

820

GEOPHYSICAL REPORT
on
HAL GROUP OF CLAIMS
Heffley Lake Area, B. C.
For
MADISON OILS LIMITED

By: E. Percy Sheppard, P. Eng.
Consulting Geologist

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" " " " Lines 31, 32 (" ") # 3(b)

GEOPHYSICAL REPORT

HEFFLEY LAKE PROPERTY

SUMMARY

Mr. L. C. Hunt, Calgary, Alberta, owns by record 40 contiguous full-size lode mineral claims straddling Heffley Lake, British Columbia.

The iron-copper property is 28 miles northeast of Kamloops and is located in the Kamloops Mining Division of B. C. The property is accessible by a good gravel road which passes through the center of the claims group.

The property contains magnetite and copper showings which have the characteristics of contact metamorphic deposits. Bedrock cuts in the area of the claims have exposed mineral showings in the form of disseminated magnetite and copper up to eight feet in width.

The magnetic anomaly outlined by the present ground magnetic survey is approximately 12,000 feet in length in a north-westerly direction and reaches a maximum width of 4000 feet. It shows strong maximums and minimums, and in other areas these have been found to indicate contact metamorphic type ore deposits.

RECOMMENDATIONS

It is recommended that the area be further explored by more detailed ground magnetic traverses, geological mapping and sampling. The detail work should cover the outlined anomaly described in this report.

GEOPHYSICAL REPORT

Heffley Lake Area, B. C.

INTRODUCTION

The following report contains the results of a study made of the ground magnetometer survey conducted over the Hal Group of claims from July 1st to August 8th, 1966.

PROPERTY

A total of 40 unsurveyed lode mineral claims in the Heffley Lake area of British Columbia, wholly owned by L. C. Hunt, 517 Lancaster Building, Calgary, Alberta. The claims are designated as Hal No. 1 to Hal 36 inclusive, and Hal 77, Hal 79, Hal 81 and Hal 83. They were recorded in the Kamloops Mining Recorder's office on September 18, 1964 and September 28, 1965. The claims are in good standing.

The claims are contiguous and were 1500 feet to the right and left of the location line between posts 1 and 2. The bearing of the location line is N 57°W. The block is nearly rectangular, being six claims deep in a northerly direction.

LOCATION

The Hal group of claims is located on Heffley Lake some 28 miles northeast of Kamloops, B.C.

Access to the property is by paved secondary Highway 5 north from Kamloops to Heffley Creek, approximately 14 miles. The Todd Mountain gravelled road, which intersects Highway 5 at Heffley Creek, runs through the center of the claims. The distance from the intersection to the claims is approximately 14 miles in an easterly direction. A summer resort located near the east end of Heffley Lake provides accomodation. Heffley Lake has an elevation of 3000 feet and the northern part of the claims lies at approximately 5000 feet above sea level.

HISTORY

The Hal group of claims was staked in September 1964 and September 1965. The initial claims were staked after a reconnaissance magnetometer survey extending out from old pits indicated the presence of several strong magnetic anomalies. Geological mapping and sampling of surface pits was carried out during September, October and November of 1964 by W. H. Myers, Geophysical-Geological Consultant, of Calgary.

A total of 835 feet of diamond drilling in four holes is

completed on the property. Two other holes were started but failed to penetrate the overburden and were abandoned.

No production is reported from this property.

