81-A-795

GEOLOGICAL AND GEOCHEMICAL SURVEY

OF THE

MAR CLAIMS

OMINECA MINING DIVISION

BRITISH COLUMBIA

GUICHON EXPLORCO LIMITED (owner/operator)

GEOLOGICAL AND GEOCHEMICAL SURVEY

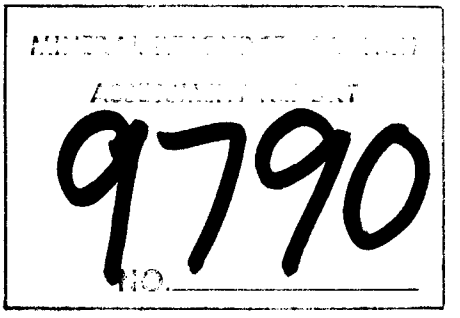
OF THE

MAR CLAIMS

OMINECA MINING DIVISION

BRITISH COLUMBIA

N.T.S. 93F/12E & 11W
(53° 37'N & 125° 30')



J. Ireland
Vancouver, B.C.

September, 1981

Table of Contents

List of Illustrations

Summary of Conclusions and Recommendations

Mercury and arsenic occur anomalously in altered late Cretaceous to Miocene volcanic rocks at two locations on the MAR claims, Omineca Mining Division, British Columbia. Erratic elevated gold values are associated with one of the alteration zones. The mineralization is associated with bleached, silicified and brecciated acid flows and tuffs that outcrop along fault lineaments that cut across the property. Anomalous mercury values exceed 4500 ppb Hg (4.17 g/tonne) and anomalous arsenic values exceed 370 ppm (.37 g/tonne). Gold values do not exceed 70 ppb in the alteration zones.

Soil sample ananysis failed to locate the alteration zones and only rock chip samples obtained from outcrop within the zone of alteration revealed the anomalous nature of the alteration zones.

It is proposed that most claims be dropped, retaining only those portions of the claims covering the actual zones of alteration and anomalous mercury, arsenic and elevated gold values.

It is further recommended that a more detailed program of geochemical sampling emphasing rock chip - outcrop sampling be carried out with the purpose of enhancing the elevated gold values obtained during the initial survey.

Introduction

This report describes the results of a soil and bedrock geochemical survey and geological mapping of part of the MAR Group of Claims carried out during the period of July 12th to August 4th, 1981. The claims are situated approximately 70 km south of Burns Lake, B.C., on the north shore of Intata Reach of the Ootsa Lake resevoir, National Topographic Series reference 93F/11w, 12E.

The MAR claims, situated in the Omineca Mining Division, are registered in the name of Guichon Explorco Limited of Toronto. The mineral claims information is listed below:

Mineral Claim	Recording Date	Record No.	No. of Units
MAR 1	September 9, 1980	3196	20
*MAR 5	September 9, 1980	3197	15
*MAR 7	September 9, 1980	3198	15
*MAR 8	September 9, 1980	3199	15
MAR 9	September 9, 1980	3200	20
*MAR 10	September 9, 1980	3201	15
*MAR 11	September 9, 1980	3202	15

NOTE: *Claim blocks examined during the summer of 1981.

Access to the claim group is fair to excellent, gained by means of maintained logging roads which cut through all claim blocks with the exception of MAR 5.

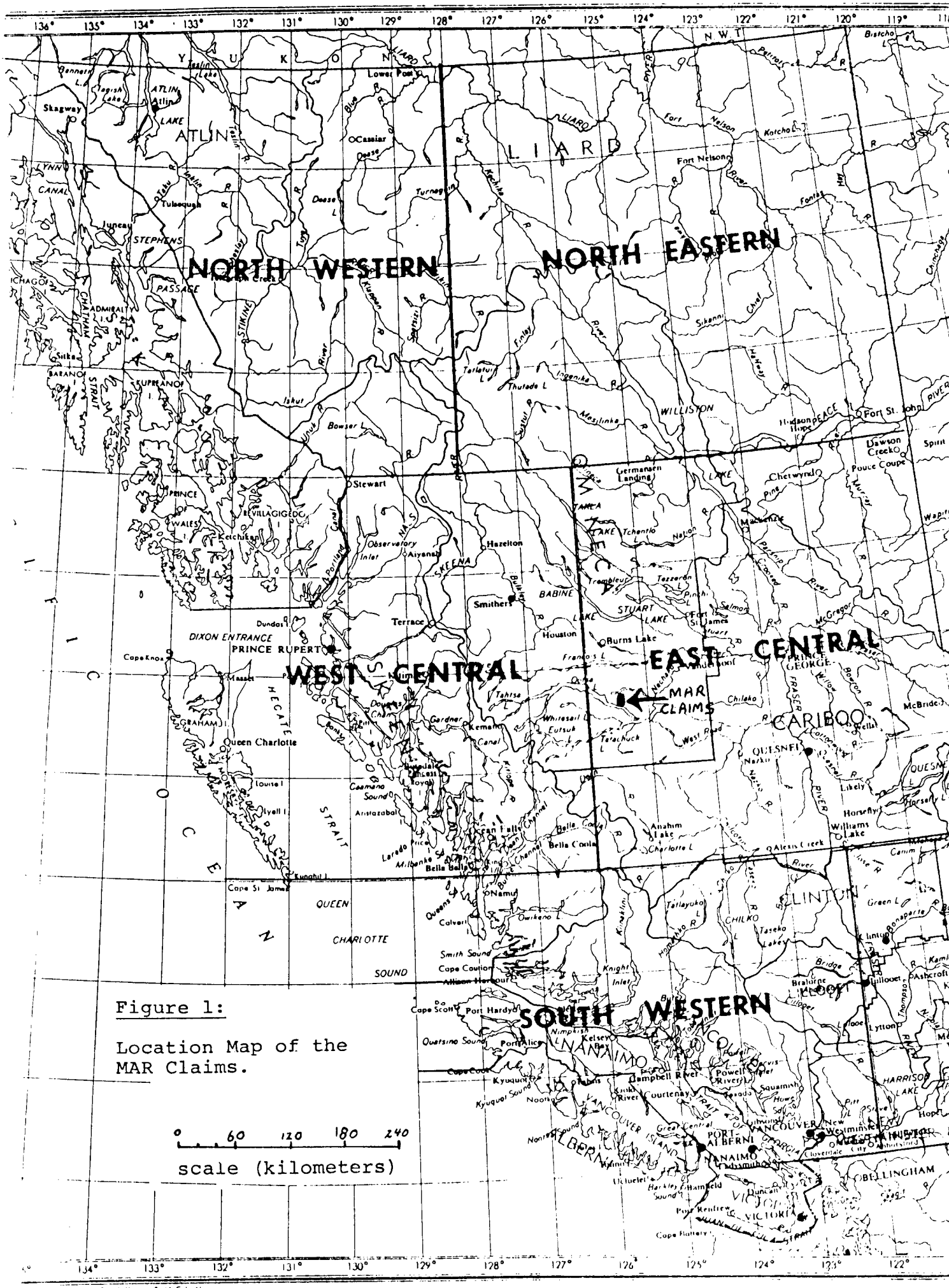


Figure 1:

Location Map of the MAR Claims.

