

T. C. EXPLORATIONS LTD.  
Pam and Mag Claims  
Dynasty Area  
Yukon

Report on Geophysical & Geochemical Surveys

by

ALRAE EXPLORATION LTD.

This report has been examined by  
the Geological Evaluation Unit.  
Approved as to technical worth by:

*D. C. Friedman*  
RESIDENT GEOLOGIST

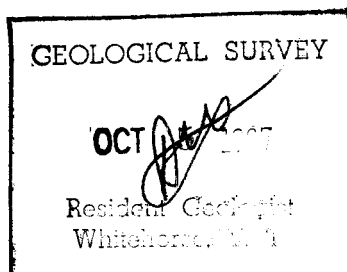
Approved as to cost in the amount  
of: \$ 21 00. 00

*A. S. Herdson*  
RESIDENT MINING ENGINEER

Accepted as representation work  
under Section 53(4) Yukon Quartz  
Mining Act

*[Signature]*  
COMMISSIONER OF YUKON

September 18, 1967



D. L. McKelvie  
B.Sc., P.Eng.

TO PROTECT OUR CLIENTS, THE PUBLIC AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS AND  
AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS AND EXTRACTS FROM OUR REPORTS MUST RECEIVE OUR WRITTEN APPROVAL.

TABLE OF CONTENTS

	Page
INTRODUCTION . . . . .	1
ACCESSIBILITY. . . . .	1
TOPOGRAPHY AND VEGETATION. . . . .	1
CLAIMS . . . . .	1
GEOLOGY (i) Regional. . . . .	2
(ii) Local . . . . .	2
LINE CUTTING . . . . .	2
MAGNETIC SURVEY (i) Type of Magnetometer. . .	2
(ii) Field Procedure . . . . .	3
(iii) Interpretation. . . . .	3
ELECTROMAGNETIC SURVEY (i) Type of Instrument	4
(ii) Field Procedure. .	4
(iii) Interpretation . .	5
GEOCHEMICAL SURVEY (i) Field Procedure. . . .	5
(ii) Laboratory Procedure .	6
(iii) Interpretation . . . .	6
CONCLUSIONS AND RECOMMENDATIONS. . . . .	6
TIME AND COST DISTRIBUTION . . . . .	8

ILLUSTRATIONS:

Location Map	in pocket at back
Magnetometer Readings	"
Electromagnetic Profiles	"
Geochemistry	"

TO PROTECT OUR CLIENTS, THE PUBLIC AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS AND AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS AND EXTRACTS FROM OUR REPORTS MUST RECEIVE OUR WRITTEN APPROVAL.

Report on  
Geophysical & Geochemical Surveys  
for  
T. C. EXPLORATIONS LTD.  
Pam 1-6 and Mag 1, 2 Claims  
Dynasty Area, Y.T.

INTRODUCTION:

The Pam and Mag claims are located on the south shore of the Pelley River, approximately 35 miles northwest of Ross River, Yukon Territory.

At the request of T. C. Explorations Ltd., 569 Howe Street, Vancouver, B.C., a program of line cutting, a magnetometer survey, an electromagnetic survey and a geochemical survey was carried out by Alrae Exploration Ltd. All field work was done by Alrae personnel under the supervision of J. Mackie.

ACCESSIBILITY:

Access to the property during the period of the program was by bush trail, four miles in length, from the Ross River - Carmacks road. Since this trail was walked each day, the progress of the survey was considerably hampered.

TOPOGRAPHY AND VEGETATION:

The south bank of the Pelley River is quite steep and provides the only topographic relief on the claims. Poplar and cottonwood trees are common along the river and willows and small evergreens densely cover the rest of the property.

CLAIMS:

The surveyed claims are owned by T. C. Explorations Ltd. and consist of the following:

Pam 1 - 6 inclusive	Record No's. Y10799 - Y10804 inclusive
Mag 1 and 2	Record No's. 98843, 98844

GEOLOGY:

(i) Regional

In the general area, a wide belt of northwesterly trending, highly metamorphosed volcanic and sedimentary rocks are found. Intrusions of quartz monzonite and diorite, rocks associated with the main intrusive of the Anvil range, are found cutting the volcanics. According to G.S.C. Map 13-1961, TAY RIVER, a Mississippian age is suggested for the volcanics and Cretaceous is suggested for the intrusives. The property lies within the valley created by the Tintina Fault, a major structural feature of the region.

