GEOCHEMICAL REPORT

ON

THE "XJ","XK","XL","XM","XN","XW","XG"

MINERAL CLAIMS

GATAGA RIVER AREA

LIARD MINING DIVISION

BRITISH COLUMBIA

LATITUDE 58°13'N

LONGITUDE 126°07'W

N.T.S. 94L/1E

OPERATOR: ZAPATA GRANBY CORPORATION

OWNER: NORANDA EXPLORATION COMPANY, LIMITED
(NO PERSONAL LIABILITY)

WORK COMPLETED BETWEEN JULY 23, 1979 and AUGUST 8, 1979

AUTHOR: W.J. WILKINSON B.Sc

June 1980

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INTRODUCTION

In late July and early August, 1979, four men were employed by Zapata Granby Corporation to conduct geochemical exploration and appraisal of Granby's "X" claims in the Braid Creek area. This field crew consisted of three men engaged through Bema Industries, and the writer.

i. Location and Access

The claims are located within N.T.S. map area 94L/1E, on the upper portions of Braid Creek - Through Creek drainage area, roughly midway between the Gataga and Kechika Rivers, 65 km north of Ware.

Access to the claims is by helicopter. Mayfield Lakes, 25 km to the east in the Gataga River valley is suitable for float-equipped aircraft, and was therefore used as a staging area. Mayfield Lakes are 270 km south of Watson Lake, 230 km east of Dease Lake, and 380 km north of Smithers. Float plane access for this programme was from Dease Lake, with additional supplies and helicopter fuel being flown in from Watson Lake. A helicopter based at Driftpile Creek, 20 km southeast of the "X" Claims, was used for access, and, whenever possible, to set out crews.

ii. Topography

The "X" series claims occupy rugged mountainous terrain. Relief is generally less than 500 metres. Valley elevations range from 1,000 metres on Braid Creek at the southern boundary of the XW Claim, to about 1,585 metres on the divide between Braid and Through Creek drainages (west boundary, XK Claim). Peak elevations are around 2,000 metres. Topographic features have a prominent northwest orientation, parallel to the geologic fabric.

Vegetation is predominantly alpine (moss, grass) to sub-alpine (shrubs and stunted spruce and pine).

Foot travel is unrestricted on the ridges and along certain game trails but is moderately to extremely difficult along swampy valley bottoms, along the more deeply incised, narrow valleys, and on the brushy, sub-alpine slopes.

iii. Property and Definition

Claims were located on Braid Creek by Granby in 1977, after regional exploration work confirmed the presence of the "Black Clastic" belt, along with numerous Smithsonite occurrences. Recconnaissance geological mapping, silt sampling and limited soil sampling were carried out (see Assessment Report No. 6689, by J.H.B. Wilkins). Silt sampling revealed areas anomalous in zinc, lead, and barium.

The 1979 programme had two objectives:

1) To investigate and evaluate, as far as possible, the anomalous 1977 silt geochemistry.

2) To conduct a more detailed geochemical exploration of the claims by grid soil-sampling.

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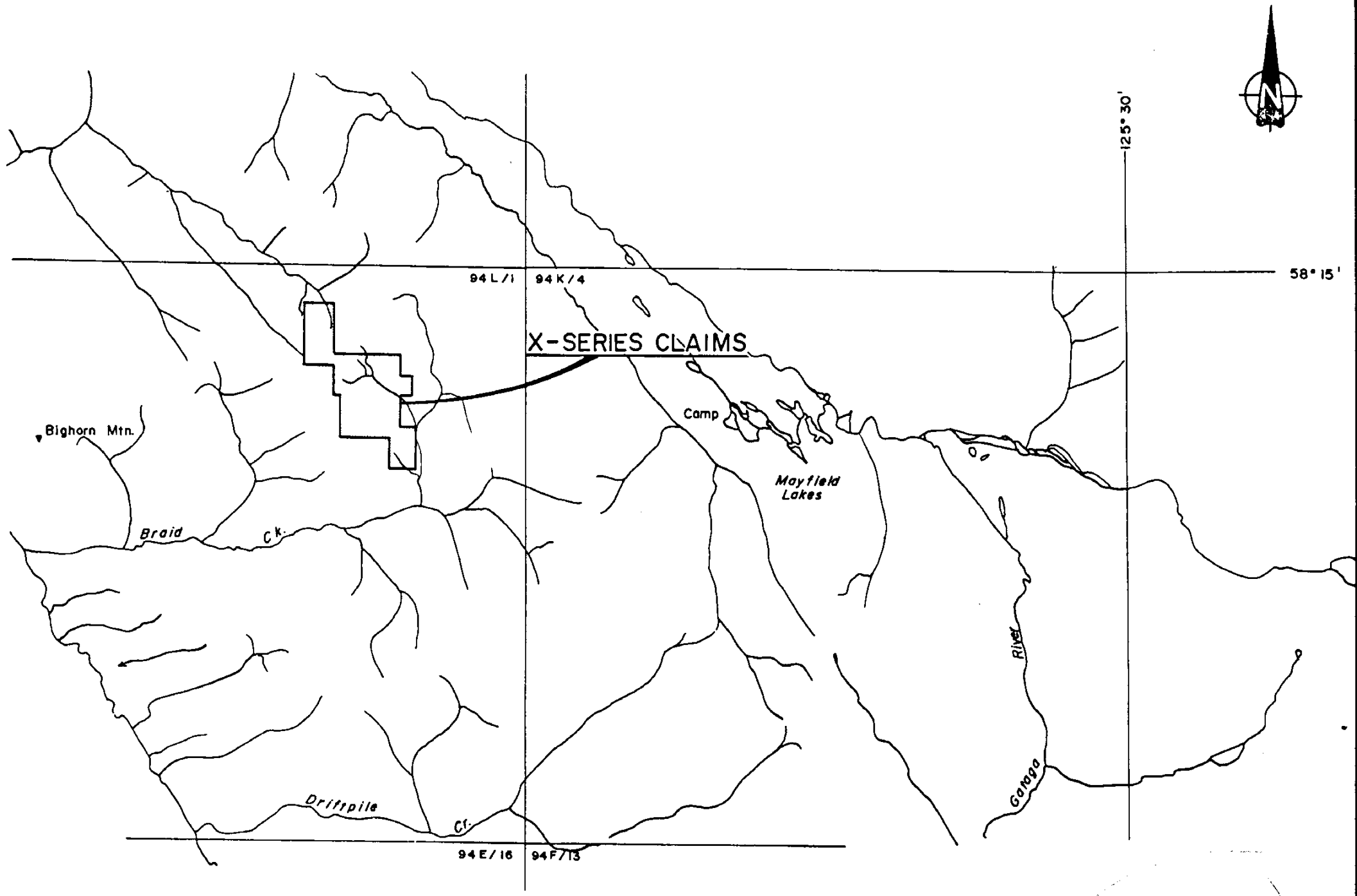


