LOG NO: 0823 RD.
ACTION:

FILE NO:

ASSESSMENT REPORT

ON THE

VR PROPERTY

AIRBORNE GEOPHYSICAL PROGRAM

VR 4, VR 6, CCM 1-3 CLAIMS

FILMED

Skeena Mining Division
NTS 104B/9E&W
Latitude 56°38'N
Longitude 130°15'W
British Columbia

August 18, 1989

SUB-RECORDER
RECEIVED
AUG 2 1989
M.R. # ...... $ ....
VANCOUVER, B.C.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,992

by

D.W. Mallo
Prime Explorations Ltd.
and
Z. Dvorak
Aerodat Limited

Operator:

ARGO DEVELOPMENT CORP.
PRIME CAPITAL PLACE
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TEUTON RESOURCES CORP.
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VR PROPERTY

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SUMMARY

This report describes an airborne geophysical survey - Magnetic, Electromagnetic and VLF-EM, flown on the VR Property on behalf of Argo Development Corp., April 18 to May 10, 1989. The geophysical report also covers the neighbouring property under option to Tantalus Resources Ltd. - which is being filed in a separate assessment report. The survey covered 210 line-kilometers (of an areal total of 795 line-kms) over the claims. This work is submitted for assessment credit on the VR 4,6 and CCM 1-3 claims.

The VR Property is comprised of six claims, the VR 4 and 6, the CCM 1,2,3 and Atkins registered in the name of Teuton Resources Corp. The property lies at the upper reaches of the Unuk River and south of Storie Creek, approximately 80 kilometers northwest of Stewart, British Columbia and 45 kilometers southeast of the Cominco Limited/Prime Resources Corp. SNIP Deposit.

The VR Property is at about 6 kilometres east of the Eskay Creek gold and silver prospects which have been known and explored since 1932. The VR and CCM claims have had only preliminary reconnaissance mapping and sampling done on them to date. The recent detailed exploration programs in the area have concentrated around the TOK and KAY claims on the Eskay Creek Property.

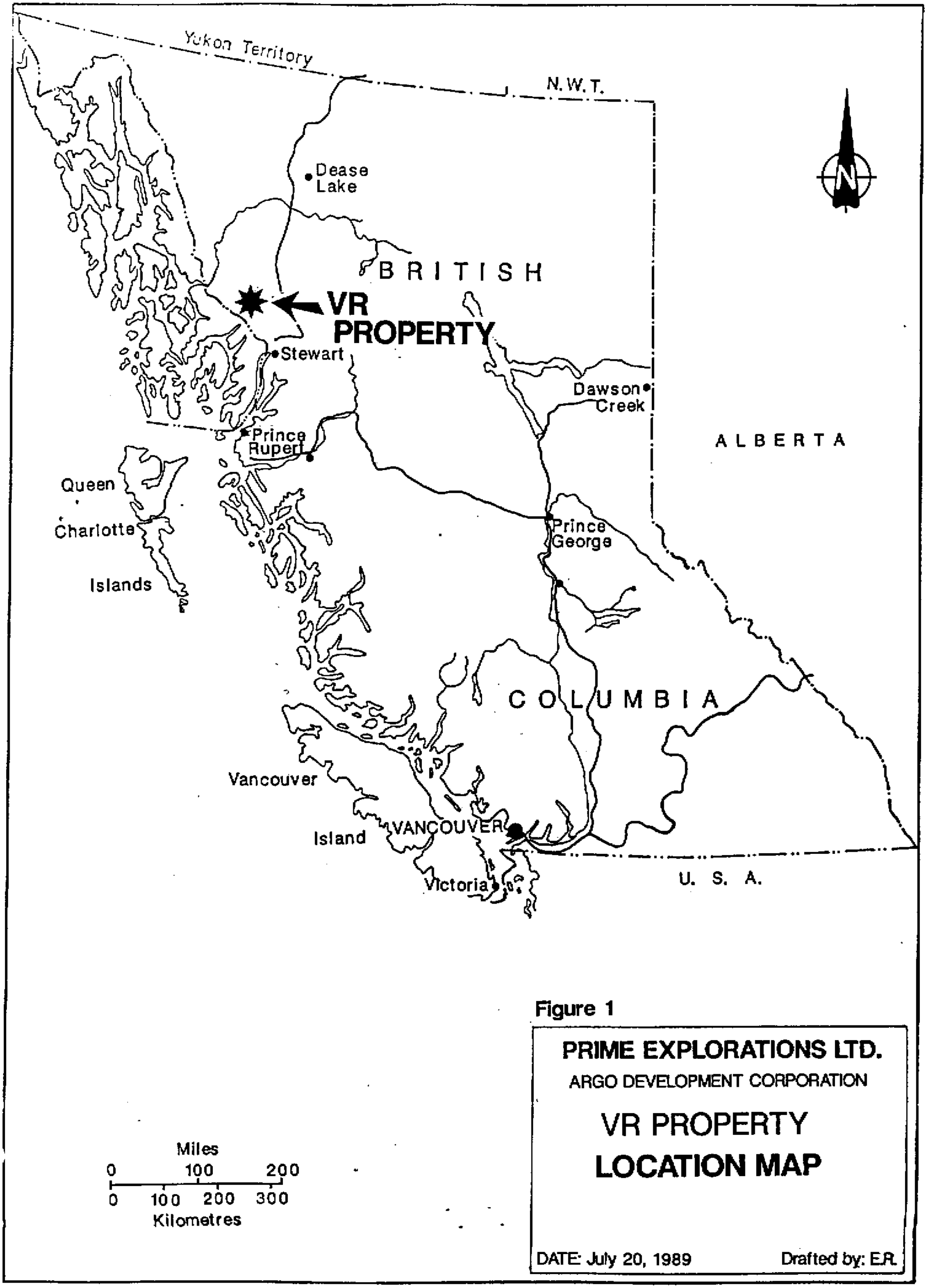

Figure 1

PRIME EXPLORATIONS LTD.

ARGO DEVELOPMENT CORPORATION

VR PROPERTY

LOCATION MAP

DATE: July 20, 1989 Drafted by: E.R.

INTRODUCTION

Objective

The objective of the 1989 airborne geophysical survey was to define areas of possible precious metal anomalies reflected by magnetic, electromagnetic and VLF-EM surveys. These anomalies will hopefully provide a data base for a surface exploration program on the property. The geophysical report and maps are included as Appendix I in this report.

Location and Access

The VR Property is located southeast of the upper reaches of the Unuk River and Storie Creek. The property is east of the Eskay Creek Project of Calpine Resources Incorporated and 45 kilometres southeast of the Cominco/Prime Resources SNIP deposit, in northwestern British Columbia. The property is approximately 80 kilometers northwest of Stewart, British Columbia and is centered around Latitude 56°38'N and Longitude 130°15'W, NTS Reference Maps 104B/9E,9W. (Figure 1)

Access is by helicopter either from Stewart, Bronson Creek (SNIP deposit) airstrip, and Bell II on the Stewart-Cassiar highway 20 kilometers to the east. A year-round, winterized camp has been established at the Eskay Creek Project, 6 kilometres to the west.

Property Description

The VR Property consists of 6 mineral claims (a total of 90 units), situated within the Skeena Mining Division. (Figure 2) The registered owner is Teuton Resources Corp. Argo Development Corp. has an option to earn 60% interest, from Teuton Resources, in the claims. Pertinent claim information is as follows:

Table 1
LIST OF CLAIMS

Claim Name	Record No.	Units	Record Date	Expiry Date *
VR 4	6194	20	May 25,1987	May 25,1992
VR 6	6196	20	May 25,1987	May 25,1992
CCM 1	7027	20	Dec.05,1988	Dec.05,1992
CCM 2	7028	12	Dec.05,1988	Dec.05,1992
CCM 3	7029	18	Dec.05,1988	Dec.05,1992
ATKINS	7219	20	Feb.10,1989	Feb.10,1990

* Based on this assessment report 3 years work is to be applied to the VR and CCM claims. The Atkins claim was not flown.

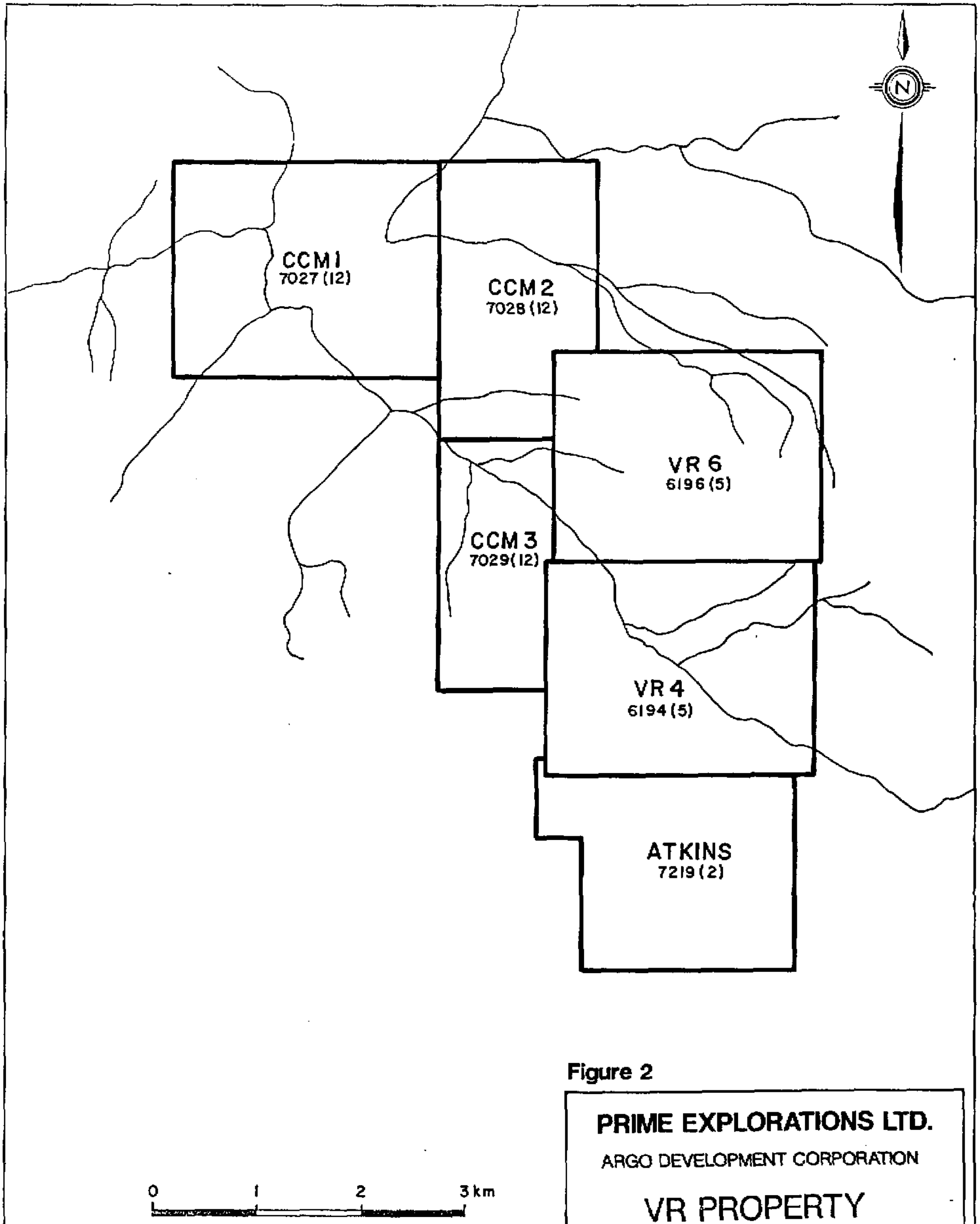

Figure 2

PRIME EXPLORATIONS LTD.