Survey and Mapping Branch, Victoria, British Columbia

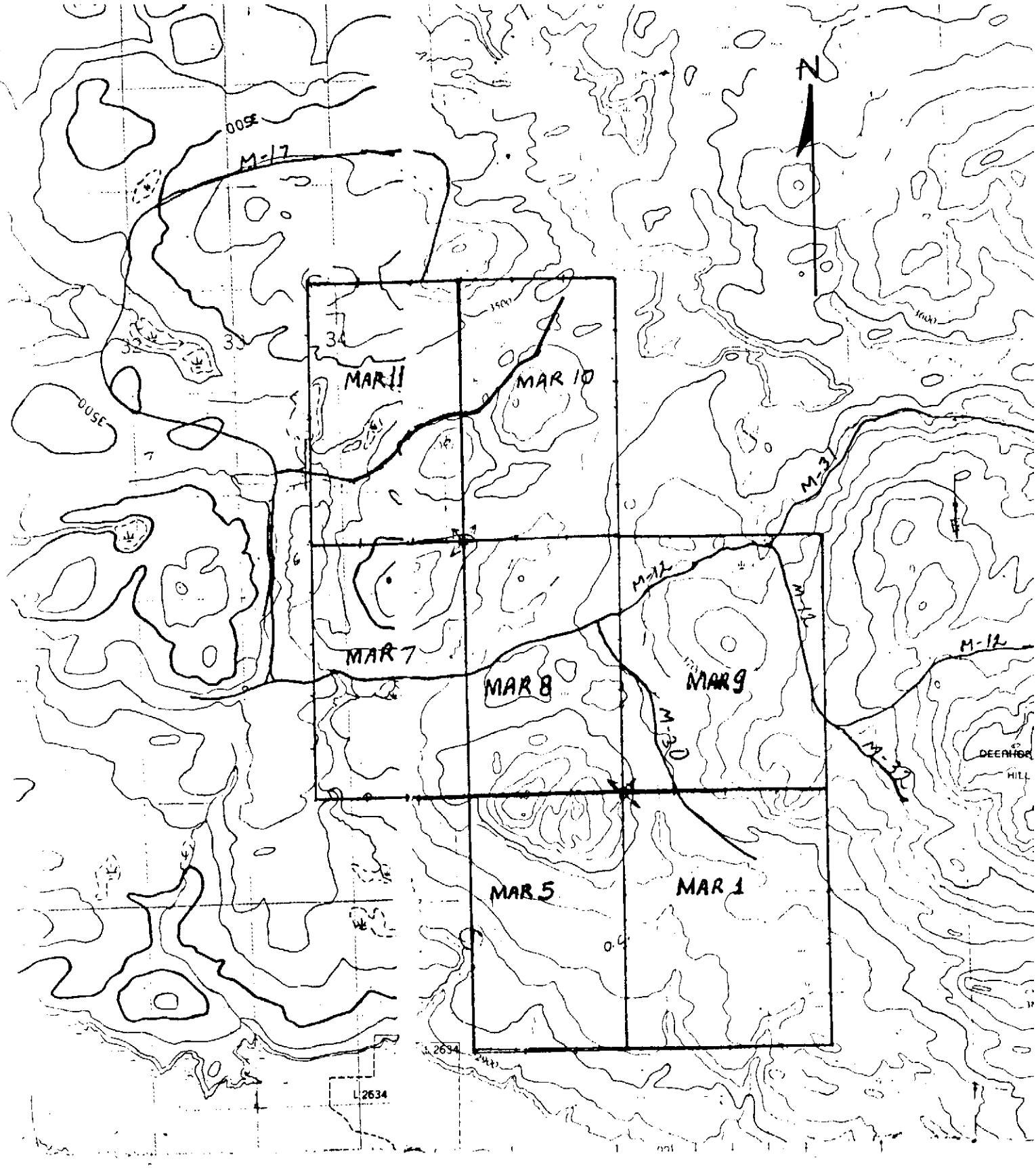


Figure 2: Topographic Map of the MAR Claims. (scale 1:50000)

Relief over much of the area is moderate to hilly. The elevation ranges from 870 meters (2,900 feet) to 1,170 meters (3,900 feet) above mean sea level. Relative relief of most of the area is less than 90 meters (300 feet).

The area is a patchwork of clear-cut areas in various stages of regrowth, immature and mature stands of spruce and fir, and small alder thickets and floating swamps, ponds and lakes occupying valley bottoms. Several small valley systems cross the claims area.

Procedure

Control for the survey consisted of a central 7.5 kilometer long baseline bearing 180°, a 7.5 kilometer long tie-line situated 1,600 meters east of and parallel to the baseline and a 5.0 kilometer long tie-line situated 1,500 meters west of and parallel to the baseline. Stations were flagged and marked every 50 meters along the baseline and tie-lines.

Soil sampling procured a 200 gram average sample from the "B" horizon located at a depth of from .3 to .8 metres. The "B" horizon was recognized as being a clay rich, burnt red coloured, layer from 3 cm to 8 cm in thickness. It was reached by digging through a light coloured, crumbly, leached horizon, that lay beneath an organic rich surface layer.

Bedrock sampling procured a 800 gram average chip sample from exposed outcrops.

Soil sample descriptions, and bedrock rock types were identified at each station. The result of this work is listed in the appendix at the end of this report.

Sampling and mapping was carried out over east-west traverse lines using a 400 meter grid spacing. Outcrop was mapped and sampled as they occured on the line.

A total of 168 samples, 44 outcrop and 124 soil, were collected over a total of 56 line kilometers of grid traverses,

7.5 km of baseline and 12.5 km of tie-line, covering an area of 18.75 square km (1875 hectares). Samples were sent to Chemex Laboratories Ltd., 212 Brooksbank Avenue, North Vancouver, B.C. and analysed for gold, mercury and arsenic.

Grid preparation, sampling and geological mapping were carried out under the direction of Dr. H. Squair with field supervision by J.C. Ireland. H. McCreadie assisted the field work.

Previous Work

The first major geological survey conducted in the region was carried out by H.W. Tipper during the period 1949 through 1953. The results were published in G.S.C. Memoir 324 in 1963. There is, at present, no record of assessment for the area covered by the claims, although deposits of perlite have been reported in the vicinity of Henson Hills, located 10 km west of the claims. As far as is known, the claims are the first staked in the area.

GEOLOGY

Regional Geology

The MAR Group of claims is situated in an area underlain predominantly by Late-Mesozoic, Early Tertiary acid to intermediate composition, volcanic and associated clastic rocks belonging to the

Ootsa Lake group. Underlying the Ootsa Lake volcanic near Intata Reach are a series of Upper Triassic volcanic flows, tuffs and breccias of intermediate composition with interbedded argillite and minor limestone. These rocks belong to the Takla group and extended south and west of Intata Reach for several miles. Overlying the Ootsa Lake rocks is a series of andesitic and basaltic flows, associated tuffs and breccias and related lamprophyric to basaltic dikes belonging to the Endako Group of Miocene and later age. These volcanic and associated rocks are relatively flat-lying and tend to form areas of high relief.

Geology - Mar Claims

Three different ages of rocks have been observed on the MAR claims. They include Upper Triassic to Lower Jurassic Takla group volcanic flows and associated breccias, the oldest and least exposed rocks in the area and roughly equal proportions of Upper-Cretaceous to Miocene aged Ootsa Lake Group rocks and Miocene and Later Endako Group rocks.

