MAP NO.:
115 I 3

ASSESSMENT REPORT X
PROSPECTUS
CONFIDENTIAL X
OPEN FILE

DOCUMENT NO: 092987
MINING DISTRICT: WHITEHORSE
TYPE OF WORK: TRENCHING, GEOPHYSICS, GEOCHEMISTRY

REPORT FILED UNDER: AURCHEM EXPLORATIONS LIMITED

DATE PERFORMED: MAY 26 AUG 1, 1991 **DATE FILED:** DECEMBER 10, 1991

LOCATION: **LAT.:** 62°05'N **AREA:** MT NANSEN

LONG.: 137°10'W **VALUE $:**51,600

CLAIM NAME & NO.: RAS 1-4, MSL, BIT 1-5
WEDGE 5-10, WEDGE 15, BULL 1-10
JLZ, JBF

WORK DONE BY: MARK LANGDON

WORK DONE FOR: AURCHEM EXPLORATION LIMITED

DATE TO GOOD STANDING:

REMARKS: THE EXISTING EXISTING GRID ON THE PROPERTY WAS EXPANDED TO CONVER NEW GROUND STAKED. A TOTAL FIELD MAGNETOMETER SURVEY AN I.P./ RESISTIVITY SURVEY WERE CONDUCTED OVER THE ENTIRE GRID. 300 SOIL SAMPLES WERE COLLECTED. TWO CAT TRENCHED WERE EXCAVATED. SOME VERY HIGHGRADE ASSAYS WERE RETURNED OVER SHORT WIDTHS FROM THE TRENCHES. THE GEOPHYSICS RESULTED IN SOME ANOMALIES THAT ARE IN NEED OF INTERPRETATION.

Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

M.R. file no.

R.M.M.R. file no.

Date forwarded 6 Dec 1991

TRANSMITTAL FORM

From ▶ Mining Recorder at: Whitehorse

To ▶ Regional Manager, Mineral Rights at Whitehorse, Y.T.

For action are:

- ☐ NEW APPLICATION FOR PLACER LEASE TO PROSPECT — Name
- ☐ RENEWAL APPLICATION PLACER LEASE TO PROSPECT — Name — Lease no.
- ☐ AFFIDAVIT OF EXPENDITURE ON PLACER LEASE — Name — Lease no.
- ☐ SECURITY DEPOSIT
- ☐ FINANCIAL ABILITY
- ☐ ASSIGNMENT OF PLACER LEASE NO. — From — To
- ☐ GROUPING APPLICATION UNDER SEC. 52(2) PLACER MINING ACT. — Owner
- ☐ DIAMOND DRILL LOGS — Claims — Claim sheet no.
- ☑ QUARTZ ASSESSMENT REPORT — Claims: Geological, Geochem, Trenching — Claim sheet no.: 115-1-3

Type of report: SBill, Wedge, RAS, Dic, Bull — Submitted by: Aurchem Expl. Ltd.

Cls. work performed on: SBill, Wedge, RAS, Dic, Bull, MSL, LGCS — $ req. for ren. application: 51,600.00

OFFICE OF THE REGIONAL MANAGER DEC 10 1991 WHITEHORSE YUKON TERRITORY

M Sandwick
Signature

Date returned

REPLY ACTION

092987

092-87

Signature

802-37 (7-88)

AURCHEM EXPLORATION LTD.
16 - 266 Rutherford Road South
Brampton, Ontario L6W 3X3
Tel. (416) 452-6454 FAX: (416) 454-9195

December 18, 1991

Yukon Government Mining Recorder
and Assessment,
Room 201, Federal Building,
308 Main Street,
Whitehorse, Yukon,
Y1A 2J8.



Attention : Mining Recorder

Subject : Assessment Filing Fees,
Discovery Creek Claims

Gentlemen,

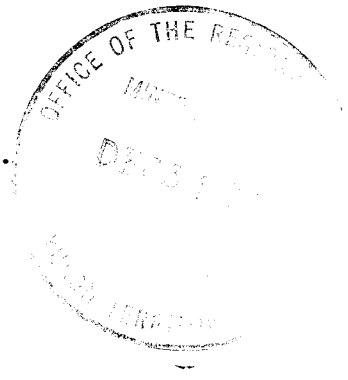
Further to our letter dated December 2, 1991, we are now herewith enclosing two copies of the final report from C.M.E. Consulting Ltd. of Vancouver on the I.P./Resistivity and Total Field Magnetic Surveys, (to be added to Aurchem's Assessment Report).

If you have any questions, please do not hesitate to contact us.

Yours very truly,
AURCHEM EXPLORATION LTD.

Mark Langdon.

Mark Langdon,
Manager - Geological Projects.



ML:mab

Enc.

Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

M.R. file no.

R.M.M.R. file no.

Date forwarded 20 Dec 91

TRANSMITTAL FORM

From ▶ Mining Recorder at: Whitehorse

To ▶ Regional Manager, Mineral Rights at Whitehorse, Y.T.

For action are:

- ☐ NEW APPLICATION FOR PLACER LEASE TO PROSPECT — Name
- ☐ RENEWAL APPLICATION PLACER LEASE TO PROSPECT — Name — Lease no.
- ☐ AFFIDAVIT OF EXPENDITURE ON PLACER LEASE — Name — Lease no.
- ☐ SECURITY DEPOSIT
- ☐ FINANCIAL ABILITY
- ☐ ASSIGNMENT OF PLACER LEASE NO. — From — To
- ☐ GROUPING APPLICATION UNDER SEC. 52(2) PLACER MINING ACT. — Owner
- ☐ DIAMOND DRILL LOGS — Claims — Claim sheet no.
- ☒ QUARTZ ASSESSMENT REPORT — Claims: J BILL, WEDGE, RAS, DIC BULL, RAT — Claim sheet no.: 115I-03

additional info report sent 6 Dec 91.

Type of report: Geological, Gc, Trenching — Submitted by: Aurchem Exploration

Cls. work performed on: J. BILL, WEDGE RAS, DIC BULL, RAT additional — $ req. for ren. application: 3500.00

Signature

Date returned

REPLY ACTION

092987

OFFICE OF THE REGIONAL MANAGER MINERAL RESOURCES DEC 13 1991 WHITEHORSE YUKON TERRITORY

Signature

802-37 (7-88)

CME Consulting Ltd.
Canadian Mineral Exploration
Consultants Working Worldwide

Box 12092, Harbour Centre
#2406 - 555 West Hastings St.
Vancouver, Canada V6B 4N5

Tel. (604) 687-7938
Fax. (604) 687-2319

D92987

RECEIVED
DEC 2 91
MINING RECORDS OFFICE
WHITEHORSE, Y.T.

REPORT
on
MAGNETIC & IP SURVEYS
DISCOVERY CREEK PROJECT
Y.T.

for

AURCHEM EXPLORATION INC.
Brampton, Ont.

by

J. Roth
STRATAGEX LTD

on behalf of

CME Consulting Ltd.
Vancouver, B.C.

Toronto, Ont. November, 1991

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 3,500 additional.

D J Ouellette

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

CME

REPORT

on

MAGNETIC & IP/RESISTIVITY SURVEYS

DISCOVERY CREEK PROJECT, Y.T.

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IP/Resistivity Pseudosections

(Appendix B)

PS#.	Line	Array	'A' Spacing
PS-1	1700S	d-d	100'
PS-2	1000S*	d-d	200'
PS-3	800S*	d-d	"
PS-4	600S*	d-d	"
PS-5	400S*	d-d	200'
PS-5a	400S	d-d	50'

IP Pseudosections (cont.)

PS#	Line	Array	'A' Spacing
PS-6	200S*	d-d	200'
PS-7	00*	d-d	"
PS-8	200N*	d-d	"
PS-9	400N*	d-d	200'
PS-10	600N*	d-d	200'
PS-10a	600N	d-d	50'
PS-11	800N*	d-d	200'
PS-12	800N*	p-d	200'
PS-13	1000N*	p-d	200'
PS-14	1200N	p-d	200'
PS-15	1400N*	p-d	200'
PS-16	1600N	p-d	200'
PS-17	1800N	p-d	200'
PS-17a	1800N	p-d	50'
PS-18	2000N	p-d	200'
PS-19	2200N	p-d	200'
PS-20	2400N	p-d	200'
PS-20a	2400N	p-d	50'
PS-21	2600N	p-d	200'
PS-22	2800N	p-d	200'
PS-23	3000N	p-d	200'
PS-24	3200N	p-d	200'
PS-25	3400N	p-d	200'
PS-26	2200E	p-d	200'
PS-27	2600E	p-d	200'

Composite Pseudosections (in pocket)

CPS-1	1700N	p-d	200 & 400'
CPS-2	3400N	p-d	200 & 400'

* Partial detail survey with a=50' (locally supplemented by a=100') in 1990 on lines 1000S to 1000N; see 1990 report by MPH.

CME

Report

on

Magnetic & IP/Resistivity Surveys

Discovery Creek Project, Y.T.

Summary

Magnetic and IP/Resistivity surveys were carried out during June and July 1991 on the Discovery Creek project near Carmacks, Y.T. by CME Consulting Ltd of Vancouver as part of an on-going exploration program by Aurchem Exploration Ltd. of Brampton, Ontario.

The surveys were executed with the objective of detecting polymetallic sulphide veins and delineating lithological and structural features which control or influence such mineralization.

The Discovery Creek project was initiated by Aurchem in 1984, on the basis of a discerned favourable setting for epigenetic gold deposits along the western margin of a major Cu-Mo porphyry system in the Mt. Nansen district known for a variety of gold occurrences.

Prior exploration conducted by Aurchem has included prospecting, mapping, geochemical sampling, VLF-EM surveying and trenching in the Willow Creek and, subsequently, in the Eliza Creek sectors. Shallow drilling was undertaken near Willow Creek in 1987 and 1988 on the basis of auriferous veins exposed in trenching; these DDHs intersected a variety of veins with significant but erratic gold values.

Additionally, prior detailed magnetic and IP/resistivity surveys were carried out in 1989 and 1990 by Aurum Geological Consultants and MPH Consulting, respectively, on a new E-W imperial grid centered on the Eliza Creek area. The results outlined a series of weak to moderate, linear magnetic anomalies trending 330°, along with a distinct linear magnetic low attributed to alteration. The IP data, primarily measured with an 'a' spacing of 50 feet, recorded a series of weak to moderate linear chargeability sources.

The present surveys represent an enlargement of the 1989 and 1990 surveys, with magnetic coverage extended from 1900S to 3400N at 100 foot intervals. IP surveying was carried out on every other line from line 1000S to 3400N, principally using an 'a' spacing of 200 feet, reading N=1-6, with either the dipole-dipole or pole-dipole array.

The magnetic data revealed a complex assemblage of anomalies ranging from linear and quasi-continuous to ovoid or irregular. The magnetic fabric displays an average 330° grain. Anomaly amplitudes are generally low to moderate, but locally quite high (>2000 nT). Magnetic sources are predominantly close to the surface (<25 ft), but in a few places are as much as 100 feet deep, probably due to thick overburden.

Five lithomagnetic domains (G, GD, D, Y and V) distinguished based on magnetic characteristics and mapped geology, exhibit reasonable correspondence with the known or extrapolated major lithologic units; in particular:

*Domain G, a mainly non-magnetic region in the eastern part of the grid, corresponds to part of a major felsic intrusive, with several other compact areas of very low magnetic relief attributed to parts of this domain.

*Domain GD identifies a narrow belt of linear anomalies attributed to a contaminated western border phase of the granodiorite.

*Domain D, a variably magnetic unit near the centre of the grid, corresponds to the diorite, with its magnetic character strongly influenced by younger dikes.

*Domain Y, characterized by moderate to strong linear anomalies, is correlated with known and probable elements of the Yukon Group, the oldest unit in the survey area.

*Domain V, rather variable in magnetic characteristics including moderate to strong quasi-linear anomalies, corresponds to a large assemblage of intermediate volcanics occupying the western third of the grid as well as the extreme north and south of the property.

Most domains are divisible into several subdomains on the basis of secondary magnetic aspects.

Faults, predominantly aligned 330°, are interpreted from the magnetic data to extend across various units and domains. A particular concentration of faults with this orientation is found in the east, along the western boundary of the granodiorite (subdomain GD_1), in close association with the auriferous veins exposed along Willow Creek and generally correlating with moderate to strong VLF conductors. An important set of older faults, predom-inantly oriented grid NW and NNW, are also interpreted. However, faults striking 020°, known or inferred on geological grounds, are not discernible in the magnetic data, possibly because of very limited displacement.

Several distinctive magnetic lows, both ovoid and linear, may indicate particularly intense alteration. An important empirical correlation of veins and magnetic lows is noted where detailed geology has been exposed by trenching.

The resistivity data outlines a central region of high resistivities which correlates with the known Yukon Group rocks. Intermediate resistivities characterize the diorite, as well as a portion of the surrounding younger volcanics.

Low resistivities characterize the known granodiorite, most probably reflecting propylitic alteration. A number of discrete resistivity lows are associated with specific IP zones, suggesting locally more intense mineralization.

The previous and present IP (chargeability) data are interpreted to define **20 shallow, linear-to-discrete IP zones designated A - U.** Many of these zones are underlain by deep, broad IP sources (designated AA, etc.), suggestive of a broad metasomatic aureole extending westward at depth from the exposed altered granodiorite.

Of particular interest are those IP zones of weak to moderate intensity which lie adjacent to known or projected vein systems. This includes zones C and J on the Willow Creek trend; and zones D, F, G, K and L on or along the Eliza Creek trend. Zone K is notable for its association with a magnetic low, while zone D could be a metasomatic aureole flanking a discrete differentiated intrusive suggested by both the magnetic and IP data. Zone N, partially delineated at the southern limit of the survey, is a discrete, compound IP source of interest both as an epigenetic and stockwork target.

In addition, the strong, broad zone A* within the granodiorite to the east is considered part of a major alteration aureole, and hence is of interest as a different type of target for gold-copper mineralization. The adjoining shallow linear IP zones $A_1/A_2/A_3/A_4$ and zone B which lie along the western flank of zone A are judged favourable targets for shallow vein-style mineralization within the altered granodiorite.

Further exploration to evaluate the potential of the priority IP targets is recommended, commencing with a thorough review of all available geochemical data and prospecting or trenching results on or near the geophysical targets. Shallow drilling (with several DDHs per zone) is the recommended route to such further evaluation. Alternatively, trenching over the shallowest portion (preceded in certain cases by additional detailed IP where not already available) would be useful as an interim phase to determine those targets most meriting subsequent drilling.

CME

Report

on

Magnetic & IP/Resistivity Surveys

Discovery Creek Project, Y.T.

1.0 Introduction

This report presents and discusses the results of magnetic and IP/resistivity surveys conducted by CME Consulting Ltd of Vancouver on the Discovery Creek property near Carmacks, Y.T., on behalf of Aurchem Exploration Inc. of Brampton, Ontario.

The Discovery Creek property consists of 36 mining claims and leases in the Whitehorse Mining District. The property, located northwest of Mt Nansen, is centered around a portion of Discovery Creek and its tributaries, Willow, Eliza and Shaw Creeks.

The geophysical surveys were carried out as part of an on-going exploration effort by Aurchem directed at the discovery epigenetic gold deposits similar to those currently known in the vicinity of Mt. Nansen.

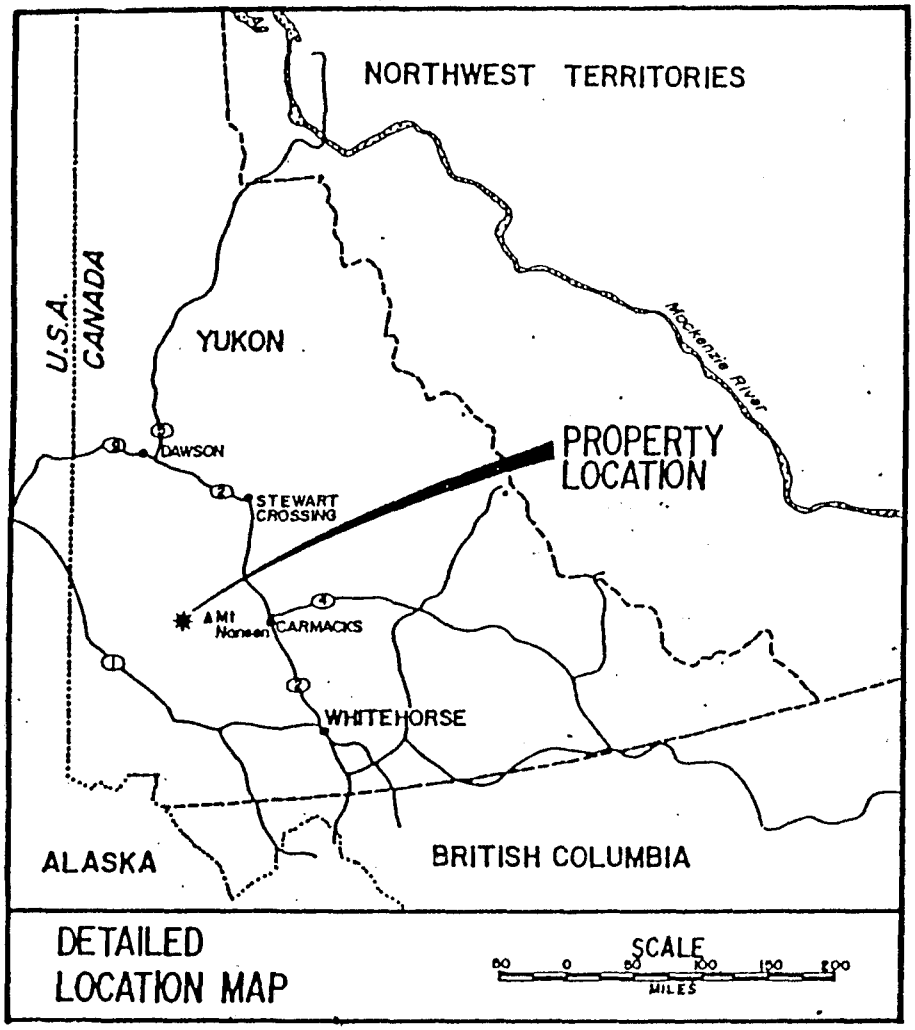
These surveys represent an expansion of a prior geophysical program undertaken in 1989 and 1990 over a restricted portion of the property centered on Eliza Creek. The results of these previous surveys are presented and evaluated in an earlier report by Simon Bate of MPH Consulting Ltd.

2.0 Background

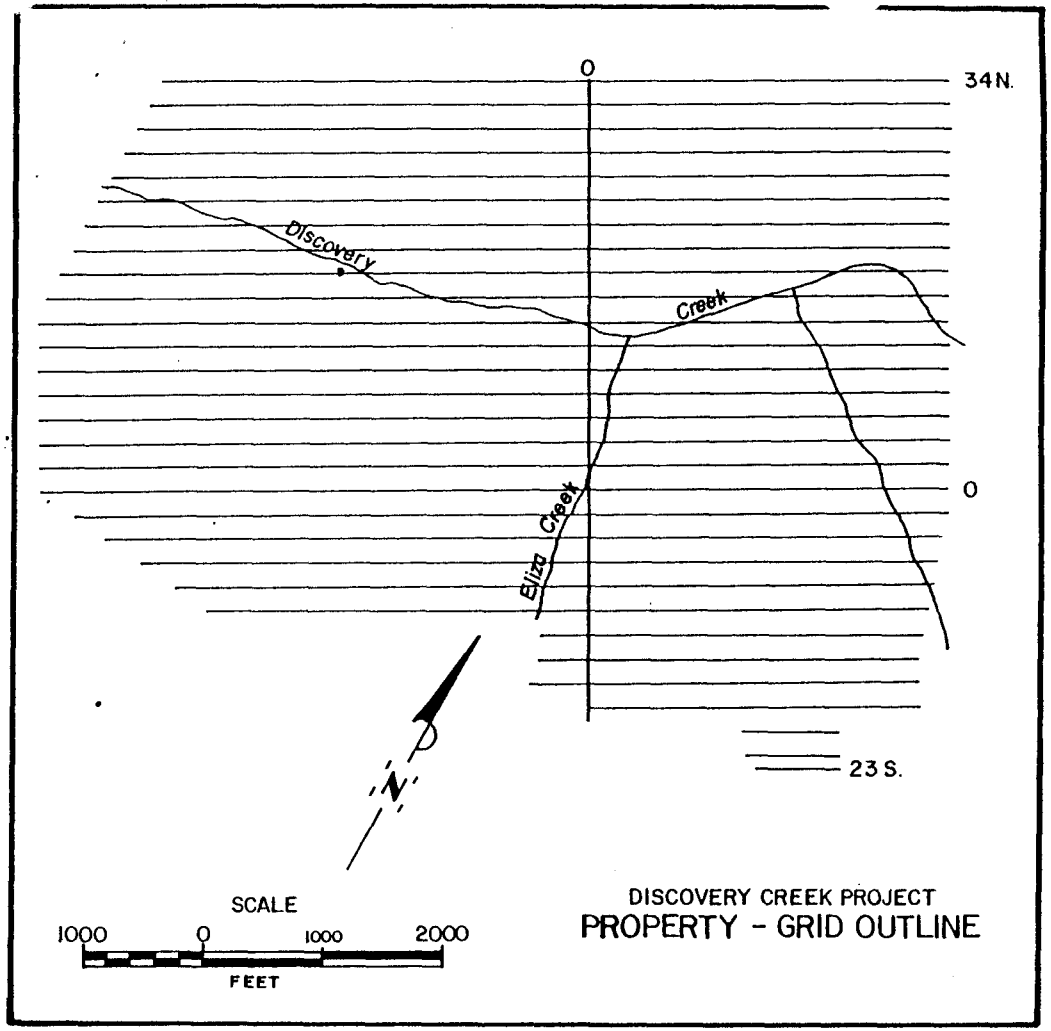
A portion of the Discovery Creek property was originally optioned by Aurchem Exploration in 1984, on the basis of considerations of general structural and alteration favourability for epigenetic gold deposits on the margin of a major copper-molybdenum porphyry system. The property was subsequently expanded to its present size by staking and optioning additional claims to the north and west.

Following acquisition, Aurchem conducted prospecting, geochemical sampling and considerable trenching, primarily in the Willow Creek area, as described in exploration reports by Mark Langdon, Manager of Geological Projects for Aurchem. A VLF-EM survey was also completed on an E-W imperial grid over much of the then-current claims.

In view of the encouragement obtained and the auriferous veins exposed, an initial 3000 ft diamond drill program was undertaken in 1987 to test the gold potential at shallow to moderate depths in the Willow Creek sector (16 DDHs), followed by further drilling in the subsequent year (4000 ft/ 12 DDHs).



DETAILED LOCATION MAP



DISCOVERY CREEK PROJECT
PROPERTY - GRID OUTLINE

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK PROJECT
CARMACKS, Y.T.

PROPERTY LOCATION

Project No.: P-07A	By: J.Roth/STRATAMEX
Scale: As shown	Drawn:
Drawing No.: Figure 1	Date: November, 1987

CME CME Consulting Ltd.

The drilling is reported to have suffered from poor recovery, so that, although some encouraging gold assays were recorded, the values are not considered representative of the intrinsic gold content of veins. However, drilling did confirm that the veins are quite variable with depth and along strike.

Subsequently, the exploration focus shifted to the Eliza Creek area (to the west of Willow Creek), following encouragement obtained in further prospecting and geochemical sampling.

In 1989 a new east-west survey grid with a line spacing of 100 feet and a baseline oriented 330° was established by Aurum Geological Consultants Ltd. Aurum carried out a detailed total field magnetic survey over a small part of this grid (from line 1600S to 1100N).

In 1990, MPH Consulting carried out a detailed IP/resistivity survey over a similarly restricted portion of the grid. The IP survey was executed primarily with a 50 ft dipole-dipole array (locally supplemented by 100 ft dipole data).

The results of the 1989 magnetic survey and 1990 IP survey are discussed in detail in the 1990 report by Bate. The magnetic results disclosed a complex assemblage of weak to moderate quasi-linear magnetic anomalies striking predominantly grid north-south (including a prominent linear magnetic low attributed to alteration). The IP results defined a series of weak to moderate, linear chargeability features exhibiting an average 330° strike.

The preceding geophysical surveys were carried out in concert with substantial trenching west of Eliza Creek. These trenches, excavated through 10-20 feet of overburden, helped to delineate the general bedrock geology of this largely overburden-covered area and exposed a series of polymetallic veins. As described in the 1990 geological report by Langdon, the veins, oriented mainly at 330°, contain pyrite, arsenopyrite, galena and sphalerite as the dominant sulphides and trace to 0.4 oz/t gold and significant silver. The larger veins are traceable over distances of up to 500 feet at Willow Creek and several thousand feet at Eliza Creek. They display variable oxidation.

The present geophysical program was carried out in recognition of the need to explore the expanded property at greater depth in light of overburden conditions and variable weathering.

3.0 Geology

The Discovery Creek property lies within the "unglaciated terrane" of the Yukon. Topography is relatively subdued and locally transported overburden is extensive.

As noted above, the bedrock geology of the Discovery Creek property is largely concealed by overburden, typically 10-20 feet in thickness, but locally substantially thicker. Consequently, trenching has provided major assistance in mapping bedrock geology, supplementing the sparse bedrock exposures. Bedrock, where exposed, is variably fresh to locally oxidized or rubbly, rendering sampling of the veins at times problematic.

As indicated in the geologic map and accompanying notes and various reports prepared by Langdon, the property is underlain by a variety of lithologic units ranging from early Paleozoic or PreCambrian to Cretaceous.

The following summarizes present geologic understanding; additional pertinent detail may be obtained by consulting the various maps and reports.

In regional terms, the property lies on the western margin of a major Cretaceous granodiorite which hosts a Cu-Mo porphyry system held by BYG Resources.

The oldest bedrock unit exposed on the property comprises schists and related sediments and volcanics of the Yukon Group of early Paleozoic or possibly PreCambrian age. A large outcrop of this unit is exposed on line 0+00W near 1000W. Yukon Group metasediments are also suspected to occur in the vicinity of line 2500N near 1500W based on rock fragments observed in an old trench and the magnetic survey results.

A complex intrusive of predominantly dioritic composition is mapped to the northeast of the Yukon Group lithologies. This diorite, believed to be Jurassic in age, is exposed in various trenches and in several other localities, and is inferred to occupy much of the central portion of the property. Based on the trenching, a NW-trending fault is inferred to separate the diorite from the older Yukon Group.

This block of diorite and Yukon Group sediments has in turn been intruded by a major Cretaceous granodiorite to the east. Trenching along the Willow Creek area has been helpful in establishing the diorite/granodiorite contact.

A large accumulation of intermediate volcanics, possibly of late Cretaceous age, occupies the western sector of the property as well as the northern and southern margins of the grid, surrounding the block of older Yukon Group sediments and diorite and granodiorite intrusives.

Finally, a series of younger dikes of felsic to intermediate composition trending 330° are mapped as intruding all the preceding lithologic units. These are believed to be related to a rhyolite porphyry intrusive located immediately east of the property. A subordinate set of slightly younger intermediate dikes oriented 020° are also noted in the trenches.

Regional and detailed geologic mapping aided by the trenching have revealed that the major structural orientation is grid north (330°), paralleling the older of the two set of dikes.

An older set of faults trending grid northwest is also recognized; the principal such fault extends across the center of grid, forming the boundary between the Yukon sediments and the diorite.

Locally, a further set of faults with a grid northeast orientation is suggested primarily by subordinate veins which exhibit a 020° strike and which in places appear to crosscut the dominant 330° set, aligned with the subordinate set of young dikes.

Various types and degrees of alteration have been observed superimposed on various lithologic units.

For example, the Yukon Group is observed to be locally altered towards its southern limit, and is also reportedly silicified. It also contains magnetite veins, possibly caused by the diorite intrusive.

Restricted propylitic alteration envelopes are also observed associated with the 330° vein systems.

Pervasive propylitic alteration is also present within the eastern granodiorite, associated with the aureole surrounding the Cu-Mo porphyry system.

The vein systems themselves reportedly display variable mineralogy, including one or more of pyrite, arsenopyrite, galena, sphalerite, and tetrahedrite accompanied by trace to significant gold and silver. As exposed in the various trenches, the dominant 330° veins range from wide and quasi-continuous to anastomosing to narrow and erratic. The major vein systems have been traced for up to 500 feet at Willow Creek and several thousand feet at Eliza Creek. Secondary veins striking 020° are comparatively minor and impersistent.

In summary, the geology of the Discovery Creek property reflects a complex assemblage of lithologic units of different ages which have been subjected to deformation and disruption at various periods. Gold mineralization is primarily associated with comparatively young polymetallic veins oriented 330° tentatively associated with a rhyolite intrusive located to the east. As will be discussed in Section 5, the geological complexities are mirrored by the complexities exhibited by the various geophysical data sets.

4.0 Survey Description

The surveys described and discussed in this report were carried out on an enlarged version of the 1990 detail grid. The expanded (imperial) grid extends at 100 foot intervals from line 1900S to line 3400N, and, on average, from 3000E to approximately 4000W, with the baseline oriented at 330° (grid north). Several N-S tielines were also established and surveyed (TL 2200E and 2600E).

The magnetic and IP/resistivity surveys were carried out by CME Consulting of Vancouver, B.C. during the period June 1 to August 1, 1991, with Dennis Morrison, senior geophysical operator, as party chief.

The total field magnetic survey was executed with the objective of mapping significant lithologic units and indicating possible zones of alteration and structural components.

The magnetometer survey was conducted over the remaining grid (84.8 km) surrounding the area surveyed in 1989 by Aurum Geological Consultants. The present survey used a GEM continuous-reading (Overhauser) proton magnetometer. This instrument records readings at one second intervals while the operator is traversing the line, thereby achieving better resolution of narrow, near-surface magnetic sources. It measures and records the value of the total magnetic field to +/-0.1 nT, with a useful sensitivity of +/-1 nT, assuming reasonable care by the operator in maintaining a stable sensor orientation while traversing. A digitally recording base station magnetometer accurately synchronized to the field magnetometer enables correction for diurnal variations.

The magnetic data, after correction for diurnal variations, was decimated to 25 ft stations, to facilitate gridding and contouring using GEOPAK software, and merged with the prior data collected by Aurum. The resulting map of the total magnetic field variations for the entire grid, contoured at 50 nT, comprises Map 1, at a scale of 1:2400. The complete (undecimated) magnetic data is displayed in profile form as a complementary map (Map 2).

The objective of the IP/resistivity survey was to map significant accumulations of polarizable sulphides (and graphite, if present) and to determine the distribution and characteristics of lithologic units within the upper 300-400 feet, considerably deeper than achieved with the 1990 detailed survey.

The IP/resistivity survey was conducted by Dennis Morrison, assisted by Zdenek Duchoslav, geophysicist, plus three additional assistants.

The IP survey employed a BRGM 6-channel time-domain IP-6 receiver, coupled with a 3 kw Huntec transmitter. This receiver samples the decay voltage at 10 adjustable time windows. For the present survey, a transmitter cycle of +2/0/-2/0 seconds was used, and the secondary decay voltages were measured over the interval from 0.30 to 1.30 seconds. The value selected for display is the total chargeability (in millivolts/volt) integrated over the entire one-second window (i.e., equivalent to IP measurements recorded in milliseconds). Apparent resistivities (in ohm-meters) were also obtained by standard formulae from the measured primary voltages and transmitter currents at each separation.

Initially, the survey commenced at the southern end of the grid with the dipole-dipole array employed with a 200 ft 'a' spacing reading N=1-6.

Upon encountering more conductive conditions than expected north of line 600N, the pole-dipole array was substituted, in order to achieve better signal-to-noise and better depth of exploration. This array (with infinite to the west) was used over the balance of the IP survey (to line 3400N at 200 foot intervals). The portions of lines surveyed with 50 or 100 ft dipoles in 1990 were re-surveyed with a=200' in the present program.

As determined by geologic considerations and observed IP anomalies, certain sectors of various lines were re-surveyed with a 50 or 100 foot 'a' spacing, to better resolve near-surface and/or narrow IP sources. Lines 1700N and 3200N were also re-surveyed with 'a' = 400 feet, in an effort to define the distribution of IP and resistivity features at greater depths. Total IP surveying amounted to 51.5 km on 26 lines.

In this context it is worth noting that narrow sulphide-bearing veins would be poorly resolved with the 200 foot dipole spacing, whereas their presence may be better discerned in the detailed surveys conducted in 1990 and in the selective detail surveys executed in 1991.

Data quality is judged to be generally excellent, with weak chargeability features sensibly contourable at 1.0 mv/v. A few scattered chargeability readings with the dipole-dipole array which are discordant with adjacent readings have been deleted from the final edited pseudosections. Similarly, a few readings at the largest N spacings severely influenced by EM coupling arising from conductive lithologies have been deleted. None of these minor excisions affect the content or interpretability of the data.

5.0 Results & Interpretation

In general, the survey results are judged to provide considerable information and insight pertinent to assessing the potential of the property for possible polymetallic veins as well as stockwork porphyry style mineralization.

The magnetic results will be discussed first, followed by the IP and resistivity data. Pertinent aspects of the 1990 detailed survey will be mentioned in the context of this discussion, as well as the earlier VLF-EM survey. This discussion will also attempt to integrate the geologic information provided by Aurchem Exploration into the geophysical interpretation, and to identify priority targets for further investigation.

5.1 Magnetics

The magnetic data, portrayed in contoured form in Map 1 at a scale of 1:2400, delineate a rather variegated magnetic terrane, which ranges from minimal magnetic relief along the eastern boundary of the grid, to very high relief (in excess of 2000 nT) in the vicinity of line 0+00 and 1000W. Anomaly forms range from linear and quasi-continuous to ovoid and irregular. The linear magnetic features display a dominant trend of grid north (330°); there is no particular trend to the ovoid or irregular features, although they are predominantly found in the central and northeast sector of the property. (The suspect anomaly at the western end of line 2300N is believed due to an adjacent cliff.)

The vast majority of the magnetic sources are quite shallow, within 25 feet of surface, and dominantly subvertical in orientation. A few magnetic sources are at greater depths (up to 100 feet), as indicated on Map 1, clustered in an east-west band in the north-central part of the grid, corresponding to increased thickness of overburden.

In the interpretation portrayed in Map 1, the magnetic features have been divided into a series of **lithomagnetic domains** labelled G, GD, D, V and Y, which correspond approximately with the major identified rock units.

In most instances the domain boundaries correspond to identifiable differences in magnetic character. However, in certain instances two domains have been distinguished based on geological evidence even though there is little difference in magnetic character. In other instances, the domain boundaries have been shifted or modified from that based on geological projection or inference to achieve greater consistency with the magnetic data.

Domain G is a readily identifiable region of very low magnetic relief which is mainly found along the eastern margin and in the northeastern sector of the survey grid. This domain primarily correlates with the mapped Cretaceous granodioritic intrusive; the low susceptibility implies a very low ferromagnesian composition.

In detail, domain G has been divided into subdomains G through G_5, probably reflecting slightly different phases or composition or intensity of alteration.

Subdomain G_1 is the principal region of low magnetic relief indicated to extend between 200S and 3400N, with likely continuation to the north and east. It corresponds to a very low Fe-Mg granodiorite (approaching a monzonite?), perhaps further reduced by pervasive alteration; this unit hosts the Cu-Mo porphyry deposit located east of the grid. Possible fractures or faults oriented 330° are weakly expressed in the magnetic data.

Subdomain G_2, located in the northeast sector of the grid, is a slightly more magnetic phase interpreted to extend as a crudely linear belt as far west as 600W. It is characterized by weak, sporadic, quasi-continuous, irregular magnetic anomalies, interpreted as reflecting granodiorite with a slightly higher Fe-Mg content possibly due to ingestion of older rocks.

Subdomain G_3 is an ovoid, largely non-magnetic region centered on 1800N and 700E, surrounded by an arcuate cluster of magnetic highs. This subdomain is interpreted as a felsic (granodioritic?) core to a polyphase intrusive.

Subdomain G_4 is an irregular, largely non-magnetic area in the centre of the grid near 1500N, 1000W. It could be a non-magnetic phase of the older diorite (domain D). There is no outcrop in this sector, which is mantled by particularly thick overburden.

Subdomain G_5 forms a comparably non-magnetic western continuation to subdomain GD_4, and is attributed to a similar lithologic unit.

Domain GD is a related but significantly more magnetic unit primarily found along the western margin of domain G. It contains quasi-continuous, narrow, linear magnetic anomalies of low to moderate amplitude. Domain GD is interpreted as a contaminated border phase to the main granodioritic intrusive. Younger dikes are also known to be present.

In detail, domain GD is divided into subdomains GD_1 and GD_2. Subdomain GD_1 constitutes a narrow western rim to non-magnetic domain G. It is noteworthy that this interval is transected by a series of mapped and interpreted grid north-south faults and hosts the auriferous veins found in the Willow Creek trenching.

Subdomain GD_2, characterized by ovoid, weakly magnetic features, is an irregular lobate region centered on 1300N and 1200E, immediately south of the non-magnetic subdomain G_3. An intermediate intrusive is considered highly probable as the source.

Domain D presents a rather variegated magnetic character, with irregular to linear magnetic anomalies of low to

moderate amplitude, including several distinct magnetic lows. The main portion of this domain correlates with the diorite of Jurassic age mapped in the centre of the grid. Several smaller areas of comparable magnetic character observed in the northern part of the grid are included in this domain, although they may in fact be part of a younger dioritic intrusive complex.

In detail, domain D is divided into subdomains D_1 through D_9, as described in greater detail below.

Subdomain D_1 is a narrow, crudely linear, moderately magnetic band which extends north-south between 1900S and 1000N immediately west of subdomain GD_1. Magnetically, there is little to distinguish these two units; however, geologic mapping (via trenching) has established their presence and extent. Their common pattern of linear magnetic anomalies and the absence of any distinguishable magnetic characteristics suggests that both subdomains contain younger dikes which contribute significantly to the observed magnetic character.

Subdomain D_2 is a north-south-trending band of lower susceptibility centered on 400E adjacent to the more magnetic subdomain D_3 to the east.

Subdomain D_3 is a band of high susceptibility rocks west of Eliza Creek, but immediately east of a distinct linear "alteration low".

Subdomain D_4 is a slightly less magnetic band still further to the west, containing magnetic sources of somewhat variable orientation.

Subdomain D_5 is a series of ovoid to elliptical regions of low to negative magnetic response, indicative of intense alteration or an intrusive with reversed magnetization. A prominent linear low west of Eliza Creek forms a southern extension of one such ovoid feature.

Subdomain D_6 is a similarly ovoid positive anomaly to the west of subdomain D_5, centered at 1100N, 800W. A discrete dioritic intrusive is inferred to be the probable cause.

Subdomain D_7 is a restricted region of subdued magnetic relief centered on line 1300N near 2100W. Its subdued character in part reflects thicker overburden, possibly up to 100 feet. The causative lithology may be unrelated to the main mass of the diorite to the east.

The preceding subdomains (D_1 through D_7) are bounded to the north by a distinctly less magnetic terrane, forming part of domain G.

To the southwest, a NW-trending fault observed in the trenches separates the diorite from the older Yukon Group. this boundary is essentially invisible in the magnetic data; hence it is surmised that the majority of the linear anomalies in both the diorite (domain D) and the Yukon Group (domain Y) reflect younger dikes.