ARGO DEVELOPMENT CORPORATION

VR PROPERTY

CLAIM MAP

DATE: July 20, 1989 DRAFTED BY: B.R.

Physiography, Vegetation and Climate

The VR property is situated within the Coast Range physiographic division. The claims cover the headwaters of Kaypros Creek in the vicinity of the Roansfell glacier. Slopes range from moderate to very precipitous. Elevations in the area of the property vary from approximately 750 metres in the valleys at the north end, up to 1500 metres in the south.

Low lying regions are vegetated by mature mountain hemlock and balsam which changes to subalpine and alpine vegetation consisting of stunted shrubs and grasses above treeline.

Climate in the area is severe, particularly at the higher elevations. Annual precipitation is heavy, much of which falls as snow in January and February. Summer work conditions last from July until September and are generally mild and wet.

Property History

Most of the activity to date in this area has centred around Bronson Creek on the Iskut River where the SNIP Deposit and the Johnny Mountain Mine are located. Increased activity on these deposits created a staking rush in the mid-1980's that spread south to the Unuk River, resulting in the current exploration program on Eskay Creek and surrounding properties.

The Eskay Creek area has undergone numerous exploration campaigns since the discovery of gold in 1932, but the work has generally been confined to the limits of that property. Only minor work has been carried out on the claims area itself. In 1987 Teuton Resources Corp. conducted an exploration program on the neighbouring TR claims and extended a rock and silt survey onto the VR 4 & 6 claims. A moderate gold-copper anomaly was revealed in the silt samples at the confluence of two drainages, with values up to 62 ppb AU and 199 ppm CU. No work has been done on the CCM claims.

Property and Regional Geology

The VR property is underlain by Hazelton Group rocks consisting of several distinct volcanic and sedimentary units of the Unuk River Formation, overlain by the Betty Creek Formation. Lower Unuk River units consist of mixed brown and grey sedimentary rocks with tuffaceous interbeds. Overlying these are andesitic pyroclastics and flows of the Upper Unuk River Formation. The uppermost sequence on the property is the Betty Creek Formation comprised of heterogenous red, green, purple, grey and black bedded to massive pyroclastics and conglomerates, sandstone and siltstone, with minor limestone and chert. The youngest rocks on the property are the Middle Jurassic sediments of the Salmon River Formation which outcrop in the northern portion of the claim block along the river valley. The sediments are composed of well bedded siltstone and fine grained sandstones with lesser greywacke, minor limestone, argillite and conglomerate.

Structurally the rocks form a steeply north to northeast dipping package cut by several east-west and north-south to northwest trending faults.

Upstream from the silt gold anomaly on the VR 4 claim, a gossan described as an orange/brown limonitic zone, but containing no visible sulphides outcrops. Silt results above this gossan show a decrease in copper and gold values indicating the anomaly is likely related to the gossan.

The regional geology has been defined as the Stewart Complex, which encompasses some late Paleozoics and a thick succession of Mesozoic strata. This is bounded by the Coast Plutonic Complex to the west, the Bowser Basin to the east, and geographic margins of Alice Arm to the south and the Iskut River to the north.

The oldest units in the Stewart Complex are Upper Triassic epiclastic volcanics, marbles, sandstones and siltstones, overlain by sedimentary and volcanic rocks of the Jurassic Hazelton Group. The Unuk River Formation consists predominantly of volcanic rocks and sediments and forms and angular unconformity with the underlying late Triassic rocks. Betty Creek red and green volcaniclastic agglomerates unconformably overlie the Unuk River Formation, and the Salmon River Formation of siltstones and lithic wackes forms a conformable to disconformable contact with the underlying Betty Creek Formation. The Nass Formation of argillites overlies the Salmon River Formation. These volcanic and sedimentary successions were intruded by the Coast Plutonic Complex during the Cretaceous and Tertiary periods with a wide variety of intrusive phases, including granodiorite, quartz monzonite and diorite. Small satellite plugs from the main batholith can be important for localizing mineralization.

Conclusions and Recommendations

The results of this survey will be used for delineating anomalous areas on the property where ground surveys will proceed to further define mineralized zones.

More detailed conclusions of the survey are presented in the Aerodat report, Appendix I, page 6-1.

Bibliography

CHAPMAN, J.
1989: Report on the Argo Development Corp. VR Property, Skeena M.D., British Columbia, on behalf of Argo Development Corp. (Unpubl.)

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Telephone: (416) 671-2446 Telex: 06-968872 Fax: (416) 671-8160

Invoice No: 20-8913-0129a
Date: April 18, 1989

Argo Development Corp.
c/o Prime Capital Place
10th floor, 808 West Hastings Street
Vancouver, B.C.
V6C 2X6

Attn: Mr. J. R. Foster

In Account With:

Aerodat Limited
3883 Nashua Drive
Mississauga, Ontario
L4V 1R3

Re: Airborne Geophysical Survey - VR Grid

295 km @ $78.00/km	$23,010.00
Fuel & lodging (estimate)	$13,838.81
Orthophotos	$ 4,452.83
Amount Due	$41,301.64

AERODAT LIMITED 3883 NASHUA DRIVE • MISSISSAUGA • ONTARIO • CANADA • L4V 1R3
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May 17, 1989

Argo Development Corp.
11th Floor - Box 10
808 West Hastings Street
Vancouver, British Columbia
V6C 2X6

Dear Sirs:

We would like to confirm that the following claims were surveyed by Aerodat during the time period listed below.

Claim Name	Record No.	Survey Dates
CCM 1	7027	April 18 - May 10, 1989
CCM 2	7028	April 18 - May 10, 1989
CCM 3	7029	April 18 - May 10, 1989
VR 4	6194	April 18 - May 10, 1989
VR 6	6196	April 18 - May 10, 1989

Preliminary estimated cost of the survey is calculated to be $41,000.00. Survey data is currently being compiled and interpreted, and Aerodat anticipates the delivery of a finished report, meeting claim assessment requirements, within about one month.

Thank you for choosing Aerodat, and should you require further information in regards to the survey, please do not hesitate to contact us.

Yours truly,

AERODAT LIMITED

Douglas H. Pitcher

Douglas H. Pitcher,
Vice President

DP/ml

APPENDIX I

Airborne Geophysical Survey

REPORT ON A
COMBINED HELICOPTER-BORNE
MAGNETIC, ELECTROMAGNETIC AND VLF
SURVEY
UNUK RIVER-AREA 4
BRITISH COLUMBIA

FOR
ARGO DEVELOPMENT CORP.
AND
TANTALUS RESOURCES LTD.
BY
AERODAT LIMITED
June 27, 1989

J8913

Z. Dvorak
Consulting Geophysicist

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LIST of MAPS
(Scale 1:10,000)

Basic Maps : (As described under Appendix "B" of Contract)

1. **PHOTOMOSAIC BASE MAP;**
   Showing registration crosses corresponding to NTS coordinates on survey maps, on stable Cronaflex film.

2. **FLIGHT LINES;**
   Photocombination of flight lines, anomalies and fiducials with base map.

3. **AIRBORNE ELECTROMAGNETIC SURVEY INTERPRETATION MAP;**
   showing conductor axes and anomaly peaks along with conductivity thickness values; on a Cronaflex base; Interpretation Report.

4. **TOTAL FIELD MAGNETIC CONTOURS;**
   showing magnetic values contoured at 2 nanoTesla intervals; on a Cronaflex base map.

5. **VERTICAL MAGNETIC GRADIENT CONTOURS;**
   showing vertical gradient values contoured at 0.05 nanoTesla per metre intervals showing flight lines and fiducials; on a Cronaflex base map.

6. **RESISTIVITIES CALCULATED FROM 4175 Hz COPLANAR COILS;**
   contoured data at logarithmic spaced resistivity intervals (in ohm.m.), on a base map.

7. **VLF-EM TOTAL FIELD CONTOURS;**
   of the VLF Total field from the Annapolis, Md. transmitter; as a Cronaflex base map.

8. **ELECTROMAGNETIC ANOMALIES;**
   showing anomaly peaks along with conductivity thickness values on clear acetate film.

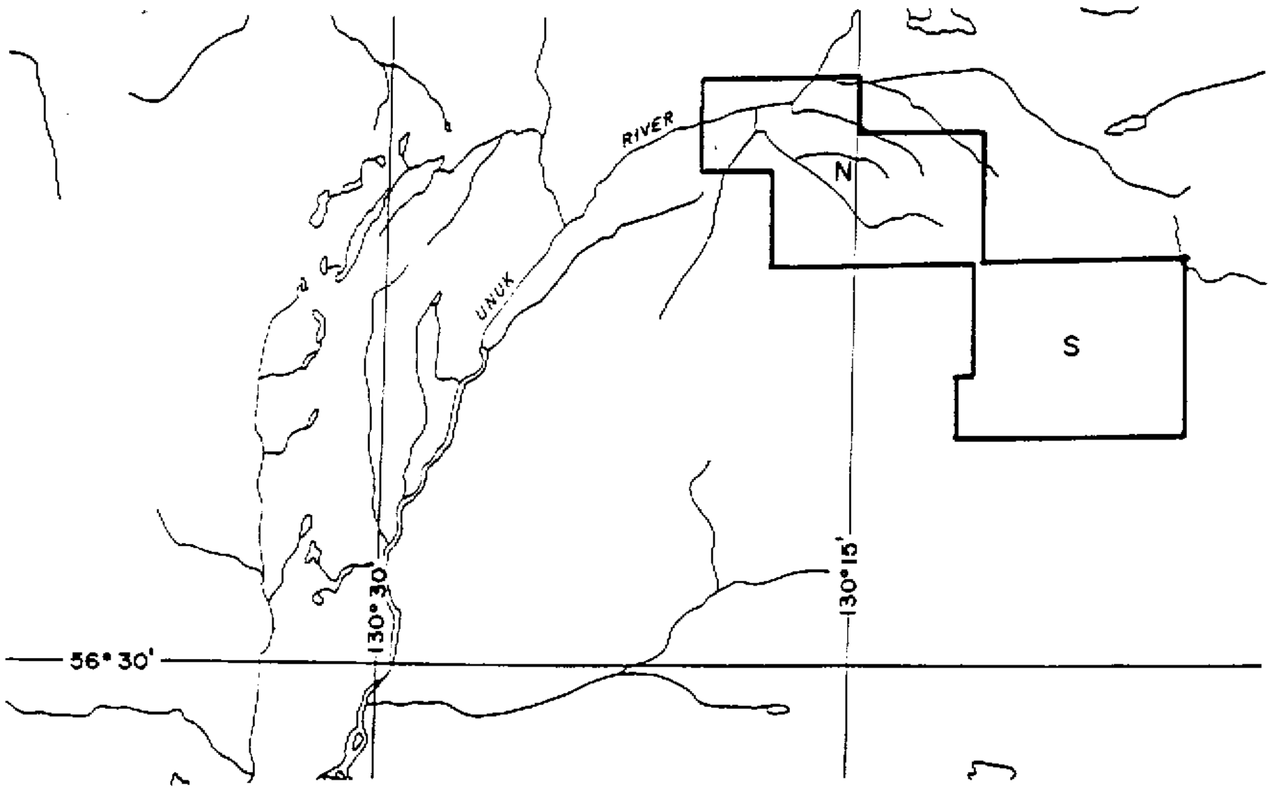
1. INTRODUCTION

This report describes an airborne geophysical survey carried out on behalf of Prime Explorations Limited by Aerodat Limited. Equipment operated during the survey included a four frequency electromagnetic system, a high sensitivity cesium vapour magnetometer, a two frequency VLF-EM system, a video tracking camera, a radar altimeter, and an electronic positioning system. Electromagnetic, magnetic, and altimeter data were recorded both in digital and analog forms. Positioning data was stored in digital form, encoded on VHS format video tape and recorded at regular intervals in UTM coordinates, as well as being marked on the flight path mosaic by the operator while in flight.

