

Geophysical Surveys

The geophysical surveys on the Platinum Blonde project were carried out during the latter part of May, June and the first two weeks of July, 1987. A total of 182.25 kilometers of line, in addition to baselines, were flagged at 20 m intervals with the lines being 100 m apart. The VLF-EM survey was conducted using the transmitting station at Jim Creek, Washington (near Seattle). Readings were taken facing 330° Az along the lines at 20 m intervals as the direction to the station was 240° Az.

Magnetometer readings were taken at 10 m stations and corrections for drift and diurnal changes were made by use of a base station recording magnetometer.

Equipment Used

The magnetometer survey was conducted using two Geometrics G-856 A portable proton magnetometers (memory-mag). One was used in the field mode (Ser. No. 27503) while the other was used in a base station mode (Ser. No. 27502). The internal clocks were synchronized before commencement of the survey and subsequent daily readings were dumped out to floppy disk in a Kaypro I portable computer. The data from the two magnetometers were merged and corrected for diurnal drift from an established base station value. The corrected results were plotted as field profiles and also stored on disk for eventual transfer to a Univac 1108 mainframe for final plotting.

The VLF-EM survey employed a Geonics EM-16 (ser. No. 25) which used the Jim Creek, NLK (24.8 kHz) station near Seattle as the transmitter. VLF readings were also entered onto floppy disk in a Kaypro I computer and field profiles of In-phase, Quadrature and Fraser Filter were plotted. The stored data was transferred to the Univac system for final plotting.

Survey Results

The magnetometer survey results were plotted as plan maps of contoured data and stacked profiles at a scale of 1:5000 (see plates in the folder at back of report).

The VLF-EM survey results were plotted as plan maps of stacked profiles of the In-phase, Quadrature and Filter data as

well as contoured Fraser Filter data at scales of 1:5000. The Fraser Filter data was calculated as per the method put forth by D.C. Fraser (1969, Contouring of VLF-EM data, Geophysics v.34 p 958-967). See plates in the folder at the back of report.

Discussion of Results

VLF Survey

A study of the strike directions of the VLF conductor axes reveals that two prominent directions were detected by the VLF-EM survey. These azimuths are 062° and 088° with the following breakdown as listed:

	<u>No. of Cond.</u>
1) 062° Az - 054° Az	21
- 068° Az	28
2) 088° Az - 080° Az	33
- 090° Az	15
- 100° Az	21

Two minor strike directions of 027° Az (3) and 119° Az (4) were also detected.

Several of the conductor axes corresponded with mapped faults or geological contacts. Confirmation of some of the north-south faults can be shown by the termination of the east-west VLF conductors.

Interpreted conductor axes can be seen on Plates ____ and ____ included at the back of this report.

East Sheet Magnetism

Rock unit Ts (trachitic syenite) is characterized by a relatively quiet magnetic response on the east side of this sheet, while on the west side it has a response similar to unit T (trachyte flows). Rock unit MD (medium monzodiorite) is quite active magnetically.

The above distinction between units Ts and MD suggests that the fault shown on Gloucester Creek is actually further west of the creek at the south end of the property.

Units Kf, Ka (fanglomerate, arkose) and Fs/Fv (volc. and arkosic sandstone/aphanitic volc. flows & breccias) have a quite flat magnetic response and this distinction makes it easy to trace the geologic boundaries between them and the other units bordering them. In particular, the contact between them and unit T is readily outlined.

West Sheet Magnetics

Unit cTs (coarse trachitic syenite) is magnetically quiet on this sheet. Rock unit Ts on the other hand is characterized by noisy magnetics similar to units Px (pyroxenite) and MD except for the area crossing the 6300N Baseline at Line 40E where it has the same quiet response as unit cTs to the south-east.

The contact between unit Kf and Unit T is well defined as can be seen on the East sheet.

Rock unit D (hypidiomorphic diorite) appears to be somewhat magnetic on both of the fingerlike projections which intrude until Fs south of the 5000N baseline and west of line 43E.

Minor dyke like responses are located on this sheet and can be traced for 100 to 300 meters.

Two clear overlays of the geophysical interpretations have been prepared to accompany this report.