ASSESSMENT REPORT

GEOLOGICAL AND GEOCHEMICAL SURVEY

GOAT CLAIMS

Atlin Mining Division

Trapper Lake Area, B. C.

N.T.S. 104K/Tulsequah Sheet

58°56'N
132°42'W

OWNER: CHEVRON CANADA LIMITED

OPERATOR: CHEVRON STANDARD LIMITED

Authors: Derek Brown
Ken Shannon

September, 1982

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INTRODUCTION

LOCATION AND ACCESS

The GOAT claims are situated at 58°56'N and 132°42'W, approximately 52 kilometers north of Trapper Lake (Fig. 1). Access to the property was by helicopter from a base camp on Trapper Lake.

CLAIMS

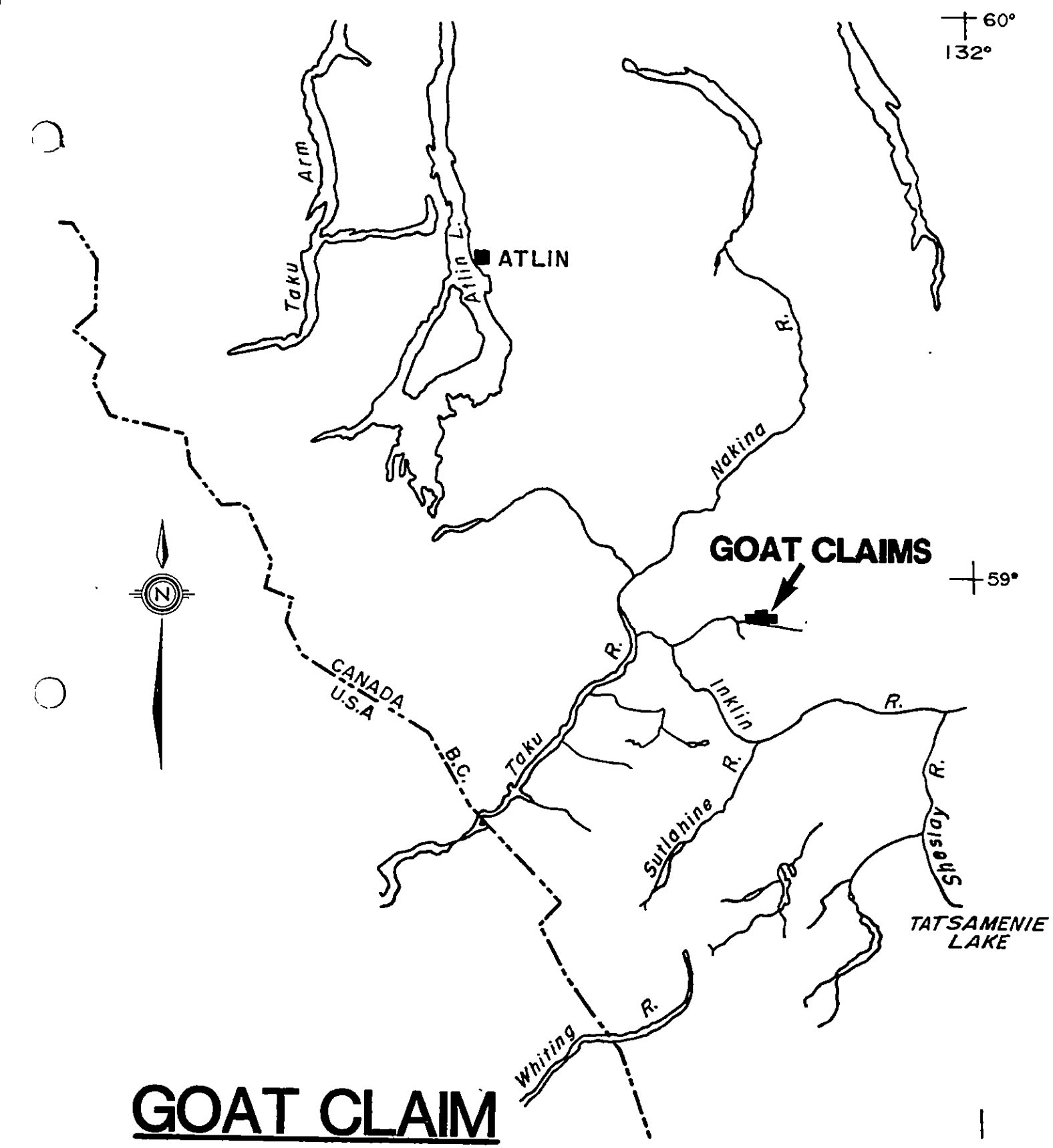
The GOAT claims were staked during July and August, 1981 as follows:

CLAIM	RECORD NUMBER	RECORD DATE	NUMBER OF UNITS
GOAT	1351	July 20,1981	20
GOAT 1	1492	Aug. 21,1981	20
GOAT 2	1493	Aug. 21,1981	20
GOAT 3	1494	Aug. 21,1981	10

REGIONAL GEOLOGY

The GOAT claims are situated along the Nahlin fault which dips steeply to the northeast juxtaposing Permian(?) ultramafic rocks with the Early and Middle Jurassic Laberge Group (Souther, 1971). North of the fault is the Nahlin ultramafic body consisting of variably serpentinized peridotite, gabbro and pyroxene diorite (Monger, 1975). The Laberge Group, in the area of the claims is called the Inklin Formation and comprises a thick sequence of sedimentary rocks predominantly shale and siltstone.

Late Cretaceous to Early Tertiary quartz-feldspar porphyry stocks and dykes (Souther, 1971) intrude the Inklin sedimentary rocks. The porphyry intrusions appear to be concentrated along the Nahlin fault zone.



GOAT CLAIM

LOCATION MAP

M504

0 30
Km

FIGURE I

GEOLOGY OF THE CLAIMS

The Nahlin fault strikes northwest across the claims. The Nahlin ultramafic body, peridotite and serpentinized peridotite, lies to the north of the fault. The Inklin Formation south of the fault is intruded by quartz-feldspar porphyry dykes and a stock.

Nahlin Ultramafic Body (Unit 1a, 1b, 1c)

Peridotite outcrops, Unit 1a of Figure 2, form rough weathering, reddish-brown knobs. A meshwork of chalcedony veins and stringers is common in fractured peridotite. Milky quartz and possibly magnesite line vugs. The peridotite is variably quartz-carbonate altered and secondary fuchsite(?) is common.

Serpentinite exposures, Unit 1b of Figure 2, are generally irregular pods surrounded by partially serpentinized peridotite. Both massive and foliated serpentinite are present on the claims. Serpentinite rubble is abundant along the northern part of the claims as indicated by Figure 2, Unit 1c. The rubble appears to be "slump deposits" from serpentinite outcrops further uphill. Both the Inklin Formation and Recent unconsolidated gravels are overlain by the serpentinite rubble. The rubble has a characteristic greenish-grey colour and commonly forms steep unvegetated slopes.

Inklin Formation (Unit 2)

Approximately 1000 meters of unmetamorphosed Inklin mudstone, shale and siltstone are exposed on the north side of Yeth Creek and along its tributaries. The mudstone is dark grey to black and commonly massive. Shale beds are often recessive weathering and highly fractured. The siltstone is more resistant, weathers grey to

orange-brown, and is thinly laminated with alternating shaly beds. Inklin rocks are often pyritic and clay altered adjacent to the Cretaceous to Tertiary dykes and stock.

Late Cretaceous and Early Tertiary Intrusions (Unit 4, 4a, 4b, 4c)

A quartz-feldspar porphyry stock intrudes the Inklin Formation on the claims, Unit 4a on the geology map. Clay alteration within the intrusion is variable, where intense the rocks are soft and weather white. The porphyry is generally medium-grained and massive. Pyrite, up to 10%, is disseminated throughout the stock and in small quartz veins within the stock.

Felsite and quartz-feldspar porphyry dykes and sills, probably related to the stock, are also clay altered and contain disseminated pyrite. The dykes and sills are aplitic to medium-grained. Contact metamorphic effects are locally evident as narrow biotite hornfels zones and pyritic zones in the Inklin sedimentary rocks. Structurally the dykes and sills are relatively undeformed but locally are warped, truncated and sheared.

