

824981

REPORT ON THE  
AIRBORNE GEOPHYSICAL SURVEY  
OF THE  
EL, KS, JUNE, TS MINERAL CLAIMS  
CAWSTON AREA, B.C.  
OSOYOOS MINING DIVISION

\*-\*-\*-\*-\*

Abrams Oil Management Ltd.  
213 Blow Building  
Calgary, Alberta

HARVEY H. COHEN ENGINEERING LTD.  
CONSULTING ENGINEERS

TELEPHONE: BUS.: 684-6711  
RES.: 266-8169

1264 West Pender Street  
VANCOUVER 1, B.C.

August 21, 1967.

Abrams Oil Management,  
213 Blow Building,  
Calgary, Alberta.

Dear Sirs:

Re: Airborne Geophysical Survey  
EL, KS, JUNE, TS Mineral Claims  
Cawston Area, B.C.  
Osoyoos Mining Division

Pursuant to your request, we have conducted a combined airborne geophysical survey on the EL, KS, JUNE and TS Mineral Claims in the Cawston Area, B. C., Osoyoos Mining Division during the period July and August, 1967.

The following report and maps are based on the results of that survey.

Respectfully submitted,

(signed)

HARVEY H. COHEN, P. ENG.

TABLE OF CONTENTS

Introduction. . . . . 1

Location and Access. . . . . 1

Summary of Claims. . . . . 2

Geophysical Investigations. . . . . 3

Magnetometer Survey. . . . . 3

Electromagnetic Survey. . . . . 5

Radioactivity Survey. . . . . 5

Procedure. . . . . 6

Analysis of Results & Conclusions. . . . . 7

Magnetometer Survey. . . . . 7

Electromagnetic Survey. . . . . 8

Radioactivity Survey. . . . . 9

MAPS

- Key Map Showing Location of Snowy Mountain Area Property
- Map Showing Flight Line Grid Pattern Snowy Mountain Property
- Claim Location Map of Snowy Mountain Property
- Airborne Geophysical Survey - Magnetometer
- Airborne Geophysical Survey - Electromagnetic
- Airborne Geophysical Survey - Radioactivity

REPORT ON THE  
AIRBORNE GEOPHYSICAL SURVEY  
OF THE  
EL, KS, JUNE, TS MINERAL CLAIMS  
CAWSTON AREA, B.C.  
OSOYOOS MINING DIVISION

---

INTRODUCTION

LOCATION AND ACCESS:

The Abrams Oil Management Ltd. property, consisting of 303 mineral claims held by location and purchase agreement, is situated 12 miles south of Keremeos, B.C. in the Osoyoos Mining Division. The Keremeos-Osoyoos (via Richter Pass) highway (B.C. No. 3A) passes directly below the property along the Similkameen River. The claims cover the east slopes of Snowy Mountain from the summit at 8,500 feet to the ~~Similkameen~~ Similkameen River at 1,300 feet in elevation.

Keremeos, the nearest supply centre, is situated on the southern Trans-Provincial Highway, 220 miles east of Vancouver, B.C. It is serviced by daily truck transport, bus and rail.

Geographically, the location may be described as:

Latitude            49°        05' N  
Longitude        119°       50' W

SUMMARY OF CLAIMS:

<u>NAME OF CLAIM</u>	<u>RECORD NUMBER</u>	<u>RECORD DATE</u>
EL 1 - 36	16273 - 16308	July 20/66
EL 40 - 45	16257 - 16272	Aug. 4
EL 46 - 55	17365 - 17374	Oct. 11
EL 56 - 59	17388 - 17391	Oct. 11
KS 1 - 50	18363 - 18412	Dec. 12
KS 51 - 52	16819 - 16820	Sept. 7-9
KS 53 - 56	16803 - 16806	Sept. 7-9
KS 57 - 61	16821 - 16825	Sept. 7-9
KS 62	16807	Sept. 7-9
KS 63	16826	Sept. 7-9
KS 64 - 68	16808 - 16812	Sept. 7-9
KS 69 - 70	16827 - 16828	Sept. 7-9
KS 71 - 76	16813 - 16818	Sept. 7-9
KS106 -139	17111 - 17114	Sept. 21-Oct.14

SUMMARY OF CLAIMS (CONT.)

