

REPORT ON THE  
AIRBORNE GEOPHYSICAL SURVEY  
ON THE  
GUN CREEK PROPERTY  
GOLD BRIDGE AREA, B.C.

Owner/Operator: NOXE PETROLEUM CORPORATION

54.7' 55'  
50° ~~55~~ N 122° ~~55~~ W

N.T.S. 92 J/15W

LILLOOET MINING DIVISION

FILMED

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

14,864

J.T. WALKER

SUB-RECORDER  
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VANCOUVER, B.C.

J.T. WALKER MINING GEOPHYSICS

APRIL 16, 1986

## TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
SURVEY PERSONNEL	3
SURVEY PROCEDURE AND NAVIGATION	3
INSTRUMENTATION AND DATA RECORDING	
(a) Proton Magnetometer	3
(b) Electromagnetic System (VLF-EM)	3
(c) Recording System	4
(d) Radar Altimeter	4
DATA REDUCTION AND PRESENTATION	4
(a) Aeromagnetic Data	5
(b) Electromagnetic Data	5
DISCUSSION OF RESULTS	6
CONCLUSIONS & RECOMMENDATIONS	7

<u>LIST OF MAPS</u>	<u>SCALE</u>	<u>DRAWING NO.</u>
Aeromagnetic Contour Map showing Airborne VLF-EM Anomalies (with Topographic Underlay & Location Map)	1:16,667	1

AIRBORNE GEOPHYSICAL SURVEY  
ON THE  
GUN CREEK PROPERTY  
NOXE PETROLEUM CORPORATION  
GOLD BRIDGE AREA, B.C.

INTRODUCTION

During the period March 25 and 29, 1986, J.T. Walker Mining Geophysics carried out an airborne geophysical survey in the Gun Creek Area, Gold Bridge, B.C. The survey area lies 10 kilometers northwest of Gold Bridge, B.C. The area flown is outlined on the Location Map, which depicts the N.T.S. sheet 92 J 15 at a scale of 1:250,000. This map is located at the top right of Drawing No. 1.

The purpose of the survey was to provide data for compiling a low level aeromagnetic contour map and to locate zones of conductivity at the VLF frequencies (21.4 kHz. - 24.8 kHz.).

Three measurements were recorded during the survey:

- (1) Total magnetic field intensity.
- (2) Relative Field Strength of the horizontal component of the VLF electromagnetic field, utilizing two transmitters simultaneously, located near:
  - (a) Seattle, Washington (24.8 kHz.)
  - (b) Annapolis, Maryland (24.4 kHz.)

A Bell 206 B Helicopter, chartered from Highland Helicopters, Williams Lake, B.C. was used to fly the survey. Eight survey lines were flown in a southeast-northwest direction. A total of 42 line kilometers were flown covering an area of approximately 840 hectares. Line spacing of 200 meters was maintained throughout the survey. Terrain clearance was 80 meters. Air speed of 100 kilometers per hour was maintained where possible.

The Gun Creek property consists of 25 reverted Crown grants held by Noxe Petroleum, situated on Gun Creek, approximately 10 km NW of the village of Gold Bridge in the Bridge River area, Lillooet Mining Division, B.C. Claim details are as follows:

<u>Claim Name</u>	<u>Record Number</u>
Surrey	2732 ✓
Lytton	2733 ✓
High Tor 7	2734 ✓
High Tor 8	2735 ✓
Red Bluff 2	2736 ✓
Red Bluff 1	2737 ✓
High Tor 1	2738 ✓
High Tor 2	2739 ✓
High Tor 3	2740 ✓
High Tor 5	2741 ✓
High Tor 6	2742 ✓
High Tor 2fr.	2748 ✓
Gold Pass 10	2749 ✓
Gold Pass 11	2750 ✓
Gold Pass 12	2751 ✓
Gold Pass 13	2752 ✓
Gold Pass 14	2753 ✓
High Tor 5fr.	2754 ✓
High Tor 4	2755 ✓
High Tor 9	3073 ✓
High Tor 10	3074 ✓
High Tor 11	3075 ✓
High Tor 12	3076 ✓
High Tor fr.	3084 ✓
High Tor 3	3134 ✓

Access to the claim group is easily gained by means of the gravel road running along Gun Creek which connects to the Tyaughton lake access road from the Gold Bridge - Lillooet highway running along the northern side of Carpenter Lake. Total road distance from Gold Bridge is approximately 22 km.

