

569

REPORT OF GEOPHYSICAL SURVEY

LYN #1, RAY Y FRACTION and ^{G.W.N.} ~~RAY-19~~ CLAIM GROUPS

(22338-22348) (21133; 18921-24,27,29,30; 19904
06,08-11; 19188; 19196,98,99) (18925, 18926,
18928; 18999-19002, 19004,006,009-017; 19193-
19194)

SKEENA MINING DIVISION

By G.W.N. Norman, P. Eng.

August September, 1964.

104B/9E+9W

C O N T E N T S

INTRODUCTION 1
LOCATION 1
TYPE OF SURVEY AND EQUIPMENT 2
WORK PERFORMED 3
RESULTS 5

MAGNETIC CONTOUR MAP 1000 feet to 1 inch In Folder

<p style="text-align: center;">Department of Mines and Petroleum Resources ASSESSMENT REPORT</p> <p>NO. 569 MAP</p>

REPORT OF GEOPHYSICAL SURVEY

LYN #1, RAY Y FRACTION and RAY #19 CLAIM GROUPS

SKEENA MINING DIVISION

By G.W.H. Norman, P. Eng.,

August 21st to September 10th, 1964

INTRODUCTION

This report presents the results of an Airborne Magnetic Survey of the Lyn 1, Ray Y Fraction and Ray 19 claim groups. A fixed wing aircraft was not used because of the rough topography. Instead the survey was carried out with Bell G2 helicopter equipped with a varian type airborne magnetometer with a self-recording device giving a continuous record of the magnetic measurements.

LOCATION

The claim groups covered by this airborne survey lie near the Mitchell and Sulphurets glacier which form the headwater sources of Sulphurets creek. The Lyn group lie north of the toe of Mitchell glacier and the two Ray groups are north of the lower part of Sulphurets glacier. (see map in Folder). The area of the claims lies 10 miles east of the junction of Sulphurets and Unuk River and 45 miles north north west of the Town of Stewart at the head of Portland Canal.

TYPE OF SURVEY AND EQUIPMENT

The problem of carrying out airborne work in an area with large and locally sharp relief can be resolved to some extent by contour flying a series of lines with a helicopter.

The lines on the Lyn and Ray groups in Sulphurets creek area were flown at 500 foot contour intervals starting at the 6000 elevation contour. The lines averaged 1000 feet apart and were flown with the machine 300 feet above the ground.

The Varian magnetometer used on the survey employs the effect of the earth's magnetic field on the orientation of atomic nuclei. Kerosene provides an ample source of atomic nuclei in their simplest form in the hydrogen atom. The kerosene is placed in a cylindrical container and towed 50 feet below the aircraft. The container is surrounded by a coil through which a current is forced to flow at one second intervals. When the current in the coil is cut off the hydrogen protons are oriented in space by the controlling forces of the earth's magnetic field. When the current flows through the coil a strong local magnetic field is set up to act on the hydrogen nuclei. This local field is sufficient to completely counteract the earth's magnetic field. The effect on the protons when the current is cut off and they reconform to the earth's magnetic field provides a means, with appropriate electronic instrumentation of measuring the strength of the earth's magnetic field.

The instrument used in 1964 is coupled with a continuous recording device provided with a metric chart 12 centimeters wide

travelling either one or four feet per second as required. Readings are taken by the instrument at intervals one second apart when the current in the coil is cut off. In an aircraft travelling at the average speed 45 miles per hour used on the survey successive readings are 66 feet apart.

The scale of the metric chart used was 100 gammas per centimeter which allows for changes for 1000 gammas across the width of the chart. When the differences in reading exceed 1000 gammas the recorder automatically steps up or down to change the datum or centre line of the chart by 500 gammas.

The instrument measures the total intensity of the earth's field in gammas. The average total field is approximately 57,000 gammas.

WORK PERFORMED

The airborne survey was carried out with the magnetometer mounted in a Bell G2 Helicopter operated under charter from Klondike Helicopters Ltd., Whitehorse, Yukon. The machine used, No. C F L I M, was flown by pilot, John King, who was responsible for keeping the aircraft at a constant elevation during each flight line. The magnetometer was operated by Gordon Gutrath B.Sc. U.B.C. 1960 who has four years experience with airborne magnetic surveys and airborne magnetometers.

Installation of the magnetometer in the Helicopter was supervised by George McLaughlin, formerly with McPhar Geophysics Ltd. of Ontario and now on the geophysical staff of Newmont Exploration Ltd. at Danbury, Connecticut. The installation and a

series of tests of performance were made by McLaughlin at Telegraph Creek, B.C. in June 1964.

Four lines averaging 20 miles in length were flown on August 21 by Gordon Gutrath at elevations of 6000, 5500, 5000 and 4500 feet above sea level. On August 22 lines were flown at 3000 and 3500 feet contour elevations parallel to the other lines. A short line was flown along the ridge between Sulphurets and Mitchell Glacier at 6700 feet and another at the 2000 foot contour on the north side of Sulphurets creek and glacier.

A contour map of the claim area was made by Hunting Survey Corporation Ltd. at a scale of 1000 feet to the inch and contours at 100 foot intervals. The flight lines were located on this map by means of fiducial marks on the charts at identifiable stream crossings and other recognizable topographic features visible on the contoured map. The claims had been previously located by ground surveys and plotted on the contour map. The flight lines were tied to the claim surveys by means of the 1000 scale contour map.

