

SELF POTENTIAL GEOPHYSICAL SURVEY REPORT

ON THE

HEN CLAIM GROUP

**OMINECA MINING DIVISION** 

93F15

(Latitude 53°56', Longitude 124°49')

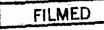
OWNER AND OPERATOR

G. W. Kurz GEOLOGICAL SURVEY BRANCH Fraser Lake, BC ASSESSMENT REPORT

24,798

Submitted: November, 1996

Author: G. D. Bysouth



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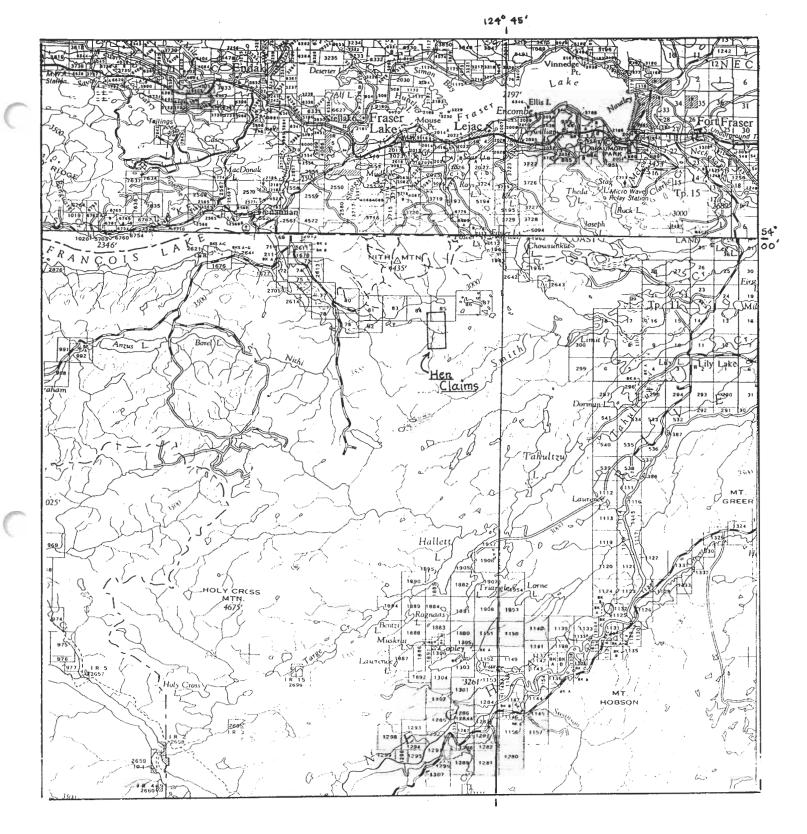
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### 1.0 INTRODUCTION

The Hen Mineral Claim Group is a copper-molybdenum prospect located in the Nithi Valley area about 14.5 km (9 miles) south of Fraser Lake, BC. Access to the property is provided by all weather logging roads from either Fraser Lake townsite or Highway 16 near Lejac.

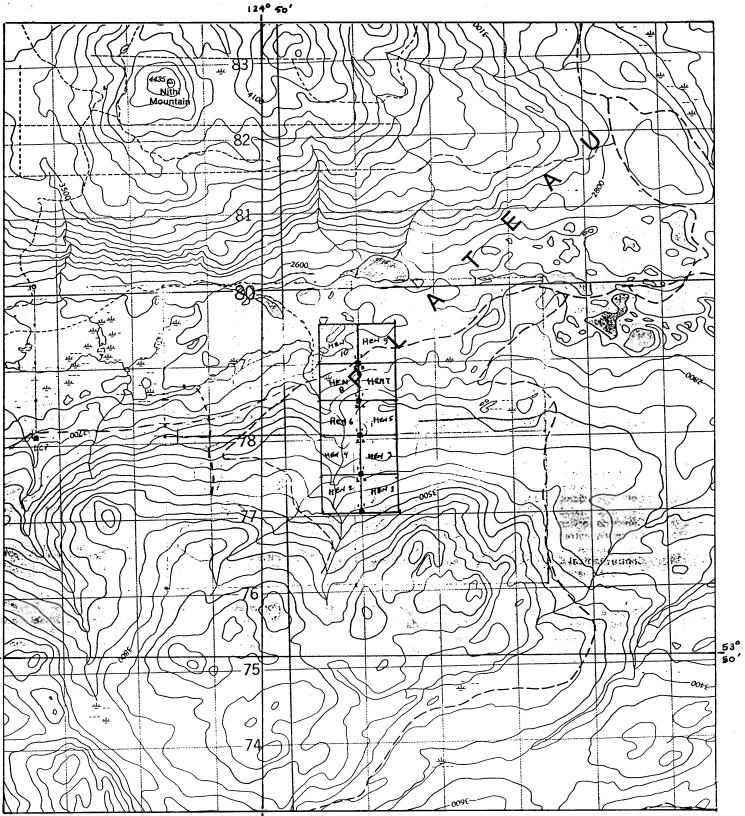
The Hen claims cover part of an older property known as the Gel claims which was held by Amax Exploration Inc. in the late 1960s. An I.P. survey carried out in 1967 by McPhar Geophysics for Amax outlined a large low grade I.P. anomaly within the property. This anomaly and associated geochemical soil anomalies are the chief focus of exploration activity on the present Hen claims.