This hypothesis is supported by the detailed geologic information compiled from the trenching in the Eliza Creek sector. As noted in last year's report on the magnetic survey conducted on the detailed grid (Bate, 1990), certain of the dikes exposed in the trenches correlate with the linear magnetic highs, while the linear lows in part correlate with the larger veins.

Subdomains D_8 and D_9, located north of the E-W band of low susceptibility, are characterized by oval to sub-circular magnetic highs, and are attributed to dioritic intrusives. Note that these northern diorites may be younger than the main block of diorite to the south.

Subdomain D_8 comprises two irregular, lobate magnetic highs centered on line 2000N near 1300W, within a block inferred to consist primarily of Yukon Group sediments.

Subdomain D_9 is composed of four separate composite magnetic highs, which form an arcuate rim around a central region of low susceptibility designated subdomain G_3. A composite or differentiated intrusive is inferred as the probable cause.

Faulting oriented 330° is inferred to transect much of domain D and in fact serves as boundaries between many of the subdomains. Faults oriented 020° are not particularly noticeable in the magnetic data, possibly because they reflect minor, late fractures with small offset. One interpreted fault with this strike is discerned crossing line 0+00 near 1000E.

A significant number of faults striking 020° are shown in the prior interpretation of the detailed 1990 magnetic survey (Bate, 1990). However, little support for these faults is discerned with the larger perspective provided by the enlarged survey. Minor, young fractures with minimal offset could reconcile the somewhat conflicting geological and geophysical evidence.

As noted in the 1990 report, the major veins exhibit an empirical correlation with certain magnetic lows within domain D. The distinctiveness of these lows (both linear and ovoid) is emphasized by the present expanded survey.

Domain Y corresponds to known and inferred Yukon Group metasediments and associated volcanics, primarily exposed in the south-central portion of the grid. In detail, this domain is divided into subdomains Y_1 through Y_3.

Subdomain Y_1 is a highly magnetic region centered on line 0+00 and 1000W; a substantial area of outcropping Yukon Group has been mapped in this subdomain. The strong anomalies are attributed to veinlets of magnetite, possibly caused by the diorite.

The northeast boundary of subdomain Y_1 is a mapped NW-trending fault which separates this domain from the adjoining younger diorite. As noted above, this fault

cannot be discerned in the magnetic data, suggesting that younger north-south dikes dominate the observed magnetic pattern, as was argued above in the discussion of domain D.

A second northwest-striking fault transects subdomain Y_1 near line 0+00 near 1500W. The block to the southwest exhibits comparable magnetic trends but slightly lower susceptibilities, and is considered to be part of this subdomain.

Several faults trending 330° (grid north) are interpreted to transect subdomain Y_1, including a persistent fault which is inferred to extend to the north across subdomain Y_3.

Subdomain Y_2 designates an area immediately to the southeast of subdomain Y_1 characterized by somewhat lower anomalies. Scattered outcrops of Yukon Group support the probable correlation of this sector as part of domain Y. Locally observed alteration may account for the lower susceptibility.

Subdomain Y_3 is a compact block located towards the northern limit of the grid. This subdomain exhibits moderate magnetic anomalies of irregular orientation and continuity. It is speculatively correlated with the Yukon Group, partly on the basis of scattered float found in the regional mapping program.

The southern boundary of subdomain Y_3 corresponds to a non-magnetic band designated as part of domain G, while to the north a major E-W fault is interpreted to separate subdomain Y_3 from much younger intermediate volcanics of domain V.

Finally, a prominent fault striking grid NNW is inferred to bound subdomain Y_1 to the west.

Domain V designates those regions of known or inferred intermediate volcanics, which are principally found in the western and northern sectors of the grid. In detail, domain V has been divided into subdomains V_1 through V_8, discussed further below.

Subdomain V_1 designates a moderately magnetic block with quasi-linear anomalies centered on line 0+00 near 3000W. A substantial outcrop of intermediate volcanics is mapped within this subdomain.

Subdomain V_2 identifies a cluster of moderate to moderately strong magnetic anomalies oriented grid north to northwest, lying immediately to the east of subdomain V_1, but west of the block of older lithologies. Depths to magnetic sources increase at the northern end of subdomain V_2, probably reflecting thicker overburden.

Subdomain V_3 forms an arcuate band of intermediate susceptibility. It surrounds a central area of higher susceptibility designated as subdomain V_4 further to the west.

Subdomain V_5, a compact area of low susceptibility centered on 2000N, 3500W, is speculatively attributed to volcanics of lower susceptibility. Alternatively, this unit could be a western continuation of non-magnetic subdomains G_4 and G_5.

Subdomain V_6 designates a restricted area in the northwest corner of the grid characterized by lower average susceptibility but containing irregular, moderate to strong magnetic sources.

Subdomain V_7 is a partially delineated band of irregular, moderate to strong magnetic anomalies across the northern margin of the survey to the east of subdomain V_6. Outcrops of intermediate volcanics further to the north support this correlation.

Subdomain V_8, barely glimpsed at the southern limit of the survey, appears to be less magnetic than other portions of domain V. Scattered outcrops and float support the correlation with domain V.

Within domain V, faults striking 330° are again observed. In particular a major fault with this orientation forms the eastern boundary of this domain, separating it from the older lithologies to the east.

Several lesser faults are discerned within domain V, in places forming the boundaries between different subdomains.

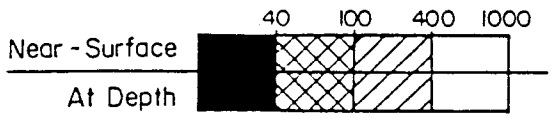
No distinctive magnetic lows (apart from normal geometric effects) are discernible in the magnetic data for domain V.

As a final general comment, there is reasonable congruency between the faults interpreted from the magnetic data and the principal conductors defined by the prior VLF survey. Minor VLF conductors, on the other hand, show little correlation with faults inferred from the magnetics.

INTERPRETATION

EXPLANATION

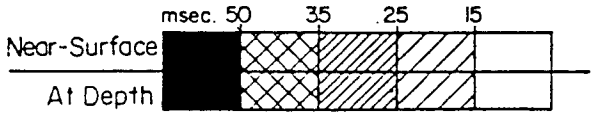
Resistivity Lows :



ρH : High resistivity

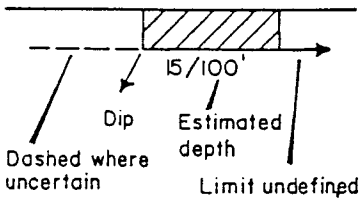
Contact

Chargeability Highs:



✳ Correlating resistivity low

A, etc. Zones



5.2 IP/Resistivity

As described in Section 4.0, the IP/resistivity survey covered lines 1000S to 3400N at 200 foot intervals. In addition, lines 1700S and 1700N were surveyed, plus two tie lines (2200E and 2600E). It is also worth recalling that the dipole-dipole array was used south of line 800N, while the pole-dipole array was used from line 800N northwards. Selected lines were surveyed in detail with a dipole of 50 or 100 feet, or resurveyed with a 400 ft dipole, as indicated on Maps 3, 4, 5 and 6.

The IP/resistivity data, plotted in standard pseudosection form at a scales of 1:1200, 1:2400 or 1:4800 (depending on dipole length), constitute Appendix B (PS-1 through PS-27). Composite pseudosections for the two key lines surveyed with multiple dipole lengths are also found in Appendix B (CPS-1 and CPS-2).

The anomalous conductive and polarizable sources interpreted from the data are portrayed using the format displayed in Fig. 2. This format distinguishes between shallow and deep sources, and differentiates between very weak, weak, moderate and strong IP sources as shown, in a manner similar to that employed in the interpretation of the 1990 data. However, the threshold for very weakly anomalous chargeability has been elevated to 7.5 mv/v, somewhat higher than in the 1990 interpretation. Sources which are questionable or uncertain are indicated by a dashed anomaly box. IP responses with correlating lower (apparent) resistivity values are indicated by an asterisk (*). Indicated dips of anomalous sources are also shown.

The IP and resistivity data were initially interpreted on a line-by-line basis; the resulting interpretation was then modified by using the plan contour maps of chargeability and resistivity. The interpreted anomalous features are shown on both the pseudosections and plan maps, with the significant zones identified alphabetically. Note that shallow IP zones are designated as A, etc., while segments of a common zone or related features are designated A_1, etc. Related deeper IP sources are generally designated as zone AA, etc. Correlating resistivity lows are designated as 'a', etc.

Consideration of probable physical properties and numerous published and unpublished case histories indicate that typical polymetallic sulphide veins or vein systems should normally be discernible as a weak to moderate IP response, assuming that the IP array dimensions are comparable to target width and depth. The IP anomaly may be accompanied by lower resistivities if the sulphides are interconnected or if there is significant accompanying alteration; conversely, resistivity may be neutral or higher if sulphides are disseminated and accompanied by silicification.

5.2.1 Resistivity

The resistivity data, as seen in the contoured N=2 values (Map 3), display a broad central region of high values centered on line 600S near 1400W. This block corresponds primarily to exposed and inferred Yukon Group sediments and related lithologies.

The fringing area to the north and northeast characterized by intermediate resistivities corresponds principally to the dioritic intrusive, while to the south the adjoining intermediate volcanics (domain V) also exhibit intermediate values.

A substantial region of distinctly lower resistivities is seen in the northeastern sector of the grid. This region is attributed to propylitically altered granodiorite (domain G). High chargeabilities accompany the low resistivities, as discussed in the following section 5.2.2.

A broad band of slightly lower resistivities is seen to extend east-west across the grid on or near lines 2200N and 2400N. This band is attributed to a corridor of thicker overburden whose alignment may reflect underlying structural control.

Towards the northern limit of the survey, resistivity values in excess of several thousand ohm-meters are again observed, correlating with a large block of intermediate volcanics (subdomain V_7).

High resistivities are also apparently associated with the intermediate volcanics of subdomain V_4 at the western limit of the survey, but because of present incomplete definition this correlation is only speculatively established.

Specific local resistivity lows associated with chargeability highs have been designated by low 'a', etc. These lows, identified in Map 3, will be discussed further in the following section on the IP zones detected in this survey.

Comparison of interpreted VLF-EM conductors and resistivity lows shows (not surprisingly) only limited agreement, since VLF tends to primarily reflect shallow, narrow conductive sources or contacts, whereas the resistivity lows (particularly as measured with a dipole of 200 feet) tend to reflect volumetrically larger conductive features at greater depths.

5.2.2 Chargeability

The contoured chargeability data at N = 2 and 4 are displayed in Maps 3 and 4, respectively, with the interpreted anomalous features superimposed.

As seen therein, the measured (apparent) chargeability values range from very low (<3 mv/v) to high (>60 mv/v). In general, higher background values and a greater concentration of local chargeability anomalies are seen northeast of a NW-striking line extending through the centre of the grid. Low background values are again seen along the north-central margin of the grid.

As seen in Map 3, the shallow chargeability zones A-U are predominantly linear, weak to moderate in amplitude, less than 75 feet deep and strike grid north-south. These zones are superimposed on broad, deep sources designated zones AA, CC, DD, KK, NN and SS, respectively, while a strong, broad zone A* is seen towards the eastern boundary.

Because the chargeability sources are frequently overlapping or superimposed, it is often difficult to confidently establish boundaries to specific zones, as inspection of various pseudosections and their interpretations readily confirms.

It is also worth noting that the present survey, primarily conducted with a 200 foot dipole, was directed at targets of significant width and polarizability at intermediate depths. Narrow sulphide-bearing veins may not been detectable with this dipole length, although these important features may be quite discernible in the selected detailed surveying conducted in the present program and in 1990.

IP zone A*, the strongest, most extensive chargeability feature detected in the present survey, is defined between lines 1400N and 2600N at the eastern limit of the IP coverage. The zone undoubtedly extends further to the north and east beyond the limits of the present survey.

Zone A* is characterized by intrinsic chargeabilities in the range of 65-75 mv/v, with source depths between 100 and 150 feet. The zone is consistently associated with lower resistivities (100-150 ohm-m). Located within mapped granodiorite (subdomain G_1), zone A* is confidently attributed to part of a major pyritic halo related to the BYG porphyry Cu-Mo deposit to the east. The low resistivities indicate moderately intense propylitic alteration.

Within the broad zone A*, several shallow, narrow IP features are distinguishable in the detail surveying conducted on lines 1800N and 2400N. In particular, on line 1800N shallow, narrow chargeability sources are seen near 3250E and 3500E. These features are consistent with narrow veins containing a low sulphide tenor.

Several narrow, relatively shallow, linear IP zones designated A_1 - A_3 lie along the western flank of zone A*, within the altered granodiorite of magnetic domain G.

Zone A_1, located northwest of zone A*, is a narrow, linear source defined on lines 2400N through 3400N near 2700E. The feature is best defined on lines 2600N and 2800N, where it is also accompanied by lower resistivities.

Zone A_2 is a strong, discrete IP response best resolved on lines 1600N and 1800N near 3150E, immediately west of zone A* and south of zone A_1. It displays an unusual northwest strike and is accompanied by lower resistivities. A high priority is assigned in view of its combined characteristics.

Zone A_3, defined on lines 3000N through 3400N near 2300E, is a comparably strong but narrower chargeability source located immediately west of zone A_1. Its full extent to the north is undefined.

Zone A_3 is associated with low resistivities, but not with any distinct low. Its location within the projected granodiorite suggests a source characterized by more intense alteration accompanied by higher sulphides.

Persistently anomalous soil geochemistry is present across this sector, but no trenching or drilling has been reported near any of the above three interesting zones.

Zone AA is a broad, deep apron of anomalous chargeability flanking zone A* to the west and underlying zones A_1 - A_3. Interpreted depths range from 100 to 250 feet; intrinsic chargeabilities range from moderate to moderately strong. The zone is associated with lower resistivities. Located within a sector of the granodiorite (subdomain G_1), its overall characteristics are consistent with an envelope of disseminated pyrite extending westwards at depth from the main alteration zone A*.

Zone AA probably continues further to the south and east as one component of this major alteration system.

Zone AA', located south of zone AA, is an IP source partially glimpsed at the ends of lines 1000S to 400N. The anomaly, although incompletely defined, appears to be weaker than zone AA immediately to the north although probably geologically related.

Zone AA' occurs within the granodiorite (subdomain G_1) and hence is considered as part of the overall porphyry alteration envelope.

Zone B is a strong, narrow, linear IP source detected in the detail surveying on lines 400N through 800N near 2400E. Source characteristics are consistent with an intrinsic chargeability of 25-30 mv/v at a depth of approximately 50 feet.

Zone B is associated with a distinct resistivity low on one line, suggesting a sulphide-bearing vein or vein system as the possible cause. It lies within domain G_1 (granodiorite). There is no strong lineament or fault discernible in the magnetic data at this location, but the linear character of the chargeability contours does suggest a possible fault or contact. Geologic information is limited at this location in that no trenching been undertaken; however, no vein is presently indicated.

Zone B lies above and possibly is related to a broad, deeper zone of chargeability on lines 800N and 1000N, constituting part of the broad anomaly AA.

Zone C is a narrow, weak chargeability source detected on lines 1800N through 2200N near 1650E in the reconnaissance survey. It is interpreted to have an intrinsic chargeability of 20 mv/v and a depth of 50 feet.

Zone C lies within subdomain GD_1, a transitional unit between the granodiorite and diorite, in close proximity to several N-S faults. Accordingly, it is considered of distinct interest as a possible sulphide-bearing vein. Available geologic information does not indicate the presence of any veins or any prior trenching in this vicinity.

Zones C_1 and C_2 are shallow, narrow, weak, probably related chargeability sources located north of zone C. Zone C_1, indicated solely on line 2600N, has an accompanying resistivity low and lies at the interpreted boundary of subdomains D_7 and G_2.

Zone C_2, to its north, is defined on lines 3200N and 3400N near 1100E, and likely extends further to the north. It is also accompanied by lower resistivities and lies in subdomain G_2. Note that zone C_2 is cut off to the south by a prominent ENE fault and that this shallow source lies above a strong anomaly at depth forming part of zone CC.

The preceding IP zones ($C/C_1/C_2$) are regarded as interesting targets for epigenetic mineralization. In addition, the mapped and inferred faults in this sector also point to a favourable environment.

Zone CC, which underlies and flanks zone C, is a broad envelope of moderate to moderately strong chargeabilities detected at depth on lines 1400N to 3400N generally between 1000E and 2200E. A source with intrinsic chargeability in the range of 45-50 mv/v at depths of 300-400 feet is inferred.

Zone CC is accompanied by moderately lower resistivities (but slightly higher than those associated with the exposed altered granodiorite located further to the east).

Zone CC extends across several magnetic domains; in fact, because of its depth, the zone may be unrelated to the lithologic units exposed at surface in this sector. It is consequently speculated that zone CC may represent a western extension of the altered granodiorite at depth.

Zone D is a narrow, moderately strong, linear chargeability feature which extends from line 1400N to 2400N near 100W. The source is interpreted to be at a depth of 125 to 150 feet, with an intrinsic chargeability of 25 mv/v. Associated resistivities are distinctly lower on several lines.

Zone D is clearly resolved in the data on the two lines surveyed in detail in this sector (lines 1400N and 1600N), and is seen to overlie a broad, deep IP source designated zone DD, discussed further below.

Zone D appears to terminate to the north in the vicinity of line 2400N. However, in the contoured chargeability data there is a suggestion of a possible continuation to northeast, oblique to the survey grid, forming an arcuate trend which rims a central core with low chargeabilities.

To the south, zone D appears to be absent on line 1200N. However, a shallow IP anomaly (zone G) is again present on line 1000N; these two zones may be geologically related.

Zone D occurs within magnetic subdomain D_7, but extends north and south into subdomains G_2 and G_4, respectively, suggesting an intrusive-related source. A major fault is interpreted in the vicinity of IP zone D, possibly the northward projection of the Eliza Creek fault.

The overall pattern of magnetic, resistivity and IP features supports a composite, differentiated intrusive with a good potential for disseminated Cu-Au mineralization (reflected by zone D) along its margins.

Zone DD is a deep, broad extensive IP source of moderate intensity which flanks and underlies zone D, particularly to the north and west. Defined as far north as line 3400N, zone DD probably extends further north beyond the present survey limits. It has intrinsic chargeabilities of 20-30 mv/v, with interpreted depths between 200 and 400 feet.

Zone DD extends across several magnetic domains. The southern part is spatially associated with a portion of the diorite (domain D), while the central portion correlates with a speculatively assigned block of Yukon Group (subdomain Y_3), and the northern part extends into part of domain V (intermediate volcanics). Thus zone DD may reflect an ensemble of different geologic sources, or be unrelated to surface geology.

Zone E is a shallow weak chargeability source detected on line 1000N near 900E in the east-central part of the grid. Shallow, poorly resolved responses on adjoining lines 800N and 1200N may be related to this source.

Zone E has no discernible resistivity low. It lies near the boundary of subdomains D_1 and GD_2, suggesting a possible vein source in an intrusive host.

The character and continuity of zone E is subject to greater than normal uncertainty due to the change from pole-dipole to dipole-dipole array south of line 800N, resulting in a change in background levels and in anomaly amplitudes. On the basis of present information a low priority is indicated.

Zone F is a weak, narrow, shallow IP source detected on line 200N and 400N near 600E southwest of zone E. As defined in the detail surveying, the anomaly has an intrinsic strength of 15 mv/v and a depth of 50-75 feet.

Zone F is associated with distinctly lower resistivities of restricted extent, creating additional interest in this feature. The zone lies immediately east of the Eliza Creek fault within subdomain D_2, suggesting a distinct potential for vein-type mineralization in a dioritic host.

Zone G, located northwest of zone F, is defined in the detailed surveying on lines 800N and 1000N by weak chargeability responses (15-20 mv/v) near the baseline at interpreted depths of 75-100 feet. The zone lies west of Eliza Creek in an area of known veins and hence is of distinct interest in terms of further exploration.

Zone G appears to be related to a broader interval of weak to moderate chargeability discerned at greater depths on either side, constituting a southeastern continuation of zone DD.

Part of zone G is associated with lower resistivities. The zone lies within subdomain D_5, an unusual negative magnetic source possibly indicative of intense alteration, imparting additional interest to this zone.

Zone H, located to the northwest of zone G, is indicated by a narrow, weak IP anomaly detected only on line 1200N near 700W.

Zone H lies near the southern boundary of domain D, at the northern terminus of an interpreted fault, and hence is consistent with a limited sulphide-bearing vein hosted by the dioritic intrusive. Its proximity and similarity to adjacent zone G suggests a similar origin.

Zone J is a narrow, weak but persistent, linear IP source which extends from line 1000S to 200N near 1600E in the Willow Creek sector. This source is interpreted to have an

intrinsic chargeability of 15-20 mv/v at depths of 50-75 feet. The zone lies within subdomain GD_1 near its western contact with subdomain D_1, close to several known and interpreted grid north-south faults.

Accompanying resistivity values are locally lower on several lines, suggesting more intense mineralization in the vicinity of line 200S.

Zone J lies just west of most of the auriferous veins exposed in trenches excavated in the Willow Creek sector and has been partially tested by several prior drill holes. It remains a target of high priority, in view of proximity to known gold-bearing veins.

Zone K is a shallow, narrow, weak chargeability feature detected in the 1990 detailed survey on lines 0+00 to 400N near Eliza Creek. The zone has an indicated source strength of 10 mv/v and a depth of 40-50 feet, with no appreciable resistivity character.

Zone K extends grid north-south along the boundary of subdomains D_3 and D_4, adjacent to the interpreted fault which extends through the linear magnetic low, and is consequently judged an excellent candidate for possible vein-style mineralization, albeit of low sulphide content. The zone has been partially exposed and sampled by several of the trenches in the Eliza Creek sector, and probably merits further evaluation via drilling.

Zone KK comprises a series of moderate chargeability anomalies which surround and/or underlie zone K on lines 200S through 400N at interpreted depths of 150-250 feet. The chargeability source appears to be quasi-continuous with the similarly deep zone DD to the north.

Zone KK is stronger and more extensive to the west of zone K than to the east. In particular, a resistivity low apparently correlates with the eastern portion of zone KK, creating greater interest in this sector.

Zone KK lies predominantly within magnetic subdomains D_3 and D_4, comprising part of the dioritic intrusive. However, its width and considerable depth below surface suggest that the zone may be related to an underlying younger intrusive.

Zone L is a poorly resolved, weak, shallow chargeability source detected in the detailed survey at the western ends of lines 0+00 through 400N near 800W. It has an apparent strike of grid north-south.

Zone L lies close to the boundary of subdomain D_4 and the Yukon Group, along the fault interpreted to separate these two units. It may in fact lie mainly within the block of older Yukon Group. The present limited definition of zone L precludes assigning a specific priority, but it appears to be of lower interest.

Zone M is a narrow, relatively shallow, linear IP source detected on lines 0+00 through 800S near 1600W. A source with an intrinsic chargeability of 20 mv/v and a depth of 100-150 feet is inferred. There is no discernible associated resistivity character.

Zone M, which strikes north-south, lies primarily within the Yukon Group (subdomain Y_1), and does not appear to extend into the adjoining diorite (subdomain D_2) nor the intermediate volcanics (domain V).

Zone M is rated geophysically as a intermediate priority target, based in part on its geologic setting. Favourable evidence in the form of mineralized float or anomalous geochemical data would increase this rating.

Zone MM is a deep, broad chargeability feature detected to the north of zone M on lines 200N and 400N. Zone MM is a associated with quite high resistivities, typical of the Yukon Group. This zone is presently regarded as of low priority, but could be upgraded in the event of encouraging results in evaluating zone M.

Zone N is a complex, bi-lobate chargeability source detected on lines 400S through 1000S immediately west of the base-line in both the reconnaissance and detail IP surveying. The zone likely continues further to the south beyond the limits of the present survey, and indeed shows evidence of becoming stronger (and shallower) to the south. The two northern limbs are designated subzones N_1 and N_2.

Locally, lower resistivities accompany the anomalous chargeabilities of zone N, notably on lines 400S and 1000S.

In the detail survey data, zone N is primarily resolved on lines 800S and 1000S, where it is weakly anomalous and shallow . To the north, the zone is too deep (or laterally distant) to be detected with an 'a' spacing of 50 or 100 feet. However, in the data recorded with an 'a' spacing of 200 feet on these lines, the source is indicated to be broad and weak. As noted above, it becomes stronger (and shallower) to the south.

Zone N is located near the southern limit of the Yukon Group rocks (domain Y), and most likely extends into the adjoining intermediate volcanics (subdomain V_8), along the projected trace of the "alteration magnetic low". Hence this IP zone is judged to merit additional evaluation both for possible epigenetic as well as porphyry-style mineralization. Additional prospecting and detailed geochemistry may be useful to seek evidence supporting its favourable geophysical characteristics and to determine the desirability of trenching and/or drilling.

Zone P is a weak, moderately deep IP response detected on lines 0+00 and 200S near 1000W. The source is estimated to

have an intrinsic chargeability of 14 mv/v at a depth of 125-175 feet. There is no discernible resistivity signature accompanying the IP source.

Zone P lies within the inferred Yukon Group (subdomain Y_1) near its southern boundary. Several interpreted subsidiary faults pass near this zone, but its priority is viewed as indeterminate.

Zone Q is a weak, shallow, restricted IP source detected on lines 1800N and 2000N near 1300W in the northwest quadrant of the survey. It is characterized by an intrinsic chargeability of 15 mv/v and depths of 50-75 feet. It has no distinguishable resistivity signature, although it is associated with a sector with slightly lower resistivities found north of the highly resistive Yukon Group.

Zone Q is located within subdomain D_8, indicating a probable intrusive setting, immediately west of a fault trending 330°, creating additional interest in this feature in terms of possible vein-style mineralization.

Zone Q is part of a generalized northwest-trending series of discrete IP anomalies which includes zones G, H, R and S. It lies above part of the extensive, deep IP source of moderate strength designated zone DD. An intermediate priority is assigned based on present information.

Zone R, located northwest of zone Q, is defined by weak, narrow, shallow IP responses detected on lines 2000N and 2200N near 2000W. It lacks any distinctive resistivity character.

Zone R is located within subdomain Y_3, a unit speculatively correlated with Yukon Group sediments. The zone rests atop a broad, deep IP source designated zone SS, described in greater detail below. A low to intermediate priority is assigned to zone R based on present information.

Zone S is a broad, moderately strong, comparatively deep IP source detected on lines 2400N to 3400N near 2800W, with probable continuation further to the north.

Zone S displays a consistent association with lower resistivities, suggesting stringer sulphide mineralization or interconnected veinlets.

Zone S lies within intermediate volcanics (subdomains V_6 and V_7). A fault oriented 330° is interpreted to extend through the axis of the IP source, suggesting an increased likelihood of vein-style mineralization, although a stratabound source is also possible. Hence zone S is judged of interest in terms of subsequent follow-up.

Zone SS is a weak, broad IP source which extends at depth east and southeast of zone S at least as far as line 1600N. Like zone S, its northern extent is also undefined. In view of its persistence across magnetic domain boundaries, a weak alteration halo is surmised as a possible cause.

Zone T is a weak, narrow, moderately deep chargeability feature detected on lines 1000N through 1400N near 3600W toward the western limit of the survey. The zone is associated with intermediate resistivities along the eastern edge of a block of high resistivities.

Zone T straddles the boundary between intermediate volcanics (subdomain V_5) and domain Y, several hundred feet west of the interpreted major NNW fault. Consequently, this zone is assigned an intermediate priority, based on present evidence, pending re-evaluation of any prospecting and geochemical data in this sector.

The contoured chargeability data for N=4 enhances recognition of the deeper chargeability zones and their substantial overlap or adjunct character. As seen in Map 4, zone AA forms a broad western apron to zone A, and is in turn succeeded to the west by moderate values, constituting zones CC and DD. On certain lines these deep anomalies are essentially continuous across much of the survey traverse. Such a broad, quasi-continuous pattern of IP anomalies is consistent with a major alteration halo which extends to the west at gently increasing depths. (An alternative hypothesis of deep oxidation is dismissed on the basis of geological observation.)

Note that many of the shallow, narrow IP sources recognizable in the N=2 data have largely disappeared in the N=4 contoured data, reflecting the dominance of the deeper sources in this data set.

It is also merits mentioning that the IP data on tie lines 2200E and 2600E are consistent with the features interpreted on the cross lines; however, the orientation of these lines parallel to the dominant geological and geophysical trends has yielded broadly anomalous intervals reflecting sources beneath and/or adjacent to the traverses.

Finally, it is worth cautioning that while IP is a very effective detector of sulphides (and graphite), gold may or may not be related to such detectable sulphide accumulations. Thorough integration of geological and geochemical information is needed to achieve the most effective utilization of the various geophysical data sets and insights, with appropriate review and re-evaluation as new information or concepts are introduced.

6.0 Conclusions

Based on the results and preceding discussion, it is concluded that the geophysical surveys have contributed substantially to identifying targets and delineating significant lithologic and structural elements on the largely overburden-covered Discovery Creek property.

In particular, the **magnetic data**, amalgamated with a prior detailed survey, have enabled:

1) Delineation of five lithomagnetic domains correlatable with known and projected major lithologic units;

2) Recognition of a series of faults striking 330° defining the dominant structural regime;

3) Identification of distinctive magnetic lows attributable to alteration and correlatable (at least in part) to persistent auriferous vein systems.

The **IP/resistivity data**, acquired principally with an 'a' spacing of 200' supplemented by selected detail surveying carried out in 1990 and in the present program, have delineated:

1) Twenty shallow, linear, weak to moderate chargeability zones (A-U) striking mainly 330°;

2) Ten priority targets for epigenetic mineralization comprising zones A_1-A_4 and B within the altered granodiorite; zones C and J along the Willow Creek trend; and zones D, F, G, K, L and N along the Eliza Creek trend, selected on the basis of geophysical characteristics, known or projected mineralization and inferred structural features;

3) A broad, strong, shallow IP source (zone A*) attributed to part of an extensive propylitic alteration aureole related to a disseminated Cu-Mo system located to the east of the property;

4) A broad envelope of moderate to strong IP responses which extends to the west at depth (designated zones AA, CC and DD) and which is attributed in large part to a western continuation of the alteration halo;

5) Resistivity features which characterize general lithological units, as well as local resistivity lows favourably associated with certain IP zones.

Finally, the combination of detailed magnetic surveys and IP/resistivity surveys at several different dipole lengths is judged to have comprised an effective geophysical approach to exploring this geologically complex property.

7.0 Recommendations

Based on the preceding discussion and conclusions, it is recommended that further exploration of both epigenetic and porphyry targets be undertaken on the Discovery Creek property.

In particular, it is recommended that:

1) Existing geological and geochemical data be thoroughly compiled and evaluated vis-a-vis the identified geophysical targets;

2) Priority geophysical targets, particularly where supported by geology and geochemistry, be further evaluated by trenching and/or drilling as appropriate;

3) Limited detailed IP surveying be undertaken to clarify certain incompletely resolved targets of interest, such as zone N.

4) The present geophysical interpretation be updated and revised as new information is acquired.

Respectfully submitted,

Jerry Roth, M.A.
Senior Consulting Geophysicist
STRATAGEX LTD.

CME

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STRATAGEX LTD.
Geophysical Consulting

STATEMENT OF QUALIFICATIONS

J. Roth

I, Jeremy Roth, residing at 146 Dowling Ave., Toronto, make this statement as to my professional qualifications:

1) I hold a B.A. degree in Mathematics and an M.A. degree in Geophysics from Harvard University, Cambridge, Mass.

2) I have worked continuously as an exploration geophysicist since 1966, both in Canada and abroad.

3) I have been in practice as a consulting geophysicist since 1984.

4) I have carried out the geophysical interpretation embodied in the attached report based on my general professional knowledge and experience and on discussions with contractor and client staff involved in the project.

5) I hold no interest in Aurchem Exploration Inc. nor in any of its affiliates, nor do I expect any compensation from Aurchem Exploration apart from normal consulting fees.

Jeremy Roth

Suite 300, 75 King St.E., Toronto, Canada, M5C 1G3•Tel:(416) 362-3344•Fax:(416)362-3800•Telex: 06 23565

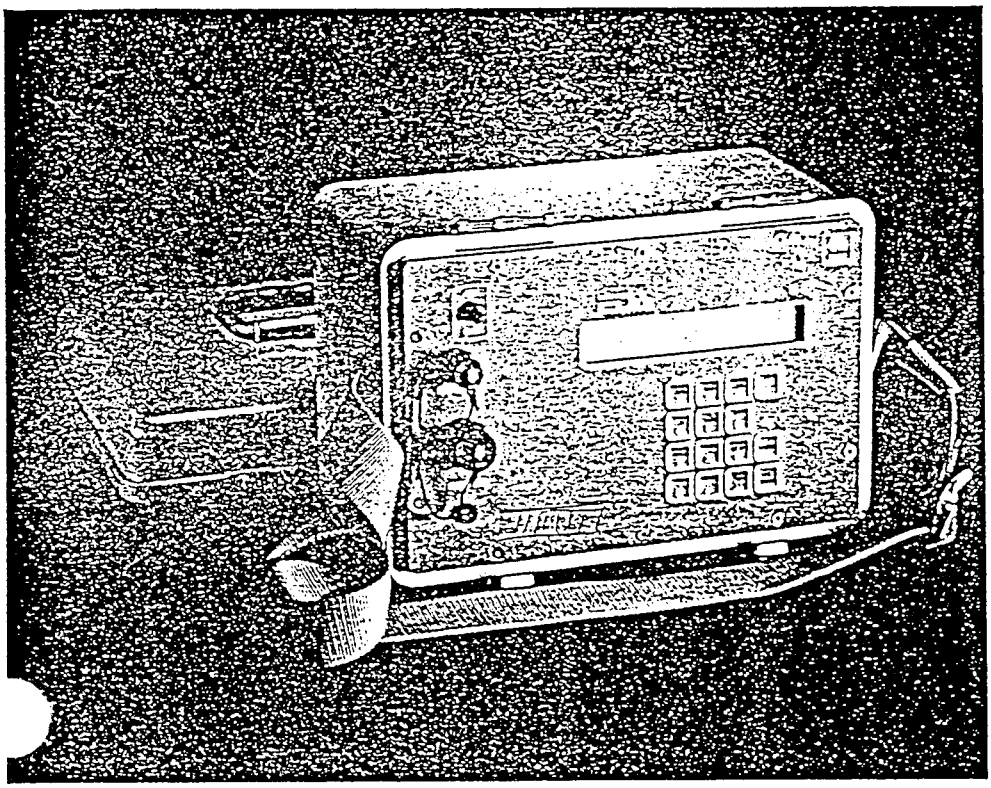
CME

APPENDIX A

Equipment Specifications

IP-6
Six Dipole
Time Domain IP Receiver

EDA



Major Benefits

- Six Dipoles Simultaneously Measured
- Ten Windows Available
- Choice of Arithmetic or Logarithmic Window Width
- Programmable Arithmetic Window Width
- High Input Voltage
- Weighs Only 8.5 kg.
- User Friendly

EDA

Specifications

Dipoles	Six simultaneous input dipoles.
Input Voltage (Vp) Range	Standard: — 8 volt maximum for each dipole — maximum sum of 12 volts from the second to the sixth dipole. Additional Setting: — attenuation of up to 40 volts on the first dipole.
Input Voltage Protection	Up to 1000 volts.
Vp Resolution	1 microvolt.
Vp Accuracy	0.3% typical; maximum 1% over temperature range.
Chargeability Resolution	1 millivolt/volt for Vp greater than 10 millivolts. 0.1 millivolt/volt for Vp greater than 100 millivolts.
Chargeability Accuracy	0.6% typical; maximum 2% for Vp greater than 10 millivolts over temperature range.
Automatic SP Compensation	±1 volt with linear drift correction up to 1 millivolt/second.
Input Impedance	10 megohm.
Sample Rate	10 milliseconds.
Automatic Stacking	1 to 999 cycles.
Synchronization	Minimum primary voltage level of 40 microvolts.
Rejection Filters	50 and 60 Hz power line rejection greater than 100 dB.
Grounding Resistance Check	0.1 to 128 kilo-ohms.
Compatible Transmitters	Any time domain waveform transmitter with a pulse duration of 1, 2, 4 or 8 seconds and a crystal timing stability of 100 ppm.
Programmable Parameters	Geometric parameters, time parameter, intensity of current, type of array, line and station number, dipole length, window width and delay time (mode 2).
Display	Two-line, 40-character alphanumeric liquid crystal display protected by an internal heater for low temperature conditions.
Memory Capacity	1800 sets of readings.
RS-232C Serial I/O Interface	300 to 19,200 baud rate; 7 or 8 data bits; 1 or 2 stop bits; odd, even, no parity.
Console Power Supply	Six - 1.5V "D" cell alkaline batteries with auto power save feature; 20 hours of operation at 20°C.
Operating Environmental Range	−40°C to +60°C; 0 to 100% relative humidity; weatherproof.
Weight and Dimensions	8.5 kg. (with batteries), 300 x 200 x 240 mm.
Standard System Complement	Instrument console with carrying strap, batteries, data transfer cable and operations manual.
Displayed Parameters	Primary voltage, partial and total decimalized chargeabilities, running and cumulative average of total chargeabilities (in fixed modes), standard deviation of primary voltage and total chargeability, self potential, number of cycles, dipole being measured and contact resistance.
Available Options	Stainless steel transmitting electrodes, copper sulphate receiving electrodes, alligator clips, bridge leads, multi dipole wire cable, wire spools and software programs.

EDA Instruments Inc.
4 Thorncliffe Park Drive
Toronto, Ontario
Canada M4H 1H1
Telex: 06 23222 EDA TOR
Cable: EDAINSTRMTS TORONTO
Telephone: (416) 425 7800
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9200 E. Mineral Avenue
Suite 370
Englewood, Colorado, U.S.A. 80112
Telephone: (303) 790 2541
Fax: (303) 790 2902

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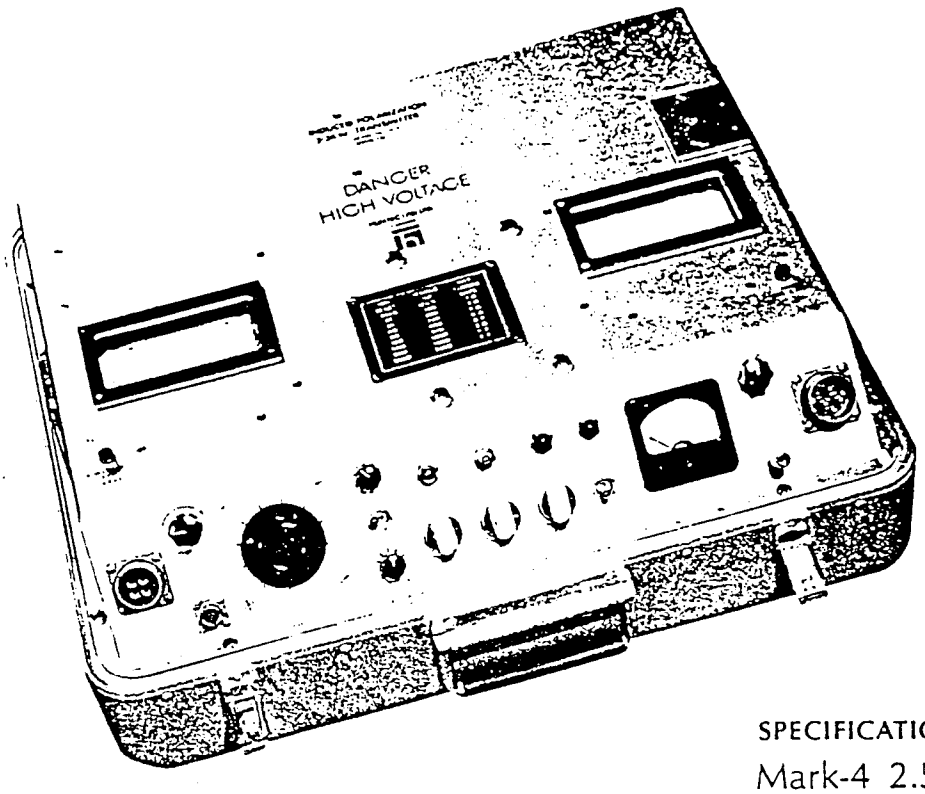


M-4 SERIES

Induced Polarization/ Resistivity 2.5 kW Transmitter

DESCRIPTION

The HUNTEC M-4 2.5 kW Induced Polarization ...smitter is designed for time domain, frequency ...ain (PFE) and complex resistivity applications. ...e unit converts primary 400 Hz ac power from an engine-alternator set to a regulated dc output current, set by the operator. Current regulation eliminates output waveform distortion due to electrode polarization effects. It is achieved in the transmitter by varying the alternator field currents. The transmitter is equipped with dummy loads to smooth out generator load variations.

