BRITISH COLUMBIA

PROSPECTORS ASSISTANCE PROGRAM

MINISTRY OF ENERGY AND MINES

GEOLOGICAL SURVEY BRANCH

PROGRAM YEAR:	1994/95
REPORT #:	PAP 94-34
NAME:	BRYAN MULOIN

Assessment Report Nos. 23497

A GEOCHEMICAL SURVEY
ON
JAWBONE CREEK

CARIBOO MINING DISTRICT
BRITISH COLUMBIA
NTS 93H/4 b, c, f, g,

LATITUDE 53x 2'
LONGITUDE 121x 45'

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BRITISH COLUMBIA
PROSPECTORS ASSISTANCE PROGRAM
PROSPECTING REPORT FORM (continued)

B. TECHNICAL REPORT

- One technical report to be completed for each project area
- Refer to Program Requirements/Regulations, section 15, 16 and 17
- If work was performed on claims a copy of the applicable assessment report may be submitted in lieu of the supporting data (see section 16) required with this TECHNICAL REPORT

Name BRYAN MULOIN Reference Number 119 152

LOCATION/COMMODITIES

Project Area (as listed in Part A.) JAWBONE CK Minfile No. if applicable _____

Location of Project Area NTS 93 H/4E Lat 53°2' Long 121°45'

Description of Location and Access West of Stanley in the Barkerville Gold Belt. Access from highway 26 by logging road 72C at Timon Creek

Main Commodities Searched For Gold

Known Mineral Occurrences in Project Area n/a

WORK PERFORMED

1. Conventional Prospecting (area) 20 hectares
2. Geological Mapping (hectares/scale) _____
3. Geochemical (type and no. of samples) 51 samples, alder leaves
4. Geophysical (type and line km) H-Loop EM 3km Crone Radem 0.4km
5. Physical Work (type and amount) line cutting 3km
6. Drilling (no. holes, size, depth in m, total m) _____
7. Other (specify) _____

SIGNIFICANT RESULTS (if any)

Commodities Au Claim Name Zeno

Location (show on map) Lat 53°2' Long 121°45' Elevation _____

Best assay/sample type see geochem report

Description of mineralization, host rocks, anomalies –
Black phyllite, altered by intrusion - primary silicic, with mafic dykes and metallic components identified by conductive and magnetic anomalies

Supporting data must be submitted with this TECHNICAL REPORT.

INTRODUCTION

This is a geochemical study done for assessment on the KNOW group of mineral claims east of Jawbone Creek.

Work prior to '91 comprised of a dip angle VLF survey on a line spacing of 500 meters, and some geochem sampling, both on the TARA claim group. From this work one strong conductor on the east branch of Jawbone Creek was singled out for study in '91.

The KNOW group covers that VLF structure for a mile along the east branch of Jawbone Creek. Study to date includes geophysical traverses every 50 meters extending 100 meters either side. As part of that study a precision magnetic survey was initiated to define components in the alteration shatter envelope. These features are thought to be the feeders for the gold worked by a previous generation of miners. Ground flumes, shafts, and washes local to these structures attest to their interest.

A geochemical survey done in '91 also seems to indicate the magnetically defined structures are related to subdued gold anomalies.

LOCATION AND ACCESS

Topographic description of site:

NTS 93H/4b,c,f,g

The KNOW Group, now 4 of 2 post claims: VINO, ENO, ZENO, and SINO, is successor to Jawbone and Tara Groups of mineral claims. It is situated in the area known as the Barkerville Gold Belt or the Cariboo Gold Mining District. For a general location see figure 1 following page and in more detail, Know Claim Group Location Map, Figure 2 after page 5. Access to the property from Highway 26 is by logging road 72C at Timon Creek and a short road just west of Jawbone Creek. It is situated west of the former community of Stanley enroute between Quesnel and Wells. Another road enters the area from the north from Slough Creek.

HISTORY

The Stanley and VanWinkle area on Lightning Creek to the south is a notable mining area. Butcher Bench produced the largest recorded nugget of the Cariboo 36.4 oz with 6100 oz coming from an area of only a few square yards. The district has several continuing active operations.

The Slough Creek area north of the property has attracted extensive work, and is reputed to have produced more gold than Williams Creek. Most recent photos showing the large nugget gold of the Cariboo are from the south side of this creek.

The promise of the KNOW prospect is inspirational if one beleaves the find reported by Stuart S. Holland (1948) that "F.J. Tregillus, of Barkerville, says that the father of W.M. Hong, of Barkerville, told him a Chinese miner had found a 41 ounce nugget on the left fork of Jawbone Creek. The nugget was never shown locally because the finder shortly left for China."

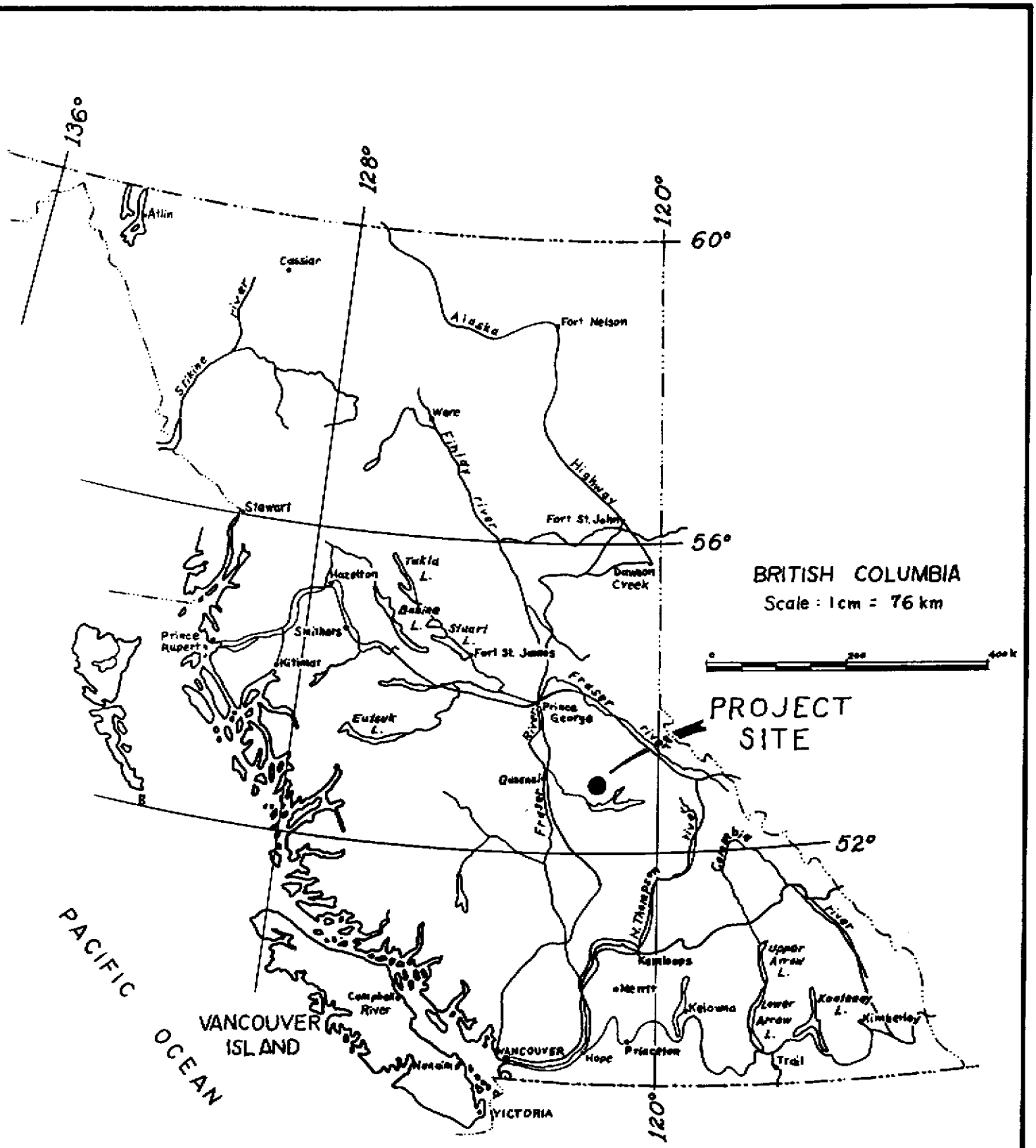


FIG 1

LOCATION MAP

BTM 12/87

REGIONAL GEOLOGY

Writers previous to L.C. Struick included the area in the Richfield formation, a basal quartzite. Struick introduces the concept of terraines and renames the formations. His description of the Jawbone Creek area is that it is underlain by phyllites. The structural elements he defines are: a fault to the east parallel to Davis Creek; the Lightning Creek Anticlinorum halfway up Mount Nelson to the north; and the end of an overturned syncline south past Mount Anderson. The authors studies along Jawbone Creek indicate the rock units of the area are dominated by relatively fissile material. The lack of rock exposure in the area is significant, supporting a phyllite description of the bedrock. Quartz enriched outcrops are appropriatly assosciated with the EM conductors. Where outcrops are to be seen it is the agency of silicification a component of intrusive alteration.

Forestry road 72C, continued into the area in 1993, gave opportunity to observe cutbanks marked by remnants of north striking mafic dykes. They are not as fully weathered as the enclosing till. From one such feature at 10.6 km the road builders obtained gravel for use on this road. Examination will still locate other thinner dykes. Observation of these features is evidence that these can not be glacial tills and; the Fraser glaciation could not have completely covered the interior Basin as suggested by Tipper, 1971. This also explaines the lack of observed moraines noted by him. His 1971 report is not a study as such but an invitation to discussion. Subsequent writers have ignored this aspect of Bulletin 196 treating his writting as proven fact.

There are other explanations for the structural settings of the gold occurences of the Cariboo than Tertiary stream sediments and glacial burial.

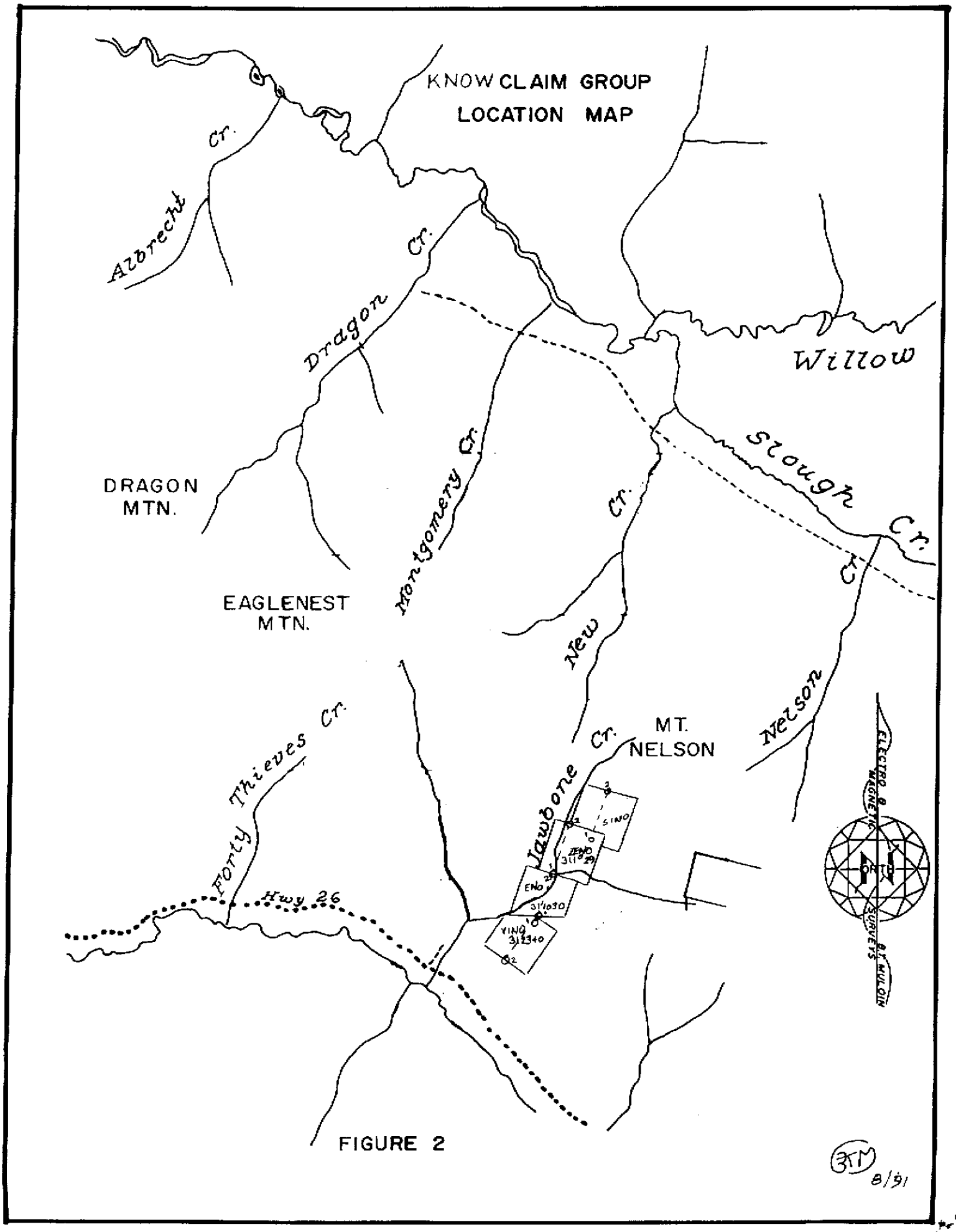
LOCAL AND GRID GEOLOGY

The authors examination in this area includes the logging road 72C as it was constructed, several small trenches, and the few outcrops in the grid area. South of Lightning Creek the adit with outcrops recently exposed by blasting on the Dominion Claims were visited, Permission to examine the property was obtained from Mr. Pat Byrnes of Tam Tan Explorations Ltd.

Holland, p.56, 1948, describes the Dominion claims about the adit. A precis or synopsis of that information follows:

The north east of Lot 11404 is underlain by grey flaggy quartzites and squeezed pea size quartz pebble conglomerate. They are overlain by about 100 feet of limestone outcropping in the canyon of Anderson Creek. Overlying the limestone is a 1500 feet or more belt of chloritic rocks grading upward from bright green chloritic schist to brown weathering chlorite schist to quartzite. They strike north 30 degrees west and dip 20 to 40 degrees west. The claims are south west of the major anticlinal axis but the limestone and chloritic schists are not repeated on the north east side.

The author suspects that what Holland has described are the components of alteration.


KNOW CLAIM GROUP
LOCATION MAP
Cr.
Albrecht
Dragon Cr.
Willow
DRAGON MTN.
Montgomery Cr.
Slough Cr.
Cr.
EAGLENEST MTN.
New
Nelson
MT. NELSON
Jawbone Cr.
Forty Thieves Cr.
Hwy 26
FIGURE 2
8/91

LOCAL GEOLOGY AND GRID GEOLOGY cont

On the two lines 4250S, and 4300S, and 30W of the base line the outcrop is similar to the Dominion Claims pebble conglomerate. This is interpreted as silica alteration, as the pisolites (pebbles) have a characteristic hyaline or opalescent sheen to them. On the Dominion Claims they are seen to grade from oolites, 3mm, at the ends of the outcrop area to the larger size, 8 to 10mm with associated carbonate in the center. On line 5550S just 20E of the baseline a questionable outcrop (may be an erratic) is quartz with phenocrysts of feldspar, probably plagioclase, albite. This rock type is also seen just east of the Dominion Claims adit.

In the area of this study, between 4300S and 4330S, 80E to 90E, a quartz vein of over a meters width is located. Its vertical dip and exposed side give it the appearance of being over 2 to 3 meters across. This too is a measure of silica alteration intensity. Two parts of the EM conductor straddle this quartz vein. To the west near 40W the EM target is poorly conductive. To the east, at 200E, is a better conductor. This seems to indicate a sequence of events in this intrusive. First silica flooding, followed by intrusion of a more diverse chemical nature. The silica having sealed up the primary vents the subsequent activity has to shatter into a more brittle cap or divert around it.

The previous reconnaissance of the grid area revealed a few quartzites paralleling the VLF-EM and magnetic structures. Some of these have manganese stains on fracture surfaces. Manganese is a common component of alteration and may be a significant indicator in this area.

Other geologists in the locality have told the author that VLF-EM conductors, when drilled, prove to be graphitic shear zones. This may have been wad (earthy pyrolusite) instead of graphite. When drilling is in inclined holes, as is usual, the geometry is such that the metallic component is easily missed, other zones of the alteration encountered instead.

A sub outcrop on 5550S and 70E to 80E is a highly brecciated phyllite. Its occurrence on a steep slope accounts for its exposure. To the west and just off the grid at about 4950S another out crop, in Jawbone Creek, is a more resistant phyllite. These with the group of outcrops just south of the grid are representative of the country rock. It is suspected that silica alteration has reinforced a very fissile phyllite allowing it to resist weathering and to outcrop.

Of some interest is that the only evident mining along Jawbone Creek is along the east bank of this branch where the outpourings of the mineralizing structure have enriched the weathered overburden.

DETAILED MAGNETOMETER SURVEY

The present grid was initiated at 1675W on line "J" The base line is due magnetic north or 23 degrees east of true north. Numbering on the baseline is from 5000S at this point and follows along the VLF field strength maximum of the conductor.

The VLF conductive structure is continuous on or near the baseline for its entire length. It appears that the conductivity of the structure significantly drops off by about 4500S. North of this point the conductive nature of the structure appears to have transposed to the east where line extensions pick it up at about 200E. This may indicate two cycles of intrusion, a primary one silica rich opening and initiating mineralization, and a secondary cycle in which a metallic rich injection occurs in selected channel ways.

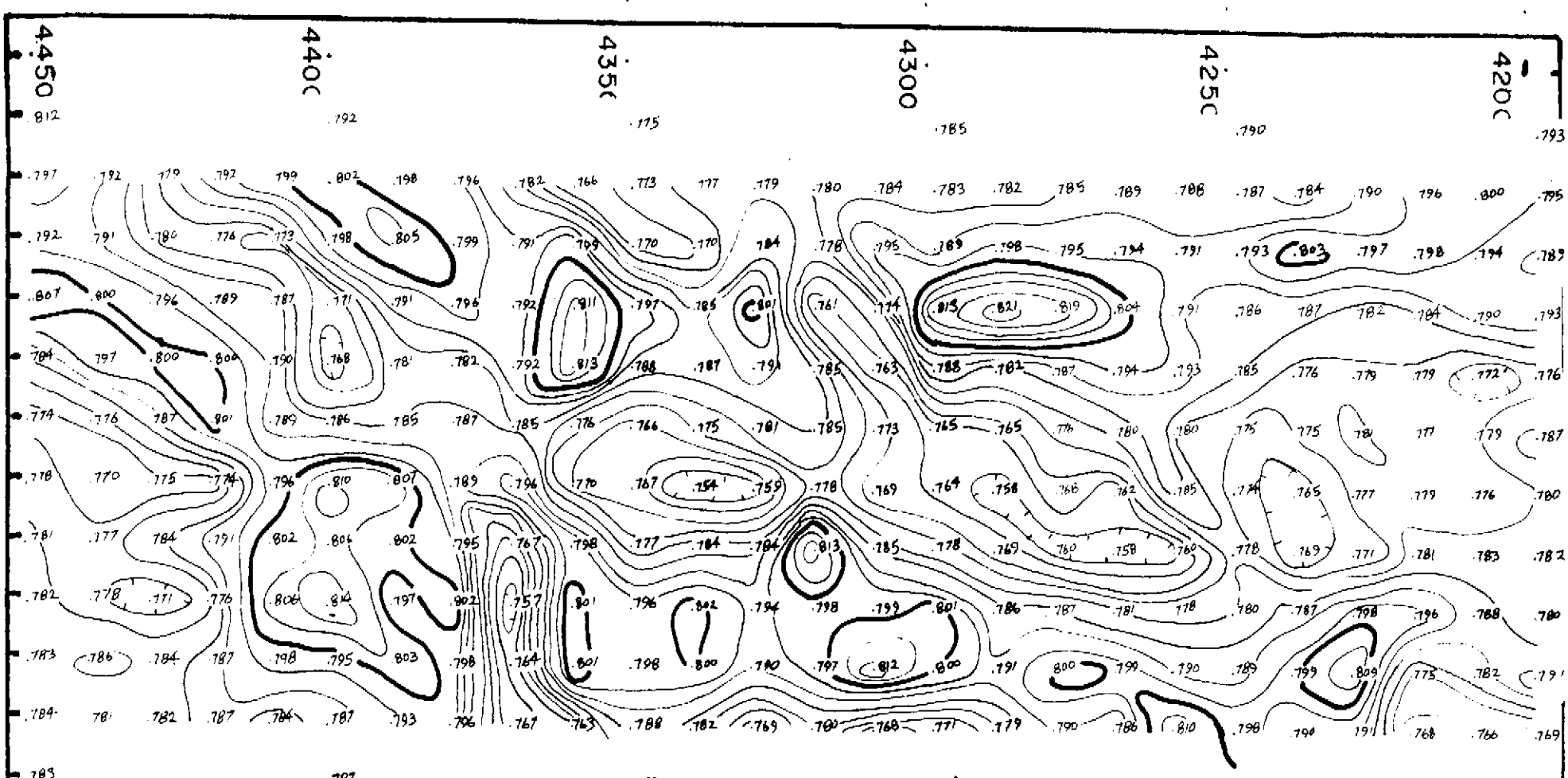
Several alteration components of these intrusives are identifiable by geophysical means. The alteration can be divided into mineralogical, petrological, and shatter envelope components. The shatter envelope is the passages, plumbing, for alteration to develope in. With detailed study it is seen to have a fairly consistent pattern.