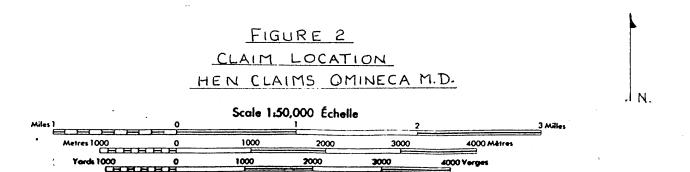
The objective of the 1996 Self Potential Survey was to test parts of the McPhar I.P. anomaly for near surface sulfide mineralization in order to locate shallow trenching targets. A total of 2500 line-meters of survey was completed during the period August 14-17, 1996. Most of the work was in a clear-cut area, overgrown with thick patches of willow, alder and secondgrowth which made traversing difficult.

### 2.0 TOPOGRAPHY AND SURFICIAL GEOLOGY

The Hen claims are located along the south side of Nithi Valley (Figure 2). Relief within the claim block ranges from about 790 m. near the base of the valley to about 1066 m. near the southern claim boundary. The Self Potential survey was confined to a gently sloping hillside between elevations of 945 m. and 1036 m. Numerous seepages, swampy areas and small sluggish streams indicate that the general area in and around the claim block is poorly drained.

A rocky till consisting of angular to subangular rock fragments in a silty matrix covers most of the hillslopes. Outwash sand and gravels fill the valley bottom to about the 840 m. elevation and form a distinctive glacial kettle topography. Within the survey area no natural outcrops were noted; however, the occurrence of rock exposure in some shallow bulldozer cuts and the abundance of angular locally-derived float suggest the overburden cover is relatively shallow, possibly in the order of 1.0 to 4.0 m.





### 3.0 GEOLOGY

The Hen claims are underlain by plutonic rocks of the Upper Jurassic Francois Lake Intrusions. A few outcrops of Casey Alaskite occur in the southern and central parts of the property and quartz diorite is well exposed along the high ridge south of the claims. The contact between the two units is considered to lie along the southeastern edge of the property. Outcrops of Nithi Quartz Monzonite occur to the west; this contact may lie within or near the western boundary of the property.

Disseminated pyrite and chloritic veinlets, carrying pyrite and sparse chalcopyrite, were noted in dioritic rocks south of the claims. Quartz veins mineralized with pyrite and chalcopyrite or molybdenite were noted in both Casey Alaskite and Nithi Quartz Monzonite float fragments scattered throughout the survey area.

#### 4.0 MINERAL CLAIMS

The location of the Hen Group is shown in Figure 2. The property consists of 10 two-post claims, staked August 24, 1995. Tenure numbers are 339693 to 339702 for the claims numbered Hen 1 to Hen 10. All claims are owned by G. W. Kurz of Fraser Lake, BC.

#### 5.0 SELF POTENTIAL SURVEY

#### 5.1 THE SELF POTENTIAL EFFECT

Electrically conductive bodies of sulfide mineralization or graphite that lie well above and below the water table commonly display large spontaneous ground potentials significantly above background levels. Common amplitudes for sulfide mineralization range between 100 to 300 millivolts and may extend up to one volt for graphite bodies. However, over areas of near surface water table conditions, or over areas of thick clay cover, the spontaneous potential, or self potential effect is considerably muted and may not be easily differentiated from normal background potentials, which can reach amplitudes of 100 millivolts. Unlike other geophysical

methods, the self potential method is particularly sensitive to near surface conductors and can often be used to define trenching targets; this, and its low cost, makes the self potential method ideal for prospecting applications.