The survey area, comprising two rectangular blocks in the Iskut-Unuk Rivers area, and situated approximately 75 kilometres northwest of Stewart, British Columbia, was flown during the period of April 21 to May 23, 1989. Data from seventeen flights were used to compile the survey results. The flight line orientation was east-west, and the nominal flight line spacing was 100 metres. Coverage and data quality were considered to be well within the specifications described in the service contract.

The purpose of the survey was to record airborne geophysical data over and around ground that is of interest to Prime Explorations Limited.

A total of 795 line kilometres of the recorded data were compiled in map form. The maps are presented as part of this report according to specifications laid out by Prime Explorations Limited.



RIVER
UNUK
N
S
56° 30'
130° 30
130° 15'

2. SURVEY AREAS LOCATION AND CLAIMS COVERED

The survey areas are depicted on the index map shown. They are centred at approximate geographic latitude 56 degrees 37 minutes north, longitude 130 degrees 11 minutes west, approximately 75 kilometres northwest of the town of Stewart, British Columbia, and 40 kilometres east of the Bronson Creek (Snip) airstrip (NTS Reference Map Nos. 104 B/9). The areas are accessed by helicopter from Bronson, Stewart, or Bell II on the Cassiar-Stewart Highway.

The Treaty Creek survey block contains the following claims:

VR	Argo
Treaty Creek	Tantalus

The Treaty Creek survey area consists of two adjacent rectangular blocks with a common corner. Terrain in the area is rugged, with altitudes varying from approximately 600 m a.s.l. to more than 1,950 m a.s.l. Major parts of the southeast block are covered by icefields.

3. AIRCRAFT AND EQUIPMENT

3.1 Aircraft

An Aerospatiale SA 315B Lama helicopter, (C-GXYM), piloted by J. Kamphuis, owned and operated by Peace Helicopters Limited, was used for the survey. The Aerodat equipment operator and navigator was V. Cole. Installation of the geophysical and ancillary equipment was carried out by Aerodat. The survey helicopter was flown at a mean terrain clearance of 60 metres, while the EM sensors have a ground clearance of 30 metres.

3.2 Equipment

3.2.1 Electromagnetic System

The electromagnetic system was an Aerodat 4 frequency system. Two vertical coaxial coil pairs are operated at 935 Hz and 4600 Hz and two horizontal coplanar coil pairs at 4175 Hz and 32 kHz. The transmitter-receiver separation was 7 metres. Inphase and quadrature signals were measured simultaneously for the 4 frequencies with a time constant of 0.1 seconds. The electromagnetic bird was towed 30 metres below the helicopter.

3.2.2 VLF-EM System

The VLF-EM System was a Herz Totem 2 A. This instrument measures the total field and quadrature component of the selected frequency. The sensor was towed in a bird 12 metres below the helicopter. The transmitting station used was NSS, Annapolis, Maryland broadcasting at 21.4 kHz. This station is maximum coupled with E-W striking conductors and provides usable results for strikes +/- 30 degrees.

3.2.3 Magnetometer

The magnetometer employed a Scintrex Model VIW 2321 H8 cesium, optically pumped magnetometer sensor. The sensitivity of this instrument was 0.1 nanoTeslas at a 0.2 second sampling rate. The sensor was towed in a bird 12 metres below the helicopter.

3.2.4 Magnetic Base Station

An IFG (GEM 8) proton precession magnetometer was operated at the base of operations to record diurnal variations of the earth's magnetic field. The clock of the base station was synchronized with that of the airborne system to facilitate later correlation.

3.2.5 Radar Altimeter

A King KRA 10 radar altimeter was used to record terrain clearance. The output from the instrument is a linear function of altitude for maximum accuracy.

3.2.6 Tracking Camera

A Panasonic video flight path recording system was used to record the flight path on standard VHS format video tapes. The system was operated in continuous mode and the flight number, real time and manual fiducials were registered on the picture frame for cross-reference to the analog and digital data.

3.2.7 Analog Recorder

An RMS dot-Matrix recorder was used to display the data during the survey. In addition to manual and time fiducials, the following data was recorded:

Channel	Input	Scale
CXI1	Low Frequency Inphase Coaxial	25 ppm/cm
CXQ1	Low Frequency Quadrature Coaxial	25
CXI2	High Frequency Inphase Coaxial	25
CXQ2	High Frequency Quadrature Coaxial	25
CPI1	Mid Frequency Inphase Coplanar	100ppm/cm
CPQ1	Mid Frequency Quadrature Coplanar	100

Channel	Input	Scale
CPI2	High Frequency Inphase Coplanar	200
CPQ2	High Frequency Quadrature Coplanar	200
VLT	VLF-EM Total Field, Line NLK	25 %/cm
VLQ	VLF-EM Quadrature, Line NLK	25 %/cm
VOT	VLF-EM Total Field,Ortho NSS	25 %/cm
VOQ	VLF-EM Quadrature, Ortho NSS	25 %/cm
RALT	Radar Altimeter, (150 m. at	
	top of chart)	100ft/cm
MAGF	Magnetometer, fine	25nT/cm
MAGC	Magnetometer, coarse	250nT/cm

3.2.8 Digital Recorder

A DGR 33:16 data system recorded the survey on magnetic tape. Information recorded was as follows:

Equipment	Recording Interval
EM System	0.1 seconds
VLF-EM	0.2 seconds
Magnetometer	0.2 seconds
Altimeter	0.2 seconds
Nav System	0.2 seconds
Power Line Monitor	0.2 seconds

3.2.9 Radar Positioning System

A Motorola Mini Ranger IV, UHF radar navigation system was used for both navigation and flight path recovery. Transponders sited at fixed locations were interrogated several times per second and the ranges from these points to the helicopter are measured to a high degree of accuracy. A navigational computer triangulates the position of the helicopter and provides the pilot with navigation information. The UTM data was recorded on magnetic tape and on the analog records for subsequent flight path determination.

4. DATA PRESENTATION

4.1 Base Map

An orthophoto mosaic base at a scale of 1:10,000 was prepared as a base map for the project data. The final data is presented on an unscreened Cronaflex base. Recovery of a number of points ensures that the electronic navigation coordinates are accurately registered to the base topography.

4.2 Electromagnetic Anomaly Map

4.2.1 Flight Path

The flight path was derived from the Mini Ranger UHF radar positioning system. The distance from the helicopter to two established reference locations was measured several times per second and the position of the helicopter calculated by triangulation. It is estimated that the flight path is generally accurate to about 10 metres with respect to the topographic detail on the base map.

The flight lines have the flight number as an additional reference and the camera frame, time, and the navigator's manual fiducials for cross reference to both analog and digital data.

4.2.2 Electromagnetic Data Compilation

The electromagnetic data was recorded digitally at a sample rate of 10 per second with a time constant of 0.1 seconds. A two stage digital filtering process was carried out to reject major sferic events to reduce system noise.

Local sferic activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude, but leave a broader residual response that can be confused with geological phenomenon. To avoid this possibility, a computer algorithm searches out and rejects the major sferic events. The signal to noise ratio was further enhanced by the application of a low pass digital filter. It has zero phase shift which prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength less than about 0.25 seconds. This low effective time constant permits maximum profile shape resolution.

Following the filtering process, a base level correction was made. The correction amplitude of the various inphase and quadrature components is zero when no conductive or permeable source is present. The filtered and levelled data was used in the interpretation of the EM data.

4.2.3 Airborne EM Interpretation

An interpretation of the electromagnetic data was prepared showing peak locations of anomalies and conductivity thickness ranges along with the inphase amplitudes (computed from the 4600 Hz coaxial response). The peak response symbols may be referenced by a sequential letter, progressing in the original flight direction. The EM response profiles are presented on a separate map with an expanded horizontal scale across the geological strike.

4.3 Total Field Magnetic Contours

The aeromagnetic data was corrected for diurnal variations by adjustment with the digitally recorded base station magnetic values. No correction for regional variation (IGRF) was applied. The corrected profile data was interpolated onto a regular grid at a 25 metre true scale interval using a cubic spline technique. The grid provided the basis for threading the presented contours at a 2 nanoTesla interval. The aeromagnetic data have been presented with flight path on a Cronaflex copy of the photomosaic base map.

4.4 Vertical Magnetic Gradient Contours

The vertical magnetic gradient was calculated from the gridded total field magnetic data. Contoured at a 0.05 nT/m interval, the gradient data were presented on a Cronaflex copy of the base map.

4.5 VLF-EM Total Field

The VLF-EM (Ortho mode) signals from NSS, Annapolis, Maryland, broadcasting at 21.4 kHz, were compiled as contours in map form and presented on a Cronaflex overlay of the photomosaic base map along with flight lines. The linear VLF data was also recorded on the analog records and on digital tape.

4.6 EM Resistivity Contours

The apparent resistivity was calculated from the 4175 Hz coplanar coil pair and the resultant contours are presented on a base map. The calculations are based on a half space model. This is equivalent to a geological unit with more than 200 metres width and strike length. In practice, conductors, conductive lithologies and surficial conductors often have lesser dimensions, at least in one of the three dimensions. Apparent resistivities are usually underestimated for these sources.

5. INTERPRETATION

5.1. Geology

Limited geological information was provided by the Prime Explorations Ltd. Comments made in this paragraph are paraphrased from an internal geologic report prepared by J. Blackwell and liberally extrapolated to the general area geology. These comments are necessarily very general and incomplete and should be used only as a guide.

The survey area is located within the Intermontane Tectonic Belt which contains Stikine terrane rock assemblages. The Unuk River area is underlain by Upper Triassic to Lower Jurassic volcanic and sedimentary arc-related units. These thick, weakly metamorphosed units are overlain by Middle Jurassic successor basin sedimentary units. Large scale northeast plunging vertical folds and major north trending cataclystic and fault zones are believed to be related to late Jurassic to early Cretaceous plutons and orogenesis. There is also some evidence of late Triassic deformation.

Regional geologic mapping by the GSC, the British Columbia Ministry of Energy, Mines and Petroleum Resources, and Newmont Mining has produced selective areal map coverage. Government geologic reconnaissance mapping is continuing, and revisions and improvements to the current geologic understanding are expected.

Stihini Group rocks (Upper Triassic volcanics and sedimentary rocks) occur east of Unuk River and west of Harrymel Creek. They include deformed and metamorphosed siltstone, wackes, conglomerate, and limestone, overlain by basalt and andesite flows and breccias. Dacite pyroclastic tuffs and breccias are also present on a local scale.