GEOLOGY

The Hal group of claims described herein is underlain by a series of metamorphic rocks of the Cache Creek Group. These Paleozoic rocks are composed of both Carboniferous and Permian age formations, as divided by W. B. Cockfield in his Canada Department of Mines & Resources Memoir 249. The rocks of the Cache Creek Group in the immediate vicinity of the claims group consist of hard, dark grey to black argillites with massive limestones and altered limestones. The massive limestones are cut with numerous dykes of greenish-grey hornblend porphyry. To the south the area is covered with glacial drift. In many areas typical contact metamorphic zones were observed. Southeast of the claims across the lake is a large area of greenstones of the Cache Creek Group. They are fine to medium grained, altered and sheared rocks. Approximately four miles southwest of the claims area intrusive rocks consisting of granite and granodiorite outcrop on Mount Fleet and Mount Lolo. The showings exposed on the north side of Heffley Lake and covered by the claims group have the characteristics of contact metamorphic deposits, although no body of plutonic rock is known to occur in the vicinity. The area to the south is, however, covered by drift. The deposits consist of disseminated or massive magnetite with garnet and epidote in a fine grained dense rock that is undoubtedly altered limestone.

A large body of crystalline limestone outcropping on a steep hill above the showings is cut by numerous dykes of greenish grey hornblend porphyry. Many rusty altered zones occur in the limestone and cuts made near the base of the hill on several of these were found to contain magnetite accompanied by pyrite and pyrrhotite. Up to 8-foot widths of disseminated magnetite have been reported from these old cuts.

The alteration of limestone to skarn is commonly accepted as forming the typical example of contact-metamorphic ore deposits. In this case the showings of magnetite appear to be situated at some distance from the intrusive rock responsible for the metamorphism. The showings occur at or near contact of limestones with greenstones, which is itself metamorphosed and carries some of the ore minerals. It is felt that the orebearing solutions emanated from an intrusive body that is not exposed at surface, either because it lies in the drift covered area or has not been uncovered by erosion. Thus the intrusion responsible for the mineralization must lie below the deposit and the factor limiting the size of orebodies might be the size of limestone mass rather than the position of the granitic rocks.

THE MAGNETIC SURVEY

A magnetometer survey was carried out by †John F. Schaeffe, Geologist, from July 1st to August 8th, 1966 on the following claims of the Hal Group: Hal 1 to Hal 36 inclusive and Hal 77, Hal 79, Hal 81, Hal 83. This magnetometer survey was undertaken at the writer's recommendation. It is certified that the work was done in the proper manner and within the limits of accuracy demanded of this type of survey.

A Sharpe MF-1, Model 321 Fluxgate Magnetometer was used. Zero was set at Station 61 located at the Knoeff Creek Road cutoff. Details of corrections are shown in Note 6 on the accompanying magnetic map. Horizontal control was obtained by a transit and stadia survey carried along Heffley Lake Road and marked on pickets placed off the road. Side lines were run by Brunton and tape, marked by pink flagging, and distance blazed on nearest tree. Magnetometer readings were taken at 200 foot separations. Traverse lines were spaced at 4000 ft. separations East-West, with an East-West traverse carried along Heffley Road and another down the approximate center of Heffley Lake.

The survey outlined a magnetic anomaly which is described as follows:

Beginning in Hal claim 36, the anomaly covers Hal 29, 30, 14, 31, 15, 10, 32, 16, 11, 33, 34, 72, 6, 81, 79, 77. The anomaly is approximately 12,000 feet in length northwesterly and 4000 feet wide in a northeasterly direction. The anomaly reaches a maximum of 2500 gamma on L 26 in claims 30 and 14, and rises to a peak of better than 4000 gamma on L 31, claims 33, 34, 72 and 6.

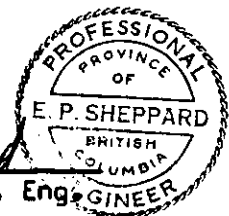
The magnetic profiles made from the traverses indicate the magnetic anomaly is caused by a geologic feature having a steep dip to the southwest, trending in a northwesterly direction. The disturbing body is indicated to be fairly homogenous and deepseated. The road and lake traverses bear out the continuity of the disturbing body.

It is recommended that further magnetic traverses at closer intervals be run across the anomalous area to further outline the magnetic highs before diamond drilling is resumed.

