CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
http://www.azgs.az.gov
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Client Siskon Corporation Date July 20, 1972 RMGC Job No. 72-16-13R



FRI HOLE F-1 (ROTARY) VERTICAL, Rotary to 1405' NX Core 1405'-1570' end

FRI Hole No. 1

| F Series Sample No. | | ppm Copper | ppm Molybdenum |
|---|---|---|---|
| 102, 10'-20' | Volcanics | 10 | -1 |
| 103 | ↓ | 10 | -1 |
| 104 | | 10 | -1 |
| 105 | | 15 | -1 |
| 106, 50'-60' | | 15 | -1 |
| 107 | | 10 | -1 |
| 108 | | 15 | -1 |
| 109 | | 15 | -1 |
| 110 | | 10 | -1 |
| 111, 100'-110' | | 10 | -1 |
| 112 | | 10 | -1 |
| 113 | | 10 | -1 |
| 114 | | 10 | -1 |
| 115 | | 10 | -1 |
| 116 | | 15 | -1 |
| 117 | | 10 | -1 |
| 118, 170'-180' | | 10 | -1 |
| 119 (DRY ↑) | | 10 | -1 |
| 120 | | 15 | -1 |
| 121 (Mud ↓) | | 40 | -1 |
| 122 | | 20 | -1 |
| 123 | | 20 | -1 |
| 124 | | 25 | -1 |
| 125 | | 15 | -1 |
| 126, 250'-260' | Volcanics | 15 | -1 |

By [signature]

Gary M. Fechko
Rocky Mountain Geochemical Corporation
Reno, Nevada
July 20, 1972

Client Siskon Corporation Date July 28, 1972 RMGC Job No. 72-17-15R



# FRI Rotary Hole, F-1 (Rotary)

| Sample NO. | | ppm Copper | ppm Molybdenum |
|---|---|---|---|
| F 127 | 260'-270' | 15 | -1 |
| 28 | | 15 | -1 |
| 29 | | 15 | -1 |
| 30 | | 15 | -1 |
| 31 | | 10 | -1 |
| 32 | | 10 | -1 |
| 33 | | 10 | -1 |
| 34 | | 15 | -1 |
| 35 | | 30 | -1 |
| 36 | | 20 | -1 |
| 37 | | 45 | -1 |
| 38 | | 20 | -1 |
| 39 | | 20 | -1 |
| 40 | | 25 | -1 |
| 41 | | 30 | -1 |
| 42 | | 25 | -1 |
| 43 | | 20 | -1 |
| 44 | | 25 | -1 |
| 45 | | 25 | -1 |
| 46 | | 20 | -1 |
| 47 | | 35 | -1 |
| 48 | | 40 | -1 |
| 49 | | 30 | -1 |
| 50 | | 30 | -1 |
| 51 | 500'-510' | 50 | -1 |

Volcanics (samples 127–35, above the line)

Sedimentaries- Shales Limestone Dolomite (samples 36–51, below the line)

Minor amounts of Calcite & Pyrite

Client Siskon Corporation Date July 28, 1972 RMGC Job No. 72-17-15R



F-1 (ROTARY)

| Sample No. | | ppm Copper | ppm Molybdenum |
|---|---|---|---|
| F 152 | 510'-520' | 30 | -1 |
| 53 | | 25 | -1 |
| 54 | | 25 | -1 |
| 55 | | 20 | -1 |
| 56 | | 15 | -1 |
| 57 | | 20 | -1 |
| 58 | | 15 | -1 |
| 59 | | 20 | -1 |
| 60 | | 20 | -1 |
| 61 | | 35 | -1 |
| 62 | | 25 | -1 |
| 63 | | 20 | -1 |
| 64 | | 25 | -1 |
| 65 | | 15 | -1 |
| 66 | | 20 | -1 |
| 67 | | 20 | -1 |
| 68 | | 35 | -1 |
| 69 | | 25 | -1 |
| 70 | | 25 | -1 |
| 71 | | 25 | -1 |
| 72 | | 15 | -1 |
| 73 | | 15 | -1 |
| 74 | | 10 | -1 |
| 75 | | 10 | -1 |
| 176 | 750'-760' | 10 | -1 |

F-1 (ROTARY)

| Sample No. | | ppm Copper | ppm Molybdenum |
|---|---|---|---|
| F 177 | 760'-770' | 15 | -1 |
| 78 | | 10 | -1 |
| 79 | | 15 | -1 |
| 80 | | 15 | -1 |
| 81 | | 20 | -1 |
| 82 | | 15 | -1 |
| 83 | | 15 | -1 |
| 84 | | 15 | -1 |
| 85 | | 10 | -1 |
| 186 | 850'-860' | 10 | -1 |

By [signature]
Gary M. Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada July 28, 1972

Client Siskon Corporation Date August 9, 19 RMGC Job No. 72-17-42R



FRI HOLE F-1 (ROTARY)

| | F Series Sample No. | | ppm Copper | ppm Molybdenum |
|---|---|---|---|---|
| Metasediments - lime-shales | 187 | 860'-870' | 15 | -1 |
| | 188 | | 15 | -1 |
| | 189 | | 20 | -1 |
| | 190 | | 20 | -1 |
| | 191 | | 15 | -1 |
| | 192 | | 15 | -1 |
| White Dolomite | 193 | | 20 | -1 |
| | 194 | | 15 | -1 |
| | 195 | | 15 | -1 |
| | 196 | | 15 | -1 |
| | 197 | | 10 | -1 |
| | 198 | | 20 | -1 |
| | 199 | 980'-990' | 20 | -1 |