#### 5.2 EQUIPMENT AND FIELD PROCEDURE

The self potential equipment used in this survey consisted of two nonpolarizing electrodes, a reel of wire, and a multimeter. The electrodes were essentially pots fitted with a base of unglazed porcelain and filled with saturated copper sulfate solution. Rubber plugs were used to hold a copper rod in contact with the solution and form a leak-proof top. About 300 m of No. 18 stranded copper wire was used on a large reel fitted with a commutator. A LCD Micronta Digital Multimeter, having a 10 mega ohm impedance, was attached to the reel in a protective compartment.

Field methods followed standard procedures except the wire was anchored at the base station and the multimeter moved forward along the line with the reel. This allowed the operator to observe each station along the line at the time readings were taken and make necessary adjustments if necessary. Stations were established at 25 m intervals along all lines. Control was by hip chain and compass. In all stations an attempt was made to establish stable ground contact by digging through the humus and roots to damp soil, usually at the B-horizon. The S. P. system was connected so that the forward pot would be positive and any mineralizing potentials encountered would be negative. Pot differences were checked at regular intervals.

In this survey, a baseline reel of wire was used which was connected to the primary base pot and moved along the baseline. A second reel of wire was connected to the baseline reel at each grid line so that all readings made along the line were directly relative to the primary base pot. This eliminated the need to correct the readings from secondary base stations normally set up on each line.

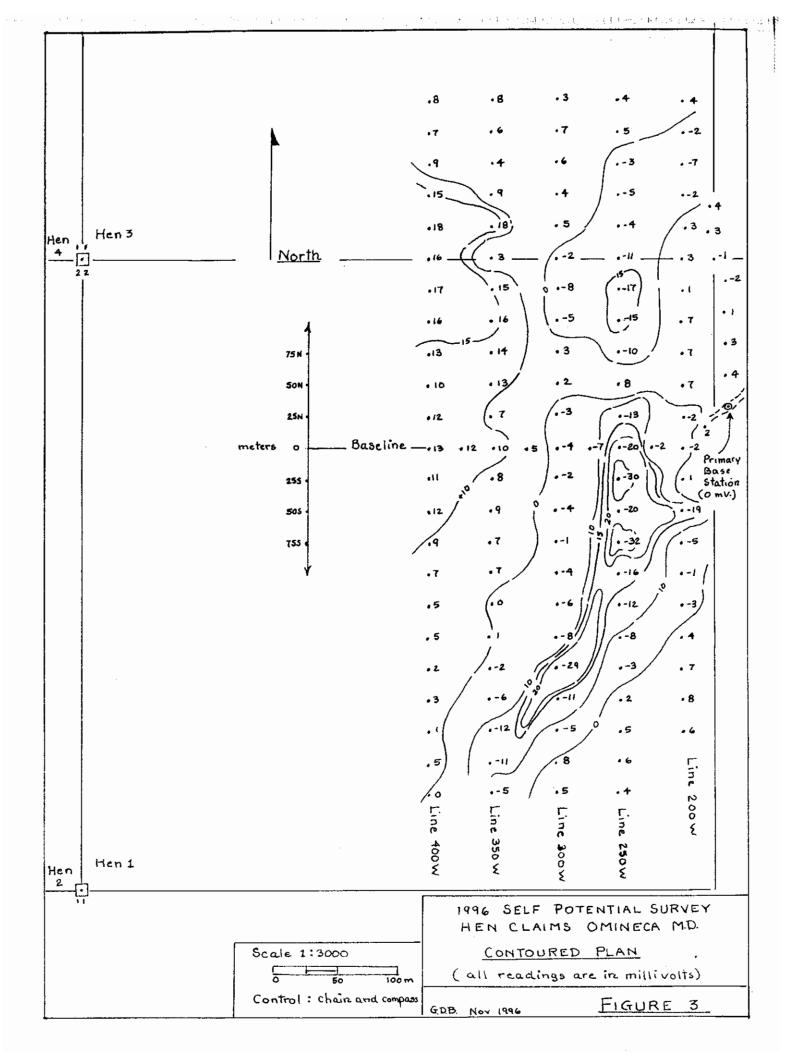
#### 5.3 RESULTS AND INTERPRETATION

A plan of the results with station locations is provided in Figure 3. Profiles are shown in Figure 4. All readings are relative to a primary base station which has been set at zero millivolts.