A hint of the shatter envelope pattern is seen in the magnetometer survey, being irregular magnetic highs and lows flanking the EM conductor to the west and a fairly continuous but moderate high flanking on the east and uphill side of the conductor. The difference in the two flanking structures was dictated by the topography at the time of intrusion. This shows the terrain is mature and not heavily eroded since that time. The down hill side may be more interesting to the prospector. Here we are deeper into the shatter envelope where the foci of shear and tension stress form explosive venting passage ways. To identify this A closer grid spacing, 10 meters by 10 meters, was used. Detailed magnetometer surveys were paced in between lines.

To test the main structure, the VLF-EM conductor, several of these shatter cone, secondary zones, have been identified by magnetic surveys. The magnetometer gives structural detail on cloudless days. Clouds cause reading drift of 10 gammas or more. This is not acceptable when the total range of the readings is 60 gammas.

The tension veins radiate laterally and parallel the intrusive, VLF-EM conductor. They show up as weak magnetic highs. There is also a pattern of oblique or shear fractures. Where these stress indicators focus is an area of intense shattering, the vent where the intrusive has released pressure. Depending on many complex factors these vents may be mineralized. On other prospects they have been seen to form dumbbell patterns or pairs straddling the intrusive. Because of the steepness of this hillside the uphill side was not tested assuming structural and geometric reasons for greater difficulty in identification.

Between 4230S and 4410S two parallel tension patterns are seen to be the focus of venting. Boulder piles where the structure crosses the creek, chinese workings, attest to this.



KNOW MINERAL CLAIMS

DETAILED MAGNETOMETER SURVEY

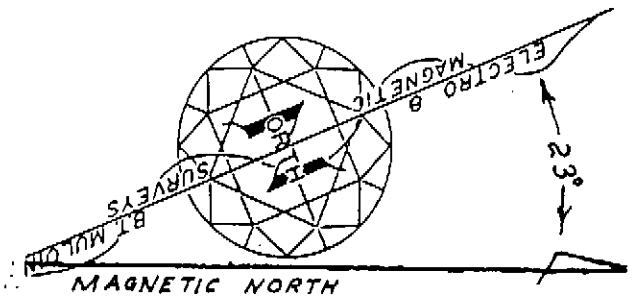
INSTRUMENT: SCINTREX MP2 DIGITAL PROTON PRECESSION MAGNETOMETER

CONTOUR INTERVAL: 5 γ and 50 γ

BACKGROUND: 57000 γ

SCALE 1:1000

0 10 20 30 40 50



NTS 93H4

GEOCHEMICAL TESTING

In '91 Warren Hunt requested that two of these shatter structures be tested by sampling of alder leaves. A traverse of seven samples taken then is plotted for the gold assay, it is included in the appendix. The assays are not spectacular for their values. They do seem to indicate gold concentration where they are near to the shatter structures interpreted from the magnetometer study.

The limitations in alder leaf sampling were again encountered with this study. Alders do not grow every where in the area of interest. Presumably water and depth of soil control their location. In all 51 locations were tested. The samples were of one to two pounds in size. At some locations this defoliated all the alders. It took about an hour a pound to collect the samples. The two studies are different. This series was picked in July and the previous one was sampled in September '91. Previously higher values now asseyed poorly though were adjacent to better valued samples. This is possibly due to the depletion of material available by the first testing. Different trees had to be sampled on this study.

A more complex pattern of mineralization is evident. The similarity of metal distribution patterns for all elements plotted, see appendix, indicates that a primary mineralizing source is being examined. If this were a glacially or alluvially distributed mineralization it would be expected that there would be a more random correlation between elements. Uranium is slightly different in that its concentration seems to increase to the west, towards the silica center, of alteration. This suggests that it came in ahead of the less ephemeral elements. Gold was the primary interest. A concentration near the magnetic structures can still be interpreted. A structure at the edge of the study area, 4450S, 100E seems to indicate the southern continuation of the vein pattern at 100E. This is seen to be affirmed by the magnetic surveys that continue in this direction.

Molybdenum distribution though subdued is assosciated with the magnetic features. It too increases to the southwest.

Copper patterns correspond to those of gold. The high value at 4200S, 200E may be related to the primary, VLF identified structure.

Lead, zinc, silver, nickel, cobalt, manganese, strontium, cadmium, barium and boron all seem to correlate well with that of gold.

Arsenic values seem to emphasize a north westerly axis of mineralization though still correlating with the gold pattern.

Bismuth seems to indicate an offsetting pattern. It is possibly assosciated but mutually exclusive to the gold occurences.

The assay report is presented in the appendix, See also the Geochem maps.

CONCLUSIONS AND RECOMMENDATIONS

The discreteness of the mineralization patterns indicate small vein structures. This is a residual soil that is being tested. Metals can be expected to have leached down. The bedrock topography of this valley is more rugged than the soil surface. It is between 20 to 30 feet to these veins judging from the magnetometer survey. Quartz veining stands high and exposes above the soil surface. Metallic veins can be expected to weather deeply. Fumarolic sources of metal are likely to be virtually bottomless.

Further testing of these vein structures has to be by a series of very closely placed short drill holes or by shaft as was done by the previous generation of miners. A backhoe may possibly be able to dig deep enough requiring several steps.

STATEMENT OF QUALIFICATIONS

I, BRYAN T. MULOIN, declare that I am a graduate of Queen's University, Kingston, Ontario, having received a batchelor's degree in Geological Sciences from its Faculty of Applied Science in 1971; and that I have been employed since then in mining exploration.

BRYAN T. MULOIN, GEOLOGIST

REFERENCES

Bowman, M.E. 1888 "Report on the Geology of the Mining District of Cariboo, British Columbia," Geological and Natural History Survey of Canada

Clague, J.J. 1991 "Quaternary Stratigraphy and History of Quesnel and Cariboo River Valleys, British Columbia: Implications for Placer Gold Production" in Current Research, Part A Geological Survey of Canada, Paper 91-1A, pages 1-5.

Hanson, G. 1935 "Barkerville Gold Belt, Cariboo District, British Columbia" GSC Memoir 181

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Levson, V.M. and Giles, T.R. 1993 "Geology of Tertiary and Quaternary Gold-Bearing Placers in the Cariboo Region, British Columbia (93A,B,G,H)" British Columbia Ministry of Energy, Mines and Petroleum Resources, Bulletin 89

Struick, L.C. 1988 "Structural Geology of the Cariboo Gold Mining District, British Columbia" GSC Memoir 421

Tipper, H.W. 1971 "Glacial Geomorphology and Pleistocene History of Central British Columbia" Geological Survey of Canada, Bulletin 196.

Geochem study: Bryan T Muloin '91, sampled by B T Muloin.

Location,	Au ppb,	Cu ppm,	Zn ppm,	Ni ppm,	Co ppm	
4360S,110E	7.7	116	451	52	49	alder leaves
120E	3.0	201	459	66	48	alder leaves

Location,	Au ppb,	Cu ppm,	Zn ppm,	Ni ppm,	Co ppm	
4350S,130E	0.3	155	755	84	70	alder leaves

Location,	Au ppb,	Cu ppm,	Zn ppm,	Ni ppm,	Co ppm	
4310S,140E	1.2	169	679	64	10	alder leaves

Location,	Au ppb,	Cu ppm,	Zn ppm,	Ni ppm,	Co ppm	
4300S,150E	5.1	88	680	24	26	alder leaves
160E	7.6	54	407	42	10	alder leaves

Location,	Au ppb,	Cu ppm,	Zn ppm,	Ni ppm,	Co ppm	
4290S,170E	3.2	331	506	63	10	alder leaves

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GEOCHEMICAL ANALYSIS CERTIFICATE

Bryan Muloin File # 94-2261

P.O. Box 1312, Fort St. James BC V0J 1P0

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb	ASH gm	SAMPLE gm
0+80E 44+20S	6	120	7	897	.3	242	4	2967	.18	38	<5	<2	<2	732	1.7	2	<2	<2	15.31	5.278	<2	19	8.10	807	<.01	106	.06	.01	4.46	<1	7	2.73	201
0+90E 43+40S	2	52	4	536	.4	52	8	1290	.16	28	12	<2	<2	706	.7	2	2	<2	17.19	3.989	<2	1	10.10	207	<.01	228	.03	<.01	4.65	<1	5	3.75	222
0+90E 44+10S	5	119	6	794	.3	190	4	3965	.20	54	<5	<2	<2	577	1.1	2	3	<2	10.88	6.216	<2	1	8.50	472	<.01	108	.04	.01	4.90	1	3	2.96	228
0+90E 44+20S	1	92	3	464	.3	118	3	2244	.15	29	<5	<2	<2	582	.7	2	2	<2	13.70	4.107	<2	16	7.98	690	<.01	121	.02	<.01	4.01	<1	9	3.40	219
1+00E 43+20S	3	75	8	569	.1	98	2	3607	.27	51	<5	<2	<2	869	.7	<2	<2	<2	19.78	4.340	<2	1	10.52	354	<.01	176	.03	<.01	5.11	<1	5	3.25	216
1+00E 43+90S	1	107	7	654	.5	170	7	875	.17	40	7	<2	<2	672	1.0	3	<2	<2	12.22	5.426	<2	1	7.17	304	<.01	97	.07	<.01	4.20	<1	3	2.78	202
RE 1+00E 44+50S	<1	57	7	780	.6	12	3	3276	.09	29	8	<2	<2	502	1.0	6	<2	<2	15.96	3.443	<2	2	8.97	412	<.01	289	.01	<.01	5.30	<1	12	-	-
1+00E 44+00S	<1	125	5	806	.3	222	13	1401	.20	30	9	<2	<2	910	1.3	2	<2	<2	16.26	6.675	<2	1	8.66	371	<.01	74	.06	<.01	5.38	<1	1	2.85	223
1+00E 44+20S	4	63	10	564	.3	49	2	1132	.19	117	<5	<2	<2	624	.8	3	<2	<2	16.00	4.472	<2	1	9.03	504	<.01	141	.02	.01	5.00	<1	3	2.85	218
1+00E 44+30S	<1	67	5	615	.1	22	2	4418	.14	28	<5	<2	<2	464	.4	2	<2	<2	14.79	3.751	<2	<1	8.63	357	<.01	239	.01	<.01	4.58	<1	4	3.37	219
1+00E 44+50S	2	62	<2	770	.2	12	2	3270	.11	26	5	<2	<2	510	.5	2	<2	<2	15.64	3.652	<2	<1	9.23	444	<.01	308	.01	<.01	4.94	<1	13	3.96	223
1+10E 43+10S	<1	86	2	678	.2	184	9	3766	.17	30	14	<2	2	740	.9	2	<2	<2	15.06	4.568	2	1	10.32	524	<.01	105	.06	<.01	4.64	<1	2	3.22	220
1+10E 43+60S	2	129	5	626	.4	74	5	2823	.18	46	<5	<2	<2	782	.6	3	<2	<2	14.95	5.325	<2	1	8.63	406	<.01	236	.03	.01	5.73	<1	1	2.98	215
1+20E 43+10S	1	98	6	590	.2	89	4	3003	.20	41	5	<2	<2	758	.8	3	<2	<2	15.47	4.077	2	1	8.90	471	<.01	161	.04	.01	5.25	<1	4	2.60	220
1+20E 43+60S	3	136	5	683	.4	110	8	3322	.21	25	13	<2	<2	959	.6	3	<2	<2	17.44	5.938	2	1	9.22	482	<.01	101	.03	<.01	5.64	<1	1	2.64	219
1+20E 44+30S	<1	61	6	566	.1	18	2	4456	.13	39	<5	<2	<2	529	.4	4	<2	<2	16.38	3.781	<2	<1	8.91	588	<.01	287	.02	.01	5.19	<1	2	3.05	217
STANDARD C/AU-S	21	58	38	127	7.3	66	30	1068	3.96	42	21	8	35	48	18.0	15	18	63	.51	.090	38	56	.89	174	.08	33	1.88	.06	.15	12	50	-	-

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
- SAMPLE TYPE: VEGETATION AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: JUL 26 1994 **DATE REPORT MAILED:** Aug 4/94

SIGNED BY ..... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

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GEOCHEMICAL ANALYSIS CERTIFICATE

Bryan Muloin File # 94-2137 Page 1

P.O. Box 1312, Fort St. James BC V0J 1P0

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb	ASH gm	SAMPLE gm
1+20E 43+00S	1	138	6	620	.2	142	6	6547	.13	142	<5	<2	<2	999	.4	<2	11	<2	15.55	4.172	4	2	7.48	1178	<.01	234	.04	.01	18.61	<1	2	3.41	207
1+30E 42+80S	1	172	2	708	.5	278	4	2892	.16	121	<5	<2	<2	820	.6	<2	<2	<2	11.61	5.459	4	3	7.38	619	<.01	122	.08	.01	30.04	<1	2	2.82	205
1+30E 43+40S	2	142	4	680	.4	87	5	2013	.17	139	<5	<2	<2	760	.5	<2	5	<2	12.86	4.513	5	2	10.40	376	<.01	132	.04	.01	24.16	<1	<1	2.55	206
1+30E 43+50S	2	165	4	752	.5	99	5	1838	.21	84	<5	<2	<2	845	.4	<2	5	<2	14.48	5.657	4	2	8.16	506	<.01	100	.03	.01	23.38	<1	13	2.65	204
1+30E 43+70S	1	146	5	884	.2	318	4	3708	.15	45	<5	<2	<2	741	1.4	<2	6	<2	14.94	4.303	6	2	7.41	1306	<.01	196	.05	.01	25.38	<1	1	3.17	203
1+40E 42+10S	1	134	4	595	<.1	97	6	3270	.17	78	<5	<2	<2	859	.5	<2	<2	<2	15.98	4.620	4	2	9.83	350	<.01	131	.04	.01	20.56	<1	1	2.74	208
1+40E 42+40S	2	73	3	694	<.1	64	<1	2433	.16	39	<5	<2	<2	723	.3	<2	3	<2	16.20	4.185	3	2	9.38	223	<.01	289	.02	<.01	22.05	<1	<1	3.42	206
1+40E 42+60S	2	111	<2	610	.4	118	1	1714	.15	95	<5	<2	<2	748	.4	<2	2	<2	16.55	5.464	3	2	9.29	243	<.01	140	.03	.01	23.63	<1	<1	2.65	202
1+40E 42+70S	1	104	5	543	.3	134	4	2511	.12	44	<5	<2	<2	757	.3	<2	<2	<2	16.04	3.746	4	2	9.84	266	<.01	121	.04	<.01	18.21	<1	<1	3.39	206
1+40E 43+10S	1	153	<2	725	<.1	94	5	1201	.18	150	<5	<2	<2	1006	.2	<2	<2	<2	17.80	5.979	4	3	9.72	411	<.01	112	.04	.01	19.76	<1	<1	2.64	207
1+40E 43+70S	1	130	7	817	.8	255	3	4272	.17	76	<5	<2	<2	601	1.0	<2	8	<2	13.23	5.047	5	2	5.89	977	<.01	126	.04	.01	25.58	<1	7	2.96	207
1+40E 44+10S	1	68	4	636	.2	28	2	1688	.12	59	<5	<2	<2	581	<.2	<2	<2	<2	15.62	3.495	5	2	7.96	522	<.01	235	.03	.01	23.96	<1	<1	3.30	203
1+40E 44+30S	1	83	3	616	.1	53	1	2010	.14	61	<5	<2	<2	535	.4	<2	<2	<2	16.18	3.830	3	2	6.82	627	<.01	219	.03	.01	25.05	<1	<1	3.30	209
1+50E 42+00S	<1	86	6	632	.1	37	1	4341	.15	71	<5	<2	<2	768	.4	<2	<2	<2	15.22	3.902	5	2	9.08	314	<.01	231	.02	.01	18.91	<1	1	3.06	205
1+50E 43+00S	1	104	7	753	.3	56	1	1282	.11	63	<5	<2	<2	827	.3	<2	<2	2	14.86	4.789	3	2	10.37	419	<.01	229	.02	.01	22.97	<1	<1	2.79	207
1+50E 43+10S	1	134	5	700	<.1	71	<1	830	.16	59	<5	<2	<2	952	.5	<2	8	<2	16.81	4.736	5	2	11.22	428	<.01	176	.03	.01	23.39	<1	<1	2.81	206
1+50E 43+60S	3	153	9	958	.2	262	7	4708	.16	39	<5	<2	<2	757	.9	<2	<2	<2	13.00	6.585	5	3	8.27	912	<.01	81	.07	.01	24.22	<1	10	2.72	208
1+50E 43+70S	3	136	9	878	.1	304	3	3840	.17	113	<5	<2	<2	825	1.0	<2	<2	<2	14.78	5.170	5	2	7.37	1185	<.01	76	.04	<.01	24.71	<1	7	3.19	206
1+50E 44+20S	1	87	2	597	<.1	88	1	833	.15	23	<5	<2	<2	631	.3	<2	<2	<2	17.46	4.460	4	2	7.46	759	<.01	274	.02	<.01	23.53	<1	3	3.14	207
1+50E 44+30S	1	116	2	619	<.1	112	5	2218	.17	66	<5	<2	<2	547	.5	<2	<2	<2	15.08	5.185	4	2	7.98	610	<.01	181	.05	.01	23.74	<1	4	2.57	206
1+60E 42+10S	1	146	4	1114	5.0	94	3	2373	.16	34	<5	<2	<2	916	.4	<2	<2	<2	15.74	4.774	4	3	9.01	586	<.01	117	.05	.01	22.35	<1	<1	2.67	205
1+60E 42+90S	2	69	7	624	.2	87	1	2368	.12	44	<5	<2	<2	997	.3	<2	<2	<2	18.48	4.344	3	3	10.98	505	<.01	209	.04	.01	16.42	<1	3	3.20	205
1+60E 43+00S	2	88	2	567	.2	98	1	2221	.12	53	<5	<2	<2	1001	.3	<2	<2	<2	18.79	4.009	4	2	10.45	492	<.01	183	.03	<.01	15.69	<1	<1	3.31	203
1+60E 43+70S	1	95	<2	647	<.1	199	3	3414	.15	45	<5	<2	<2	646	.8	<2	<2	<2	14.71	4.586	5	2	8.23	816	<.01	122	.04	.01	19.18	<1	<1	3.08	206
1+60E 44+30S	1	89	6	622	.1	191	1	2945	.17	42	<5	<2	<2	644	.5	<2	3	2	18.14	4.752	5	2	7.47	912	<.01	185	.03	.01	21.86	<1	2	2.99	207
1+60E 44+40S	1	92	4	745	.3	110	6	4497	.15	62	<5	<2	<2	517	.6	<2	7	<2	15.47	4.398	5	2	7.29	511	<.01	185	.03	.01	27.62	<1	2	2.92	206
1+70E 42+80S	1	91	3	657	.1	61	2	3930	.13	97	<5	<2	<2	989	.5	<2	<2	<2	18.30	4.425	4	1	11.35	623	<.01	173	.02	.01	15.94	<1	1	3.03	205
1+70E 42+90S	1	72	<2	509	<.1	74	2	1068	.14	59	<5	<2	<2	977	.3	<2	<2	<2	17.25	4.915	4	2	12.14	482	<.01	120	.03	<.01	16.56	<1	4	3.15	203
1+80E 42+00S	1	116	3	651	.1	80	4	2011	.16	103	<5	<2	<2	757	.5	<2	5	<2	13.00	4.675	5	2	8.72	461	<.01	93	.03	.01	22.57	<1	1	2.92	208
1+80E 42+80S	1	111	<2	574	.2	113	8	2231	.17	36	<5	<2	<2	1010	.3	<2	7	<2	16.44	5.016	5	2	11.41	627	<.01	110	.07	<.01	20.65	<1	3	2.86	209
1+80E 43+60S	3	129	8	846	<.1	250	11	3924	.15	25	<5	<2	<2	716	.6	<2	<2	<2	16.15	5.669	8	3	8.96	942	<.01	187	.05	<.01	22.18	<1	2	2.81	205
1+90E 42+80S	2	119	<2	644	.3	120	4	2517	.15	33	<5	<2	<2	902	.5	<2	<2	2	15.71	5.172	5	2	10.93	602	<.01	154	.03	<.01	17.98	<1	<1	2.65	203
1+90E 44+20S	1	86	6	800	.2	198	6	2308	.16	29	<5	<2	<2	715	.6	<2	3	<2	15.50	4.797	3	2	9.60	931	<.01	134	.06	<.01	15.10	<1	<1	2.37	206
1+90E 44+30S	1	113	5	802	.5	208	6	2938	.15	37	<5	<2	<2	662	.5	<2	4	2	17.11	4.364	4	2	8.92	941	<.01	139	.04	.01	15.85	<1	<1	2.62	207
STANDARD C/AU-S	19	58	38	125	6.8	72	31	1044	3.96	42	19	6	37	48	17.6	15	20	60	.51	.091	42	56	.91	181	.08	34	1.88	.05	.14	13	52	-	-