The three units occur as a series of north-northwest trending belts that become younger from west to east. The Takla rocks appear to be less continguous than the younger rocks, being exposed only in the southwest corner of the claims. The Ootsa Lake rocks form a belt one to two km wide through the centre of the map area and overlying Endako group volcanic rocks form a discontinuous belt along the eastern boundary of the map area.

Reconnaisance of the area east of the map area during the summer of 1980 indicates the Tertiary rocks occur as dissected sheets rather than a continuous belt (ref. Ireland, 1980). Unconformable contacts and fault contacts separate the various rock types present.

Takla group rocks are exposed in the southwest corner of MAR 7 and to the west of MAR 5. These rocks consist of Andisitic to docitic flows and flow breccias that have been metamophosed to the lower to mid Greenshist facies, marked by the extensive development of chlorite. The outcrops are often cut by calcite stringers and breccias exhibit calcite-chlorite infillings. These rocks are green on fresh surfaces and weather to dark green.

Ootsa Lake Group rocks are poorly exposed over most of the map area, but the outcrop pattern suggests a relatively continuous belt extending from the southeast portion of MAR 5 to the northwest corner of MAR 11. This belt of rocks thickens considerably near the center of the claims group and exposures of rocks of similar lithology directly east and west of this area suggest that a continuation of these rocks to the east and west is possible. 10 to 30 meter thick rhyolite flows exhibiting flow-banding, make up the major proportion of the sequence. These siliceous rocks range in colour from buff to maroon on fresh surface and weather to white and grey to yellow.

Vugs and gas pockets along the seams of the banding contain crystals of silica and the banding is commonly fused by re-crystallized silica. Massive rhyolite flows are less common and they tend to be thinner and of less areal extent. Quartz-Feldspar porphyry flows have been observed also in association with Feldspar-Biotite porphyry flows.

Dacitic rocks ranging in composition from rhyo-dacitic to trachytic are present to a lesser extent throughout the pile. These rocks weather grey and range in color from white to grey to purple on fresh surface. Phenocysts of biotite usually occur sparsely as 1 to 3 mm flakes. Feldspar porphyry flows containing subhedral feldspar laths in a matrix ranging in color from pink to purple are rare but present. Many of the poorly exposed porphyrite occurances may have been feeder dikes or near-source flows. Ash tuffs and volcaniclastic to pyroclastic breccia ranging in composition from rhyodocitic to trachytic is present (as 1 to 3 m thick beds) occuring as inter-flow units and lenses sporadically through-out the sequence. They are often quite friable as they weather easily.

Endako group rocks form two promontaries, one at the north end of the baseline and a southern promontary at the north end of MAR 5. The southern promontary is comprised of 5 to 15 m thick basalt flows ranging in texture from fine-grained massive to coarsely vesicular to porphyritic. They range in color from dark purple-green in the porphyrite varieties to black in the massive, fine-grained varieties.

The northern promontary is composed of thick succession of andesitic to basaltic, coarsely bedded tuffs and obsidian tuffs. They strike northeast and dip to the southeast 15° to 20°. These rocks are generally fine-grained but often contain lapilli-sized fragments. They are dark green on fresh surfaces and weather grey-brown. Obsidian tuffs often show rough bedding structures. Overlying the tuffs are black, fine-grained, massive to vesicular basalts that appear to extend from the north end to the south boundary of MAR 10.

Structure

The map area lies on the west slope of Deerhorn Hill which has been subjected to extensive block faulting, resulting in the formation of several half-graben structures. There are two dominant lineament trends, a series of sub-parallel, north-east to north trending faults and a less dominant northwest trending series of sub-parallel faults. Vertical displacement is more prominant than lateral movement. Faulting is more extensive near the corners of the blocks. All the faults are either high-angle or vertical. Brecciation and alteration of the rocks often occurs in the more intensely faulted sections and evidence of epithermal activity is also observed in these areas.

Mineralization

Disseminated sulphide has been observed in brecciated and

bleached to silicified Ootsa Lake volcanics at two locations on the MAR Claims. These alteration zones occur in rock adjacent to, or within fault zones situated at the corners of larger, black-faulted sections. They are exposed along scarps created by the faulting.

A series of nearly flat-lying dacitic flows and tuffs exposed at 200 E & 1300 S on MAR 8 are host to one alteration zone. These rocks have been intruded by a northwest trending mafic dike which apparently opened channelways for epithermal solutions. The dike appears to be fault-controlled. Epithermal solutions acted on the volcanic units causing a zone of intense bleaching, kaolinization and desilicification approximately 30 meters wide on the northeast side of the dike. Within this bleached zone lenses and pockets of hematite-rich, partially silicified material containing abundant disseminated sulphide occur. Veins of silica containing fine-grained block sulphide occur in these hematitic-siliceous lenses.

A later northeast striking fault has cut off exposure on the west side of the alteration zone. Similar less extensively altered, bleached, brecciated and silicified rocks of rhyolite composition outcrop along the trace of the fault 600 m north of the main zone of alteration at 350 E & 700 S on MAR 8.

A second alteration zone exhibits features similar to the

first. Bleaching, kaolinization and desilification occur in acid flows situated at 1400 W & 800 N on MAR 11. The area is extensively faulted. Adjacent to a north striking fault, the rocks have been sheared and brecciated and silicification containing disseminated sulphide has formed the matrix of the fault breccia. Intense kaolinization of the rhyolite unit occurs as a halo surrounding the silicified breccia zone.

Geochemical Survey

A total of 168 rock and soil samples were collected from the claims area for a total area sampled of 1875 hectares. Mercury and arsenic levels were determined using atomic absorption and gold was determined by combined fire assay and atomic absorption.

Rock and soil samples have mercury values ranging from 10 ppb to 4600 ppb (10^{-9} grams per tonne); and from less than 5 ppb gold to 175 ppb gold. Certificates of analysis appear in the appendix and distribution of values are listed below:

(1) Mercury

4001-5000 ppb Hg.	2 samples
1500-4000	4 samples
1001-1500	2 samples
901-1000	0
801- 900	0
701- 800	1 sample
601- 700	0

501- 600 ppb Hg	0
401- 500	1 sample
301- 400	1 sample
201- 300	4 samples
101- 200	9 samples
51- 100	40 samples
0- 50	104 samples
	168 samples

(2) Arsenic

201- 500 ppm As	2 samples
101- 200	1 sample
91- 100	0
81- 90	3 samples
71- 80	1 sample
61- 70	3 samples
51- 60	3 samples
41- 50	1 sample
21- 30	5 samples
11- 20	18 samples
0- 10	130 samples
	168 samples

(3) Gold

151-200 ppb Au	1 sample
101-150	0
91-100	0
81- 90	0
71- 80	1 sample
61- 70	2 samples
51- 60	0
41- 50	2 samples
31- 40	0
21- 30	8 samples
11- 20	41 samples
0- 10	113 samples
	168 samples

The results of the geochemical survey confirm the presence of two zones of alteration in the map area. The first zone occurs in the northwest portion of MAR 8. The alteration zone extends from 150^{m} E & 2200^{m} S to 330^{m} E & 700^{m} S along a northeast trending fault zone, a distance of 1500 meters. Mercury values are elevated and range from background in the soils to 450 ppb Hg in rock chip samples. Anomalous threshold values for rock geochemistry have been determined at 290 ppb Hg (Ireland, 1980). Arsenic values from rock geochemistry range from background to 375 ppm As. Threshold values for arsenic in rocks in the area is 92 ppm As. Gold values are erratic, with values from rock geochem ranging from

10 ppb Au to 70 ppb Au. Threshold values for anomalous gold in rocks found in the area was determined to be 38 ppb Au. Soil Geochemistry failed to pick up the anomalous zones, but good outcrop exposure and generally continuous anomalous or elevated values from rock chip sampling outlined the alteration zone. Host rocks are acid volcanic flows and tuffs of the Ootsa Lake Group of Late Cretaceous - Early Tertiary age.