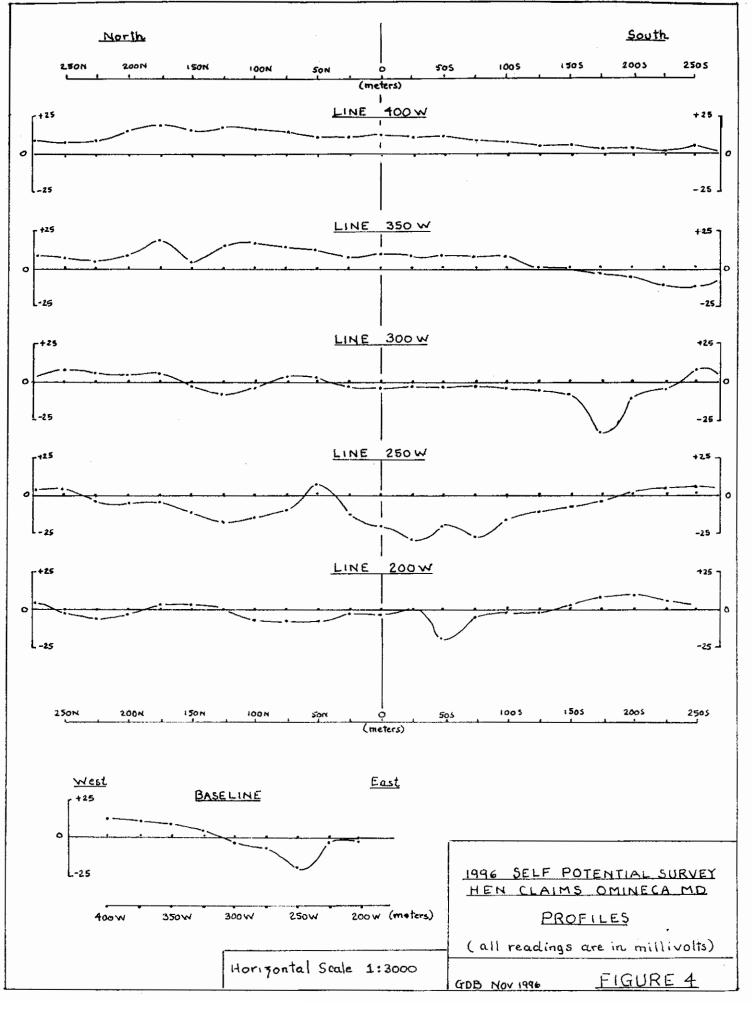
A north trending self potential anomaly has been outlined which shows up as a series of large negative readings along Line 250W and across the southern ends of Lines 300W and 350W. The anomaly is enhanced by a contrasting positive high zone measured along Lines 350W and 400W which also trends northerly. The overall direction and extent of the anomaly is best illustrated by the contoured plan in Figure 3, with the -10 mV contour taken as a threshold value. In retrospect, the grid lines should have been oriented in an east-west direction for full anomaly definition. Only the baseline profile shown in Figure 4 provides a meaningful cross-sectional view of the anomaly.

As presently outlined, the maximum amplitude of the anomaly is between 30 and 40 mV. This is well within the range of normal background variations and therefore cannot be interpreted as a definite expression of sulfide mineralization. However, the distribution of all readings show a distinct northerly control which would not normally be expected in random background variations. The large negative readings found along Line 250W and on the southern end of Line 300W are therefore considered to be possible expressions of bedrock sulfide mineralization and further work is required for further definition. The 1967 I.P. survey suggests the survey area is underlain by weakly concentrated sulfide mineralization. Self potential negatives obtained in this survey may be caused where this mineralization is of higher concentration or lies close to the surface. In the latter case, the shape of the anomaly may be a function of subsurface bedrock topography.

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# 6.0 STATEMENT OF EXPENDITURES