By Gary M Fechko
Gary M, Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada August 9, 1972

Client: Siskon Corporation Date August 16, 1972 RMGC Job No. 72-18-25R



FRI Hole F-1 (Rotary)

Meta-sediments Shales, limestone & Dolomite occasional minor amounts of pyrite & silicates

| F-Series Sample No. | ppm Copper | ppm Molybdenum |
|---|---|---|
| 1100 (990'-1000') | 20 | -1 |
| 01 | 30 | -1 |
| 02 | 25 | -1 |
| 03 | 15 | -1 |
| 04 | 15 | -1 |
| 05 | 20 | -1 |
| 06 | 20 | -1 |
| 07 | 15 | -1 |
| 08 | 30 | -1 |
| 09 | 20 | -1 |
| 10 | 20 | -1 |
| 11 | 20 | -1 |
| 12 | 25 | -1 |
| 13 | 20 | -1 |
| 14 | 20 | -1 |
| 15 | 25 | -1 |
| 16 | 15 | -1 |
| 17 | 20 | -1 |
| 18 | 40 | -1 |
| 19 | 15 | -1 |
| 20 | 20 | -1 |
| 21 | 15 | -1 |
| 22 | 15 | -1 |
| 23 | 25 | -1 |
| 24 (1230'-1240') | 30 | -1 |

Client Siskon Corporation Date August 16, 1972 RMGC Job No. 72-18-25R



F-1 (ROTARY)

| F-Series Sample No. | ppm Copper | ppm Molybdenum |
|---|---|---|
| 1125 (1240 - 1250') | 20 | -1 |
| 26 | 20 | -1 |
| 27 | 15 | -1 |
| 28 | 25 | -1 |
| 29 (1280'-1290') | 20 | -1 |

↑

By Gary M. Fechko
Gary M. Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada August 16, 1972

Client Siskon Corporation Date October 19, 1972 RMGC Job No. 72-24-20R



FRI HOLE F-1 (ROTARY)

| | Sample No. | ppm Lead | ppm Zinc | Oz/T Gold | Oz/T Silver |
|---|---|---|---|---|---|
| Meta-Sediments (Composites) | F-12-F-135 (10'-350') | 10 | 240 | -0.003 | -0.03 |
| | F-136-F-160 (350'-600') | 20 | 370 | -0.003 | -0.03 |
| | F-161-F-185 (600'-850') | 20 | 280 | -0.003 | -0.03 |
| | F-186-F-1117 (850'-1170') | 20 | 420 | -0.003 | -0.03 |
| | F-1118-F-1130 (1170'-1300') | 10 | 260 | -0.003 | -0.03 |

By Gary M. Fechko

Gary M. Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada October 19, 1972

Client Siskon Corporation Date August 19, 1972 RMGC Job No. 72-19-11R



FRI Hole No. 1 (ROTARY) T.D. 1405'

| Sample No. | ppm Copper | ppm Molybdenum | ppm Lead | ppm Zinc | Oz/T Gold | Oz/T Silver |
|---|---|---|---|---|---|---|
| Metasediments: Shales, Limestones, Dolomite, few Silicates + pyrite F-1130 (1290'-1300') | 30 | -1 | - | - | - | - |
| 31 | 30 | -1 | - | - | - | - |
| 32 | 30 | -1 | - | - | - | - |
| 33 | 30 | -1 | - | - | - | - |
| 34 | 30 | -1 | - | - | - | - |
| 35 | 30 | -1 | - | - | - | - |
| 36 | 25 | -1 | - | - | - | - |
| 37 | 35 | -1 | - | - | - | - |
| 38 | 20 | -1 | - | - | - | - |
| 39 | 25 | -1 | - | - | - | - |
| 40 | 25 | -1 | - | - | - | - |
| F-1140 1/2 (1400'-1405') | 25 (increase in silicates) | 4 | - | - | - | - |
| F-1131-1140 1/2 Composite (1300'-1405') | - | - | 10 | 285 | -0,003 | 0,03 |

By [signature]
Gary M, Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada August 19, 1972

ROCKY MOUNTAIN GEOCHEMICAL CORP.
SALT LAKE CITY, UTAH • RENO, NEVADA • SPOKANE, WASHINGTON • TUCSON, ARIZONA

METALLURGICAL LABORATORIES, INC. CHEMISTS • ASSAYERS • SPECTROGRAPHERS

1142 HOWARD STREET • SAN FRANCISCO, CALIFORNIA 94103 • AREA CODE 415 863-8575

# Qualitative Spectrographic Analysis

Submitted by Siskon Corporation
P. O. Box 889
Reno, Nevada 89504

Date August 18, 1972

Sample of Mineral

P. O. No.

Lab. No. 1935

## METALS FOUND AND PERCENTAGE RANGE

| SAMPLE MARK | LESS THAN 0.01% | .01 TO .10% | .10 TO 1.0% | 1.0 TO 10.0% | MAJOR |
|---|---|---|---|---|---|
| F-1131-1140½ Composite | Chromium | Manganese | Barium | Aluminum | Silicon |
| | Vanadium | Strontium | Titanium | Iron | Calcium |
| | Boron | Zirconium | | Magnesium | |
| | Lead | Zinc | | Sodium | |
| | Nickel | Copper | | Potassium | |
| | Cobalt | | | | |
| | Silver | | | | |

FRI Hole No. 1
1300' to 1405'
COMPOSITE

REMARKS: Zinc and Copper close to low side of Percentage Range.