Vancouver, B.C.
September 27, 1966

E. Percy Sheppard

E. Percy Sheppard, P. Eng.
Consulting Geologist



† See Appendix

CERTIFICATE

I, E. Percy Sheppard, do hereby certify that I am an independent Consulting Geologist with offices at 402 West Pender Street, Vancouver 3, British Columbia.

I am a member of the Association of Professional Engineers of British Columbia, the Geological Association of Canada, the Society of Exploration Geophysicists, and the A. I. M. E.

I have been active in mining geology and geophysics for the past thirty years.

I am a graduate of Dalhousie University, Halifax, Nova Scotia, with a B.Sc. in Geology.

The information for the accompanying report was obtained from a study of the ground magnetometer survey conducted by Mr. John F. Schaefle during July and August 1966.

I further certify that I have no interest in the property described herein and do not anticipate any interest as a result of writing this report.

E. Percy Sheppard

E. Percy Sheppard, P. Eng.



Vancouver, B.C.
September 27, 1966

APPENDIX

+ Resume for John Forrest Schaeffle, Geologist

I have been employed by McKinney Gold Mines Ltd and Northwood Mining Ltd, both at 506-540 Burrard Street, Vancouver 1, B.C., since September 1964.

I am a graduate of Wayne State University, Detroit, Michigan, with a B.Sc. in Geology, 1957. Post Graduate course work at Wayne State during 1957-59, included a year of geophysical theory. During the University of British Columbia 1960-61 session I took a "refresher" programme of mainly fourth year geology courses.

I have recently started procedure towards certification by the Association of Professional Engineers of British Columbia. Past employing companies are: Redstone Mines Ltd, Granby Mining Ltd and Mayo Silver Mines Ltd.

Work assignments since 1961 include: geophysical prospecting; diamond drill hole layouts; logging and interpretation; bulldozer trenching and road building; regional geological mapping; surface and underground detailed geological mapping and surveying; and geochemical sampling and analysis.

Signed:

John F. Schaeffle
John F. Schaeffle
John F. Schaeffle, Geologist

September 27, 1966

E. PERCY SHEPPARD
CONSULTING GEOLOGIST

402 WEST PENDER STREET, SUITE 817
VANCOUVER, B.C.

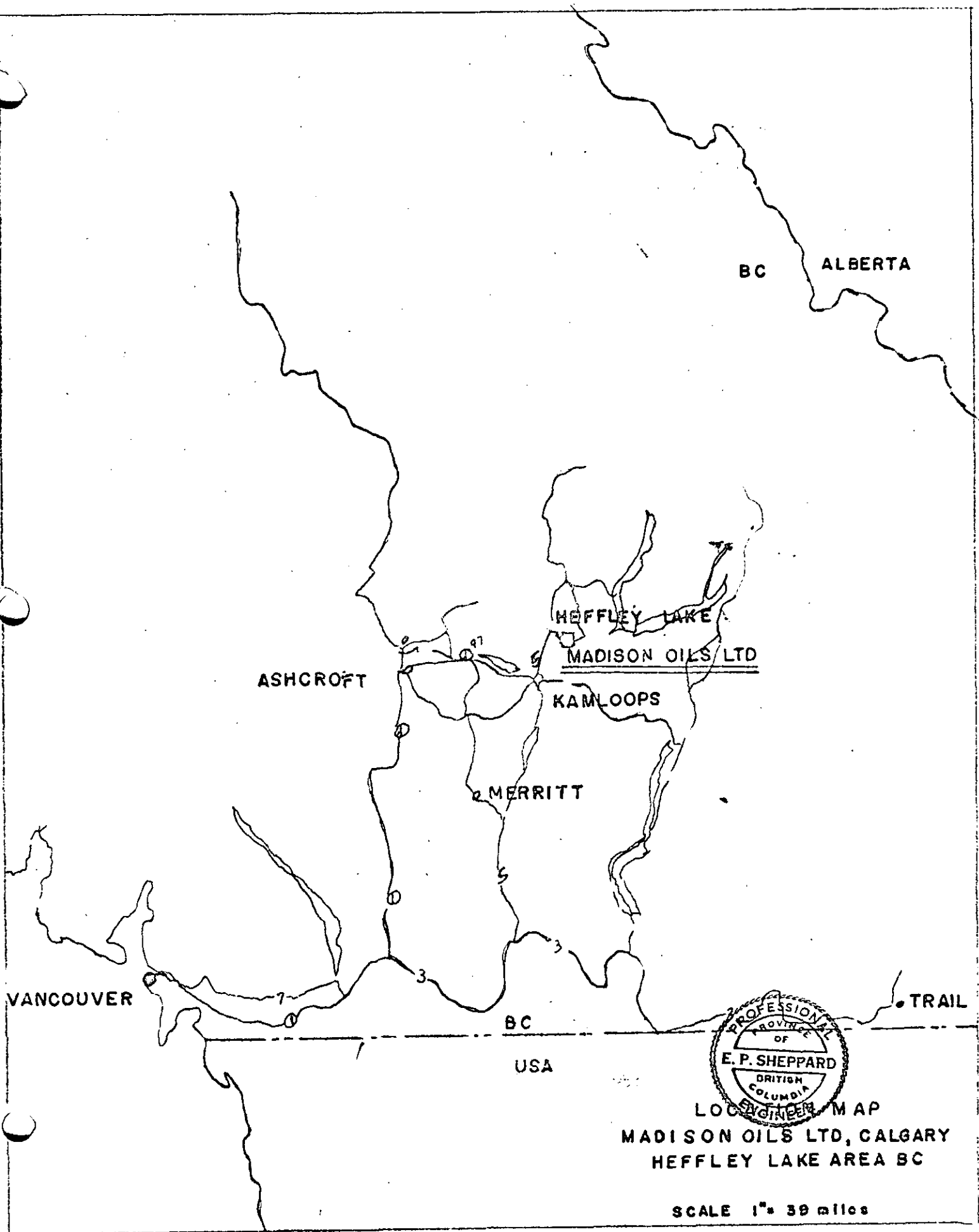
September 27, 1966

STATEMENT

In Account With:
Northwood Mining Ltd
506-540 Burrard Street
Vancouver 1, B.C.

September 26 & 27

Professional Services:		
Supervision & Interpretation	\$150.00
Maps & Report Printing	38.40
Stenographic Services	<u>18.00</u>
Total	\$206.40