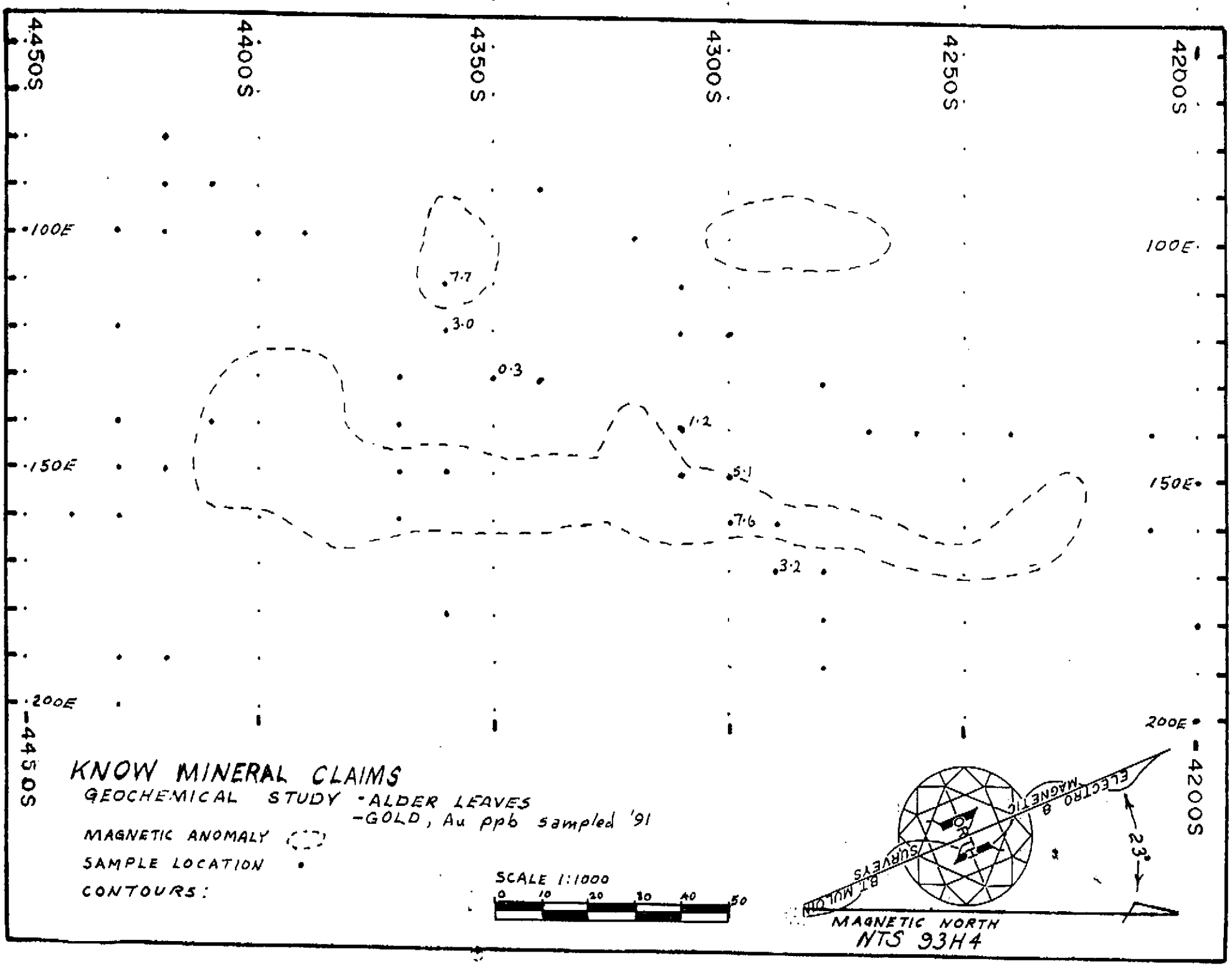
ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
- SAMPLE TYPE: VEGETATION AU* ANALYSIS BY ACID LEACH/AA FROM TOTAL SAMPLE.

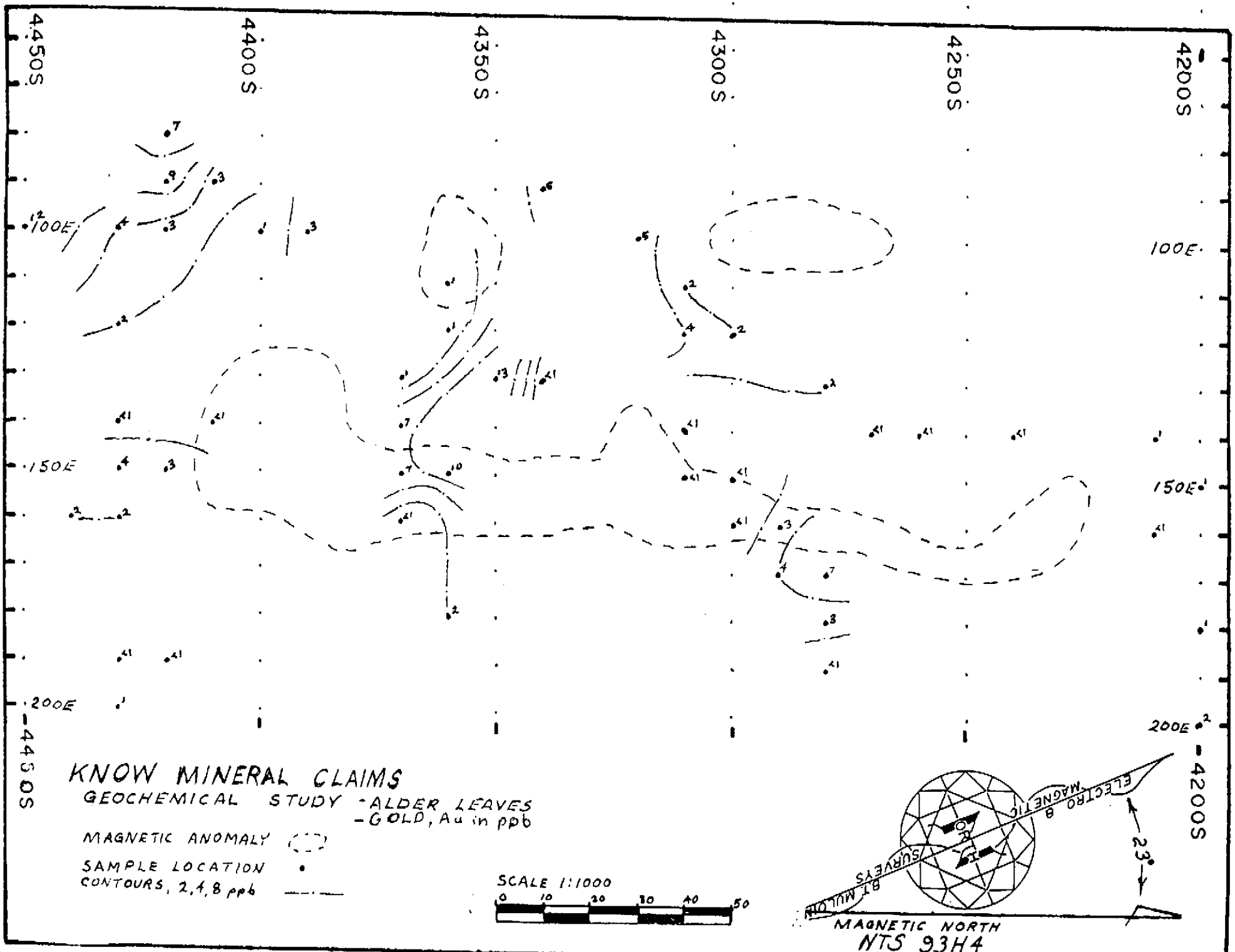
DATE RECEIVED: JUL 18 1994 **DATE REPORT MAILED:** Aug 23/94

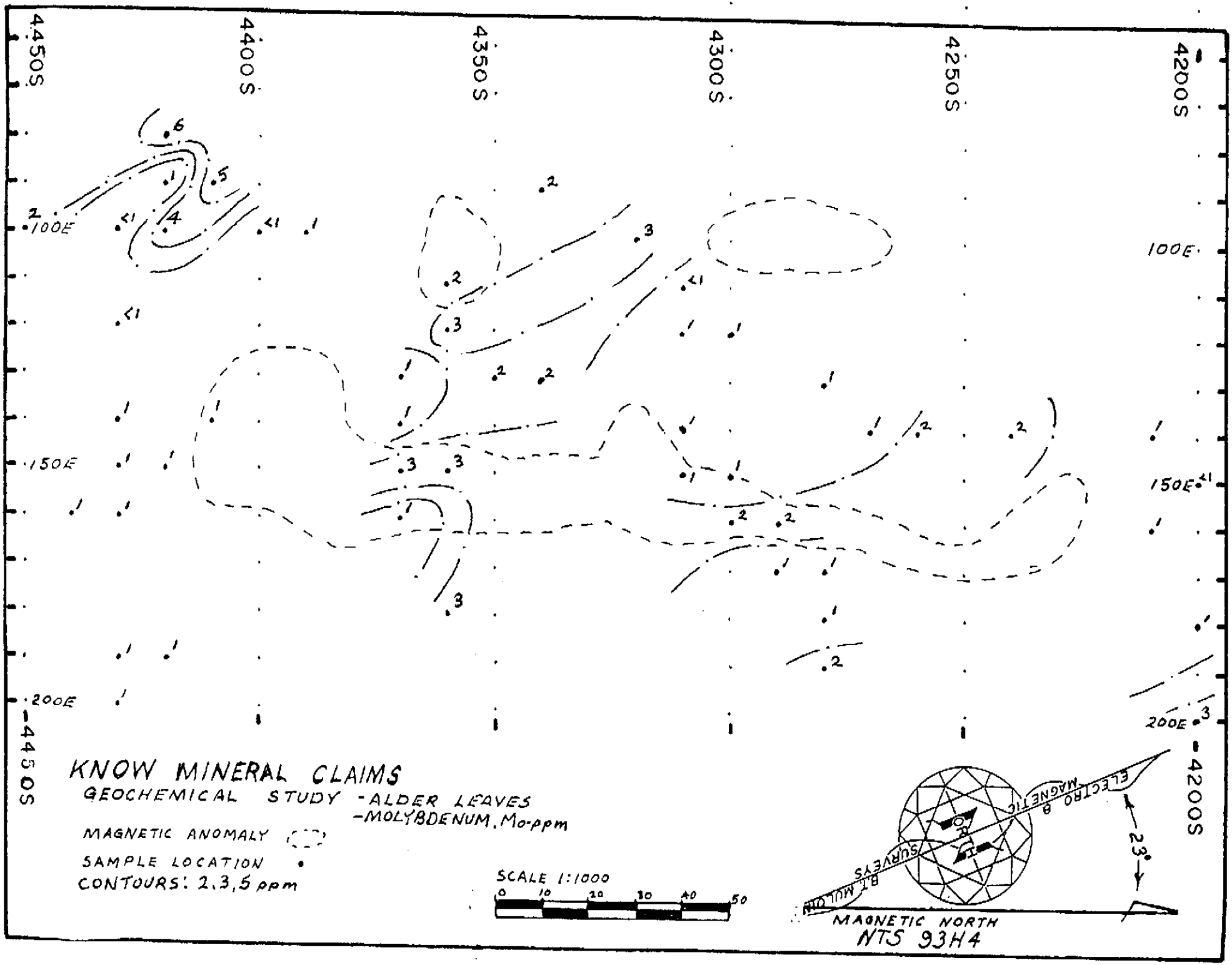
SIGNED BY..... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

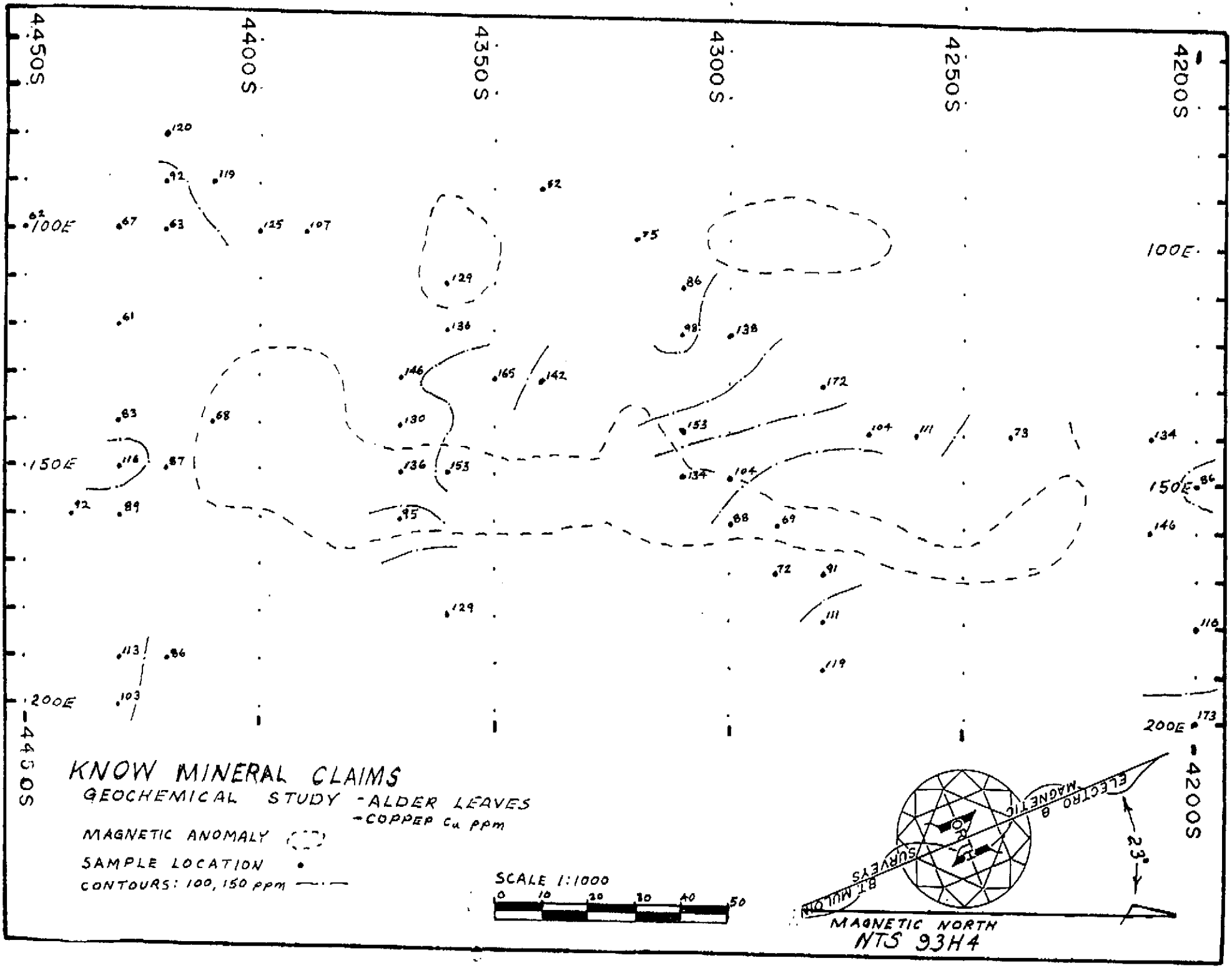
SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb	ASH gm	SAMPLE gm
2+00E 42+00S	3	173	10	959	.5	134	6	3083	.20	38	<5	3	2	943	1.2	<2	<2	<2	14.49	5.664	4	16	7.45	691	<.01	125	.07	.01	3.68	4	2	2.92	206
2+00E 44+30S	1	103	3	685	.2	112	4	1944	.18	80	<5	2	<2	642	.7	<2	2	<2	15.37	4.257	<2	19	8.84	823	<.01	123	.04	.01	3.58	3	1	3.03	208

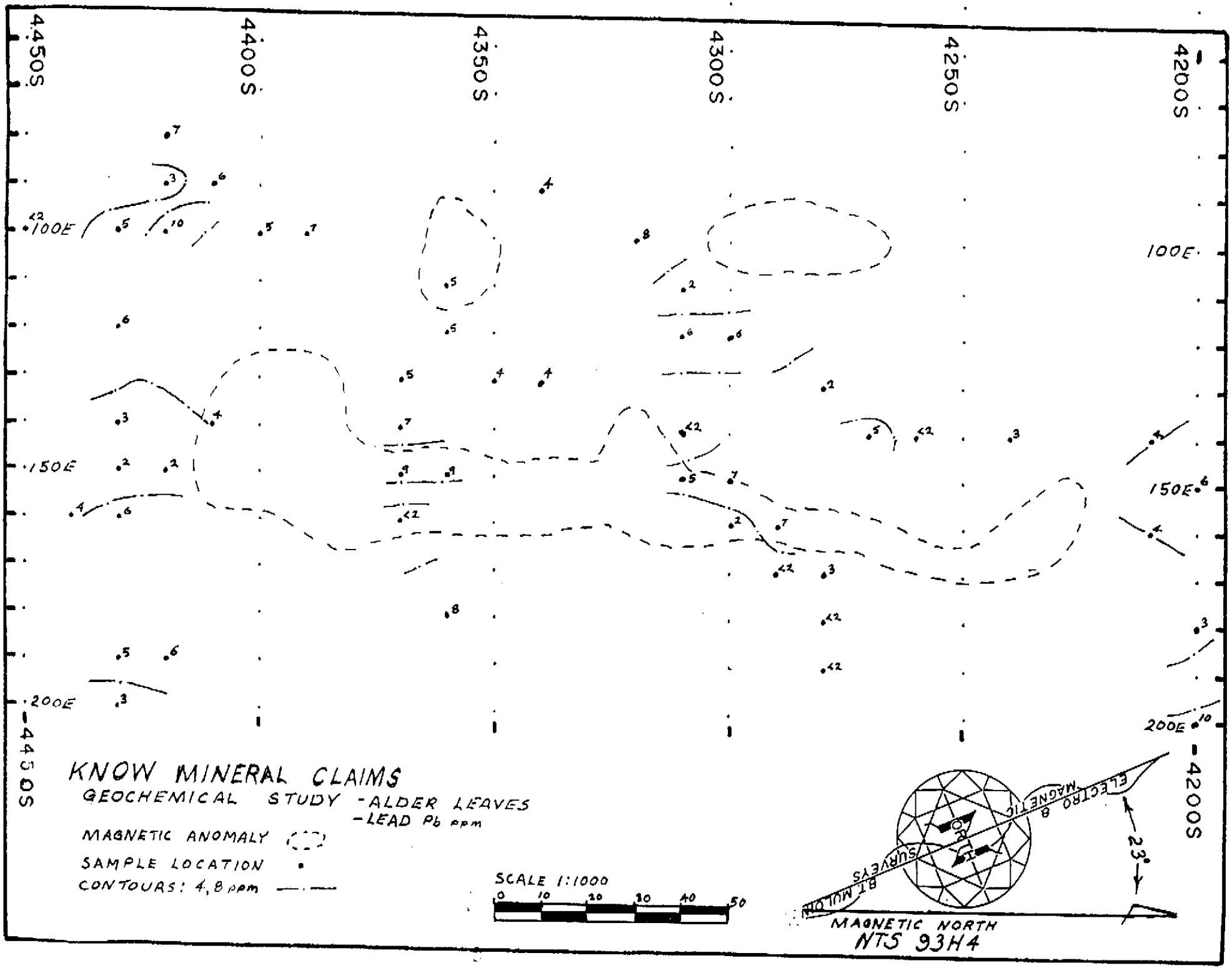
Sample type: VEGETATION.