<u>NAME OF CLAIMS</u>	<u>RECORD NUMBER</u>	<u>RECORD DATE</u>
KS140 - 156	17283 - 17299	Sept. 21-Oct. 14
KS157 - 169	17375 - 17387	Oct. 11
KS170 - 191	17499 - 17520	Oct. 14
JUNE 1 - 20	16969 - 16988	Sept. 13
JUNE 21	16989	Sept. 13
JUNE 22-85	18478 - 18541	Dec. 16

GEOFYSICAL INVESTIGATIONS

MAGNETOMETER SURVEY:

The purpose of the geophysical survey was to determine the existence of any magnetic or non-magnetic anomalies on the property, and if so what was their size, intensity and probable cause. An anomaly would result from the presence or absence of any magnetic accessory minerals in the underlying rock formations in detectable quantity; the magnetic survey would differentiate between the volcanics and intrusives and detect magnetic sulphides that could possibly be associated with valuable minerals.

Using these factors as a guide, the geophysical survey was conducted over an area of 30 square miles, adequately covering the 303 mineral claims held by your

Company.

Factors which produce variations in the magnetic field are:-

1. A concentration of magnetic minerals possibly associated with valuable minerals.
2. A variation in amount of accessory magnetite in granitic or volcanic bedrock.
3. A variation in amount of magnetite distributed through or connected with the overburden.
4. A variation in depth of non-magnetic overburden on caprock over bedrock having a constant vertical magnetic intensity.
5. Variation in amount of magnetic minerals in adjacent bands of volcanic and/or sedimentary rocks. These variations are not expected to be great, and produce elongated highs and lows parallel to the strike of the formation.
6. Any combination between variations in magnetic minerals in the rock and variations in the thickness of the overlying magnetic or non-magnetic overburden or caprock.

It will be seen from the above factors that the geophysical survey employing a magnetometer produces information that would assist in providing a structural picture as well as indicating favorable geologic areas of greater significance for further geological exploration.

ELECTROMAGNETIC SURVEY:

This survey, conducted simultaneously with the magnetometer survey measures the changes in mutual impedance between a pair of coils as the impedance is affected by nearby conductors of electricity. The equipment employed transmits a field through a 65 foot coil at 1,000 cycles per second. The coil is housed in a bird drawn by the aircraft, and records any fields produced by the transmitted field.

RADIOACTIVITY SURVEY:

The radioactivity was measured continuously employing a DR-229 Nucleometer constructed specifically for airborne work. It is a 24 tube highly sensitive instrument.



## PROCEDURE

The EL, KS, JUNE, TS property, consisting of 303 mineral claims was covered by 428 lineal miles of survey. Due to the nature of the topography, flight lines were flown at  $0^{\circ}$  and  $180^{\circ}$  (T) in order to conform to the general contours and maintain a constant height above ground. The north-south flight lines were flown at a 500 foot spacing, at an elevation of 500 feet above ground, and at a constant speed of 113.7 miles per hour ground speed. A Piper "Cherokee" fixed wing aircraft was employed to conduct this survey. The instrumentation included a continuous recording system of the readings on film. Flight lines, 91 in number, were flown 34,000 feet in length plus turning and reorienting distance. The flight pattern was plotted in advance on large scale maps utilizing prominent landmarks as visual reference points.

## ANALYSIS OF RESULTS AND CONCLUSIONS

### MAGNETOMETER SURVEY

The results of the magnetometer survey has indicated definite trends of both high and low magnetic intensities. The plus 1,000 gamma anomalies and the below zero gamma anomalies have been contoured. The significance of the high magnetic intensities is probably due to the presence of magnetic accessory minerals in the underlying granodiorite particularly to south and west of the property. The low intensity magnetics occur to the northeast on the KS 60 mineral claims, and this area along Susap Creek is the contact zone between the granodiorites to the south and volcanics to the north. The lower intensities are due in part to increased depth of overburden in the wide creek area and to the receding ground level.

The negative anomaly centering at line 76 north 40 on the EL 1 - 2 could be due to the granitic outcrops at this location - probably a syenite in composition with the magnetic accessory mineral altered or replaced by other minerals.

The magnetic intensities at the west section of the property are higher due chiefly to the topography. The barren outcrops of granodiorite forming scarps and

bluffs would give rise to the magnetic differential recorded.

ELECTROMAGNETIC SURVEY:

Recorded intensities of 5 to 10, considered the magnitude of disseminated sulphides, were contoured and plotted on the EM map.

A zone of higher than average conductivity was recorded on flight line 29 passing through KS 186, 184, 182, 41, 39 and 37. This is the centre of a belt which follows the granodiorite-syenite contact crossing Snowy Mountain just west of the peak. The zone could be of geologic significance, and the conductivity could be due to disseminated sulphides of copper, molybdenum or iron. It is doubtful at this horizon that the recorded influence is due to shears filled with electrolyte or serpentized bodies.