The gossanous rocks, Unit 4b, are extensively altered quartz-feldspar porphyry. Some Inklin Formation may lie within the gossanous unit but severe oxidization and inaccessibility hinder differentiation of rock units 2 and 4a in this region. Hydrated iron oxides produce yellow to rusty-brown weathered surfaces. "Fresh" rocks contain up to 15% disseminated pyrite and original feldspars and mafic minerals are completely hydrothermally altered to clay minerals and chlorite.

An intrusive breccia, Unit 4c, is exposed at several locations between the quartz-feldspar porphyry and the Inklin Formation. A large block of breccia approximately 35 meters wide and 85 meters long is exposed on the cliff face 500 meters northeast of the GOAT 1 legal corner post. The breccia is also exposed as thin veins less than 2 centimeters wide cutting felsite dykes. The angular to subrounded fragments range from less than 1 centimeter to over 1 meter across. The fragments are quartz-feldspar porphyry, felsite, shale, mudstone and rarely siltstone. The relative proportions of the fragments is highly variable. The matrix composition also ranges from felsic to argillaceous. Both the fragments and matrix contain disseminated pyrite.

MINERALIZATION AND ALTERATION

Mineralization of the quartz-feldspar porphyry consists of disseminated pyrite. Quartz-calcite stringers in the porphyry have trace amounts of sphalerite and galena. Arsenopyrite blebs are associated with a fine-grained, porphyritic, hornblende andesite dyke in Nickel Creek. A massive sulfide vein up to 15 centimeters thick is exposed in Nickel Creek at the waterfall. The sulfide vein cuts Inklin sedimentary rocks and consists primarily of pyrite, sphalerite and chalcopyrite. Silicified Inklin rocks locally contain abundant disseminated pyrite in small altered zones.

GEOCHEMICAL SURVEY OF THE CLAIMS

71 rock and 88 soil samples were collected and analysed for Ag, As, Sb and Au. Where possible soil samples were taken from the B-horizon at depths of 5 to 20 centimeters, otherwise talus fines or the C-horizon were collected.

Soil samples were placed in kraft wet strength soil bags, air dried and shipped to Chemex Labs, North Vancouver, B. C. The samples were further dried and then sieved, with the -80 mesh portion being retained for analysis. Rock samples were crushed and then pulverized in a ring grinder to -100 mesh. For Au determination, a fire assay - atomic absorption technique is used with the fire assay bead being dissolved in HCl and HNO_3 then analyzed by conventional atomic absorption techniques. For Ag, a mixture of $HClO_4$ and HNO_3 is used to digest the sample, which is followed by atomic absorption spectrophotometry. The As analyses are done by standard colorometric techniques following an $HClO_4$ plus HNO_3 digestion. Antimony analyses were done by digesting the sample in HCl, then adding potassium iodide, extracting with TOP - MIBK and then analyzing by atomic absorption spectrophotometry.

GEOCHEMICAL RESULTS

Ag and Au-Ag anomalies over 0.5 ppm occur in altered Inklin sedimentary rocks adjacent to the Nahlin fault and close to quartz-feldspar porphyry intrusions. An exceptionally high anomaly of 30.0 ppm Ag and 270 ppb Au is from the gossanous unit of altered porphyry (Unit 4b). High Ag values are probably associated with thin quartz-sphalerite stringers in the host rock.

As — As values greater than 15 ppm are considered anomalous. All rock types have some anomalous results.

Sb — Sb anomalies are present throughout the claims. The highest result, 14.6 ppm, was from a soil. Stibnite needles were observed on one fracture face in an Inklin sedimentary rock and may be the source of the Sb anomalies.

The limited number of results indicate a crude correlation between Au, Ag, As and Sb. The highest anomalies are concentrated in Unit 4b, the gossanous zone.

CONCLUSIONS

Conclusions drawn from the limited number of geochemical results are speculative. The Nahlin ultramafic rocks are void of any anomalous geochemical values. Both the altered Inklin Formation and the quartz-feldspar porphyry yield Au, Ag, Sb and As anomalies. The highest Au anomaly was 270 ppb, most are considerably lower. Most of the anomalous values are associated with Unit 4b where clay and pyrite alteration is extensive.