METALLURGICAL LABORATORIES, INC.

By Martin P. [illegible]
SPECTROCHEMIST

Note: F-1 deepened from 1405' to 1520' by NX coring, 10/26-31/72. 115' in porphyry.

Charge $10.00

MET LAB FORM 14

REPORT ON THE
INDUCED POLARIZATION
AND RESISTIVITY SURVEY
ON THE
FRI CLAIM GROUP
NYE COUNTY, NEVADA
FOR
SISKON CORPORATION

McPHAR GEOPHYSICS

# REPORT ON THE INDUCED POLARIZATION AND RESISTIVITY SURVEY ON THE FRI CLAIM GROUP NYE COUNTY, NEVADA FOR SISKON CORPORATION

## 1. INTRODUCTION

At the request of Siskon Corporation, McPhar has completed an Induced Polarization and Resistivity survey on the Fri Claim Group, Nye County, Nevada. The Fri Claim Group is located in T.7N., R.39E. and R. 40E., in the Unknown Mining District, approximately 30 miles northwest of Tonopah.

The purpose of the Induced Polarization and Resistivity was to prospect for sulphide mineralization at depth beneath the alluvial cover within the Claim Group. Measurements were made with 1,000' dipoles at frequencies of 0.125 Hz and 1.25 Hz in order to minimize possible electromagnetic coupling effects. The survey was performed by Mr. Anthony Ivan-Smith, Crew Chief, at the direction of Mr. W.L. Callahan, consulting mining engineer to Siskon.

## 2. PRESENTATION OF RESULTS

The Induced Polarization and Resistivity results are shown on the following data plots in the manner described in the notes preceding this report.

| Line | Electrode Intervals | Dwg. No. |
|---|---|---|
| A | 1,000 feet | IP 5903-1 |
| B | 1,000 feet | IP 5903-2 |
| C | 1,000 feet | IP 5903-3 |
| D | 1,000 feet | IP 5903-4 |
| E | 1,000 feet | IP 5903-5 |

Also enclosed with this report is Dwg. I.P.P. 4832, a plan map of the Fri Claim Group at a scale of 1" = 1,000'. The location of the claims relative to the section corners and the outline of the claim group have been taken from a map made available by Siskon Corporation.

In this report both percent frequency effect (PFE) anomalies and metal factor (MF) anomalies are shown on the plan map. Percent frequency effect is a measure of the intensity of polarization, and anomalies are classified as very weak to very strong. The percent frequency effect results indicate polarizable areas without taking into account the resistivity of the areas. Metal factor (MF) is obtained by combining the percent frequency effect and the resistivity. A good conductor (low resistivity) that is strongly polarizable (high percent frequency effect) will give a well-defined or definite metal factor anomaly. Less well-defined metal factor anomalies are designated as probable or possible.

The percent frequency effect and metal factor parameters are complementary. The relative importance of each type of information depends upon the particular geophysical environment and the type of target expected. For example, a mineralized silicified zone will give a strong percent frequency effect anomaly, but may not give a definite metal factor anomaly. Alternatively, an oxidized ore zone may only give a weak percent frequency effect anomaly, but will give a definite metal factor anomaly pattern. Judicious consideration of both the percent frequency effect and the metal factor results permits a comprehensive evaluation of the geophysical environment.

The anomalies as shown on the data plots and plan map represent the surface projection of the polarizable zones. Contacts or faults inferred from the resistivity patterns are also shown. Anomaly boundaries and fault locations should be considered accurate to the electrode interval used.

The anomalies shown on the plan map are designated apparent depths of shallow, moderate or deep. At larger dipole separations a greater volume of rock is averaged, in lateral extent as well as depth. Thus, the source of a deep-appearing anomaly detected along a single line may be at shallow depth to one side of the line. The data plots, therefore, cannot represent true depth. Depths can be calculated from the apparent resistivity data in the case of ideal horizontal layers, but even this calculation depends on an assumed resistivity contrast between the zone at depth and the overlying rock. Although ambiguous, the simple depth designations are useful for correlating or comparing anomalous zones obtained on adjacent survey lines. Drill hole information from one or more zones frequently permits one to make a fair depth estimate for other zones. The following depth generalizations apply to porphyry copper and contact-replacement bodies:

| | Apparent Depth (dipole separations) | Drill Hole Depth (in dipole lengths) |
|---|---|---|
| Shallow | 1 - 2 | $\frac{1}{2}$ - 1 |
| Moderate | 2 - 3 | 1 - 1$\frac{1}{2}$ |
| Deep | 3 - 5 | 1$\frac{1}{2}$ - 2+ |

Thus, a shallow zone is one detected at one-to-two dipole separations and should be tested by a drill hole from a half-to-one dipole length deep.

An appendix on the interpretation of Induced Polarization anomalies from relatively small sources is enclosed in this report. It shows the desirability of detailing with shorter spreads when the anomaly is shallow and the source may be narrow.

The Induced Polarization method is a geophysical tool used to determine the electrical properties of the earth. The final evaluation of the Induced Polarization anomalies; e.g. which of the anomalies constitutes the most favourable exploration target, must be based on available geologic evidence and concepts.