BC ALBERTA

HEFFLEY LAKE
MADISON OILS LTD

ASHCROFT

KAMLOOPS

MERRITT

VANCOUVER

TRAIL

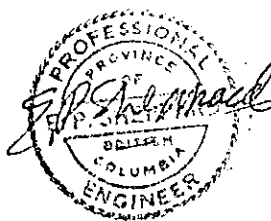
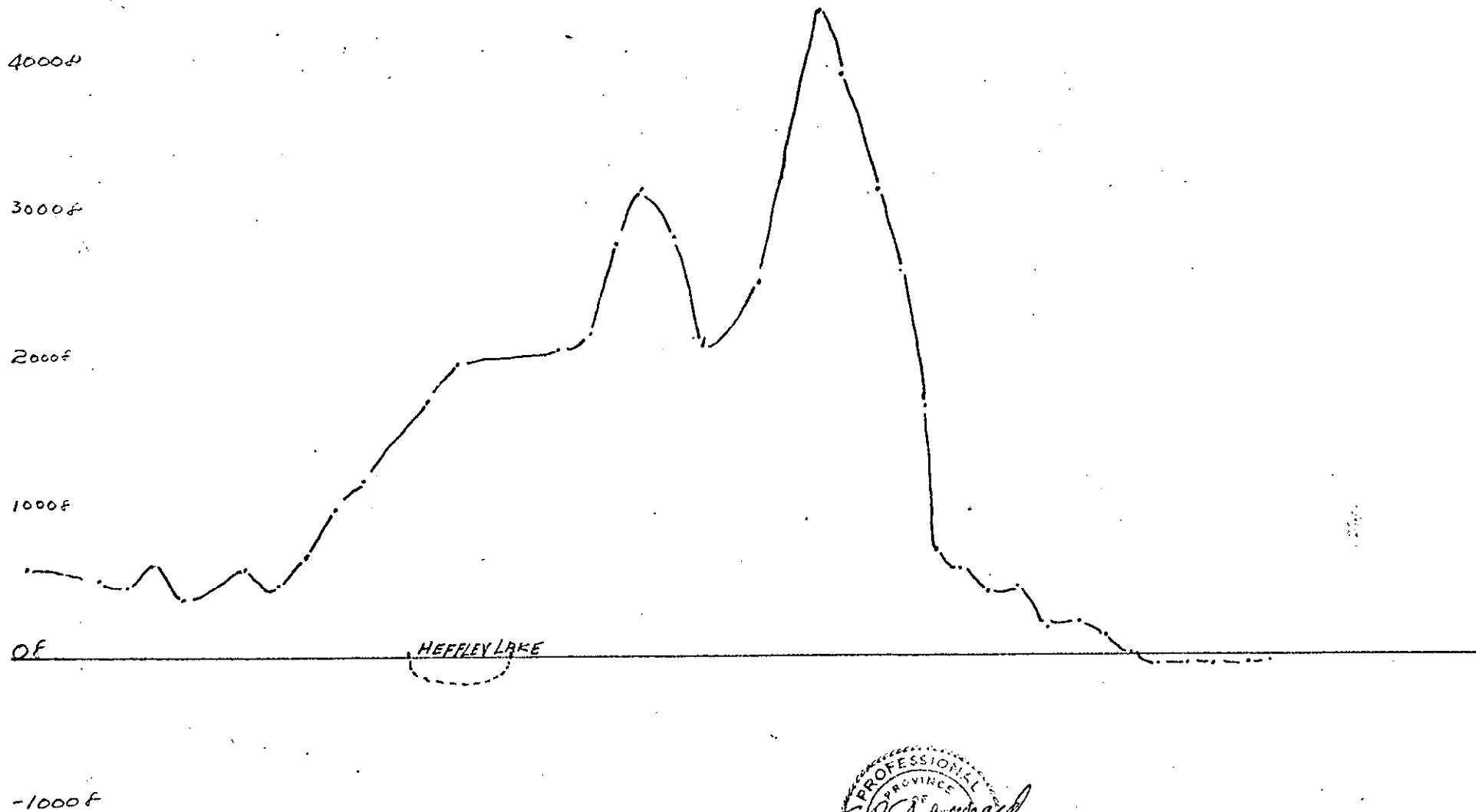
BC

USA



LOCATION MAP
MADISON OILS LTD, CALGARY
HEFFLEY LAKE AREA BC

SCALE 1" = 39 miles



HAL GROUP
 MAGNETIC PROFILE
 LINE 31, 32.
 Scale 1" = 1000'
 FACING EAST.