RECOMMENDATIONS

A lack of ore-grade mineralization in both the quartz-feldspar porphyry and the altered zones of the Inklin Formation suggest that there is little potential for a significant mineral deposit. No further work is recommended at this time.

REFERENCES

Monger, J.W.H.

1975: Upper Paleozoic rocks of the Atlin Terrane, Northwestern British Columbia & South-Central Yukon; Geol. Sur. Can., Paper 74-47.

Souther, J.G.

1971: Geology & Mineral Deposits of Tulsequah Map - Area, British Columbia; Geol. Sur. Can., Mem. 362.

1982 EXPLORATION PROGRAM

GOAT CLAIMS

TRAPPER LAKE AREA, B. C.

PERIOD: June 10, 11, 12, 13, 24; July 14, 1982

COSTS:

1. LABOUR:

	Position	Field Days	Office Days
Ken Shannon	Geologist	1.5	1
Derek Brown	"	5	4
Mike Gray	Sampler	3	
Rob Lazenby	"	3	
Fránz Wohlgemuth	"	3	
	Total days	15.5	5

Average cost per field man day =	$100.00 x 15.5	$ 1,550.00
Average cost per office man day =	175.00 x 5	875.00

2. ANALYSIS:

Rocks (Au, As, Ag, Sb) 71 samples @$17.40	1,235.40
Soils (Au, As, Ag, Sb) 88 samples @$15.50	1,364.00

3. CAMP COSTS:

15.50 man days @$79.50/man day	1,232.25

4. HELICOPTER:

9.25 hours @$510.00/hour incl. fuel	4,717.50

5. DRAFTING:

3 man days @$100.00/man day	300.00

6. SAMPLE SHIPPING:

159 samples @$0.60 each	95.40
ASSESSMENT WORK TOTAL	$11,369.55

STATEMENT OF QUALIFICATIONS

I, Derek Brown, graduated in May, 1981 with a B.Sc. (Hons. Geology) from Carleton University, Ontario. I have worked as a geologist since graduation and am presently employed on a temporary basis by Chevron Standard Limited of Vancouver, B. C.

Derek Brown

DEREK BROWN

STATEMENT OF QUALIFICATIONS

I, Ken Shannon, have worked as a geologist in B. C. on a seasonal basis since graduation from the University of British Columbia with a B.Sc. (Hons. Geology) in 1975. A M.Sc. degree was awarded from the Department of Geology at U.B.C. in May, 1982. I am employed as a geologist by Chevron Standard Limited of Vancouver, B. C. Work on the GOAT Claims Group was done under my supervision.

Ken Shannon

KEN SHANNON

GOAT 3

GOAT 1

GOAT 2

LCP

NAHLIN FAULT ZONE

Creek

Steep Creek

Yern

LEGEND

PERMIAN (?)

1 NAHLIN ULTRAMAFIC BODY
- UNIT 1a - peridotite, dunite
- UNIT 1b - serpentinite (in place)
- UNIT 1c - serpentinite rubble

LOWER AND MIDDLE JURASSIC

2 INKLIN FORMATION
- siltstone, shale, mudstone

LATE-CRETACEOUS AND EARLY TERTIARY

4 quartz - feldspar porphyry dykes and sills, clay altered

UNIT 4a - quartz-feldspar porphyry stock
UNIT 4b - gossanous rocks, dominantly altered quartz-feldspar porphyry
UNIT 4c - intrusive breccia, polymictic

SYMBOLS

- Geological boundary (defined, approximate)
- Bedding - inclined, vertical
- Fault - steep to vertical
- Approximate limit of outcrop