## 3. DISCUSSION OF RESULTS

As shown on the plan map, the resistivity results indicate a northwest-trending contact or fault that passes through 40 SW along Line A and Line B and a possible east-trending contact or fault that passes through 60 SW along Line C and 50 SW along Line D. Very low-resistivity material occurs to the northeast along Line A, Line B, Line C and Line D. The strong to very strong PFE anomalies associated with the very low-resistivity material can be attributed entirely to electromagnetic (EM) coupling (see Appendix). The corresponding metal factor anomalies, although high in magnitude, have therefore been designated as possible rather than probable or definite. The results obtained along each line are discussed in detail below.

### Line A

The resistivity results indicate a contact or fault at approximately 40 SW, with very low-resistivity material to the northeast. The resistivities become lower toward the northeast. Moderate-resistivity material is associated with the interval 80SW to 100SW (?).

The high PFE's northeast of 40SW can be attributed entirely to EM coupling. Those in the interval 40SW to 80SW remain very weakly anomalous after allowing for EM coupling.

Line B

Contacts are indicated at approximately 40SW and 75SW, with moderate-resistivity material in between. High-resistivity material at the southwestern end of the line is associated with the interval 110SW to 130SW (?).

The anomalous, weak PFE's in the interval 40SW to 90SW cannot be attributed entirely to EM coupling. Residual PFE's of 2% to 3% remain after allowing for coupling. The corresponding metal factor anomaly in the interval 45SW to 75SW is therefore designated as probable.

Line C

The resistivity results clearly indicate a contact or fault near 60SW, with high-resistivity material near surface to the southwest. There is a suggestion of a resistivity low at depth in the interval 100SW to 115SW (?).

Very weak to weak anomalous PFE's are associated with the high-resistivity rock in the interval 70SW to 100SW. Weak to moderate PFE's are associated with the lower-resistivity at depth, contributing to the probable metal factor anomalies at depth in the intervals 70SW to 90SW and 100SW to 115SW (?).

Line D

The resistivity results suggest a contact in the vicinity of 50 SW or 55 SW, with low-resistivity material to the northeast. A resistivity high occurs at shallow to moderate depth in the interval 60 SW to 70 SW (?).

The weak to moderate PFE's associated with the low-resistivity material northeast of 50 SW can be attributed entirely to EM coupling. The weak PFE's at depth in the interval 50 SW to 80 SW (?) cannot be attributed entirely to EM coupling. There is a suggestion that the PFE magnitude increases to the southwest. The probable metal factor anomaly is primarily due to low resistivities associated with the interval 50 SW to 60 SW.

Line E

The resistivity pattern suggests a contact or fault in the vicinity of 20 NW. Low resistivities are associated with the interval 20 NW to 10 NW. Shallow, moderate-resistivity highs are associated with the intervals 30 NW to 20 NW and 10 NW to 0.

The PFE results indicate a weak to moderate PFE anomaly at depth throughout the interval 100 NW to 35 SE (?). The anomaly is strongest in the interval 10 NW to 30 SE, where it is also shallowest. The anomalous PFE's cannot be attributed entirely to EM coupling. The probable metal factor anomaly at shallow to moderate depth in the interval 10 NW to 0 is mainly due to low resistivities. The probable metal factor anomaly at moderate depth in the interval 45 NW to 10 NW is due to moderately-low resistivities and weak PFE's that are not attributable to EM coupling. The probable metal factor anomalies at shallow to moderate depth in the interval 60NW to 70NW and at moderate depth in the interval 80NW to 100NW (?) are due to low resistivities and very weak PFE's.

## 4. CONCLUSIONS AND RECOMMENDATIONS

The Induced Polarization and Resistivity survey indicates that a thick section of very low-resistivity material underlies the northeastern portion of the Fri Claim Group. The material may be either alluvium and gravel or very conductive volcanics.

The most promising anomaly detected by the survey is the moderate PFE anomaly and the corresponding probable metal factor anomaly partially delineated at the southwestern end of Line C. This anomaly should be further delineated by extending Line B, Line C and Line D in order to locate a drill hole. It would also be worthwhile to run a northeast-trending line through 10SE on Line E in order to further evaluate the moderate PFE anomaly in that area.

McPHAR GEOPHYSICS INCORPORATED

Anthony M. Hauck III

Anthony M. Hauck III
Geophysicist.

Dated: February 21, 1972

## APPENDIX - Electromagnetic Coupling PFE's

Inductive electromagnetic coupling through the earth between the sending and receiving dipoles can produce apparent percent frequency effects (PFE's). The magnetic field associated with the alternating current within the sending dipole causes eddy currents to flow within the earth. The secondary magnetic field associated with the eddy currents induces a current within the receiving dipole, reducing the measured voltage. The effect is greater at the higher, or AC frequency than at the lower, or DC frequency, and the net result is a PFE greater than that produced by rock polarization alone. EM-coupling effects increase with increasing frequency, decreasing resistivity, increasing dipole length, and increasing dipole separation. Theoretical EM-coupling PFE's for a homogeneous earth or uniform half space, 1000' dipoles, and frequencies of 0 and 1.25 Hz are tabulated below. Theoretical EM-coupling PFE's for a two-layer earth are always less than those for a homogeneous earth and lie in between those for a half space of upper layer material and those for a half space of lower layer material.