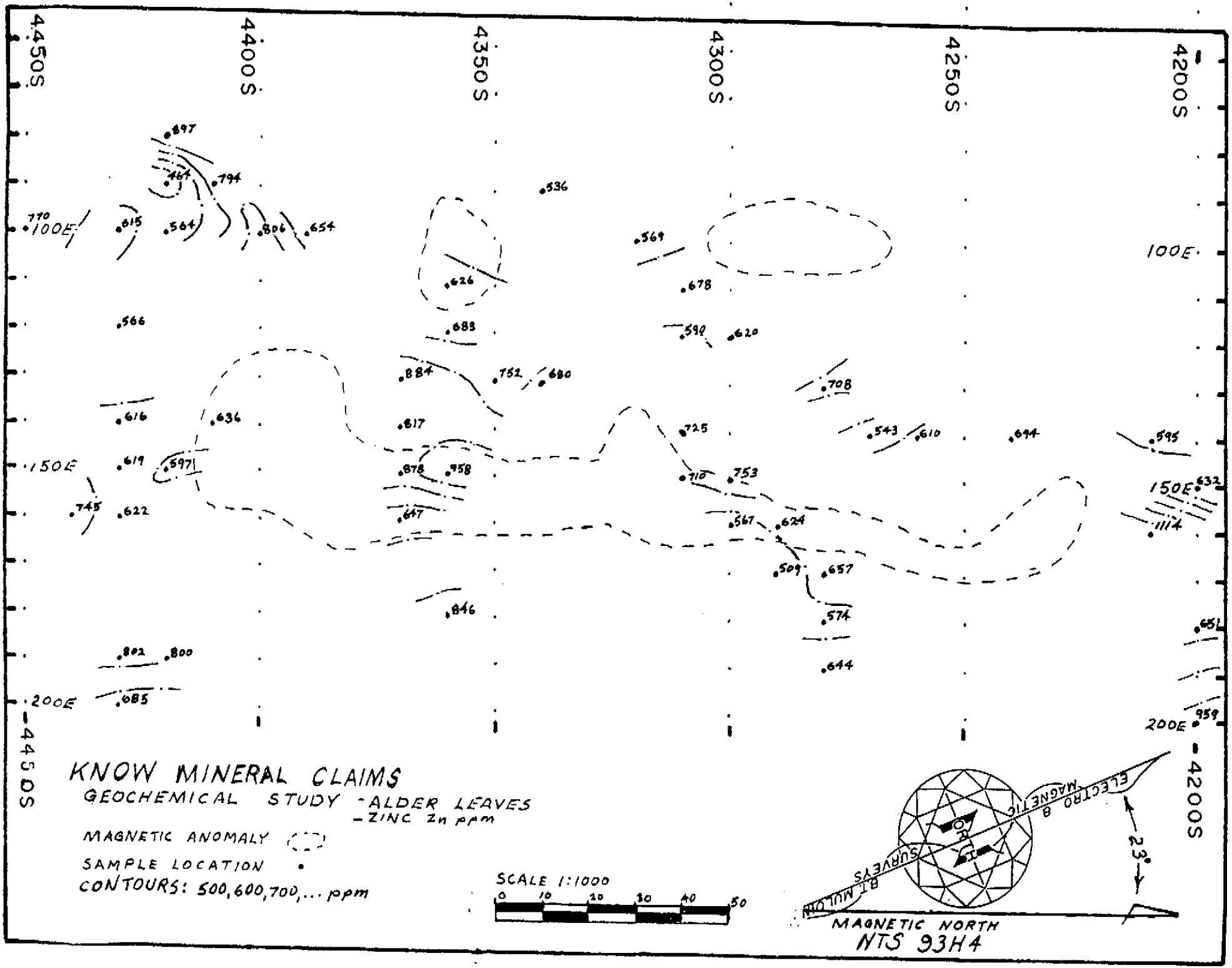

4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
7.7
3.0
0.3
1.2
5.1
7.6
3.2
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
-GOLD, Au ppb sampled '91
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS:
SCALE 1:1000
0 10 20 30 40 50
ELECTRO MAGNETIC SURVEYS BY MULDOON
23°
MAGNETIC NORTH
NTS 93H4

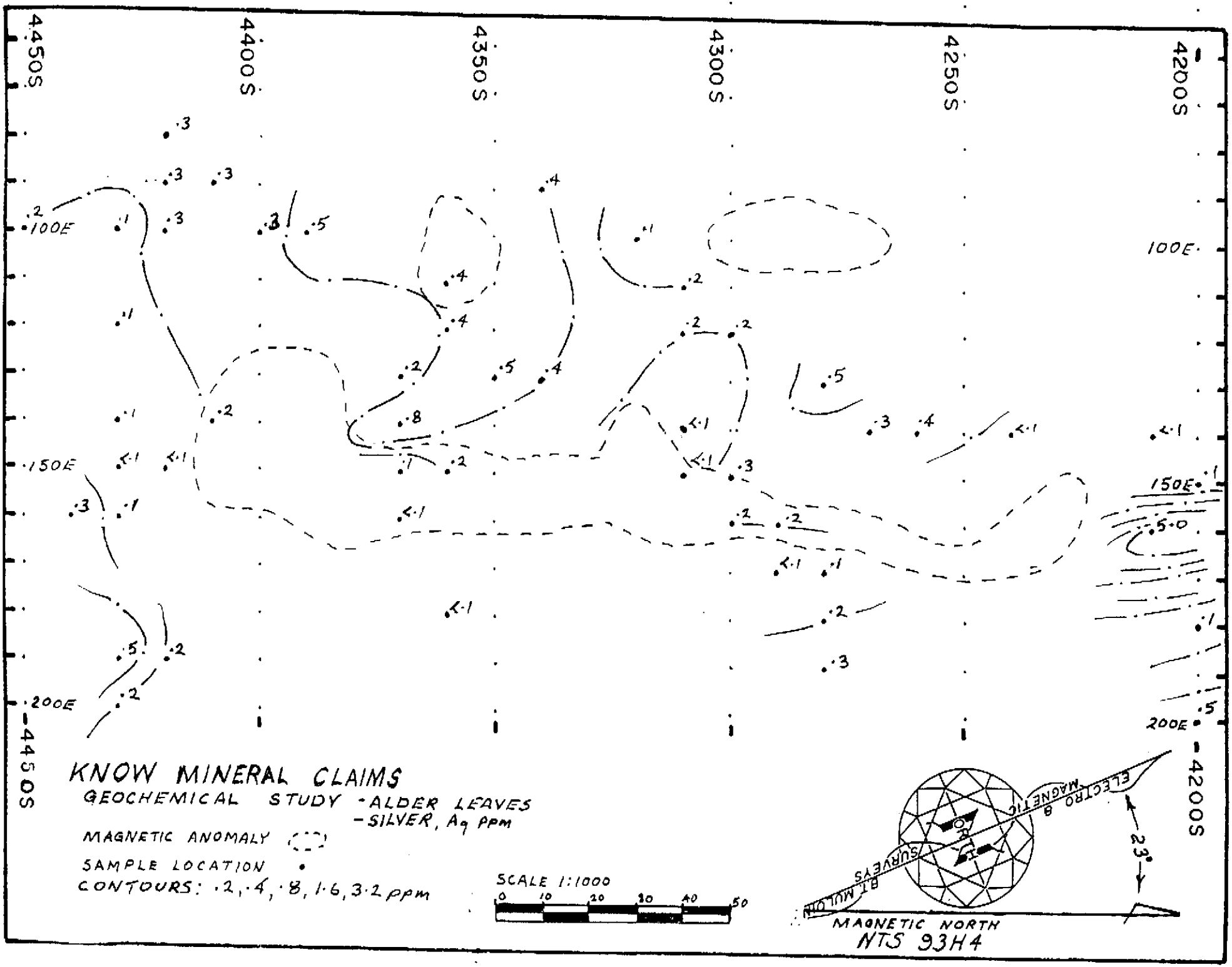

4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
- GOLD, Au in ppb
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS, 2, 1, 8 ppb
SCALE 1:1000
0 10 20 30 40 50
ELECTRO MAGNETIC SURVEYS BT MULTIM
23°
MAGNETIC NORTH
NTS 93H4

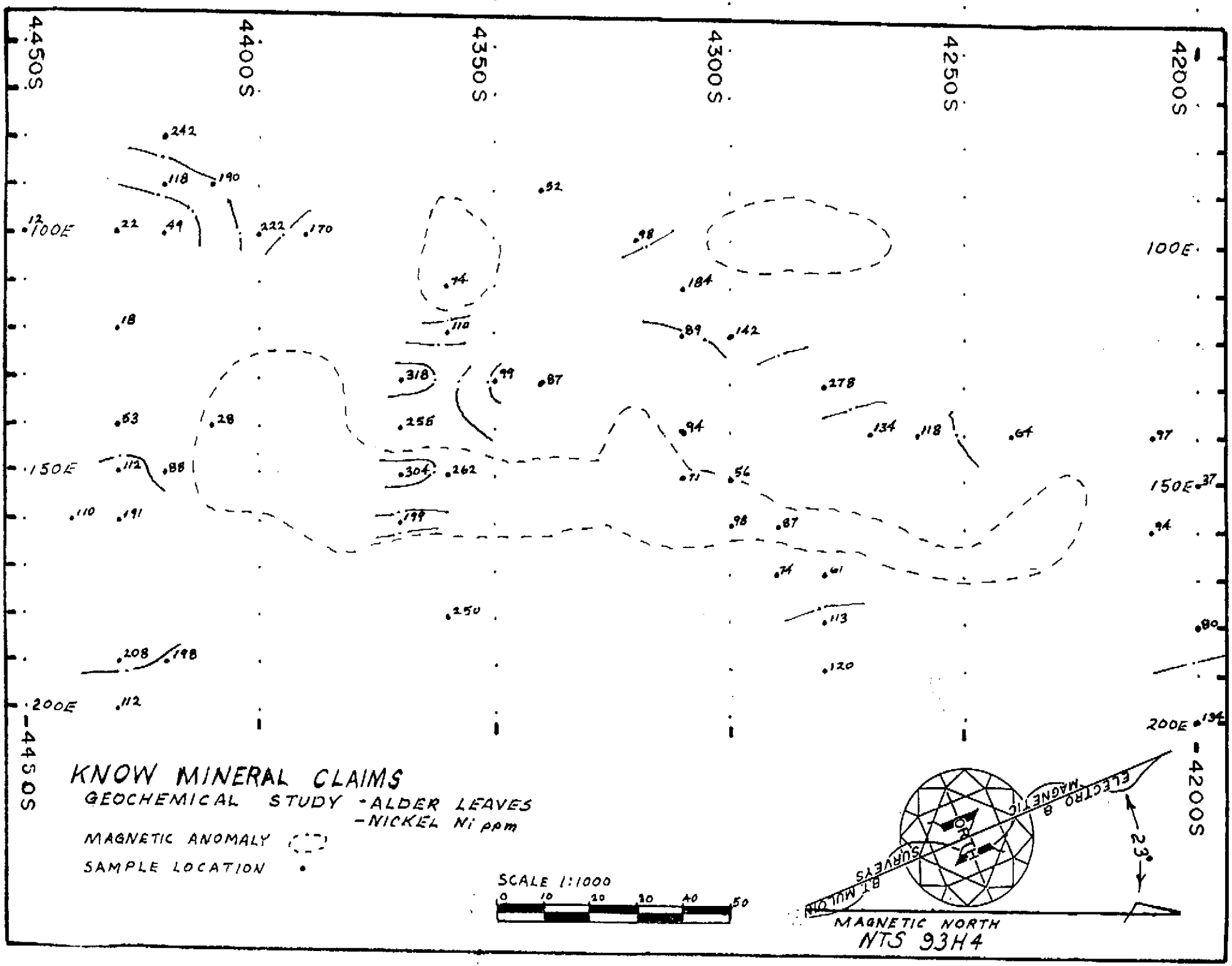

4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
-MOLYBDENUM. Mo-ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS: 2,3,5 ppm
SCALE 1:1000
0 10 20 30 40 50
ELECTRO MAGNETIC SURVEYS
BT MULLIN
23°
MAGNETIC NORTH
NTS 93H4

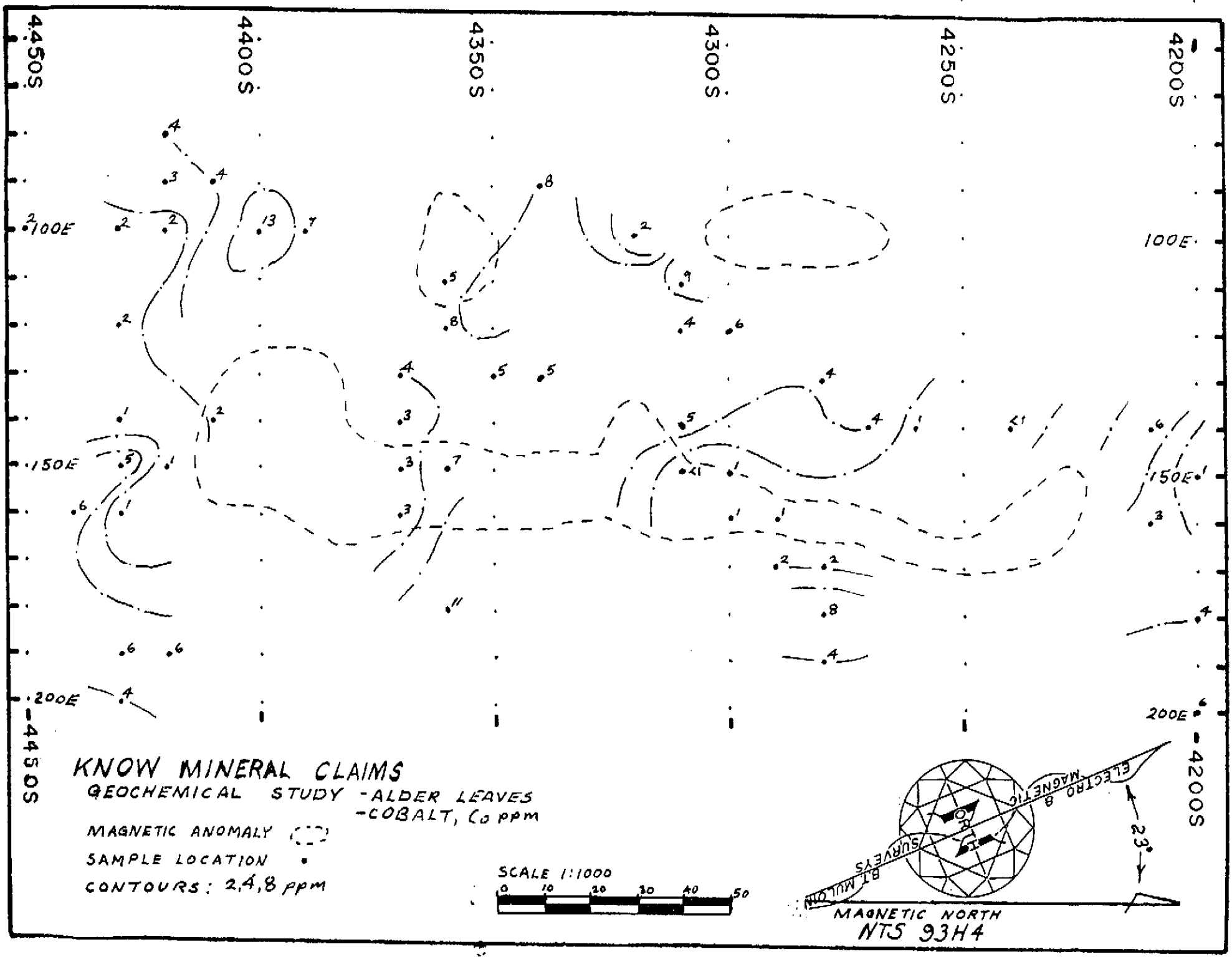

4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
- COPPER Cu ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS: 100, 150 ppm
SCALE 1:1000
0 10 20 30 40 50
ELECTRO MAGNETIC SURVEYS BY MULDOM
23°
MAGNETIC NORTH
NTS 93H4

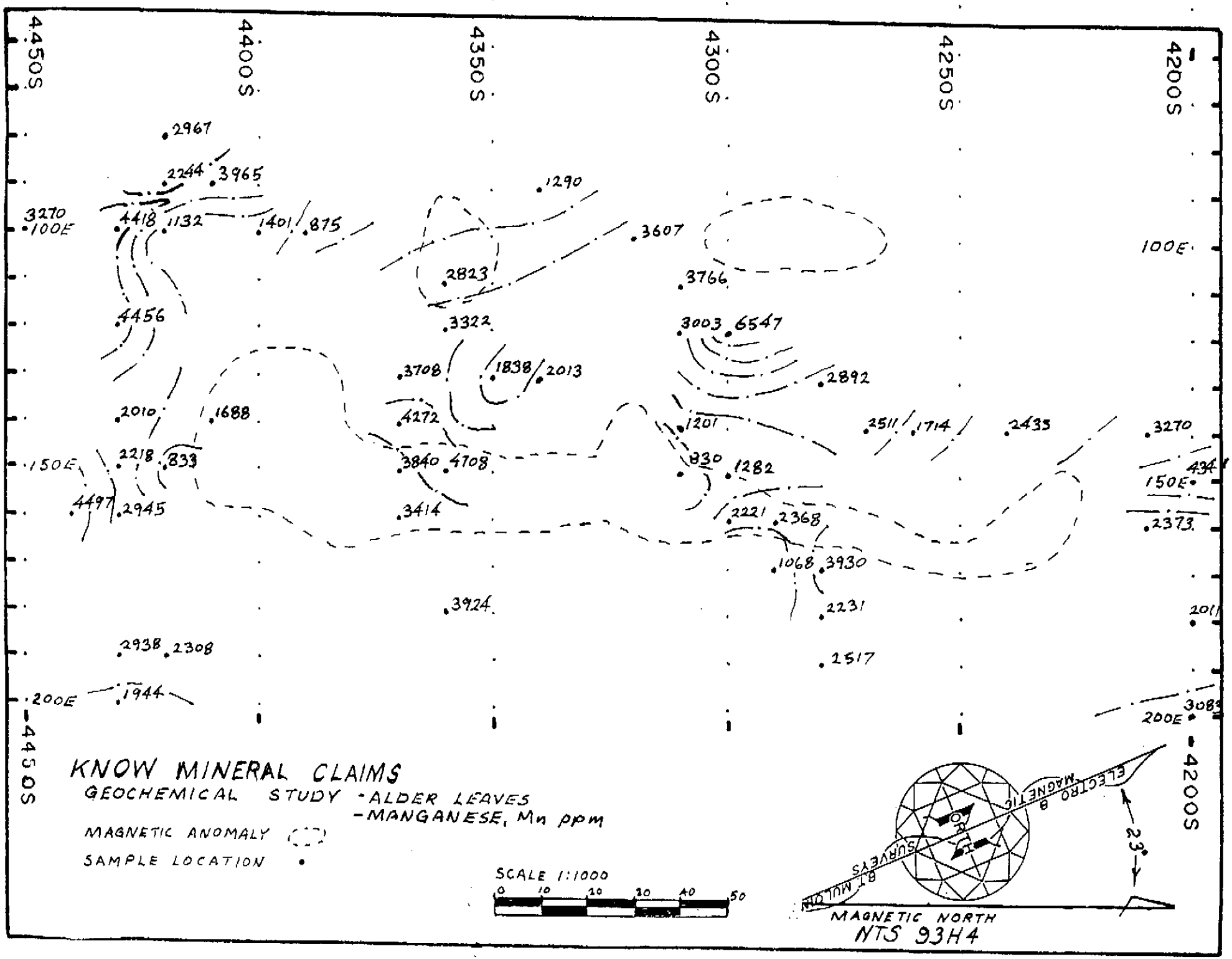

4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
- LEAD Pb ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS: 4, 8 ppm
SCALE 1:1000
0 10 20 30 40 50
ELECTRO & MAGNETIC SURVEYS BY MULDOON
23°
MAGNETIC NORTH
NTS 93H4