The second anomalous alteration zone occurs along the western border of MAR 11, at 1400^{m} W & 850^{m} N. Mercury values determined from rock chip sampling range from 120 ppb Hg to 4600 ppb Hg over a distance of 300 meters. Associated with high mercury are arsenic values that range from 45 ppm and up to 315 ppm As. No significant gold values were detected in the sampling program. The host rock for this zone is a brecciated, silicified bleached and Kaolinized acid tuff exhibiting minor disseminated sulphide in the silicified zone. They are members of the Ootsa Lake Group of Volcanic rocks.

Anomalous mercury, arsenic and gold values are distributed along faults, the wallrocks of which have been sheared, bleached, silicified and epithermally altered. The alteration haloes vary in intensity and areal extent and the bleached kaolinized haloes are more extensive than the silicified zones, which are confined to the rocks adjacent to the faults.

MAR CLAIMS - COST ESTIMATE (JULY 2, 1981 - AUGUST 10, 1981)

1. Geological and Geochemical Survey	
40 man-days at $57.00 per day	$ 2,280.00
40 man-days at $45.00 per day	1,800.00
2. Accomodation	
4 weeks at $100.00 per week	400.00
12 days at $40.00 per day	480.00
3. Food	
40 days at $30.00 per day	1,200.00
4. Support	
Tools, flagging, sample bags, shipping, etc.	1,933.00
5. Transportation	
Vehicle Lease 40 days at $36.27 per day	1,450.80
Vehicle Operation 40 days at $12.00 per day	480.00
6. Sample Analysis	
140 soil samples at $12.00 per sample	1,680.00
44 rock samples at $14.25 per sample	627.00
7. Report and Drafting	1,250.00
	$13,580.80

Conclusions

Mercury and arsenic occur in anomalous concentrations within faulted and epithermally altered Late Cretaceous-Early Tertiary Ootsa Lake Group acid volcanics and tuffs. Two anomalous zones with values ranging from 120 ppb Hg to 4600 ppb Hg and up to 375 ppm As have been outlined and one zone returned gold values in the 30 ppb Au to 70 ppb Au range. Alteration consists of zones of brecciated, silicified, sulphide-bearing lenses occuring along fault scarps surrounded by extensive haloes of bleached, de-silicified and kaolinized country rock.

Results of the soil analyses failed to locate the alteration zones as the soils overlying the area were not locally derived. Rock chip sampling of outcrop outlined both alteration zones successfully.

Recommendations

Reduction of the number of claims, with the claims MAR 1 (3196), MAR 5 (3197), MAR 7 (3198), MAR 9 (3200) and MAR 10 (3201) being dropped outright and Claims MAR 8 (3199) and MAR 11 (3202) being reduced to 9 units each is recommended. A more detailed sampling program, concentrating on sampling of rock outcrop within the reduced claims area should be carried out in an effort to clarify the relationship between those anomalous gold values obtained and the mercury-arsenic values associated with the alteration zones.

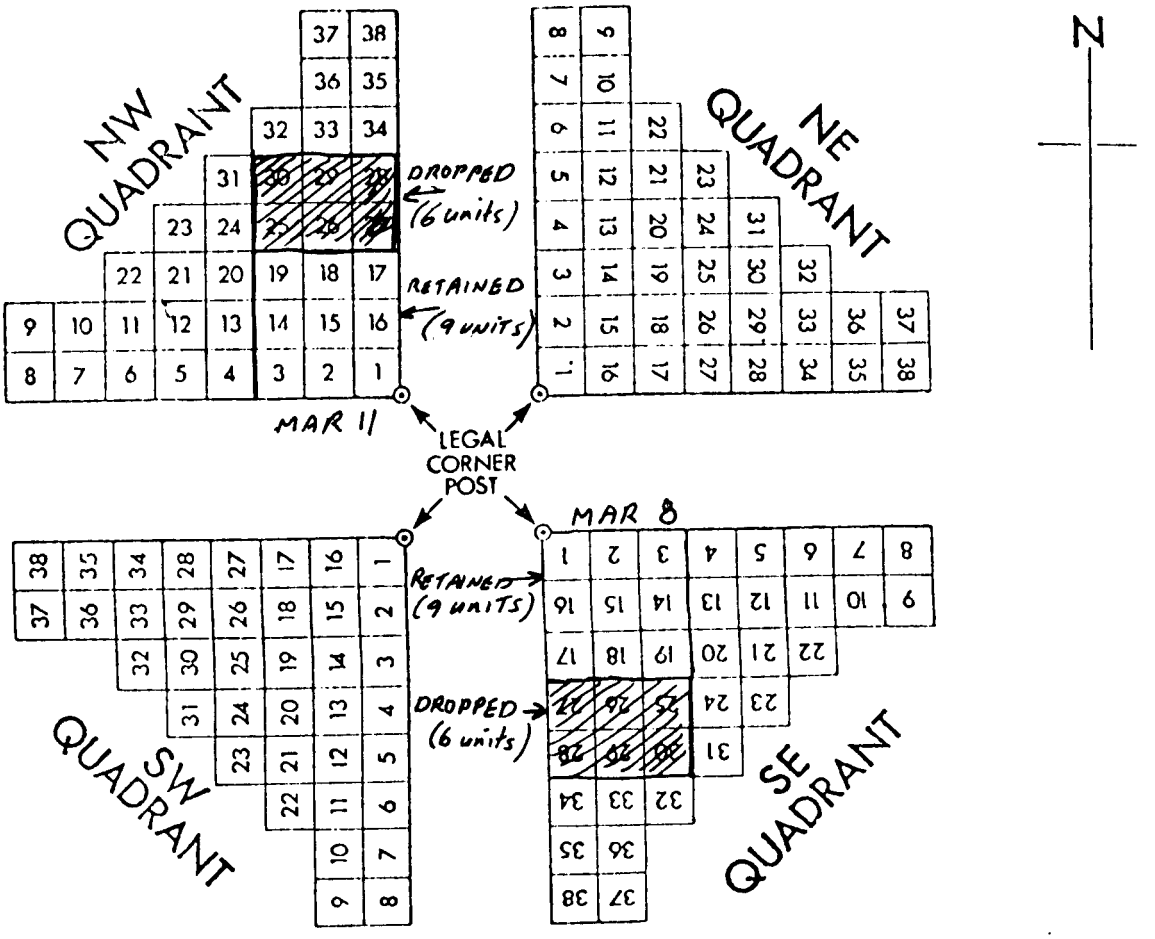


Figure 3: Recommended Reductions of Claim Units for MAR 8 and MAR 11.