| | Dipole Separation | | | | | |
|---|---|---|---|---|---|---|
| Resistivity | n = 1 | n = 2 | n = 3 | n = 4 | n = 5 | n = 6 |
| 5 | 1.4 | 4.5 | 9.5 | 16.3 | 25.3 | 37.0 |
| 10 | 0.5 | 1.9 | 4.0 | 7.1 | 11.3 | 16.3 |
| 15 | 0.3 | 1.1 | 2.4 | 4.3 | 6.9 | 10.0 |
| 20 | 0.2 | 0.7 | 1.7 | 3.0 | 4.9 | 7.0 |
| 30 | - | 0.4 | 1.0 | 1.8 | 2.9 | 4.3 |
| 50 | - | 0.2 | 0.5 | 0.9 | 1.5 | 2.3 |
| 75 | - | - | 0.3 | 0.5 | 0.9 | 1.4 |
| 100 | - | - | 0.2 | 0.4 | 0.6 | 0.9 |

# McPHAR GEOPHYSICS

## NOTES ON THE THEORY, METHOD OF FIELD OPERATION, AND PRESENTATION OF DATA FOR THE INDUCED POLARIZATION METHOD

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Induced Polarization as a geophysical measurement refers to the blocking action or polarization of metallic or electronic conductors in a medium of ionic solution conduction.

This electro-chemical phenomenon occurs wherever electrical current is passed through an area which contains metallic minerals such as base metal sulphides. Normally, when current is passed through the ground, as in resistivity measurements, all of the conduction takes place through ions present in the water content of the rock, or soil, i.e. by ionic conduction. This is because almost all minerals have a much higher specific resistivity than ground water. The group of minerals commonly described as "metallic", however, have specific resistivities much lower than ground waters. The induced polarization effect takes place at those interfaces where the mode of conduction changes from ionic in the solutions filling the interstices of the rock to electronic in the metallic minerals present in the rock.

The blocking action or induced polarization mentioned above, which depends upon the chemical energies necessary to allow the ions to give up or receive electrons from the metallic surface, increases with the time that a d. c. current is allowed to flow through the rock; i. e. as ions pile up against the metallic interface the resistance to current flow increases. Eventually, there is enough polarization in the form of excess ions at the interfaces, to appreciably reduce the amount of current flow through the metallic particle. This polarization takes place at each of the infinite number of solution-metal interfaces in a mineralized rock.

When the d. c. voltage used to create this d. c. current flow is cut off, the Coulomb forces between the charged ions forming the polarization cause them to return to their normal position. This movement of charge creates a small current flow which can be measured on the surface of the ground as a decaying potential difference.

From an alternate viewpoint it can be seen that if the direction of the current through the system is reversed repeatedly before the polarization occurs, the effective resistivity of the system as a whole will change as the frequency of the switching is changed. This is a consequence of the fact that the amount of current flowing through each metallic interface depends upon the length of time that current has been passing through it in one direction.

The values of the per cent frequency effect or F. E. are a measurement of the polarization in the rock mass. However, since the measurement of the degree of polarization is related to the apparent resistivity of the rock mass it is found that the metal factor values or M. F. are the most useful values in determining the amount of polarization present in the rock mass. The MF values are obtained by normalizing the F. E. values for varying resistivities.

The induced polarization measurement is perhaps the most powerful geophysical method for the direct detection of metallic sulphide mineralization, even when this mineralization is of very low concentration. The lower limit of volume per cent sulphide necessary to produce a recognizable IP anomaly will vary with the geometry and geologic environment of the source, and the method of executing the survey. However, sulphide mineralization of less than one per cent by volume has been detected by the IP method under proper geological conditions.

The greatest application of the IP method has been in the search for disseminated metallic sulphides of less than 20% by volume. However, it has also been used successfully in the search for massive sulphides in situations where, due to source geometry, depth of source, or low resistivity of surface layer, the EM method can not be successfully applied. The ability to differentiate ionic conductors, such as water filled shear zones, makes the IP method a useful tool in checking EM anomalies which are suspected of being due to these causes.

In normal field applications the IP method does not differentiate between the economically important metallic minerals such as chalcopyrite, chalcocite, molybdenite, galena, etc., and the other metallic minerals such as pyrite. The induced polarization effect is due to the total of all electronic conducting minerals in the rock mass. Other electronic conducting materials which can produce an IP response are magnetite, pyrolusite, graphite, and some forms of hematite.

In the field procedure, measurements on the surface are made in a way that allows the effects of lateral changes in the properties of the ground to be separated from the effects of vertical changes in the properties. Current is applied to the ground at two points in distance (X) apart. The potentials are measured at two other points (X) feet apart, in line with the current electrodes is an integer number (n) times the basic distance (X).

The measurements are made along a surveyed line, with a constant distance (nX) between the nearest current and potential electrodes. In most surveys, several traverses are made with various values of (n); i.e. (n) = 1, 2, 3, 4, etc. The kind of survey required (detailed or reconnaissance) decides the number of values of (n) used.

In plotting the results, the values of the apparent resistivity, apparent per cent frequency effect, and the apparent metal factor measured for each set of electrode positions are plotted at the intersection of grid lines, one from the center point of the current electrodes and the other from the center point of the potential electrodes. (See Figure A.) The resistivity values are plotted above the line as a mirror image of the metal factor values below. On a second line, below the metal factor values, are plotted the values of the per cent frequency effect. In some cases the values of per cent frequency effect are plotted as superscripts of the metal factor value. In this second case the frequency effect values are not contoured. The lateral displacement of a given value is determined by the location along the survey line of the center point between the current and potential electrodes. The distance of the value from the line is determined by the distance (nX) between the current and potential electrodes when the measurement was made.