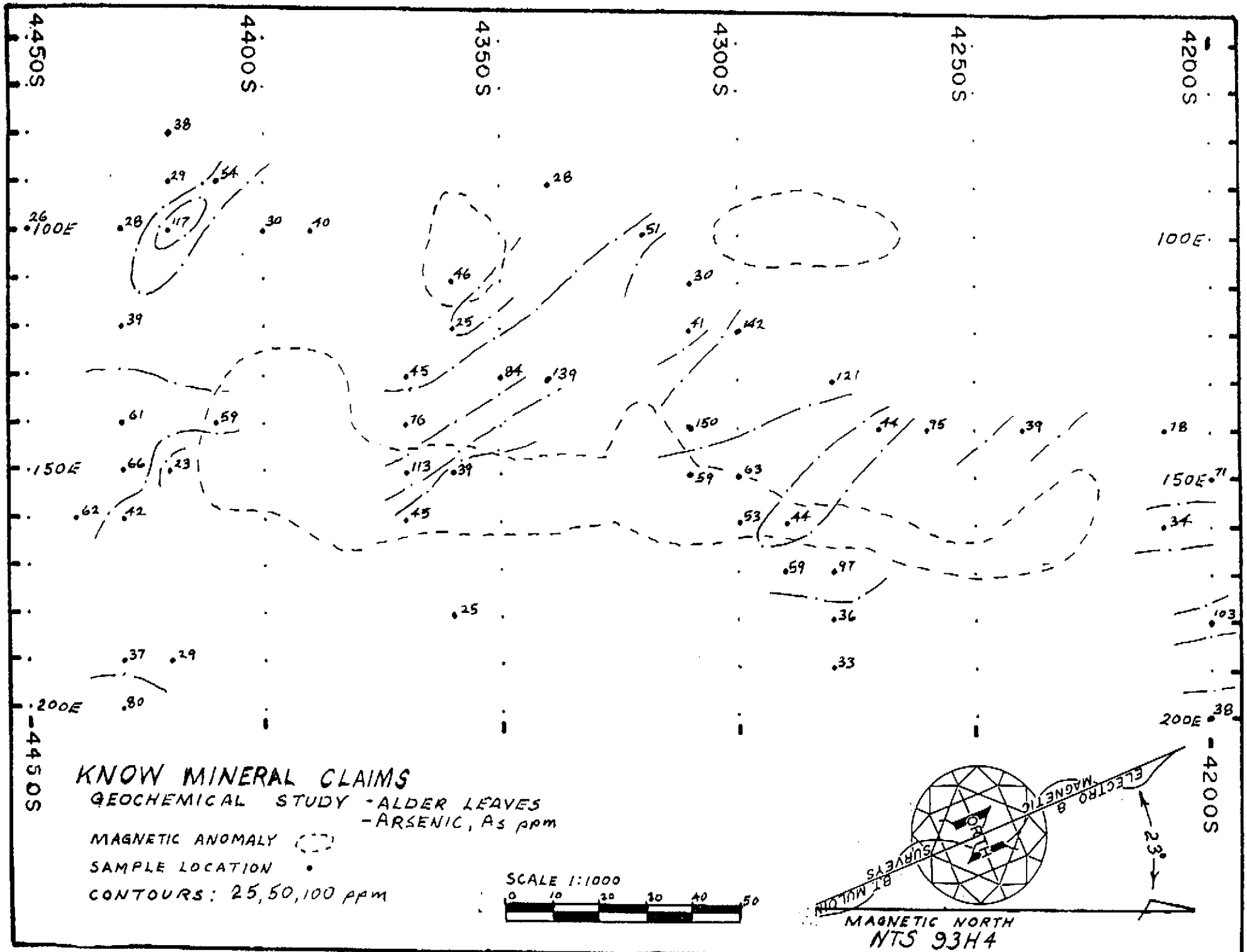

4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
897
794
770
615
564
806
654
536
569
626
678
566
683
590
620
884
752
680
708
616
436
817
725
543
610
644
595
619
597
878
958
718
753
632
745
622
647
567
624
1114
509
657
846
574
651
802
800
685
959
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
- ZINC Zn ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS: 500, 600, 700, ... ppm
SCALE 1:1000
0 10 20 30 40 50
ELECTRO MAGNETIC SURVEYS BL MUL OIL
23°
MAGNETIC NORTH
NTS 93H4

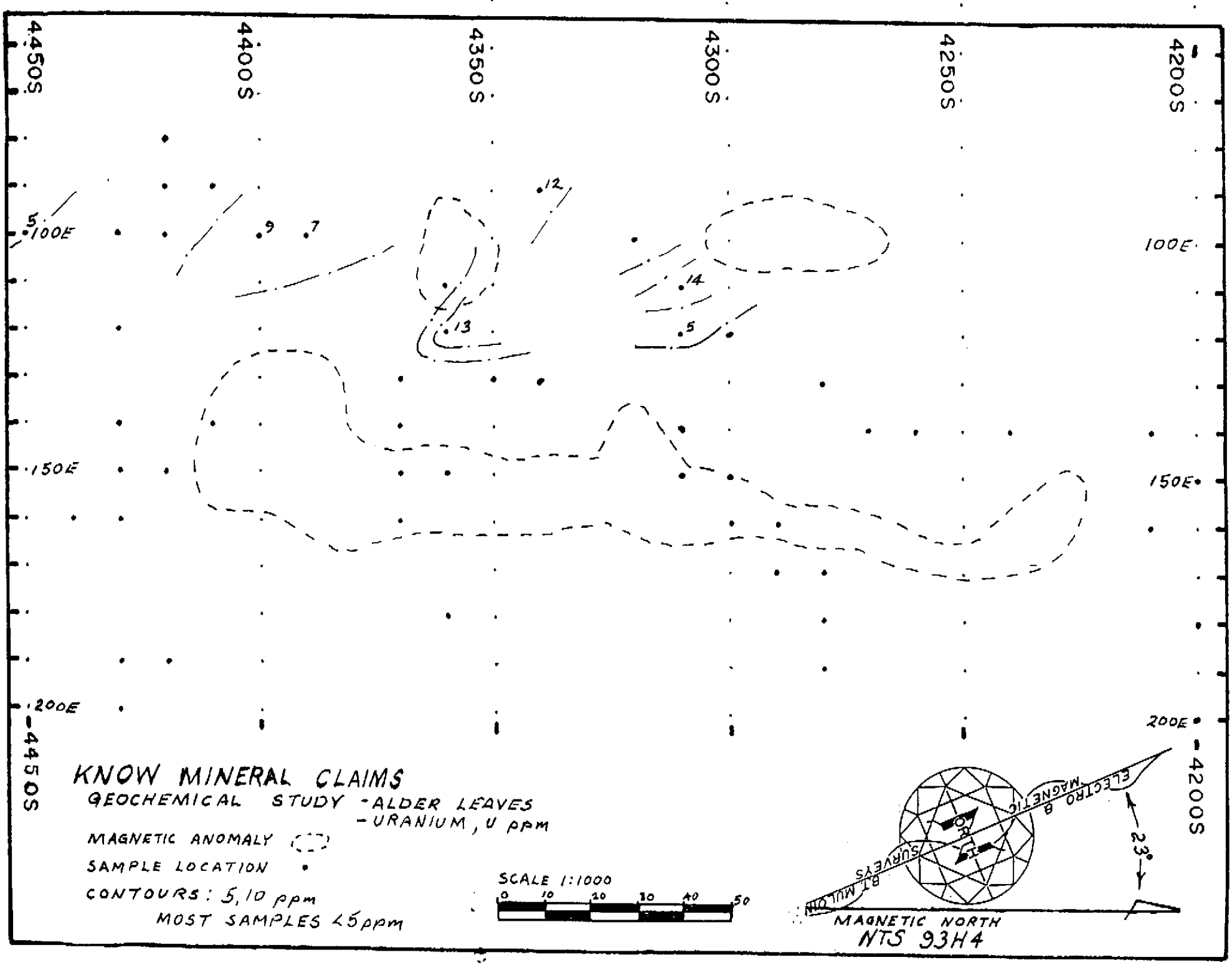

4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
- SILVER, Ag ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS: .2, .4, .8, 1.6, 3.2 ppm
SCALE 1:1000
0 10 20 30 40 50
ELECTRO MAGNETIC SURVEYS
BT MULLIN
23°
MAGNETIC NORTH
NTS 93H4

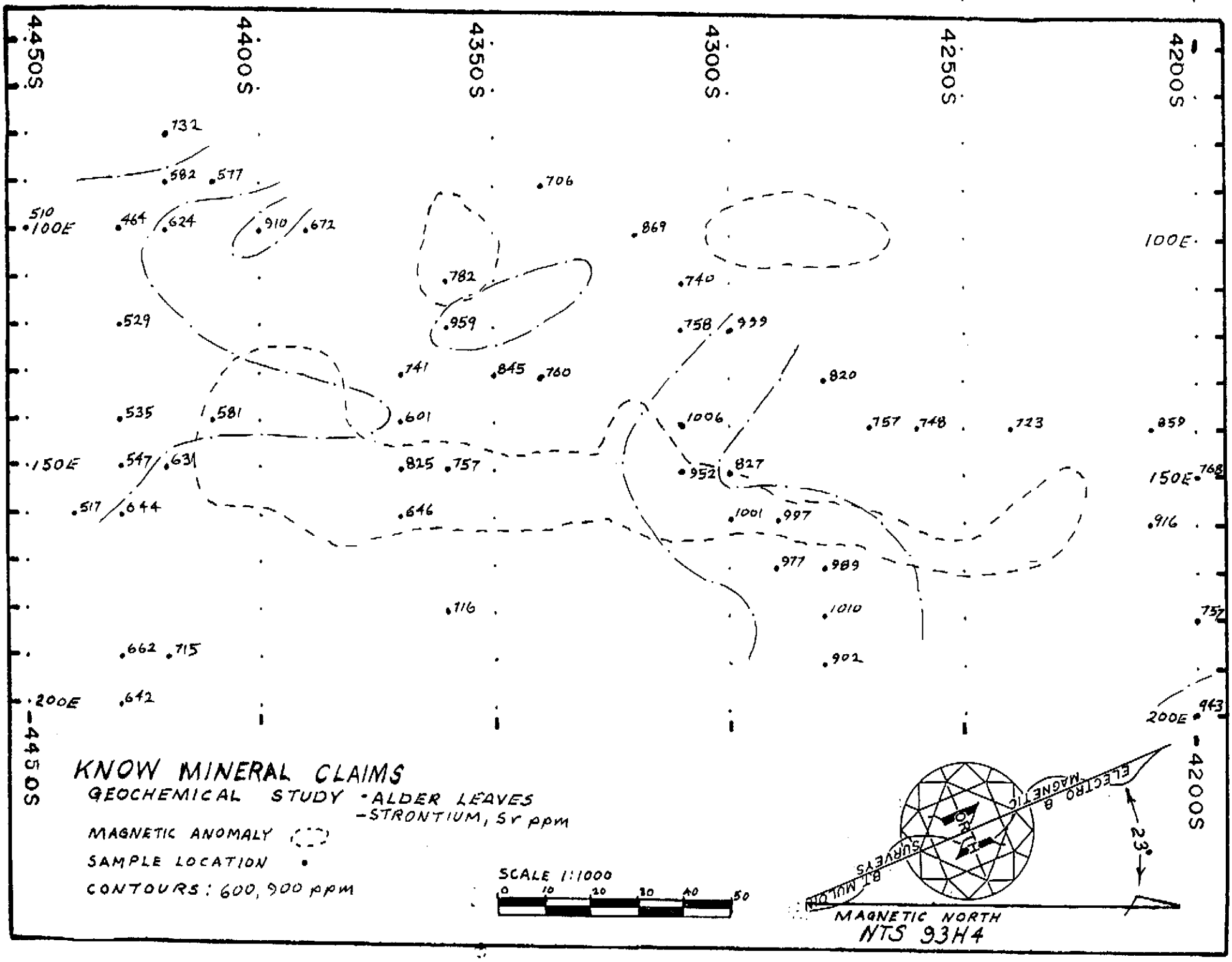

4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
242
118
190
12
22
49
222
170
52
98
74
184
18
110
89
142
318
99
87
278
53
28
256
94
134
118
64
97
112
88
304
262
71
56
37
110
191
199
98
87
94
74
61
250
113
80
208
198
120
112
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY -ALDER LEAVES
-NICKEL Ni ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
SCALE 1:1000
0 10 20 30 40 50
ELECTRO MAGNETIC SURVEYS
BT MULCAIR
23°
MAGNETIC NORTH
NTS 93H4

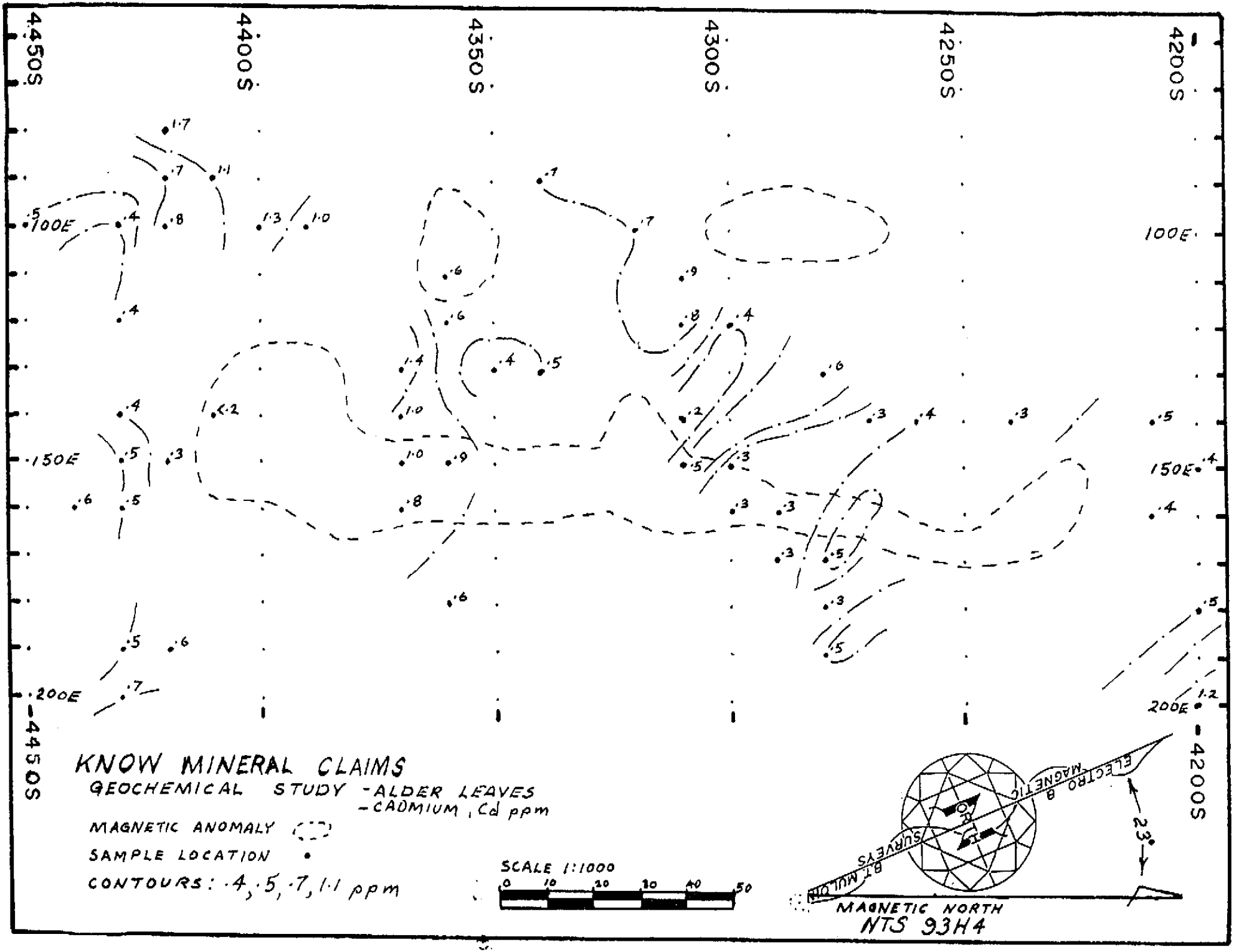

4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
- COBALT, Co ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS: 2,4,8 ppm
SCALE 1:1000
0 10 20 30 40 50
ELECTRO MAGNETIC SURVEYS BY MULLOY
23°
MAGNETIC NORTH
NTS 93H4


4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
2967
2244
3965
3270
4418
1132
1401
875
1290
3607
2823
3766
4456
3322
3003
6547
3708
1838
2013
2892
2010
1688
4272
1201
2511
1714
2435
3270
2218
833
3840
4708
830
1282
434
4497
2945
3414
2221
2368
2373
1068
3930
3924
2231
2938
2308
2517
1944
3083
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
- MANGANESE, Mn ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
SCALE 1:1000
0 10 20 30 40 50
ELECTRO MAGNETIC SURVEYS BY MULLOY
23°
MAGNETIC NORTH
NTS 93H4


4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
38
29
54
26
28
117
30
40
46
28
51
39
25
30
41
42
45
84
139
121
61
59
76
150
44
75
39
78
66
23
113
39
59
63
71
62
42
45
53
44
34
59
97
25
36
103
37
29
33
80
38
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
- ARSENIC, As ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS: 25, 50, 100 ppm
SCALE 1:1000
0 10 20 30 40 50
ELECTRO MAGNETIC SURVEYS BY MULCAH
23°
MAGNETIC NORTH
NTS 93H4


4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
5
9
7
12
13
14
5
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
- URANIUM, U ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS: 5, 10 ppm
MOST SAMPLES < 5 ppm
SCALE 1:1000
0 10 20 30 40 50
ELECTRO MAGNETIC SURVEYS BY MULLOY
23°
MAGNETIC NORTH
NTS 93H4


4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
732
582
577
510
464
624
910
672
706
869
782
740
529
959
758
939
741
845
760
820
535
581
601
1006
757
748
723
859
547
631
825
757
952
827
768
517
644
646
1001
997
916
977
989
716
1010
752
662
715
902
642
943
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
- STRONTIUM, Sr ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS: 600, 900 ppm
SCALE 1:1000
0 10 20 30 40 50
ELECTRO MAGNETIC SURVEYS BY MULDON
23°
MAGNETIC NORTH
NTS 93H4