References

1. J.C. Ireland (1980) - The Prince George Project: A Regional Geological and Geochemical Survey of the Fraser Lake Map Area, B.C.: Selco Mining Inc., Company Report.

2. H.W. Tipper (1963 - Nechaco River Map Area, British Columbia: G.S.C. Memoir 324.

3. J.G. Wargo (1979) - The Next Exploration Stage for Carlin-Type Gold Deposits: Soc. of Mining Engineering, September 1979, pp. 1321-1323.

CERTIFICATE

I, James C. Ireland of 5 Clement Street, Capreal, Ontario, hereby certify that:

(1) I am a student of geology residing at the above address.

(2) I am pursuing a H.B.Sc. at Laurentian University.

(3) I have practiced my profession for more than 4 years.

(4) I supervised and carried out the geological and geochemical work on the MAR Claim Group with the assistance of Mr. H. McCreadie and attest that the field work was carried out with due regard for current geological and geochemical practice.

(5) I interpreted the results of the survey.

(6) I hold no interest direct or indirect in the MAR Claim Group which is the subject of this report.

Respectfully Submitted

Vancouver, B.C.
September 8, 1981

J.C. Ireland

CERTIFICATE

I, Hugh Squair of 4287 Staulo Crescent, Vancouver, B.C., hereby certify that:

(1) I am a geologist residing at the above address.

(2) I am a graduate of the University of Saskatchewan and London with B.A. 1959 and Phd. 1965, degrees in Geology and Mining Geology and have practiced my profession for 15 years.

(3) I am registered as a member of the Association of Professional Engineers of the Province of Ontario.

(4) I directed the geological and geochemical work carried out on the MAR Claim Group by Mr. James Ireland and attest that the values presented and their spatial relationships to each other are correct within reasonable limits of error.

(5) I hold no interest direct or indirect in the MAR Claim Group which is the subject of this report.

Respectfully Submitted,

Vancouver, B.C.
July 31, 1981

Hugh Squair

APPENDIX

MAR CLAIMS

SAMPLE DESCRIPTIONS

AND

ANALYSIS RESULTS

1981

Sample Number	Claim	Coordinates	Sample Description	Au (ppb)	Hg (ppb)	As (ppm)
3101	MAR 5	00 + 5100S	soil - clay & gravel	<5	40	7
3102	MAR 5	400E + 5100S	soil - clay & gravel	5	25	7
3103	MAR 5	800E + 5100S	soil - clay & gravel	5	25	9
3104	MAR 5	1200E + 5100S	soil - clay & gravel	5	25	6
3105	MAR 5	1600E + 5100S	soil - clay & gravel	<5	20	7
3106	MAR 5	00 + 4300S	soil - sand & gravel	5	25	7
3107	MAR 5	400E + 4300S	soil - sand, clay & gravel	<5	25	6
3108	MAR 5	800E + 4300S	soil - sand & gravel	<5	40	9
3109	MAR 5	1200E + 4300S	soil - mostly clay	<5	40	6
3110	MAR 5	1600E + 4300S	soil - sand & gravel	10	40	5
3111	MAR 5	00 + 3100S	soil - sand & gravel	<5	40	6
3112	MAR 5	400E + 3100S	soil - sand, clay & pebbles	<5	40	7
3113	MAR 5	600E + 3100S	chloritized, siliceous volcaniclastic unit 2 - altered - Ootsa Lake Group upper unit	<5	230	9
3114	MAR 5	600E + 3100S	siliceous tuffaceous sediment - Ootsa Lake Group	20	60	7
3115	MAR 5	900E + 3100S	massive basalt flows - minor pyro - clastic units - Tertiary	5	30	6
3116	MAR 5	1200E + 3100S	soil - clay, sand & pebbles	5	30	5
3117	MAR 5	1600E + 3100S	soil - clay, sand & pebbles	5	30	17
3118	MAR 5	00 + 2700S	soil - clay, sand & pebbles	15	30	5
3119	MAR 5	400E + 2700S	broken rock no O.C. basalt- Tertiary	<5	40	10

Sample Number	Claim	Coordinates	Sample Description	Au (ppb)	Hg (ppb)	As (ppm)
3120	MAR 5	800E + 2700S	soil - sand, pebbles & clay	10	30	6
3121	MAR 5	1200E + 2700S	soil - sand, pebbles & clay	< 5	30	7
3122	MAR 5	1600E + 2700S	soil - sand, pebbles & clay	175	40	5
3123	MAR 8	1200E + 1900S	soil - sand, pebbles & clay	20	40	6
3124	MAR 8	800E + 1900S	soil - sand, pebbles & clay	15	50	7
3125	MAR 8	400E + 1900S	soil - mostly clay	10	70	7
3126	MAR 8	00 + 1900S	soil - sand, pebbles	5	80	6
3127	MAR 10	00 + 100N	soil - sand	10	60	5
3128	MAR 10	340E + 100N	Tertiary basalt flows - massive to vesicular	70	90	9
3129	MAR 10	400E + 100N	soil - sand, pebbles & clay	15	40	5
3130	MAR 10	800E + 100N	soil - sand, pebbles	15	60	7
3131	MAR 10	1200E + 100N	soil - sand, clay &	10	40	5
3132	MAR 10	1600E + 100N	soil - sand, clay & pebbles	10	40	7
3133	MAR 8	1600E + 300S	soil - sand, clay & pebbles	10	30	6
3134	MAR 8	1175E + 300S	soil - sand, clay & pebbles	15	30	5
3135	MAR 8	800E + 300S	soil - sand, clay & pebbles	5	30	6
3136	MAR 8	425E + 300S	soil - sand, clay & pebbles	5	40	7
3137	MAR 8	00 + 300S	soil - sand, clay & pebbles	< 5	30	6
3138	MAR 10	400E + 1700N	soil - sand, clay & pebbles	5	75	11

Sample Number	Claim	Coordinates	Sample Description	Au (ppb)	Hg (ppb)	As (ppm)
3139	MAR 10	800E + 1700N	soil - clay mud	10	90	14
3140	MAR 10	1200E + 1700N	soil - sand	10	130	12
3141	MAR 10	1200E + 1300N	soil - loose clay mud	10	60	9
3142	MAR 10	800E + 1300N	soil - wet clay & sand	10	40	10
3143	MAR 10	500E + 1300N	basalt flows - Tertiary	15	30	5
3144	MAR 10	400E + 1300N	soil - clay & sand	10	90	12
3145	MAR 10	00 + 1300N	soil - sand, clay & pebbles	10	60	9
3146	MAR 10	00 + 2100N	soil - sand, clay & pebbles	5	50	5
3147	MAR 10	400E + 2100N	soil - sand, clay & pebbles	10	70	4
3148	MAR 10	800E + 2100N	soil - sand, clay & pebbles	10	50	4
3149	MAR 10	1200E + 2100N	soil - sand	15	80	16
3150	MAR 10	1600E + 2100N	soil - clay, sand & pebbles	15	50	10
3151	MAR 5	00 + 4700S	soil - clay & sand- poorly sorted	10	20	7
3152	MAR 5	400E + 4700S	soil - clay & sand - poorly sorted	10	25	6
3153	MAR 5	800E + 4700S	soil - wet clay & cobbles	25	60	11
3154	MAR 5	1200E + 4700S	soil - sand & cobbles - thick unit	5	20	7
3155	MAR 5	1600E + 4700S	soil - sequence of sand over gravelly sand	30	60	9
3156	MAR 5	00 + 3880S	soil - clay, sand & gravel	10	30	7