Hazleton Group comprises Unuk River Formation, Betty Creek Formation, Mount Dilworth Formation, and Salmon River Formation.

The Lower Jurassic Unuk River Formation occurs at moderate elevations east of Unuk River and west of Harrymel Creek. Green andesite tuffs, flows and pyroclastic rocks intercalated with wackes, siltstone and minor conglomerate are dominant.

The Lower Jurassic Betty Creek Formation, outcropping throughout the Unuk River valley, overlies the Unuk River Formation. It comprises volcaniclastic conglomerate, andesite and dacite pyroclastic tuff and breccias with intercalated grit and arenaceous wackes.

Overlying the Betty Creek Formation is the Mount Dilworth Formation. It outcrops on the Prout Plateau, west of Harrymel Creek, at higher elevations, and east of

Unuk River. It comprises dacite to rhyolite pyroclastic breccias,bedded tuff and flow breccias.

The late Lower Jurassic Salmon River Formation comprises a sequence of grey siltstone, chert, and limestone. It outcrops north and west of the Prout Plateau.

Bowser Group - Ashman Formation Middle Jurassic units occur on the Prout Plateau in the vicinity of Tom McKay Lake. These rocks include chert pebble conglomerate, grey to black mudstone and wackes, and limestone and volcanic flows.

Cenozoic to Recent subareal olivine basalt flows occur frequently. Deposits are widespread in the major river valleys and in the Cone Glacier area. Numerous felsic and mafic dykes occur locally.

No intrusive rocks were located on the Prout Plateau. Elsewhere in the general area, a variety of intrusives were reported. Regional metamorphic grade is lower greenschist. The grade increases locally to lower amphibolite. Upright to slightly overturned vertical folds are documented with fold axes at 20 to 35 degrees north, plunging 0 to 15 degrees north. Documented faults and other structures are rare. A major 150 degree north trending shear zone cuts through the lower Unuk River valley. Further to the north, it bifurcates or joins a major north trending mylonite band in the Harrymel Creek valley and a major vertical fault in the Clouter and Argillite Creek valleys.

5.2 Magnetics

The magnetic data from the high sensitivity cesium magnetometer provided virtually continuous magnetic reading when recording at two-tenth second intervals. The system is also noise free for all practical purposes. The sensitivity of 0.1 nT allows for the mapping of very small inflections in the magnetic field, resulting in a contour map that is comparable in quality to ground data.

The total magnetic field in the Treaty Creek claim block varies over a narrow range of values, from approximately 57,300 nT to in excess of 57,850 nT. It contains several prominent anomalies, both linear and oval-to-irregular in shape. The magnetic contour patterns in the western part of the northwest block display a northeasterly trend which, in the rest of the block, changes to northwest-southeasterly. These trends are projected into the southeast block where the volcanics occur in a large fold-like pattern. This is in agreement with the government released geology. An inner volcanic belt is also seen in the central-south part of the northwest block (at the west end of lines 1000 to 1180) and in the western portion of the southeast block.

The north-central and southeastern portions of the northwest block, as well as the northwestern southwestern, and east-central portions of the southeast block contain relatively extensive magnetic anomalies, roughly paralleling the volcanic belts. The internal structure of these anomalies is very complex as indicated by the calculated magnetic vertical gradient map. This map also suggests that small intrusives may occur in the survey area, e.g., near the time mark 17:19:47 on line 1310, near the time mark 13:42:23 on line 1130, at the time mark 13:13:00 on line 2330, and cantered at the time mark 11:52:36 on line 2070. Other anomalies/intrusives may be present; detailed evaluation of the data would be required to establish their presence.

Two dike-like anomalies oriented in the northeast-southwesterly direction occur in the northwest block. One is situated near the west block boundary, the other one in the central portion of the block. Other trends of the same orientation exist but they may be questionable. A strong linear anomaly of a northwesterly orientation is situated at the south-central block boundary. It may reflect a dike.

Terminations, offsets, and breaks of the magnetic contour patterns occur throughout the survey blocks. They are considered to indicate structural features, such as faults and contacts. Although the structural analysis of the data was hampered by the complexity of the magnetic patterns, shadow imaging by means of RTI (Real Time Imaging) system was used with success. Two faults of northeast-southwesterly orientation were identified in the central portion of the northwest block, which appear to divide the outer volcanic belt into three portions. (The aforementioned localized magnetic anomaly on line 1130, which may reflect an intrusive, appears to be related to the eastern of the two faults.) Also identified was a northwest-southeasterly oriented fault which is believed to extend into the area of the southeast block. In the area of the southeast block, four other possible faults were identified. A major fault(?) system extends from the southwest corner of the block toward its northeast part. In its southwest part, it correlates, or occurs in association, with a magnetic anomaly related to the Konkin mineralized zone. In the central part of the block, this structure appears to split into a NNE and northeast oriented branches. (One of the possible intrusives, centred at the time mark 13:13:00 on line 2330, is closely related to these features.) Two other faults(?) were identified in the south half of the block. The shorter of these features parallels the structure extending through both blocks, whereas the other feature strikes at a shallow angle to the former one. Further evaluation of the data using various enhancement techniques, such as shadow mapping, and upward and downward continuation, with the aim of defining structures, as well as the extent of the individual geologic/magnetic units, may be considered in the future.

5.3 Apparent Resistivity

The apparent resistivity was calculated from the coplanar 4,175 Hz electromagnetic data. The resistivity values vary from less than 200 ohm-m to more than 8,000 ohm-m, the upper detection limit at this frequency. The geologic environment in the survey area is generally highly resistive which provides ideal conditions for the detection of bedrock conductors. In the area of the southeast block, there is an extensive high resistivity zone which follows several icefields. High resistivities over this zone suggests substantial thickness of the ice. Detection of weaker bedrock conductors under the ice would require use of deep penetrating ground system. However, because this zone approximates the magnetically inactive part of the block, the presence of bedrock conductors is unlikely.

Low values occur in several zones of generally limited lateral extent, which approximate the outer edge of the volcanic rocks. In several instances (e.g., in the central portion of the northwest block, and practically in all instances within the southeast block) they are directly or loosely associated with (linear) magnetic anomalies. Those low and intermediate resistivity zones which do not correlate with topographic depressions or creeks, and which show association with magnetics, should be considered as primary follow-up targets. These zones may reflect conductive mineralization associated with structural zones of weakness which may have served as conduits of hydrothermal fluids. Consideration should be given to zones centered at or near the following time marks: 16:44:14 on line 1280, between 15:10:55 on line 1430 and 13:17:00 on line 1490, between 15:57:00 on line 1380 and 17:13:30 on line 1300, between 16:17:44 on line 1250 and 14:41:33 on line 1190, 11:30:39 on line 1040, and possibly between 11:59:43 on line 1070 and 10:44:47 on line 1010. At the same time, some attractive magnetic anomalies are not associated with recognizable or attractive resistivity lows which, under usual circumstances, would diminish their exploration attractivness. Known gold mineralization, in the general area, however, does not produce resistivity lows and, hence, all attractive anomalies should be investigated (e.g., the magnetic anomaly extending from the time mark 16:26:00 on line 1260 in the northeasterly direction, or the Komnkin magnetic anomaly which is associated with only 1,600 to 2,000 ohm-m resistivities).

In the southeast block, the low resistivity zones displaying values lower than 1,000 ohm-m should be considered. Two semi-circular zones of less than 250 ohm-m situated in the central part of the southeast block appear more attractive than the rest. They may be due to an alteration. Two extensive, elongated low resistivity zones (values as low as 25 ohm-m were calculated) in the southeast corner of the area and at its east-central boundary are, at the moment, difficult to explain. They may reflect a graphitic horizon. Further work is required.

5.4 Total Field VLF-EM

The NSS, Annapolis, Maryland data is presented on the total VLF-EM field map. This transmitter, which operates at a frequency of 21.4 kHz, occurs at an azimuth of 93 degrees, and hence, energizes preferentially conductors striking within approximately +/-30 degrees of this azimuth. Because the flight line orientation coincides with the transmitter azimuth, there is little chance detecting any well defined conductors. Features perpendicular to the station azimuth/flight line direction will not be portrayed directly. In the best case, they may be indicated as the contour pattern interruptions and offsets. Due to these restrictions, the resulting VLF-EM map does not appear to contain much useful information. (Further processing and evaluation may, however, succeed in extracting new information.)

5.5 Electromagnetics

The electromagnetic data was first checked by a line-to-line examination of the analog records. Record quality was generally very good with some noise on the 32,000 Hz coplanar traces in conductive or rugged parts of the block.

The electromagnetic anomalies were selected by the writer from the analog and digital profiles according to the vertical thin sheet model. Practically all the electromagnetic anomalies are weak and poorly defined. In many instances the EM anomaly is defined only by the quadrature channels which indicates low conductance values.

Only 24 electromagnetic anomalies occur in the northwest block, none reflecting a well developed bedrock conductor, such as a massive sulphide or a graphitic horizon. Four of the anomalies reflect very poorly conductive mineralization associated with localized concentrations of magnetite (1030A, 1030C, 1030D, 1050A), two anomalies are due to weak conductors of possible bedrock origin

(1150A, 1340A), and one anomaly may reflect a cultural source (1020A). The remaining anomalies are questionable or "edge" effect anomalies. (The latter type of anomaly is caused by an abrupt change in ground conductivity, such as an edge of conductive overburden or a contact. Because disseminated mineralization may occur along contacts, these anomalies should be evaluated with care.)

In the area of the southeast block, the survey has detected nine anomalies due to weak mineralization associated with the local concentration of magnetite (2610A, 2610B, 2610C, 2600A, 2150A, 2020A, 2020B, 2000A, and 2000B), several questionable and edge effect type anomalies, and two extensive groups of anomalies which appear to reflect bedrock conductors. They are situated in the southeast corner and in the east-central part of the block where they are associated with the two extensive resistivity lows mentioned earlier.

6. CONCLUSIONS AND RECOMMENDATIONS

Results of the present airborne geophysical survey indicate that the survey area is underlain by complex geology. Trends compatible with those presented on the government release preliminary geology map are indicated by the magnetic data. The data suggests that the magnetically more active volcanics may occur in the form of a relatively thin surface layer. The frequently varying, and in some instances confused magnetic gradient patterns appear to be a combination of deeper and weaker responses, and stronger shallower ones, presumably due to volcanic flows. It is proposed that several semi-circular, localized magnetic anomalies may reflect intrusives. Should this be confirmed by future work, they would constitute exploration targets of priority.

Low and intermediate resistivity values were calculated over a number of laterally confined zones. Most of these zones occur on the outer edge of the volcanic belt, and many show close relation to (linear) magnetic anomalies. Two large zones situated in the central part of the southeast block may reflect an alteration zone. Origin of the two zones with values as low as 20 ohm-m which are located in the southeast corner of the southeast block and at its east-central boundary, is not clear but these zones may be due to graphite.

The electronmagnetic anomalies detected in the two survey blocks fall into several categories. The first category consists of anomalies produced by weakly conducting mineralization associated with localized concentrations of magnetite. These targets may be of some exploration interest. The second category contains poorly defined but probably real anomalies which are due to weak bedrock and possible bedrock conductors. Also these targets are of potential exploration interest. The third category contains two extensive groupings of EM anomalies situated in the southeast corner of the southeast block and at its east-central boundary. Graphitic conductors are the most likely source of these anomalies. They would be of exploration interest provided gold is expected to be associated with graphite. The last category consists of very weak and questionable EM anomalies, some of them of the "edge" effect type, which are may or may not be real. Their follow-up is not recommended at this time.