4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
- CADMIUM, Cd ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS: .4, .5, .7, 1.1 ppm
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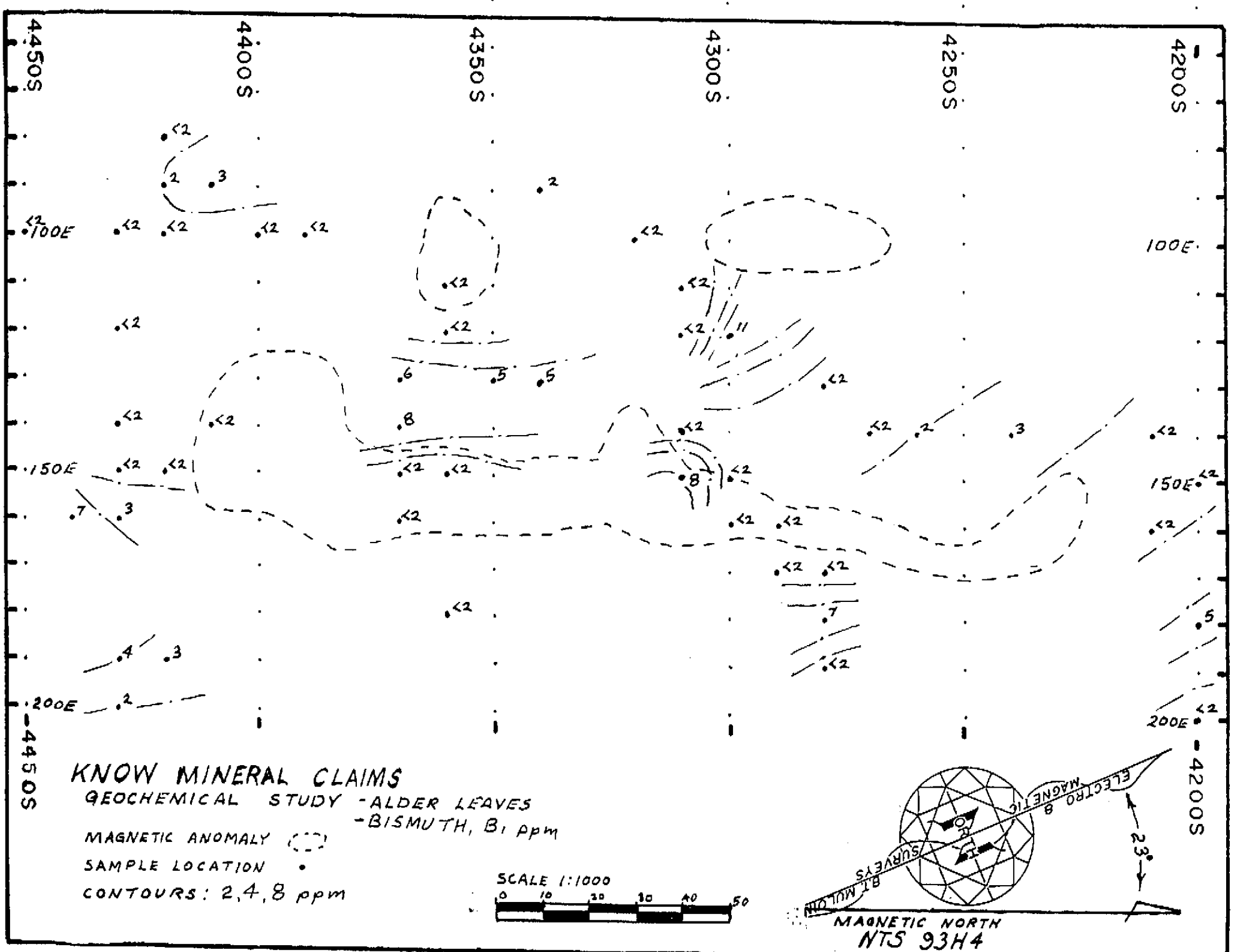
BT MULCH
SURVEYS
23°
MAGNETIC NORTH
NTS 93H4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4400S
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100E
150E
200E
KNOW MINERAL CLAIMS
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- BISMUTH, Bi, ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS: 2, 4, 8 ppm
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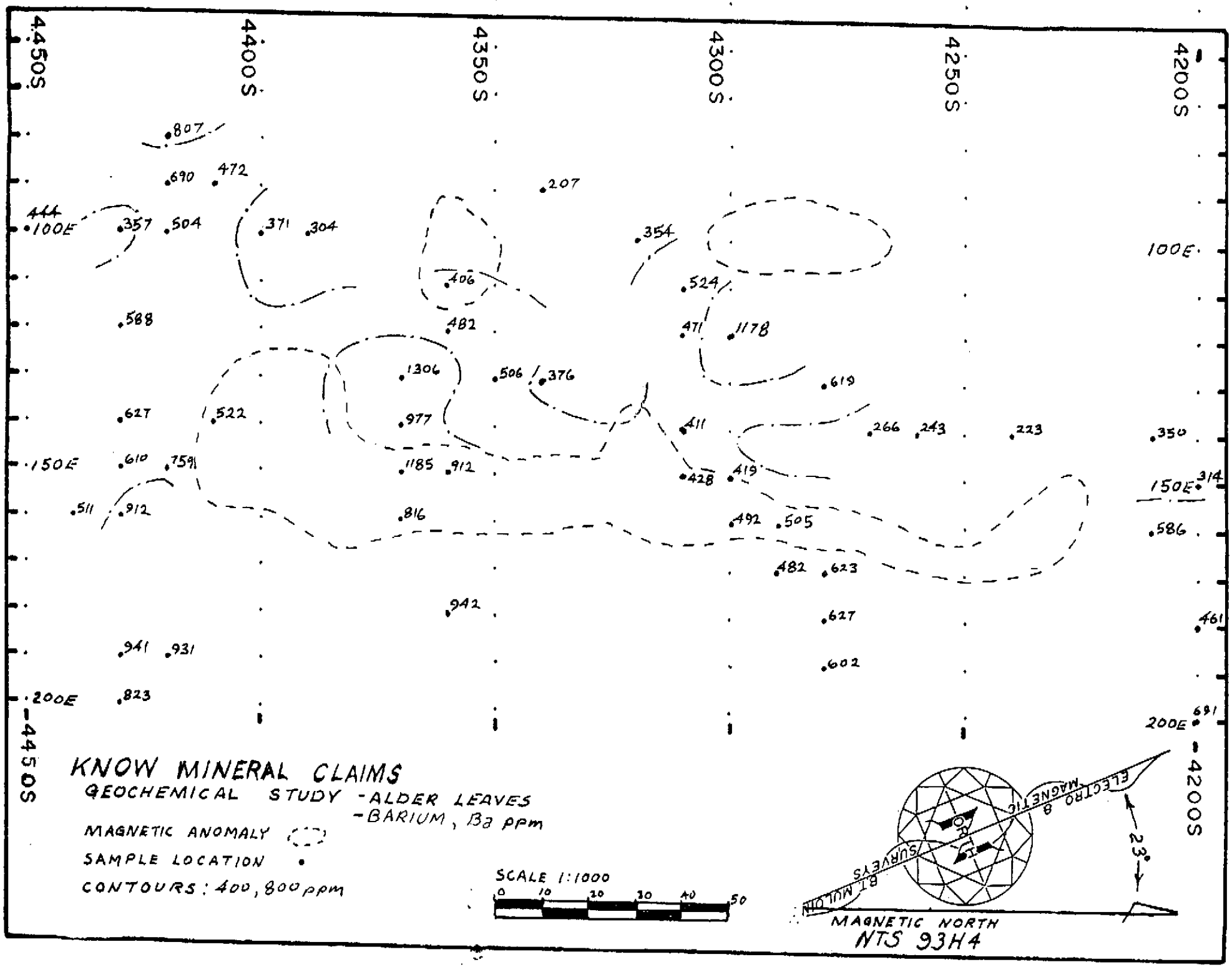
BL MULQUIN
23°
MAGNETIC NORTH
NTS 93H4


4450S
4400S
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4300S
4250S
4200S
100E
150E
200E
807
690
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371
304
354
406
524
588
482
471
1178
1306
506
376
619
627
522
977
411
266
243
223
350
610
759
1185
912
428
419
314
511
912
816
492
505
586
482
623
942
627
461
941
931
602
823
691
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
- BARIUM, Ba ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS: 400, 800 ppm
SCALE 1:1000
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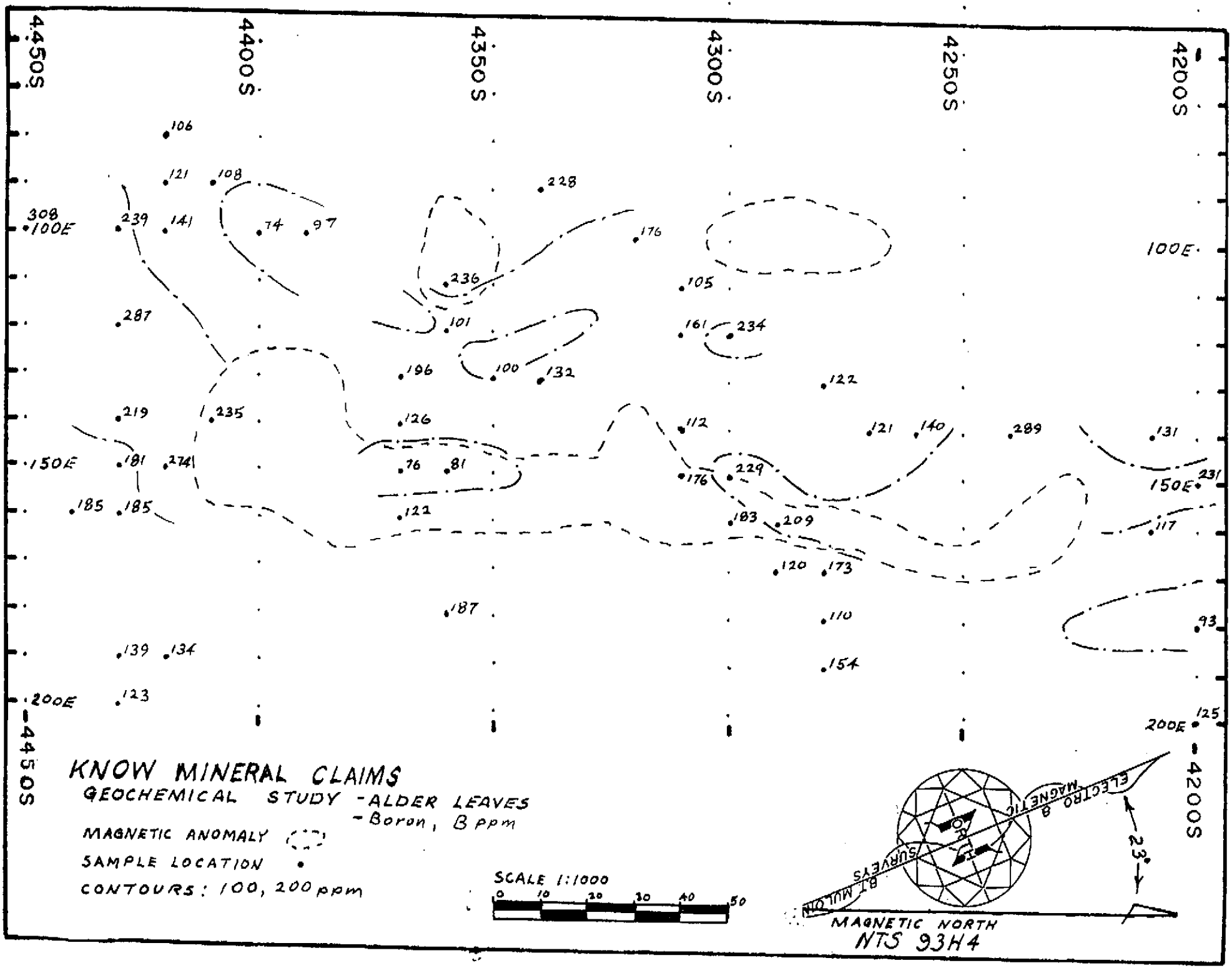
ELECTRO MAGNETIC SURVEYS BY MULCHIN
23°
MAGNETIC NORTH
NTS 93H4


4450S
4400S
4350S
4300S
4250S
4200S
100E
150E
200E
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121
108
228
308
239
141
74
97
176
236
105
287
101
161
234
196
100
132
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219
235
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112
121
140
289
131
181
274
76
81
176
229
231
185
185
122
183
209
117
120
173
187
110
93
139
134
154
123
125
KNOW MINERAL CLAIMS
GEOCHEMICAL STUDY - ALDER LEAVES
- Boron, B ppm
MAGNETIC ANOMALY
SAMPLE LOCATION
CONTOURS: 100, 200 ppm
SCALE 1:1000
0 10 20 30 40 50
ELECTRO MAGNETIC SURVEYS BY MULTON
23°
MAGNETIC NORTH
NTS 93H4

FURTHER GEOPHYSICAL SURVEYS
ON
JAWBONE CREEK

CARIBOO MINING DISTRICT
BRITISH COLUMBIA
NTS 93H/4 b, c, f, g,

LATITUDE 53° 2'
LONGITUDE 121° 45'

BRYAN T. MULCIN
PO BOX 1312
PORT ST JAMES
BRITISH COLUMBIA V0J 1P0
TEL (604) 996 2253

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HORIZONTAL LOOP EM STUDY:
LINE 4300S
LINE 4350S

INTRODUCTION

These are geophysical studys done for assessment on the KNOW group of mineral claims east of Jawbone Creek.

Work prior to '91 comprised of a dip angle VLF survey on a line spacing of 500 meters, and some geochem sampling, both on the TARA claim group. From this work one strong conductor on the east branch of Jawbone Creek was singled out for study in '91.

The KNOW group covers that VLF structure for a mile along the east branch of Jawbone Creek. Study to date includes geophysical traverses every 50 meters extending 100 meters either side. As part of that study a precision magnetic survey was initiated to define components in the alteration shatter envelope. These features are thought to be the feeders for the gold worked by a previous generation of miners. Ground flumes, shafts, and washes local to these structures attest to their interest.

A geochemical survey done in '91 also seems to indicate the magnetically defined structures are related to subdued gold anomalies.

LOCATION AND ACCESS

Topographic description of site:

NTS 93H/4b,c,f,g

The KNOW Group, now 4 of 2 post claims: VINO, ENO, ZENO, and SINO, is successor to Jawbone and Tara Groups of mineral claims. It is situated in the area known as the Barkerville Gold Belt or the Cariboo Gold Mining District. For a general location see figure 1 following page 3 and in more detail, Know Claim Group Location Map, Figure 2 after page 5. Access to the property from Highway 26 is by logging road 72C at Timon Creek and a short road just west of Jawbone Creek. It is situated west of the former community of Stanley enroute between Quesnel and Wells. Another road enters the area from the north from Slough Creek.

HISTORY

The Stanley and VanWinkle area on Lightning Creek to the south is a notable mining area. Butcher Bench produced the largest recorded nugget of the Cariboo 36.4 oz with 6100 oz coming from an area of only a few square yards. The district has several continuing active operations.

The Slough Creek area north of the property has attracted extensive work, and is reputed to have produced more gold than Williams Creek. Most recent photos showing the large nugget gold of the Cariboo are from the south side of this creek.

The promise of the KNOW prospect is inspirational if one beleaves the find reported by Stuart S. Holland (1948) that "F.J. Tregillus, of Barkerville, says that the father of W.M. Hong, of Barkerville, told him a Chinese miner had found a 41 ounce nugget on the left fork of Jawbone Creek. The nugget was never shown locally because the finder shortly left for China."

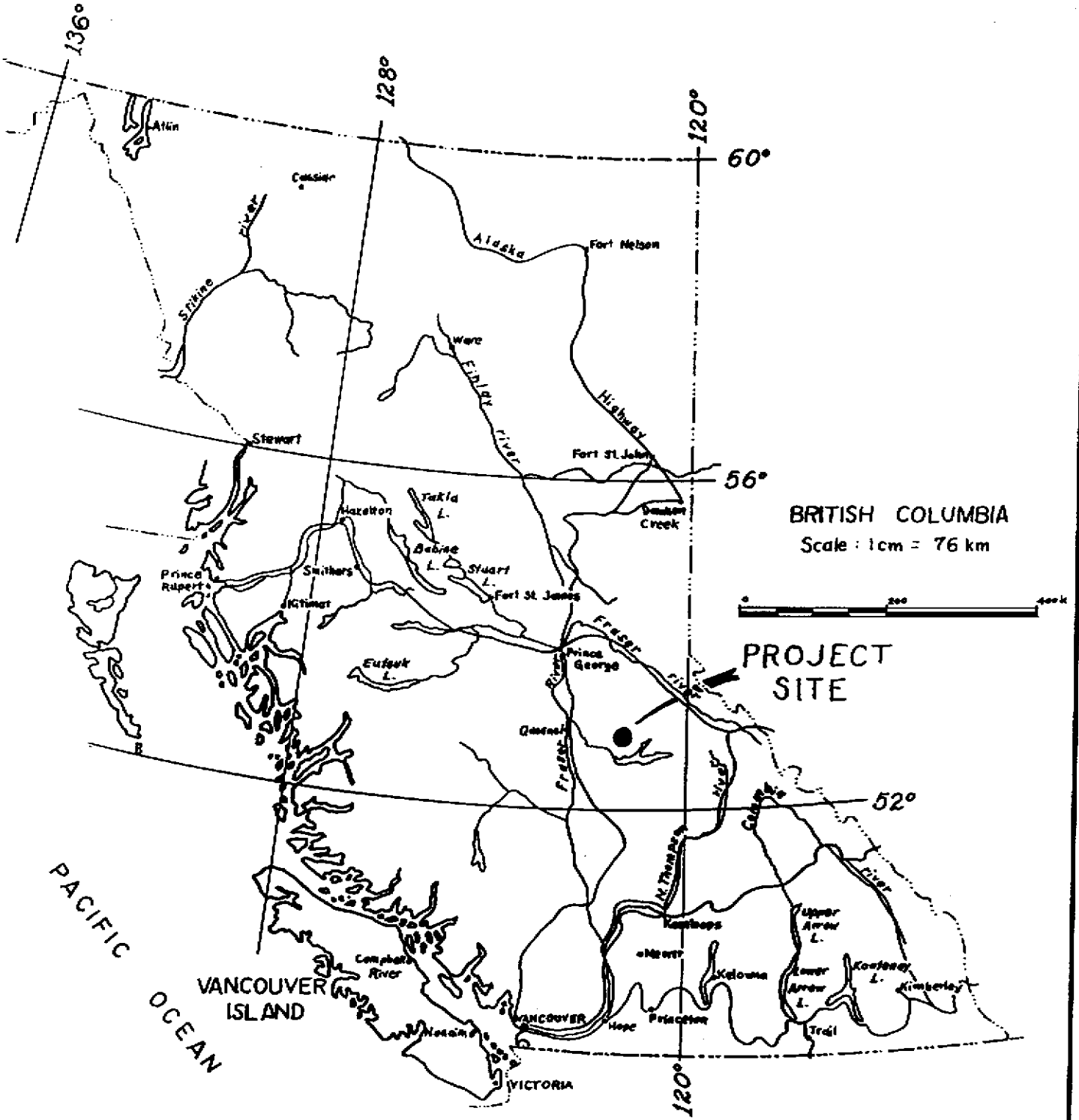


FIG 1

LOCATION MAP

12/87

REGIONAL GEOLOGY

Writers previous to L.C. Struick included the area in the Richfield formation, a basal quartzite. Struick introduces the concept of terraines and renames the formations. His description of the Jawbone Creek area is that it is underlain by phyllites. The structural elements he defines are: a fault to the east parallel to Davis Creek: the Lightning Creek Anticlinorum halfway up Mount Nelson to the north; and the end of an overturned syncline south past Mount Anderson. The authors studies along Jawbone Creek indicate the rock units of the area are dominated by relatively fissile material. The lack of rock exposure in the area is significant, supporting a phyllite description of the bedrock. Quartz enriched outcrops are appropriatly assosciated with the EM conductors. Where outcrops are to be seen it is the agency of silicification a component of intrusive alteration.