### SURVEY PERSONNEL

Pilot: R. Bugg (Highland Helicopters)

Navigator: M. Gray

Operator: T. Walker (J.T. Walker Mining Geophysics)

Data reduction, compilation, drafting and interpretation: T. Walker

### SURVEY PROCEDURE AND NAVIGATION

A flight line base map of the survey area was prepared by enlarging a 1:50,000 N.T.S. topographic map to a scale of 1:16,667. Proposed flight lines and topographically located control points were plotted and numbered prior to flying the survey. During the survey, flight line path deviations were noted and corrected on the flight line base map. Flight line and control point information was announced by the navigator and recorded on magnetic tape. During the course of the survey, this information was notated by the operator directly onto the magnetic and VLF-EM analog charts to provide correlation between the flight line control points and the recorded data.

### INSTRUMENTATION

The following instruments were installed in the helicopter for measuring and recording the geophysical data:

(a) Proton Magnetometer (ELSEC - Type 595)

Manufactured by the Littlemore Scientific Engineering Co., Oxford, U.K., the magnetometer measures the total magnetic field at a one-second cycle rate. The measurement is displayed digitally to one gamma and has an analog output of 100, 1000, or 10,000 gammas full scale. The 1000 gamma full scale output was used for the survey. The Toroidal wound detector was installed in a fibre-glass "bird", towed beneath the helicopter on a 12 meter cable.

(b) Electromagnetic Receiver (VLF-EM)

The two-frequency VLF-EM receiver was manufactured by

Sabre Electronic Instruments Ltd., Burnaby, B.C. Two omni-directional antenna arrays, (mounted in the fibreglass "bird", which also carries the magnetometer detector) are used. The antenna arrays are designed to detect the total horizontal magnetic component of the VLF fields.

VLF signals originating from U.S. Navy transmitters near Seattle, Washington (24.8 kHz.), and Annapolis, Maryland (21.4 kHz.) were utilized for this survey. Two signals are measured simultaneously. The amplitudes of the horizontal component of the fields are measured continuously and displayed as relative field strengths. Two analog outputs are provided for recording.

(c) Recording System

Two chart recorders and a magnetic tape Frequency Modulated system are employed simultaneously during the survey.

- (1) A one-pen chart recorder, (Hewlett Packard- Model 7155B) is used to record the aeromagnetic data in profile. The recorder is calibrated to provide a full scale deflection of 1000 gammas.
- (2) A two-pen chart recorder (Soltec - Model VP6723S) is used to record the VLF-EM field strength data from two transmitters.

(d) Radar Altimeter

A radar altimeter (Mark 10 - Bonzer Inc.) was installed to measure and display the helicopter terrain clearance during the survey. The visual meter display assists the pilot in maintaining a constant aircraft-ground clearance.

DATA REDUCTION AND PRESENTATION

All survey data is presented on one plan map at a scale of 1:16,667. Corrected flight lines and control points are plotted and numbered. Flight line direction is indicated by an arrow at the beginning of each line.

(a) Aeromagnetic Data (Drawing No. 1)

The aeromagnetic data is presented as an aeromagnetic Contour Map (Drawing No. 1). The contour values are referenced to a base of 56,000 gammas total magnetic field. The results were not corrected for diurnal variation. The magnetic data was transferred manually from the strip charts to the flight lines using a standard graphic method whereby magnetic contour interval points are transcribed to the plan map on the appropriate flight line. Contour lines were drawn through points of equal magnetic intensity. Contour intervals of 500 gammas and 100 gammas were used.

(b) Electromagnetic Data (VLF-EM)

The VLF-EM data is recorded as a continuous profile of the Relative Field Strength. A significant anomaly is a definitive increase in the Relative Field Strength. The VLF-EM anomalies are shown on Drawing No. 1 by an anomaly symbol and bar along the flight lines. The length of the bar corresponds to the anomalous profile width at the half height. The number enclosed within the anomaly symbol represents the percent increase of the field strength at the maximum profile height. The anomalous locations are transcribed to the flight lines using the graphic method described under Aeromagnetic Data. Anomalous responses from the Transmitter near Seattle are plotted with the anomaly symbol above the flight line. Responses from the Transmitter near Annapolis are plotted below the flight line. The location of the flight lines is shown by the screened topographic contour map printed as an underlay on the drawing. Also, a location map, with the survey area outlined, is located at the top of the drawing. The Location Map covers the 92 J 15 map area at a scale of 1:250,000.

## DISCUSSION OF RESULTS

The results of the Airborne Magnetometer Survey are plotted as an Aeromagnetic Contour Map using a 100 gamma contour interval. Heavier line widths accentuate the 500 gamma contour intervals. Contour values are referenced to a total magnetic field value of 56,000 gammas.

Magnetic intensity ranges from less than 900 gammas to greater than 3600 gammas. A steep 1000 gamma gradient striking generally east-west divides the survey area, with the magnetic field north of the 1500 gamma contour being relatively low and having a relief of less than 600 gammas. One small magnetic high is evident within this area, located within the most northerly claims of the group.