NORANDA EXPLORATION COMPANY LIMITED

LOCATION MAP

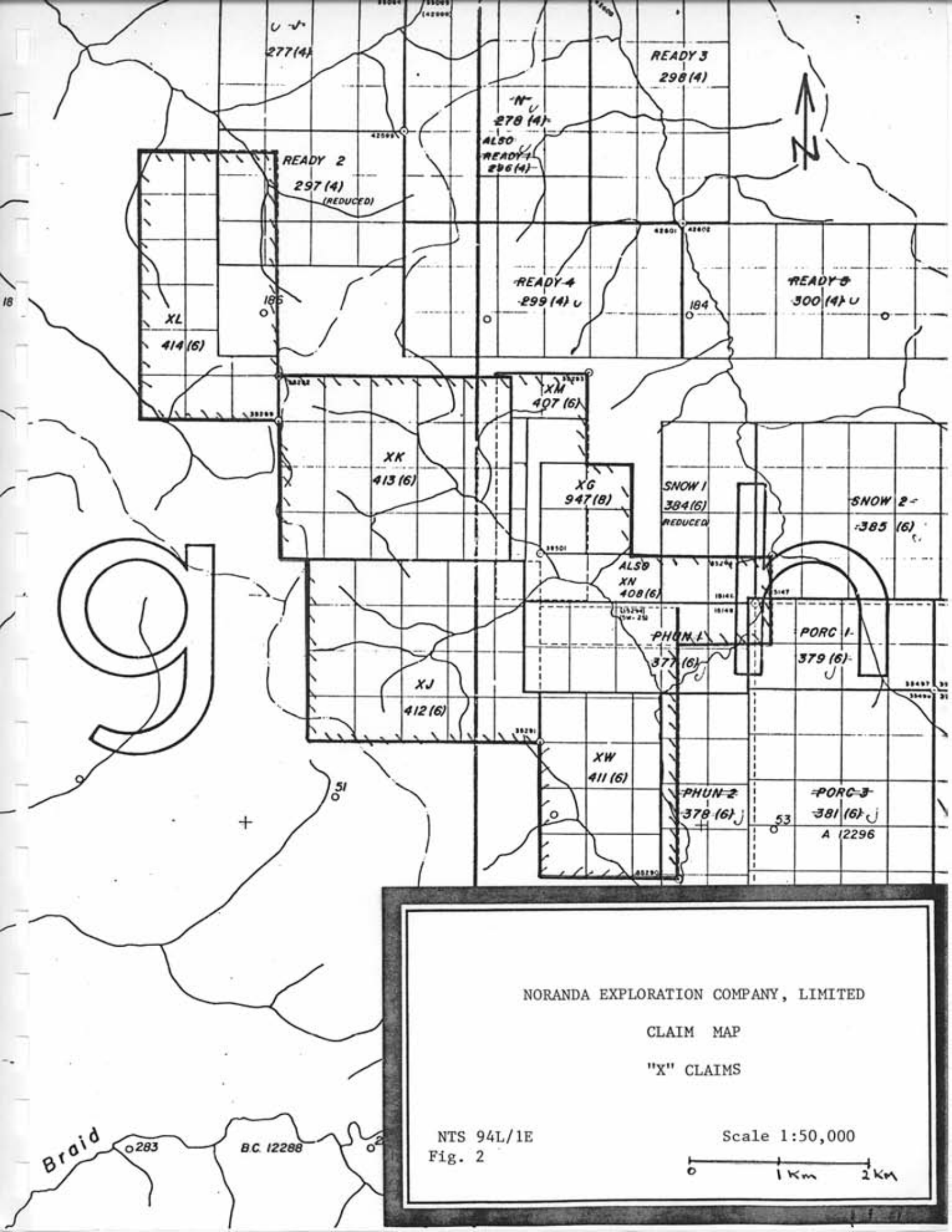
5 0 5 MILES

KILOMETERS 5 0 5

N.T.S. 94 K/4 . 94 L/1

FEB 1980

Figure 1



NORANDA EXPLORATION COMPANY, LIMITED

CLAIM MAP

"X" CLAIMS

NTS 94L/1E

Fig. 2

Scale 1:50,000

0 1 Km 2 Km

The Braid Creek "X" property presently consists of 100 metric claim units as listed below:

Braid Creek "X" Claims Property Status

Claim Name	Record No.	No. of Units	Date Recorded
XM	407	10	June 29, 1977
XN	408	10	" " "
XW	411	18	" " "
XJ	412	20	" " "
XK	413	20	" " "
XL	414	18	" " "
XG	947	4	August 30, 1979*

(* - XG Claim was located August 4, 1979)

Ownership of this property was transferred from Granby to Noranda Exploration Company, Limited on November 30, 1979.

iv. Economic Assessment of Property

No mineralization of economic potential is known on the property. The geologic setting is favourable for the occurrence of shale-hosted baritic zinc-lead deposits. Barite and Smithsonite are present as well as a number of geochemical anomalies.

v. Work Summary

38 line-kilometres were soil sampled at 50 metre intervals from a central base line 6.2 kilometres long. The areas where silt geochemical anomalies were located in 1977 were carefully explored for baritic horizons and for zinc-lead mineralization.

A total of 793 soil samples were collected on the grid.

vi. Claims Worked On

Work was actually performed on the XK, XL, XM, XJ and XG Mineral Claims.

vii.Purpose of Project

This property is being explored for shale-hosted baritic zinc-lead-silver mineralization. Soil geochemistry was selected as a logical follow-up to the original (1977) silt sampling and geological recconnaissance programme, with the objective of delineating areas favourable for further, more detailed investigation. Negative results would have lead to a decision to abandon the claims, since no ore sulphides have been found in place.

GEOLOGY

(i) Lithology

The claims are underlain by basinal shales which are tentatively identified

.../3

as the Ordovician-Silurian Road River Formation and the Devonian-Mississippian Gunsteel Formation. (These units are similar, and positive identification would require fossil evidence (graptolites) which was not found).

Shales assigned to the Road River Formation (?) are exposed in three anticlinal structures running northwesterly across the claims. They are typically coal-black, highly graphitic, non-siliceous rocks. A distinctive mottled orange-brown and white weathering unit characterized in several places by "flaser" beds reported as typical of the uppermost Road River was noted in several localities.

The Gunsteel Formation (?) is preserved in the synclines which typically alternate with the anticlines in which the older Road River is exposed, and thus, although not inherently more recessive, it tends to occupy trough-like depressions and minor stream tributaries, at higher levels. The Gunsteel (?) consists of black, slightly graphitic blue-grey-weathering siliceous shales with cherty lenses, with at least one prominent cherty sandstone bed. Detailed stratigraphy of this formation has not been determined - exposures are poor, and the probable presence of overturned and repeated beds renders suspect any preliminary attempt at classification.

Within the Gunsteel (?), buff-brown weathering, baritic shales, relatively enriched with pyrite nodules, have been located at several localities. Where visible in hand specimens, barite occurs as nodular concretions along bedded planes and as thin laminae interbedded with shale.

At one locality, #411, pyrite in shales approaches near-massive proportions.

(ii) Structure

The area of interest is bounded to the west by a northwesterly thrust fault separating Kechika limey shales (Cambrian-Ordovician) from the younger, basinal shales (Road River, Gunsteel) present toward the east.

Structure in the basinal shales consists of a succession of overturned folds striking northwest with limbs dipping southwest, giving way toward the northeast to a normal anticline.

Faulting is inferred from discontinuities along the trend of the fold belt. An E-NE fault is inferred along the east-flowing drainage on the XK claim, with an apparent westerly offset of the folds north of the fault.

GEOCHEMISTRY

(i) Sampling Methods

A base line 6.2 km long was established using compass and chain, oriented at N45°W (true). The base line was flagged, and labelled at 100 metre intervals from 2+00 North to 64+00 North. Cross lines were run out perpendicular to the base line using compass and chain. Maximum line spacing was 400 metres. The intervals 2+00N to 14+00N, 26+00N to 40+00N, and 60+00N to 64+00N were sampled at 200 metre line spacing because of the presence of anomalous silt geochemistry and/or barite or Smithsonite.

Samples were collected at 50 metre intervals, from the "B" soil horizon, at a depth of 10-20 cm, using an iron mattock to first dig a hole, then placing the sample in a high wet strength Kraft paper sample bag.

ii) Analytical Procedures

Samples were submitted to Acme Analytical Laboratories, 852 E. Hastings Street, Vancouver, B.C. for analysis for lead, zinc, silver and barium.

The samples were here dried at 75° Celsius and sieved to -80 mesh. Analysis for silver, lead and zinc was done from a 0.50 gram sample, digested with dilute aqua regia in a boiling water bath and diluted to 10 mls. with demineralized water, by Atomic Absorption. (Silver results were background corrected). Barium analysis was also by Atomic Absorption, from a 0.100 gram sample digested hot with NaOH and EDTA solution.

iii) Interpretation of Results

a) Appraisal of Silt (1977) Anomalies

Three areas of anomalous silts were classified as targets for field examination on the basis of high geochemical response:

Area 1 on the XL Claim, a north-flowing tributary yielded high zinc geochemistry and very high barium geochemistry.

Area 2 on the XK Claim, two southeast flowing tributaries of Braid Creek were strongly anomalous in zinc; the more northerly yielded good lead response in one sample (410 ppm).

Area 3 on the XK Claim, southeast corner - high zinc geochemistry on a small tributary coincided with a barite float occurrence.