Forestry road 72C, continued into the area in 1993, gave opportunity to observe cutbanks marked by remnants of north striking mafic dykes. They are not as fully weathered as the enclosing till. From one such feature at 10.6 km the road builders obtained gravel for use on this road. Examination will still locate other thinner dykes. Observation of these features is evidence that these can not be glacial tills and: the Fraser glaciation could not have completely covered the interior Basin as suggested by Tipper, 1971. This also explaines the lack of observed moraines noted by him. His 1971 report is not a study as such but an invitation to discussion. Subsequent writers have ignored this aspect of Bulletin 196 treating his writting as proven fact.

There are other explanations for the structural settings of the gold occurences of the Cariboo than Tertiary stream sediments and glacial burial.

LOCAL AND GRID GEOLOGY

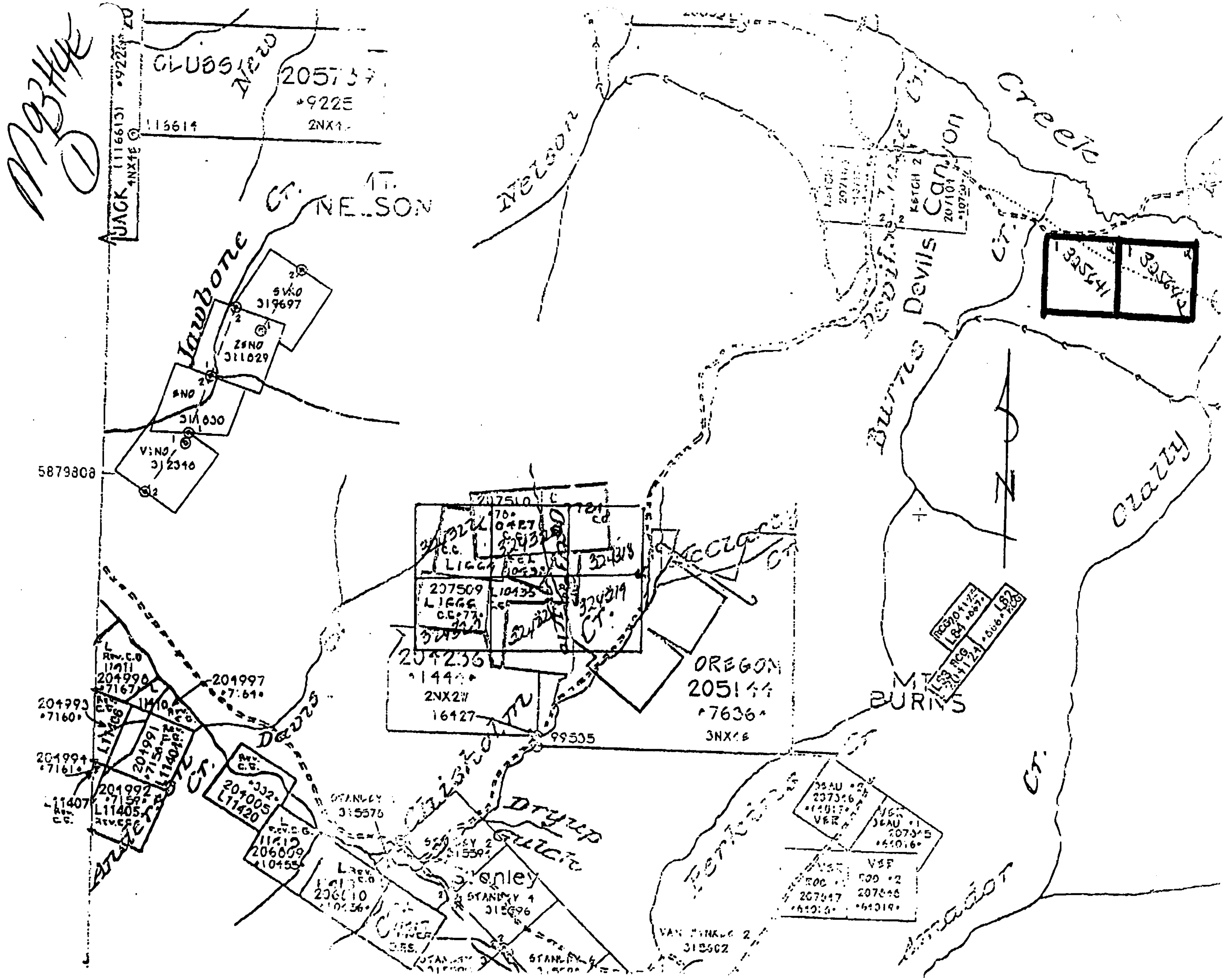
The authors examination in this area includes the logging road 72C as it was constructed, several small trenches, and the few outcrops in the grid area. South of Lightning Creek the adit with outcrops recently exposed by blasting on the Dominion Claims were visited, Permission to examine the property was obtained from Mr. Pat Byrnes of Tam Tan Explorations Ltd.

Holland, p.56, 1948, describes the Dominion claims about the adit. A precis or synopsis of that information follows:

The north east of Lot 11404 is underlain by grey flaggy quartzites and squeezed pea size quartz pebble conglomerate. They are overlain by about 100 feet of limestone outcropping in the canyon of Anderson Creek. Overlying the limestone is a 1500 feet or more belt of chloritic rocks grading upward from bright green chloritic schist to brown weathering chlorite schist to quartzite. They strike north 30 degrees west and dip 20 to 40 degrees west. The claims are south west of the major anticlinal axis but the limestone and chloritic schists are not repeated on the north east side.

The author suspects that what Holland has described are the components of alteration.

SENT BY:GAUESNEL ; 1-19-95 ; 16:10 ; GA QUESNEL→ 604 990 7052;# 1/ 3



LOCAL GEOLOGY AND GRID GEOLOGY cont

On the two lines 4250S, and 4300S, and 30W of the base line the outcrop is similar to the Dominion Claims pebble conglomerate. This is interpreted as silica alteration, as the pisolites (pebbles) have a characteristic hyaline or opalescent sheen to them. On the Dominion Claims they are seen to grade from oolites, 3mm, at the ends of the outcrop area to the larger size, 8 to 10mm with associated carbonate in the center. On line 5550S just 20E of the baseline a questionable outcrop (may be an erratic) is quartz with phenocrysts of feldspar, probably plagioclase, albite. This rock type is also seen just east of the Dominion Claims adit.

In the area of this study, between 4300S and 4330S, 80E to 90E, a quartz vein of over a meters width is located. Its vertical dip and exposed side give it the appearance of being over 2 to 3 meters across. This too is a measure of silica alteration intensity. Two parts of the EM conductor straddle this quartz vein. To the west near 40W the EM target is poorly conductive. To the east, at 200E, is a better conductor. This seems to indicate a sequence of events in this intrusive. First silica flooding, followed by intrusion of a more diverse chemical nature. The silica having sealed up the primary vents the subsequent activity has to shatter into a more brittle cap or divert around it.

The previous reconnaissance of the grid area revealed a few quartzites paralleling the VLF-EM and magnetic structures. Some of these have manganese stains on fracture surfaces. Manganese is a common component of alteration and may be a significant indicator in this area.

Other geologists in the locality have told the author that VLF-EM conductors, when drilled, prove to be graphitic shear zones. This may have been wad (earthy pyrolusite) instead of graphite. When drilling is in inclined holes, as is usual, the geometry is such that the metallic component is easily missed, other zones of the alteration encountered instead.

A sub outcrop on 5550S and 70E to 80E is a highly brecciated phyllite. Its occurrence on a steep slope accounts for its exposure. To the west and just off the grid at about 4950S another out crop, in Jawbone Creek, is a more resistant phyllite. These with the group of outcrops just south of the grid are representative of the country rock. It is suspected that silica alteration has reinforced a very fissile phyllite allowing it to resist weathering and to outcrop.

Of some interest is that the only evident mining along Jawbone Creek is along the east bank of this branch where the outpourings of the mineralizing structure have enriched the weathered overburden.

GEOPHYSICAL SURVEYS

The present grid was initiated at 1675W on line "J" of the 1990 grid used for a regional VLF Dip Angle survey. The base line is due magnetic north or 23 degrees east of true north. Numbering on the baseline is from 5000S at this point and follows along the VLF field strength maximum of the conductor.

The VLF conductive structure is continuous on or near the baseline for its entire length. It appears that the conductivity of the structure significantly drops off by about 4500S. North of this point the conductive nature of the structure appears to have transposed to the east where line extensions pick it up at about 200E. This may indicate two cycles of intrusion, a primary one silica rich opening and initiating mineralization, and a secondary cycle in which a metallic rich injection occurs in selected channel ways.

Several alteration components of these intrusives are identifiable by geophysical means. The alteration can be divided into mineralogical, petrological, and shatter envelope components. The shatter envelope is the passages, plumbing, for alteration to develope in. With detailed study it is seen to have a fairly consistent pattern.

A hint of the shatter envelope pattern is seen in the magnetometer survey, being irregular magnetic highs and lows flanking the EM conductor to the west and a fairly continuous but moderate high flanking on the east and uphill side of the conductor. The difference in the two flanking structures was dictated by the topography at the time of intrusion. This shows the terrain is mature and not heavily eroded since that time.

The tension veins radiate laterally and also parallel the intrusive, identified by the VLF-EM conductor. They show up as weak magnetic highs. There is also a pattern of oblique or shear fractures. Where these stress indicators focus is an area of intense shattering, the vent where the intrusive has released pressure. Depending on many complex factors these vents may be mineralized. On other prospects they have been seen to form dumbbell patterns or pairs straddling the intrusive. Between 4230S and 4410S two parallel tension patterns are seen to be the focus of venting. Boulder piles where the structure crosses the creek, chinese workings, attest to this.

1) HORIZONTAL LOOP EM SURVEY

A Geonix EM17L Horizontal loop Electro Magnetic instrument was used. Its frequency is 800 hertz. This instrument though supposibly outdated is familiar to the author, having done several hundreds of miles of surveys in the Shield with them. The transmitter was carried by Larry L. Ford of Fort St. James.

GEOPHYSICAL SURVEYS

1) HORIZONTAL LOOP EM SURVEY, Continued

The intention was that a sounding of the depth to the central structure might be made. This was to be done by using the several transmitter and receiver seperations possible with the EM17L. Penetration is approximatly half the loop seperations, 200, 400, and 600 feet. This instrument works best for defining planar sheets of conductive and inductive minerals in vertical to inclined aspect with the grounds surface. The geometry of this prospect is proposed as a deeply buried ribbon paralling the surface with several vertical pipes issuing laterally away from it. No decisive estimate of the depth to the central structure is possible from the survey. It is seen that it did interact with the pipe like vein near line 4300S at 100E. This structure can be seen to dip steeply to the west. Only 50 meters away on line 4350S there is no clear interaction with this vein. This is possibly due to other weak conductive structures breaking up the response. In general the survey did not give satisfactory information.

2) VLF CRONE EM SURVEY

The Crone Radem was used to continue the survey over two more lines, 5600S, and 5650S to the south. The intention was to close off the anomalous reverse quadrature feature of the structure at this end. It was beleaved the anomaly was caused by the structure and the signal seperating spatially. The continued conductor is strongly indicated in all but the reverse quadrature component were it is diffusely indicated. It turns through 60 degrees to the southeast. The reverse quadrature component did not close as thought it might, its presence may indicate a significant change in structure or minerology.

CONCLUSIONS AND RECOMMENDATIONS

1) HORIZONTAL LOOP EM SURVEY

The survey was not informative, depth to the source structure is not easily interpreted. Interaction with small vein structures is evident. The vein on line 4300S, 100E is the only well defined structure. It is possible that a Vertical Loop EM Survey using several seperations may work to cheaply sound the depth to the main conductor and discriminate from the lesser features.

2) VLF CRONE EM SURVEY

The continuation of this survey over two more lines defines a change in direction of the structure. The anomalous reverse quadrature response is more interesting than previously expected. It requires further study. A detailed magnetic survey may help define what is happening here. The grid will have to be turned to follow the structure.

STATEMENT OF QUALIFICATIONS

I, BRYAN T. MULOIN, declare I have been a student of geology and involved in mining exploration since 1966. My experiences since that time define my knowledge. The land is the true arbiter of my abilities.

BRYAN T. MULOIN,

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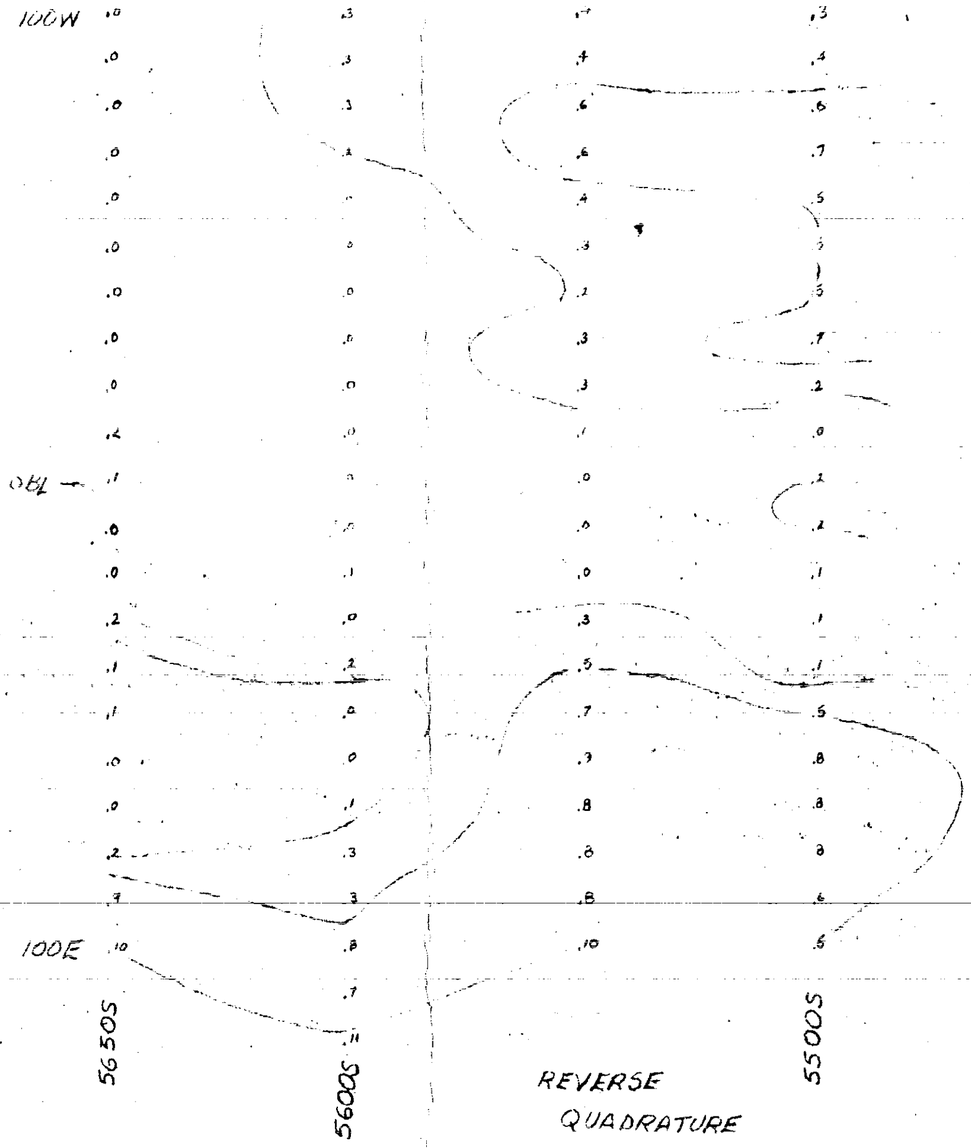
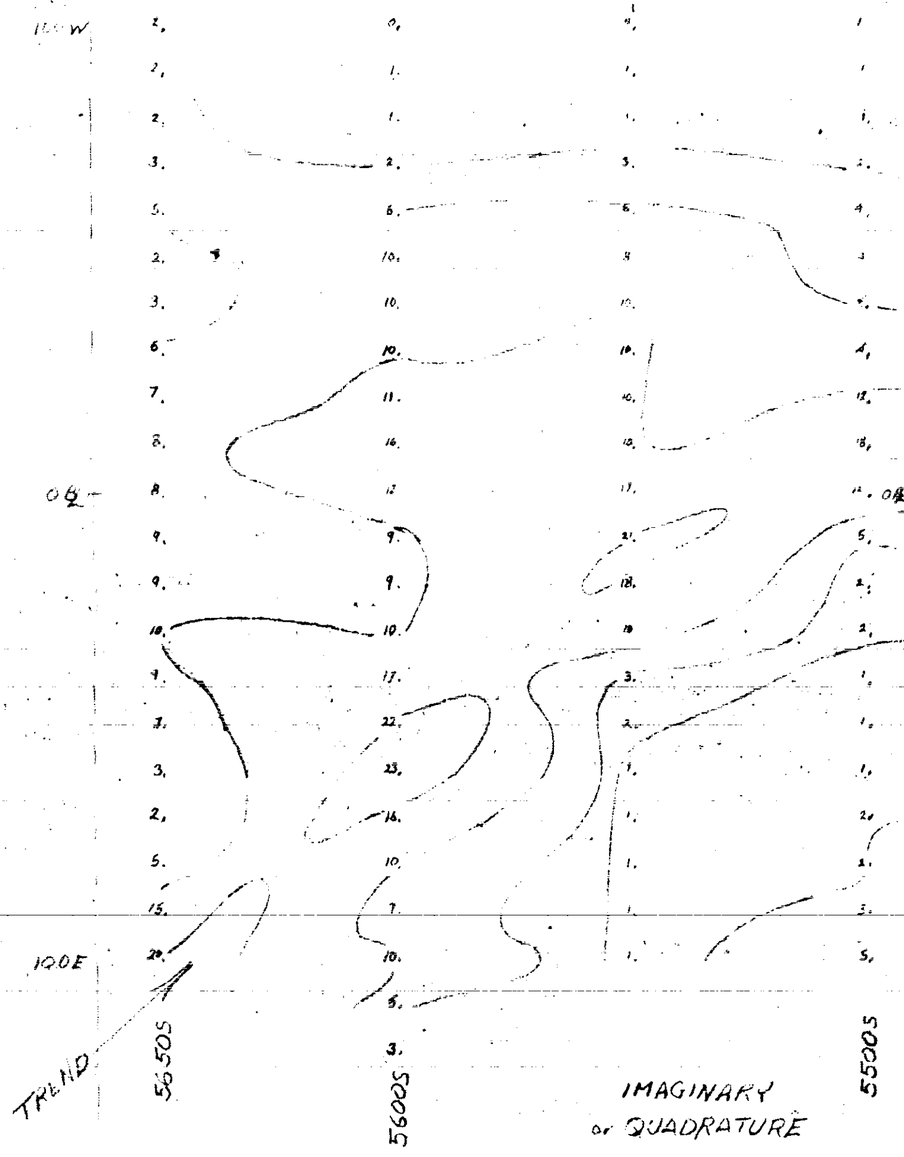


REVERSE
QUADRATURE



IMAGINARY
or QUADRATURE

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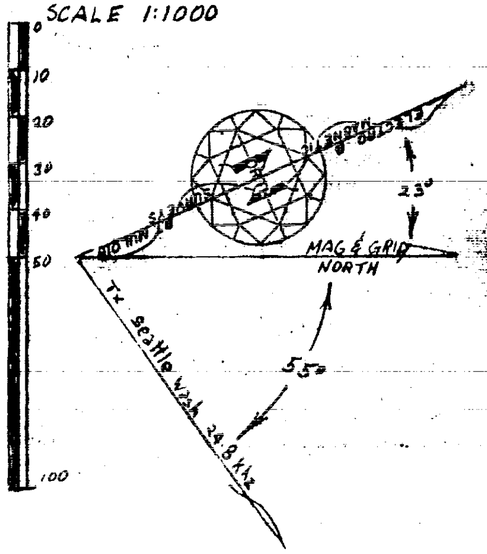
- CONTOURS AT 2, 5 & 10 %
- INSTRUMENT - CRONE RADEM