(ii) Local

Due to the lack of surface exposures, the bedrock geology on the claims must be postulated from the regional geology. A few outcrops are found along the bank of the Pelley and consist of argillite, a medium grey rock with alternate light and dark bands, and a dark, fine-grained gneiss probably an altered diorite. Bedding and foliation of these rocks are both northwest with dips of 50° - 85° to the southwest. No interpretative structures or sulphide mineralization is seen in the outcrops.

LINE CUTTING:

A total of 14,900 feet of line was cut on the Pam group, consisting of cross lines at 400 foot intervals, running north from a previously established base line, and, both north and south cross lines from a 1,500 foot eastward extension of that base line. The new line cutting covered all of the Pam group of claims south of the Pelley River.

MAGNETIC SURVEY:

(i) Type of Magnetometer

A Sharpe fluxgate magnetometer, model MF-1, was used for this survey. This is a hand-held instrument which requires only

coarse levelling and is not significantly affected by orientation and, therefore, can be used rapidly and efficiently.

The magnetometer measures the vertical component of the earth's magnetic field to 5 gammas on the lowest scale range. Full scale ranges vary progressively from a minimum of plus or minus 1,000 gammas to a maximum of plus or minus 100,000 gammas. The values can be read directly from the scale.

Since temperature compensations have been built directly into the instrument, the only corrections of the readings necessary is the diurnal variation. The variation in each survey loop is assumed to be linear and is determined by subtraction of the initial and final readings. The correction added to each reading in the loop is the product of the total diurnal variation of the loop and the ratio of time elapsed up to the time of the reading over the total time elapsed for the loop.

(ii) Field Procedure

The magnetometer survey was conducted on the Pam claims only. After the instrument was zeroed for the area, readings were taken every 100 feet on both the base line and cross lines for a total of 14,900 feet. Two readings were taken at each of the established base stations and the average used for the calculations. Loops of not more than one hour duration were started from the base stations. The maximum allowable diurnal variation was 50 gammas per loop, or 1 gamma per minute, whichever was less. To eliminate negative values each corrected loop was adjusted.

(iii) Interpretation

No significant magnetic anomalies were found during this survey. However, the general east - west trend of the magnetics established during a previous survey of the Mag claims was found to continue on the Pam group.

TO PROTECT OUR CLIENTS, THE PUBLIC AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS AND AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS AND EXTRACTS FROM OUR REPORTS MUST RECEIVE OUR WRITTEN APPROVAL.

ELECTROMAGNETIC SURVEY:

(i) Type of Instrument

The instrument used for the electromagnetic survey is the Ronka EM 16 which utilizes the transmission signals from very low frequency (VLF) radio stations which are in communication with off-shore submarines. The radio stations have vertical antennae, the currents in which emit concentric horizontal magnetic fields. When these fields meet conductive bodies in the ground, secondary fields result. The vertical components of these secondary fields are measured by the EM 16.

The instrument is a sensitive receiver tuned to the frequency band of the VLF stations and consists of two coils, one vertical and one horizontal, with separate inputs. When the signal from the vertical coil is minimized by physical tilting, the angle of tilt is an accurate measure of the real-component of the secondary field. The remaining signal is balanced by a measured percentage of a signal from the other coil. This compensation signal is a measure of the quadrature vertical signal.

For interpretation purposes, the actual readings are plotted using suitable scales, and curves constructed to determine the location of any conductive zones.

(ii) Field Procedure

All readings were taken using the signal from VLF station NPM, operating at 23.4 kilocycles. This station was the only one for which both the real and quadrature components could be measured.

On the Pam claims, readings were made at 100 foot intervals along all cross lines with both real and quadrature values indicated in percentages. In all, 12,600 feet of survey was completed.

The Mag claims were surveyed at 100 foot intervals for a total of 5,200 feet. The area covered contained magnetic anomalies discovered during a magnetometer program in 1966. Lines cut at that time were used for control.

For the entire survey, the instrument was oriented facing north in order to eliminate the need for positive and negative corrections.

(iii) Interpretation

Two weakly conductive zones have been indicated by the electromagnetic survey. On Mag 1, a very weak east - west (Zone 1) zone is suggested at approximately 200 north on lines 60W, 56W 52W and 48W. On Pam 6 and extending westward into Mag 1, a somewhat stronger, although irregular, conductor (Zone 2) is located between 400 and 700 feet south of the base line. This latter zone is of some interest due to its association with a magnetic high and because its character is of the type expected for the mineralization encountered elsewhere in the Dynasty area. Regular, sharp crossovers with easily interpreted features would not be expected.