Offsets, disruptions, and terminations of both the total field and calculated vertical gradient contours are interpreted to be indicative of structural features, such as faults and/or shears. These inferred structures are considered to be of prime exploration importance because many ore bodies are controlled by faults and other structures. It is recommended to direct future exploration accordingly.

Gold mineralization in the general area is known to be related to relatively isolated magnetic anomalies. It does not respond to the electromagnetic exitation. It is, therefore, recommended to focus future exploration into areas containing localized magentic features, particularly near the inferred structural features and their intersections, to the low and intermediate resistivity zones related to magnetic anomalies, and to areas of intersection of structural trends. The two extensive low resisitivty zones situated in the southeast part of the southeast block, which may reflect graphitic horizon, should be investigated.

Follow-up work should depend on the correlation of the results of the present survey with a workable geologic model. The survey results should be compiled on a common base containing all types of other information, including geology, geochemistry, and other geophysics. Target areas should be selected based on the mutual correlation of all the data.

Respectfully submitted

Z. Dvorak
Consulting Geophysicist
for
AERODAT LIMITED
June 27, 1989

8913

APPENDIX I

GENERAL INTERPRETIVE CONSIDERATIONS

Electromagnetic

The Aerodat four frequency system utilizes two different transmitter-receiver coil geometries. The traditional coaxial coil configuration is operated at two widely separated frequencies and the horizontal coplanar coil pair is operated at a frequency approximately aligned with one of the coaxial frequencies.

The electromagnetic response measured by the helicopter system is a function of the "electrical" and "geometrical" properties of the conductor. The "electrical" property of a conductor is determined largely by its electrical conductivity, magnetic susceptibility and its size and shape; the "geometrical" property of the response is largely a function of the conductor's shape and orientation with respect to the measuring transmitter and receiver.

Electrical Considerations

For a given conductive body the measure of its conductivity or conductance is closely related to the measured phase shift between the received and transmitted electromagnetic field. A small phase shift indicates a relatively high conductance, a large phase shift lower conductance. A small phase shift results in a large inphase to quadrature ratio and a large phase shift a low ratio. This relationship is shown quantitatively for a non-magnetic vertical half-plane model on the accompanying phasor diagram. Other physical models will show the same trend but different quantitative relationships.

The phasor diagram for the vertical half-plane model, as presented, is for the coaxial coil configuration with the amplitudes in parts per million (ppm) of the primary field as measured at the response peak over the conductor. To assist the interpretation of the survey results the computer is used to identify the apparent conductance and depth at selected anomalies. The results of this calculation are presented in table form in Appendix II and the conductance and inphase amplitude are presented in symbolized form on the map presentation.

The conductance and depth values as presented are correct only as far as the model approximates the real geological situation. The actual geological source may be of limited length, have significant dip, may be strongly magnetic, its conductivity and thickness may vary with depth and/or strike and adjacent bodies and overburden may have modified the response. In general the conductance estimate is less affected by these limitations than is the depth estimate, but both should be considered as relative rather than absolute guides to the anomaly's properties.

Conductance in mhos is the reciprocal of resistance in ohms and in the case of narrow slab-like bodies is the product of electrical conductivity and thickness.

Most overburden will have an indicated conductance of less than 2 mhos; however, more conductive clays may have an apparent conductance of say 2 to 4 mhos. Also in the low conductance range will be electrolytic conductors in faults and shears.

The higher ranges of conductance, greater than 4 mhos, indicate that a significant fraction of the electrical conduction is electronic rather than electrolytic in nature. Materials that conduct electronically are limited to certain metallic sulphides and to graphite. High conductance anomalies, roughly 10 mhos or greater, are generally limited to sulphide or graphite bearing rocks.

Sulphide minerals, with the exception of such ore minerals as sphalerite, cinnabar and stibnite, are good conductors; sulphides may occur in a disseminated manner that inhibits electrical conduction through the rock mass. In this case the apparent conductance can seriously underrate the quality of the conductor in geological terms. In a similar sense the relatively non-conducting sulphide minerals noted above may be present in significant consideration in association with minor conductive sulphides, and the electromagnetic response only relate to the minor associated mineralization. Indicated conductance is also of little direct significance for the identification of gold mineralization. Although gold is highly conductive, it would not be expected to exist in sufficient quantity to create a recognizable anomaly, but minor accessory sulphide mineralization could provide a useful indirect indication.

In summary, the estimated conductance of a conductor can provide a relatively positive identification of significant sulphide or graphite mineralization; however, a moderate to low conductance value does not rule out the possibility of significant economic mineralization.

Geometrical Considerations

Geometrical information about the geologic conductor can often be interpreted from the profile shape of the anomaly. The chance in shape is primarily related to the change in inductive coupling among the transmitter, the target, and the receiver.

In the case of a thin, steeply dipping, sheet-like conductor, the coaxial coil pair will yield a near symmetric peak over the conductor. On the other hand, the coplanar coil pair will pass through a null couple relationship and yield a minimum over the conductor, flanked by positive side lobes. As the dip of the conductor decreased from vertical, the coaxial anomaly shape changes only slightly, but in the case of the coplanar coil pair the side lobe on the down dip side strengthens relative to that on the up dip side.

As the thickness of the conductor increases, induced current flow across the thickness of the conductor becomes relatively significant and complete null coupling with the coplanar coils is no longer possible. As a result, the apparent minimum of the coplanar response over the conductor diminishes with increasing thickness, and in the limiting case of a fully 3 dimensional body or a horizontal layer or half-space, the minimum disappears completely.

A horizontal conducting layer such as overburden will produce a response in the coaxial and coplanar coils that is a function of altitude (and conductivity if not uniform). The profile shape will be similar in both coil configurations with an amplitude ratio (coplanar:coaxial) of about 4:1*.

In the case of a spherical conductor, the induced currents are confined to the volume of the sphere, but not relatively restricted to any arbitrary plane as in the case of a sheet-like form. The response of the coplanar coil pair directly over the sphere may be up to 8* times greater than that of the coaxial pair.

In summary, a steeply dipping, sheet-like conductor will display a decrease in the coplanar response coincident with the peak of the coaxial response. The relative strength of this coplanar null is related inversely to the thickness of the conductor; a pronounced null indicates a relatively thin conductor. The dip of such a conductor can be inferred from the relative amplitudes of the side-lobes.

Massive conductors that could be approximated by a conducting sphere will display a simple single peak profile form on both coaxial and coplanar coils, with a ratio between the coplanar to coaxial response amplitudes as high as 8*.

Overburden anomalies often produce broad poorly defined anomaly profiles. In most cases, the response of the coplanar coils closely follows that of the coaxial coils with a relative amplitude ration of 4*.

Occasionally, if the edge of an overburden zone is sharply defined with some significant depth extent, an edge effect will occur in the coaxial coils. In the case of a horizontal conductive ring or ribbon, the coaxial response will consist of two peaks, one over each edge; whereas the coplanar coil will yield a single peak.

* It should be noted at this point that Aerodat's definition of the measured ppm unit is related to the primary field sensed in the receiving coil without normalization to the maximum coupled (coaxial configuration). If such normalization were applied to the Aerodat units, the amplitude of the coplanar coil pair would be halved.

Magnetics

The Total Field Magnetic Map shows contours of the total magnetic field, uncorrected for regional variation. Whether an EM anomaly with a magnetic correlation is more likely to be caused by a sulphide deposit than one without depends on the type of mineralization. An apparent coincidence between an EM and a magnetic anomaly may be caused by a conductor which is also magnetic, or by a conductor which lies in close proximity to a magnetic body. The majority of conductors which are also magnetic are sulphides containing pyrrhotite and/or magnetite. Conductive and magnetic bodies in close association can be, and often are, graphite and magnetite. It is often very difficult to distinguish between these cases. If the conductor is also magnetic, it will usually produce an EM anomaly whose general pattern resembles that of the magnetics. Depending on the magnetic permeability of the conducting body, the amplitude of the inphase EM anomaly will be weakened, and if the conductivity is also weak, the inphase EM anomaly may even be reversed in sign.

VLF Electromagnetics

The VLF-EM method employs the radiation from powerful military radio transmitters as the primary signals. The magnetic field associated with the primary field is elliptically polarized in the vicinity of electrical conductors. The Herz Totem uses three coils in the X, Y, Z configuration to measure the total field and vertical quadrature component of the polarization ellipse.

The relatively high frequency of VLF (15-25) kHz provides high response factors for bodies of low conductance. Relatively "disconnected" sulphide ores have been found to produce measurable VLF signals. For the same reason, poor conductors such as sheared contacts, breccia zones, narrow faults, alteration zones and porous flow tops normally produce VLF anomalies. The method can therefore be used effectively for geological mapping. The only relative disadvantage of the method lies in its sensitivity to conductive overburden. In conductive ground to depth of exploration is severely limited.

The effect of strike direction is important in the sense of the relation of the conductor axis relative to the energizing electromagnetic field. A conductor aligned along a radius drawn from a transmitting station will be in a maximum coupled orientation and thereby produce a stronger response than a similar conductor at a different strike angle. Theoretically, it would be possible for a conductor, oriented tangentially to the transmitter to produce no signal. The most obvious effect of the strike angle consideration is that conductors favourably oriented with respect to the transmitter location and also near perpendicular to the flight direction are most clearly rendered and usually dominate the map presentation.

The total field response is an indicator of the existence and position of a conductivity anomaly. The response will be a maximum over the conductor, without any special filtering, and strongly favour the upper edge of the conductor even in the case of a relatively shallow dip.

The vertical quadrature component over steeply dipping sheet-like conductor will be a cross-over type response with the cross-over closely associated with the upper edge of the conductor.

The response is a cross-over type due to the fact that it is the vertical rather than total field quadrature component that is measured. The response shape is due largely to geometrical rather than conductivity considerations and the distance between the maximum and minimum on either side of the cross-over is related to target depth. For a given target geometry, the larger this distance the greater the depth.

The amplitude of the quadrature response, as opposed to shape is function of target conductance and depth as well as the conductivity of the overburden and host rock. As the primary field travels down to the conductor through conductive material it is both attenuated and phase shifted in a negative sense. The secondary field produced by this altered field at the target also has an associated phase shift. This phase shift is positive and is larger for relatively poor conductors. This secondary field is attenuated and phase shifted in a negative sense during return travel to the surface. The net effect of these 3 phase shifts determine the phase of the secondary field sensed at the receiver.

A relatively poor conductor in resistive ground will yield a net positive phase shift. A relatively good conductor in more conductive ground will yield a net negative phase shift. A combination is possible whereby the net phase shift is zero and the response is purely in-phase with no quadrature component.

A net positive phase shift combined with the geometrical cross-over shape will lead to a positive quadrature response on the side of approach and a negative on the side of departure. A net negative phase shift would produce the reverse. A further sign reversal occurs with a 180 degree change in instrument orientation as occurs on reciprocal line headings. During digital processing of the quadrature data for map presentation this is corrected for by normalizing the sign to one of the flight line headings.

