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GEOPHYSICAL REPORT

SKYLARK GROUP

49° - 118° S.^W~~E~~.

PRUDENTIAL PETROLEUMS LTD.

82E/2E

January 25 - February 13, 1964

By: Alfred R. Allen, P.Eng.

542

542

MAGNETOMETER SURVEY

SKYLARK GROUP

GREENWOOD M.D.

B. C.

for

**PRUDENTIAL PETROLEUMS LTD.
751 Granville Street
Vancouver, B.C.**

By

Alfred R. Allen, P.Eng.

February, 1964

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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 542 MAP _____

THE SKYLARK GROUP
MAGNETOMETER SURVEY

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INTRODUCTION

A magnetometer survey was conducted by the writer over Lease 125, comprising 12 reverted Crown-grant-mineral claims, known as the Skylark Group, from January 25th to February 13th, 1964. The field party consisted of Alfred R. Allen, A.J. Daly and T. Thomas. Greenwood was used as headquarters. A Chevrolet sedan and a Dodge sedan were used for transportation between Greenwood and the property.

A Wilde mining transit, ^uBrenton compasses and a D-1-M Sharpe magnetometer were used as well as other necessary field equipment.

The object of the survey was to detect and outline variations in the magnetic field of the earth on the property. Over the years, veins carrying sulphide mineralization including magnetic iron minerals, have been mined on and near the property. Over 80% of the claim area is covered by overburden. It is considered likely, therefore, that extension of the known mineral deposits, or other undiscovered veins, may be detectable through the use of the magnetometer

LOCATION AND ACCESSIBILITY

The Skylark Group is located 1-1/2 miles east of Greenwood, B.C., about 800 feet higher in elevation. The Greenwood-Phoenix road

passes across the northern part of the claim area. The power line of the West Kootenay Light and Power Co., passes across the southern part of the property.

West longitude 118°-39' and north latitude 49°-06' pass through the property.

Greenwood is the distribution centre for the area and transportation, communication and power services are available.

PROPERTY

The Skylark Group is made up of twelve reverted Crown-grant mineral claims, now held by Prudential Petroleum Ltd., under Mineral Lease 125. The claims are as follows:

<u>Name</u>	<u>Lot Number</u>	<u>Area Acres</u>
Skylark	763	31.88
Meadow Lark	1712	51.00
Triumvirate Fr.	1777	4.13
Smilax Fr.	1064	38.50
Silver King	1097	29.90
Silver Cloud	1218	28.82
Iron Cap	1574	17.24
Hope No. 2	1849	44.81
Arcadia	3135	19.10
Last Chance	753	46.83
Denver	764	19.85
Silver Cloud Fr.	4545	4.75
		<u>336.81</u>

TOPOGRAPHY

The property is located on a rolling upland surface deeply incised by westerly flowing Twin Creek. The lowest point, in Twin Creek

valley is 3,040 feet elevation, and the highest point at the south east corner of the property is 4,130 feet above sea level. Greenwood is 2,500 feet above sea level.

Overburden covers more than 80% of the claim area.

GEOLOGY

The claims are located at the contact between Jurassic or Cretaceous granodiorite stock and Triassic or Permian, chert, andesite, latite, argillite, jasperoid. These sedimentary, volcanic and metamorphic rocks have been intruded also by stocks of diorite and gabbro and dykes of tertiary porphyritic pulaskite.

Vein and replacement deposits have been mined from the property. The Skylark vein was narrow, but the ore shoot contained high gold-silver values. Ruby silver, native silver, pyrite, galena, sphalerite and chalcopryite occur in a quartz gangue.

The Last Chance deposit contains pyrrhotite, pyrite, arsenopyrite, tetrahedrite, galena and sphalerite as replacements in highly metamorphosed limestone.

At the Motherlode and Deadwood camps to the west, and Phoenix to the east, extensive deposits of chalcopryite, pyrite, magnetite and hematite have been mined since before the turn of the century and Phoenix is still operating on a large low-grade deposit.