The EM anomalies crossed by flight line 76 are significant in strength, and are indicative of better than average conductivity in the rocks. In part, the shear zones, whose surface representations are in the form of "draws," cause the EM anomalies, while sulphides - known to exist along this line - are the cause. The anomalies, due to the narrow irregular shape may indicate

disseminated sulphides possibly related to the known occurrences at line 89 north 41. The structural patterns appear east - west above line 35 N, and these are definitely cross shears in the formation.

Line 55 from 25N to 65N reveals a prominent zone of conductivity which is considered to be of geologic significance. The zone records a moderate intensity equivalent to that of disseminated sulphides, and could be indicative of underlying mineralization that is related to the King Edward molybdenite occurrence. The zone coincides with two magnetic anomalies of low intensity (40 N and 53N) thus eliminating the possibility that the conductivity is due to magnetite accessory minerals.

Other anomalies shown on the map are considered due to other causes by features of lesser magnitude and geologic interest such as fault patterns and shears.

#### RADIOACTIVITY SURVEY

The radioactivity measured during this survey showed above normal in the southwest section of the property, and is caused by radioactive elements in the underlying rocks. The centre of the area of radioactive influence is at Line 13 N 23 and while the recorded intensity was only 2 M/hr., it is significant in that

there may exist a definite relationship between radioactivity and valuable minerals. Radioactive potassium is often associated with mineralized bodies, and certain forms of weathered sulphides react to radioactivity. The zone of greater significance follows a trend across 13N which passes through KS 20, 22, 24 & 26 mineral claims. The zone reveals a magnetic influence of over 1,000 gamma above background. There exists an area of geologic significance with the possibility of the presence of an intrusive mass (indicated by magnetic content measured) with the possible association of molybdenite and weathered products including potassium which is indicated by radioactivity.

CERTIFICATE

I, Harvey Cohen of 8438 Wiltshire Street, Vancouver 14, B.C. hereby certify that;

1. I am a graduate of the University of British Columbia B Ap Sc in Mining Engineering 1949.
2. I am a registered Professional Engineer in the Province of British Columbia since 1954 and have been practising my profession for 17 years.
3. I have no direct or indirect interest in the Snowy Mountain property nor in any securities of the company engaged in exploring this property.
4. I have no expectation of receiving or obtaining any interests in securities of Abrams Oil Management Ltd.
5. Information contained in the accompanying report is based on my personal examination of the property during the period September 28 - October 1, 1966.

(signed) HARVEY H. COHEN, P. ENG.

To accompany Report on the KS, EL, TS, JUNE, and Leamington Mineral Claims, Similkameen River Area, B.C., Osoyoos Mining Division, dated November 2, 1966.

HARVEY H. COHEN, P.ENG.

REPORT ON THE  
KS, EL, TS, JUNE AND LEAMINGTON MINERAL CLAIMS  
SIMILKAMEEN RIVER AREA, B. C.  
OSOYOOS MINING DIVISION

Abrams Oil Management Ltd.  
303 Blow Building  
Calgary, Alberta

HARVEY H. COHEN, P.ENG.

HARVEY H. COHEN ENGINEERING LTD.  
CONSULTING ENGINEERS

Telephone: BUS. 684-6711  
RES. 266-8169

1264 WEST PENDER STREET  
VANCOUVER 1, B/C.

November 2, 1966

Abrams Oil Management Ltd.  
303 Blow Building  
Calgary, Alberta

Subject: KS, EL, TS, June and Leamington  
Mineral Claims  
Similkameen River Area, B. C.  
Osoyoos Mining Division

Dear Sirs:

Pursuant to your request, the writer has carefully examined the Snowy Mountain property during the period September 29 - October 1, 1966 and submits herewith a report thereon.

Respectfully submitted,

(signed)

Harvey H. Cohen, P. Eng.



KEY MAP SHOWING LOCATION OF SNOWY MOUNTAIN AREA PROPERTY

TABLE OF CONTENTS

INTRODUCTION	1
LOCATION OF AREA	1
SIZE OF AREA AND EXPOSURES	2
HISTORY	2
SUMMARY AND CONCLUSIONS	4
RECOMMENDATIONS	6
ESTIMATES	7
GEOGRAPHY	9
RELIEF AND ELEVATION	9
CLIMATE	9
GEOLOGY	10

MAPS:

KEY MAP SHOWING LOCATION OF SNOWY MOUNTAIN AREA

CLAIMS MAP SHOWING ABRAHMS OIL MANAGEMENT PROPERTY

HARVEY H. COHEN, P.ENG.