- CONTOURS AT 2, 5, 10, & 20%

SCALE 1:1000



KNOW MINERAL CLAIMS, CARIBOO
NTS 93 H 4

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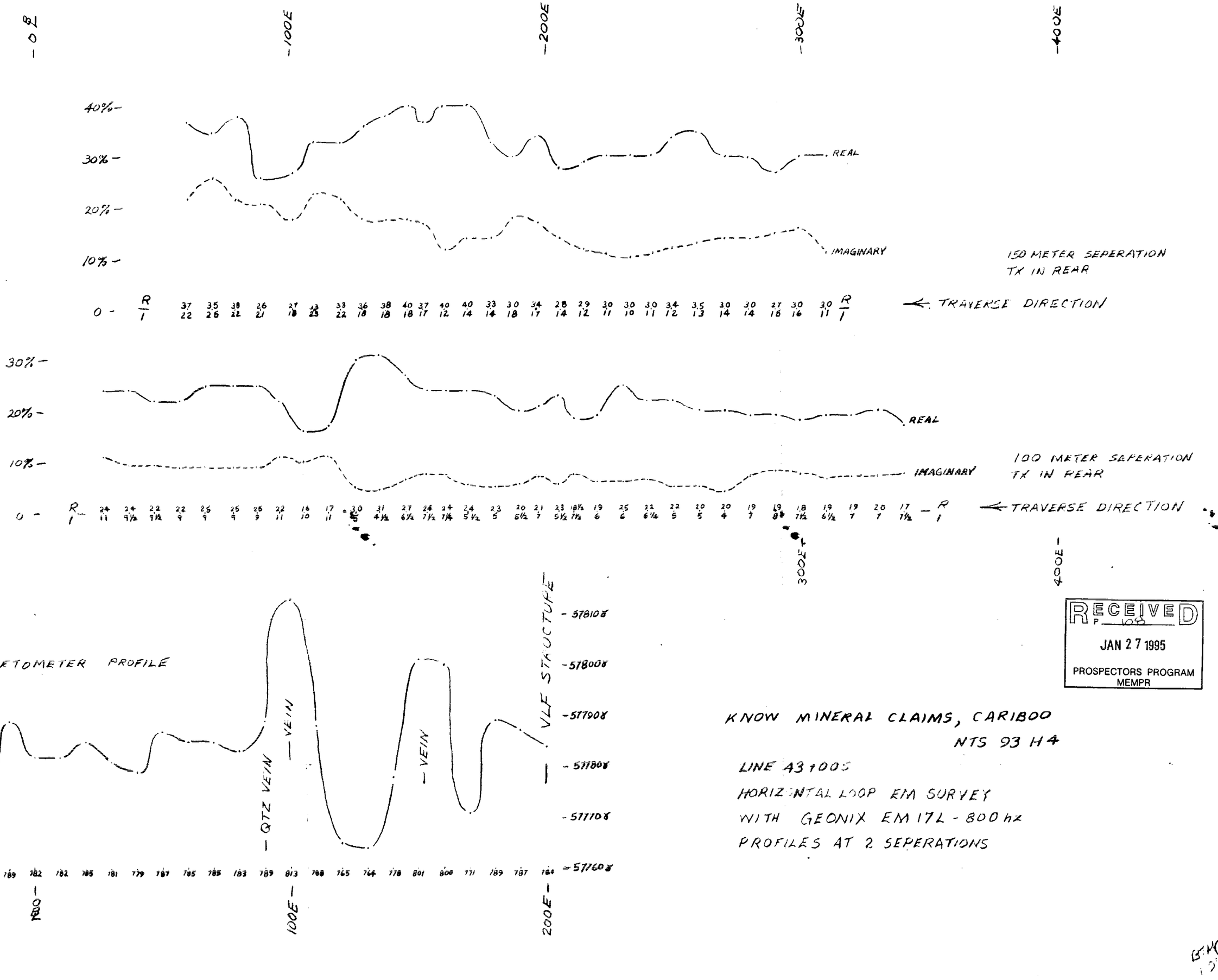
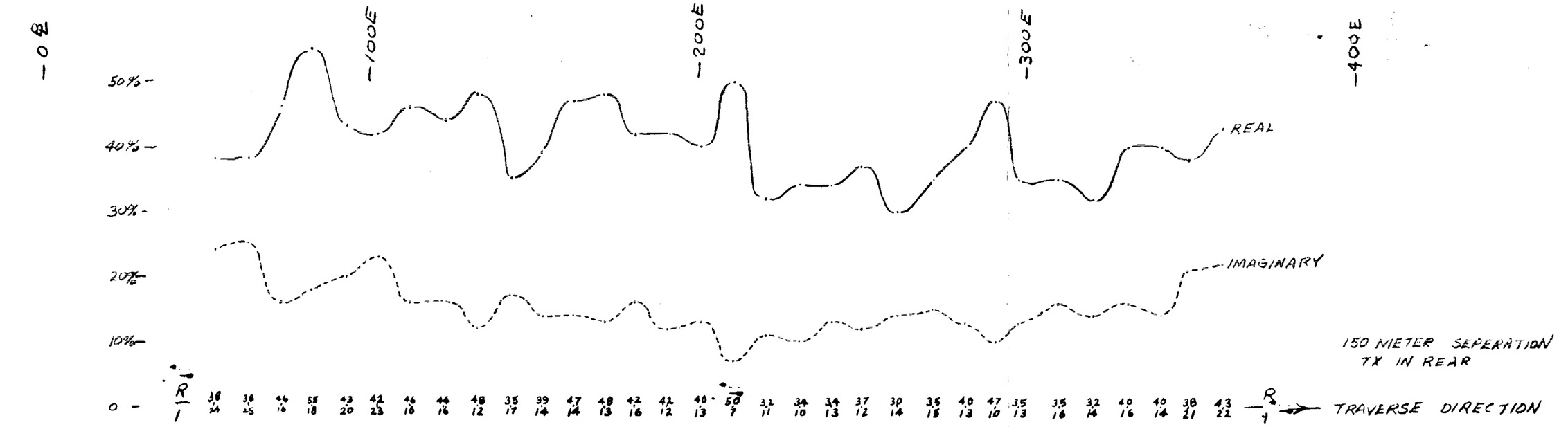
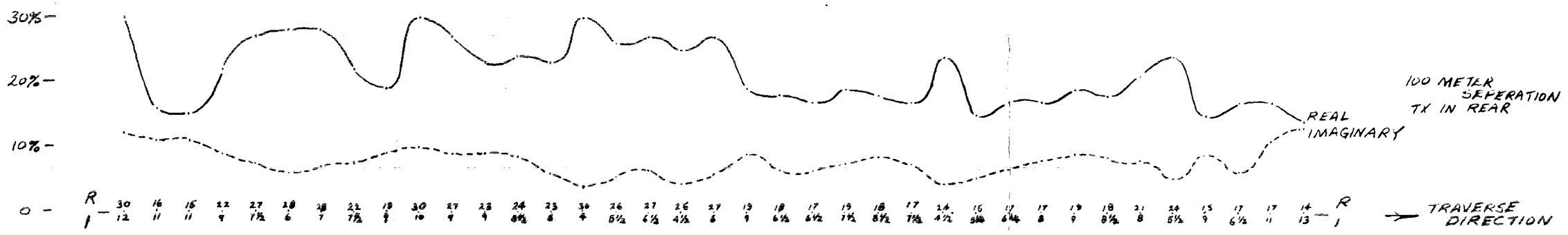
12 of ①

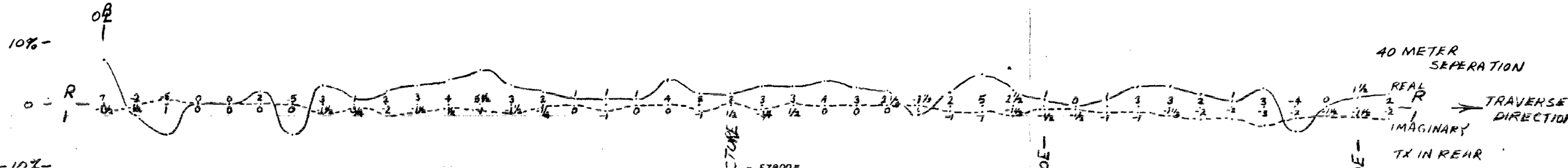


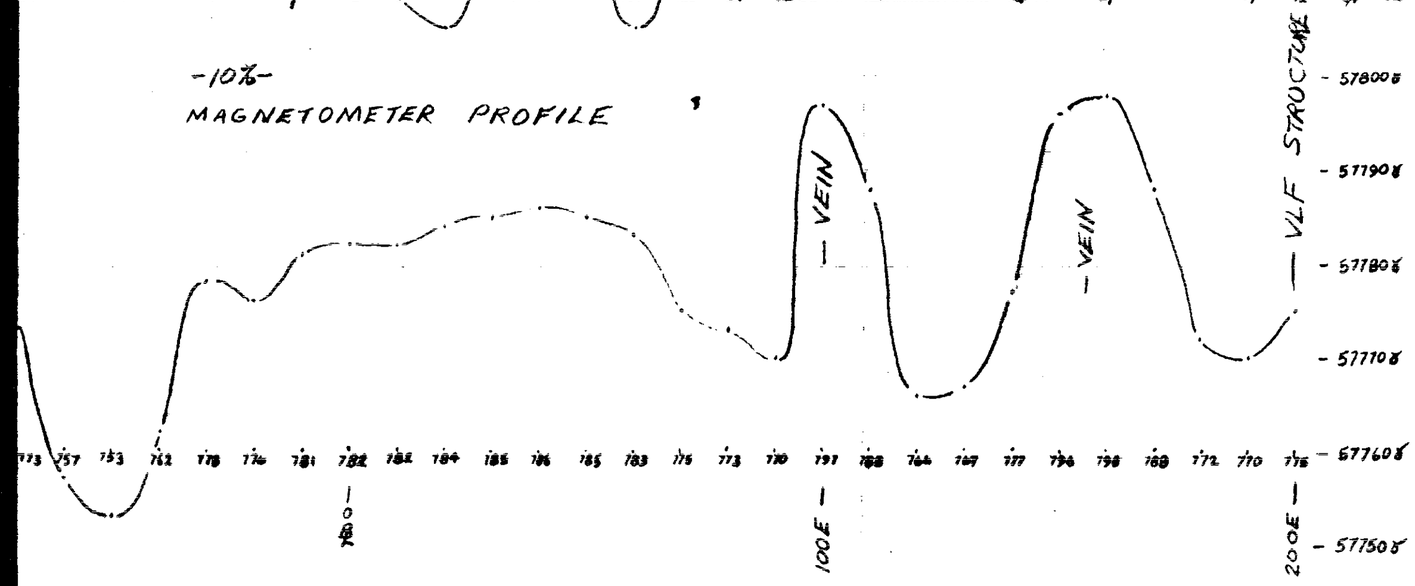
KNOW MINERAL CLAIMS, CARIBOO
NTS 93 H4

LINE A3+00S
HORIZONTAL LOOP EM SURVEY
WITH GEONIX EM 17L - 800 hz
PROFILES AT 2 SEPERATIONS









KNOW MINERAL CLAIMS, CARIBOO

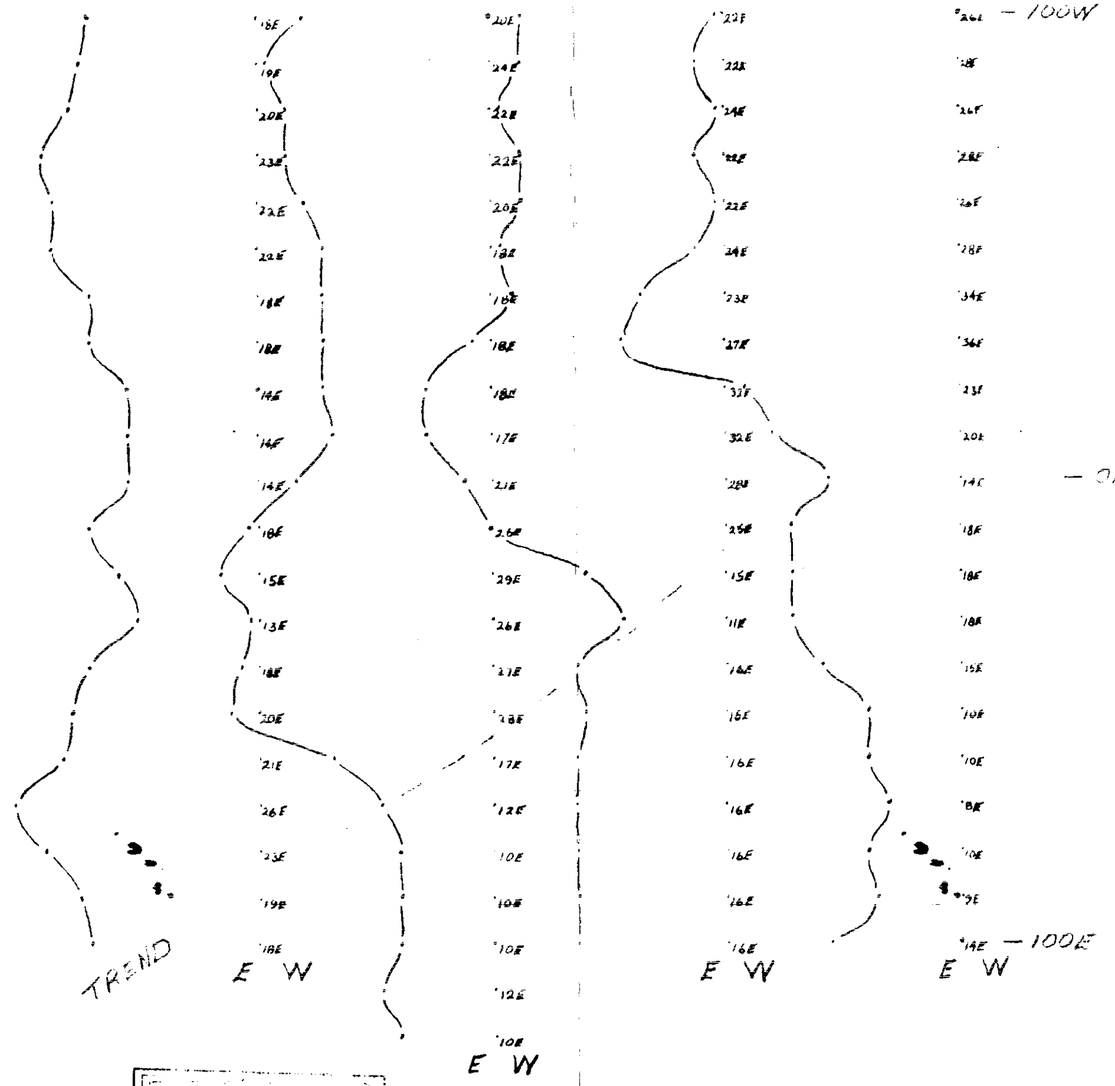
NTS 93 H4

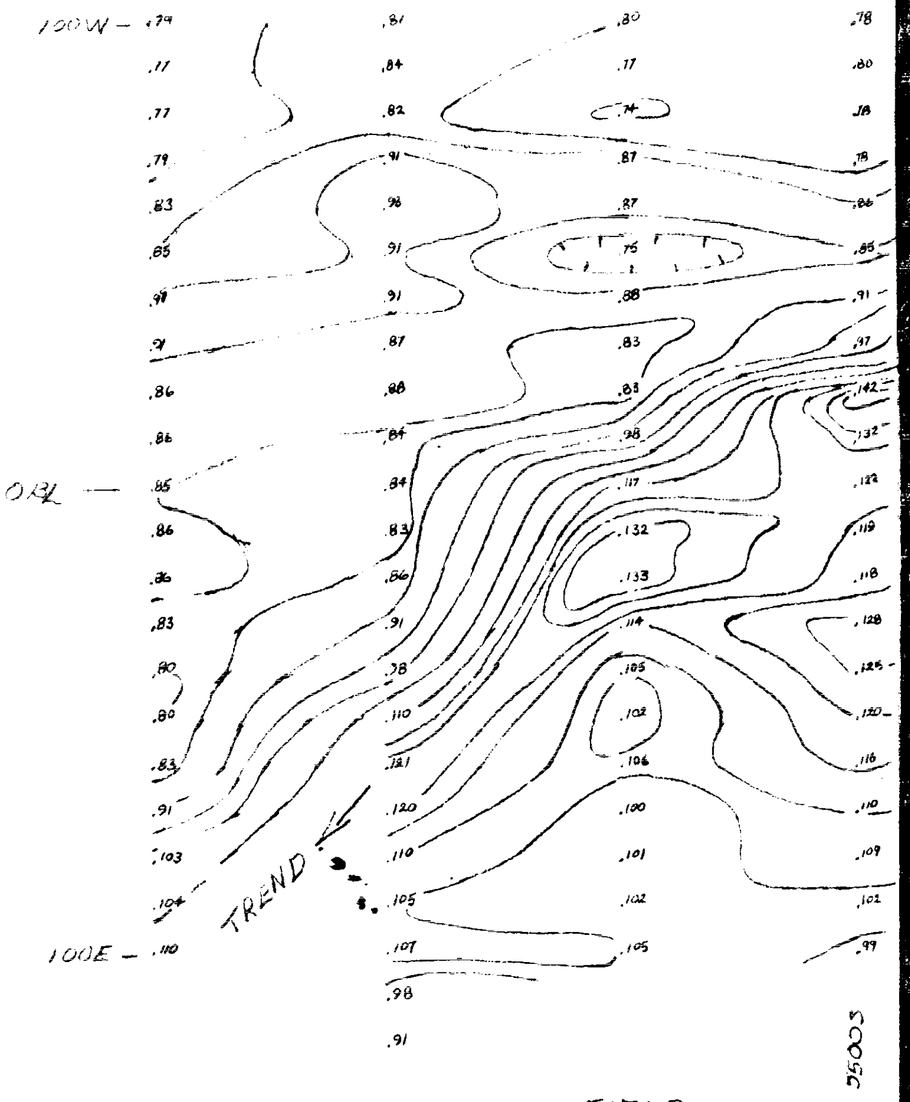
LINE 43+50S

HORIZONTAL LOOP EM SURVEY

WITH GEONIX EM 17L - 800hz

PROFILES AT 3 SEPERATIONS





DIP ANGLE

- READINGS IN °, DEGREES RELATIVE TO HORIZONTAL
- PROFILE SCALE:

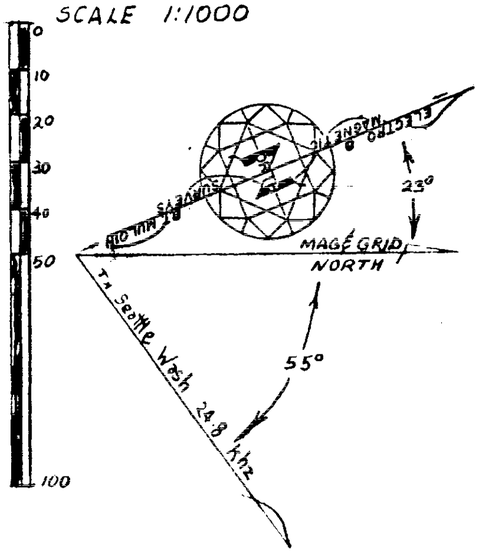
30°E 25° 20° 15° 10° 5°E 0 5°W 10° 15° 20° 25° 30°W

FIELD STRENGTH

- READINGS IN % RELATIVE TO BACKGROUND
- CONTOURS AT 5 % INTERVAL
- INSTRUMENT CRONE RADEM

25005

SCALE 1:1000



KNOW MINERAL CLAIMS, CARIBOO
NTS 93 H 4

BTH
12 '94

(4)