1Km

GEOLOGICAL BRANCH
ASSESSMENT REPORT

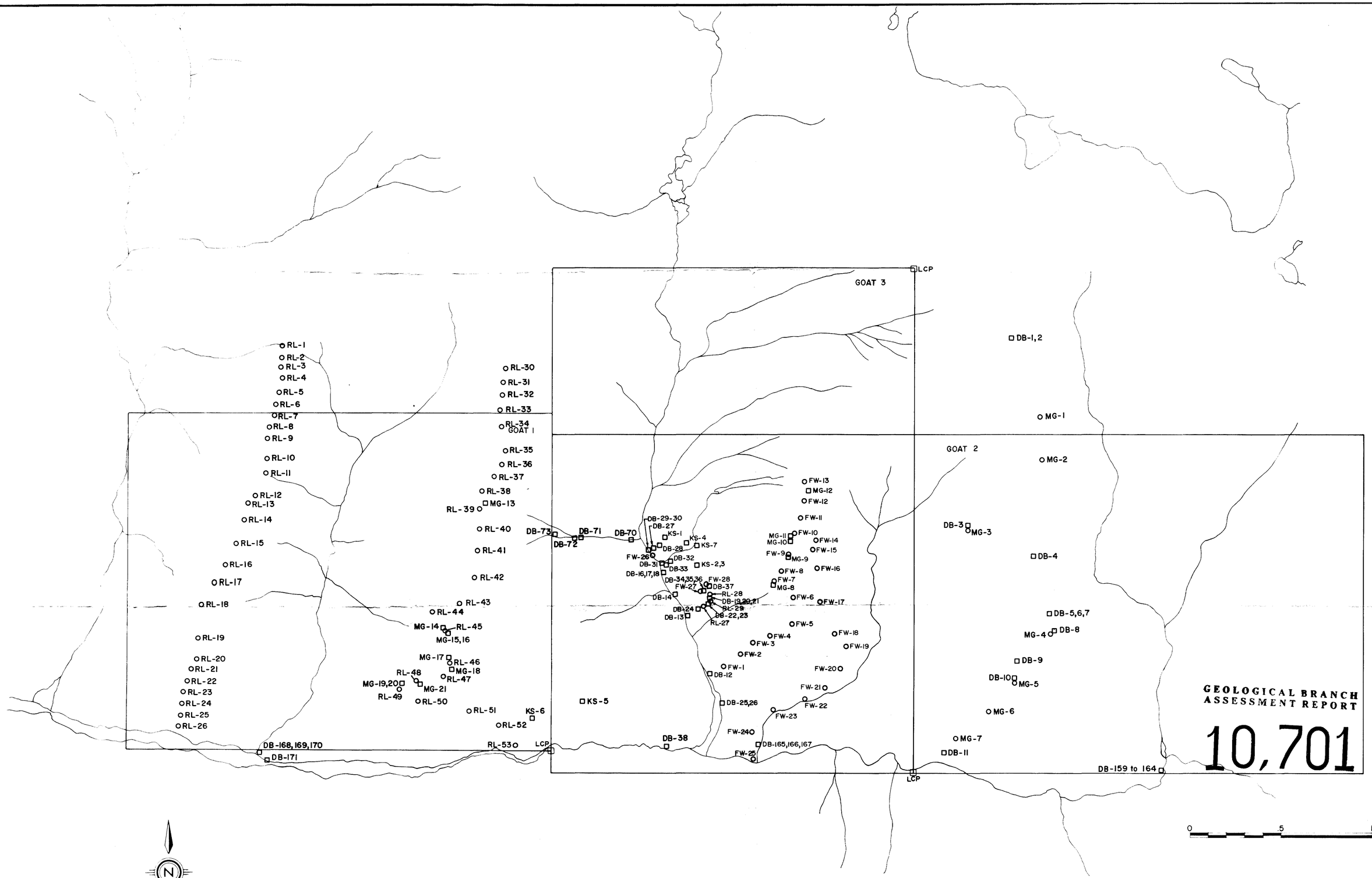
10,701

Chevron Standard Limited
Minerals Staff

GOAT CLAIMS

GEOLOGY

2 | M504 | SEPT./82 | G-6



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ASSESSMENT REPORT

10,701

LEGEND

- O SOIL
- □ ROCK