These areas were investigated by closing up the line spacing on the grid to 200 metres over them, and by an appraisal in the field. In Area 1, the XL Claim, the high barium silt geochemistry (19,000 ppm) led directly to the discovery of a nodular baritic shales outcrop, extending northwesterly for several hundred metres from the anomalous silts. Only minor Smithsonite was noted. Soil sampling resulted in quite weak anomalies, with high barium response following the known trend of baritic shales on lines 60+00N to 64+00N (figure 3). In area 2, XK Claim, anomalous geochemistry is partly related to springs which have formed bright red and orange gossans. Bedrock is poorly exposed, deeply weathered and leached. A massive pyrite horizon roughly 30 cm thick was noted in one locality (411). Soil sampling over this area confirmed the high lead-zinc values, and results suggest that the ridge between the anomalous tributaries may contain a lead-zinc sulphide horizon which is causing anomalies on both drainages. In Area 3, investigation of rock surfaces exposed by slumping indicated a high proportion of Smithsonite in strongly fractured and weathered shales. A horizon of massive barite was traced in sub-outcrop across the top of the exposure, but no ore sulphides were found. Soil geochemistry results were not strongly anomalous. In attempts to expose the barite on bedrock, frost was encountered at about one metre below surface. As this was on a northeast slope in early August this frost may well be permanent, and could therefore minimize the effectiveness of geochemistry in the immediate area. The area immediately upslope and along strike from the barite occurrence merits further investigation. Steep, covered slopes prevail and will hamper further investigation.

b) Soil Grid Results and Interpretation

The soil samples were analyzed for lead, zinc and silver, the principal

target metals, as well as for barium, which is characteristic of the ore horizons. Anomalous geochemical response was obtained for each element. To date, only barium response has been shown to be related to anomalous concentrations in bedrock.

Barium: A generally high fluctuating background for barium is present across the grid. At 500 ppm, a number of small scattered anomalies are outlined, as well as three prominent larger zones. The most northerly of these large zones extends from 5200N (area 1). Barite in the Gunsteel (?) shales was confirmed here during the fieldwork, while investigating a barium silt anomaly from the same area. An anomaly in a westward extension of the central part of the grid is partially coincident with strongly anomalous values for zinc. Highly anomalous response across the south end of the grid reflects known exposures of baritic shale east of the creek, and also a trenched sub-outcrop of massive barite running along a steep hillside immediately west of this northwest fork of Braid Creek (area 3).

Anomalous barium values have thus been demonstrated to be indicative of barite in the underlying rocks. The barium anomalies partially outline the areas considered most favourable for the presence of ore horizons.

Lead: Most of the grid is not anomalous for lead, with background values generally much less than 60 ppm. The largest anomaly, silt area 2, near the centre of the grid was contoured at 100 ppm, with many values over 200 ppm, ranging to a maximum of 440 ppm. The anomaly occurs on lines 2200 N, and 2600 N, and is roughly 300 metres wide. The cause of the anomaly is unknown. This area is overburden-covered, but is believed to be underlain by a dip-slope consisting of Gunsteel shale.

This anomaly lies just 250 metres east up-slope of a rather spectacular zinc anomaly, and this general area therefore merits a more detailed examination.

A small, weaker anomaly at the extreme south end of the grid coincides with moderately anomalous zinc and anomalous barite, in the vicinity of the massive barite sub-outcrops, and therefore merits further attention. (A soil sample taken at a depth of 0.5 metre in this area assayed: 405 ppm Pb, 8000 ppm Zn, 6.7 ppm Ag).

Zinc: Background for zinc is relatively high, generally in the 80 - 150 ppm range. Contouring of results at 200 ppm reveals relatively broad trends running parallel to geological contacts. Contouring at 1,000 ppm reveals small, widely scattered zones, some of which are related to known Smithsonite occurrences in cherty Gunsteel (?) shales.

A zone highly anomalous in zinc was picked up on three lines (220 N, 2400 N, 2800 N) which were extended west of the remainder of the grid in order to obtain some data over a rather atypical east-west valley situated on the XK claim. Scattered across the valley floor are numerous small gossanous creeks and pools and it is therefore possible that a larger inactive "ore" gossan might be present under the moss and grass.

Sampling results (two adjoining sample stations yielded soil analyses of 11.6% and 4.9% zinc) suggest strongly that a gossan related to a zinc-lead ore horizon is present nearby. More detailed soil sampling is clearly required in t this area, as well as some form of sub-surface investigation.

Silver: Background for silver is in the 0.1-0.5 ppm range. Anomalous values were contoured at 1.0 and 10.0 ppm. The 1.0 ppm contour outlines extremely narrow, linear anomalies running parallel to geological contacts. In several areas, anomalous silver correlates with anomalous zinc, lead, barium, thereby

re-enforcing these anomalies. The highest silver response (20.2 ppm) occurs in an area which has not been closely examined (probably overburden covered), and occurs just 50 metres upslope from a barium high (15,000 ppm). The area of this anomaly should be explored in detail.

CONCLUSIONS

The brief 1979 exploration programme on the "X" claims was designed to gather some clear indication of the potential of the claims. Negative results would have been sufficient justification for a decision to abandon the claims, insofar as no ore sulphides in place have been discovered. The 1979 programme however has confirmed that two geological Formations favourable for lead-zinc (silver) ore are present on the claims in an attractive structural setting. Barite, which seems to be characteristic of sub-basins in which ore occurs, is present in abundance. Geochemical response is lower in lead than might be expected, but nevertheless does correlate with zinc and silver anomalies. Zinc (and to a lesser extent, silver) geochemistry clearly outlines areas where massive sulphide horizons could very well be present. Further soil sampling is clearly required.