MAGNETOMETER SURVEY

The magnetometer survey was conducted on a grid system using 300-foot parallel lines, tied to a surveyed base line which was run southeasterly across the long axis of the claims area. Stations were established and magnetometer readings recorded at 100-foot intervals along the grid lines.

First a reconnaissance of the area was made during which roads, the power line and one corner post of the Hope No. 2 claim were located. This was followed up by cutting out a base line from the northwest to the southeast corners of the property. The line was first established by sighting and Brunton compass and slashed out as straight as possible between two established points. This line was then surveyed by chain and transit, stations established at convenient points and then staked out at 300-foot intervals. Cross lines from the 300-foot stations on the base line were run by chain and compass at right angles to same. At 100-foot intervals stakes were placed with the station number on each. Magnetometer readings were recorded at each of these stations.

A D-1-M Sharpe magnetometer was used and diurnal readings taken, morning and afternoon. Appropriate corrections were made for diurnal variation, which on several days, ranged up to 6 degrees on the maximum swing readings of the instrument.

SURVEY RESULTS

No strong magnetic variations were encountered, but two large and six small anomalies were outlined. Magnetic intensity

ranged from 1,100 to 3,050 gammas. Readings of 2,500 and higher are outlined on the map accompanying the report.

The most significant anomaly is on the Last Chance claim, near the old workings. It is over 1,200 feet long and 50 to 500 feet wide. At the northwest end, near the Last Chance shaft, there is a low of 1,390 gammas whereas at the southeast end there is a high of 3,050 gammas. Three hundred feet south of the shaft there is a second smaller anomaly, 300 feet across, with maximum strength of 3,050 gammas on the northeast and a low of 1,850 on the south end.

A second large anomaly is located along the southeast side of Twin Creek. It is 1,800 feet long, up to 800 feet wide, and the field strength ranges up to 3,050 gammas. Two small anomalies lie to the east and south of this area.

An anomaly on the Meadow Lark claim measures 700 feet in a north-south direction and has a maximum of 2,945 gammas. A low of 1,100 gammas is located near the south end. Two weak anomalies lie to the west and southwest.

SUMMARY AND CONCLUSIONS

Eight anomalous areas are outlined on the Skylark Group of mineral claims. The anomalies are not strong magnetic field variations. Considering the geology of the ore deposits of the district, this is significant and indicates pyrrhotite rather than magnetite mineralization. It points to the possible presence of mineral occurrences such as are

present on the Last Chance claim, containing pyrrhotite, pyrite, arsenopyrite, tetrahedrite, galena and sphalerite. It rules out the possibility of a Granby or Motherlode type of replacement deposit, but does not indicate that the rich silver-gold Skylark-type veins may not be present.

It is concluded that exploratory work should be directed toward investigation of possible extension of the mineralized zone on the Last Chance claim and the possibility of a similar mineral deposit along the southeast side of Twin Creek on the Arcadia, Silver Cloud, Silver Cloud Fraction and Silver King claims.

Respectfully submitted,



Alfred R. Allen, P. Eng.