Sample Number	Claim	Coordinates	Sample Description	Au (ppb)	Hg (ppb)	As (ppm)
3157	MAR 5	400E + 3900S	soil - sand, clay, gravel & cobbles	10	20	6
3158	MAR 5	800E + 3900S	soil - sand & cobbles	10	20	7
3159	MAR 5	1200E + 3900S	soil - muddy, rusty clay & pebbles	<5	35	7
3160	MAR 5	1630E + 3950S	acid tuffs & flows N70° E/40° S Ootsa Lake Group	<5	760	17
3161	MAR 5	00 + 3500S	soil - sand, clay & boulders	5	40	6
3162	MAR 5	400E + 3500S	soil - sandy clay with pebbles moderately well sorted - muddy	10	25	6
3163	MAR 5	800E + 3500S	soil - sand, clay & gravel	10	30	5
3164	MAR 5	1200E + 3500S	soil - sand, clay & gravel	5	25	7
3165	MAR 8	150E + 2200S	chalky white to red stained acid volcanics - Ootsa Lake Group - possible fault zone	<5	450	375
3166	MAR 8	400E + 2300S	soil - poorly sorted debris	10	30	7
3167	MAR 8	800E + 2300S	soil - poorly sorted clay, sand, gravel & boulders	5	30	9
3168	MAR 8	1200E + 2300S	massive to vesicular basalt flows - N80° W/ 10° S - Tertiary	<5	60	7
3169	MAR 8	1600E + 2300S	soil - gravel, clay & sand	<5	25	5
3170	MAR 8	1200E + 1500S	soil - glacial debris			
3171	MAR 8	800E + 1500S	soil - gravel, clay & sand	5	25	5

Sample Number	Claim	Coordinates	Sample Description	Au (ppb)	Hg (ppb)	As (ppm)
3172	MAR 8	400E + 1500S	soil - muddy clay, sand & gravel	5	30	5
3173	MAR 8	00 + 1500S	soil - clay, sand & gravel	5	25	7
3174	MAR 8	00 + 700S	soil - sand & pebbles	15	50	10
3175	MAR 8	330E + 700S	bleached, brecciated & silicified, rusty stained Ootsa Lake Group acid volcanics -Fault Zone trending N12° E	15	50	41
3176	MAR 8	330E + 700S	bleached, brecciated & silicified, rusty stained Ootsa Lake Group acid volcanics -Fault Zone trending N12° E	75	90	29
3177	MAR 8	400E + 700S	unbrecciated equivalent to 3175	25	40	30
3178	MAR 8	760E + 700S	bleached, rust stained acid tuffs - possible Fault trending N60° E - Ootsa Lake Group	25	40	10
3179	MAR 8	1200E + 700S	soil - clay & gravel	10	30	5
3180	MAR 8	1600E + 700S	soil - rusty clay & gravel	5	80	10
3181	MAR 8	1200E + 1100S	soil - clay & coarse gravel	15	110	17
3182	MAR 8	400E + 1100S	soil - clay & coarse gravel	10	70	11
3183	MAR 10	00 + 500N	soil - pebbly clay	5	30	4
3184	MAR 10	400E + 500N	soil - gravel & clay	10	40	6
3185	MAR 10	800E + 500N	soil - gravel & clay	5	60	9
3186	MAR 10	1600E + 500N	soil - gravel & clay	5	40	3
3187	MAR 10	800E + 900N	soil - wet, sandy clay & boulders	5	70	10

Sample Number	Claim	Coordinates	Sample Description	Au (ppb)	Hg (ppb)	As (ppm)
3188	MAR 10	400E + 900N	soil - clay, cobbles & pebbles	15	40	12
3189	MAR 10	00 + 950N	soil - sand & gravel	10	50	11
3190	MAR 10	00 + 2500N	soil - clay & gravel	10	90	6
3191	MAR 10	400E + 2500N	soil - clay, pebbles & cobbles	15	60	3
3192	MAR 10	800E + 2500N	soil - wet clay & cobbles	10	70	5
3193	MAR 10	1200E + 2500N	soil - sand gravel	15	50	3
3194	MAR 10	00 + 2250N	mafic tuffs, obsidian and chalcedonic basalt flows - Tertiary	30	70	4
3195	MAR 11	400W + 2500N	soil - coarse gravel & clay	15	40	4
3196	MAR 11	800W + 2500N	soil - rusty clay & gravel	15	70	14
3197	MAR 11	1200W + 2500N	soil - clay & gravel	5	85	9
3198	MAR 11	1350W + 2500N	vuggy vesicular, rusty stained, bleached, flowbanded rhyolite, Ootsa Lake Group	25	30	2
3199	MAR 11	1600W + 2500N	soil - clay & pebbles	15	40	4
3200	MAR 11	1600W + 2100N	soil - sandy gravel	15	30	5
3201	MAR 11	1200W + 2100N	soil - sandy gravel	10	160	38
3202	MAR 11	800W + 2100N	soil - clay & gravel	10	260	22
3203	MAR 11	400W + 2100N	soil - clay & gravel	15	80	17
3204	MAR 11	400W + 900N	broken rock - Tallus - basalt and chloritic tuff	15	10	2
3205	MAR 11	1200W + 900N	soil - gravel & clay	10	60	22
3206	MAR 11	1600W + 900N	soil - gravel & clay	15	45	5

Sample Number	Claim	Coordinates	Sample Description	Au (ppb)	Hg (ppb)	As (ppm)
3207	MAR 11	800W + 500N	soil - gravel & clay	5	120	15
3208	MAR 11	400W + 500N	soil - gravel & clay	5	50	6
3209	MAR 11	1400W + 850N	brecciated, silicified, sheared, bleached siliceous Ootsa Lake Group rhyolite flows - possible fault zone	20	180	9
3210	MAR 11	1400W + 850N	same as 3209	15	200	17
3211	MAR 11	1400W + 850N	same as 3209	20	240	16
3212	MAR 11	1400W + 850N	same as 3209	10	1300	17
3213	MAR 11	1400W + 850N	same as 3209	10	160	4
3214	MAR 11	1400W + 850N	same as 3209	10	1200	10
3215	MAR 11	1400W + 850N	same as 3209	15	4400	59
3216	MAR 11	1400W + 850N	same as 3209	15	4600	315
3217	MAR 11	1400W + 850N	same as 3209	15	1600	61
3218	MAR 11	1400W + 850N	same as 3209	10	1800	80
3219	MAR 11	1400W + 850N	same as 3209	5	1900	61
3220	MAR 11	1400W + 850N	same as 3209	10	2200	67
3221	MAR 11	1350W + 850N	silicified, bleached, flow-banded rhyolite -poor exposure	10	120	5
3222	MAR 11	1350W + 850N	silicified, bleached, flow-banded rhyolite -poor exposure	5	130	6
3223	MAR 8	200E + 1300S	bleached zone - hematite- chlorite- silica- alteration zones in Ootsa Lake Group dacites - minor sulphides and prevailent brecciation	10	70	85
3224	MAR 8	200E - 1300S	same as 3223	70	60	81