Physical work, such as hand trenching, is not likely to be a satisfactory means of evaluating these anomalies. At Driftpile Creek, where ore horizons outcrop, they are so weathered, oxidized and leached of sulphides as to be completely unimpressive. This leached zone is roughly 10 metres deep. Backhoe or bulldozer trenching is clearly preferable, but may be impractical because of the remoteness of the region. The feasibility of flying a small bulldozer to the property should be investigated, however. Landing large aircraft in this area on the snow in late winter should be possible.

I conclude that this property has considerable potential for the eventual discovery of strata-bound zinc-lead (silver) ore.

Signed

W. J. Wilkinson, B.Sc

GEOLOGICAL ASSOCIATION OF CANADA
W. J. WILKINSON
FELLOW

APPENDIX 1

ITEMIZED COST STATEMENT

Bema Industries Limited Invoice A083 (labour & disbursements - invoice attached)		7,758.77
Bema Industries Invoice A090 (truck rental $672.70, saw rental $25.00)		697.70
Wages, W.J. Wilkinson, July 23 - August 8 inclusive, 17 days @ $175.00 per day		2,975.00
Travel Costs - Wilkinson - Air fare Vancouver to Smithers return via Terrace		152.70)
Accommodation, Wilkinson, July 22,23, Aug. 7		64.05)
Meals while travelling (including crew)		176.75)
		392.50
Air Charters		
Float Plane: B.C.- Yukon Air Invoices 11737, 11624		1,920.00
Helicopter : Trans North Turbo Air Invoices 34016,34025, 34027,34031,34033,34036,34042,34045,34046		2,380.00
Fuel (Helicopter)		
Airport Texaco Service, Watson Lake, 5bbls JP-4		470.00
Assays		
From Acme Analytical Laboratories Ltd. Invoice 0372 (Aug. 20/79) 793 Samples for Pb,Zn,Ag,Ba @ $3.85 (less 10%)		3,022.42
Bus Freight (samples), Smithers to Vancouver		68.65
Camp Costs		
Groceries - Super Value, Smithers	446.87	
" - Campground Service, Watson Lake	124.25	
Expediting - C.J.L. Enterprises, Smithers	68.00	
" - Yukon Expediting Ltd, Watson Lk,	102.50	
	741.62	741.62
Report Preparation		1,000.00
TOTAL COST		$21,426.66

:M INDUSTRIES LTD. ~~19790 - 88 AVENUE RR#1 LANGLEY B.C. V3A 6Y3 (604)888-9300~~
5780 - 203rd St; LANGLEY, B.C. V3A 1W3

INVOICE A 083

DATE August 14, 197

FILE NO.

PROJECT 79-28

Mr. Bill Wilkinson
Granby Mining Corporation
15th Floor 1066 West Hastings St;
Vancouver, B.C.
V6E 3X1

Re: Kattaga River Prospecting/Linecutting
July 20 - August 8

LABOUR

Mr. L. Warren, Supervisor	18½ Days @ $175.00/day	$3,237.5
Mr. D. Matheson, Linecutter	176 Hours @ $13.25/hr.	2,332.0
Mr. A. Vincent, Asst.	172 Hours @ $ 8.25/hr.	1,419.0

DISBURSEMENTS

Greyhound Stage Lines (receipt forwarded from Smithers)	$ 68.65	
Sandman Inn; Smithers	54.96	
	27.99	
	225.41	
D. Matheson Expenses	21.04	
L. Warren Expenses	83.28	
Langley Travel, A. Vincent (Van. - Smithers - Van.)	150.00	
C P Air, D. Matheson (Terrace - Van.)	76.70	
SUB TOTAL	$708.03	
Less D. Matheson Phone Bill	38.26	
	$669.77	
15% overhead charge	100.50	
	$770.27	770.[illegible]

TOTAL $7,758.[illegible]

This is our account, ~~$7,759.04~~
BEMA INDUSTRIES LTD.