FEATURES

- Solid-state switching for long life and precise timing.
- Open circuit during the "off" time ensures no counter current flow.
- Resistance measurement for load matching.
- Precision crystal controlled timing.
- Failsafe operation protects against short-circuit and overvoltage.
- Automatic regulation of output current eliminates errors due to changing polarization potential and load resistance.

SPECIFICATIONS

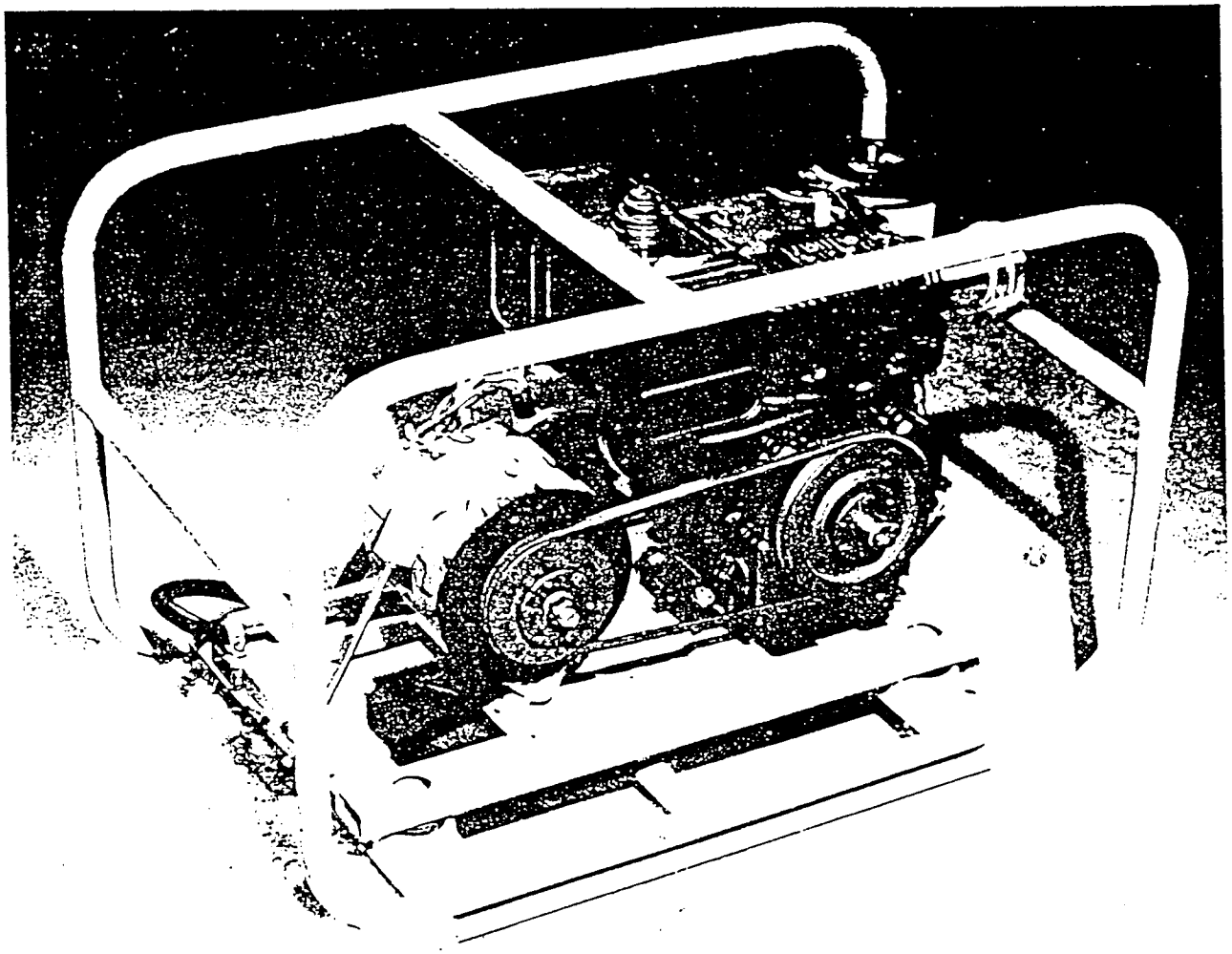
Mark-4 2.5 kW Transmitter

A) Power input:	96 — 144 V line to line 3 phase 400 Hz (from Huntec generator set)
B) Output:	Voltage: 150 — 2200 V dc in 8 steps Current: 0.2 — 7 A regulated**
C) Current regulation:	Less than ±0.1% change for ±10% load change
D) Output frequency:	0.0625 Hz to 1 Hz (time domain, complex resistivity) 0.0625 Hz to 4 Hz (frequency domain) selectable from front panel An additional range of frequencies between 0.78 and 5.0 Hz is available and can be selected by an internal switch.
E) Frequency accuracy:	±50 ppm −30°C to + 60°C
F) Output duty cycle: $T_{on}/(T_{on}+T_{off})$	0.5 to 0.9375 in increments of 0.0625 (time domain) 0.9375 (complex resistivity) 0.75 (frequency domain)
G) Output current meter:	Two ranges: 0-5 A and 0-10 A
H) Ground resistance meter:	Two ranges: 0-10 kΩ and 0-100 kΩ
I) Input voltage meter:	0-150 V
J) Dummy load:	Two levels: 500 W and 1.75 kW
K) Temperature range:	−34°C to + 50°C
L) Size:	53 cm x 43 cm x 29 cm
M) Weight:	26 kg

**Smaller currents are obtainable, but outside the current regulation range the transmitter voltage is regulated, not the current.

huntec (70) LIMITED

25 HOWDEN ROAD,
SCARBOROUGH,
ONTARIO, CANADA
M1R 5A6
PHONE: (416) 751-8053
TELEX 06-963640
CABLE: HUNTOR,
TORONTO.



SPECIFICATIONS

M-4 2.5 kW Engine Driven Alternator

Output:	120 V ac 400 Hz 3.5 kVA maximum
Engine:	6 kW air cooled, single cylinder four cycle piston engine with manual start
Fuel:	Regular grade gasoline, tank capacity 3.8 L to give 4 h duration
Alternator:	Delta connected heavy duty automobile type, belt driven, air cooled
Construction:	Tubular protective carrying frame with resiliently mounted engine and alternator
Size:	51 cm x 48 cm x 76 cm
Weight (dry):	61 kg

CME

APPENDIX B

IP/Resistivity Pseudosections

PS#	Line	Array	'A' Spacing
PS-1	1700S	d-d	100'
PS-2	1000S*	d-d	200'
PS-3	800S*	d-d	"
PS-4	600S*	d-d	"
PS-5	400S*	d-d	200'
PS-5a	400S	d-d	50'
PS-6	200S*	d-d	200'
PS-7	00*	d-d	"
PS-8	200N*	d-d	"
PS-9	400N*	d-d	200'
PS-10	600N*	d-d	200'
PS-10a	600N	d-d	50'
PS-11	800N*	d-d	200'
PS-12	800N*	p-d	200'
PS-13	1000N*	p-d	200'
PS-14	1200N	p-d	200'
PS-15	1400N*	p-d	200'
PS-16	1600N	p-d	200'
PS-17	1800N	p-d	200'
PS-17a	1800N	p-d	50'
PS-18	2000N	p-d	200'
PS-19	2200N	p-d	200'

* Partial detail survey with a=50' (locally supplemented by a=100') in 1990 on lines 1000S to 1000N; see 1990 report by MPH.

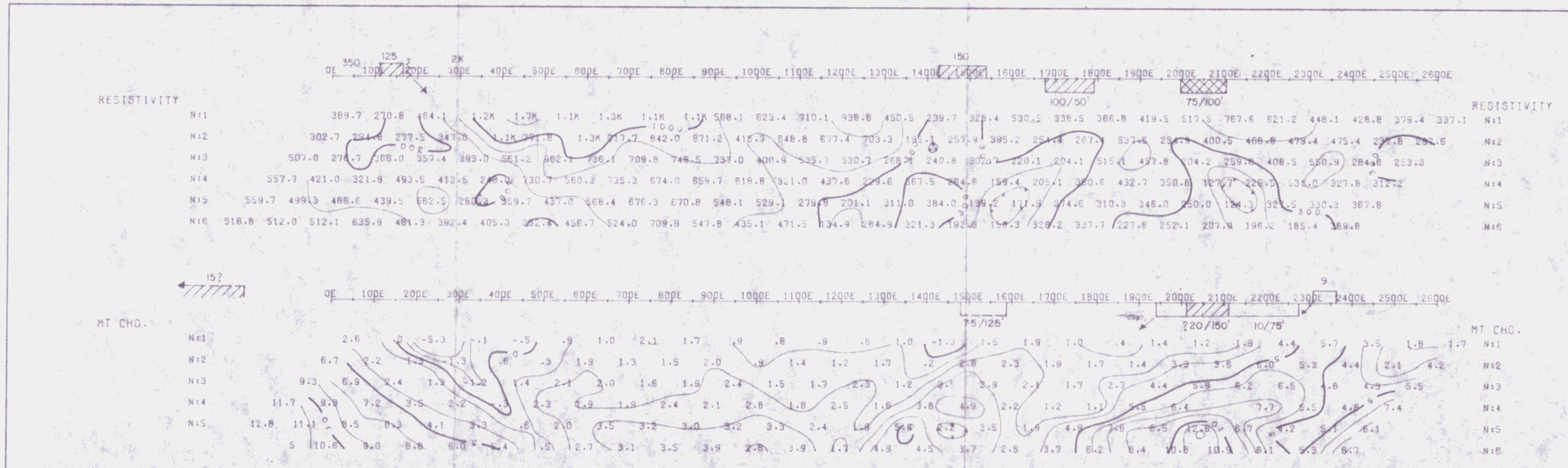
APPENDIX B (cont.)

IP/Resistivity Pseudosections

PS#	Line	Array	'A' spacing
PS-20	2400N	p-d	200'
PS-20a	2400N	p-d	50'
PS-21	2600N	p-d	200'
PS-22	2800N	p-d	200'
PS-23	3000N	p-d	200'
PS-24	3200N	p-d	200'
PS-25	3400N	p-d	200'
PS-26	2200E	p-d	200'
PS-27	2600E	p-d	200'

Composite Pseudosections

CPS-1	1700N	p-d	200 & 400'
CPS-2	3400N	p-d	200 & 400'



INTERPRETATION

EXPLANATION

Resistivity Lows



PH: High resistivity

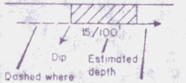
Contact

Chargeability Highs:



Correlating resistivity low

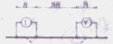
A, etc. Zones



LINE : 1700 S (DETAIL)

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



PLOTTING POINT
N = 1, 2, 3, 4, ...
"A" SPACING = 100.0 FEET

ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

092987

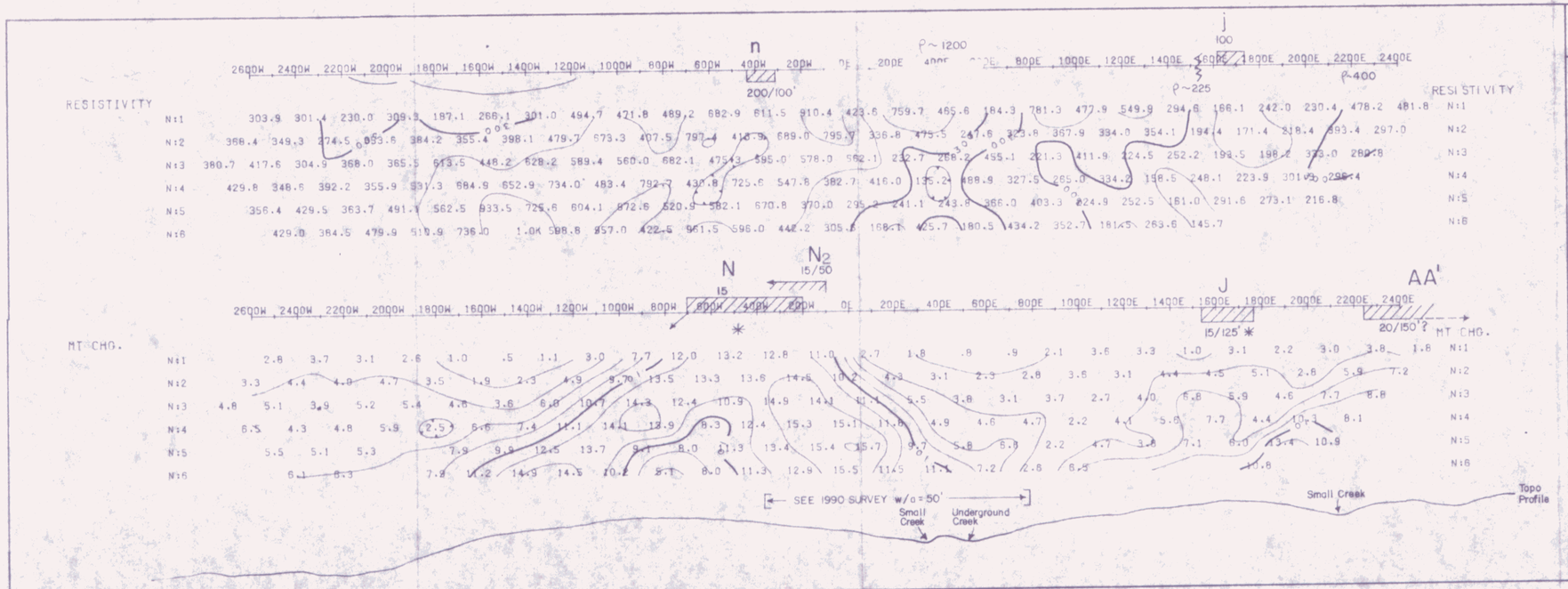
AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

SCALE = 1:2400

CME CONSULTING LTD.



INTERPRETATION

EXPLANATION

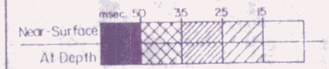
Resistivity Lows:



ρH High resistivity

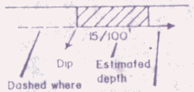
Contact

Chargeability Highs:



Correlating resistivity low

A, etc. Zones



LINE : 1000 S

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



PLOTTING POINT
N = 1, 2, 3, 4, ...
"A" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

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CARMACKS, Y.T.

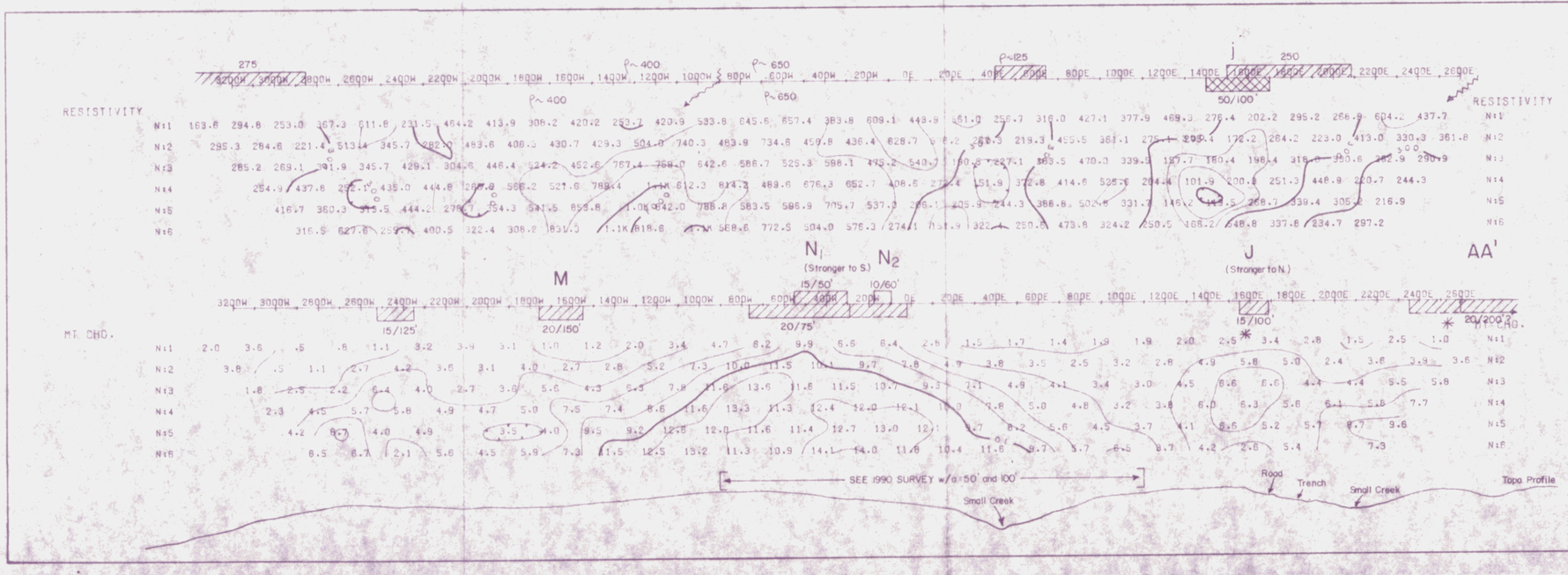
DATE : JUN/JUL/91 | REF : P-078

SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

PS-2



INTERPRETATION

EXPLANATION

Resistivity Lows:



ρH: High resistivity

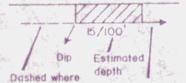
Contact

Chargeability Highs:



✳ Correlating resistivity low

A, etc. Zones



LINE : 800 S

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



PLOTTING POINT
N = 1, 2, 3, 4, ...
"a" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

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CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

SCALE = 1:4800.0

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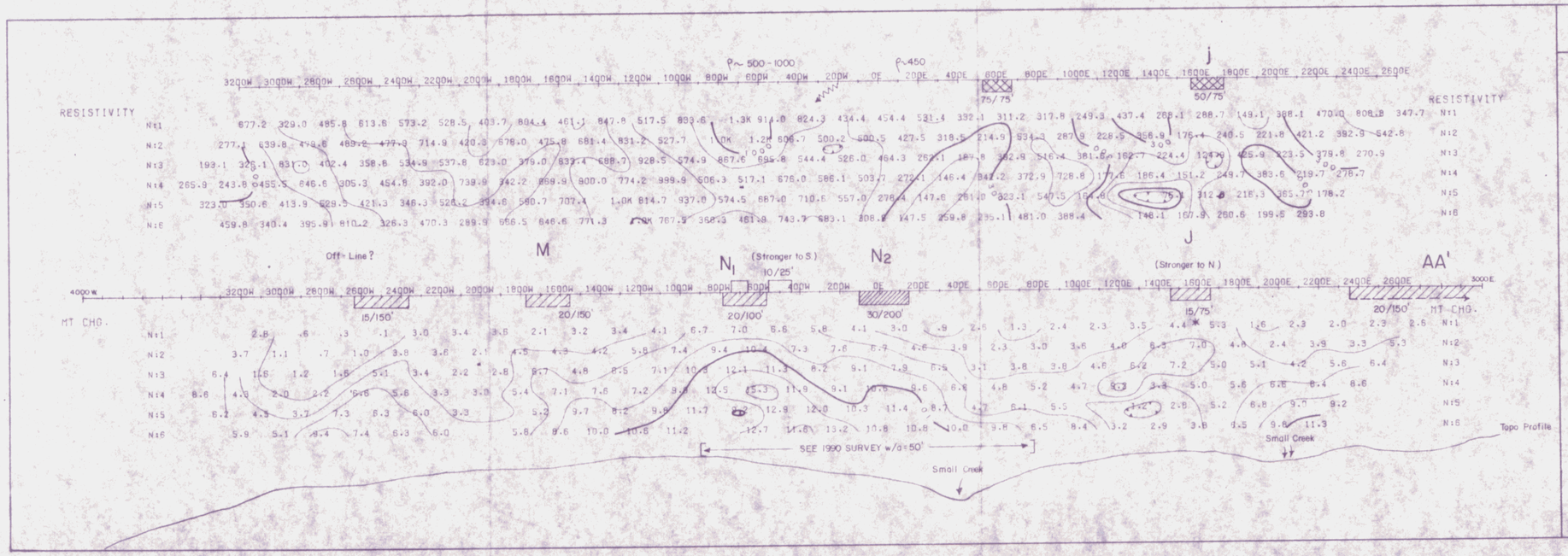
Interpretation by: STRATAGEX Ltd.

PS-3



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near-Surface / At Depth — 40 100 400 1000

H : High resistivity

Contact

Chargeability Highs:

Near-Surface / At Depth — msec 70 35 25 15

Correlating resistivity low

A, etc. Zones

15/100'

Dip — Estimated depth

Dashed where uncertain — Limit undefined

LINE : 600 S

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY

A NA A

PLOTTING POINT

N = 1, 2, 3, 4, ...

"A" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER

TX CYCLE: 2 SEC.

RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

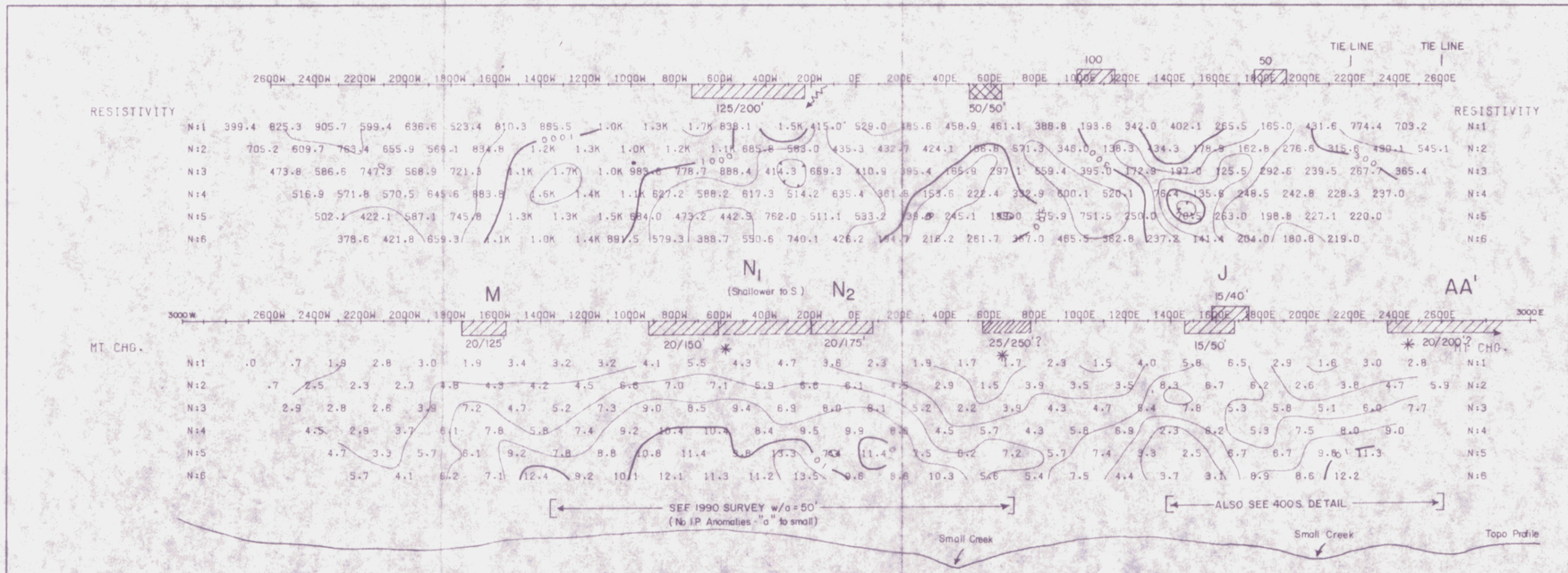
DATE : JUN/JUL/91 | REF : P-07A

SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by : STRATAGEX Ltd.

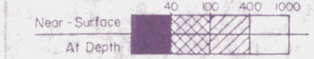
PS-4



INTERPRETATION

EXPLANATION

Resistivity Lows:



H High resistivity

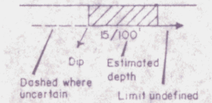
Contact

Chargeability Highs:



Correlating resistivity low

A, etc. Zones



LINE : 400 S

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

092987

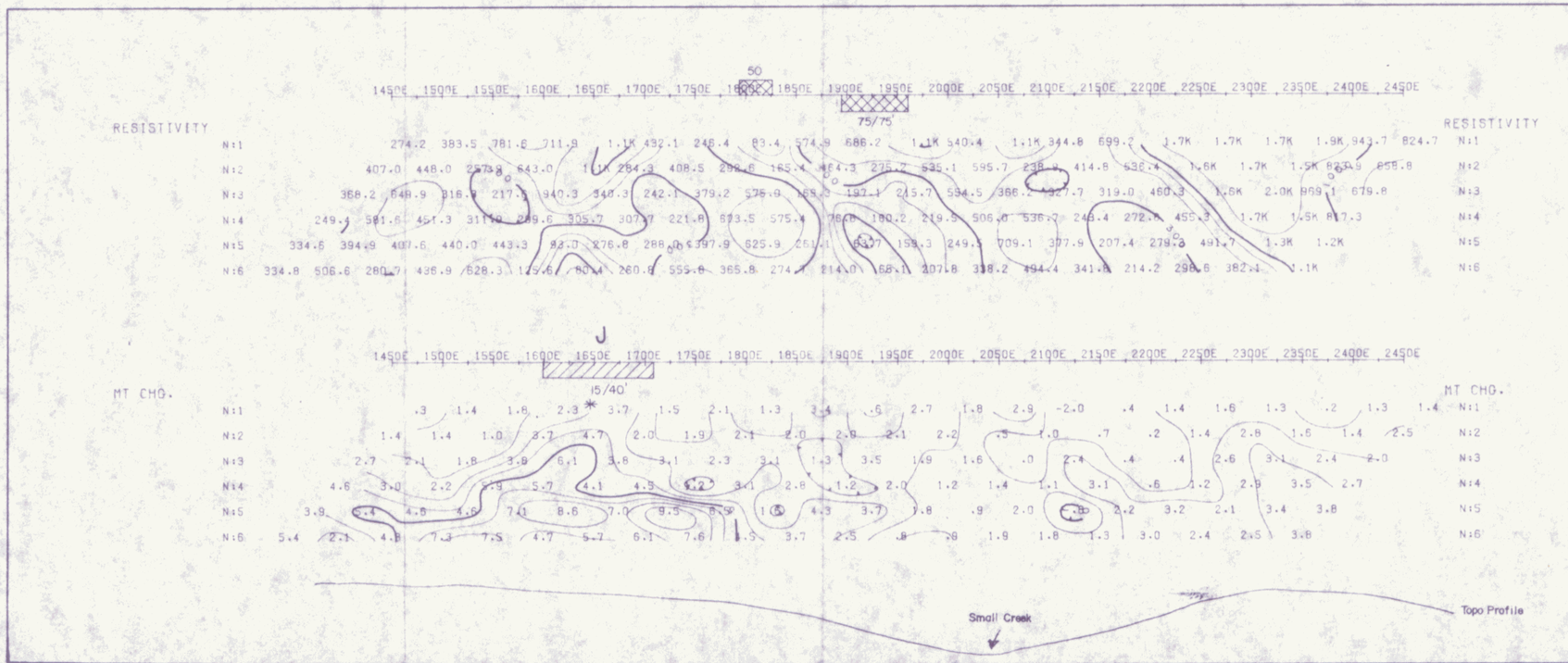
AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

SCALE = 1:4800.0

CME CONSULTING LTD.



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near - Surface
At Depth

40 100 400 1000

H High resistivity

Contact

Chargeability Highs:

msec 50 35 25 15

Near-Surface
At Depth

Correlating resistivity low

A, etc. Zones

I5/100'

Dip

Estimated depth

Dashed where uncertain

Limit undefined

LINE : 400 S (DETAIL)

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY

A NA A

PLOTTING POINT
N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 FEET

ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

092987

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

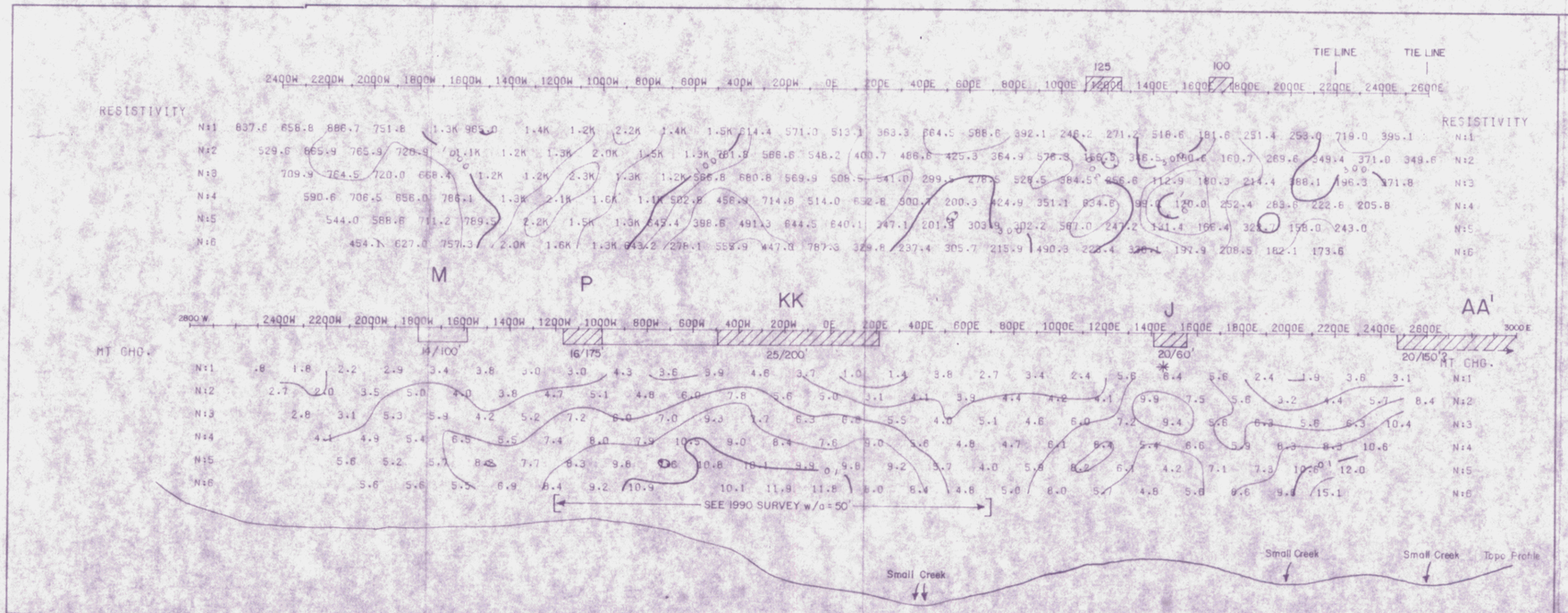
SCALE = 1:1200.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

PS-5a

092987



INTERPRETATION

EXPLANATION

Resistivity Lows:



P H High resistivity

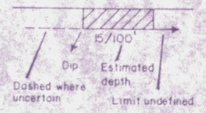
Contact

Chargeability Highs:



Correlating resistivity low

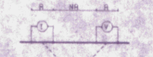
A, etc. Zones



LINE : 200 S

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

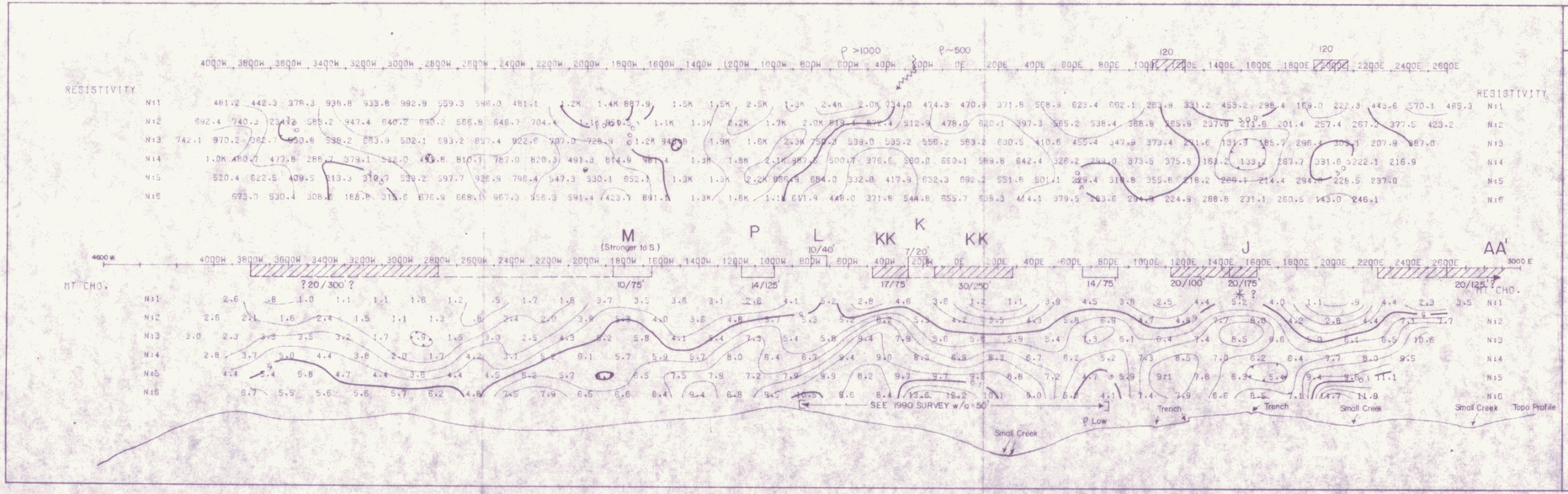
SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

PS-6

092987



INTERPRETATION

EXPLANATION

Resistivity Lows

Near-Surface / At Depth — 40 100 400 1000

H High resistivity

Contact

Chargeability Highs?

Near-Surface / At Depth — msec 50 35 25 15

Correlating resistivity low

A, etc. Zones

15/100' Dip — Estimated depth

Dashed where uncertain — Limit undefined

LINE : 0

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

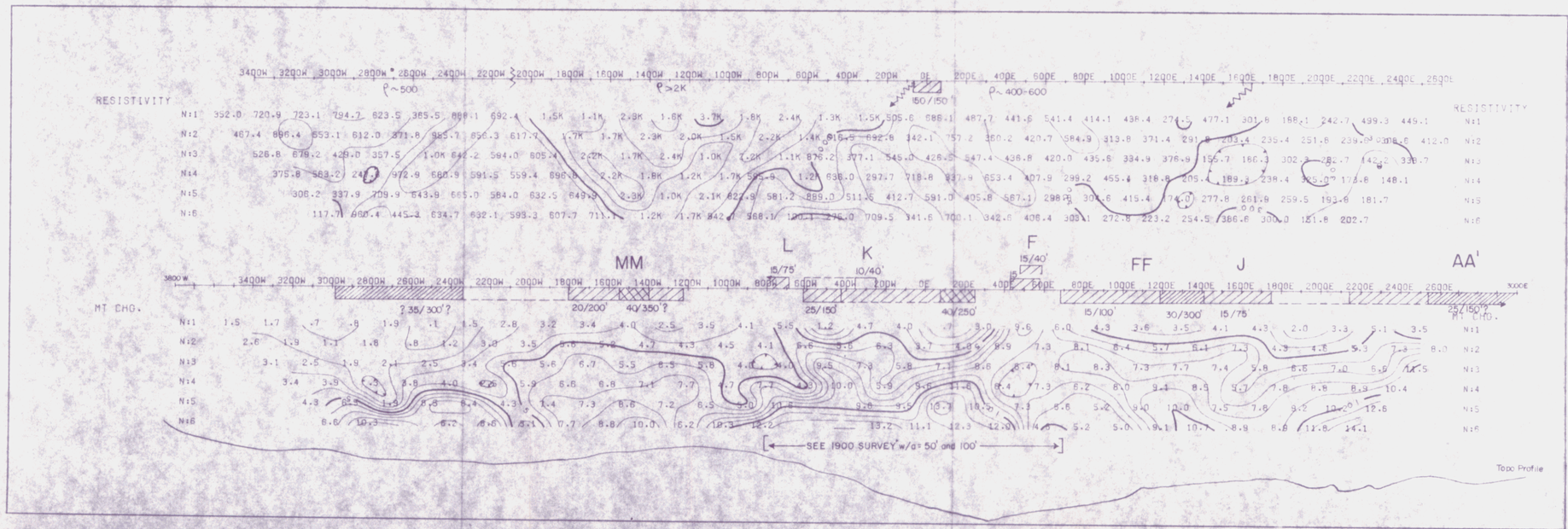
DATE : JUN/JUL/91 | REF : P-078

SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

092987



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near-Surface

At Depth

H: High resistivity

Contact

Chargeability Highs:

Near Surface

At Depth

Correlating resistivity low

A, etc. Zones

Dashed where uncertain

Dip

Estimated depth

Limit undefined

LINE : 200 N

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY

PLOTTING POINT
N = 1, 2, 3, 4, ...
"A" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

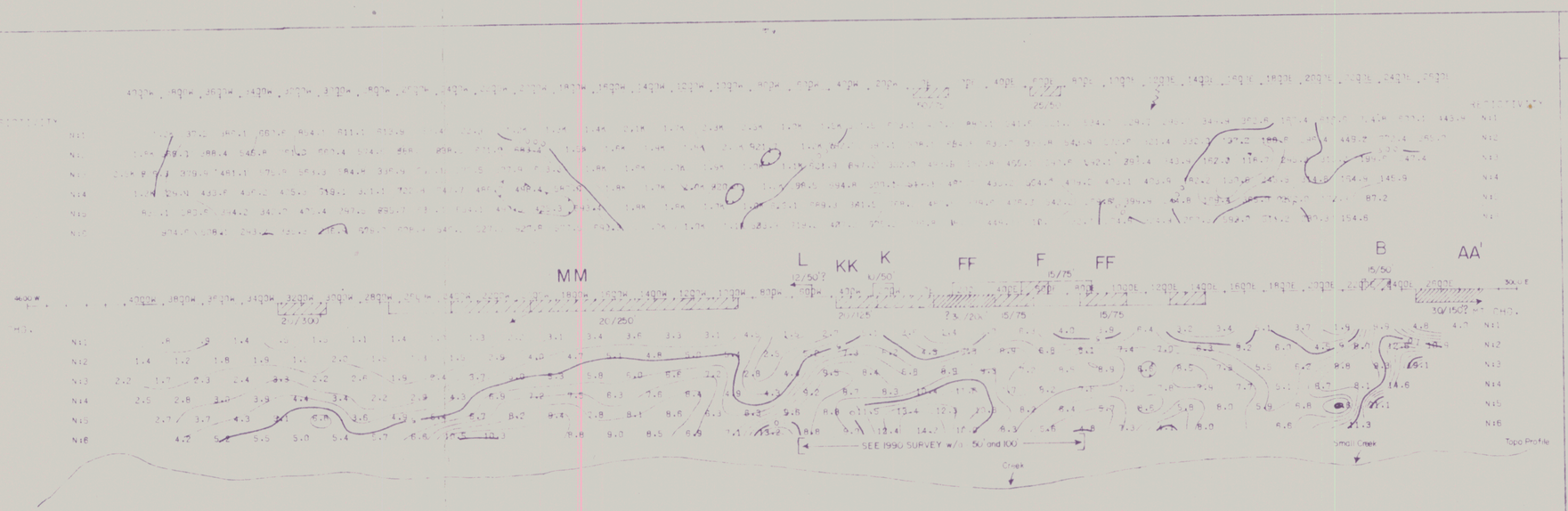
SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

PS-8

092987



INTERPRETATION

EXPLANATION

Resistivity Lows

Near Surface

At Depth

H - High resistivity

Conductivity Highs

Near Surface

At Depth

Correlating resistivity low

A, etc. - Zones

Dashed where uncertain

Dip

Estimated depth

Limit undefined

LINE : 400 N

INDUCED POLARIZATION SURVEY

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK

CARMACKS, Y.T.

