the K50/Waterloo road junction. The work on this area is more prospecting and preliminary mapping to determine if there is sufficient alteration and mineralization to justify introducing the potential of the area to major companies for their consideration. At this time there is not enough data to support the contention of a large tonnage copper porphyry but the soil geochemistry defines an area for detail geology and prospecting.

In conclusion, I agree with the description of the work plan as proposed by Mr. Yorke-Hardy, I concur with the proposed budget to carry out the work and the staging of the plan in keeping with the results achieved.

This letter may be used as a part of filing with regulatory bodies and may be used in whole or in part to describe the property and my conclusions.

Yours truly,



F. Marshall Smith, P.Eng.
May 31, 1991

Phone: (604) 277-6662 F. Marshall Smith, P.Eng. Fax: (604) 271-6607
6580 Mayflower Drive, Richmond, British Columbia, Canada V7C 3X6

CERTIFICATE OF QUALIFICATIONS

I, F. Marshall Smith, do hereby certify that:

1. I am a consulting geologist and geochemist with offices at 6580 Mayflower Drive, Richmond, British Columbia.

2. I am a graduate at the University of Toronto with a degree of B.Sc., Honors Geology.

3. I am a member in good standing of the Association of Professional Engineers of the Province of British Columbia.

4. I have practiced my profession continuously since 1967.

5. This letter and recommendation is based on reports by Mr. R.W. Yorke-Hardy, whom the writer is familiar with and examinations of portions of the described property during 1983 through 1985.

6. I have no interest in the property or shares of Zalmac Mines Ltd. or in any of the companies with contiguous property to the P&Z mineral claims, Lightning Peak area, BC.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. MARSHALL SMITH

F. Marshall Smith, P.Eng.
May 31, 1991

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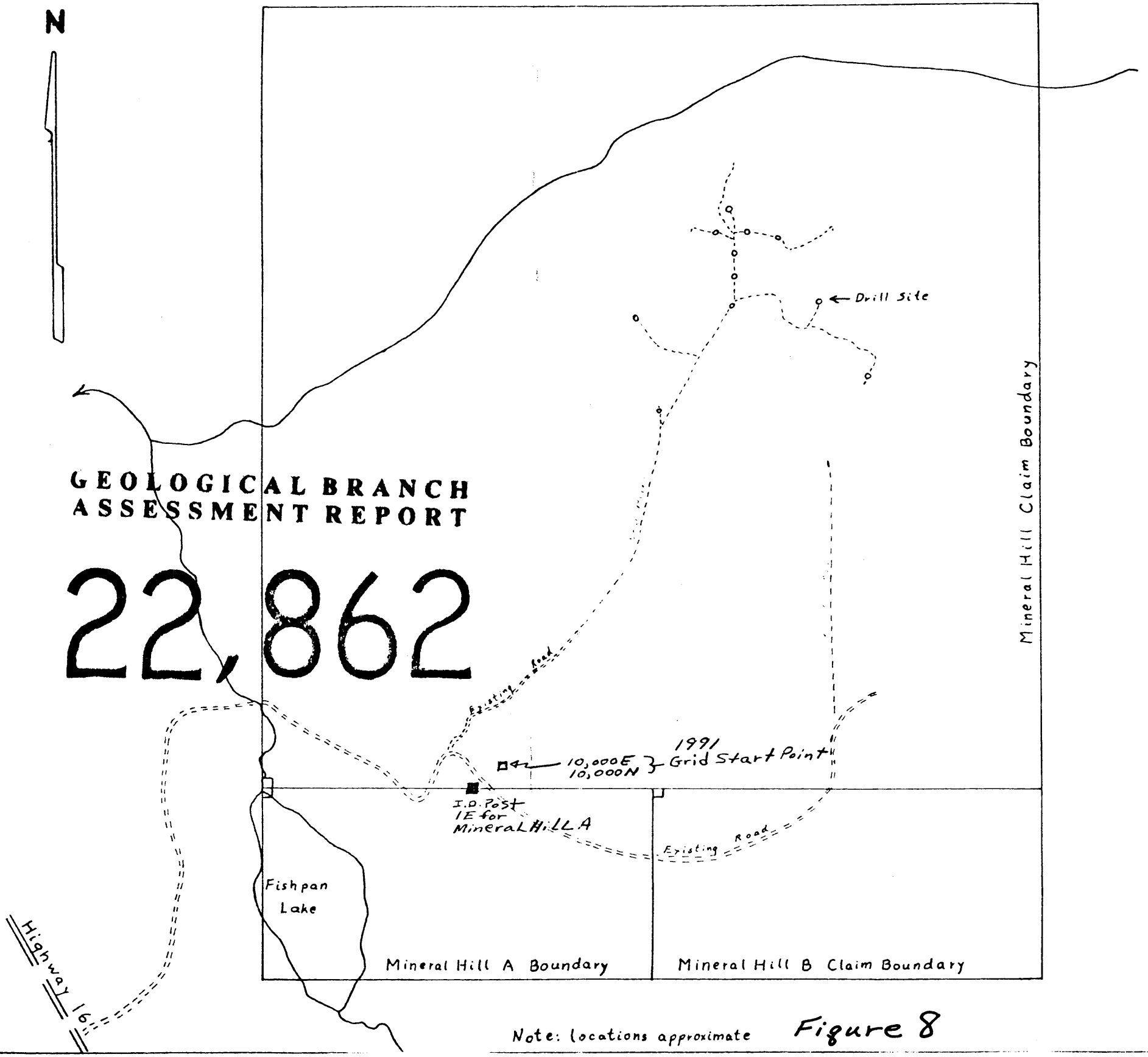
6580 Mayflower Drive, Richmond, British Columbia, Canada V7C 3X6