Sample Number	Claim	Coordinates	Sample Description	Au (ppb)	Hg (ppb)	As (ppm)
3225	MAR 8	200E + 1300S	same as 3223	30	70	4
3226	MAR 8	200E + 1300S	same as 3223	10	130	135
3227	MAR 8	200E + 1300S	same as 3223	10	50	53
3228	MAR 8	200E + 1300S	same as 3223	15	100	81
3229	MAR 8	200E + 1300S	same as 3223	30	50	59
3230	MAR 7	400W + 1500S	soil - clay & gravel	10	60	7
3231	MAR 7	800W + 1500S	soil - sandy clay	15	70	9
3232	MAR 7	1600W + 1500S	soil - gravel	10	60	6
3233	MAR 7	1600W + 1900S	soil - sandy gravel	10	50	6
3234	MAR 7	1200W + 1900S	soil - gravel	10	30	4
3235	MAR 7	760W + 1900S	bleached, silicified Ootsa Lake Group rhyolite - poor exposure	10	20	3
3251	MAR 10	1600E + 2500N	soil - clay & sand	15	40	2
3252	MAR 11	400W + 1700N	soil - clay, sand & gravel	45	55	5
3253	MAR 11	800W + 1700N	soil - clay, sand & gravel	50	50	22
3254	MAR 11	1000W + 1700N	rhyolite - Ootsa Lake Group	20	30	5
3255	MAR 11	1200W + 1700N	soil - clay, sand & pebbles	10	30	5
3256	MAR 11	1470W + 1700N	rhyolite - Ootsa Lake Group	15	370	10
3257	MAR 11	1600W + 1700N	soil - clay, sand & pebbles	5	30	4
3258	MAR 11	1200W + 1300N	soil - clay, sand & pebbles	5	25	5
3259	MAR 11	800W + 1300N	soil - clay, sand & pebbles	10	35	5

Sample Number	Claim	Coordinates	Sample Description	Au (ppb)	Hg (ppb)	As (ppm)
3260	MAR 7	400W + 300S	soil - clay, sand	10	30	6
3261	MAR 7	500W + 300S	feldspar porphyry flows - Ootsa Lake Group.	15	30	3
3262	MAR 7	800W + 300S	soil - clay, sand & pebbles	10	25	4
3263	MAR 7	1200W + 300S	soil - clay, sand & pebbles	15	30	4
3264	MAR 11	1200W + 100N	soil - clay, sand & pebbles	15	30	3
3265	MAR 11	800W + 100N	soil - clay, sand & pebbles	10	25	2
3266	MAR 11	400W + 100N	soil - clay, sand & pebbles	15	30	5
3267	MAR 7	400W + 700S	soil - clay, sand & pebbles	15	20	2
3268	MAR 7	800W + 700S	soil - clay, sand & pebbles	15	35	5
3269	MAR 7	1200W + 700S	soil - clay, sand & pebbles	5	35	7
3270	MAR 7	1600W + 1100S	soil - clay & sand	10	60	3
3271	MAR 7	1200W + 1100S	rhyolite porphyry - Ootsa Lake Group	5	20	4
3272	MAR 7	800W + 1100S	soil - clay, sand & pebbles	10	40	<1
3273	MAR 7	400W + 1100S	soil - clay, sand & pebbles	10	20	3
3274	MAR 7	400W + 2700S	soil - clay, sand & pebbles	10	30	3
3275	MAR 7	800W + 2700S	soil - clay, sand & pebbles	15	20	<1
3276	MAR 7	1025W + 2700S	andesite porphyry flow or fedder dike - Hazelton or Takla Group.	10	20	3

Sample Number	Claim	Coordinates	Sample Description	Au (ppb)	Hg (ppb)	As (ppm)
3277	MAR 7	1200W + 2700S	soil - clay	10	30	2
3278	MAR 7	1600W + 2700S	soil - clay, sand & pebbles	5	30	4
3279	MAR 7	1600W + 2300S	soil - clay, sand & pebbles	10	40	3
3280	MAR 7	1250W + 2300S	•chloritized andesite flows - possible carbonate alteration Hazelton or Takla Group	10	20	3
3281	MAR 7	1250W + 2300S	•brecciated, chloritized andesite possible carbonate alberation - Hazelton or Takla Group	5	20	4
3282	MAR 7	1200W + 2300S	soil - clay, sand & pebbles	5	40	<1
3283	MAR 7	800W + 2300S	soil - clay, sand & pebbles	10	30	3
3284	MAR 7	400W + 2300S	soil - clay, sand	<5	50	<1

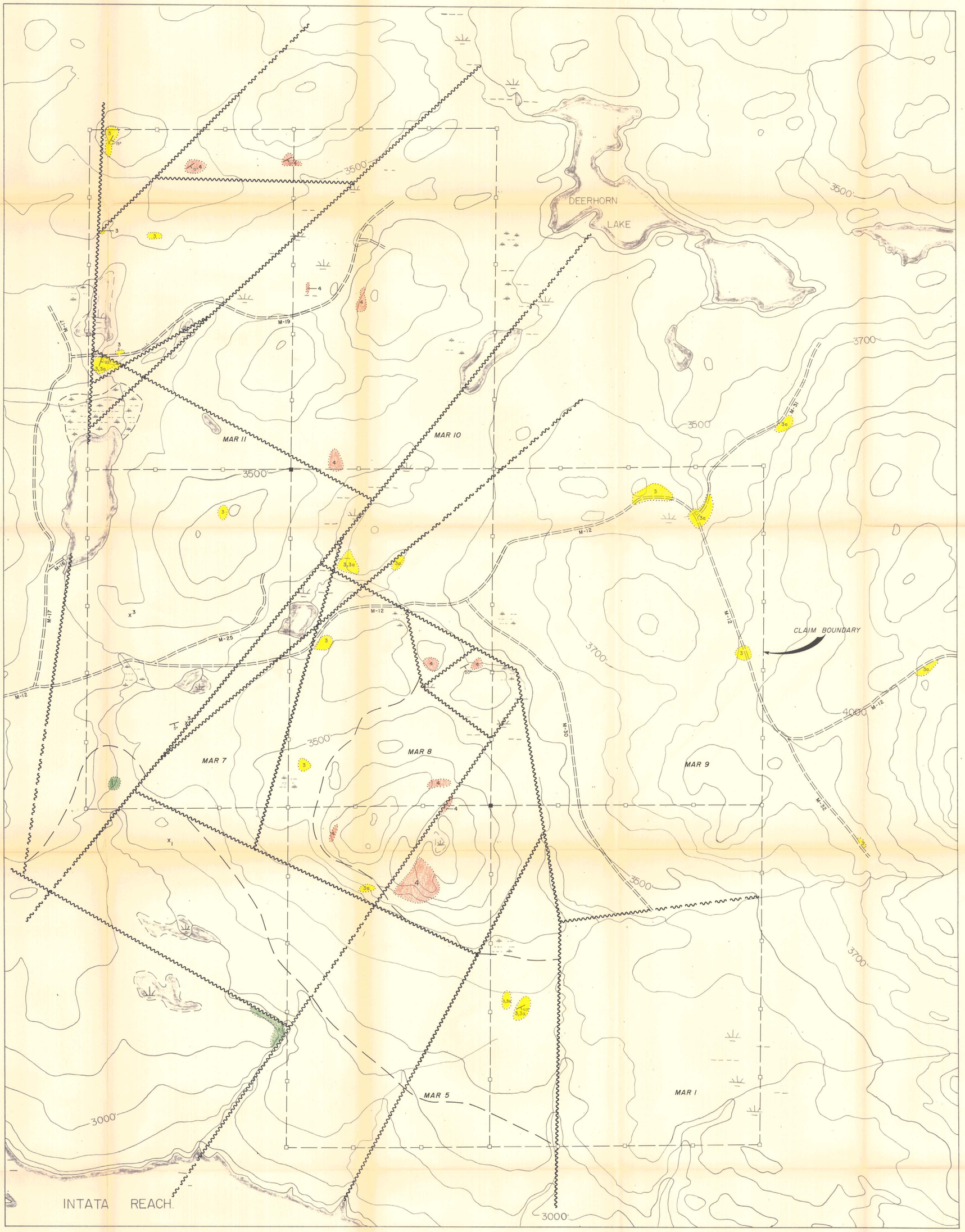
N.B. symbol < - indicates "Less Than"