DATE : JUN/JUL/91 REF : P-07A

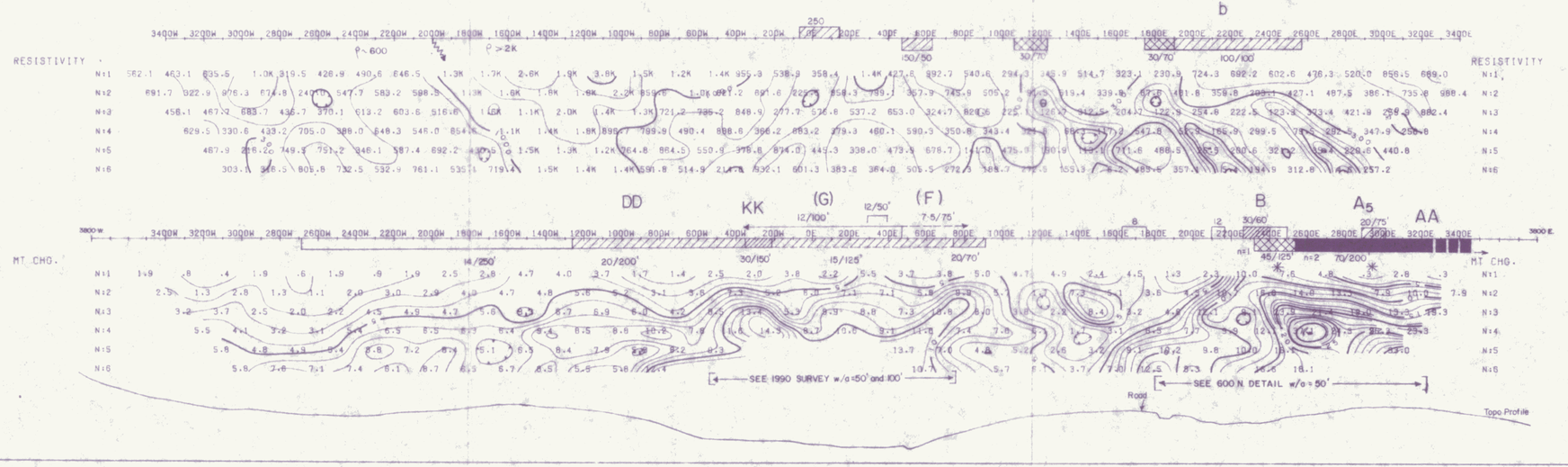
SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd

PS-9

092987



INTERPRETATION

EXPLANATION

Resistivity Lows :

Near - Surface
At Depth

H : High resistivity
Contact

Chargeability Highs

Near - Surface
At Depth

Correlating resistivity low
A, etc. Zones

Dip
Dashed where uncertain
Estimated depth
Limit undefined

LINE : 600 N

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY

PLOTTING POINT
N = 1, 2, 3, 4, ...
"a" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., C.M.E. Consulting Ltd.
Implementation by: D.F.M., Z.D., C.M.E. Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-078

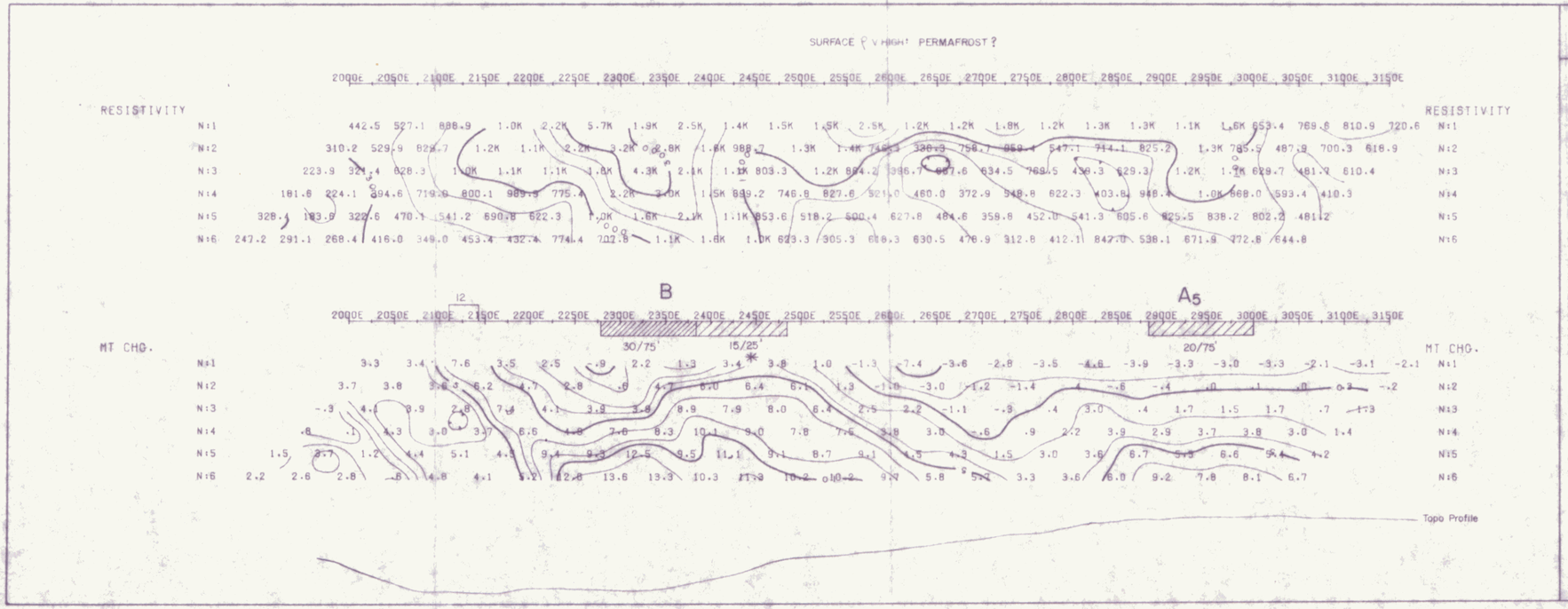
SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by : STRATAGEX Ltd.

PS-10

092987



INTERPRETATION

EXPLANATION

Resistivity Lows:



ρH: High resistivity

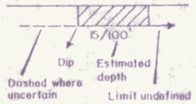
Contact

Chargeability Highs:



Correlating resistivity low

A, etc. Zones



LINE : 600 N (DETAIL)

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



PLOTTING POINT
N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 FEET

ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

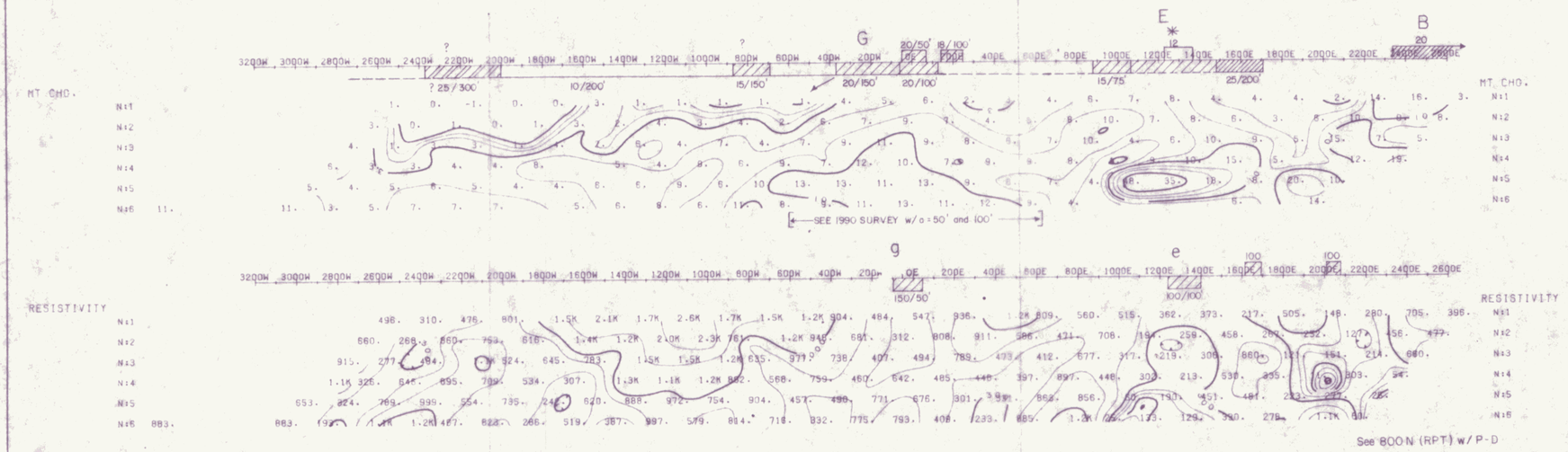
SCALE = 1:1200.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

PS-10a

092987



INTERPRETATION

EXPLANATION

Resistivity Lows

Near - Surface / At Depth — 40 100 400 1000

H: High resistivity

Contact

Chargeability Highs:

msec 50 35 25 15

Near-Surface / At Depth

Correlating resistivity low

A, etc. Zones

15/100 — Dip — Estimated depth

Dashed where uncertain — Limit undefined

LINE : 800 N

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...

"a" SPACING = 200.0 FEET

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK

CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

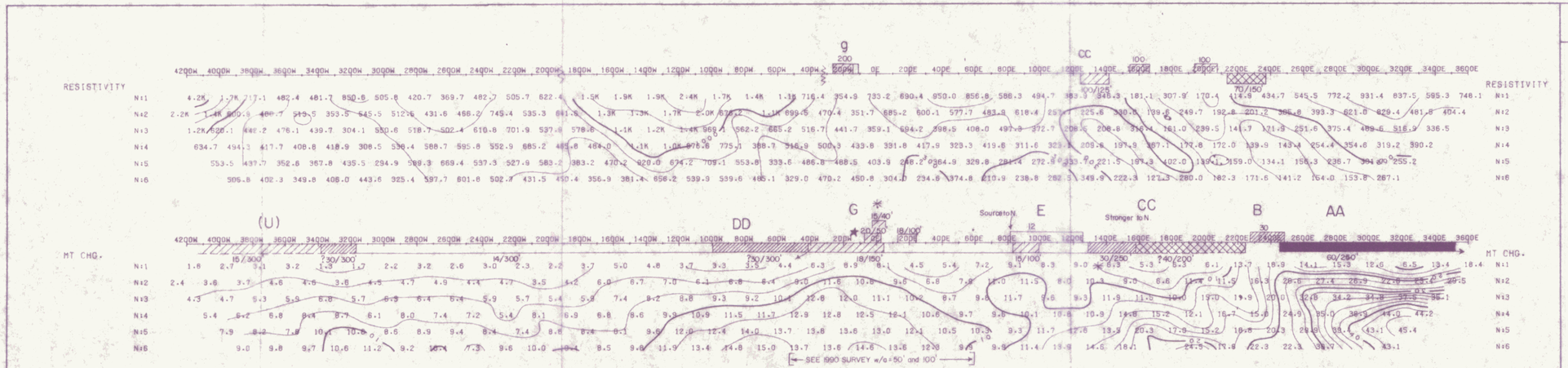
SCALE = 1:4800.0

CME CONSULTING LTD.

PS-11

092987

MAP# 115 7/3 (207)



INTERPRETATION

EXPLANATION

Resistivity Lows:



H: High resistivity

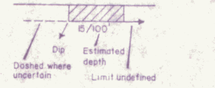
Contact

Chargeability Highs:



Correlating resistivity low

A, etc. Zones



LINE : 800 N (RPT)

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...

"a" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER

TX CYCLE: 2 SEC.

RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: A.R., Stratagem Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

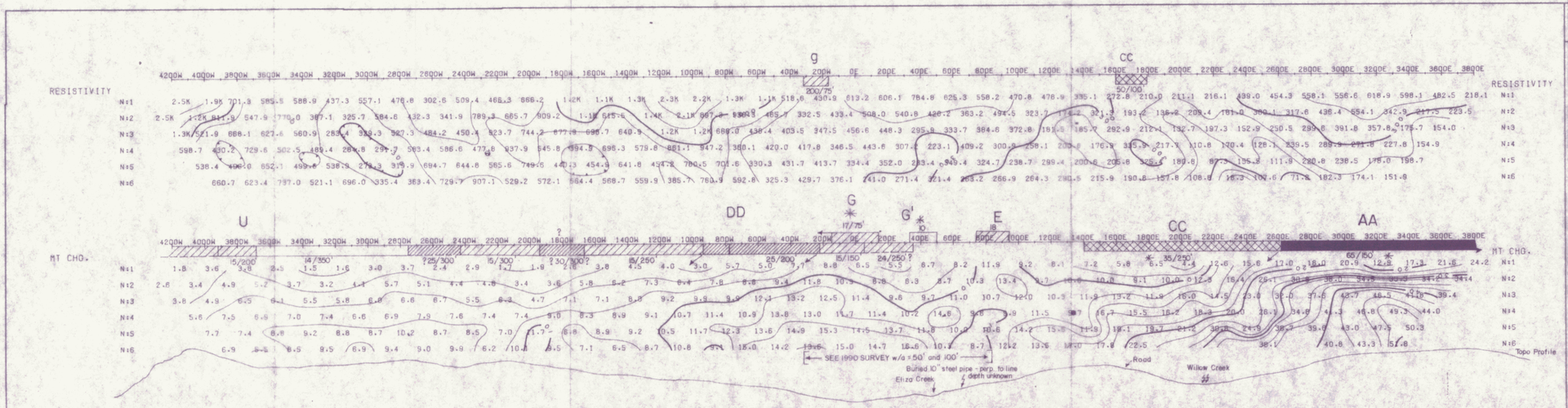
DATE : JUN/JUL/91 | REF : P-07A

SCALE = 1:4800.0

CME CONSULTING LTD.

PS-12

MAP # 1157/3 (199)



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near-Surface / At Depth

msec 40 100 400 1000

H High resistivity

Contact

Chargeability Highs:

msec 50 35 25 15

Near-Surface / At Depth

Correlating resistivity low

A, etc. Zones

6/100 Dip, Estimated depth

Dashed where uncertain — Limit undefined

LINE : 1000 N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

092987

DEPTH POINT

N = 1, 2, 3, 4, ...

"A" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER

TX CYCLE: 2 SEC.

RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

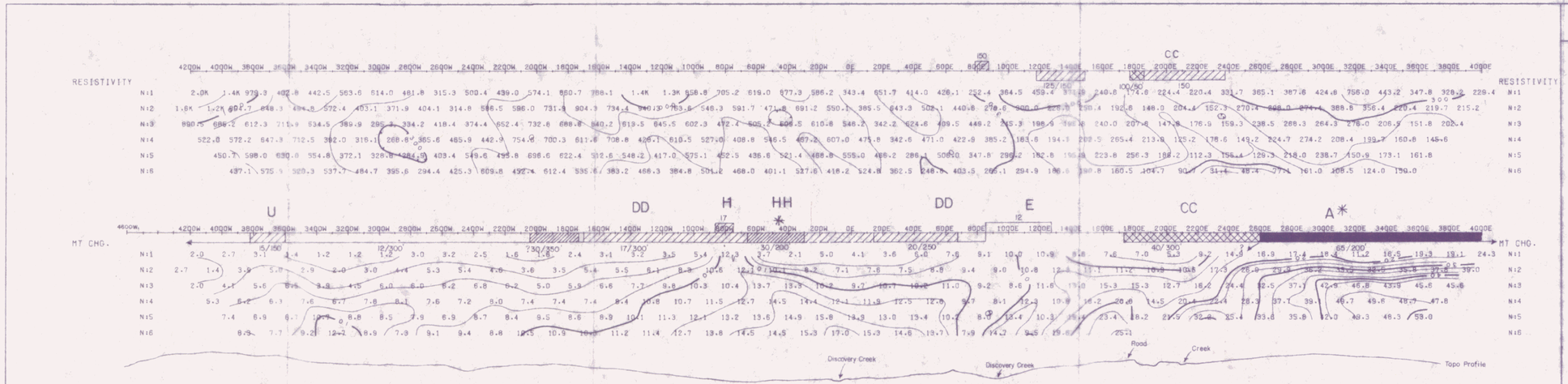
SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd

PS-13

MAP # 115 7/3 (198)



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near-Surface / At Depth

H High resistivity

Contact

Chargeability Highs:

msec. 50 35 25 15

Near-Surface / At Depth

Correlating resistivity low

A, etc. Zones

15/100 Dip

Dashed where uncertain

Estimated depth

Limit undefined

LINE : 1200 N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

1092987

N = 1, 2, 3, 4, ...

"a" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER

TX CYCLE: 2 SEC.

RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

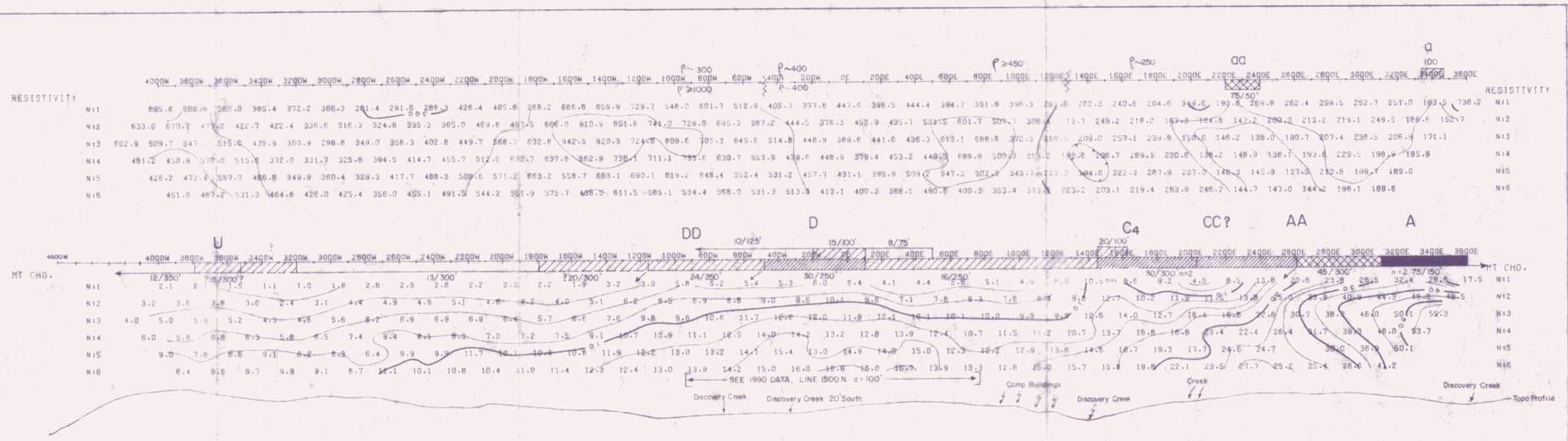
SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

PS-14

MAP# 115J/3 (200)



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near-Surface / At Depth — 40 100 400 1000

H: High resistivity

Contact

Chargeability Highs:

msec 50 35 25 15

Near-Surface / At Depth

Correlating resistivity low

A, etc. Zones

15/100

Dip

Estimated depth

Dashed where uncertain

Limit undefined

LINE : 1400 N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

092987

N = 1, 2, 3, 4, ...

"a" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER

TX CYCLE: 2 SEC.

RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

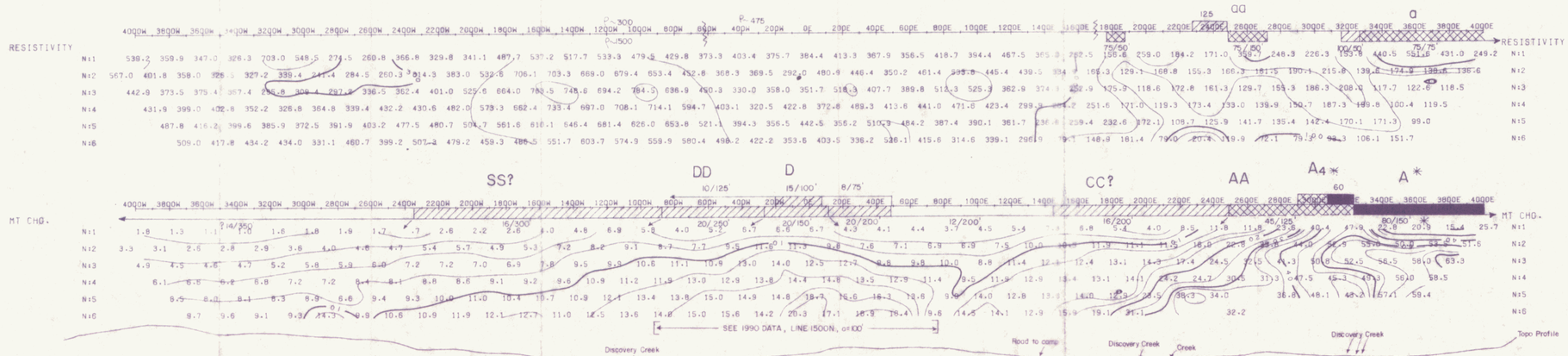
SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by : STRATAGEX Ltd.

PS-15

MAP #1153/3 (20)



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near-Surface
At Depth

40 100 400 1000

H High resistivity
Contact

Chargeability Highs:

Near-Surface
At Depth

msec 50 35 25 15

* Correlating resistivity low

A, etc Zones

15/100'
Dip
Dashed where uncertain
Estimated depth
Limit undefined

LINE : 1600 N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

092987

DEPTH POINT

N = 1, 2, 3, 4, ...
"a" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

SCALE = 1:4800.0

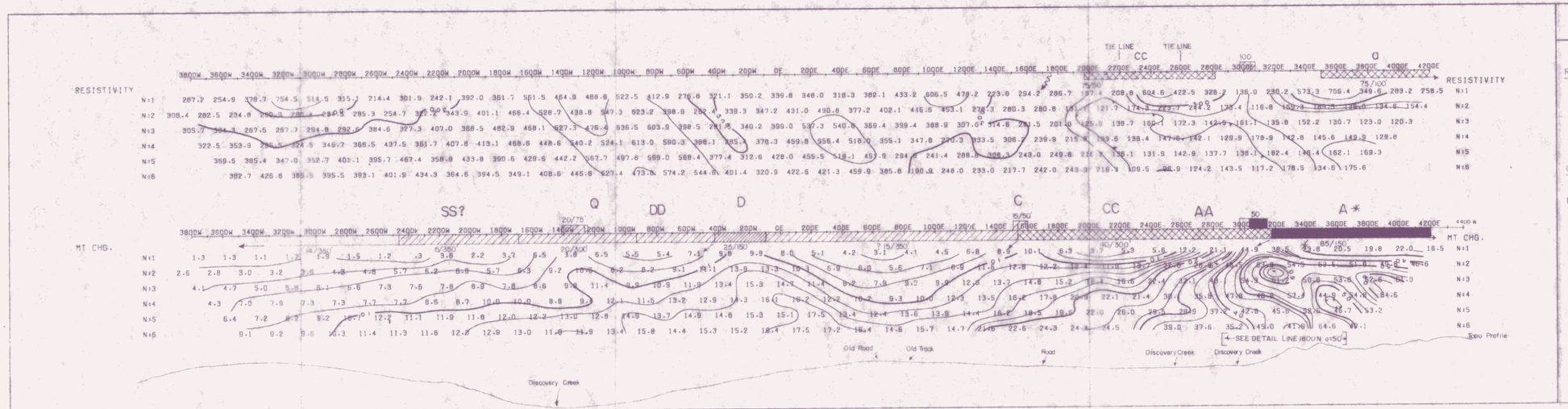
CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

PS-16

MAP # 115 I/3

(204)



INTERPRETATION

EXPLANATION

Resistivity Lows

Near-Surface
At Depth

H: High resistivity
Contact

Chargeability Highs:

Near-Surface
At Depth

Correlating resistivity low

A, etc. Zones

Dip
Dashed where uncertain

Estimated depth
Limit undefined

LINE : 1800 N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

092987

N = 1, 2, 3, 4, ...

"A" SPACING = 200.0 FEET

ELREC IP-8 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., JME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

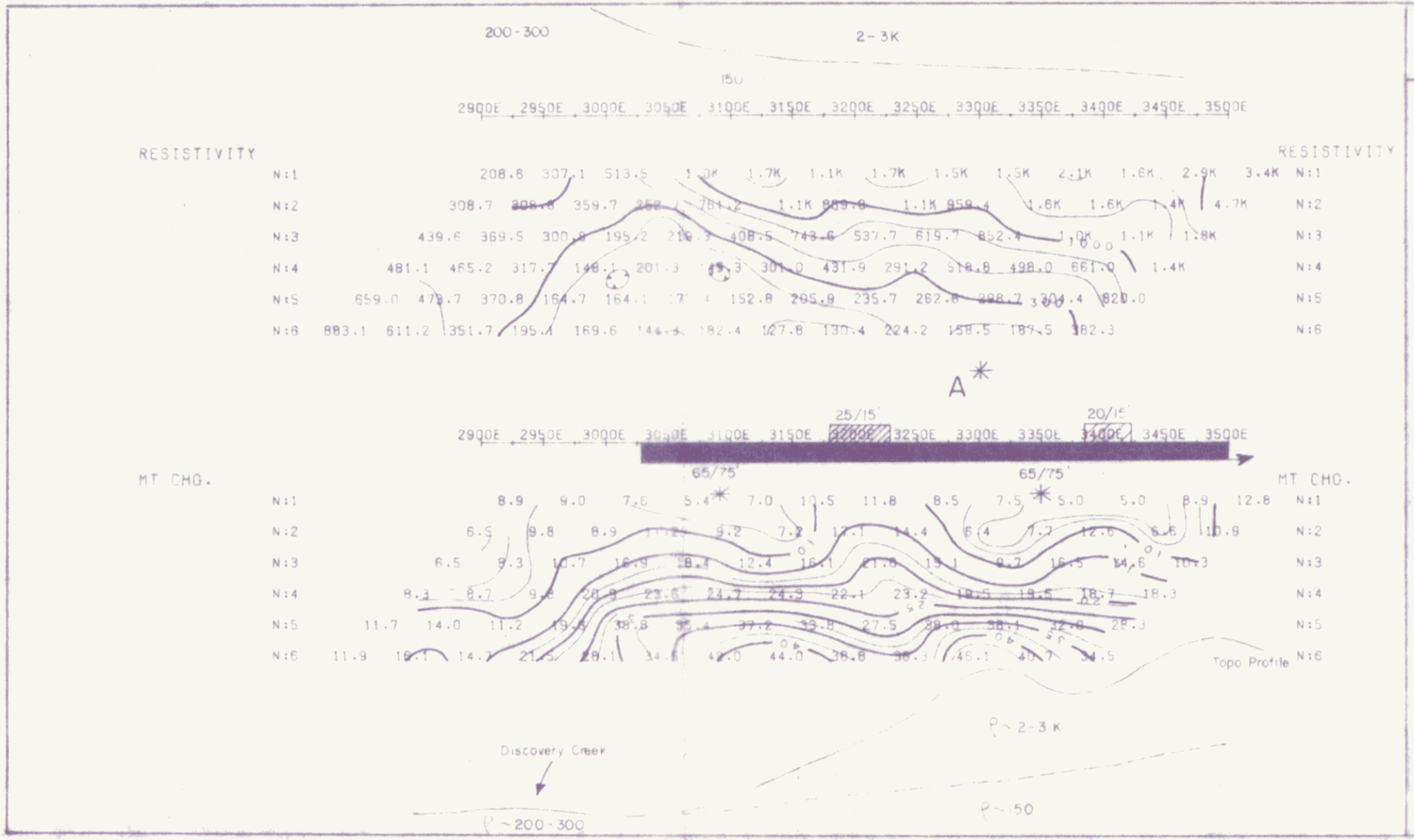
DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

SCALE - 1:4800.0

CME CONSULTING LTD.

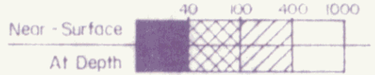
Interpretation by: STRATAGEX Ltd.



INTERPRETATION

EXPLANATION

Resistivity Lows:



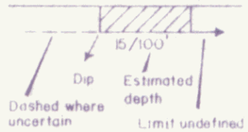
H: High resistivity Contact

Chargeability Highs



Correlating resistivity low

A, etc. Zones

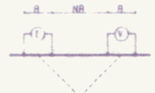


LINE : 1800 N (DETAIL)

INDUCED POLARIZATION SURVEY

092987

DIPOLE-DIPOLE ARRAY



ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 REF : P-07A

SCALE = 1:1200.0

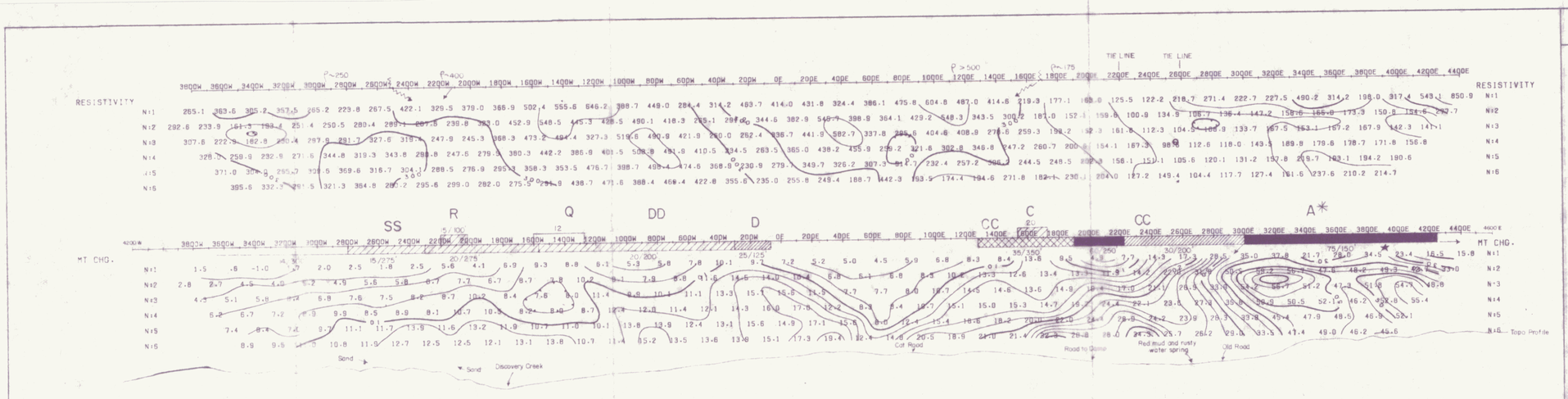
CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

PS-17a

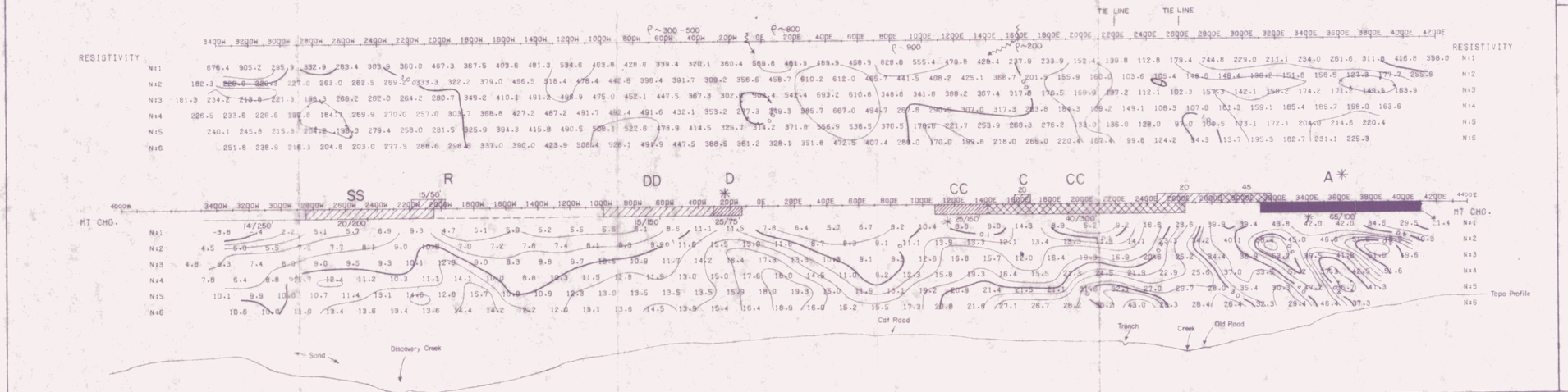
MAP# 1157/3

(203)



PS - 18

MAP# 1151/3 (202)



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near-Surface / At Depth — 40 100 400 1000

H High resistivity

Contact

Chargeability Highs:

Near-Surface / At Depth — msec 50 35 25 15

Correlating resistivity low

A, etc. Zones

15/100

Dip — Dashed where uncertain

Estimated depth — Limit undefined

LINE : 2200 N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

092987

a a

depth point

N = 1, 2, 3, 4, ...

"a" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER

TX CYCLE: 2 SEC.

RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

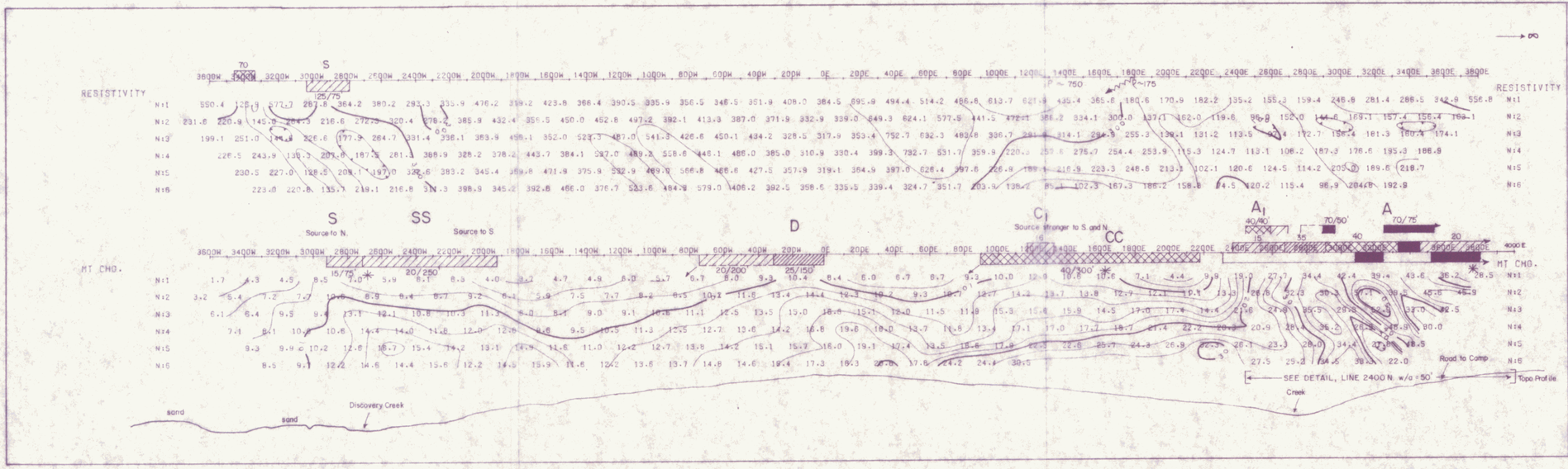
SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

PS-19

092987



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near - Surface

At Depth

H = High resistivity

Contact

Chargeability Highs:

msec 50 35 25 15

Near - Surface

At Depth

Correlating resistivity low

A, etc. Zones

Dip 6/100

Dashed where uncertain

Estimated depth

Limit undefined

LINE : 2400 N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

N = 1, 2, 3, 4, ...

"A" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER

TX CYCLE: 2 SEC.

RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

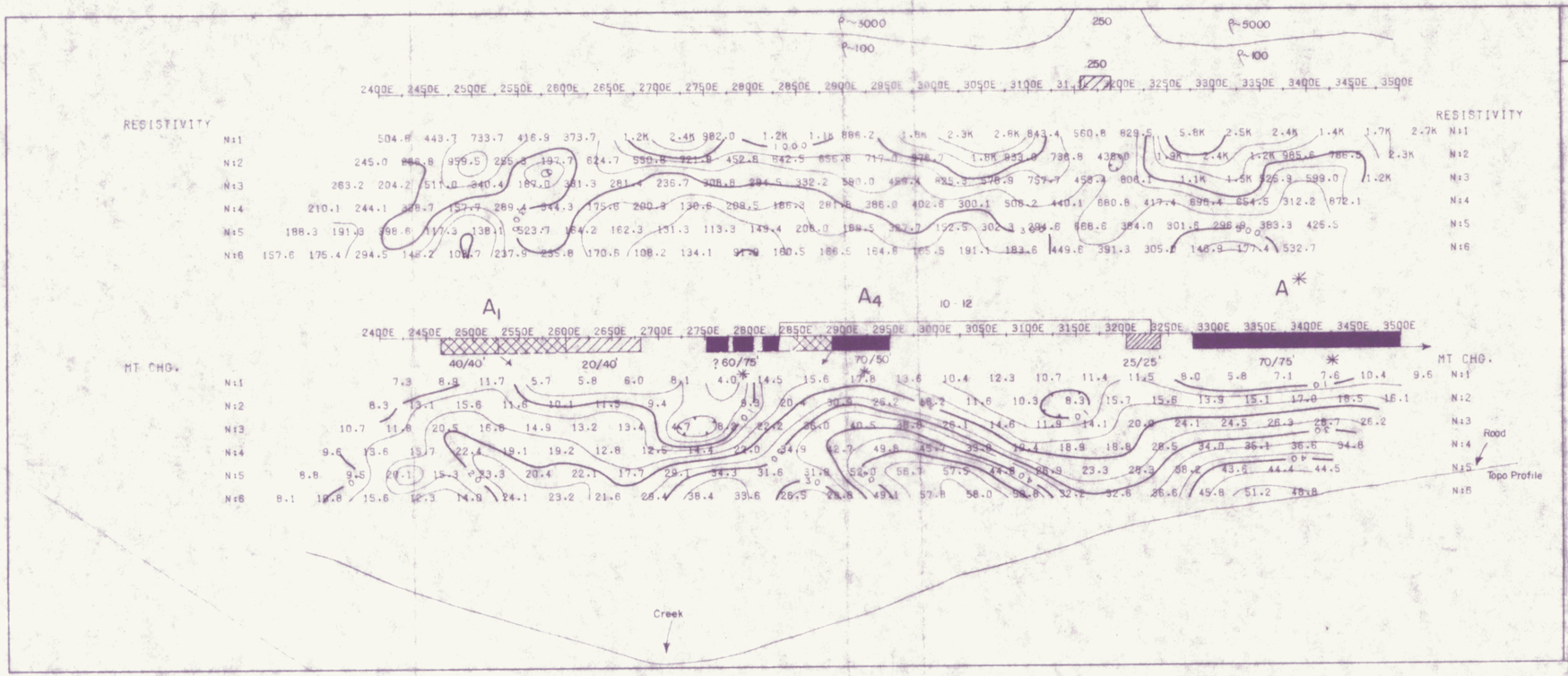
DATE : JUN/JUL/91 | REF : P-07R

SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd

092987



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near - Surface / At Depth — 40, 100, 400, 1000

ρH: High resistivity

Contact

Chargeability Highs:

Near - Surface / At Depth — msec 50, 35, 25, 15

* Correlating resistivity low

A, etc. Zones

15/100'

Dip

Estimated depth

Dashed where uncertain

Limit undefined

LINE : 2400 N(DETAIL)

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

PLOTTING POINT

N = 1, 2, 3, 4, ...

"A" SPACING = 50.0 FEET

ELREC IP-6 RECEIVER

TX CYCLE: 2 SEC.

RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

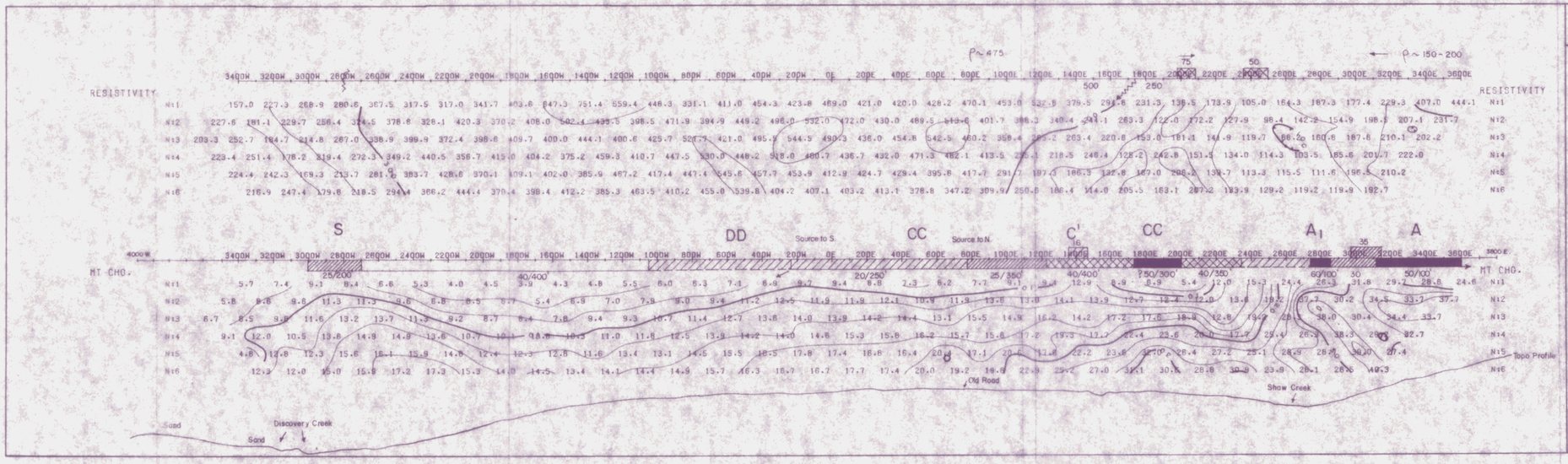
SCALE = 1:1200.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

PS-20a

092987



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near - Surface

At Depth

H - High resistivity Contact

Chargeability Highs:

Near-Surface

At Depth

Correlating resistivity low

A, etc. Zones

Dip

Dashed where uncertain

Estimated depth

Limit undefined

LINE : 2600 N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

DEPTH POINT

N = 1, 2, 3, 4, ...

"a" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER

TX CYCLE: 2 SEC.

RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

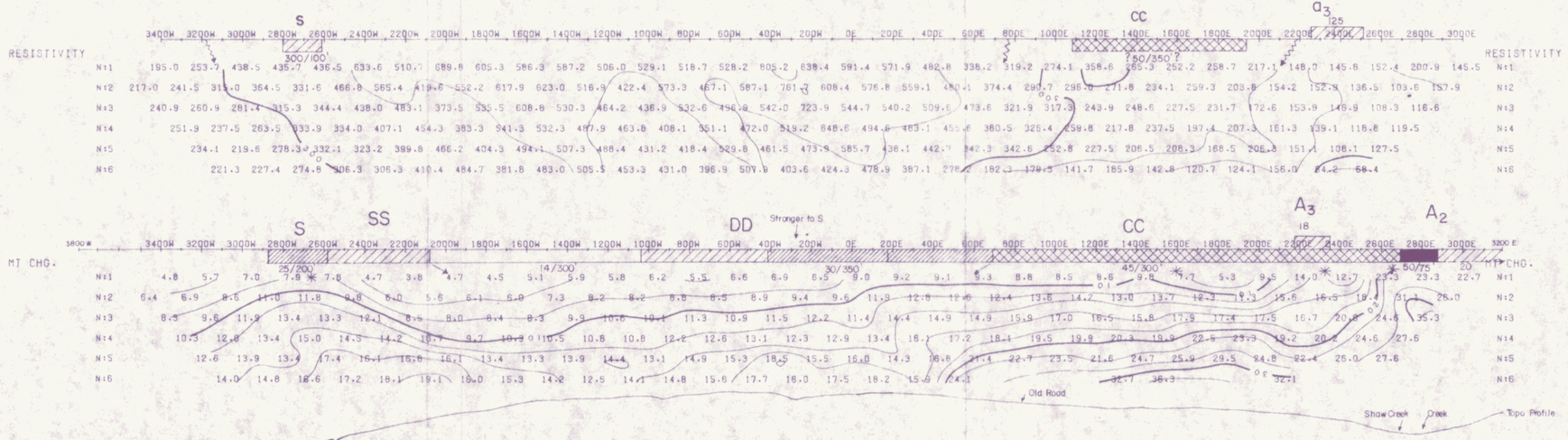
SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

PS-21

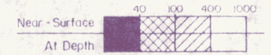
092987



INTERPRETATION

EXPLANATION

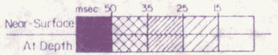
Resistivity Lows:



H High resistivity

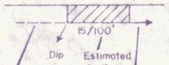
Contact

Chargeability Highs:



Correlating resistivity low

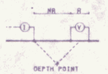
A, etc. Zones



LINE : 2800 N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...

"A" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

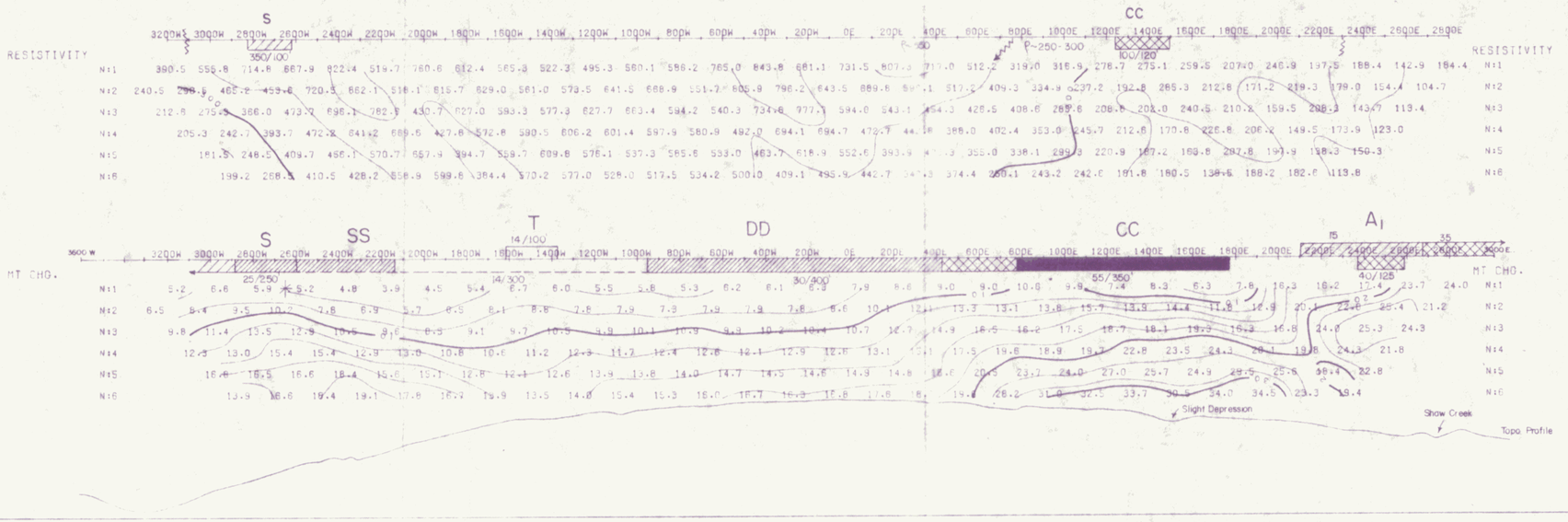
DATE : JUN/JUL/91 | REF : P-07A

SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

092987



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near - Surface
At Depth

40 100 400 1000

PH High resistivity
Contact

Chargeability Highs:

msec 50 35 25 15

Near-Surface
At Depth

Correlating resistivity low

A_1, etc. Zones

15/100

Dip

Dashed where uncertain

Estimated depth

Limit undefined

LINE : 3000 N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

N = 1, 2, 3, 4, ...

"A" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER

TX CYCLE: 2 SEC.

RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

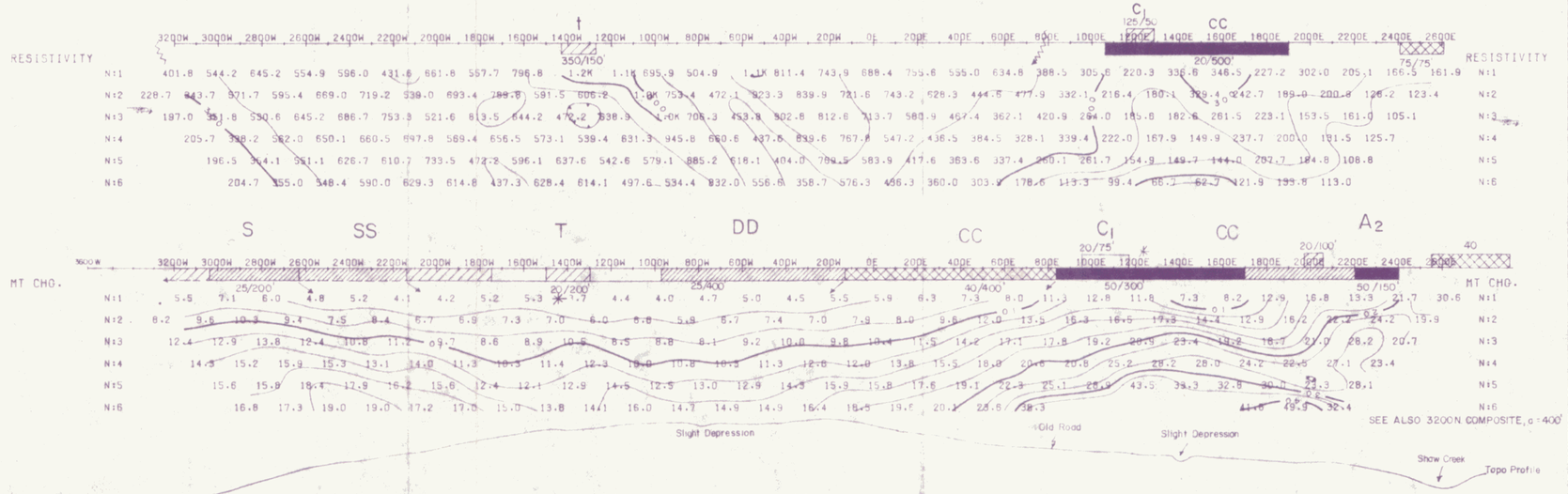
DATE : JUN/JUL/91 REF : F-07A

SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.

092987



INTERPRETATION

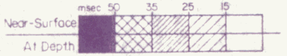
EXPLANATION

Resistivity Lows



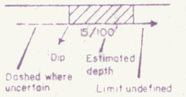
PH High resistivity Contact

Chargeability Highs



Correlating resistivity low

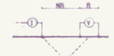
A, etc. Zones



LINE : 3200 N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...

"A" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

AURCHEM EXPLORATION LTD.

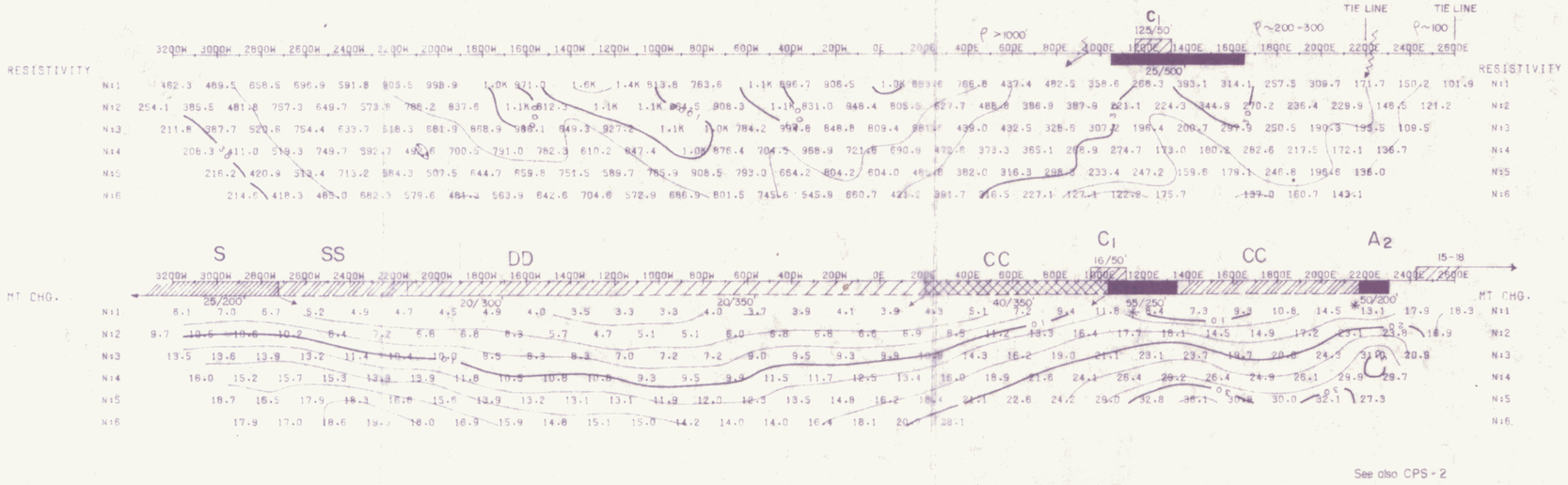
DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

SCALE = 1:4800.0

CME CONSULTING LTD.

Interpretation by: STRATAGEX Ltd.



INTERPRETATION

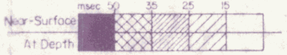
EXPLANATION

Resistivity Lows



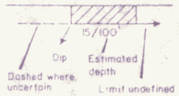
ρH: High resistivity Contact

Chargeability Highs



Correlating resistivity low

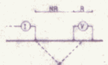
A, etc. Zones



LINE : 3400 N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...

"a" SPACING = 200.0 FEET

ELREG IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

092087

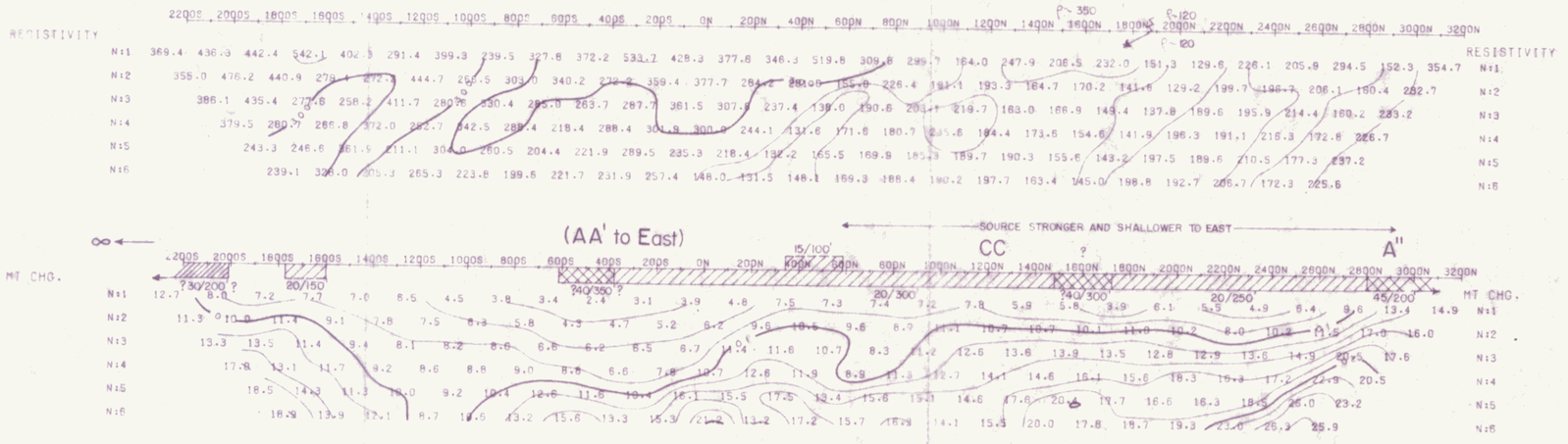
AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-09A

SCALE = 1:4800.0

CME CONSULTING LTD.



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near - Surface
At Depth

40 100 400 1000

H High resistivity

Contact

Chargeability Highs

Near - Surface
At Depth

msec. 50 35 25 15

Correlating resistivity low

etc. Zones

15/100'

Dip

Estimated depth

Dashed where uncertain

Limit undefined

TIE LINE : 2200 E

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

092987

N = 1. 2. 3. 4. ...

"A" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER

TX CYCLE: 2 SEC.

RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

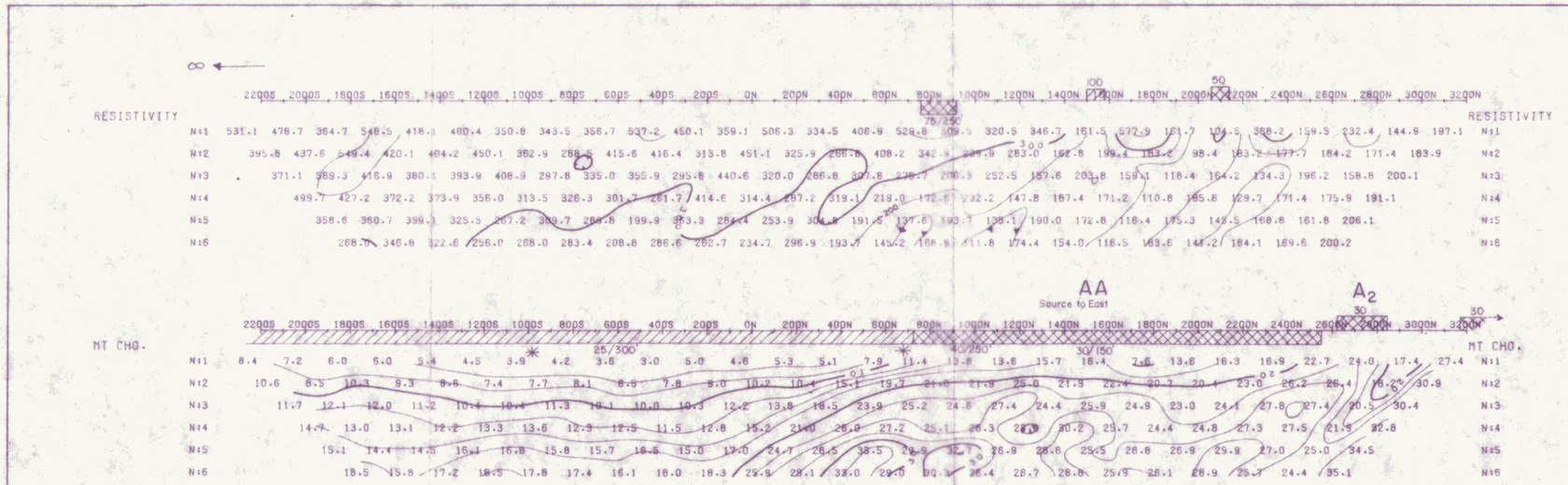
AURCHEM EXPLORATION LTD.

DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

SCALE = 1:4800.0

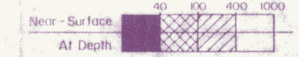
CME CONSULTING LTD.



INTERPRETATION

EXPLANATION

Resistivity Lows:



H: High resistivity

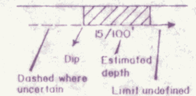
Contact

Chargeability Highs:



Correlating resistivity low

A, etc. Zones

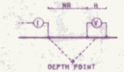


TIE LINE : 2600 E

INDUCED POLARIZATION SURVEY

092987

CABLE-DIPOLE ARRAY



N = 1. 2. 3. 4. ...

"A" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER

TX CYCLE: 2 SEC.

RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.D., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

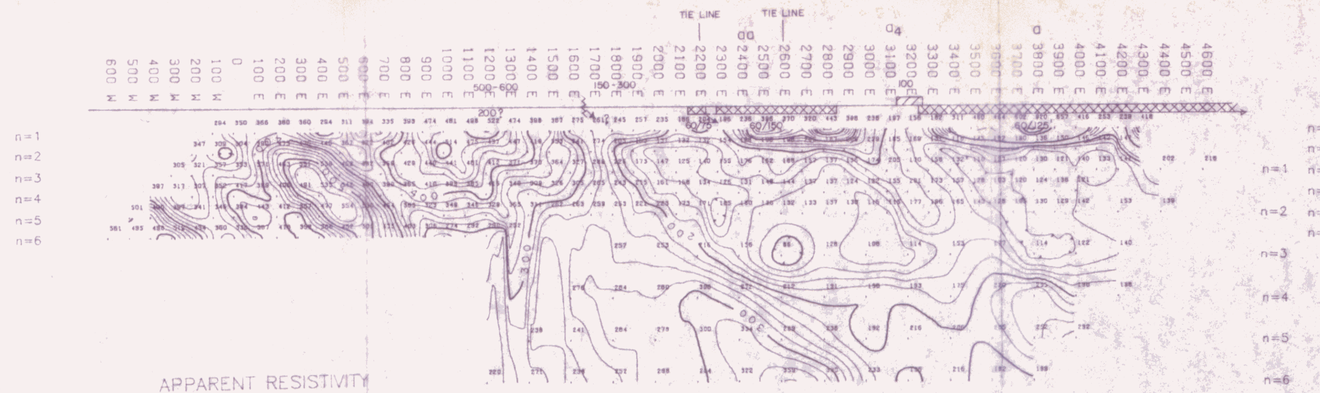
AURCHEM EXPLORATION LTD.

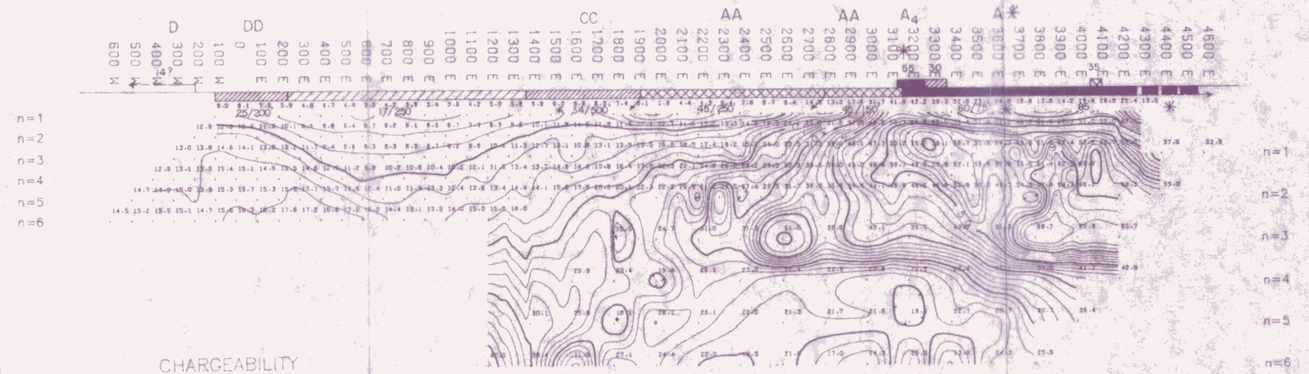
DISCOVERY CREEK
CARMACKS, Y.T.

DATE : JUN/JUL/91 | REF : P-07A

SCALE = 1:4800.0

CME CONSULTING LTD.





INTERPRETATION

EXPLANATION

Resistivity Lows:

Near-Surface / At Depth — 40 100 400 1000

ρH: High resistivity — Contact

Chargeability Highs:

msec. 50 35 25 15 7.5

Near-Surface / At Depth

Correlating resistivity low

A, etc. Zones

15/100 — Dip — Estimated depth

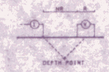
Dashed where uncertain — Limit undefined

LINE 1700N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

DOUBLE DENSITY



COMPOSITE PSEUDOSECTION

n = 1, 2, 3, 4, ...

"A" SPACING = 200.0 AND 400.0 FEET

ELREC IP-6 RECEIVER

TX CYCLE: 2 SEC.

RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.B., CME Consulting Ltd.
Interpretation by: J.R., Stratagex Ltd.

092987

MAP #115E/3

205

AURCHEM EXPLORATION LTD.

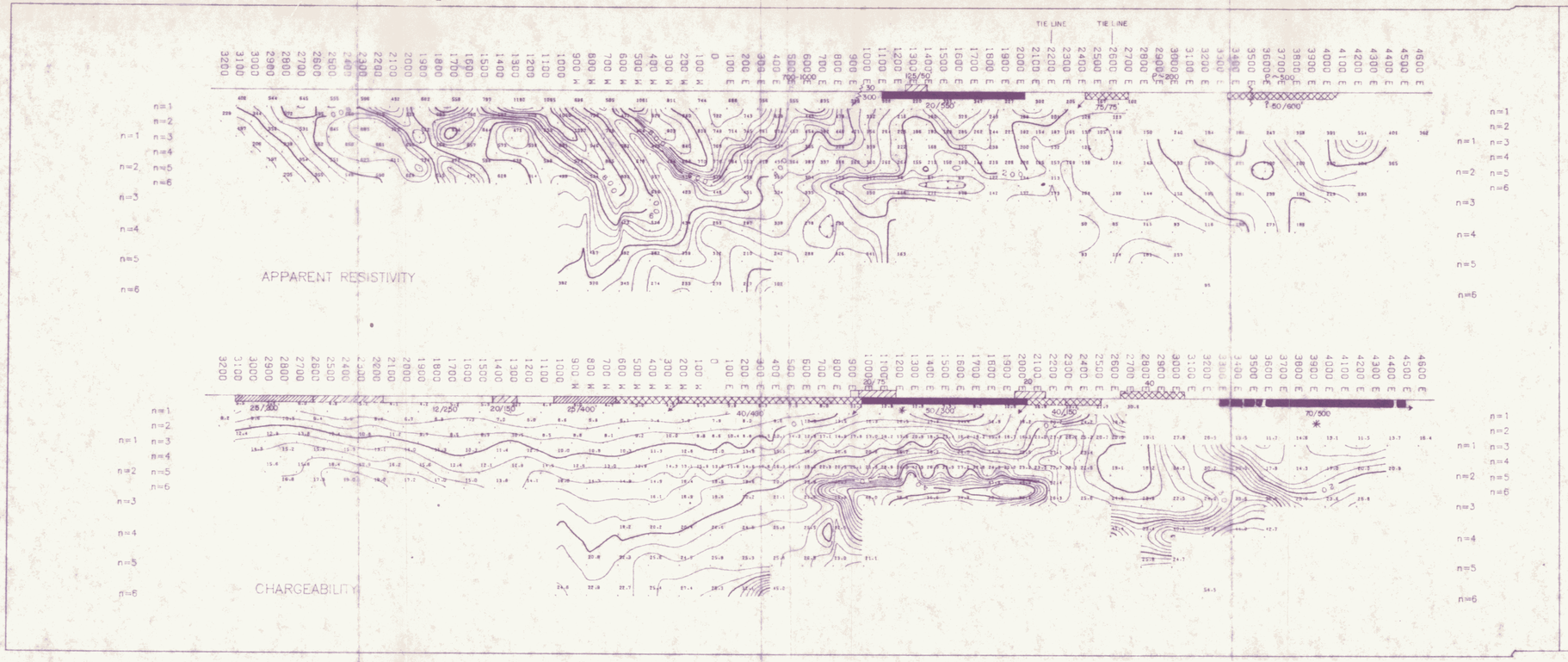
DISCOVERY CREEK PROJECT, CARMACKS, Y.T.

SCALE: 1:4800

DATE: JUN/JUL/1991 | REF.: P-07A

CME CONSULTING LTD.

CPS-1



INTERPRETATION

EXPLANATION

Resistivity Lows:

Near - Surface
At Depth
40 100 400 1000

ρH: High resistivity
Contact

Chargeability Highs:

Near-Surface
At Depth
msec 50 35 25 15

✳ Correlating resistivity low
A, etc. Zones

15/100
Dp
Estimated depth
Dashed where uncertain
Limit undefined

LINE 3200N

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY
DOUBLE DENSITY

DEPTH POINT

COMPOSITE PSEUDOSECTION

N = 1, 2, 3, 4, ...
"A" SPACING = 200.0 AND 400.0 FEET

ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., Z.O., CME Consulting Ltd.
Interpretation by: J.R., Strategex Ltd.

092987

MAP# 115 I/3

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AURCHEM EXPLORATION LTD.

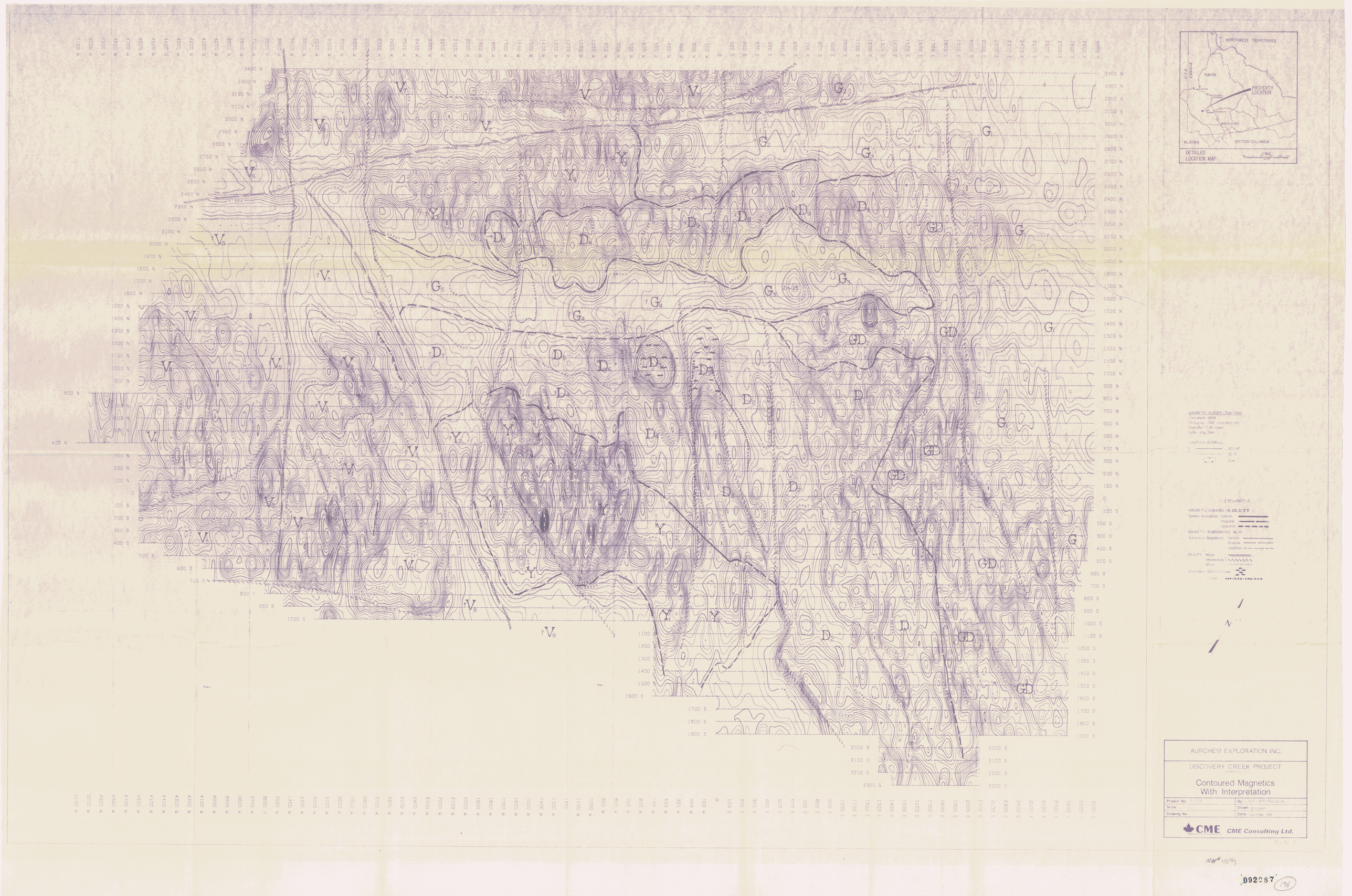
DISCOVERY CREEK PROJECT, CARMACKS, Y.T.

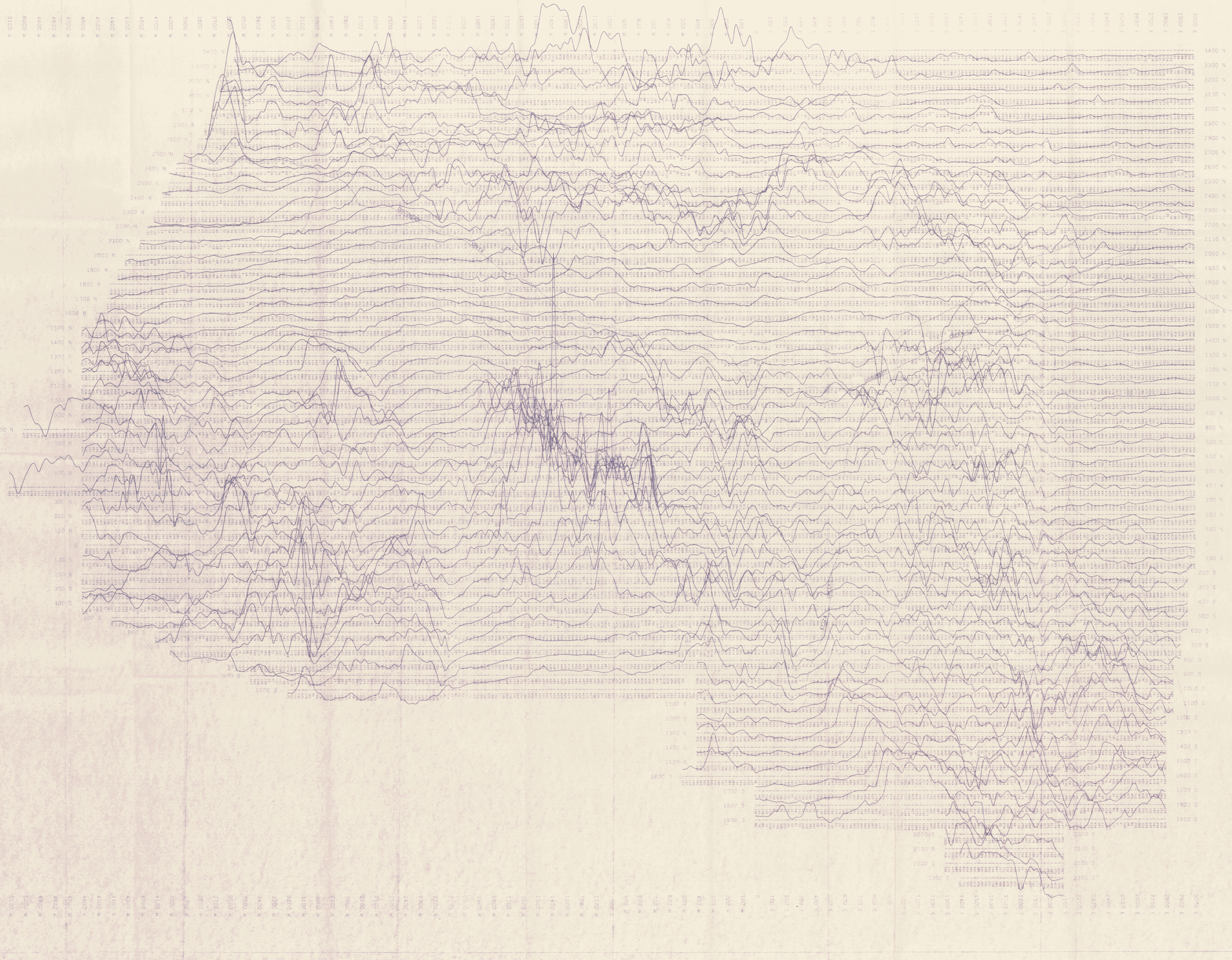
SCALE: 1:4800

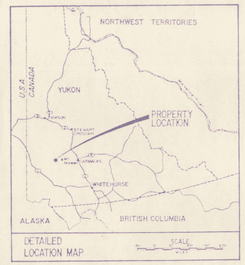
DATE: JUN/JUL/1991 | REF.: P-07A

CME CONSULTING LTD.