APPENDIX II

ANOMALY LIST

J8913 TREATY CREEK NORTH AREA (ISKUT-UNUK RIVERS), B.C. - EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM) INPHASE	QUAD.	CONDUCTOR CTP MHOS	DEPTH MTRS	BIRD HEIGHT MTRS
3	1020	A	0	1.5	11.2	0.0	24	5
3	1030	A	0	-22.3	43.7	0.0	0	6
3	1030	B	0	1.7	11.6	0.0	9	20
3	1030	C	0	-17.8	3.9	0.0	0	18
3	1030	D	0	-36.6	4.9	0.0	0	16
3	1050	A	0	-42.9	4.7	0.0	0	1237
3	1060	A	0	-0.1	3.9	0.0	0	23
3	1070	A	0	5.9	12.7	0.2	1	40
3	1080	A	0	3.6	7.5	0.2	0	54
3	1090	A	0	8.9	20.2	0.3	10	24
4	1100	A	0	-4.2	11.7	0.0	0	22
4	1100	B	0	-6.3	14.4	0.0	0	24
4	1100	C	0	-6.3	14.8	0.0	0	19
4	1100	D	0	7.4	13.7	0.3	0	41
4	1110	A	0	11.4	23.0	0.4	0	34
4	1110	B	0	8.9	21.2	0.2	2	32
4	1140	A	0	2.6	7.7	0.1	0	47
4	1140	B	0	7.0	23.1	0.1	8	21
4	1150	A	0	4.5	25.7	0.0	0	1250
5	1250	A	0	5.4	11.3	0.2	16	27
5	1250	B	0	6.3	15.0	0.2	9	29
22	1340	A	0	5.8	7.7	0.5	8	47
2	1430	A	0	6.0	7.3	0.6	5	52
1	1460	A	0	5.1	6.0	0.6	25	36

Estimated depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or overburden effects.

J8913 TREATY CREEK SOUTH AREA (ISKUT-UNUK RIVERS), B.C. - EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM) INPHASE	QUAD.	CONDUCTOR CTP MHOS	DEPTH MTRS	BIRD HEIGHT MTRS
6	2000	A	0	-1.2	4.5	0.0	0	1229
6	2000	B	0	-0.2	6.1	0.0	0	6
6	2000	C	0	18.7	29.2	0.7	0	35
6	2000	D	0	7.0	21.5	0.1	0	1245
6	2010	A	0	9.3	22.2	0.2	0	1232
6	2010	B	0	6.0	17.4	0.1	12	22
6	2020	A	0	-56.7	12.1	0.0	0	683
6	2020	B	0	-53.0	10.8	0.0	0	1248
6	2020	C	0	2.7	14.7	0.0	2	27
6	2020	D	0	5.2	6.0	0.6	23	38
6	2030	A	1	98.3	125.6	1.6	0	1245
6	2030	B	1	40.3	36.3	1.9	26	7
6	2030	C	1	12.8	12.8	1.1	20	28
6	2030	D	0	5.5	9.7	0.3	25	23
8	2041	A	0	9.4	11.4	0.7	0	60
7	2050	A	2	62.7	42.7	3.1	0	1234
7	2060	A	0	6.2	9.3	0.4	0	1240
8	2070	A	3	16.9	6.2	4.7	4	53
9	2090	A	2	31.7	18.3	3.1	0	1244
9	2110	A	1	19.5	19.1	1.3	10	32
9	2110	B	1	21.2	20.1	1.4	0	1243
9	2130	A	1	18.4	14.3	1.7	0	1251
9	2130	B	2	32.6	25.1	2.2	0	1251
9	2150	A	0	-1.9	10.4	0.0	0	1242
15	2170	A	0	2.2	18.9	0.0	0	26
14	2270	A	0	7.4	11.8	0.4	0	1254
14	2280	A	0	4.7	14.6	0.1	4	32
14	2290	A	2	19.6	8.8	3.7	4	48
14	2300	A	2	15.3	7.9	2.8	0	1255

Estimated depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or overburden effects.

J8913 TREATY CREEK SOUTH AREA (ISKUT-UNUK RIVERS), B.C. - EM ANOMALIES

				AMPLITUDE (PPM)		CONDUCTOR		BIRD
						CTP	DEPTH	HEIGHT
FLIGHT	LINE	ANOMALY	CATEGORY	INPHASE	QUAD.	MHOS	MTRS	MTRS
14	2300	B	3	16.1	5.0	5.8	0	82
14	2300	C	0	7.9	8.7	0.8	0	65
14	2310	A	3	126.2	80.6	4.2	0	30
14	2310	B	3	98.6	56.2	4.6	0	31
14	2310	C	3	77.2	38.8	5.0	0	36
14	2320	A	2	10.6	5.8	2.3	0	80
14	2320	B	3	19.1	5.9	6.2	0	82
14	2320	C	2	9.0	3.7	3.2	0	106
14	2330	A	2	168.1	205.9	2.1	0	21
14	2330	B	2	212.9	191.3	3.2	0	19
14	2330	C	2	117.5	84.6	3.6	0	25
13	2340	A	1	13.6	9.3	1.9	0	55
13	2340	B	2	28.6	14.7	3.5	0	53
13	2350	A	3	29.3	11.9	4.9	0	55
13	2350	B	3	43.5	17.7	5.5	0	1256
13	2350	C	3	30.7	13.8	4.3	0	155
13	2360	A	3	19.5	7.7	4.4	0	57
13	2360	B	3	47.4	23.5	4.4	0	48
13	2380	A	1	35.8	32.9	1.8	0	36
13	2400	A	1	32.1	34.1	1.4	0	69
10	2600	A	0	-11.0	11.1	0.0	0	12
10	2610	A	0	-8.5	8.4	0.0	0	10
10	2610	B	0	-8.2	7.8	0.0	0	1230
10	2610	C	0	-49.0	20.5	0.0	0	31

Estimated depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or overburden effects.

APPENDIX III

CERTIFICATE OF QUALIFICATIONS

1. I hold a PhD in Geophysics from Charles University, Czechoslovakia having graduated in 1967.

2. I reside at 146 Three Valleys Drive, in the town of Don Mills, Ontario.

3. I have been continuously engaged in both professional and managerial roles in the minerals industry in Canada and abroad for the past 19 years.

4. I have been an active member of the Society of Exploration Geophysicists since 1978 and a member of KEGS since 1978.

5. The accompanying report was prepared from information published by government agencies, materials supplied by Prime Explorations Limited and from a review of the proprietary airborne geophysical survey flown by Aerodat Limited for Prime Explorations Limited. I have not personally visited the property.

6. I have no interest, direct or indirect, in the property described nor do I hold securities in Prime Explorations Limited.

Signed

Zbynek Dvorak
Consulting Geophysicist

June 27, 1989

APPENDIX IV

PERSONNEL

FIELD

Flown	April - May, 1989
Pilot	J. Kamphuis
Operator	V. Cole

OFFICE

Processing	A.E. Valentini G. MacDonald
Report	Z. Dvorak

APPENDIX II

Certificate of Qualifications

Certificate of Qualifications

I, David W. Mallo of 4475 Hermitage Drive, Vancouver, British Columbia hereby certify:

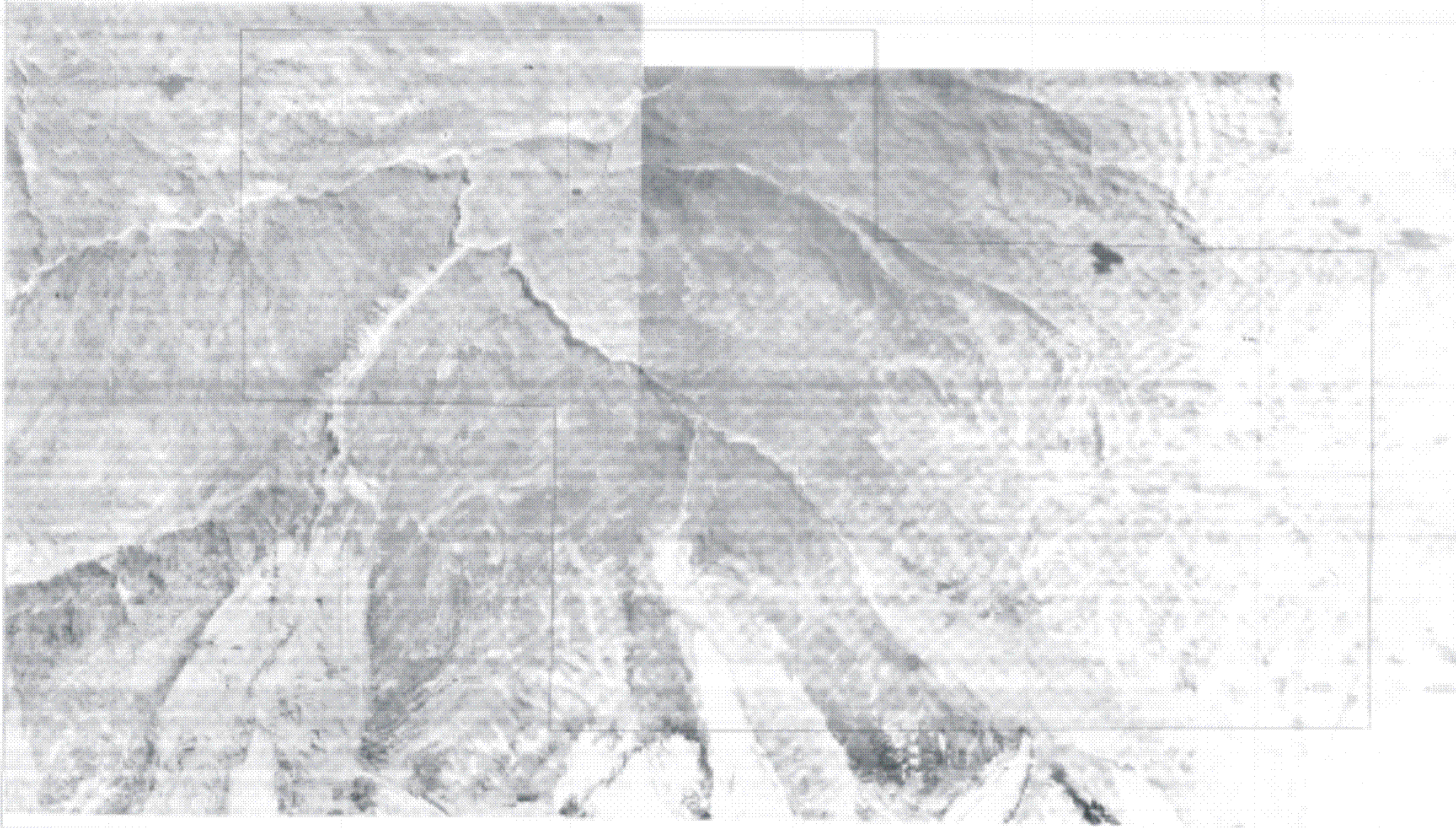
1. I am a graduate of Brandon University (1981) and hold a BSc (Spec) degree in geology.

2. I have been employed in my profession by various mining companies since graduation.

3. I am presently employed as a senior geologis with Prime Explorations Ltd., of 1000-808 West Hastings Street, Vancouver, British Columbia.

David W. Mallo
Senior Geologist

DATED at Vancouver, British Columbia, this 14th day of July, 1989.