The separation between sender and receiver electrodes is only one factor which determines the depth to which the ground is being sampled in any particular measurement. The plots then, when contoured, are not section maps of the electrical properties of the ground under the survey line. The interpretation of the results from any given survey must be carried out using the combined experience gained from field results, model study results and theoretical investigations. The position of the electrodes when anomalous values are measured is important in the interpretation.

In the field procedure, the interval over which the potential differences are measured is the same as the interval over which the electrodes are moved after a series of potential readings has been made. One of the advantages of the induced polarization method is that the same equipment can be used for both detailed and reconnaissance surveys merely by changing the distance (X) over which the electrodes are moved each time. In the past, intervals have been used ranging from 25 feet to 2000 feet for (X). In each case, the decision as to the distance (X) and the values of (n) to be used is largely determined by the expected size of the mineral deposit being sought, the size of the expected anomaly and the speed with which it is desired to progress.

The diagram in Figure A demonstrates the method used in plotting the results. Each value of the apparent resistivity, apparent metal factor, and apparent per cent frequency effect is plotted and identified by the position of the four electrodes when the measurement was made. It can be seen that the values measured for the larger values of (n) are plotted farther from the line indicating that the thickness of the layer of the earth that is being tested is greater than for the smaller values of (n); i. e. the depth of the measurement is increased. When the F. E. values are plotted as superscripts to the MF values the third section of data values is not presented and the F. E. values are not contoured.

The actual data plots included with the report are prepared utilizing an IBM 360/75 Computer and a Calcomp 770/763 Incremental Plotting System. The data values are calculated, plotted, and contoured according to a programme developed by McPhar Geophysics. Certain symbols have been incorporated into the programme to explain various situations in recording the data in the field.

The IP measurement is basically obtained by measuring the difference in potential or voltage ($\Delta V$) obtained at two operating frequencies. The voltage is the product of the current through the ground and the apparent resistivity of the ground. Therefore in field situations where the current is very low due to poor electrode contact, or the apparent resistivity is very low, or a combination of the two effects; the value of ($\Delta V$) the change in potential will be too small to be measurable. The symbol "TL" on the data plots indicates this situation.

In some situations spurious noise, either man made or natural, will render it impossible to obtain a reading. The symbol "N" on the data plots indicates a station at which it is too noisey to record a reading. If a reading can be obtained, but for reasons of noise there is some doubt as to its accuracy, the reading is bracketed in the data plot ( ).

In certain situations negative values of Apparent Frequency Effect are recorded. This may be due to the geologic environment or spurious electrical effects. The actual negative frequency effect value recorded is indicated on the data plot, however the symbol "NEG" is indicated for the corresponding value of Apparent Metal Factor. In contouring negative values the contour lines are indicated to the nearest positive value in the immediate vicinity of the negative value.

The symbol "NR" indicates that for some reason the operator did not attempt to record a reading although normal survey procedures would suggest that one was required. This may be due to inaccessible topography or other similar reasons. Any symbol other than those discussed above is unique to a particular situation and is described within the body of the report.