CPS


NORTHWEST TERRITORIES
YUKON
PROPERTY LOCATION
ALASKA
BRITISH COLUMBIA
DETAILED LOCATION MAP
MAGNETIC SURVEY (Total Field)
Instrument: GEM
Survey by: CME Consulting Ltd
Operator: D. Morrison
Date: July, 1991
CONTOUR INTERVAL
200 nT
50 nT
Low
EXPLANATION
MAGNETIC DOMAINS: G, GD, D, Y, V
Domain Boundaries: Definite
Probable
Uncertain
MAGNETIC SUBDOMAINS: G1 etc
Subdomain Boundaries: Definite
Probable
Uncertain
FAULTS: Major
Intermediate
Minor
Anomalous Magnetic Laws
Linear
N
AURCHEM EXPLORATION INC.
DISCOVERY CREEK PROJECT
Contoured Magnetics
With Interpretation
Project No: P-07A
By: J. Rohr / STRATAGEX Ltd
Scale:
Drawn: B. Kuppers
Drawing No:
Date: November, 1991
CME CME Consulting Ltd.
MAP# 115I/3
092087
196





MAGNETIC SURVEY (Total Field)
Instrument : GEM
Survey by : CME Consulting Ltd.
Operator : D. Morrison
Date : July, 1998

Profile Scale : 600nT / inch

092987

AURCHEM EXPLORATION INC.

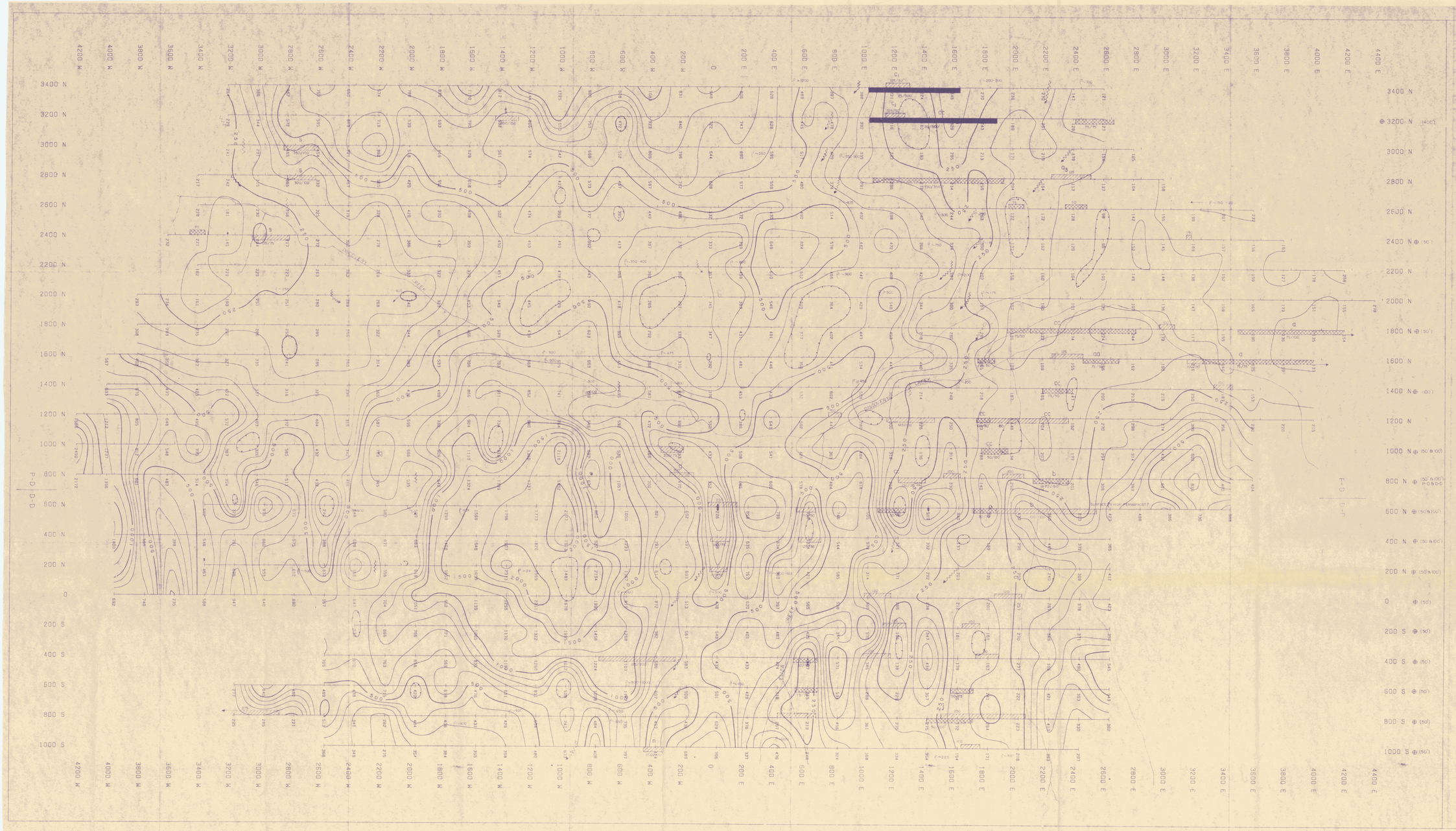
DISCOVERY CREEK PROJECT
CARMACKS, Y.T.

Magnetic Profiles

Project No: P-074	By: J.Roth/STRATAGEX Ltd
Scale: 1:2400	Drawn:
Drawing No:	Date: November, 98

CME CME Consulting Ltd.

Map No. 2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D-D
F-D
D-F
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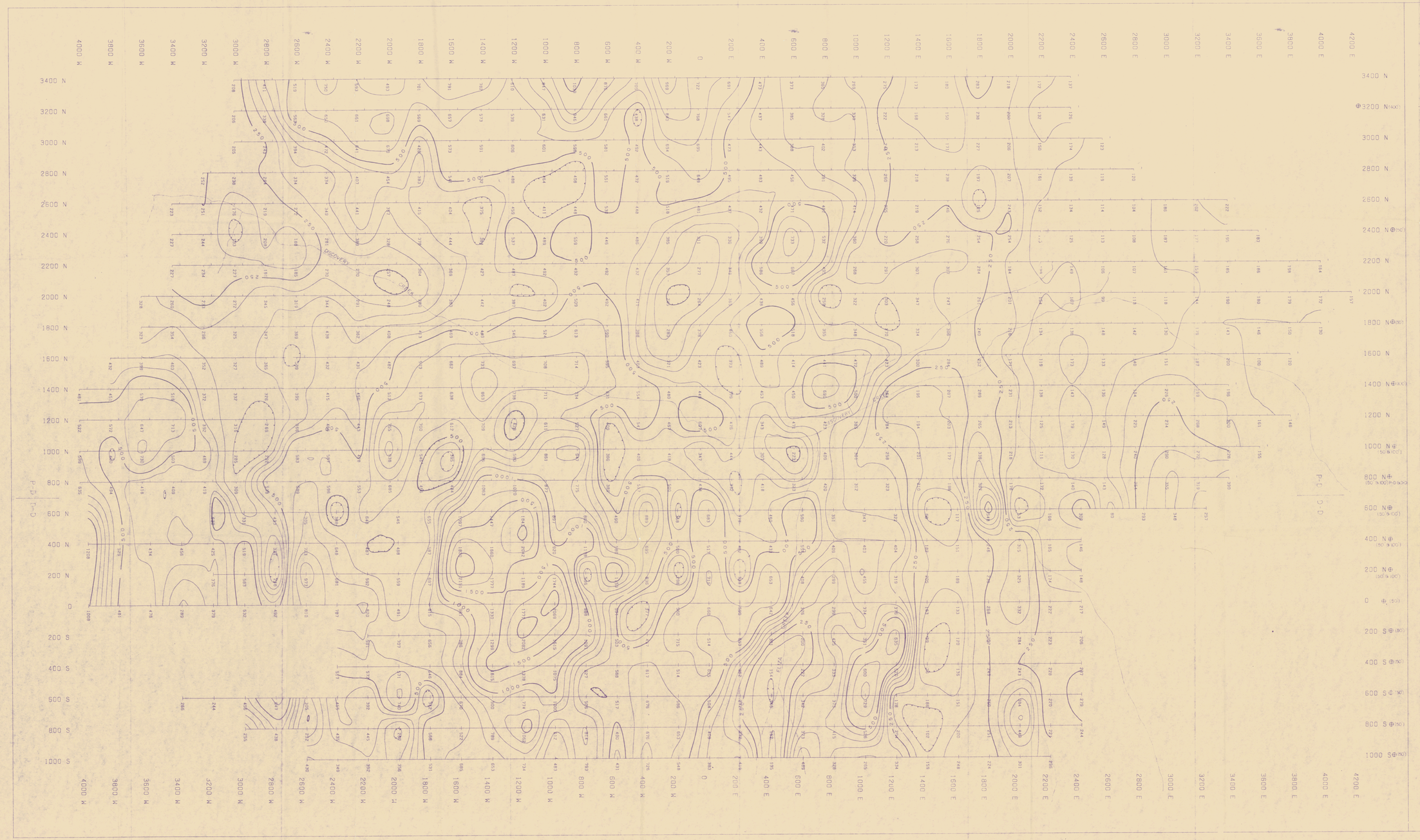

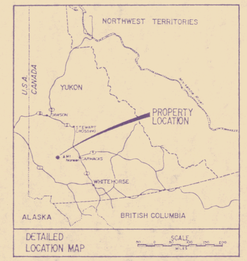

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

DIPOLE-DIPOLE ARRAY

⊕200 N⊕

Re-surveyed with larger dipole

Detail survey with smaller dipole (includes 1990 Survey)

092987

AURCHEM EXPLORATION INC.

DISCOVERY CREEK PROJECT

CARMACKS, Y.T.

Contoured Resistivity N = 4

Project No. P-[illegible]	By: J. Roth/STRATAGEX Ltd.
Scale: 1:2400	Drawn:
Drawing No:	Date: November, 1991

CME CME Consulting Ltd.

MAP # 115 I/3 Doc # 092987 (195)

Map No. 4

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

DIPOLE-DIPOLE ARRAY

Survey design by D.F.W. Cull, CME Consulting Ltd.
Implementation by D.F.W. Cull, CME Consulting Ltd.
Interpretation by J.R. Strategex Ltd.

P-D D-D

INTERPRETATION

EXPLANATION

Chargeability High

Near Surface

At Depth

Correlating Resistivity Low

Dip — Estimated depth — Limit unknown — Doubled where undertun

Re-surveyed with longer dipole

Detail survey with smaller dipole (includes 1990 Survey)

I.P. Zones A_1 etc

Shallow

Deep

PH High Resistivity

PVH Very High Resistivity

PMH Medium High Resistivity

PM Medium Resistivity

PL Low Resistivity

GRANODIORITE

DIORITE & DYKES

DISCOVERY CREEK

ELVA CREEK

DETAILED LOCATION MAP

NORTHWEST TERRITORIES

YUKON

BRITISH COLUMBIA

ALASKA

CANADA

PROPERTY LOCATION

WHITEHORSE

DAWSON

STEWART CROSSING

MT. NANSEN CAMPBELL

AURCHEM EXPLORATION INC.

DISCOVERY CREEK PROJECT
CARMACKS, Y.T.

092987

Contoured Chargeability
With Interpretation N = 2

Project No: P-07A	By: J. Roth / STRATAGEX Ltd
Scale: 1:2400	Drawn: B. Kuypers
Drawing No:	Date: November, 1991

CME CME Consulting Ltd.

MAP# 115 I/3 Doc# 092987 (192) Map No. 5

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

DIPOLE-DIPOLE ARRAY

PLOTTING POINT
N = 1, 2, 3, 4, ...
"n" SPACING = 200.0 FEET

ELREC IP-6 RECEIVER
TX CYCLE: 2 SEC.
RX CYCLE: 2 SEC.

Survey design by: D.F.M., CME Consulting Ltd.
Implementation by: D.F.M., D.H., CME Consulting Ltd.
Interpretation by: J.R., Scragge Ltd.

INTERPRETATION

EXPLANATION

Chargeability High

Conductivity High

Dip

Limit, unknown

Dashed where uncertain

Estimated depth

Resurveyed with smaller dipole

Detail survey with smaller dipole (Includes 1980 Survey)

I.P. Zones: A, etc

Deep: AA, etc

P H High Resistivity
P VH Very High Resistivity
P MH Medium High Resistivity
P M Medium Resistivity
P L Low Resistivity

P-D D-D

DETAILED LOCATION MAP

NORTHWEST TERRITORIES
YUKON
BRITISH COLUMBIA
ALASKA
U.S.A.
CANADA
PROPERTY LOCATION
WHITEHORSE
DAWSON
CARMACKS
SCALE

AURCHEM EXPLORATION INC.

DISCOVERY CREEK PROJECT
CARMACKS, Y.T.

Contoured Chargeability
With Interpretation N = 4

Project No:	By:
Scale: 1:2400	Drawn: 092987
Drawing No:	Date:

CME CME Consulting Ltd.

MAP# 115 I/3 Doc# 092987 (193)

Map No.6

AURCHEM EXPLORATION LTD.
16 - 266 Rutherford Road South
Brampton, Ontario L6W 3X3
Tel. (416) 452-6454 FAX: (416) 454-9195

092987

November 20, 1991



Yukon Government Mining Recorder & Assessment
Room 201, Federal Building
Whitehorse, Yukon
Y1A 2B5

Attention: Mining Recorder, R.H. Whittingham

Dear Mr. Whittingham:

Please accept the attached cheque for fees associated with the assessment report as follows:

Grouping Certificates - 15 groups x $5.00/group $75.00

I followed your instructions, as best as I could interpret, to make the groupings. If there are any problems with them, please call and I will make any corrections necessary.

I was not sure about costs for Certificates of Work. Could you please invoice any amounts due?

Attached is the assessment report on work done in 1991 on Aurchem's Discovery Creek Claims, an Application for A Certificate of Work and fifteen applications to Group Mineral Claims. I believe the report provides enough expenses to apply 1991 plus four years to the claims listed.

The assessment report itself is short one section, which will be forwarded as soon as possible. The Consulting Company which completed the I.P./Apparent Resistivity Surveys and the Total Field Magnetic Surveys have not yet sent us their final report with maps. We expect to receive this any day now. As soon as it arrives, I will forward two copies, which accompany the assessment report (Appendix 1 of report). I apologize for this inconvenience.

If there are any problems or concerns with any of the above, please do not hesitate to contact me.

Yours truly,

AURCHEM EXPLORATION LTD.

Mark Langdon

Mark Langdon
Manager - Geological Projects
MSL:mi
Enclosures



1991 EXPLORATION PROGRAM

Report on Trenching, Geology, Soil Geochemistry, Magnetometer and I.P. Surveys carried out on the Discovery Creek Claims
(see list of claims on page 1)

Claim Sheet 115I/3 62° 05'N/137° 10'W

May 26, 1991 to August 1, 1991

AURCHEM EXPLORATION LTD.
16 - 266 Rutherford Road South,
Brampton, Ontario, L6W 3X3.
Telephone: (416) 452-6454
Facsimile: (416) 454-9195

092987

Mark Langdon,
Manager - Geological Projects

November, 1991

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 51,600

D J Quette

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

N

Part of Claim Sheet 115I/3 5325±

TAWA

DIC

TAWA

ETZEL

Summit Creek

PAM

PAM

ETZEL

WEDGE

East Fork

South Fork

EEK

T B R

DOME

DOME

State Cr

Courtland Cr

Nansen Cr

BULL

J BILL

Rusk Cr

JOANNE

Dolly Cr

DOME

HIW

RAT

Weber Cr

BULL

Cabin Cr

H I W

DOME

OX

Bauer Cr

JEFF

DD

DD

Dome

W S

New

1991 EXPLORATION PROGRAM

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- Grid	
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- Geophysics	
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LIST OF MAPS IN BACK FOLDER

Discovery Creek Claim Map # 1A
Discovery Creek Claim Map # 1B
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Soil Geochem Map Ag Map 3
Soil Geochem Map Pb Map 4
Soil Geochem Map Zn Map 5
Soil Geochem Map As Map 6
Soil Geochem Map Cu-Mo Map 7
Soil Geochem Map Composite Map 8

Total Field Magnetics and I.P. Maps are contained in the Report by CME Consulting/Stratagex Ltd.

Geology Map - Map 10

LIST OF CLAIMS AND TAG NUMBERS

RAS 1	YA93138	AURCHEM EXPLORATION LTD.
RAS 2	YA93139	" " "
RAS 3	YA93140	" " "
RAS 4	YA93141	" " "
MSL	YA95099	" " "
LGCS 1	YA95014	" " "
LGCS 3	YA95016	" " "
BIT 1	YA97733	" " "
BIT 2	YA97734	" " "
BIT 3	YA97735	" " "
BIT 4	YA97736	" " "
BIT 5	YA97737	" " "
WEDGE 5	YA82171	" " "
WEDGE 6	YA82172	" " "
WEDGE 7	YA82173	" " "
WEDGE 8	YA82174	" " "
WEDGE 9	YA82175	" " "
WEDGE 10	YA82176	" " "
WEDGE 15	YA82181	" " "
BULL 1	YA81420	" " "
BULL 2	YA81421	" " "
BULL 3	YA81422	" " "
BULL 4	YA81423	" " "
BULL 5	YA81424	" " "
BULL 6	YA81425	" " "
BULL 7	YA81426	" " "
BULL 8	YA81427	" " "
BULL 9	YA86288	" " "
BULL 10	YA86289	" " "
JLZ	YB36258	" " "
JBF	YB36259	" " "

Introduction - 1991 Work Done

The claims as held and accompanying leases have been explored by Aurchem Exploration Ltd. from 1985 to the present.

In early 1991, an option on the Bull 1 - 10 claims was formed by Aurchem to expand the size of the property. During the field season, claims JBF and JLZ were staked over open Crown Land filling spaces created by previous staking. Also a set of claims were staked (Jon-Wedge 1 to 6) on a strip of open property between the Bull and J. Bill claim groups. These claims were subsequently refused by the Mining Recorder's offer so although shown on the claim maps, they are not officially present at this time.

Overall, the newly optioned and staked claims greatly increased the size of the Discovery Creek property.

The 1990 Eliza Creek picketed grid was expanded to cover most of the property (excluding Bull Claims 1 and 2 at the north end). The expanded grid on 100 foot spaced lines and fifty foot picketed stations covers an area approximately 7,500 ft east-west by 5,400 ft north-south.

Over this new grid the following work was done :

1. All lines of the grid were geologically mapped. As well as geology, topographical features such as creeks and roads were also noted. All previous trenches, including veins within trenches and diamond drill holes were also relocated on new grid co-ordinates. Relocating relative to the new grid was also done for all the soil geochem samples taken in earlier years on previous rough grids. This involved locating soil sample holes of about 500-700 in number and putting new grid co-ordinates to their respective assay results.

2. Two trenches were attempted using a D8H cat with ripper. The resultant trenches were geologically mapped and sampled. Original buckbrush removal was done using a D7 cat.

3. A total field magnetometer survey was conducted over the entire grid. Results were contoured at 25 foot station spacings although readings were taken likely in the station range of every 5 feet (see CME report for details).

4. An I.P./Resistivity survey was conducted basically covering the entire gridded area with an "a" spacing of 200 ft with an n of 1 - 6. Some "a" spacing of 50, 100 and 400 feet were also employed for better coverage and clarification. The I.P. survey used a combination of Dipole-Dipole and Pole-Dipole arrays.

5. Using the grid as a base, detailed examination of claims/lease (posts) locations was completed. This permitted a good accurate claim/lease map to be produced defining Aurchem's property boundaries. This was crucial to the entire program as the staking in the area is quite intense and delineation of the property boundaries to conduct work was mandatory.

6. Approximately 300 surface soil geochemical samples were taken on very broadly based lines to help in defining targets shown by both the magnetometer and I.P. surveys. Samples were assayed for Au, Ag, Pb, Zn, As, Mo, Cu.

General-Past Work and 1991 Goals

From past work we had determined that the property held at least two zones of epithermal vein mineralization, the Eliza Creek Zone and the Willow Creek Zone. Very generally the following could be stated (Pre-1991 Results) :

Willow Creek Zone - This zone generally hosted by granodiorite contains dozens of veins of a relatively narrow width (from 1 to 30 feet). The veins form a complex network of veins trending N310-N330° disrupted by post vein faults. Minor N10°-N30° veins exist which cause minor left lateral offsets of the earlier veins usually in the order of 5 - 25 feet. The high number of veins in a branching network system make on-strike continuity very difficult to delineate. Some wider veins seem to have greater on-strike potential in the order of 300 - 700 feet as presently surmised. A general pervasive alteration of the entire host granodiorite is evident, as well as strong alteration along vein boundaries. Supergene oxidation is quite intense. A surface leaching of the mineralization is also highly suspected, making trenching a very difficult method of locating and accessing veins. Diamond drilling in this area was somewhat painful due to the above factors resulting in poor core recovery and "washed-out" vein intersections.

Eliza Creek Zone - Work in this area identified a major vein zone that was continuous for at least 3000 feet and open for extension. Post vein major faulting does not appear to have created the problems found in the Willow Creek Zone. The main Eliza Creek vein zone strikes N310°-N330° and is located central to the base line or just west. A number of sub-parallel veins are noted which appear to generally move closer to the main central vein as you go to the north (N330°). The veins in Eliza Creek appear to have a greater width as well as much better continuity (i.e. width from 10 - 100 feet). The host lithologies of diorite, Yukon Group Metamorphics and minor Mount Nansen Volcanics do not appear to contain the pervasive alteration as seen in the granodiorite and usually display very narrow vein alteration zones. Supergene oxidation of the veins is very strong, as well as the suspected surface leaching of the mineralization also noted in the Willow Creek area. Work in 1990 showed that I.P. geophysics in combination with total field magnetics was very successful in delineating veins. Surface geochemical samples also substantiated the anomalies and trenching proved their existence with a general good degree of accuracy. The I.P. generally showed a weak response near surface for a vein with an increasingly stronger response to depth. This likely reflects supergene oxidation at surface which generally appears to "fade" at 200 feet of depth.

Work on the above two zones was somewhat site or area specific. A great number of individual factors were becoming evident that were suggesting that we were looking at a small part of a much bigger picture. The veins are strongly associated with porphyry dykes which strike sub-parallel. The porphyry dykes appear to be both pre and post-vein in formation (syngenetic). A porphyry system in the east and to the north of the property is found with the same N330° orientation. These areas display strong hydrothermal silicification of the granodiorite host, Cu/Mo mineralization and quartz/quartz-tourmaline breccia pipes. Some rhyolitic tuff as domes are found along the central zone of this system, but the main lithology is the Casino granodiorite (note: silicification in the granodiorite has in many locations completely replaced most of the original minerals and textures of the granodiorite). The hydrothermally altered granodiorite has been mapped by others as a different and later granodiorite than the Casino Granodiorite.

Boundaries of the silicification from what I have seen are quite abrupt to the more normal Casino granodiorite, but they are faulted contacts suggesting vertical displacement from uplift and cooling/collapse of the porphyry itself which is likely at depth.

Going on the strong probability that the epithermal system we are exploring is likely related genetically to the porphyry system, I felt that Aurchem required broader information/data in order to best delineate the most promising zones for economic epithermal mineralization. Therefore, based on our past successes, an exploration program based on grid expansion to cover most of the property followed by I.P. and total field magnetics was formed. Broad widely spaced soil geochem lines would hopefully correspond and aid in identifying veins (or vein zones) identified by the geophysics, and help in identifying the epithermal vein/porphyry system interface. Possible trends in the veins of a sulphide/mineralogical nature might be found as the distance from the porphyry varied. Both the known vein systems (Eliza and Willow Creek) would be shown onstrike to the north, and a general comparison of geophysical characteristics of each would be seen. Therefore, the geophysics could be used in the trenched areas to extrapolate the interpretation to other areas not trenched.

An I.P. "a" spacing of 200 feet was applied because :

(1) In 1990, a line of "a" of 200 feet showed a fairly good response over the Eliza Creek main vein. Therefore it was hoped that "main" veins could be delineated out of a large number veins. These anomalies, we hoped, would correlate with linear magnetic lows created by the vein alteration.

(2) Permafrost causes noise and strong surface effects in some areas. The deeper penetration, it was hoped, may reduce some of this in the overall results. (Appeared to in 1990 Survey)

(3) The supergene oxidation was causing generally weak chargeabilities near surface in the 1990 "a" = 50 foot surveys. Most veins started to show better or stronger chargeabilities at deeper levels. This interface appeared to be at almost the depth limit of "a" = 50 ft (n = 6). Therefore a broad coverage of the property with a deeper penetration may create better results, while mainly showing the larger and more sulphide rich veins. Later followup at "a" = 50 ft or 100 ft could be employed over selected areas for better definition of the exact location of the anomaly for trenching or drilling purposes.

The overall results of the 1991 work in relation to their general purpose stated above, were quite unexpected and very successful. All the data appears to fit into one theoretical model of strong sulphide porphyry mineralization underlying with a flanking epithermal vein system. The true nature of the so called porphyry sulphide mineralization will remain unknown until drilled. It could be porphyry Cu-Au-Mo?, or hydrothermal, or mesothermal, or even a high porphyry luzonite-enargite sulphide body or a combination of these. Regardless of the origin, it is hoped that economic minerals are present in sufficient quantity, in part or whole, of the extremely large tonnage implied by the results.

Property Location

The gridded claims and accompanying leases are located in the valley of Discovery Creek, a tributary of Nansen Creek, (115I/3 Map Sheet). Access is from Carmacks by going west on the Mount Nansen Road (≈ 70 km west).

Property Claim Maps & Grid

Two claims maps showing the Discovery Creek claim group over the grid are enclosed in the back folder (i.e. Map 1 and 1A). The two maps at a scale of 1 inch equals 200 feet, adjoin each other as indicated on the maps.

Due to the formation of the grid, an accurate claim post and thus claim map has finally been able to be produced. Posts located outside the grid were usually located by CME Consulting using a transit and chain method (unless identified on the map as otherwise).

Most of the external boundaries of the claim group are now known, except in a couple of areas :

(1) On the west side, the Jon-Wedge claims are shown, but were not accepted. If this should change, the external boundary may include these claims.

(2) The eastern boundary is still somewhat obscure and can likely only be resolved by a Legal Survey. Two problems exist.

   (a) The location of the ME 11-14 claims (now lapsed) created a "hole" in the Dome claim group staking which was later taken by Wedge 5, 6, 3, 16 and 17. The ME posts have not been found, but are located from a map from the ME assessment file furnished by Mr. Gordon Dickson, (shows location relative to King Cabin and Discovery Creek). This was supported by a Government Mining Inspector as to where the location of the ME claims existed. Until a Legal Survey is done though, dispute of this could be taken.

   (b) To the south of the ME claim area, the boundary should be produced by a combination of the leases and Dome 55. The problem here is that the distance between post #1 and #2 of Dome 55 is 3400 feet. Therefore, a ruling on what Dome 55 holds is required. Once again, it appears that the only way to resolve this is by conducting a Legal Survey. The claim map shows two boundary possibilities each of the "best" or "worst" case scenarios for Aurchem as far as Dome 55 is concerned.

On individual claim land positions, the claim map shows Wedge 9, LCGS 3, Bit 4 and Bit 5 hold extremely small portions of property. Bit 3 definitely holds no property at all. The holdings of Bit 1 and Bit 2 could vary from no property to substantial depending on what Dome 55 would be entitled to hold.

General Geology

The oldest lithology on the property is the Yukon Group Metamorphics. they are Cambrian in age or older and consist of metamorphic equivalents of volcanics (flows, tuffs, pyroclastics), minor sediments and plutonic lithologies. Nearly all units seen, of gneisses and schists, are very siliceous and interbanded in relatively narrow bands (less than 50 ft). They all possess a good lineation (metamorphic) which was surprisingly consistent in direction in all trenches displaying the group. They contained the orientation of N310° to N340° (most commonly N330°) and usually dipped 85° west. The strike is coincidental with the strike of both the epithermal veins and the related porphyry dyke group. The only variance seen was in the dip. The veins and dykes nearly always dipped between 70° to nearly vertical in a westerly direction. The metamorphic group usually followed an identical dip but in a few instances near the south end of the property, near the Mount Nansen Volcanic contact, they dipped about 45° west, while the dykes/veins continued their steep westerly dip. Small veinlets could be seen running up the 45° west cleavage planes in these areas. In areas where the dip was 45° west a very intense argillic alteration of the Yukon Group could be found nearby or coincidental. The gneissic/schistose texture of the group, although parallel in strike and dip to the vein/porphyry dykes, was formed pre-epithermal/dyke emplacement. The adjacent diorite does not have this metamorphic lineation, so the metamorphism is pre-diorite in age (i.e. pre-Triassic/Jurassic). It suggests that the Northwest fault system hosting the epithermal event is very old and likely was the cause of the metamorphism in the Yukon Group during the Palaeozoic Era. This likely coincides with early plate tectonics between the Yukon Crystalline Terrain (our area) with the St. Elias Belt to the west. One puzzling feature of the Yukon Group in this similar strike direction is that there is a complete lack of deformation/ folding of the lineation. This suggests a regional stress origin for the metamorphism, but in an area of intruding plutons of diorite and granodiorite and volcanics, it seems rather strange that no deformation of the block occurred. One possible explanation is that this Yukon Group "Block" is just a large "zenolith" partially attached to the diorite to the east and northeast which was contained and uplifted by the Mount Nansen Volcanics. The diorite possibly protected the block while the volcanic flows lacked sufficient strength to deform this siliceous unit, except near contacts. This suggests that diorite and/or Mount Nansen Volcanics underlie a relatively small (shallow) block of the Yukon Group.

The argillic alteration locations of the Yukon Group (and possible change in dip to 45° west) are as previously stated, in close proximity to the Mount Nansen Volcanics contact. Trench samples show that these argillized metamorphic zones are not mineralized unless late epithermal mineralization intruded as stringers. Around porphyry dykes and/or veins, there does not seem to be argillized zones in the Yukon Group of any significant magnitude. Therefore, it seems unlikely that the large argillized Yukon Group zones are related to the epithermal episode or the porphyry dyke emplacement. It seems highly probable that the argillic alteration occurred during the intrusion of the Mount Nansen Volcanics (53 - 100 Million years ago). The argillic alteration has been overprinted on top of the regional gneissic/schistose alteration of the Palaeozoic Era.

The above suggests that the Mount Nansen Volcanics underlie the Yukon Group in the southern portion of the property. The magnetometer data and the geology give rise to the possibility of a very thin layer of Yukon Group on top of the volcanics, possibly even a wedge which thickens to the northwest. The underlying contact would have a zone of argillic alteration of unknown thickness within the Yukon Group.

Trenching in 1991 showed a similar argillized Yukon Group package from L250S/1364W to 1490W. This argillization, I would also suspect, is caused by underlying Mount Nansen Volcanics. At this location we are close to both the western and southern probable contacts of the Yukon group to the volcanics. This alteration zone though, may be from an underlying contact source.

Within the Yukon Group, centred at about L200 South/800 West, is a large zone of very high magnetometer readings (note: see magnetometer map in back folder). The general Yukon Group lithologies do not differ greatly in this area compared to the east where the rest of the Yukon Group shows moderately high values. The reason for these higher values are the presence of veins of massive magnetite, possible pyrrhotite and minor pyrite. No gold or silver appears to be associated with the veins of magnetite. The vein exposed in a trench at Line 300 South/1000 West is about 15 feet wide with a central core of massive magnetite 3 - 4 feet wide and a gradational contact on either side. It has a strike and dip of N330°/80° west which is the same as the gneissic texture of the Yukon Group, the epithermal veins and the porphyry dykes. It would appear likely though that these magnetite beds were formed earlier and have no relationship to the epithermal mineralization. In this area, a brunton compass needle is deflected off as much as 30° from true directions. This same deflection of variable amounts occurs right across the southern boundary of the property as you approach the upper ridge. Most of these areas are near the Mount Nansen Volcanics which suggests some highly magnetic beds in that group.

The 1991 extension of trench L300 south to the west also exposed a second magnetite rich zone at L250S/1308 - 1364W. The host rock here was a dark green volcanic to possibly a sub-dioritic lithology. No metamorphic texture of the strong lineation found in all of the Yukon Group rocks could be seen visually. The eastern contact of this magnetite zone showed a narrow alteration zone of brecciation with the rocks altered to a "pink" granitic colour. This suggests the magnetite rich zone may be a later intrusion into the Yukon Group probably after the metamorphic texture was emplaced upon the Yukon Group package. This intrusion came from either the diorite or the Mount Nansen Volcanics which underlie. Magnetite rich areas occur in both the diorite and Mount Nansen Volcanics, but as an intrusion of volcanic looking rock, I would have to favour the Mount Nansen Group as the probable source. Very strong magnetic highs in the volcanics to the west suggest a similar lithology as to the magnetite source.

The contact of the Yukon Group and the diorite was not well exposed. Deep overburden at the contact covers the relationship. It also appears likely that a fault at this contact further complicates the picture. The best contact exposure is at Line 100 South/400 West where a 20 foot wide zone of overburden (mixture of blocks of vein and Yukon Group and argillic equivalents) separates chlorite rich diorite to the east and biotite-quartz schist to the west. No zenoliths of the Yukon Group have been seen in the diorite. There is a tendency of the biotite-quartz schist (with usual chloritic alteration) to be located in close proximity to the diorite contact.

It is possible that this is the altered version of the Biotite-Quartz Gneiss which has been remobilized with additional biotite and chlorite from the heat of the diorite intrusion. More data is required to speculate further on alteration at this contact. The fault at this location suggests that the diorite has been uplifted (or Yukon Group dropped).

The Casino Granodiorite (75 - 125 million years) has intruded post-diorite and zenoliths of diorite can be found within. The diorite/granodiorite contact is also controlled by N110° faults, as was the diorite/Yukon Group contact, but is also shown related to post-vein north-south faults.

Faults and Their Relationship to Veins

The veins are definitely fault controlled. They parallel or sub-parallel two distinct fault trends at N330° and N20°. The dominant controller is the northwest faults at N310° to N340°. The Eliza Creek Zone appears to have five or six veins of varying width that appear to be continuous on strike. These follow the northwest trend sub-parallel to the main northwest fault. Of these veins, the Eliza Creek vein is the most prominent.

Branching off or cutting through these main veins are veins at N20°. These N20° veins are usually narrower and are most common on the hanging wall side of the N330° veins. What these veins do on strike is not that obvious, but they appear to continue, or when they hit the next N330° structure they turn and parallel the original N330° structure. This creates a number of smaller N330° veins between the larger N330° veins. The secondary veins do not appear to have long continuous strike lengths, but may show discontinuous pods and lenses. This creates a picture of a number of main N330° veins with multiple smaller parallel veins that are all interconnected by veins at N20°. This same picture appears to hold true for the porphyry dykes as well, which are found in both N330° and N20° structures. The N20° veins/dykes/faults usually created a left lateral displacement of the N330° veins in the order of 5-25 feet. Possible slight changes in strike from N310 to N320 to N340 etc. may also occur.

Another set of faults are found at an N110° direction. These faults, as earlier stated, appear to be the dominant controlling faults as to lithology. Contacts of Mount Nansen Volcanics/Yukon Group, Yukon Group/Diorite, Diorite/Granodiorite and even Granodiorite/hydrothermally silicified granodiorite are all found dominantly on N110° faults. Veins and porphyry dykes crossing these faults show dislocation in some cases and no dislocation at other times. In controlling the lithologies, these N110° faults must possess a much larger movement than displayed by the veins/porphyry dykes. Therefore, these faults must be originally pre-vein in origin with fairly large movements. The overall picture suggests left lateral movements possible up to 7,000 feet with an unknown vertical movement of possibly even greater magnitudes. Movements of a post mineralization time also took place on these pre-established faults, but were likely of only very minor extent.

Speculating, I would suggest that the N110° faults are "somewhat" local to regional in origin, and were caused by the formation of the Mount Nansen Volcanics. Local to regional uplift by the intrusion/extrusion of the volcanic group followed by a probable collapse on cooling was likely the cause of these faults. This theory is expanded upon in the next section on the theory of origin of the mineralization in the area. (Model)

Model of Mineralization

Taking all the data we have to date, a geological model of formation somewhat stands out. There are a lot of unknowns obviously, so the model will change to certain degrees as additional information is gained.

I am presenting this model here so that the results presented later can be viewed in respect to the model and how they fit or do not fit. The major controller is a major NW fault which regionally controls the entire geological picture of the area. The granodiorite is generally centred along this fault regionally as well as the porphyry mineralization explored by others in the area.

This central fault lies just east of the Discovery Creek property and also to the north. The porphyry related quartz-tourmaline breccia pipes are also centrally located on this NW structure where a major N110° fault intersects.

Very generally, the following would create the present model.

(1) Formation of the Yukon Group by a mixture of volcanics, volcanoclastics, small igneous sills, sediments mainly of a clastic origin from erosion. (Pre-cambrian - Palaeozoic).

(2) Region metamorphic alteration of above (regional stress).

(3) Shallow intrusion of the diorite within the Yukon Group. It is unknown if volcanics as the extrusive phase of the diorite existed (Jurassic).

(4) In the early Cretaceous the Casino Granodiorite same up the major NW structure. This pushed up the diorite/Yukon Group package.

(5) A period of substantial erosion bringing the granodiorite and diorite to surface.

(6) Possibly in Mid-Cretaceous, the Mount Nansen Group volcanics began which continues right through to the Palaeocene. The source of these volcanics are likely a common source to later porphyry dykes and sills through differentiation of the magma chamber over time. These later products were from the heat source and origin for the porphyry mineralization and the associated epithermal system.

(7) Early in the above (6) episode, a very strong eruptive period was likely, which derived the Mount Nansen Volcanic Suite. These were mainly andesitic volcanics and their extrusive equivalents of volcanoclastics. Minor differentiated dacitic to rhyolitic units were also formed which became more common as time progressed. This eruptive episode, I believe, is centred also on the N-W fault, where the main magma chamber is at depth in this tectonically controlled fault zone. As the andesitic magma rose up the structure, it hit the major body of the granodiorite which had somewhat filled the area. Thus the major flow of magma in effect left the NW fault, and circled up around the sides of the granodiorite body. Two major centres of extrusion were created (in our area) being Mnt. Victoria and Mnt. Nansen. These lie east and west respectively of the centrally located granodiorite on the NW fault. A major point here is that the Mount Nansen Volcanics and other possible derivatives of the magma completely enclose the granodiorite underneath and on both east and west flanks.

Minor extrusions up through the granodiorite and overflowing the granodiorite and other lithologies likely took place as well. This creates areas where the volcanics overlie the granodiorite and Yukon/Diorite groups, but in a major sense they are really an underlying lithology.

Locally (unknown regional extent) this period of extrusion of the Mount Nansen Volcanics probably created considerable uplift of the granodiorite along with the diorite and attached block of Yukon Group. This created the N110° faults which are seen as the major lithology controlling structures. A possible quieter period may have followed for some time with contraction/subsidence also affecting/creating the N110° faults.