South of the gradient, a broad "high" extends for more than a kilometer, gradually decreasing to the south. This feature contains four distinct magnetic anomalies located as follows: 1/ 3600 gamma "high" located on lines 3 & 4, 2/ 3600 gamma "high" located on line 8, control point 2 (open to the southwest) 3/ 3000 gamma narrow "high" located on line 6 between control points 3 & 4. 4/ 2500 gamma "high" located near the south end of lines 6 & 7.

The results of the airborne VLF-EM survey are plotted on the Aeromagnetic Contour Map using anomaly symbols. The percent increase of the Relative Field Strength is shown within the anomaly symbol. Areas having higher than background values of Relative Field Strength that do not exhibit a distinct anomalous profile, are shown as shaded areas. These areas have not been given a % R.F.S. value. They should be considered to indicate areas of lower resistivity.

Two zones showing broad R.F.S. response are indicated. The zone located near midpoint of line 2 coincides with a topographic ridge which may have caused this response. The second zone is located in the south corner of the survey area and does not appear to be related to topography.



Four VLF-EM anomalies are indicated:

- (1) Line 1 between control point 2 & 3 - R.F.S. 12%
- (2) Line 6 between control point 2 & 3 - R.F.S. 14%
- (3) Line 7 between control point 2 & end- R.F.S. 14%
- (4) Line 7 between start & 1 - R.F.S. 12%

All anomalies are considered "weak"

#### CONCLUSIONS AND RECOMMENDATIONS

The Airborne Geophysical Survey has provided data for the compilation of a low level Aeromagnetic Contour Map. Four weakly anomalous responses are indicated by the VLF-EM results.

The results of the airborne magnetometer and VLF-EM surveys, together with geological and geochemical information available, should be utilized in developing a program to further investigate the property.

APRIL 16, 1986

  
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J.T. WALKER MINING GEOPHYSICS

NOXE PETROLEUM CORPORATION

Gun Creek Property

STATEMENT OF EXPENDITURES

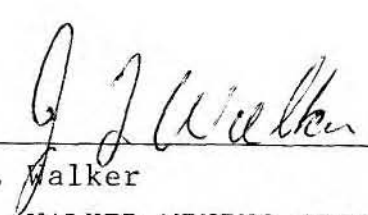
Salaries

J.P. Sorbara	2 days @ \$350.00/day	\$ 700.00
M. Grey	3 days @ \$250.00/day	750.00
Meals and Accomodation (3 man days @ \$60.00/day)		180.00
Car rental		85.00
Helicopter		810.95
Geophysical Sub-contractor		1,596.00
Administration		<u>1,000.00</u>
	Total:	\$5,121.95

STATEMENT OF QUALIFICATIONS

I, James T. Walker of the Municipality of Richmond, Province of British Columbia do certify that:

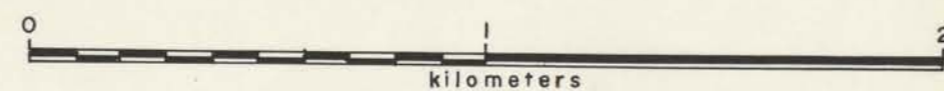
1. I have been engaged in Mining Geophysics since June, 1965.
2. I have been engaged in Airborne Geophysical surveying since April, 1973.
3. I am a member of the Canadian Institute of Mining and Metallurgy.
4. I am a member of the British Columbia Geophysical Society.
5. I am a member of the Society of Exploration Geophysicists.

  
\_\_\_\_\_  
J.T. Walker

J.T. WALKER MINING GEOPHYSICS



**AEROMAGNETIC CONTOUR MAP**  
SHOWING AIRBORNE VLF-EM ANOMALIES



LOCATION MAP

**LEGEND**

- L 7 Flight line number and direction, numbered control point.
- Magnetic measurement - Total Field.
- Reference Level - 56,000 gammas.
- Contour Interval 500 gammas.  
 100 gammas.
- VLF-EM Measurement - Relative Field Strength (horizontal component)
- VLF-EM Transmitters - Seattle, Washington. (24.8 kHz.)  
Annapolis, Maryland. (21.4 kHz.)
- Ann. VLF-EM Anomaly showing % Increase in R.F.S.  
Bar indicates anomaly length along flight line.
- Area of above average Field Strength. Indicating zones of lower resistivity or topographic highs.
- Helicopter-terrain clearance - 80 meters.
- Flight line spacing - 200 meters.

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**14,864**

*J. J. Walker*

	AIRBORNE GEOPHYSICAL SURVEY	
	NOXE PETROLEUM CORPORATION GUN CREEK PROPERTY LILLOOET MINING DIVISION	
PROJ.No. _____	SURVEY BY T. Walker & M. Gray	DATE April 1986
NTS 92 J 15	DRAWN BY T. Walker	SCALE 1:16,667
DWG.No. 1	J.T.WALKER MINING GEOPHYSICS	