symbol • - indicates rock chip sample

SUMMARY

124 soil samples
44 rock chip samples

168 Total Samples



LEGEND

TERTIARY

MIOCENE AND LATER

- 4 — ENDAKO GROUP – massive to vesicular andesite to basalt flows, breccias and tuffs

CRETACEOUS – TERTIARY

UPPER CRETACEOUS ? AND PALEOCENE, EOCENE, OLIGOCENE

- 3 — UPPER OOTSA LAKE GROUP – rhyolite, flow – banded rhyolite and dacitic flows
- 3a — siliceous to felsic ash and tuff, breccias, conglomerate
- 3b — related acid intrusions – dikes, stocks

UPPER CRETACEOUS AND ?PALEOCENE

- 2 — LOWER OOTSA LAKE GROUP – andesitic to basalt flows, breccias, minor tuffs
- 2a — related intrusions – dikes, stocks

JURASSIC OR OLDER

- 1 — andesitic flows and breccia – chloritized and carbonate rich (may be in part Takla Group – Triassic)

SYMBOLS

- Geological Contact
- Outcrop
- Strike and Dip – horizontal, inclined, vertical
- Joints – inclined, vertical
- Fault – observed, assumed
- Geochemical Sample Site
- Legal Corner Post, Claim Post
- Elevation Contour (feet)
- Dirt Roads

1km 0 1km 2km

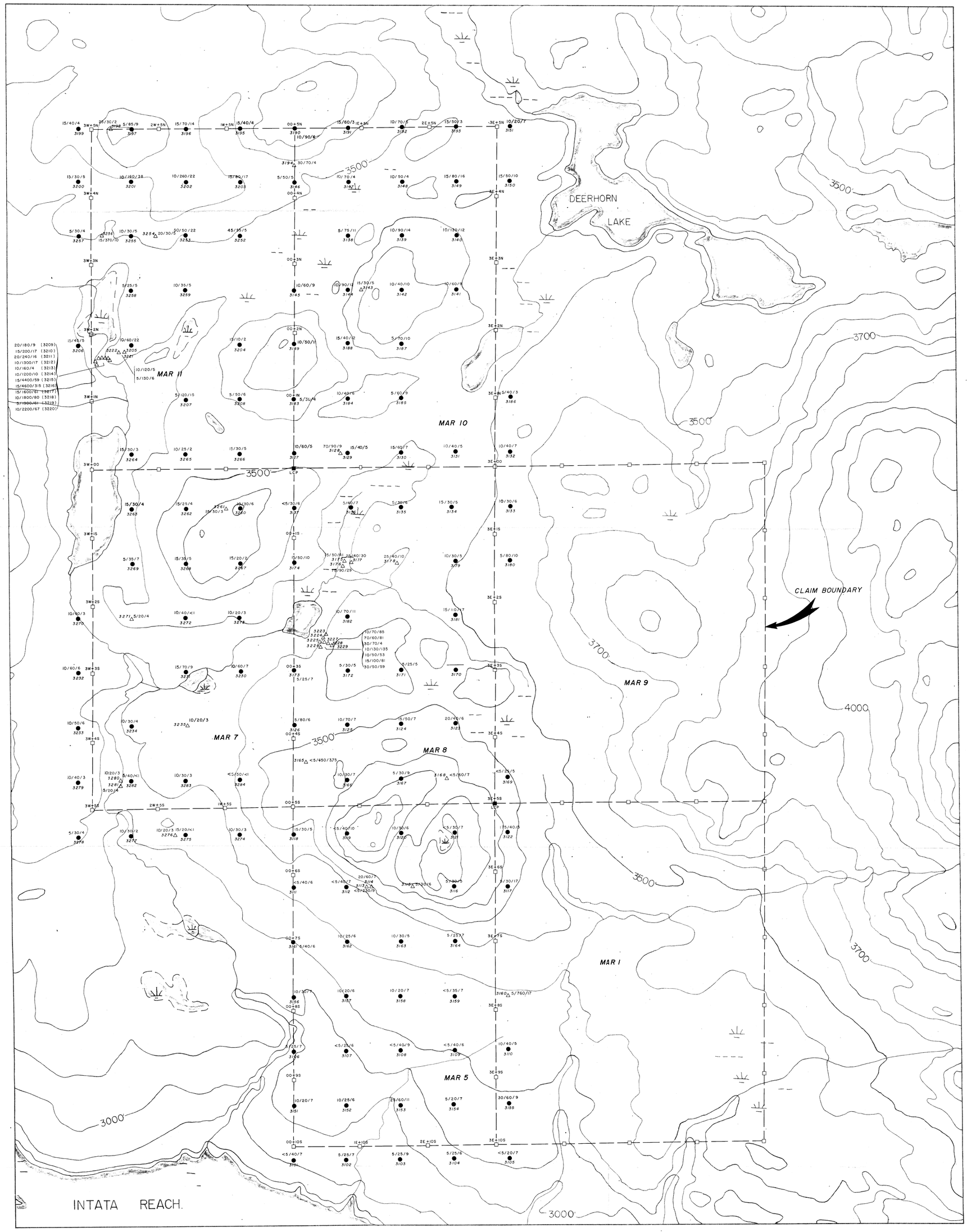
Scale 1:10,000

N

SELCO INC. EXPLORATION WESTERN CANADA

MAR GROUP
GEOLOGY

DRAWN BY	DATE	N.T.S.	PLAN
K.W.H.	APR 1981	93F/11e 8/12	WC - 75
TRACED BY J.I. and H.McC	DATE MAY-AUG. 1981		



LEGEND

- ● 3560 — Soil Sample Location and Number
- △ 3020 — Rock Sample Location and Number
- 5/25/5 — Au(ppb)/Hg(ppb)/As(ppm)...Geochemical Values

N

1km 0 1km 2km

Scale 1:10,000

9790

SELCO INC. EXPLORATION WESTERN CANADA

# MAR GROUP
# GEOCHEMISTRY
Au(ppb)/Hg(ppb)/As(ppm)

DRAWN BY	DATE	N.T.S	PLAN
K.W.H.	APR 1981	93F/11e 8/12	WC - 75
TRACED BY J.I. and H.McC.	DATE MAY - AUG. 1981		