Sept 1966

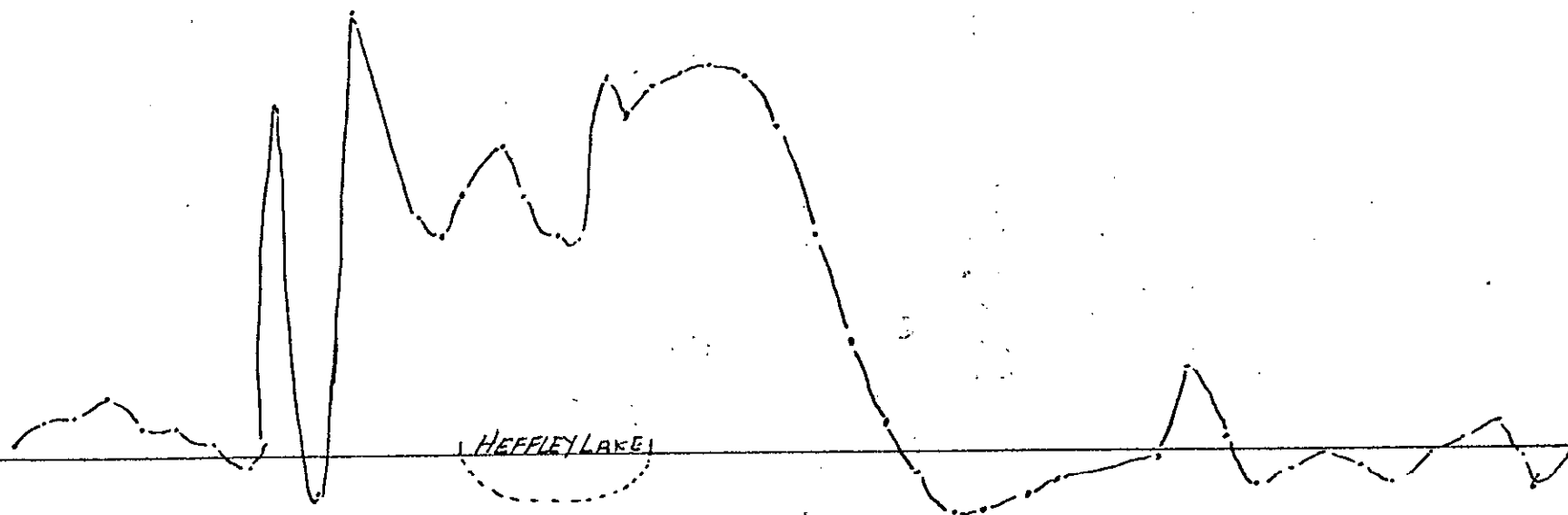
3000f

2000f

1000f

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-1000



HEFFLEY LAKE



HAL GROUP
MAGNETIC PROFILE
LINE 26.

Scale 1" = 1000'

FACING EAST.

Sept 1966

HEFFLEY LAKE AREA, B.C. 1"=1000' GENERAL PLAN

NORTHWOOD MINING, LTD.

To accompany Geophysical Report by E.P. Sheppard, P. Eng., on Hal Group of Claims, Heffley Lake, B. C., Kamloops M.D., dated Sept. 27/66

DRWN. BY J.F. SCHAEFLE JULY 18, 1966
REVISIONS John F. Schaeffle

- (1) TO INCLUDE FURTHER DATA AND BASELINE PLAN OF JULY 15/66 (AUG. 10/66 S.)
- (2)

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
No. 820 MAP #2

① CLAIMS MARKED "J38" ARE JED CLAIMS OF J.E. WOOD. THOSE MARKED "H38" ARE HAL CLAIMS OF MADISON OILS, LTD. "B" BEARS LOCATED CLAIM POST. "—" IS SCHEMATIC CLAIM LINE FROM MINING RECORDER MAP 921-16E. "-----" IS LOCATED LINE SEGMENT.

② BASELINE WAS DONE ALONG THE PARTIALLY PAVED ROAD WITH TRANSIT AND STADIA ROD. MARKED PICKETS PLACED. 2'S AND HORIZ. DISTANCES MARKED: $\frac{1}{2}$ --- $\frac{1}{2}$ --- $\frac{1}{2}$ --- $\frac{1}{2}$

③ ALIGNMENT OF BASELINE SURVEY WITH CLAIMS MADE BY (A) MATCHING LINE FROM AG1-480 WITH GOVT MAPS:

SSC 4116:15,000 @ N69°20'W
GSC 912:16E @ N10°24'W
ROAD SURVEY 16,200 @ 471'W RELATIVE TO MEAN MN.
AND CHECKING Δ40-Δ9 DISTANCE SAME AZIMUTH:

4116:15,900
912:16E @ 471'W
3 471'W @ 161'W

(B) TRUE NORTH WAS PLOTTED RELATIVE TO N69°20'W Δ61 TO Δ40. STADIA DISTANCE RETAINED.