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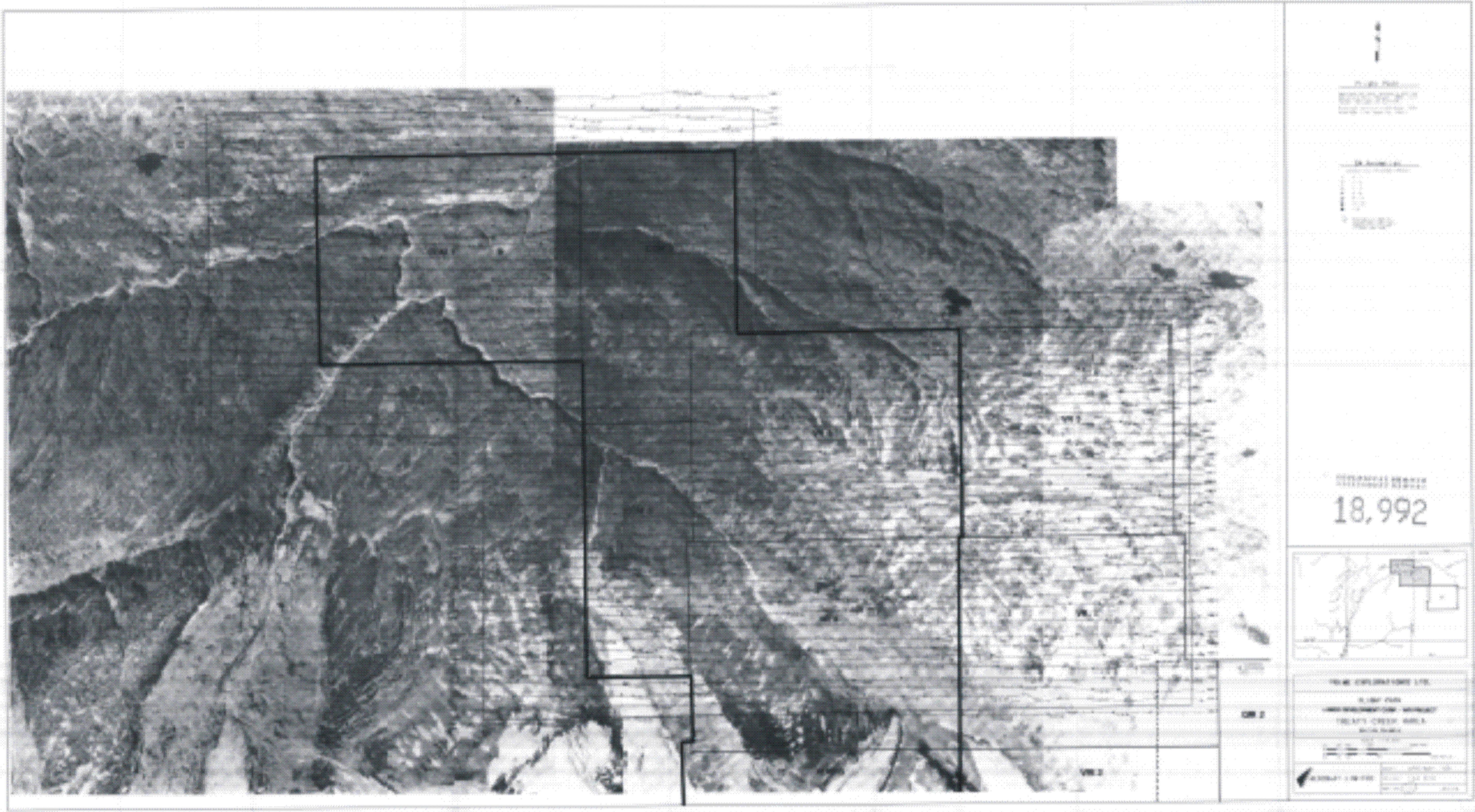
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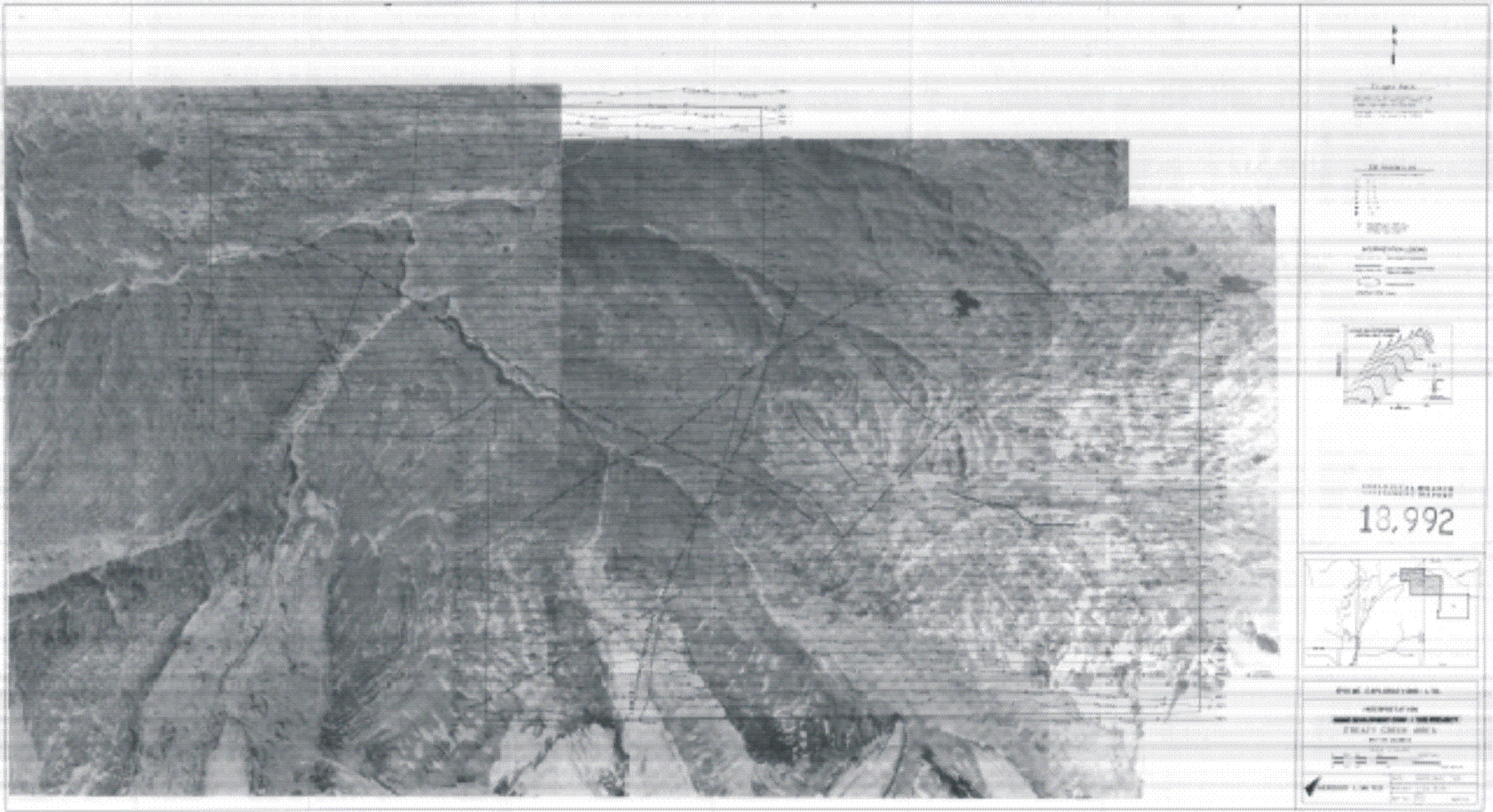
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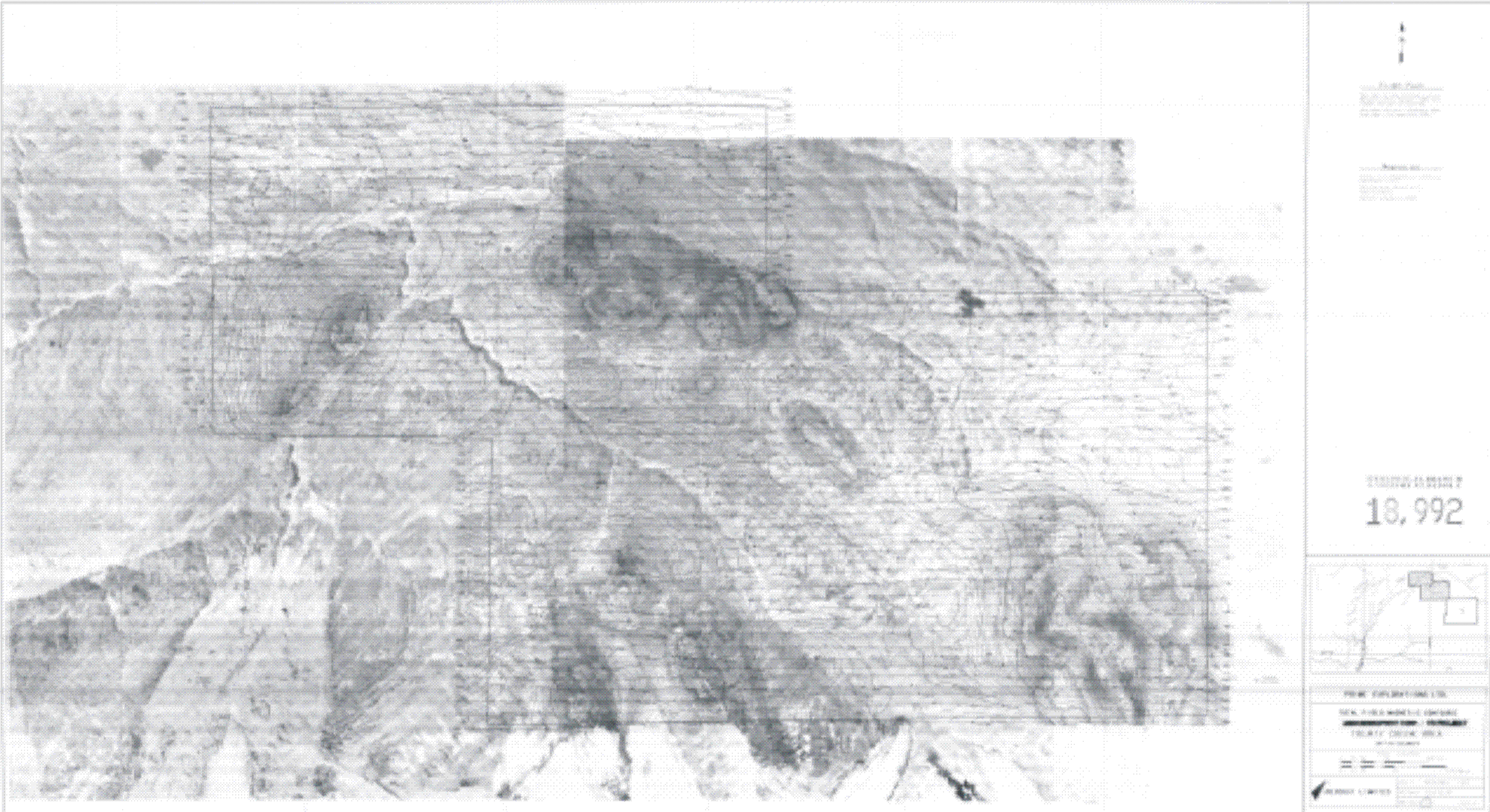
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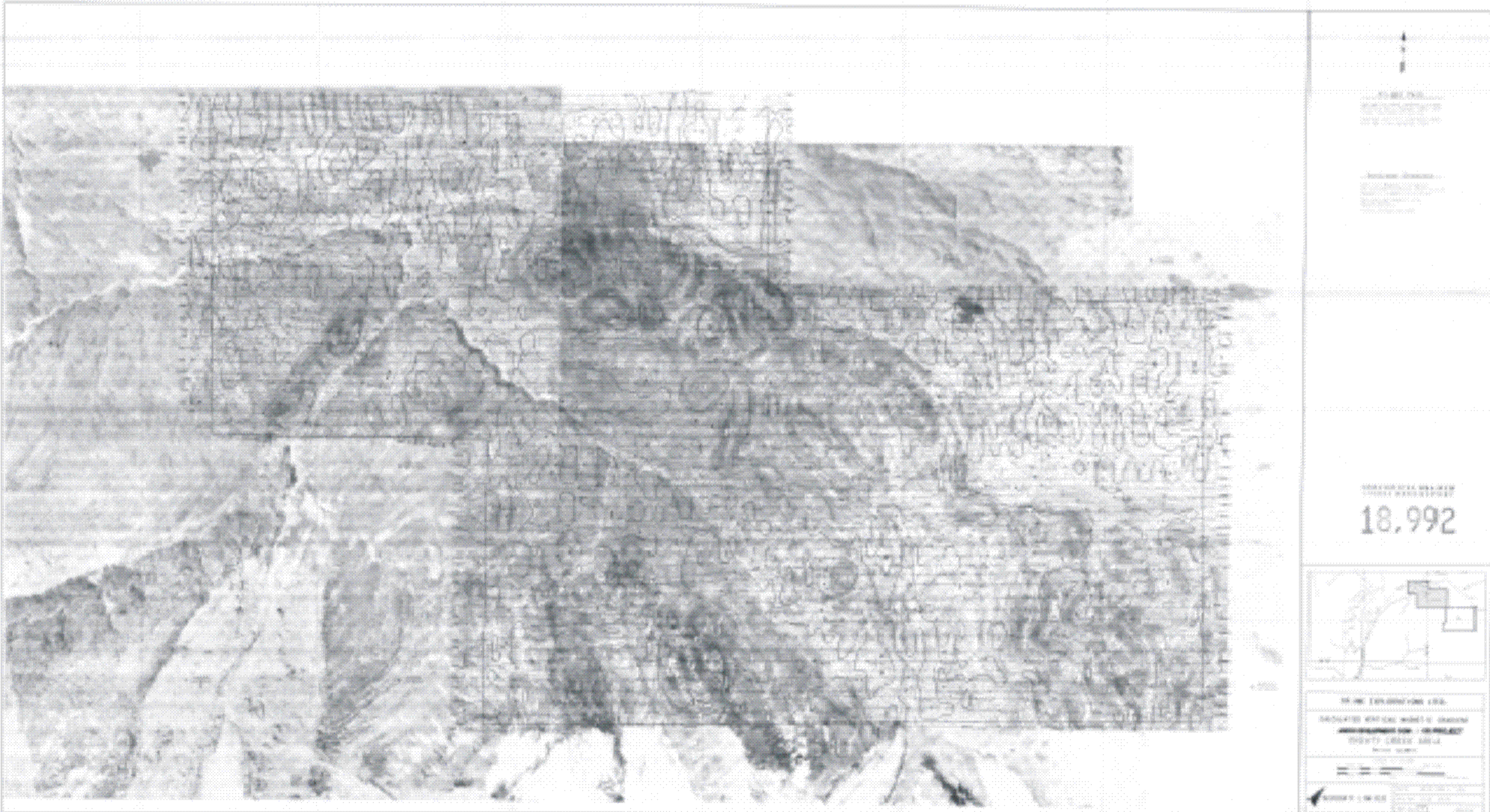
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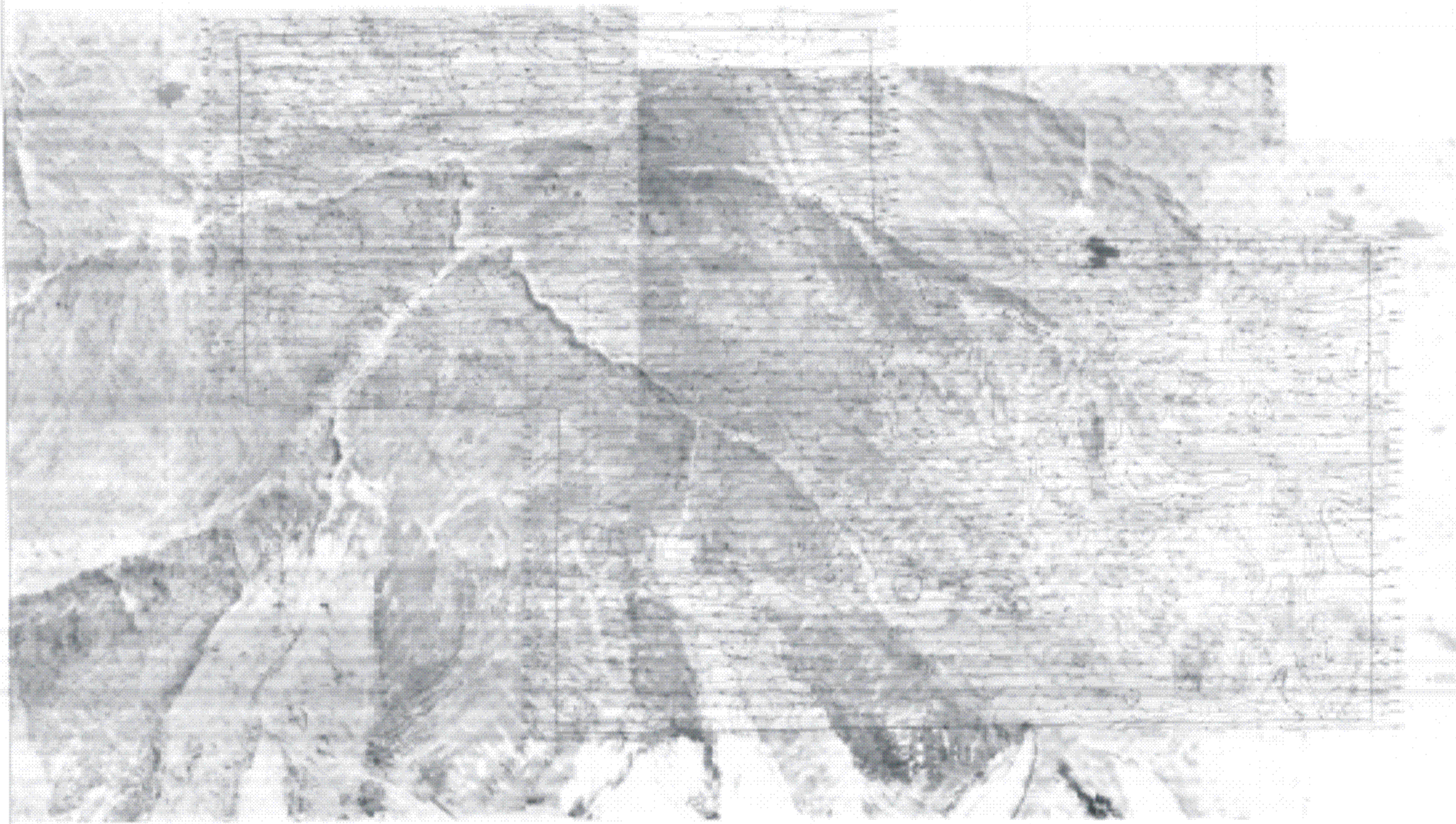