Both Zone 1 and Zone 2 must be considered weak conductors with Zone 2 having distinct magnetic correlation for part of its length.

GEOCHEMICAL SURVEY:

(i) Field Procedure

The geochemical survey carried out was a program of soil sampling with samples collected along the base and cross lines. 14,900 feet on the Pam claims was sampled at 200 foot intervals and 5,200 feet was sampled at 100 foot intervals on the Mag claims. The smaller interval in the latter case was due to the need for more detail over the known magnetic anomalies outlined in 1966. Depending

on the depth of humus and the type of vegetation encountered, the sampling depth varied from 6 to 12 inches. Records describing the depth of sampling, type of material and slope of the surface were kept for each station. Each sample was placed in a numbered bag and sent to Toronto for analysis.

(ii) Laboratory Procedure

All samples were analysed for lead and zinc by Barringer Research in Toronto, Ontario. After drying and screening to -80 mesh, the metals were extracted by the perchloric acid digestive method and the amounts of metal in each sample determined by atomic absorption spectrophotometric analysis. The results were then plotted by Alrae personnel on the accompanying geochemical map.

(iii) Interpretation

No values significantly higher than background in lead were found on the property. Thirty-seven parts per million was the highest determined concentration of lead and this is approximately twice the background. No anomalous areas could be interpreted from the results.

Only three isolated zinc determinations could be considered anomalous. One reading of 268 parts per million, another of 552 parts per million and one of 286 parts per million are widely scattered on claims Mag 1 and Pam 6. Because of the separation of these highs, no importance is attached to them and the reason for their occurrence can not be interpreted.


CONCLUSIONS AND RECOMMENDATIONS

Neither the magnetometer nor the geochemical surveys determined any distinctive anomalous areas. Two weakly conductive zones were outlined by the electromagnetic survey; Zone 1 on claim Pam 1 and Zone 2 on Mag 1 and Pam 6.

Part of Zone 2 is coincident with a magnetic anomaly found on Mag 1 by a survey conducted by Alrae in 1966 for T. C. Explorations. This correlation suggests the possibility of a small sulphide concentration at that point. The fact that the zone is not magnetic over most of its length also indicates the occurrence of a graphitic schist, a rock type known to exist in the area. A gravimetric survey would be fairly conclusive in this respect but its cost is not warranted at this time.

The strength of the conductor and the size of the area of correlation does not make this a highly favourable target for immediate consideration. However, when transportation to the area improves and the cost of further work decreases, a limited diamond drilling program could be outlined to adequately test this zone.

Respectfully submitted:



D. L. McKelvie, P. Eng.

TIME AND COST DISTRIBUTION

LABOUR

Line cutting

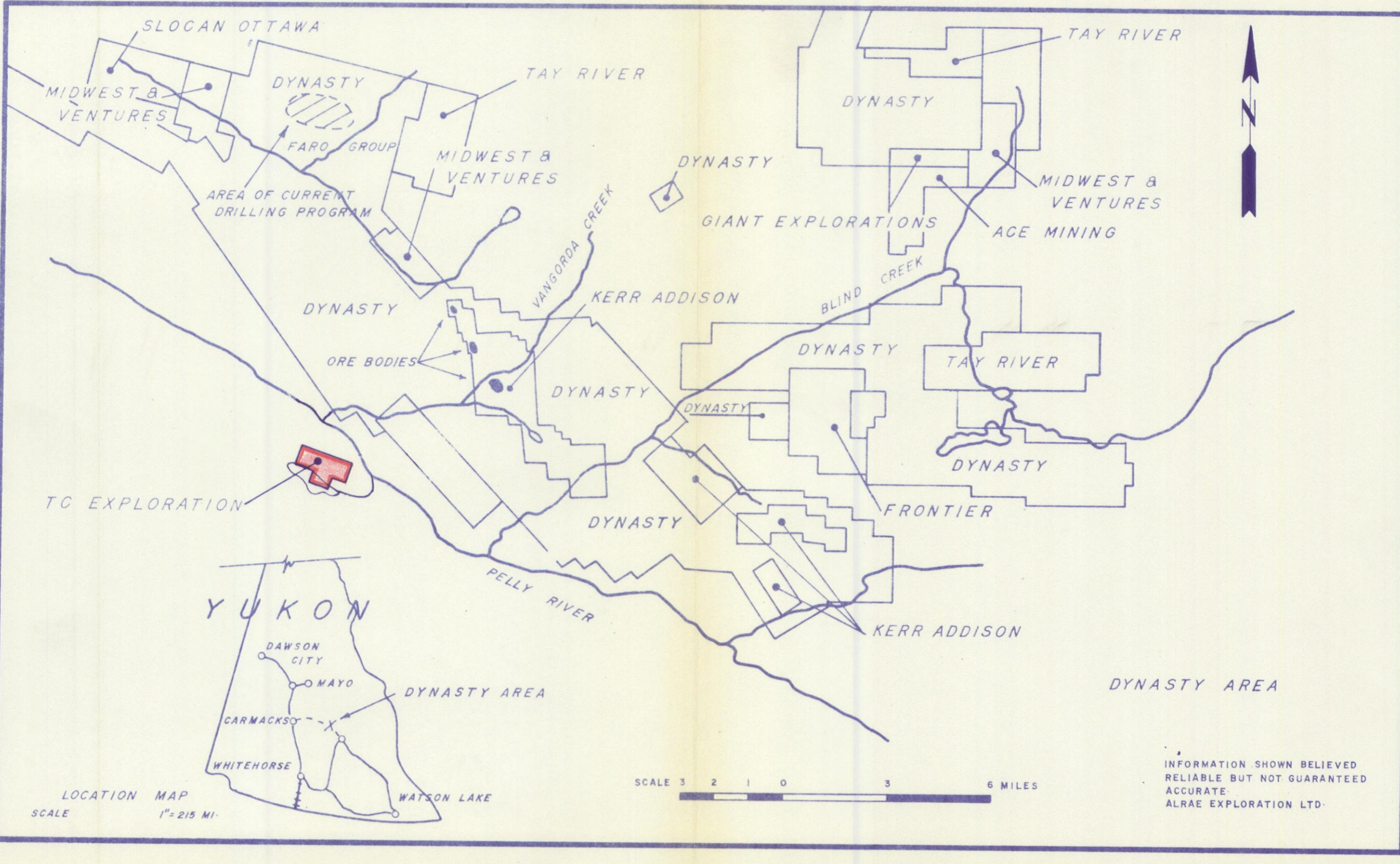
P. Cumberbirch - Vancouver, B.C. July 23 to 29, 1967 7 days @ \$22.50/day	\$ 157.50
B. Garner - Vancouver, B.C. July 23 to 29, 1967 7 days @ \$28.50/day	199.50
D. Smallman - Haileybury, Ont. July 23 to 29, 1967 7 days @ \$22.50/day	157.50

Geochemistry

D. Preston - Vancouver, B.C. July 23 to 29, 1967 7 days @ \$28.50/day	199.50
---	--------

Magnetometer and EM Surveying

J. Mackie - Vancouver, B.C. July 23 to 29, 1967 7 days @ \$50.00/day	350.00
EM rental	105.00
Mag. rental	70.00
Laboratory analysis of soil samples for ppm Pb. and Zn. (Barringer)	215.90
Transportation	220.00
Camp costs @ \$7.50/man day	262.50
Miscellaneous	<u>250.00</u>
	\$ <u>2,187.40</u>