(8) At some period later after cooling and solidification of the volcanics and their shallow equivalents, the still active magma chamber at depth became more active again. Tectonics may have re-activated or re-emplaced the major N-W fault up through all of the now present lithologies. During this reactivation stage, the large number of parallel to sub-parallel faults in the northwest direction were created which are the latest hosts to the mineralization.

The magma chamber at this point had likely been differentiated to a more felsic nature with the resultant lithologies of dacites, rhyolites, etc. of the "Mount Nansen Suite Porphyry Dykes". Early porphyry dykes extruded up through the lithologies creating pre-mineralization dykes and sills.

(9) At this point I must insert a major factor within our local geology which plays a strong role. During the creation of the N110° faults (Mount Nansen Intermediate volcanics) the major central NW fault east of our property was moved (left laterally) along one of these N110° faults. The major series of NW trenching domes of rhyolite/porphyry? centred on the main fault terminate abruptly to the north at a N110° fault. The major NW fault is then moved left laterally close to 7,000 feet to just north of our property. At both locations of intersection of the NW and N110° faults, a quartz-tourmaline breccia pipe, (created later), is found.

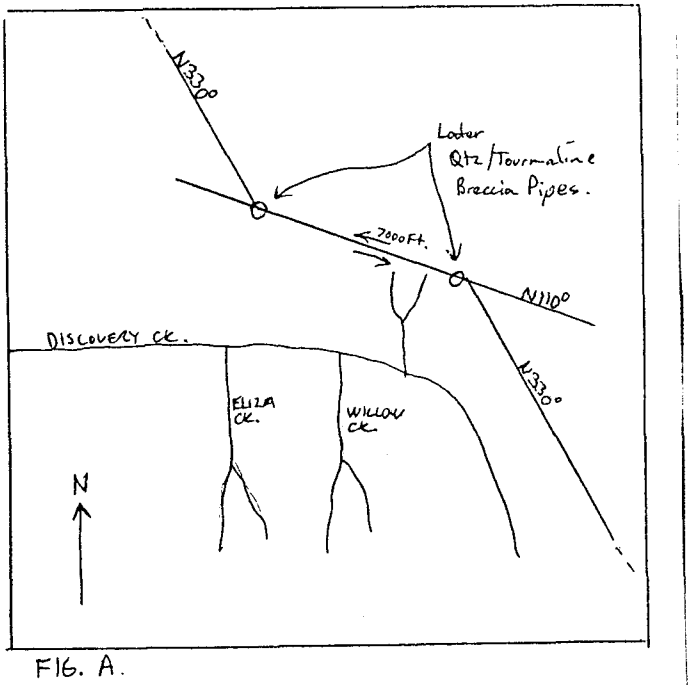


FIG. A.

(10) A magma rises up the NW fault from the deep magma chamber. The nature of this rising magma is not known, but small rising sills (?) reach the surface in a few locations centred on the NW fault. These form domes of rhyolite/rhyolite tuff (note: government geology maps call these "porphyritic granodiorite to quartz monzonite stocks".

This rising magma up the NW fault comes to the N110° fault where it then "floods" this fault zone over to the continuation of the NW fault where it again is rising up this NW structure. No porphyry (?) domes are exposed on surface along the N110° fault or the NW fault to the north, but may be at depth. Our data presented later suggests this, as does the following :

(a) Taken from a paper showing a regional Aeromagnetic Survey is the following :

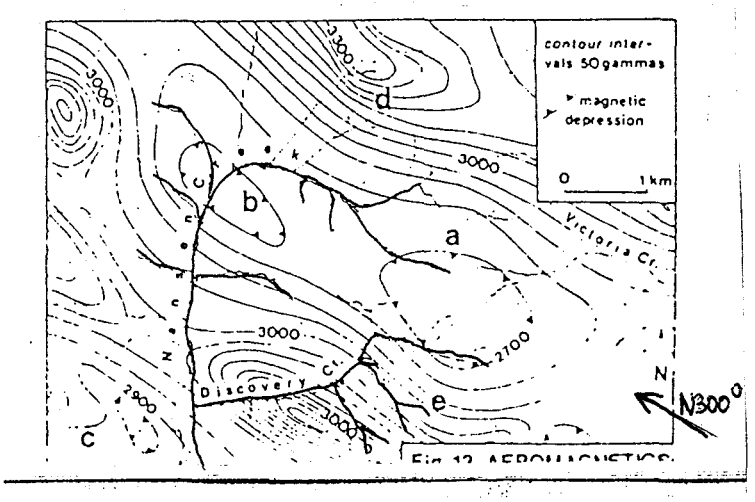


Figure B

The magnetic low areas "a" and "b" are basically interpreted as being of porphyry source. From a regional stream sediment survey and follow-up soil geochemical samples, a strong Cu-Mo anomaly was found. The paper concludes "anomalous areas "a" and "b" are characterized by high Cu and Mo and low but distinct Ag and Sb values, and it is related with strong magnetic depressions and K40 peaks. Geologically it occurs exclusively in the porphyries", (from "Mineral Exploration in the Yukon Territory, Canada" by F. Bianconi and R. Saager).

Figure B shows that the trend shown by the aeromagnetics is N300°. The structure though is really N330°. This difference or change can be accounted for by the N110° fault as shown in Figure C below :

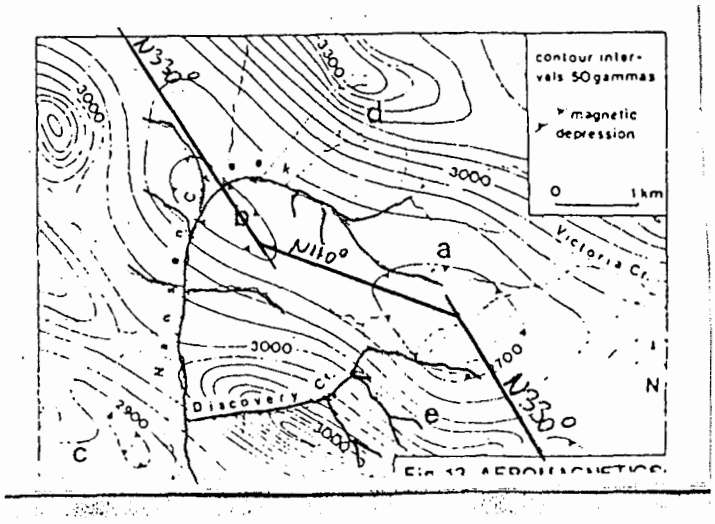


Figure C

11. The rise of magma creates a porphyry environment in the area of the NW - N110° - NW fault zone. Strong silicification of the granodiorite accompanied by Cu-Mo anomalies on the eastern portion of our property somewhat confirm the mineral environment. The silicification of hydrothermal origin may be part of the carapace of the porphyry system. This intrusion likely also causes considerable uplift and later collapse on cooling causing some movements on pre-existing faults.

Because of the N110° offsetting fault, the porphyry intrusion has created something of an "s" shape as shown below (schematically) :

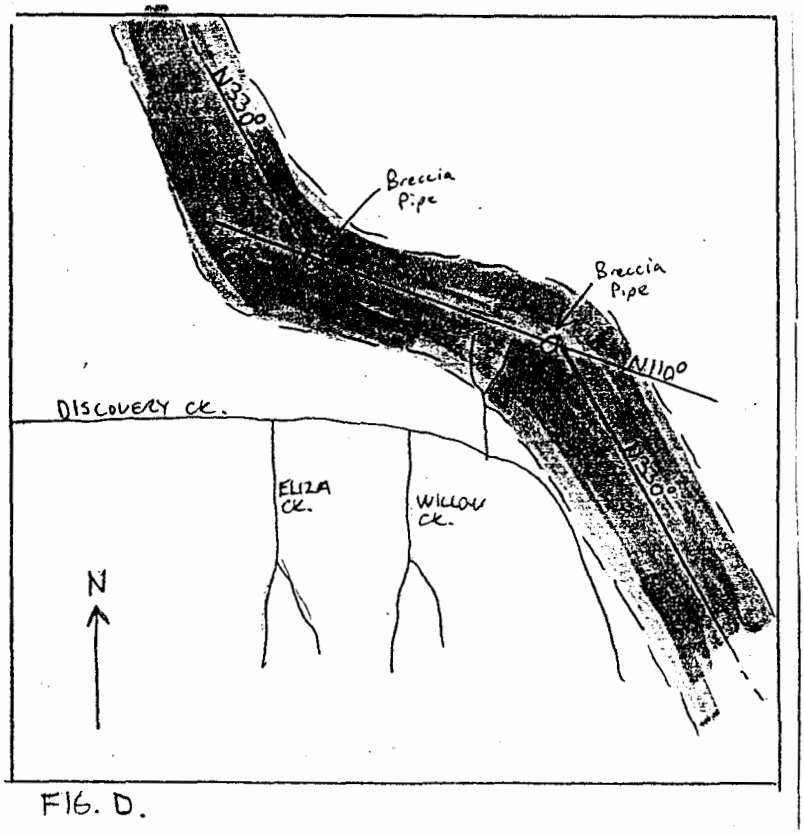


FIG. D.

It is also likely that the Quartz-Tourmaline breccia pipes formed in the cooling collapse phase.

The depth to the actual porphyry body is unknown. The porphyry alteration is represented at surface along with the small rhyolitic (?) domes.

Porphyry mineralization could be formed as described by numerous papers which I will not elaborate on. Other rarer types of mineralization such as massive sulphide rich in luzonite-enargite above and externally to the porphyry could also occur.

(12) Epithermal mineralization could occur above and in distal locations laterally to the porphyry. I personally would say that between the porphyry and epithermal environments that mesothermal and hydrothermal environments could exist. As the porphyry cools (contraction and carapace broadening), the epithermal system can migrate closer to the original porphyry until the epithermal veins may actually cut the earlier porphyry mineralization. The late porphyry collapse/cooling I would suggest may have created the local set of N10°-N30° faults which host porphyry dyke/epithermal veins of a later date than the N330° structures. As previously noted, small left lateral offsets occur on the N10-30° faults over the main vein system.

A general schematic picture of the result as found on our property is shown in Figure E below :

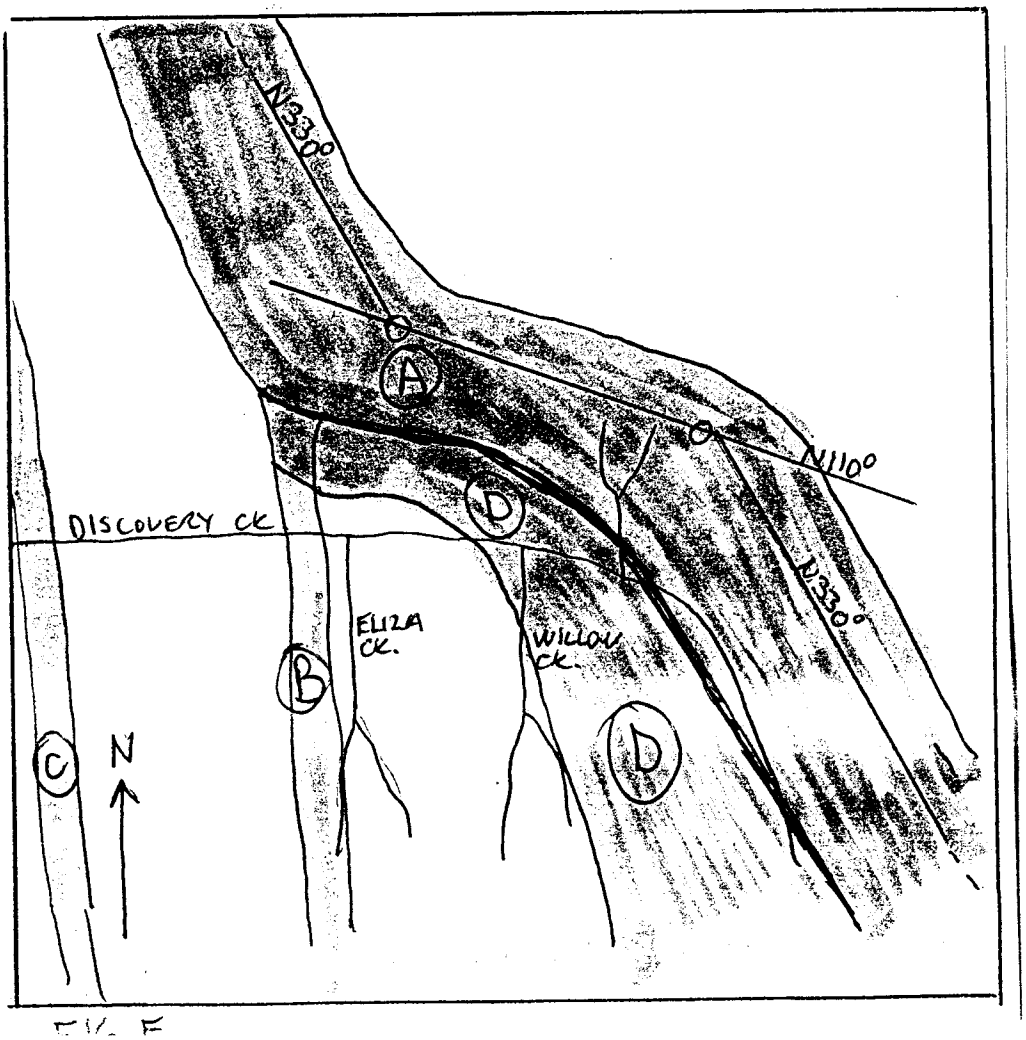


FIG. E

Zone A - Porphyry Cu-Mo zone. East side of Discovery Creek shows strong hydrothermal silicification, and Cu-Mo anomalies in rocks and soils.

Zone B - Basically this is the Eliza Creek epithermal vein zone. To the north it appears geophysically to become intermixed with porphyry or other higher temperature mineralization.

Zone C - Epithermal structures in the west are shown to be weak to non-existent at surface, but start to gain strength at depth. Possibly due to some sort of temperature profile??

Zone D - Mixed Zone of Epithermal and higher temperature mineralization (porphyry?). Geochems give a very strong signal of epithermal mineralization characteristics (i.e. Au, Ag, Pb, Zn, As are anomalous). Geophysics display N330° structures presumed to be of epithermal/mesothermal origin which at depth cut a sulphide layer or zone of possible porphyry/hydrothermal origin, (i.e. layer covers entire area and would have a gentle dip of 30° west).

Zone D is something of an unknown at this point. A strong target of sulphides is indicated by the chargeabilities of a layer with N330° linear structures cutting through the high background. It is not known if economic minerals of either Au, Ag, Pb, Zn, Mo, or Cu are present in this "layer" type structure. It is obviously strongly related to the porphyry system. The low accompanying apparent resistivities really discount this as a silicified zone, but portray it more as a very strong alteration zone with 5 - 10% sulphides and patches/layers/lenses of probable massive sulphide.

There also must be a reason for the orientation of this relatively gently dipping layer of material. One very possible explanation is that this is the contact of the Mount Nansen Volcanics underlying the Casino Granodiorite. Geologically, a lot of evidence points to this possibility which would create an excellent geologic location for a deposit to form. I have somewhat discounted the possibility of this layer being of an epithermal origin solely on the shear size of the layer being much too large to be typical. The magnetometer pattern of the area of low/flat values is more typical of a porphyry environment. The worst case scenario I see is that the layer could be a propylitic alteration zone of the porphyry with a strong pyrite component.

The Willow Creek zone (where we have done a fair amount of work) geophysically, did not present itself as a highly prospective area for exploration. Willow Creek itself almost appears to be the boundary of the western extent of the porphyry layer.

The Willow Creek Zone may represent a block from much higher in the palaeosurface of the epithermal system. A series of N110° faults and post-vein N-S faults exist in the area creating a block of higher palaeosurface mineralization (downfaulted). This suggests that the porphyry (?) layer mineralization could exist under the Willow Creek Zone, but at a much greater depth.

The Eliza Creek vein zone shows a general picture of increasing chargeabilities to the north of Discovery Creek as it approaches the mixed epithermal porphyry (?) sector. This may create an interesting, but complex target for drilling along strike and to depth along this vein system.

Not a lot of papers or data has really been produced directly linking epithermals and porphyry deposits. Generally, if the porphyry can be found, the epithermal has long been eroded away. Although porphyry Cu-Mo mineralization is evident in our area, an actual deposit, if it exists, could still be at considerable depth. The epithermal system also appears to be more of a lateral system than an overlying one which could have been eroded .

Recently, a publication of papers on this subject was presented in Economic Geology - September 1991, on deposits in South America (Chile).

Many small factors found on the property also fit very well with this model. Some are :

- within the Willow Creek Zone, veins and trenches near Willow Creek itself (eastern edge) visually display two features:

  (a) veins of a more sulphide rich nature that mineralogically have been shown as higher temperature veins;
  (b) a general increase of Cu values; a one inch wide chalcopyrite vein was found in one drill hole and many trenches display supergene malachite staining.

Also in drill core from Willow Creek, "pink-red" alteration zones or patches were found. A thin section analysis stated that this was a hydrothermal potassic alteration which is overprinted by later propylitic alteration associated with the epithermal veins.

General Results 1991

Grid

The completed grid can be seen on any of the geophysical, geology or geochemical maps.

Geochemistry

About 300 soil geochems were taken in 1991, and are shown on maps 2 to 8 in the back folder. These also show all previous soil geochems taken.

All the soil geochems were taken of the "B" horizon. The 1991 samples were taken by CME Consultants Ltd. and geochemically assayed by Rossbacher Laboratory Ltd. of Burnaby, B.C.

Geophysics

(a) Magnetics - Total field magnetics were conducted over the entire grid. The details of the survey with maps and interpretations are found in the report by CME Consulting in Appendix A (subcontracted to Stratagex Ltd.).

Generally, the total field magnetic survey helps to define the lithologies. This is reported on in Appendix A. Some of the lithologies such as the diorite and volcanic groups display similar magnetic signatures making the interpretation difficult. Known and suspected geology was used in extrapolation.

The epithermal veins are somewhat displayed by the total field magnetics as northwest trending linear lows. Many subtle examples of this can be seen right across the property as somewhat semi-continuous series of lows along the strike of the veins. The relative strength of the low created is dependent on a mixture of factors such as :

(1) the host lithology's relative magnetic signature;
(2) the degree of alteration of the vein;
(3) the width of the vein;
(4) the amount (depth) of overburden and the nature of the overburden.

The spacing between readings taken plays a very large role in the final product. Moving, for example, ten feet one way or the other near a vein can create vastly different readings. Therefore, a somewhat experimental method was used on the magnetics survey where readings were taken on a time based rapid succession along the traversed line. This creates an almost continuous set of readings along the line somewhat eliminating the station spacing problem. The plan contoured maps though utilizes only readings taken every 25 ft. as contouring is dependent on the line separation in relation to the station separation. The detailed data though can be extremely useful. For example, if the line data is added to the I.P. sections, an I.P. anomaly may show on the magnetic data, or two or three district lows rather than one broader low suggesting 2 or 3 closely spaced veins.

The "mixed zone" is shown by the magnetic data as a wide area of low values with very little variation (i.e. relative low and flat signal). This is a common feature found over porphyry environments. Contouring at a tighter interval allows subtle, but distinct, linear magnetic lows trending northwest to be seen portraying the overprinted epithermal vein system.

(b) I.P. Geophysics - described and interpreted in Appendix A.

Geology

The geology has been discussed. Previous data plus new data of 1991 was utilized. A geology map of the grid at one inch equals two hundred feet can be found in the back folder.

Trenching

Trenching was done in two locations with a D8H cat with ripper owned and operated by Don Marino - Colt Ent. of Carmacks, Yukon. The results of the trenching are discussed in the following :

(a) L600N/2175E to 2530E TRENCH

A strong I.P. geophysical target was shown in this area (part of mixed epithermal/porphyry zone). The depth to the target was estimated from 0-100 feet, but it was felt if an indication of what this target might be, the trench would be worthwhile.

The trench was dug to a depth of about 6 feet. No bedrock was seen. A line of surface soil geochems had been taken previously on line 600N at 50 foot centres. The resultant trench was geochemed via a line down the trench at L615N with samples taken every ten feet. Minor bits of rock were assayed when they looked applicable. The target vein(s) were indicated as probably being fairly sulphide rich. Bits of vuggy quartz with minor sulphides were the only suggestion of vein material. The host lithology from the overburden is a weakly propylitized granodiorite. Minor pieces of stronger propylitization showed minor (< 1%) disseminated pyrite. A few pieces of Mount Nansen Volcanics were also found within the overburden mostly at the west end near Willow Creek.

Throughout the trench of mostly sandy/gravelly granodiorite, there were very slight rusty patches and zones. Overall from a visual standpoint, the trench did not look at all promising for encouraging results. The results show the bottom trench geochems and the surface soil geochems for a comparison and are very encouraging.

TRENCH L615N - GEOCHEM RESULTS

TRENCH BOTTOM GEOCHEMS (≈ 6ft depth)

SAMPLE NAME	PPM Mo	PPM Cu	PPM Ag	PPM Zn	PPM Pb	PPB Au	PPM As
L615N 2175E	2	24	1.0	122	60	120	286
L615N 2180E	3	22	0.9	120	64	30	208
L615N 2190E	1	16	0.5	60	14	110	42
L615N 2200E	1	26	0.6	128	50	200	74
L615N 2210E	2	18	0.1	80	32	20	40
L615N 2220E	2	22	0.3	112	54	40	68
L615N 2230E	1	34	0.2	166	84	20	106
L615N 2240E	1	22	0.3	98	34	30	72
L615N 2250E	2	26	0.3	128	64	20	74
L615N 2260E	2	34	0.2	160	58	50	106
L615N 2270E	3	40	0.2	176	64	80	112
L615N 2280E	1	48	0.2	226	84	100	144
L615N 2290E	2	48	0.2	230	94	160	98
L615N 2300E	3	58	0.3	240	104	80	100
L615N 2310E	2	44	0.4	290	120	20	94
L615N 2320E	3	42	0.6	240	150	80	108
L615N 2330E	2	38	0.7	182	92	100	106
L615N 2340E	2	46	0.4	290	172	40	110
L615N 2350E	4	40	0.5	210	112	60	86
L615N 2360E	2	36	0.4	140	66	60	80
L615N 2370E	3	62	0.6	140	60	260	212
L615N 2380E	3	46	0.4	160	54	220	78
L615N 2390E	3	62	0.7	144	50	290	274
L615N 2400E	3	50	0.8	82	56	680	164
L615N 2410E	1	52	0.9	114	56	230	188
L615N 2420E	4	90	2.5	194	136	420	710
L615N 2430E	4	84	2.5	164	110	400	520
L615N 2440E	2	76	6.1	150	104	740	318
L615N 2450E	4	80	0.3	164	46	340	322
L615N 2460E	2	60	0.4	140	36	270	278
L615N 2470E	4	88	0.7	172	48	340	362
L615N 2480E	3	100	0.9	182	46	760	454
L615N 2490E	2	130	1.9	164	64	800	280
L615N 2500E	3	112	1.4	146	74	1300	320
L615N 2510E	2	40	0.6	124	44	20	98
L615N 2520E	2	28	0.3	96	32	40	68
L615N 2530E	1	20	0.4	74	20	10	42
2550E							

SURFACE SOIL GEOCHEMS

PPM Mo	PPM Cu	PPM Ag	PPM Zn	PPM Pb	PPB Au	PPM As
← Willow Creek						
← 1	26	1.5	132	60	80	68
← 1	36	2.7	84	22	40	80
← 1	34	0.8	98	22	30	98
<= (25) Rock Sample						
← 1	36	1.2	110	20	60	104
← 1	16	0.4	58	10	5	32
<= (24) Rock Samples						
<= (23)						
← 1	26	0.4	66	14	5	40
<= (22) Rock Sample						
← 1	22	0.2	84	26	5	46
← 1	26	0.4	94	28	10	64

Within the trench, four rock samples were taken (22 to 25) from the overburden, shown (above) at their respective locations. The following gives a brief description followed by the assay results of these.

S91-22 - propylitic granodiorite with about 1% disseminated pyrite
S91-23 - argillized granodiorite with some quartz rich (silicified) patches; less than 1% disseminated pyrite
S91-24 - basically the same as S91-23, but the silicified patches within the argillized granodiorite held about 2% disseminated pyrite
S91-25 - from L615N/2340E to 2300E the trench was composed of a propylitic/argillic granodiorite derived clastic sand; within this a number of clastic and blocks of andesitic volcanics of the Mount Nansen Group are found; Sample S91-25 is a piece of andesite/dacite volcanics that contained minor stringers of pyrite (< 1% pyrite).

Sample Number	Au oz/t	Ag oz/t	MO PPM	Cu PPM	Zn PPM	Pb PPM	As PPM
S91-22	0.001	0.02	1	32	52	10	36
S91-23	0.005	0.22	1	26	64	196	172
S91-24	0.005	0.11	1	20	32	44	128
S91-25	0.001	0.01	1	12	72	14	26

The geochemical results through the trench show the entire trench as being anomalous in all the elements to a certain degree with a zone of L615N/2370E to 2500E standing out in high Au, Ag and Cu values.

Of notable mention are the values of Zn compared to Pb, (Zn values distinctively higher). This could easily be explained as being in the "halo" of the vein and once we reach the vein that this trend will be reversed. In trenching the epithermal veins a Pb/Zn ratio of greater than one was a good sign for a vein below. A general trend in the surface geochem results shows that as we get closer to the "porphyry" style mineralization that a change in mineralogy is taking place where the Zn values are greater than the Pb values. The mixed porphyry/epithermal mineralization zone is shown from the I.P. chargeabilities as more sulphide rich. The supergene oxidation over the epithermal vein areas is intense and has shown a strong supergene leaching of all elements, but the more mobile elements such as Zn stand out in this regard. Therefore, the pattern of changing mineralogy from epithermal to mixed epithermal/porphyry mineralization may be real or may just be the result of strong supergene oxidation/leaching of the epithermal system compared with a weak or absent supergene effects as we move within permiter of the porphyry. It has also been shown that within the epithermal system that the greater the quartz content of the vein that the less effect the supergene leaching/oxidation has had (i.e. quartz protects the sulphides). Therefore, a change in quartz content could also produce this general trend displayed. (Note: It is a general fact in the epithermal veins that trench sampling has shown the presence of sulphides to produce higher assay results compared to their oxidized equivalents. Secondary quartz with the sulphides, especially if it is vuggy, makes this pattern almost > 95% true).

The results of the L600N trench are very encouraging and suggests the entire area of the epithermal/porphyry zone mineralization to hold good potential.

B) Trench L300S/1080W to 1490W

In 1990 trenching, the ramp entering the trench on the west side displayed patches of vein at about L300S/1080W.

It was decided that 1991 work would attempt to expose this vein and that the trench would be extended to the west to expose further probable vein zones.

The area is hosted by the Yukon Group Metamorphics which contain pods/veins of magnetite shown by the total field magnetics. Between these magnetically high zones are NW trending relative magnetic lows suggesting epithermal veins. It was deemed possible that the presence of the magnetite may create an environment of precipitation of Au thereby creating the potential for high grade veins.

The vein at 1080W and another at 1430W were exposed and sampled. The area between was partially exposed to mostly overburden covered. The veins and exposed bedrock were mapped/sampled where applicable and a line of geochem samples were taken throughout the trench. The actual line of sampling/mapping down the trench was at L250 south. The surface geochems shown were at L200 south, 50 feet away. The geology is also shown.

L250S Trench Results

GEOCHEM SAMPLES

L250S	TRENCH SAMPLES NAME	PPM Mo	PPM Cu	PPM Ag	PPM Zn	PPM Pb	PPB Au	PPM As
1000W	MAGNETITE VEIN							
1020W								
1040W	YUKON GROUP							
1060W								
1080W								
1100W	VEIN 'A' (described later)							
1120W								
1140W	YUKON GROUP AND OVERBURDEN							
1160W								
1180W								
1200W								
1220W								
	1216W	2	110	0.4	82	20	5	48
	1224W	8	1380	0.4	230	34	220	192
1240W								
	1231W	3	222	0.2	104	12	10	94
	1236W	8	408	0.3	116	18	20	56
1260W								
1280W								
1290W								
1300W								
1320W								
1340W								
1360W								
	1365W	5	350	0.3	110	14	10	42
1380W								
	1375W	9	312	0.5	264	14	30	88
	1385W	128	520	4.7	1060	342	290	2280
1400W								
	1395W	16	46	0.5	114	38	30	84
	1405W	9	86	0.6	118	106	40	164
1420W								
	1415W	9	312	0.5	264	14	30	88
	1425W	7	69	0.3	2040	200	30	474
1440W								
	1435W	12	112	42.8	1140	5600	5400	6900
	1445W	21	156	7.1	2420	770	280	1940
1460W								
	1455W	19	86	7.2	1420	1240	440	1600
	1465W	8	80	2.2	840	446	280	670
1480W								
	1475W	11	128	9.7	1140	1600	570	2280

L100S SURFACE SAMPLES NAME	PPM Ag	PPM Zn	PPM Pb	PPB Au	PPM As
1000W	0.8	45	19	6	5
1050W	2.3	55	33	7	23
1100W	0.5	117	61	12	53
1150W	2.4	38	14	6	6
1210W	1.3	40	8	6	5
1250W	0.9	52	11	11	5

POSSIBLE ZONE OF VEINS (OVERBURDEN)

YUKON GROUP & OVERBURDEN

RUSTY PORPHYRY DYKE (42) (43)

YUKON GROUP WITH POTASSIC ENRICHED BRECCIA PATCHES

MAGNETITE RICH ZONE (VOLCANICS?) (44) (45)

ARGILLIZED YUKON GROUP WITH PORPHYRY DYKES

ARGILLIZED YUKON GROUP (POSSIBLE SILICIFICATION)

VEIN ZONE 'B' (described later)

ARGILLIZED YUKON GROUP

OVERBURDEN

Grab rock samples shown as (42) to (45) on the trench results did not return any significant results but are shown below : (Vein Assays to follow)

Sample Number	Au oz/t	Ag oz/t	MO PPM	Cu PPM	Zn PPM	Pb PPM	As PPM
S91-42	0.001	0.01	1	90	82	24	44
S91-43	0.001	0.01	1	64	70	14	14
S91-44	0.001	0.01	1	456	60	4	18
S91-45	0.002	0.01	7	940	54	4	142

Vein A Results (L250S/1085E)

In 19990 trenching patches of vein material were partially exposed on the ramp into the trench. Vein type material could be seen for 23 feet on a N60° line from which three samples together gave :

6 feet of :	Au	=	.026 oz/ton
	Ag	=	.91 oz/ton
	Cu	=	354 ppm
	Zn	=	1215 ppm
	Pb	=	1270 ppm
	As	=	3008 ppm

Trenching in 1991 uncovered the zone which explained the larger (23 ft) width of possible vein.

Basically, what was found was a NW vein (N350°) where it meets a later N25° vein. The N25° vein continues on both sides of the NW vein with a ten foot left lateral offset occurring on the NW vein.

The following schematic diagram shows the general picture with the sample lines shown. The assay results of sample lines A, B, C, D are then given.

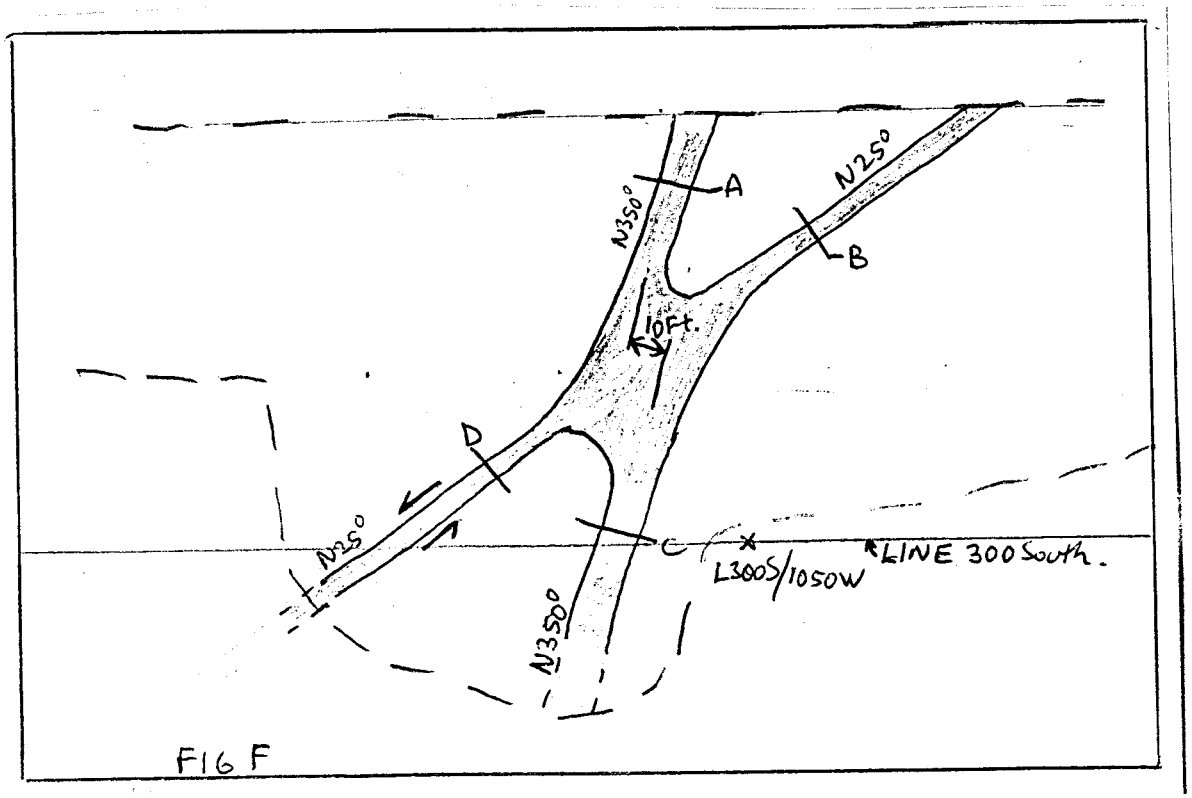


FIG F

- Line A Assay Results - Vein N350°

Sample Number	Width (ft)	Au oz/t	Ag oz/t	MO PPM	Cu PPM	Zn PPM	Pb PPM	As PPM
S91-26	2.0	0.001	0.01	1	28	920	10	306
S91-27	2.0	0.001	0.01	4	64	1720	116	1100
S91-28	2.0	0.005	0.27	9	326	2680	690	4720
S91-29	1.0	0.005	0.13	7	318	2460	600	4000

Total - 7.0 ft wide vein of low assays (very strongly oxidized)

NOTE: the fairly high Zn values suggest we are in the vein "halo" above the real vein.

- Line C Assay Results - Vein N350°

Sample Number	Width (ft)	Au oz/t	Ag oz/t	MO PPM	Cu PPM	Zn PPM	Pb PPM	As PPM	Au Equip. oz/ton
S91-34	2.0	0.058	1.78	1	210	1040	4760	3960	
S91-35	2.0	0.576	12.80	4	820	172	34200	24800	
S91-36	1.0	0.005	0.08	2	146	660	462	420	
Total 5.0ft of:		0.254	5.85	2	441	617	15676	1159	0.336

There were no appreciable visual differences between line A and line C in the samples. A strong difference in assay results is obvious. (NOTE: IN LINE C THE Zn VALUES DECREASED DRAMATICALLY WITH AN INCREASE IN OTHER ELEMENTS.)

- Line B Assay Results - Vein N25°

Sample Number	Width (ft)	Au oz/t	Ag oz/t	MO PPM	Cu PPM	Zn PPM	Pb PPM	As PPM
S91-30	1.5	0.001	0.01	2	34	296	24	74
S91-31	1.5	0.013	0.12	1	38	468	126	1040
S91-32	1.0	0.007	0.05	2	58	474	100	760
S91-33	1.0	0.001	0.01	2	106	122	14	92

Total - 5.0 ft., but samples 31 and 32 represent true vein (2.5 ft)

- Line D Assay Results - Vein N25°

Sample Number	Width (ft)	Au oz/t	Ag oz/t	MO PPM	Cu PPM	Zn PPM	Pb PPM	As PPM
S91-37	1.0	0.004	0.13	4	94	650	110	1360
S91-38	2.0	0.010	0.01	19	78	1280	90	2820
S91-39	2.0	0.011	0.17	1	68	600	54	234

Total: 5.0 ft of low values

Within the central area of where the two veins meet, the vein zone enlarges as shown in the diagram. Two grab samples from this zone gave results of :

Sample Number	Width (ft)	Au oz/t	Ag oz/t	MO PPM	Cu PPM	Zn PPM	Pb PPM	As PPM	Av Equiv. oz/ton
S91-40		0.025	2.74	1	32	490	354	6400	0.063
S91-41		0.144	0.01	7	338	3000	4760	17000	0.144

Of notable mention here (see Figure F) is that a 4 to 5 foot wide band of Mount Nansen Intermediate (andesitic) volcanics bounded the vein west of line A. No volcanics were seen on the border of Line C. The meaning of this is unknown at this time.

Vein B - L250S/1435W

At L250S/1435W was another exposed vein section. Once again (similar to Figure F) this was a junction of two veins:

- a NW vein striking N310° with a true width of 4-6 feet (varied)
- A N25° vein with a width of 1 to 1.5 ft

Both veins were fairly poorly exposed. they are hosted within a wide zone of argillized Yukon Group Metamorphics possibly getting quite close to the Mount Nansen Volcanic contact. To the west of the vein is argillized Yukon Group mixed with overburden.

From the L250S overall trench results shown earlier of the geochem sampling, geochem sample L250S/1435W lies directly above this vein (5400ppb Au). Strong geochem sample anomalies persist west of here from 1435W to 1475W (extent of samples). Further work in this area is warranted with a close look at the I.P. target just west of here.

Early in the trenching a zone near 1450 west was found to contain some "vein-like" material within the overburden. At only a two foot depth, sample S91-7 was taken as a grab sample of this material → a vuggy agglomerate of quartz clasts with scoridite and manganese coatings over the rusty quartz. The assay on this sample gave :

Sample Number	Width (ft)	Au oz/t	Ag oz/t	MO PPM	Cu PPM	Zn PPM	Pb PPM	Sb PPM	As PPM	Av Equiv. oz/ton
S91-07		0.287	3.02	252	490	2340	10500	476	13000	.329

Upon completion of the trench, the N310° vein assayed :

Sample Number	Width (ft)	Au oz/t	Ag oz/t	MO PPM	Cu PPM	Zn PPM	Pb PPM	As PPM	Av Equiv. oz/ton
S91-48	4.0	0.001	0.01	5	60	1160	46	206	
S91-49	2.0	0.004	0.34	3	18	210	920	282	
S91-50	3.0	0.010	0.59	4	36	266	1740	2620	
S91-51	1.0	3.180	4.50	15	318	700	9200	129000	
S91-52	1.0	0.019	1.10	10	78	710	3080	4440	
S91-53	5.0	0.005	0.16	5	96	1700	130	650	
Samples 49-52 7.0ft of : (True Vein about 6ft wide)		0.462	1.15	6	77	375	2763	19552	0.478
Vein plus halo 16.0ft of :		0.204	0.56	6	79	986	1261	8809	0.212

Obviously the main value came from sample S91-51. This sample was also assayed for Te which gave <.2 ppm. The vein is seen "mainly" as a medium to pale green quartz with no sulphides. Sample S91-51 contained about four 1 inch wide vuggy quartz/sulphide veins. The sulphide is dominantly arsenopyrite with a thin outer layer of sphalerite and galena. The results in S91-51 are quite similar in many ways to S91-7 from the overburden.