REFERENCES

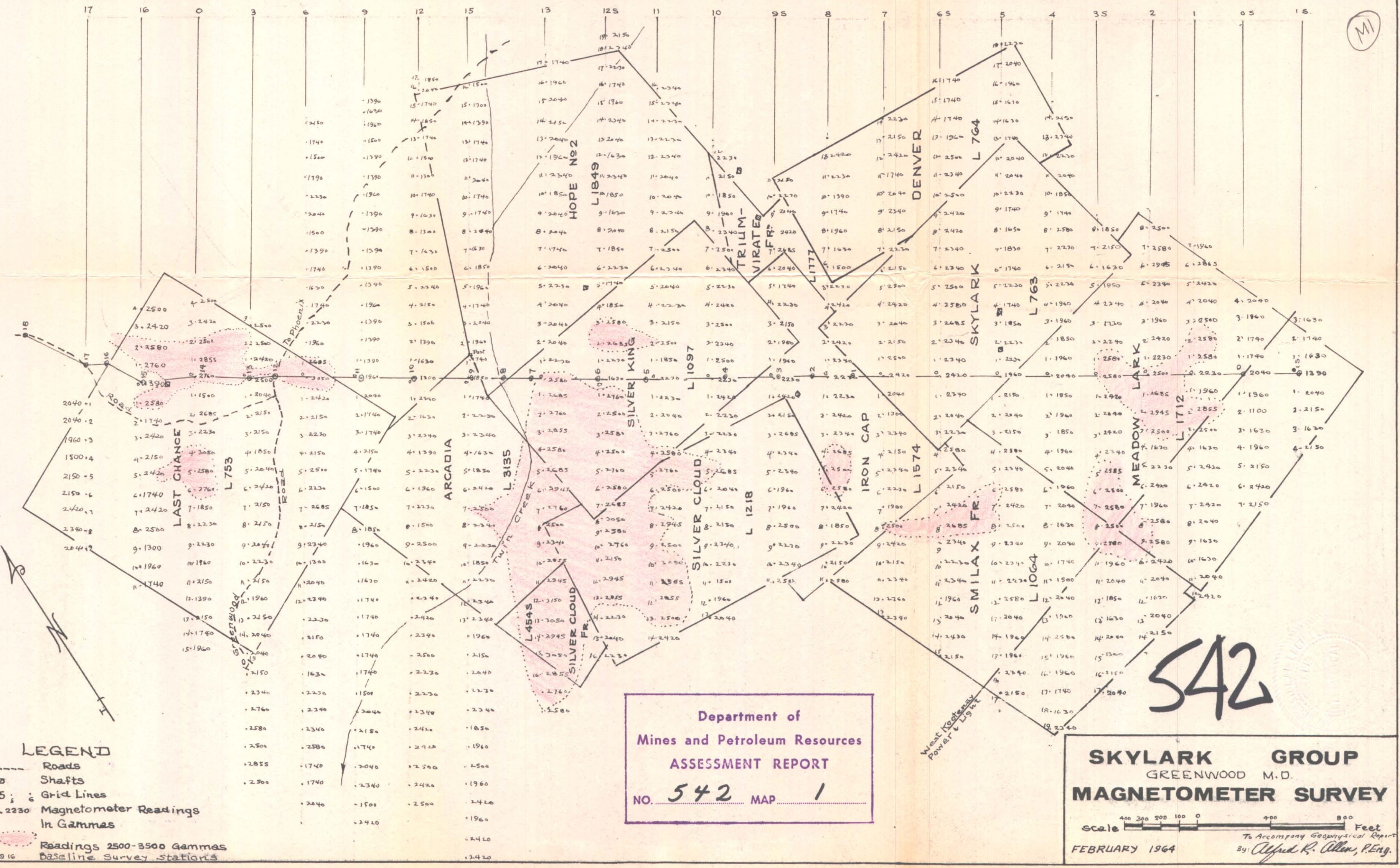
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LeRoy, G.S.C., Memoir 21, Map 16A.

LeRoy and Drysdale, G.S.C., Memoir 19, Map 30.

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LEGEND

- - - Roads
- Shafts
- 5 Grid Lines
- 2230 Magnetometer Readings In Gammas
- Readings 2500-3500 Gammas
- Baseline Survey Stations

Department of
 Mines and Petroleum Resources
ASSESSMENT REPORT
 NO. **542** MAP **1**

SKYLARK GROUP
 GREENWOOD M.D.
MAGNETOMETER SURVEY

Scale 400 300 200 100 0 400 800 Feet
 To Accompany Geophysical Report
 FEBRUARY 1964
 By: Alfred R. Allen, P.Eng.