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GOAT CLAIMS

SAMPLE LOCATIONS

FIGURE No. 3		PROJECT No. M504	
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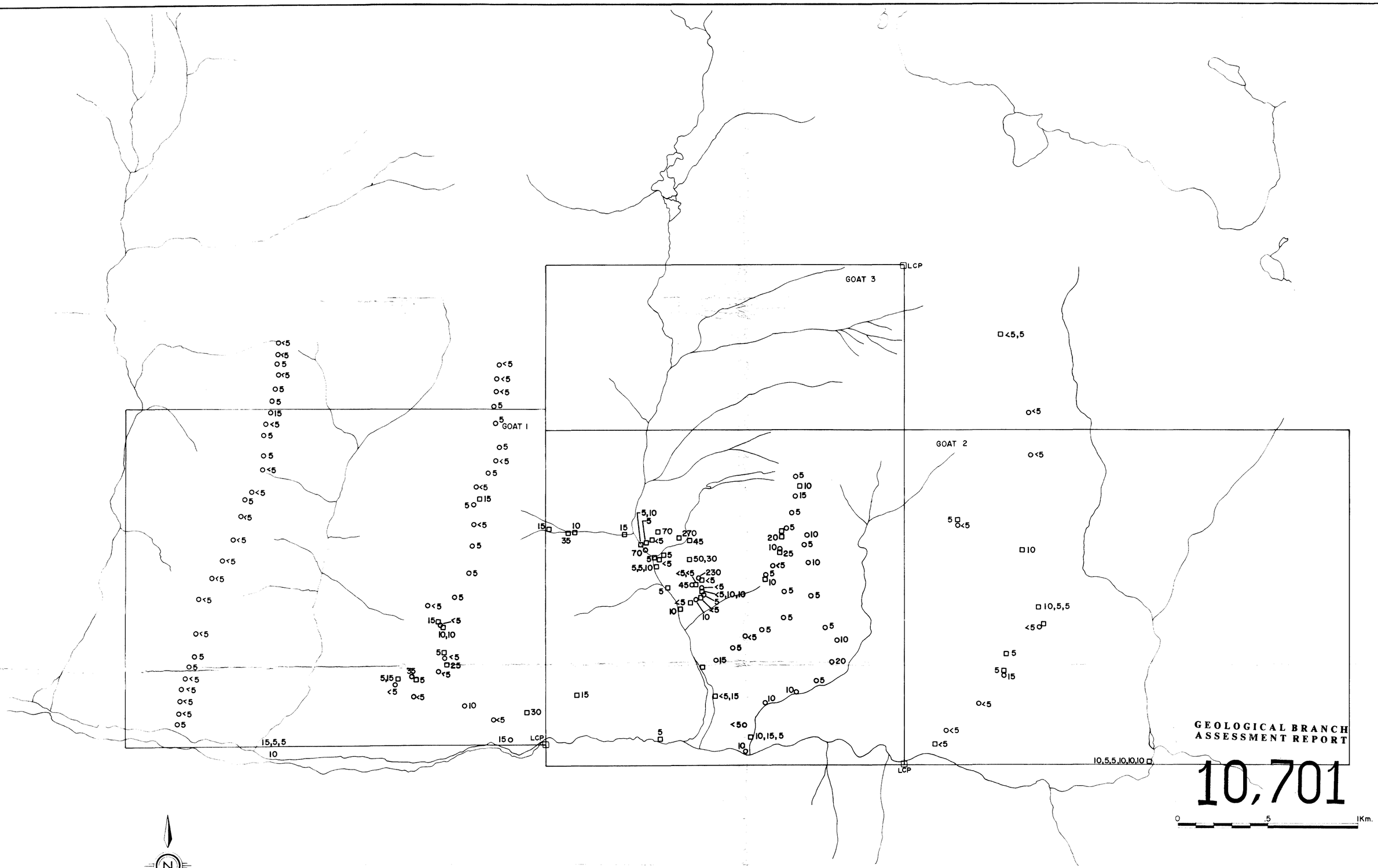
DRAFTED BY K.R.S.			S-20



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GOAT CLAIMS
GEOCHEMISTRY
Au - ppb