A sample of the N25° vein was taken, but it gave only low anomalous values (similar to sample S91-53). The junction of these two veins was directly on the northern bank of the trench so the probable fault offset of the main NW vein could not be seen.

Other Geology

Another feature looked at in 1991 of significant result was the ridge of Mount Nansen Volcanics (andesite) along Tit Mountain. This is located north of the grid about at where L3900N would be from 150 West to 1250 West. Along this ridge is a series of prominent outcrops of andesite with low areas between peaks or domes of outcrop. These low areas are seen as almost "gravel" zones with rusty oxidized chips of altered rock and minor vein material. Four or five of these proposed vein zones occur along the ridge. A very prominent one about 50 ft west of the Tit Mountain "beaken" is roughly emplaced at L3900N/300 West to 400 West. Within this low area, a number (3 or 4) of rusty zones can be seen, possibly with a N330-N340° strike. This area is directly onstrike to our main Eliza Creek vein zone. (NOTE: The Eliza Creek zone has been shown by geophysics, geochems and trenching to be continuous from L1900S to L850N. Although no trenching has been done north of L850N, the geophysics and geochem data shows a continuation on-strike and actually suggests a vein strengthening to L3400N. Continuation from L3400N to L3900N would project the zone where this low lying rusty zone exists over the ridge of Tit Mountain).

Within this wide zone of gravelly rock chips of rusty (bleached) volcanics and probable vein material, three widely spaced locations were selected for samples. It was hoped that these oxidized "chips" would geochemically identify the probable existence of a vein zone. For each sample, rock chips were gathered from a 3 foot diameter circle for assay. The results are shown below:

Sample Number	Width (ft)	Au oz/t	Ag oz/t	MO PPM	Cu PPM	Zn PPM	Pb PPM	Sb PPM	As PPM	Av Equiv. oz/ton
S91-17		0.301	1.14	3	80	740	2100	96	460	0.317
S91-18		0.003	0.01	4	54	1500	800	8	122	0.003
S91-19		0.014	0.52	1	62	318	4120	12	472	0.021

The results leave no doubt that mineralization exists. Sample S91-17 was taken 50 feet east of S91-18. Sample S91-19 was 50 ft at N150° from S91-18 and so in effect may reprsent the same vein (?) on strike.

It was field noted in sample S91-17 that a number of pieces in the sample contained vuggy quartz. No sulphides were present, but "cubic" holes from leached out pyrites could be seen.

These results combined with other data, suggests that the main Eliza Creek Vein zone is continuous from L1900S to L3900N (5,800 feet) and open for extension at both ends. Parallel to sub-parallel veins to the west of here also appear to have this similar continuous on-strike feature.

Conclusions and Recommendations

The theory or model given earlier shows a combination of porphyry and epithermal systems (and possible mesothermal/hydrothermal) coming from the same genetic source. The structural orientation of the porphyry, with the faulted "S" shape, creates a unique geological environment. A porphyry system flanked by a mixed zone of porphyry/epithermal mineralization and more distal epithermal veins is suggested. The main Eliza Creek Zone, epithermal in nature in the south strikes into a mixed epithermal/porphyry zone in the north. Parallel epithermal zones west of Eliza Creek suggest weak zones near surface with increasing strength to depth. A general picture of increased sulphide content is shown as you get closer to the porphyry. Supergene oxidation and probable supergene leaching occurs in the epithermal system. The true meaning of the strong I.P. anomaly layer (called porphyry mineralization) is not known at this time, but mineralized epithermal veins which would intercept this layer at depth exist.

At this time or stage in exploration, not enough is known on the mineralized zones to fully interpret the geophysical results obtained. Therefore, a program of investigation as to determining the geophysical meaning and what mineralization is contained is required. This would involve a reverse circulation drill program with some possible trenching targets.

Within the mixed epithermal/porphyry zone, the importance of the epithermal veins must be determined. The layer of porphyry (?) sulphides must also be investigated. This would be a priority due to the large tonnage implied by this layer. The relationship of the mineralization of both types in this mixed zone should be looked at, but this would likely require extensive drilling. Within the porphyry layer a zonation of minerals is likely and so must be taken into account. Determination if this layer is even an economic target and of what minerals should be a priority.

Drilling widely spaced holes (500 ft) along the Eliza Creek Zone would also be a priority (possibly 8 holes). In the south end (L1900S to L800N), drilling for vein width and grade would be valuable in determining a general economic outlook for this system and the trench results could be better interpreted. As you go to the north, the Eliza Creek zone enters a "mixed" zone of mineralization which may create a unique situation of changing grade, vein strength, economic mineral suite, etc., which could be important.

Within the Eliza Creek Zone and the mixed epithermal/porphyry zone, there are so many drill targets that we cannot possibly hope to look at even a low number of them. Therefore, I would concentrate on these two zones with targets selected in the hope of defining the geophysical responses meaning and other geological data required to better interpret the entire picture. If this can be done along with acquiring favourable or encouraging results, a future and much more extensive program can be better or more specifically planned. The epithermal veins on their own create a large tonnage potential if grades can justify their economics. The possible so called porphyry mineralized layer suggests a possible tonnage which could "dwarf" the epithermal system in size. Obviously a fair number of drill holes are required just to figure out what we are truly facing, what holds economical mineralization and what minerals they are.

The overall model is simplistic, although creates complex interpretation. All the facts seem to agree on this model, and alternative models to fit have been sought, but not found to date. The summer program of 1991 in my view created our best results to date by far, although they are based mostly on interpretation of geophysics and minor geology.

I would like to thank CME Consulting Ltd. of Vancouver for their work on Aurchem's behalf. Great pains were taken to ensure quality and reproducible data. The anomalies are real, the problem now lies in determining what they are and what they hold.

Mark Langdon

Mark Langdon
Manager-Geological Projects

ML:mab

LIST OF EXPENDITURES

(A) Personnel Expenditures

Mark Langdon	Manager - Geological Projects 511 Hayward Crescent, Milton, Ontario Graduated from Waterloo University April/79; Honours Science - Earth Science Major. Has 13 years experience in the mineral exploration field in a variety of positions with exploration companies. Member P.D.A. and SMME FIELDWORK : Generally all aspects of the program, supervision of contract work, geological mapping and sampling, interpretation of data and planning, budgets and other managerial duties.	
	150 days at $250.00 per day:	$ 37,500.00
Secretarial Costs		$ 1,500.00
TOTAL PERSONNEL EXPENDITURES (A)		$ 39,000.00

(B) Rental Costs

1 Suburban 4 x 4 truck (Norcan Leasing)	$ 1,600.00
TOTAL RENTAL COSTS (B)	$ 1,600.00

(C) Miscellaneous Field Expenses

Hotels, meals, supplies, fuel, etc.	$ 28,240.00

(D) Cost of Flights to Yukon $ 1,628.00

(E) Contractual Expenditures

-	Trenching - Kando Ent., Carmacks, Yukon	$ 1,712.00
-	Trenching - Colt Ent., Carmacks, Yukon	$ 18,382.00
-	Grid, Total Field Magnetometer & I.P. surveys geochemical sampling, claim staking, claim & property location; Interpretation of geophysical results CME Consulting Ltd., Vancouver, B.C.	$137,224.00
-	Assays of Rock and Soil Samples Rossbacker Laboratory Ltd., Burnaby, B.C.	$ 7,444.00
	TOTAL CONTRACTUAL EXPENDITURE (E)	$164,762.00

SUMMARY OF EXPENDITURES

A	Personnel Expenditures	$ 37,500.00
B	Rental Costs	1,600.00
C	Miscellaneous Field Costs	28,240.00
D	Flights	1,628.00
E	Contractual Expenditures	164,762.00
	GRAND TOTAL	$233,730.00

For all expenditures, receipts are available on request. Other expenditures were also encountered which are not listed above. If further expenditures are required these can be produced with receipts.

PHYSICAL EXPENDITURES FOR ASSESSMENT OF CLAIMS > 3 YEARS OLD

Personnel Expenditures	$ 3,750.00
Trenching :	
Kando Ent.	$ 1,712.00
Colt Ent.	18,382.00
Grid and Line Cutting	
CME Consulting Ltd.	$ 27,233.00
Total Physical Expenditures	$ 50,977.00

SUMMARY

Physical Expenditures	$ 50,977.00
Other Expenditures	182,753.00
TOTAL	$233,730.00

MARK LANGDON,
MANAGER - GEOLOGICAL PROJECTS.,
AURCHEM EXPLORATION LTD.


CLAIM LOCATION MAP 1A
AURCHEM EXPLORATION LTD.
DISCOVERY CREEK PROJECT
YUKON TERRITORY. NTS 115I/3
DRAWN BY: M. LAUGDON DATA BY: B. FAGAU OF CME CONSULTANTS AND M. LANGDON.
NOTE: THE KEY AND OTHER DATA IS SHOWN ON THE ADJOINING MAP 1
SCALE: 1" = 200 FT.
N
S
J. BILL 31
J. BILL 32
J. BILL 29
J. BILL 30
J. BILL 27
J. BILL 28
J. BILL 25
J. BILL 26
ETZEL 1
ETZEL 2
JON-WEDGE 1 (CLAIM REFUSED)
JON-WEDGE 2 (CLAIM REFUSED)
JON-WEDGE 3 (CLAIM REFUSED)
JON-WEDGE 4 (CLAIM REFUSED)
BULL 1
BULL 2
BULL 3
TBR 1
TBR 1 (SEN 1)
TBR 3 (SEN 3)
DOME 66
(SEN 4)
(SEN 2)
DOME 65
DOME 64
DOME 63
WEDGE 2
WEDGE 1
WEDGE 1 ??
DOME
JBF 1
O.P.
CLAIM LOCATION MAP 1A
AURCHEM EXPLORATION LTD.
DISCOVERY CREEK PROJECT
YUKON TERRITORY. NTS 115I/3
092987
MAP # 115 I/3 Doc # 092987 (184)

JOINS MAP 1A ABOVE

J. BILL 26

J. BILL 24

J. BILL 22

BULL 3

BULL 4

BULL 5

BULL 6

BULL 7

BULL 8

BULL 9

BULL 10

BULL 11

BULL 12

JON-WEDGE 4 (CLAIM REFUSED)

JON-WEDGE 5 (CLAIM REFUSED)

JON-WEDGE 6 (CLAIM REFUSED)

MYRTLE M.C.

RICCO M.C.

COURTLAND M.C.

LAURA (NOT RUSLEMEN)

IDA MAY M.C.

MACK M.C.

SUNSET M.C.

HAZEL ANNE M.C.

DOME 65

DOME 63

DOME 60

DOME 55

DOME 54

DOME ??

DOME

WEDGE 3 ??

WEDGE 3 (M.E. 14)

WEDGE 5 (M.E. 14)

WEDGE 6

WEDGE 5 (M.E. 13)

WEDGE 7 (M.E. 13)

WEDGE 8

WEDGE 10

WEDGE 15

WEDGE 16 (M.E. 11)

WEDGE 17 (M.E. 12)

RAS 1

RAS 2

RAS 3

RAS 4

JOANNE 6

JOANNE 5

JOANNE 4

JOANNE 2

JLZ

B.L. 1?

B.L. 2?

O.P.

O.P.?

DOME POSTS TO BE/HAVE NOT LOCATED.

Possible Boundary of Dome (Claims Posts Not Located)

Posts #1 & #2 on Dome 66 are 3740ft apart

#1 Post Found #2 Post Not Found

Posts #1 & #2 on Dome 66 are 3740ft apart

Posts #1 & #2 on Dome 55 are 3737ft apart

Posts #1 & #2 on Dome 55 are 3737ft apart

KING CREEK

DISCOVERY CR.

WILLOW CR.

MOOSE CR.

BROWN CR.

TAYLOR CR.

BASE LINE TO 6400N

BASE LINE 000

MSL

LCGS 1

JBF 1

KEY

CLAIM POSTS AND SURVEYED PEGS

- ⊙ survey steel peg located from blueprints but not field located.
- ⊗ survey steel peg located in the field.
- □ ⊞ ⊞ claim post(s)
- ■ claim post located and identified in field.
- ⊠ claim post not located but estimated location drawn.
- □ claim post located but identification unknown.

CLAIM BOUNDARIES

- claim or lease boundary of land held within that claim/lease.
- claim boundary projected within previously staked property.
- claim boundary projected within an area of dispute.
- a present claim boundary which is produced by past "dropped" claims, that effects the present status of claims.
- + + + + a past "dropped" claim boundary which effects the status of present claims.

AURCHEM EXPL. LTD. EXTERIOR/INTERIOR PROPERTY BOUNDARIES

- Property boundary location. (and line drawn on Aurchem's side of the boundary.
- External boundaries drawn in an area of dispute showing the best and worst case scenarios for Aurchem.

O.P. Means possibly open property available for staking.

Note: Brackets around claim name means claim dropped.

SCALE

1 INCH = 200 FEET 1 : 2400

0 100 300 500 600 FEET

N

MAG DECL'N 33.5° WEST

KEY

- DIRT OR GRAVEL ROAD
- CREEK

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK PROJECT

MOUNT NANSEN AREA 092987

YUKON TERRITORY

MAP# 115I/5 Doc# 092987 (103)

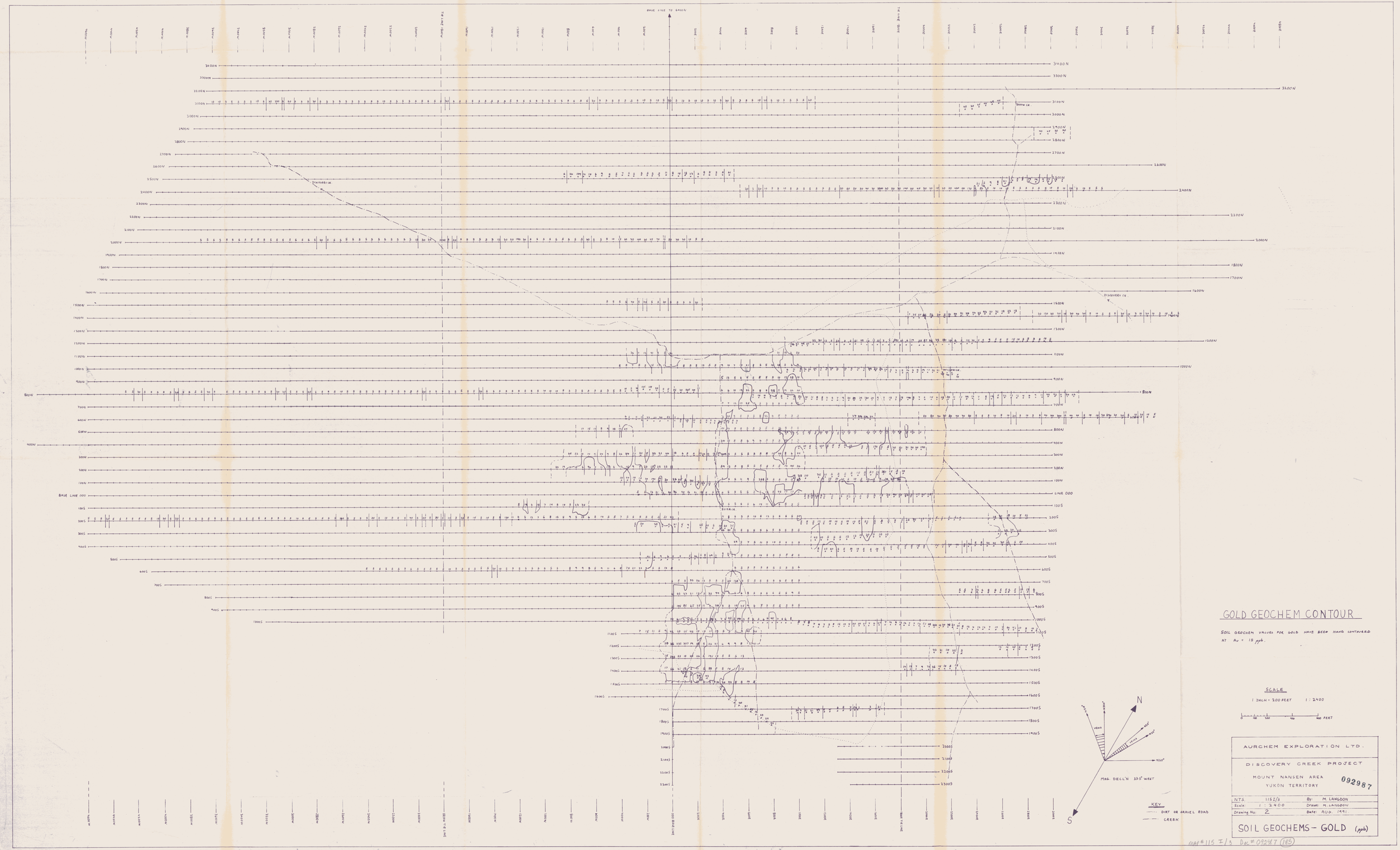
NTS 115I/5 By: M. LANGDON

Scale: 1 : 2400 Drawn: M. LANGDON

Drawing No: MAP 1 Date: AUG. 1991

CLAIM LOCATION MAP

"JOINS MAP 1A ABOVE"



GOLD GEOCHEM CONTOUR

SOIL GEOCHEM VALUES FOR GOLD HAVE BEEN HAND CONTOURED AT Au = 15 ppb.

SCALE

1 INCH = 200 FEET 1 : 2400

0 100 200 400 600 FEET

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK PROJECT

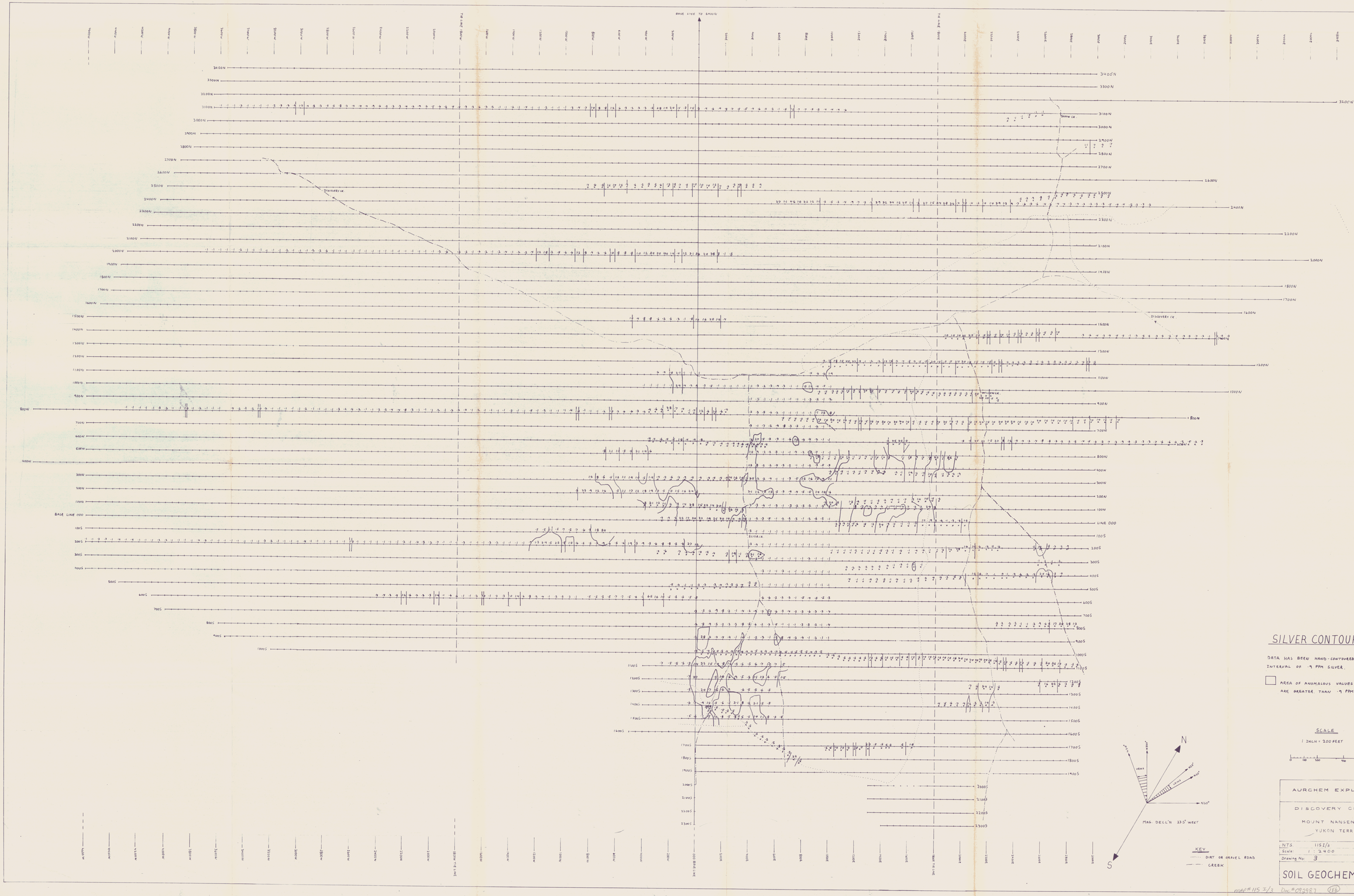
MOUNT NANSEN AREA
YUKON TERRITORY

092987

N.T.S.	115I/3	By:	M. LANGDON
Scale:	1 : 2400	Drawn	M. LANGDON
Drawing No:	2	Date:	AUG. 1991

SOIL GEOCHEMS - GOLD (ppb)

MAP # 115 I/3 Doc # 092987 (185)



SILVER CONTOURS

DATA HAS BEEN HAND-CONTOURED AT ONLY ONE INTERVAL OF .9 PPM SILVER.

☐ AREA OF ANOMALOUS VALUES WHERE Ag VALUES ARE GREATER THAN .9 PPM. SILVER.

SCALE

1 INCH = 200 FEET 1 : 2400

0 100 300 600 FEET

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK PROJECT

MOUNT NANSEN AREA
YUKON TERRITORY

092987

NTS	115I/3	By:	M. LANGDON
Scale:	1 : 2400	Drawn:	M. LANGDON
Drawing No.	3	Date:	AUG. 1991

SOIL GEOCHEMS— SILVER (PPM)

MAP # 115 I/3 Doc # 092987 (5R)

LEAD GEOCHEM CONTOUR

THE VALUES OF LEAD HAVE BEEN HAND CONTOURED AT Pb = 40 ppm. VALUES GREATER THAN 40 ppm ARE DEEMED ANOMALOUS. THIS VALUE WAS CHOSEN IN AN ATTEMPT TO SHOW ANOMALOUS ZONES DUE TO UNDERLYING VEINS. THE LARGE NUMBER OF VEINS WITHIN THE EASTERN HALF OF THE GRID IS CLEARLY DISPLAYED IN AN ELEVATED BACKGROUND VALUE FOR LEAD. FOR THE WHOLE GRID A CONTOUR INTERVAL FOR ANOMALOUS VERSUS BACKGROUND VALUES MAY ACTUALLY BE CLOSER TO A LEAD VALUE OF 20-25 ppm.

SCALE

1 INCH = 200 FEET 1 : 2400

0 100 200 400 600 FEET

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK PROJECT

MOUNT NANSEN AREA
YUKON TERRITORY

092987

N.T.S.	115 I/8	By:	M. LANGDON
Scale:	1 : 2400	Drawn:	M. LANGDON
Drawing No:	4	Date:	AUG. 1991

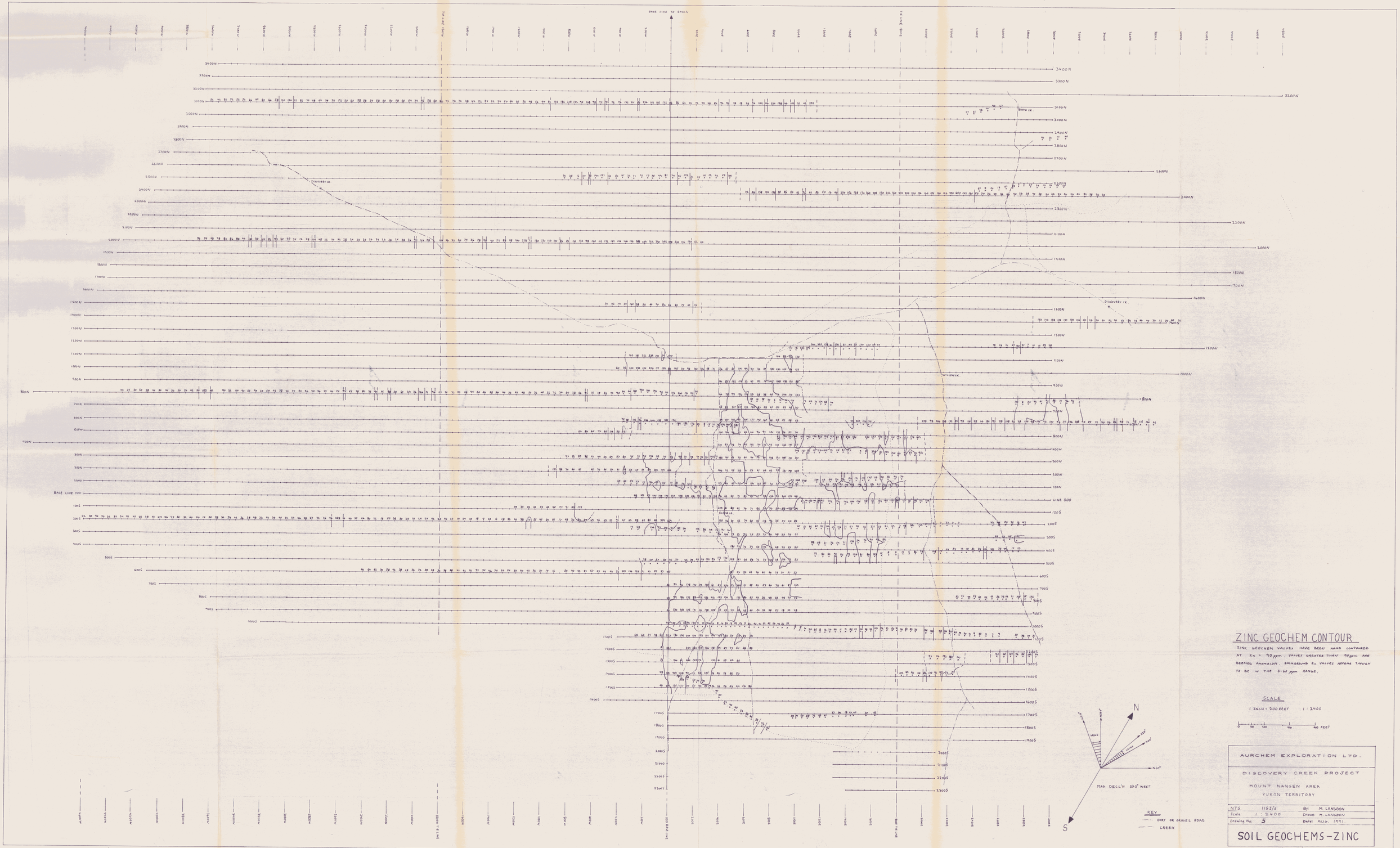
SOIL GEOCHEMS - LEAD

KEY
DIRT OR GRAVEL ROAD
CREEK

MAG. DECL'N 33° WEST

MAP # 115 I/8

Doc # 092987 (87)



ZINC GEOCHEM CONTOUR

ZINC GEOCHEM VALUES HAVE BEEN HAND CONTOURED AT Zn = 90 ppm. VALUES GREATER THAN 90ppm ARE DEEMED ANOMALOUS. BACKGROUND Zn VALUES APPEAR THOUGH TO BE IN THE 5-60 ppm RANGE.

SCALE

1 INCH = 200 FEET 1 : 2400

0 100 200 400 600 FEET

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DISCOVERY CREEK PROJECT

MOUNT NANSEN AREA

YUKON TERRITORY

NTS:	115I/3	By:	M. LANGDON
Scale:	1 : 2400	Drawn:	M. LANGDON
Drawing No:	5	Date:	AUG. 1991

SOIL GEOCHEMS-ZINC

Map# 115I/3 Doc #092987

ARSENIC CONTOUR

ARSENIC VALUES HAVE BEEN HAND CONTOURED AT 40 ppm.
VALUES GREATER THAN 40 ppm ARE DEEMED ANOMALOUS.
BACKGROUND ARSENIC VALUES APPEAR TO BE < 20 ppm.

SCALE

1 INCH = 200 FEET 1 : 2400

0 100 200 400 600 FEET

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK PROJECT

MOUNT NANSEN AREA
YUKON TERRITORY

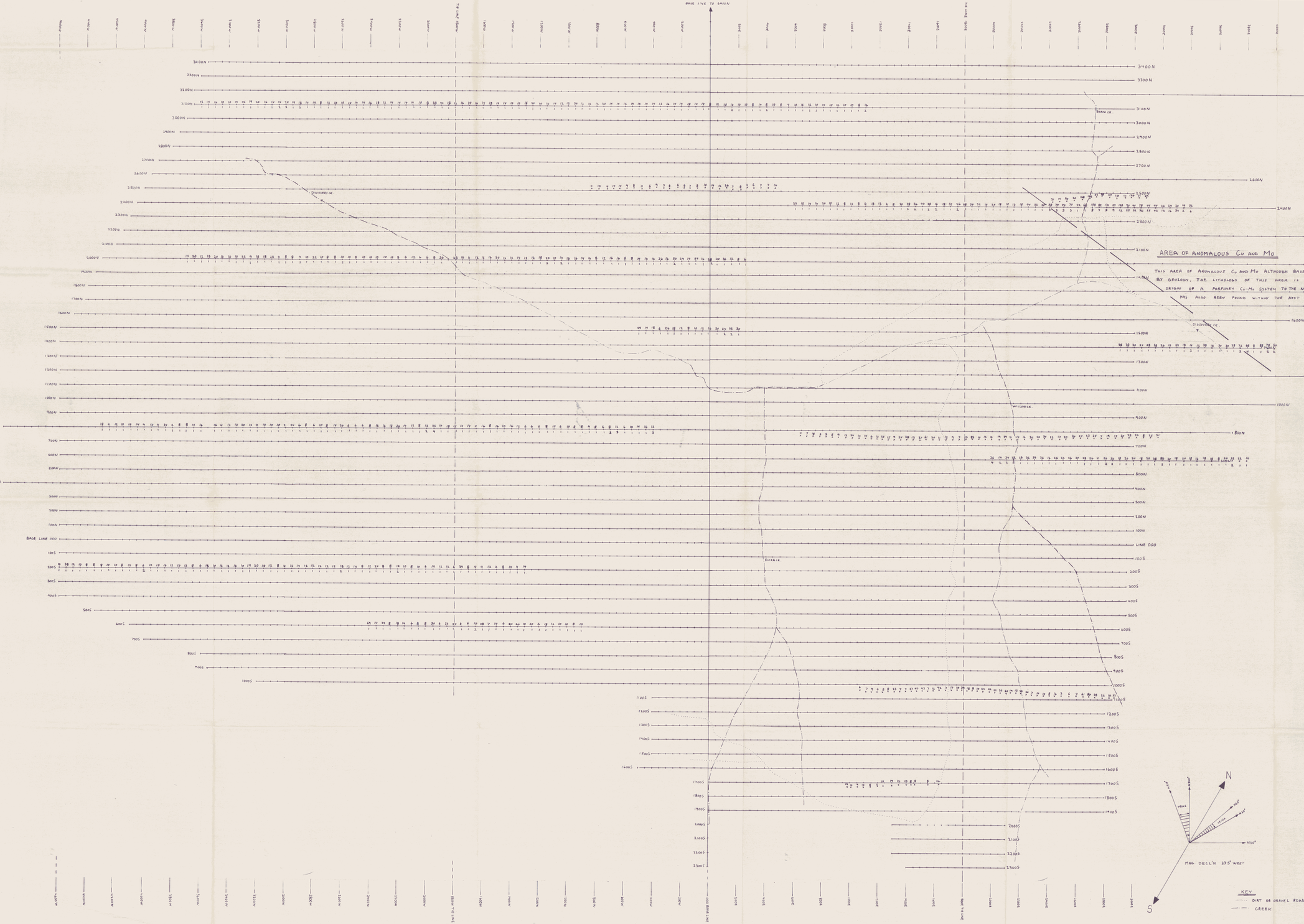
N.T.S.	115 I/3	By:	M. LANGDON
Scale:	1 : 2400	Drawn:	M. LANGDON
Drawing No:	6	Date:	AUG. 1991

SOIL GEOCHEMS-ARSENIC

KEY
..... DIRT OR GRAVEL ROAD.
—— CREEK

MAG. DECL'N 33.5° WEST

MAP # 115 I/3 Doc # 092987 (87)



SOIL GEOCHEM Cu/Mo VALUES

18 / 3 — Cu GEOCHEM VALUES IN PPM.
Mo GEOCHEM VALUES IN PPM.

x SOIL SAMPLES TAKEN BUT NOT ON PRESENT GRID.

THE Cu-Mo VALUES SHOWN (NOT CONTOURED) ARE SHOWN HERE TO DISPLAY THE Cu/Mo ANOMALY ASSOCIATED WITH THE SILICIFIED GRANODIORITE OF A PORPHYRY SOURCE. THE EPITHERMAL VEIN SYSTEM DOES SHOW A FAIRLY GOOD CORRELATION OF Cu WITH Au, Ag, Pb, Zn, As ANOMALIES AS CHALCOPYRITE IS FOUND IN LOW AMOUNTS IN THE VEINS.

SCALE

1 INCH = 200 FEET 1 : 2400

0 100 200 400 600 FEET

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK PROJECT

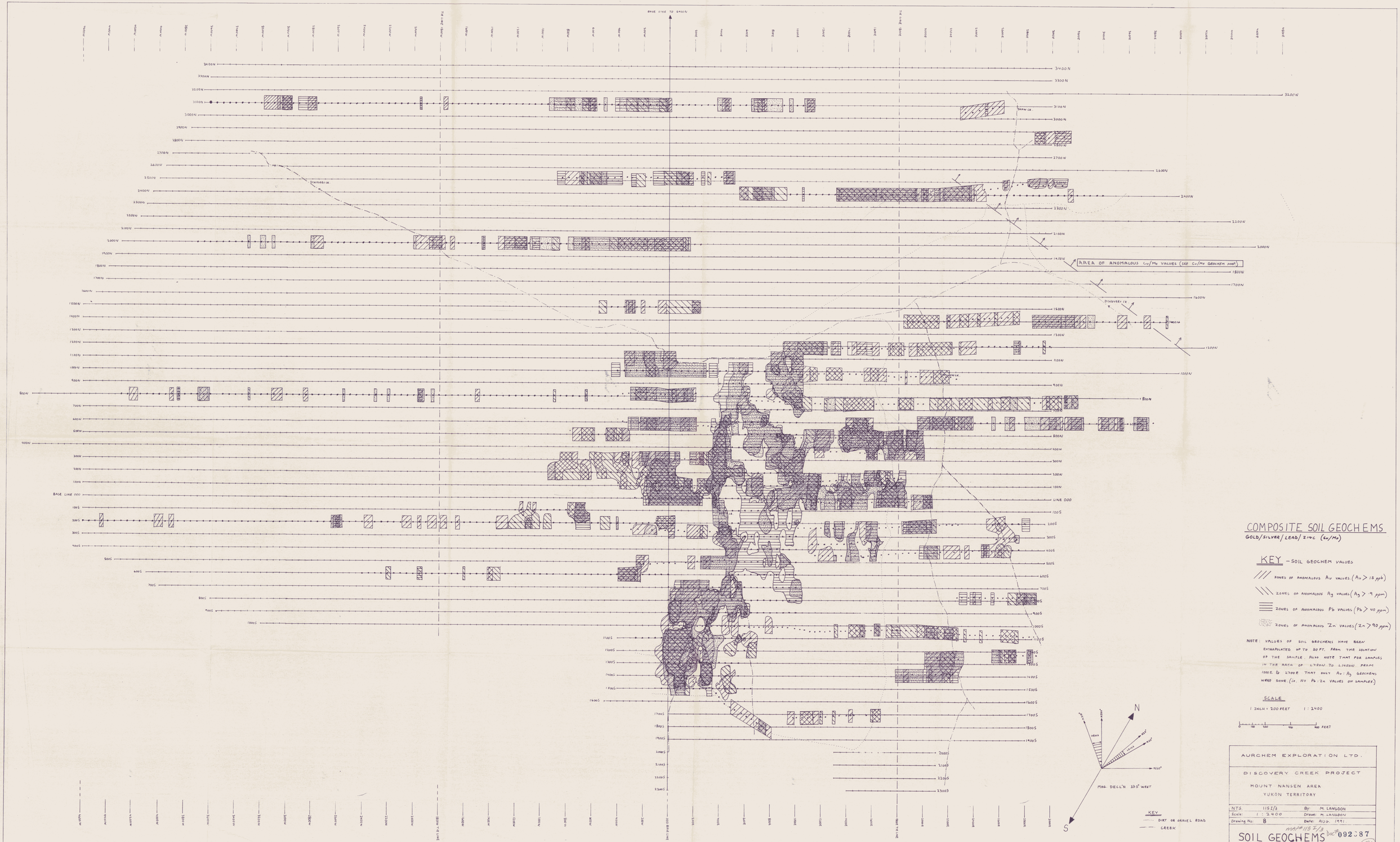
MOUNT NANSEN AREA

YUKON TERRITORY

NTS	115I/3	By:	M. LANGDON
Scale:	1 : 2400	Drawn:	M. LANGDON
Drawing No:	7	Date:	AUG. 1991

SOIL GEOCHEMS - Cu, Mo

MAP# 115 I/3 Doc # 092987



COMPOSITE SOIL GEOCHEMS

GOLD/SILVER/LEAD/ZINC (Cu/Mo)

KEY – SOIL GEOCHEM VALUES

- ZONES OF ANOMALOUS Au VALUES. (Au > 15 ppb)
- ZONES OF ANOMALOUS Ag VALUES (Ag > .9 ppm)
- ZONES OF ANOMALOUS Pb VALUES (Pb > 40 ppm)
- ZONES OF ANOMALOUS Zn VALUES (Zn > 90 ppm)

NOTE: VALUES OF SOIL GEOCHEMS HAVE BEEN EXTRAPOLATED UP TO 50 FT. FROM THE LOCATION OF THE SAMPLE. ALSO NOTE THAT FOR SAMPLES IN THE AREA OF L750N TO L1450N FROM 1000E to 2700E THAT ONLY Au : Ag GEOCHEMS WERE DONE. (ie. NO Pb : Zn VALUES ON SAMPLES.)

SCALE

1 INCH = 200 FEET 1 : 2400

0 100 200 400 600 FEET

AURCHEM EXPLORATION LTD.

DISCOVERY CREEK PROJECT

MOUNT NANSEN AREA

YUKON TERRITORY

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Scale:	1 : 2400	Drawn:	M. LANGDON
Drawing No:	8	Date:	AUG. 1991.

MAP# 115 I/3 Doc# 092087

SOIL GEOCHEMS

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