(C) USING Δ41-Δ27-B (OR Δ1) AS A ROTATIONAL POINT, THE CLAIMS AS GIVEN SCHEMATICALLY ON 1/16 G. REC. MAP 921-16E AND E.P. SHEPPARD'S STAKING ALIGNMENT OF 157'W WERE PLOTTED OVER THE ROAD BASELINE.

(D) WHEN SUFFICIENT POSTS ARE LOCATED IN THE FIELD, THE CLAIMS WILL BE RE-PLOTTED.

④ MAGNETIC DEVIATION FROM MAP 921-16E IS 23°28'E - (35'±) - 23°26'E - 31'± 23'E

⑤ SIDELINES WERE PAID BY COMPASS SINCE VARIATIONS OF ONLY SEVERAL DEGREES OF MAGNETIC NORTH WERE FOUND ON THE BASELINE. IT WAS THEN POSSIBLE TO VOID BOTH PACKING AND STADIA LAYS BY USING 120'S ALONG A PICKET LINE. MOST OF THEM WERE RUN N032°E BY S032°W. "TANKS" WERE RE-MOVED WHILE MEASURING WITH REINFORCED CATH. TAPE. BACKS WERE ON SLOPES. PINK FLAGGING AT AVERAGE 7'S CENTRES. GEOPHYSICAL STATIONS @ 200' CENTRES UNLESS OTHERWISE INDICATED. USED BLUE GREEN OR YELLOW FLAGGING AT MAG. STAS. AND MARKED STADIA ROD WITH FEET ON ROAD NEAREST 1000'. IF WITHIN TEN FEET OF POINT, PICKETS USED AS REQUIRED. A ROUGH LATITUDE SYSTEM WAS INTRODUCED AND IS RELATIVE TO THE 36-V CLAIMS. Δ. BACKS IN THE PATTERN ARE DUE TO TAPING FROM THE FAR BACKS OF PAPER STRIPS.