SELF POTENTIAL SURVEY --- HEN CLAIM GROUP, 1996

## 1. Field Work

| G. D. Bysouth             |                             |  |  |  |  |
|---------------------------|-----------------------------|--|--|--|--|
| Aug 14                    | 06 hrs                      |  |  |  |  |
| Aug 15                    | 10 hrs                      |  |  |  |  |
| Aug 16                    | <u>08 hrs</u>               |  |  |  |  |
| Total                     | 24 hours @ \$30/hr\$720.00  |  |  |  |  |
| B. D. Bysouth             |                             |  |  |  |  |
| Aug 14                    | 06 hrs                      |  |  |  |  |
| Aug 15                    | 10 hrs                      |  |  |  |  |
| Aug 17                    | <u>08 hrs</u>               |  |  |  |  |
| Total                     | 24 hours @ \$14/hr\$ 336.00 |  |  |  |  |
|                           |                             |  |  |  |  |
| 2. Report Preparation     |                             |  |  |  |  |
| G. D. Bysouth             | 8 hours @ \$30/hr\$ 240.00  |  |  |  |  |
|                           |                             |  |  |  |  |
| 3. Vehicle Costs          |                             |  |  |  |  |
| 1979 4 X 4                | 3 days @ \$25/day\$ 75.00   |  |  |  |  |
|                           |                             |  |  |  |  |
|                           |                             |  |  |  |  |
| 4. Equipment and Supplies |                             |  |  |  |  |
|                           |                             |  |  |  |  |
|                           | TOTAL COST OF SURVEY        |  |  |  |  |
|                           |                             |  |  |  |  |
|                           | LOB                         |  |  |  |  |
|                           | per v ·                     |  |  |  |  |
|                           |                             |  |  |  |  |

### 7.0 CONCLUSIONS

The self potential anomaly outlined in this survey is not of sufficient strength to be considered a definite expression of underlying sulfide mineralization. It does, however, warrant further testing by a series of self potential lines oriented in an east-west direction, with readings taken at 12.5 m intervals. Some of these lines should extend at least 300 m east and west of the present anomaly to determine if other northerly trending structures are present.

Say D. Sporth

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Garry D. Bysouth Geologist

## APPENDIX A

# LIST OF REFERENCES

1. Shepard, N. and Barker, R.A., 1967. Geochemical Report on the Counts Lake Property; BC Assessment Report No. 1108

2. Sutherland, M.A. and Hallof, P. G., 1967. Induced Polarization and Resistivity Survey, Counts Lake Property; BC Assessment Report No 1107

### APPENDIX B

### STATEMENT OF QUALIFICATIONS

I, Garry D. Bysouth, of Boswell, British Columbia do certify that:

- 1. I am a geologist
- I am a graduate of the University of British Columbia, with a BSc in Geology in 1966
- From 1966 to the present I have been engaged in mining and exploration geology in British Columbia
- I have used the self potential method in mineral exploration from 1980 to the present
- I personally was involved in the field work contained in this report and interpreted the results

hang O. Sport

Garry D. Bysouth

APPENDIX C

FIELD NOTES

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Page : Hen Group Aug 14/05 SP Survey Control: 1 est. "O base station @ codd) driveable rd -2 trav. up skid rd @ 223° 50 M 3 trav 270° - edge of clearent ~ 218m W - claim line @ 478m - extend line 550 to pen J.P. 9. trav. 0° 2000 5. trav. 90° 75m to clain Line 6. Trav. 180° 98m to #1 post Hen sand+

S.P. Survey Pot diff. of Vs .oz Trav 0-358 along skid rd. - base pot@ base stu T002 MV 25 50 3 75 ŧ. -2 100: 150 -1 175 3 end of skid ud 200 ٠ Return to base stu - trav. 223. ZSSW 2 305W -2 on low to den 3-4 de est This point as ON (baseline) 200W

Page 2 Hen Group Augis/96 SP Surey 1-200 Pot diff ++ vs - 3 : be note: bareline rect is used with another se reel along the each line so that all readings are connected to the "O" base station lop. Rewarks, шv L200 W -1 - 5 25 N 50 N 7 ৶ wet soil or seepoge 75 N 7 100 N 7 150 1 in 3 200 -3 200 250 - 2 -7 225 250 -2 4 275 N return to popeline 2 S S L +5 503 -19 √ 755 -5 1005 \_ ł 125 edge clear cut @ 1130m COAL - 3 150 4 175-200-5 7 200 В 6