Per: Carole Perkins

O.K. 341-250 $3237.5
341-265 $4,521.2
W Wilkinson

– Attach copies to Appendix I

APPENDIX 11

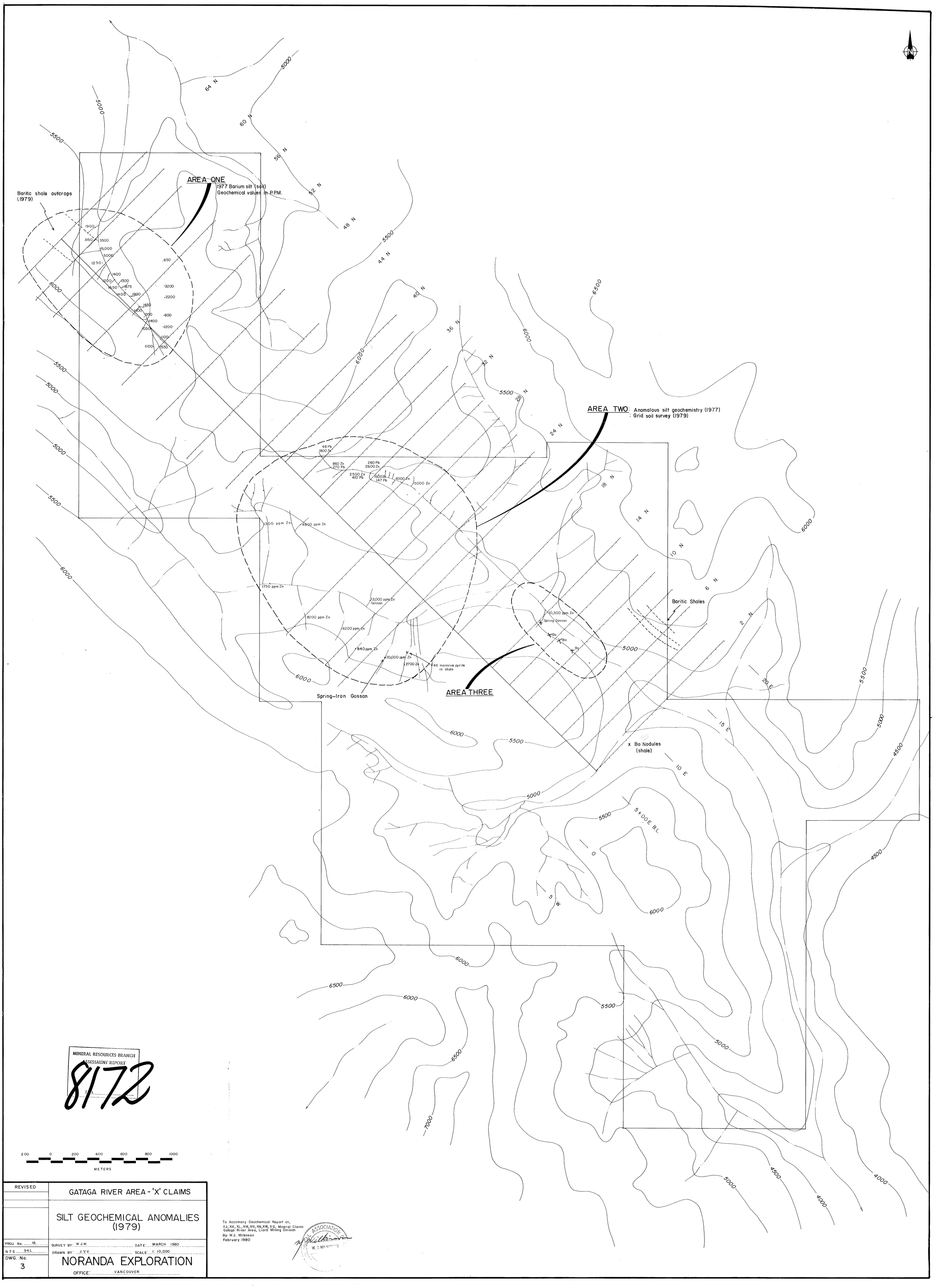
AUTHOR'S QUALIFICATIONS

The author holds a B.Sc. degree in geology from the University of British Columbia, is a Fellow of the Geological Association of Canada, and has been practising his profession continuously for twelve years. He has been employed by Zapata Granby Corporation for 10 years, initially as District Geologist (Smithers), then from 1977 - 1979 as Senior Exploration Geologist (Vancouver). From June through November, 1979 he was Manager, Metals Exploration for Granby. He was responsible for planning and supervision of this programme and directed field work on the property.