Note: locations approximate

Figure 8

529,000
528,000
527,000
389,000
390,000
391,000
392,000
Line 15+00W
Line 14+00W
Line 13+00W
Line 12+00W
Line 10+00W
Line 4+00W
Line 3+00W
Line 2+00W
Line 0+00E/W
Line 1+00W
Line 0+00W
Stn. 15+00N
Stn. 10+00N
Stn. 5+00N
Stn. 0+00N/S
1991-92 ZALMAC GRID 10+00N B/L
1991-92 ZALMAC GRID - 0+00N B/L
1985 ZALMAC GRID - B/L
Zal Traverse Stn. 0+00
VET Traverse Stn. 2+07.7
RM Traverse Stn. 2+10.3
VIC Traverse Stn. 5+63.4
RM Traverse Stn. 1+31.7
CL Traverse Stn. 0+00
CL Traverse Stn. 1+26.7
Zal Traverse Stn. 18+15.4
SLA Traverse Stn. 0+00
VIC Traverse Stn. 0+00
VET Traverse Stn. 0+00
VIC Traverse Stn. 2+02.7
Zal Traverse Stn. 19+47.
RM Traverse Stn. 0+00
LUM Traverse Stn. 0+00
See also Dwg. No. 5a
LRd Traverse Stn. 1+70.8
Grid Coord. Stn. 6+00N 0+80E
LUM Traverse Stn. 10+30.8
LRd Traverse Stn. 0+00
LUM Traverse Stn. 10+70.4
SURVEY LOCATION MAP LEGEND
Elevation Contours
Spot Elevations
Roads
Trails
Grid Lines
Soil Sample Sites
Rock Sample Sites
Historic Workings
Claim Boundaries
Claim Posts/LCP
Chain and Compass Traverse Station
Chain and Compass Control Points
100 0 100 (metres) 200 300 400
GEOLOGICAL BRANCH
ASSESSMENT REPORT
22,875
ZALMAC MINES LTD.
Lightning Peak Area, B.C.
P AND Z CLAIMS
SOIL SAMPLE & TRAVERSE
LOCATION MAP
V-H TECHNICAL SERVICES LTD.
Date: JANUARY 1992
Scale: 1:5000
Drawing No. 5

SIGNIFICANT ASSAYS DEMONSTRATING MINERAL POTENTIAL

Victoria Showings:

West:

Victoria (Z)	9210	Rock	0.062 opt Au, 1.60 opt Ag, 3635 ppm Pb, 955 ppm Zn
Victoria (Z)	9211	Rock	0.022 opt Au, 1.96 opt Ag, 4441 ppm Pb, 449 ppm Zn
Victoria (Z)	9212	Rock	298 ppb Au, 29.7 ppm Ag, 1535 ppm Pb, 326 ppm Zn
Victoria (Z)	9238	Rock	298 ppb Au, 9.1 ppm Ag, 265 ppm Pb, 195 ppm Zn

East:

Victoria (Z)	9216	Rock	0.525 opt Au, 13.78 opt Ag, 4080 ppm Pb, 1127 ppm Zn

South:

Victoria (Z)	9232	Rock	0.121 opt Au, 6.41 opt Ag, 6303 ppm Pb, 211 ppm Zn

Fire Fly (1934 MMR - Located North-West of Rampalo Claim) - Possibly Near Victoria Workings

8 ft. Vein assaying -	Rock	0.040 opt Au, 8.00 opt Ag
Quartz Float -	Rock	0.74 opt Au, 160 opt Ag

Upper Rampalo Adit:

Rampalo (Z)	Vein	Rock	0.350 opt Au, 34.42 opt Ag, 3013 ppm Pb, 907 ppm Zn
Rampalo (Z)	Stkpl	Rock	0.135 opt Au, 44.67 opt Ag, 2475 ppm Pb, 1533 ppm Zn
Rampalo (Z)	Dump	Rock	0.454 opt Au, 8.73 opt Ag, 2686 Pb, 2083 ppm Zn
Rampalo (G)	Vein	Rock	0.040 opt Au, 34.61 opt Ag, 0.083 % Pb, 0.73 % Zn
Rampalo (G)	Dump	Rock	0.120 opt Au, 17.84 opt Ag, 0.020 % Pb, 0.12 % Zn

Silver Lump Adit:

Silver Lump(Z)	Vein	Rock	0.084 opt Au, 4.47 opt Ag, 290 ppm Pb, 306 ppm Zn

Rich Rock Area:

Skarn Zone -

Trench 88 - 4 (O)	Rock	0.0637% Cu, 0.3103% W
Trench 88 - 4 (O)	Rock	0.1057% Cu, 0.2843% W

Other Locations:

Grazina 1987 Grid (Located North-East of Silver Lump Claim)

Ln 0, 9+00W(G)4809	Rock	0.230 opt Au, 0.65 opt Ag, 0.007 % Pb, 0.25 % Zn
Ln 0, 9+00 W(G)4810	Rock	0.210 opt Au, 10.17 opt Ag, 0.006 % Pb, 0.05 % Zn
Ln1S, 8+00W(G)4822	Rock	0.232 opt Au, 52.45 opt Ag, 0.003 % Pb, 0.43 % Zn

(Z) Zalmac 1991 and 1992, (G) Grazina 1987, (O) Orvana 1991.

Silver Spot # 3 Showing

Silver Spot # 4 Showings

Victoria West Showings

Victoria East Showings

Victoria South Showings

Rampalo Stockpile

Rampalo Dump

Silver Lump Adit

Upper Rampalo Adit

Rich Rock West Showing

Rich Rock Skarn Showing

Lumpy Showing

COMPOSITE MAP LEGEND

- Elevation Contours
- Roads
- Grid Lines
- Soil Sample Sites
- Historic Workings
- Claim Boundaries
- Chain and Compass Traverse Station
- Chain and Compass Control Points
- Spot Elevations (x 1844)
- Trails
- Rock Sample Sites
- Claim Posts/LCP

AIRPHOTO INTERPRETED INFORMATION:

- Lithological Contacts
- Faults and/or Shears

SOIL GEOCHEMICAL INFORMATION:

- Gold Values over 100 ppb.
- Gold Values over 50 ppb.
- Interpreted Gold, Silver ± Base Metals Zones

1985 VLF-EM DATA:

5 degree contour intervals starting at 10 degrees.

Scale: metres

GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,875

ZALMAC MINES LTD.

Lightning Peak Area, B.C.

P AND Z CLAIMS

COMPOSITE DATA MAP

INCLUDING AIRPHOTO LINEATIONS

Y-H TECHNICAL SERVICES LTD.

Date: JANUARY 1992 | Scale: 1:5000 | Drawing No. 12