SLOCAN OTTAWA

TAY RIVER

MIDWEST &  
VENTURES

DYNASTY

TAY RIVER

DYNASTY

FARO GROUP

MIDWEST &  
VENTURES

DYNASTY

AREA OF CURRENT  
DRILLING PROGRAM

GIANT EXPLORATIONS

MIDWEST &  
VENTURES

ACE MINING

DYNASTY

VANGORDA CREEK

KERR ADDISON

BLIND CREEK

ORE BODIES

DYNASTY

DYNASTY

TAY RIVER

TC EXPLORATION

DYNASTY

DYNASTY

YUKON

DYNASTY

FRONTIER

PELLY RIVER

KERR ADDISON

DAWSON  
CITY

MAYO

DYNASTY AREA

CARMACKS

WHITEHORSE

WATSON LAKE

DYNASTY AREA

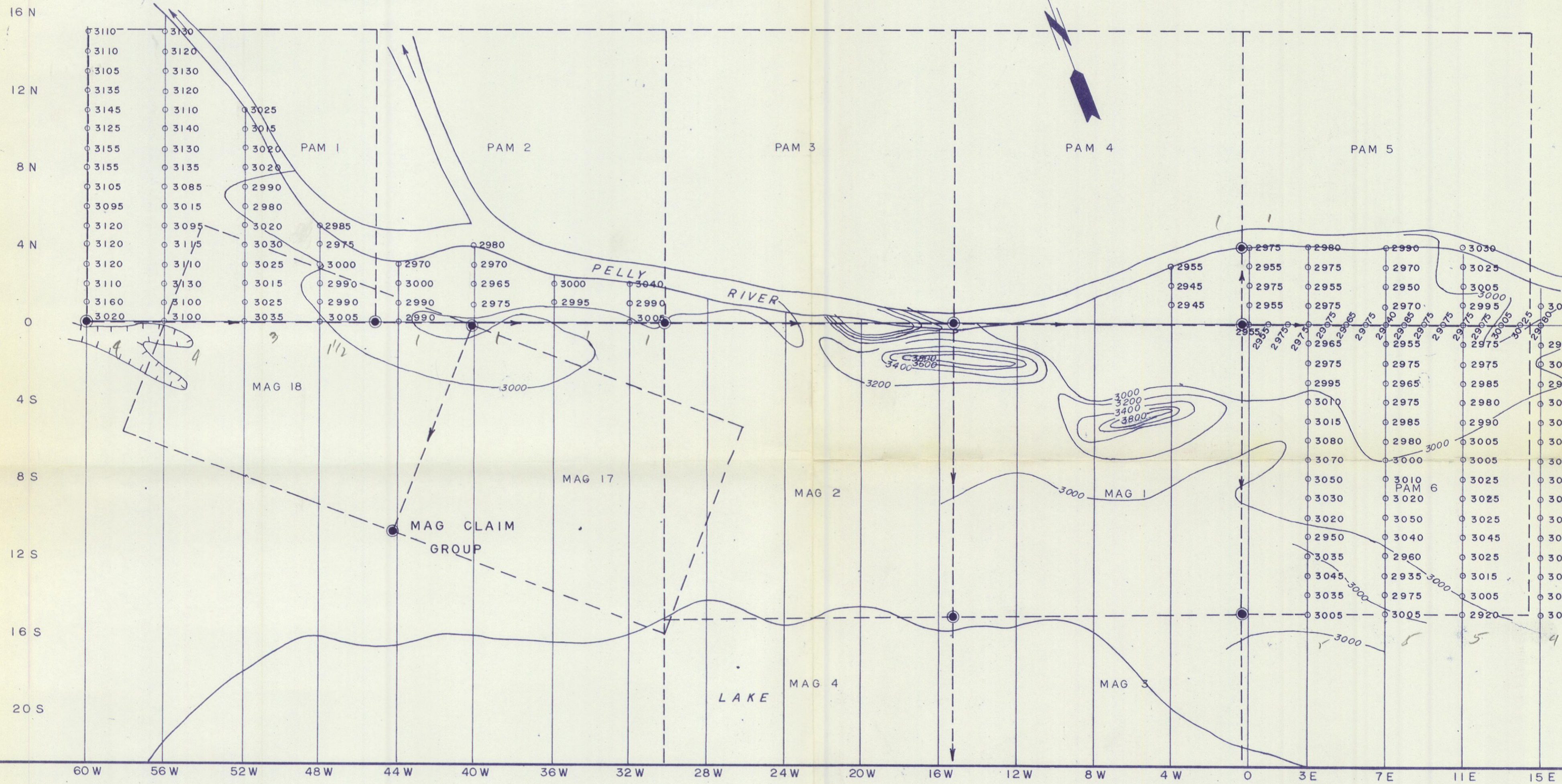
LOCATION MAP

SCALE

1" = 215 MI.