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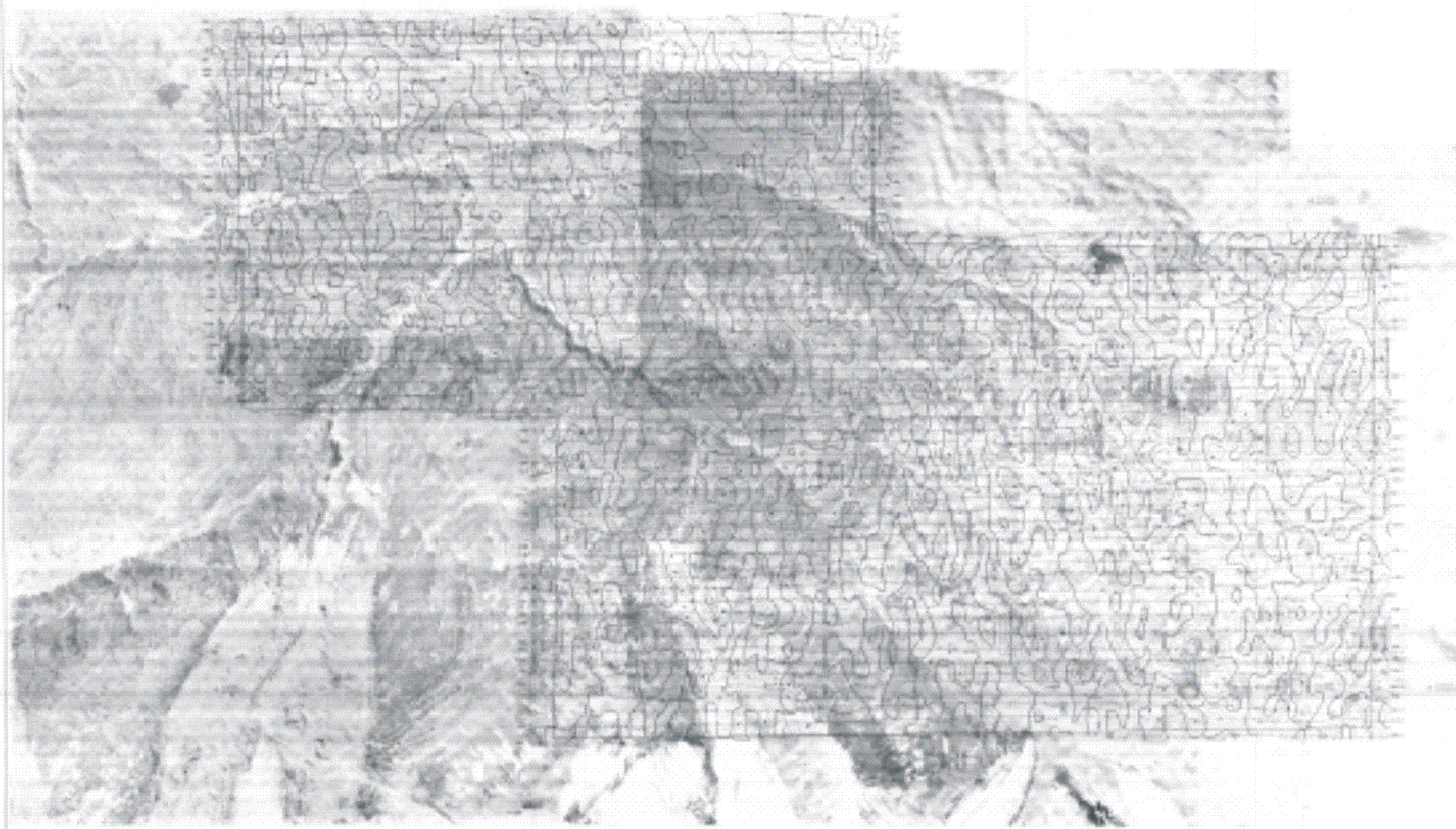

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