# METHOD USED IN PLOTTING DIPOLE-DIPOLE INDUCED POLARIZATION AND RESISTIVITY RESULTS

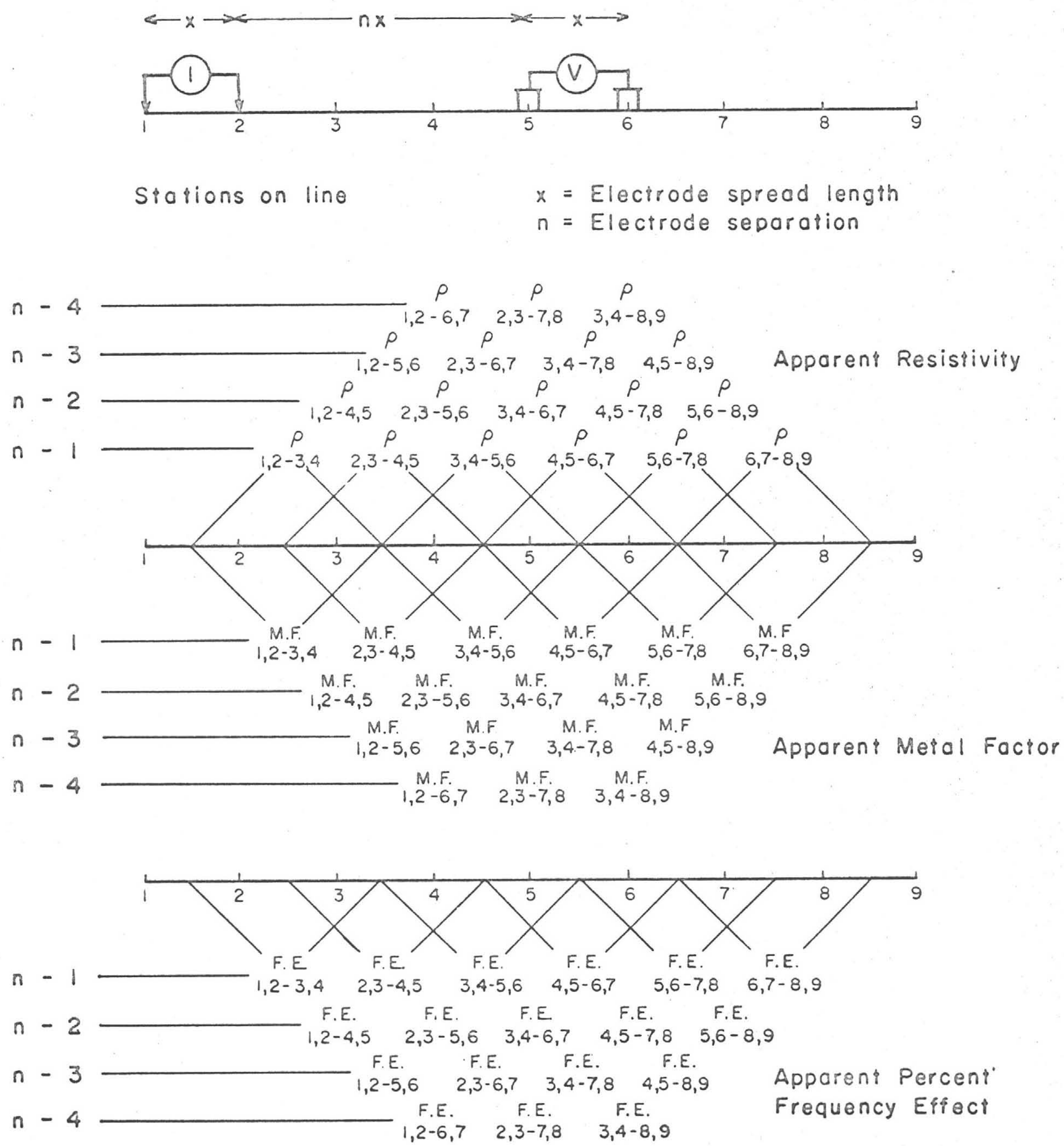


Fig. A

RENO OFFICE

# ROCKY MOUNTAIN GEOCHEMICAL CORP.

1491 E. 7TH STREET • RENO, NEVADA 89502 • PHONE: (702) 323-3610

## Certificate of Analysis



RMGC Numbers:
Local Job No.: 72-20-3R
Foreign Job No.:
Invoice No.: R 4846

Date: August 24, 1972

Client: Siskon Corporation
P, O, Box 889
Reno, Nevada

Client Order No.: None

Report On: 27 Rock Samples

Submitted by: H, B, Chessher, Jr,

Date Received: August 19, 1972

Analysis: Copper & Molybdenum

Analytical Methods: Molybdenum analysis is determined by colorimetrically. Copper analysis is determined by atomic absorption.

Remarks: None

cc: Enclosed
RMGC
File

GMF:rjb

FRI HOLE F-3 (ROTARY)

VERTICAL
Rotary to 673'
NX Core 673'-1500' end

| Sample No. | ppm Copper | ppm Molybdenum |
|---|---|---|
| F- 31 (0'-10') | 5 | -1 |
| 32 | 5 | -1 |
| 33 (20-30') | 10 | -1 |

Limey shales
Metasediments

| Sample No. | ppm Copper | ppm Molybdenum |
|---|---|---|
| F- 34 (30'-40') | 15 | -1 |
| 35 | 10 | -1 |
| 36 | 35 | -1 |
| 37 | 10 | -1 |
| 38 | 5 | -1 |
| 39 | 15 | -1 |
| F-310 | 25 | -1 |
| 311 | 20 | -1 |
| 312 | 5 | -1 |
| 313 | 10 | -1 |
| 314 | 15 | -1 |
| 315 | 45 | -1 |
| 316 | 10 | -1 |
| 317 | 10 | -1 |
| 318 | 5 | -1 |
| 319 | 25 | -1 |
| 320 | 15 | -1 |
| 321 | 15 | -1 |
| 322 | 35 | -1 |
| 323 | 15 | -1 |
| 324 | 20 | -1 |
| 325 | 10 | -1 |
| 326 | 10 | -1 |
| F-327 (260'-270') | 25 | -1 |

↓ Limey shales Metasediments (F-34 to F-327)

Limey shales ↑

By ____________________

Gary M. Fechko
Rocky Mountain Geochemical Corporation
Reno, Nevada    August 24, 1972

Client Siskon Corporation Date August 24, 1972 RMGC Job No. 72-20-4R



# FRI Hole F-3 (ROTARY)

Limey Shales Metasediments

| Sample No. | ppm Copper | ppm Molybdenum |
|---|---|---|
| F-328 (270'-280') | 45 | -1 |
| 329 | 35 | -1 |
| 330 | 20 | -1 |
| 331 | 10 | -1 |
| 332 | 20 | -1 |
| 333 | 15 | -1 |
| 334 | 30 | -1 |
| 335 | 25 | -1 |
| 336 | 40 | -1 |
| 337 | 25 | -1 |
| 338 | 30 | -1 |
| F-339 (380'-390') | 10 | -1 |

By Gary M. Fechko
Gary M. Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada August 24, 1972

FRI Hole F-3 (Rotary)

Meta-Sediments, Lime-shales ↓

| Sample No. | ppm Copper | ppm Molybdenum |
|---|---|---|
| F-347 460'-470' | 15 | -1 |
| F-348 | 10 | -1 |
| F-349 | 25 | -1 |
| F-350 | 15 | -1 |
| F-351 | 15 | -1 |
| F-352 | 15 | -1 |
| F-353 | 15 | 1 |
| F-354 | 10 | -1 |
| F-355 | 25 | -1 |
| F-356 | 10 | -1 |
| F-357 560'-570' | 70 | 38 |

By Gary M. Fechko
Gary M. Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada September 16, 1972

# ROCKY MOUNTAIN GEOCHEMICAL CORP.

1491 E. 7TH STREET • RENO, NEVADA 89502 • PHONE: (702) 323-3610

RENO OFFICE

## Certificate of Analysis



RMGC Numbers:
Local Job No.: 72-20-28R
Foreign Job No.:
Invoice No.: R 4866

Date: August 30, 1972

Client: Siskon Corporation
640 North Sierra Street
Reno, Nevada 89504

Client Order No.: None

Report On: 7 Rock Samples

Submitted by: H, B, Chessher, Jr.