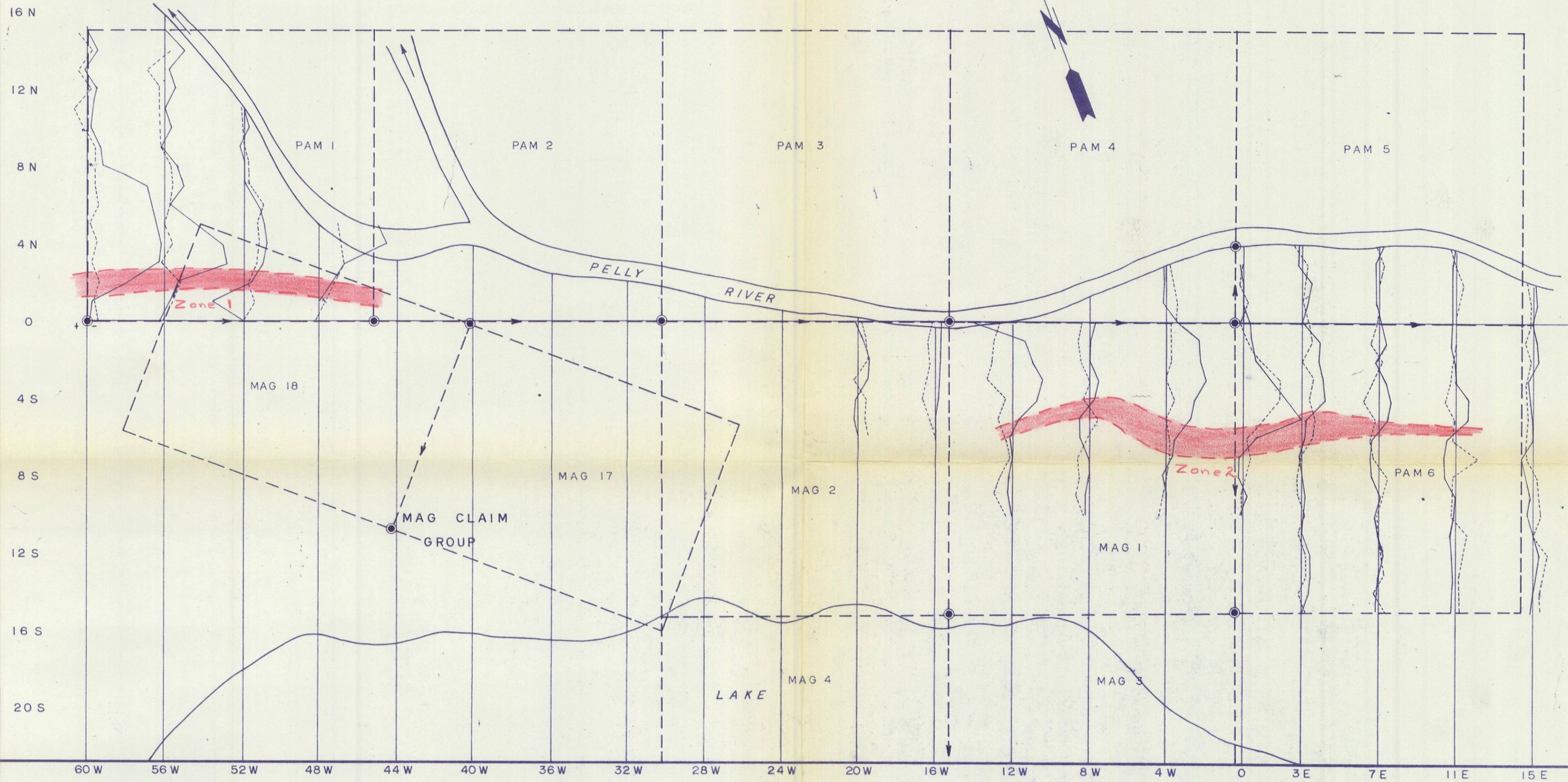
SCALE 3 2 1 0 3 6 MILES

INFORMATION SHOWN BELIEVED  
RELIABLE BUT NOT GUARANTEED  
ACCURATE.  
ALRAE EXPLORATION LTD.



NOTE: Magnetic Contours Shown on the Mag Claims are from 1966 Survey.  
Contour Interval: 200 Gammas

<b>T.C. EXPLORATIONS LTD.</b>	
PAM CLAIMS Magnetometer Readings	
ALRAE EXPLORATION LTD. GEOLOGISTS AND ENGINEERS VANCOUVER, B. C.	
DESIGNED..... D. L. M.	SCALE: HOR. 1" = 400'
DRAWN..... M. R. L.	VERT.
CHECKED..... D. L. M.	DWG. No. 8100-10
DATE..... AUGUST 1967	
INSTRUMENT: SHARPE MF-1 No. 21104	



**LEGEND**

- IN PHASE
  - - - QUADRATURE
  - ← + | - →
- ALL READINGS TAKEN FACING NORTHWARDS.

<b>T.C. EXPLORATIONS LTD.</b>	
PAM and MAG CLAIMS E.M. Profiles	
ALRAE EXPLORATION LTD. GEOLOGISTS AND ENGINEERS VANCOUVER, B. C.	
DESIGNED..... D. L. M.	SCALE: HOR. 1" = 400'
DRAWN..... M. R. L.	VERT. 1" = 50%
CHECKED..... D. L. M.	DWG. No. 8100-9
DATE..... AUGUST 1967	
INSTRUMENT: E. M. 16 (No. 51)	