After completion of the flights the magnetic charts were edited by Gordon Gutrath on August 23, 24.

G. W. H. Norman supervised the operation in the field during the period August 21 to 23 and prepared the magnetic map and accompanying report September 1-3, 7 and 8. The map was draughted by George Templeton, draughtsman for Granduc September 4 and 5.

RESULTS

The results of the airborne magnetometer survey are shown on the accompanying map in the folder of this report.

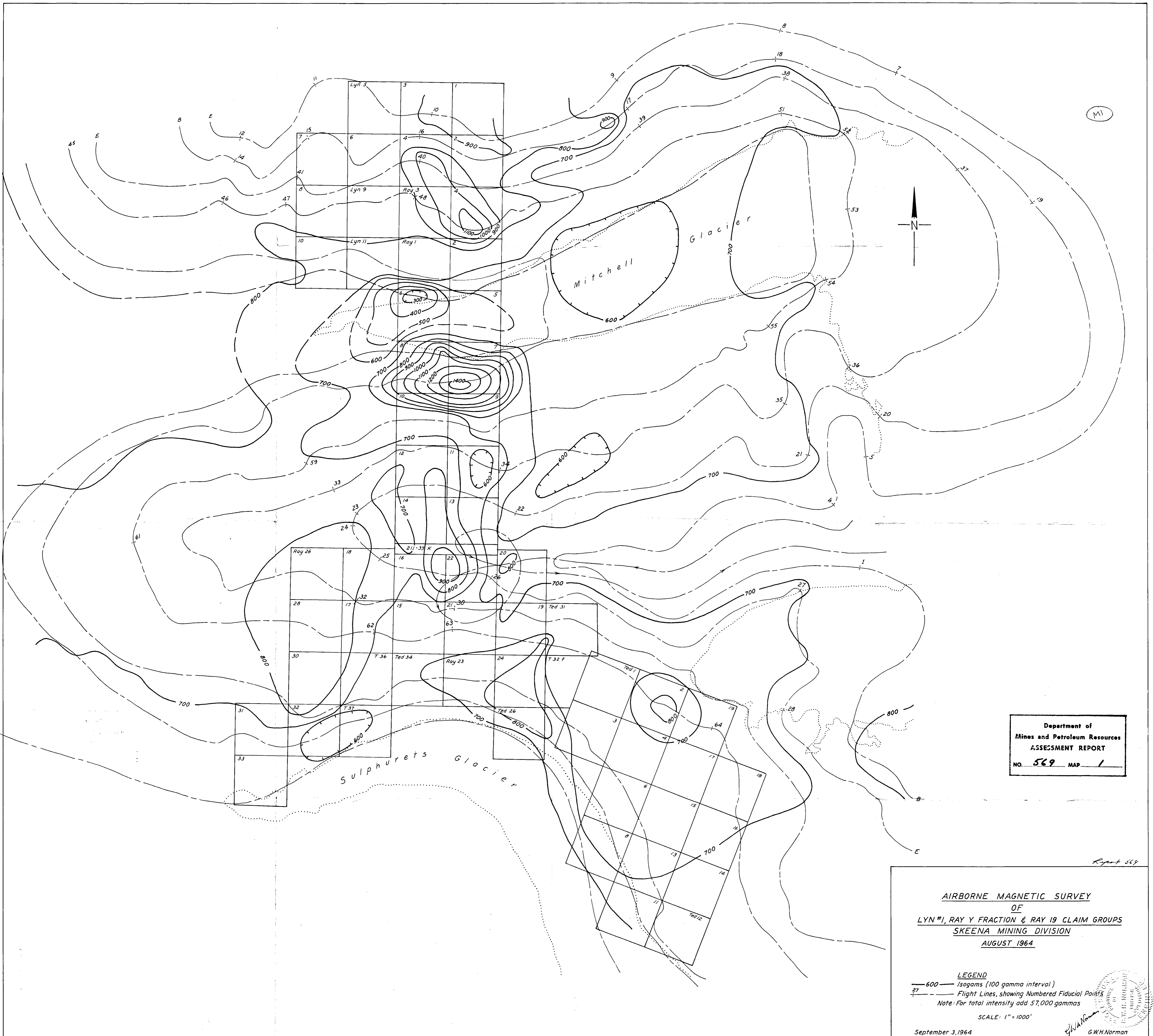
The general background in this area is approximately 57650 gammas.

Anomalous magnetic readings 750 gammas above background occur on the claims and are due to concentrations of magnetite as small stringers or as weak disseminations. These concentrations occur in monzonite rocks that in places are heavily stained by limonite due to the oxidation of pyrite. The area was staked in the thirties because copper stains were known to be present locally but these have not indicated ore of commercial grade.


.....
G. W. H. Norman, P. Eng.

September 8, 1964.

(M)



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 569 MAP 1

Report 569

AIRBORNE MAGNETIC SURVEY
OF
LYN #1, RAY Y FRACTION & RAY 19 CLAIM GROUPS
SKEENA MINING DIVISION
AUGUST 1964

LEGEND
600 — Isogams (100 gamma interval)
— Flight Lines, showing Numbered Fiducial Points
Note: For total intensity add 57,000 gammas

SCALE: 1" = 1000'

September 3, 1964

G.W.H. Norman
G.W.H. Norman