| Hen Gro            | up Aug | 15/96 | Page 3                 | Hen Group Aug 15 Page 4   |
|--------------------|--------|-------|------------------------|---|
| Baseline           | uv (   | Τορυ  | Remarks                | Baseline MV Topo Remarker   |
| 225W               | - 2    | 2~0   |                        | 27°W -7 20  |
| 2500               | -20    | )~ "  |                        | 300W - 4 J  |
|                    |        |       |                        | Line 300W   |
| Line 250W          | - 13   | -5-10 |                        | 255 -2 +5°  |
| 25N                |        | ļ     |                        | 505 -4  |
| SO N               | 8      | ¥     |                        | 755 -1  |
| 75 N               | -10    |       |                        | 100 5 - 4   |
| 100 N              | -15    |       |                        | 1255 -6   |
| 125                | - 17   |       |                        | 1505 -8   |
| 15.                | - 11   |       |                        | 1755 - 29 edge D clearent nitts   |
| 175                |        |       |                        | 2005 - 11 - 2607 - 11 - 2607 - 11 - 2607 - 11 - 2607 - 11 - 2607 |
| 260                | -5     |       |                        | 2255 -5   |
| 225                | - 3    |       |                        | 2505 8  |
| 250                | 5      |       |                        | v   |
| 275                | 4      |       |                        | Line south (routid)   |
| Return to Baseline |        |       |                        | Aug 16/96 Pot diff . 03 US 02   |
| 255                | -30    | +50   |                        | $-25 N$ $-3 - 5^{\circ}$  |
| 505                | -20    | ₽     |                        | SON \$2   |
| 155                | - 32   |       |                        | 7 ( N 3   |
| 2001               | -16    |       |                        | 100N - 3  |
| 1253               | -12    |       |                        | 175N -8   |
| 1505               | - 8    |       | clear cut edge 2 160ms | ISON -2   |
| 1755               | -3     |       |                        | 17TN S  |
| 2005               | z      |       |                        | 200 N 4   |
| 2255               | 5      |       |                        | 225 N 4   |
| 2505               | 4      |       |                        | 250N 7  |
| 2755               | 4      |       |                        | 27CN 3  |

| Aug 16/96 Hen Group |     | ~              |                         | Aug 16/   | 96 Hen      | Pays 6           |                      |
|---------------------|-----|----------------|-------------------------|-----------|-------------|------------------|----------------------|
| -                   |     |                | Page S                  | Base line | ٣V          | Topo             | •                    |
| Bascline            | MV  | T <u>ure</u>   | Remarks                 | 375 W     | 12          | 0                |                      |
| 325 V               | 5   | 0              |                         | 400 W     | 13          | ο                | @ edge of clear cut  |
| 350W                | 10  | ٥              |                         | Line 400W |             |                  | <b>N</b>             |
| L <u>350W</u>       |     |                |                         | 250       | 12          | - 5 <sup>0</sup> | the line is          |
| ·25N                | 7   | <del>-</del> S |                         | SON       | 10          | ł                | along the edge       |
| SON                 | 13  | - ٢            |                         | TON       | 13          | •                | of the clearest and  |
| 75N                 | 14  | -5             |                         | IUON      | 16          |                  | is not accurate      |
| 1000                | 16  | -5             | posr. Que otep.         | 125 N     | 17          |                  | due to windfall (    |
| 125N                | 21  |                |                         | ITUN      | 16          |                  | bearing and distance |
| 150                 | 3   |                |                         | 175 N     | 1 B         |                  | variatel )           |
| 175                 | 19  | ł              |                         | 200 N     | <b>4</b> 15 |                  |                      |
| 200                 | 9   | ۲ ۲.           |                         | 225N      | ≯્"<br>કવ   |                  |                      |
| 225                 | +   | ~ 5            |                         | 230       | 37<br>7     |                  |                      |
| 250                 | 6   | -10            | E side Offranch         | 230       | •<br>•<br>• |                  |                      |
| 275 N               | 8   | - 10           | along edge J) elear cut | return to | -           |                  |                      |
| return to baseline  |     |                |                         |           |             | 1 e <sup>0</sup> | ada, Adamat          |
| 255                 | 8   | + 5            |                         | 2545      | 11          | + \$°            | edge J clear cut ca  |
| 202                 | ٩   | 1              |                         | 50 5      | 12          | 1                |                      |
| 753                 | 7   |                |                         | Trs       | 9           |                  |                      |
| 1005                | ٦   | 4              |                         | 100 5     | 7           |                  |                      |
| 1255                | v   |                |                         | 1255      | S           |                  |                      |
| 1505                | ı   |                |                         | 150 \$    | 5           |                  |                      |
| 1755                | -2  |                | edge of clearcut 1955   | 1755      | 2           |                  |                      |
| 2005                | -6  |                |                         | 2005      | 3           |                  |                      |
| 225                 | -12 |                |                         | 225       | ۱<br>5      |                  |                      |
| 250                 | -11 |                |                         | 2751      | 0           |                  |                      |
| 275                 | - 2 |                |                         |           |             |                  |                      |