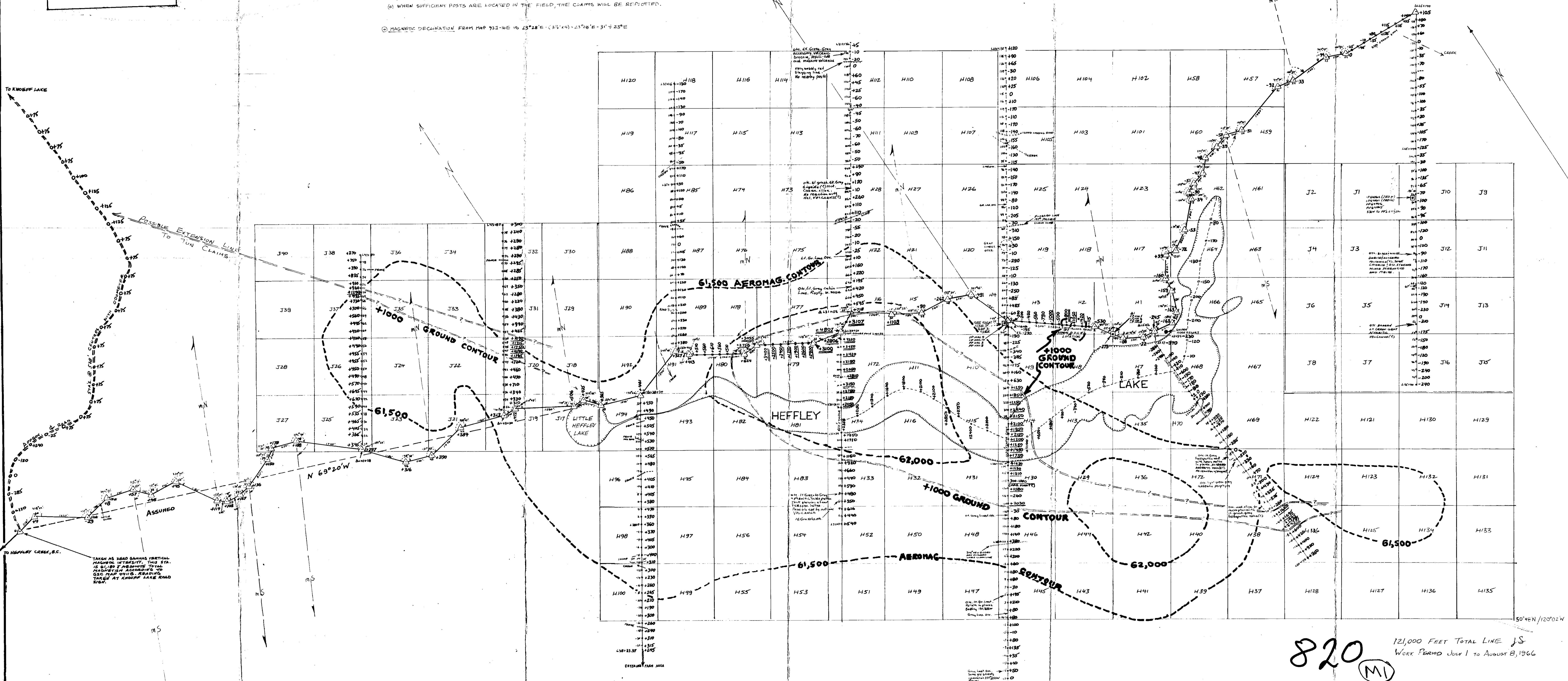
PASS STATIONS ARE NOT NUMBERED. STATIONS ON THE LAKE WERE ESTIMATED EACH TEN HUNDRED STROKES.

⑥ MAGNETOMETER READINGS WERE TAKEN WITH A STANDARD NEI FLYING INSTRUMENT MODEL 301. READINGS ARE VERTICAL COMPONENT SEPARATELY AT 100' INTERVALS. MEASUREMENTS TAKEN AT 100' INTERVALS. INSTRUMENT CHECKED AND ADJUSTED AT 100' INTERVALS. RECORDS OF 100' INTERVALS BOLD FACE. ORIGINAL LOCATIONS MADE WITHIN THREE HOURS OF READING AT PREVIOUS STATION. NORMAL CHANGE ABOUT 30 GAMMAS. DATA CHANGE IN 100' INTERVALS. 1000-2999 GAMMA READINGS ARE UNDERLINED ONCE. 3000 (1) --- IS THE 1100 GAMMA GROUND CONTOUR

⑦ AEROMAGNETIC ISOMAGNETIC LINES, INDICATED BY HEAVY DASH LINES, ARE TOTAL ABSOLUTE FIELD. 61,500 AND 62,000 WERE TRANSFERRED FROM GEOPHYSICAL MAPS AFTER MOST OF THE GROUND DATA WAS COMPILED INDEPENDENTLY. THE GOVT FLEM 1000 FEET ABOVE GROUND LEVEL.

⑧ TERRAIN IS MODERATELY STEEP AROUND THE LAKE BY B.C. STANDARDS. BUSH IS FAIRLY OPEN TO DENSE.

⑨ SERIES CONSISTS OF OUTCROP NOTES ALONG TRAVERSERS. NO SYSTEMATIC WORK DONE. THE G.S.C. HAS PERFORMED SIGNAL MAPPING HERE. OUTCROPS ARE VOLCANIC AND LIMESTONES. NO INTRUSIVE ROCKS OR STRAIB VERY SEEN. PREVIOUS REPORTS DESCRIBE DRILLING RESULTS ON THE HAL GROUP.



820 (MI) 121,000 FEET TOTAL LINE JS
WORK PERIOD JULY 1 TO AUGUST 8, 1966