FIGURE No. 4		PROJECT No. M504	
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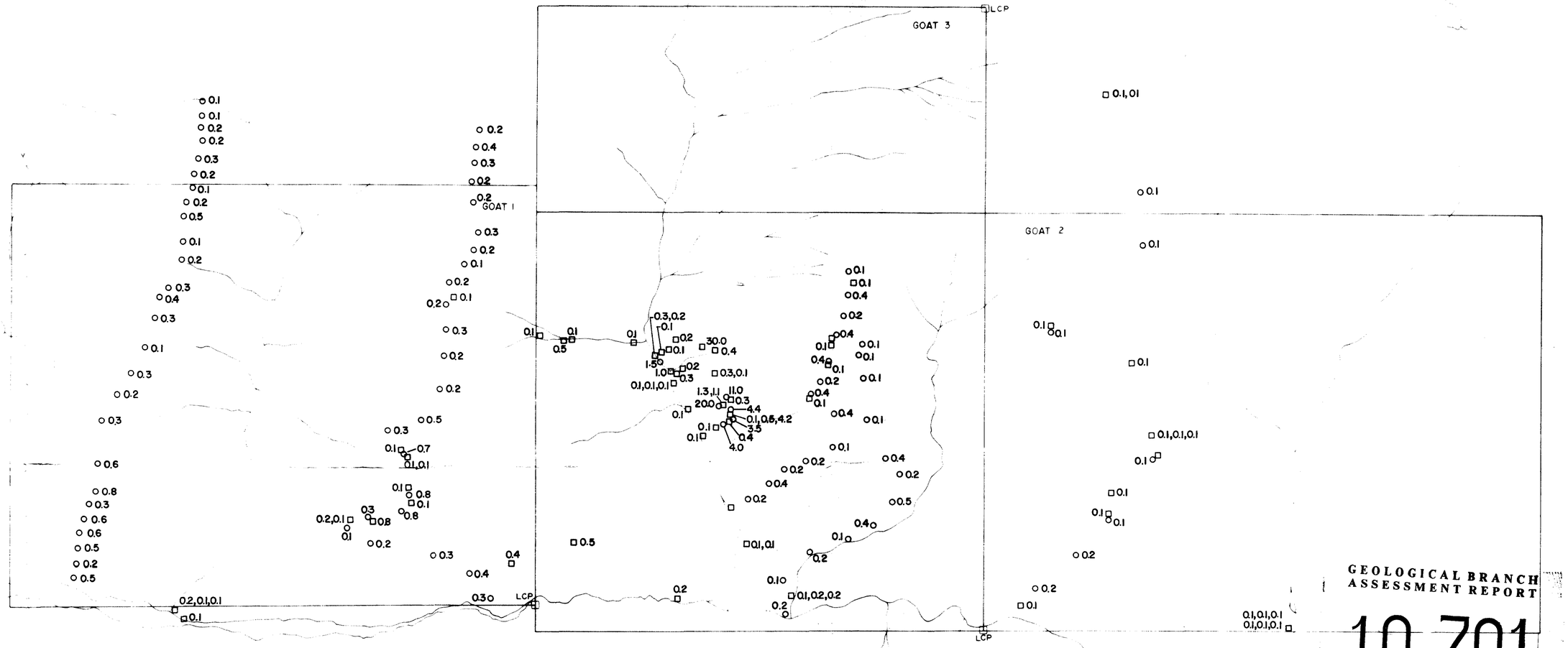
DRAWN BY K.R.S.			



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N

LEGEND

- O SOIL
- □ ROCK

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GOAT CLAIMS

GEOCHEMISTRY

Ag - ppm

SCALE 1:5		PROJECT M504	
SEPT./82			
DRAWN			C-69

GOAT 3

GOAT 1

GOAT 2

LCP

LCP

LCP

LCP

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,701

0 .5 1Km.