APPENDIX 111

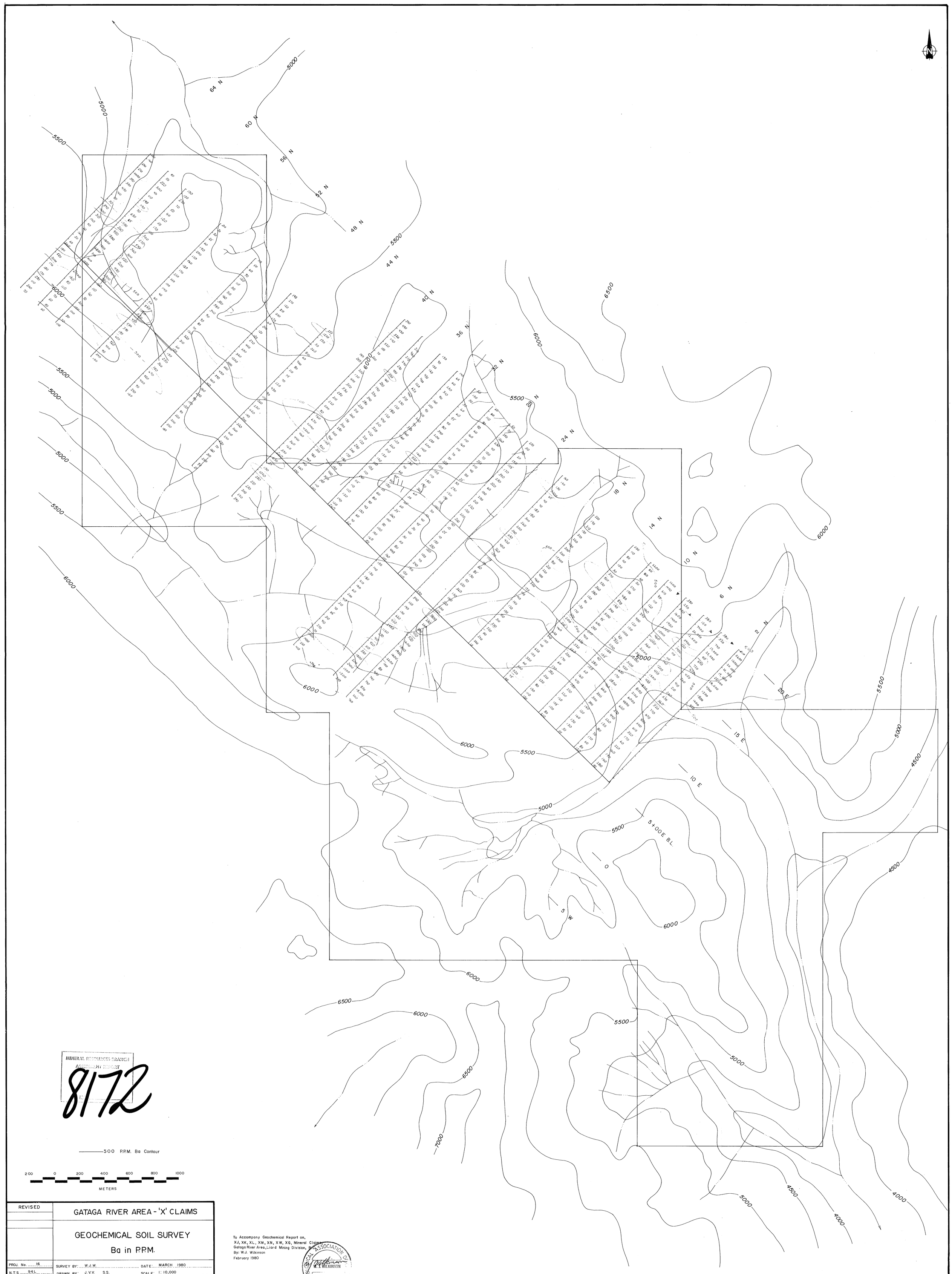
Bibliography

Wilkins, J.H.B., 1978: Geology and Geochemistry of the XM, XN, BY, GRAN, XW, XJ, XK, XL Claims; Assessment Report 6689



REVISED	GATAGA RIVER AREA - 'X' CLAIMS
	SILT GEOCHEMICAL ANOMALIES (1979)
PROJ. No. 16	SURVEY BY: W.J.W. DATE: MARCH 1980
N.T.S. 94L	DRAWN BY: J.V.V. SCALE: 1:10,000
DWG. No. 3	NORANDA EXPLORATION
	OFFICE: VANCOUVER

To Accomany Geochemical Report on,
XJ, XK, XL, XM, XN, XN, XW, XG, Mineral Claims
Gataga River Area, Liard Mining Division
By: W.J. Wilkinson
February 1980



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8172

500 P.P.M. Ba Contour

200 0 200 400 600 800 1000
METERS

REVISED	GATAGA RIVER AREA - 'X' CLAIMS
	GEOCHEMICAL SOIL SURVEY Ba in P.P.M.
PROJ. No. 16	SURVEY BY: W.J.W. DATE: MARCH 1980
N.T.S. 94L	DRAWN BY: J.V.V. S.S. SCALE: 1: 10,000
DWG. No. 4	NORANDA EXPLORATION OFFICE: VANCOUVER

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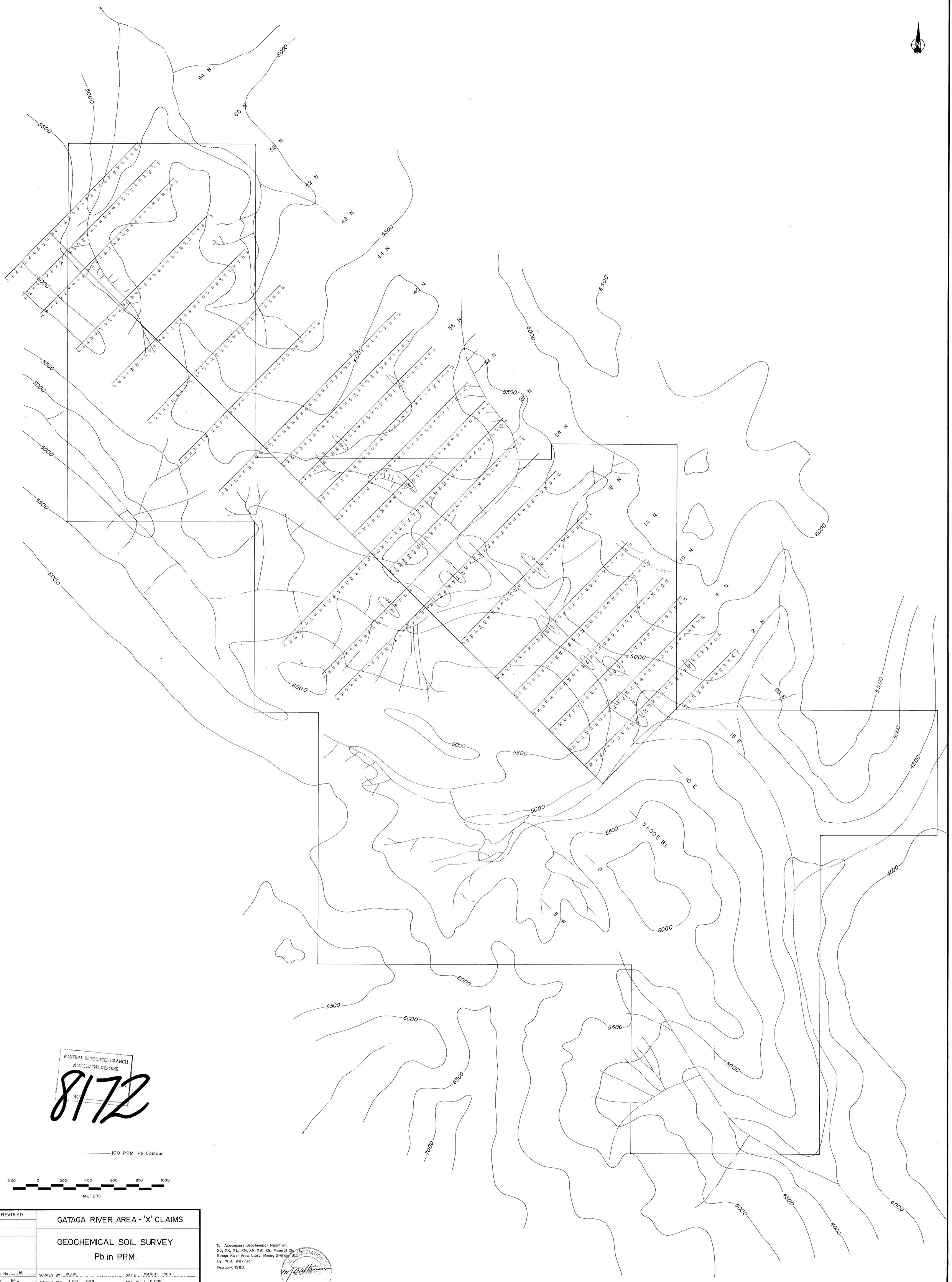