N

LEGEND

O SOIL

□ ROCK

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GOAT CLAIMS
GEOCHEMISTRY
As - ppm

FIGURE No 6		PROJECT No M504	
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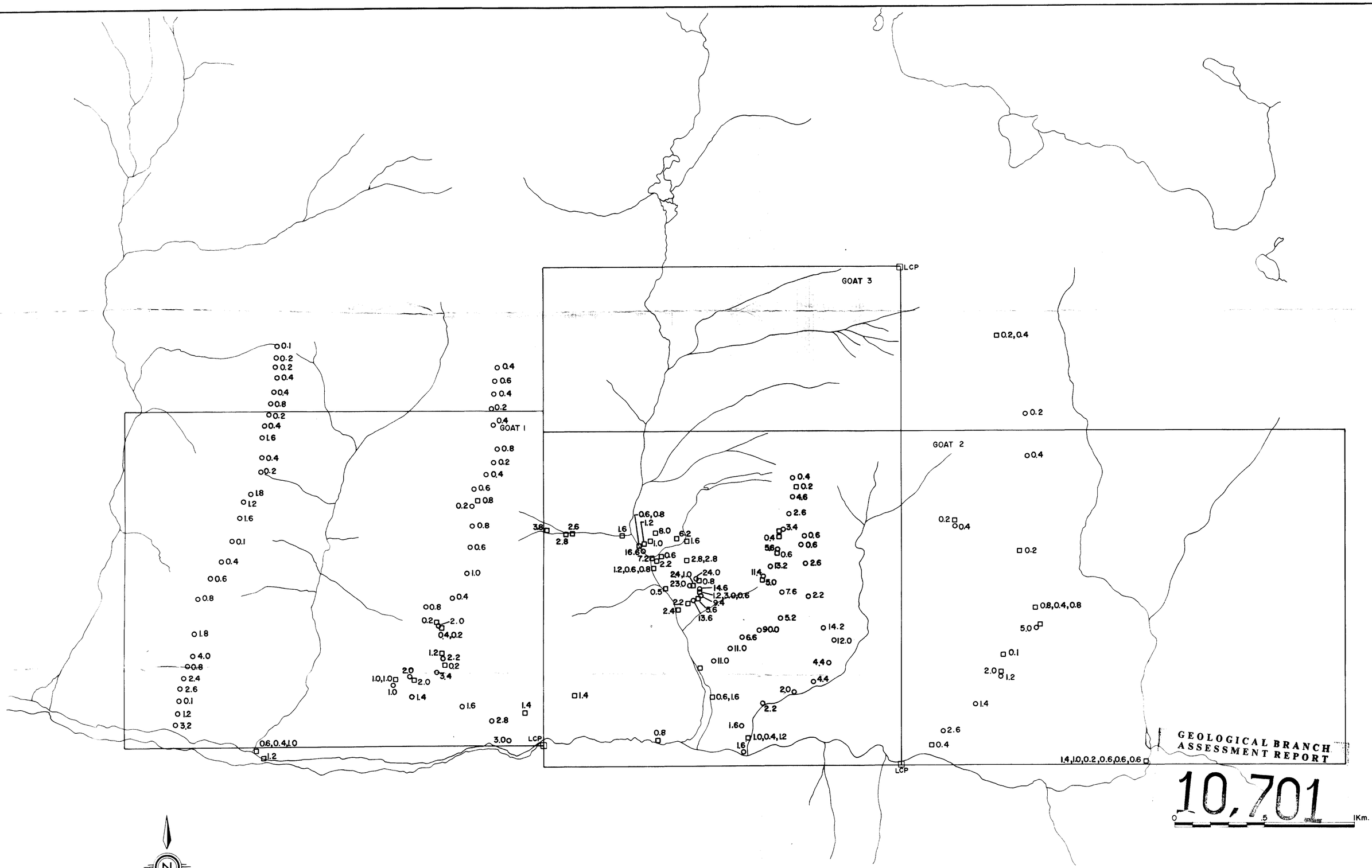
GOAT 1
GOAT 2
GOAT 3
LCP
LCP
LCP
0.1
0.2
0.2
0.4
0.4
0.8
0.2
0.4
1.6
0.4
0.2
1.8
1.2
1.6
0.1
0.4
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0.8
1.8
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GEOLOGICAL BRANCH
ASSESSMENT REPORT
10,701
0
5
Km.
N
LEGEND
SOIL
ROCK
Chevron Standard Limited
Minerals Staff
GOAT CLAIMS
GEOCHEMISTRY
Sb - ppm
FIGURE No 7
PROJECT No M504
DATE SEPT./82
REVISIONS
SCALE 1:10000
NTS No 104 K
FILE No C-71
COMPILED BY K.R.S