MINERAL RESOURCES BRANCH
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8172

100 P.P.M. Pb Contour

200 0 200 400 600 800 1000
METERS

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	GEOCHEMICAL SOIL SURVEY Pb in P.P.M.
PROJ. No. 16	SURVEY BY: W.J.W. DATE: MARCH 1980
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DWG. No. 5	NORANDA EXPLORATION OFFICE: VANCOUVER

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ASSOCIATION OF
W. J. WILKINSON

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8172

1000 P.P.M. Contour

200 0 200 400 600 800 1000
METERS

REVISED	GATAGA RIVER AREA - 'X' CLAIMS
	GEOCHEMCAL SOIL SURVEY Zn in P.P.M.
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DWG. No. 6	NORANDA EXPLORATION OFFICE: VANCOUVER

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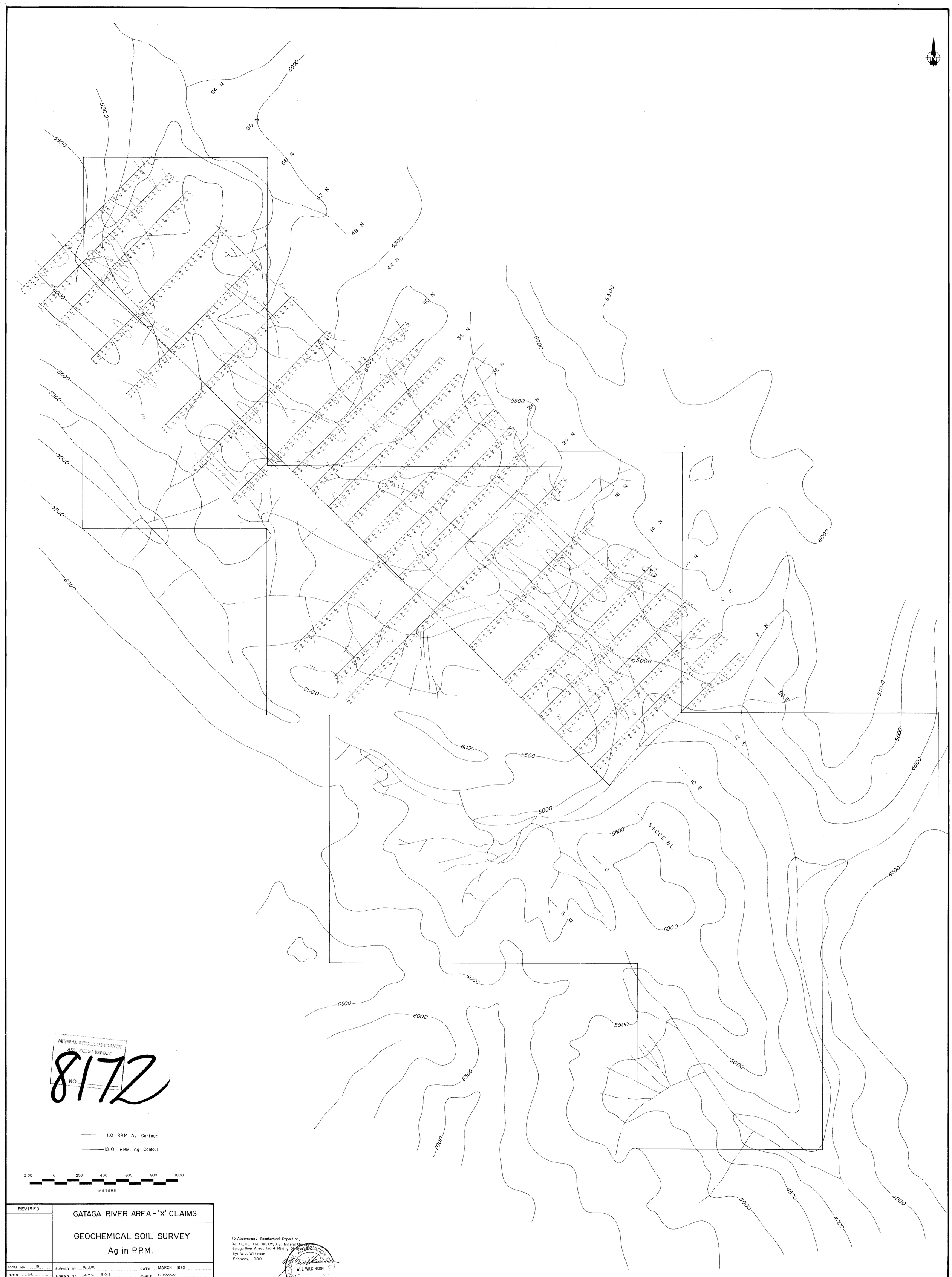
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5 E
10 E
15 E
5+00 E B.L.
0
5 W
5000
5500
6000
6500
4500
4000
7000
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8172
1.0 P.P.M Ag Contour
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200 0 200 400 600 800 1000
METERS
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