Date Received: August 24, 1972

Analysis: Copper & Molybdenum

Analytical Methods: Molybdenum analysis is determined colorimetrically. Copper analysis is determined by atomic absorption.

Remarks: None

cc: Enclosed
RMGC
File

FRI Hole F-3 GMF:rjb (ROTARY)

| Sample No. | ppm Copper | ppm Molybdenum | Sample No. | ppm Copper | ppm Molybdenum |
|---|---|---|---|---|---|
| F-340 (390'-400') | 25 | -1 | F-344 | 20 | -1 |
| F-341 | 25 | -1 | F-345 | 20 | -1 |
| F-342 | 30 | -1 | F-346 (450'-460') | 20 | -1 |
| F-343 | 20 | -1 | | | |

Lime shales Metasediments

By [signature]
Gary M. Fechko

Rocky Mountain Geochemical Corporation Reno, Nevada August 30, 1972



ND = None Detected    1 ppm = 0.0001%    1 Troy oz./ton = 34.286 ppm    1 ppm = 0.0292 Troy oz./ton

RENO OFFICE

# ROCKY MOUNTAIN GEOCHEMICAL CORP.

1491 E. 7TH STREET • RENO, NEVADA 89502 • PHONE: (702) 323-3610

## Certificate of Analysis



RMGC Numbers:

Local Job No.: 72-24-21R

Foreign Job No.:

Invoice No.: 6145

Date: October 19, 1972

Client: Siskon Corporation
640 North Sierra St., P. O. Box 889
Reno, Nevada 89504

Client Order No.: None

Report On: 3 rock samples

Submitted by: H. B. Chessher, Jr.

Date Received: October 12, 1972

Analysis: Lead, Zinc, Gold & Silver

Analytical Methods: The above analyses are determined by atomic absorption.

Remarks: None

cc: Enclosed
RMGC
File

FRI HOLE F-3 (ROTARY)

GMF:sjp

| | Sample No. | ppm Lead | ppm Zinc | Oz/T Gold | Oz/T Silver |
|---|---|---|---|---|---|
| COMPOSITE | F-31-F-320 (0'-200') | 10 | 165 | -0.003 | -0.03 |
| " | F-321-F-340 (200'-400') | 10 | 145 | -0.003 | -0.03 |
| " | F-341-F-357 (400'-570') | 10 | 145 | -0.003 | -0.03 |

Meta-Sediments

By Gary M. Fechko
Gary M. Fechko
Rocky Mountain Geochemical Corporation
Reno, Nevada October 19, 1972



ND = None Detected 1 ppm = 0.0001% 1 Troy oz./ton = 34.286 ppm 1 ppm = 0.0292 Troy oz./ton

Client Siskon Corporation Date September 20, 1972 RMGC Job No. 72-21-36R



FRI Hole F-3 (Rotary)

| Geology notes | Sample No. | Interval | ppm Copper | ppm Molybdenum |
|---|---|---|---|---|
| Metasediments, Lime-shale, little pyrite | F-358 | 570'-580' | 90 | 1 |
| Also green silicates. May be in porphyry & sample polluted with shale cuttings. | 359 | | 165 | 15 |
| | 360 | | 115 | 5 |
| | 361 | | 90 | 36 |
| | 362 | | 65 | 15 |
| shales (probably pollution) — Porphyry, green silicates, little pyrite, quartz, very little $MoS_2$. | 363 | | 125 | 35 |
| | 364 | | 125 | 109 |
| | 365 | | 90 | 29 |
| | 366 | | 145 | 57 |
| | F-367 | 660'-670' | 160 | 26 |

| Sample No. | ppm Lead | ppm Gold | ppm Zinc | ppm Silver |
|---|---|---|---|---|
| F-358-367 Comp. | 10 | -0.1 | 220 | -1 |

By Gary M. Fechko

Gary M. Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada September 20, 1972

ROCKY MOUNTAIN GEOCHEMICAL CORP.
SALT LAKE CITY, UTAH • RENO, NEVADA • SPOKANE, WASHINGTON • TUCSON, ARIZONA

FRI HOLE F-3 (Rotary to 673' then NX CORE)

Porphyry
Few quartz seams
Little pyrite
Tr. to fair $MoS_2$

| F-series Sample No. | ppm Copper | ppm Molybdenum | ppm Lead | ppm Zinc | Oz/T Gold | Oz/T Silver |
|---|---|---|---|---|---|---|
| 3673 (670'-673') | 115 | 116 | | | | |
| 3675,8 | 290 | 42 | | | | |
| 3684 | 185 | 5 | | | | |
| 3692 | 215 | 85 | | | | |
| 3702 | 360 | 280 | | | | |
| 3711 | 225 | 134 | | | | |
| 3721 (711'-721') | 540 | 0,044% | | | | |
| 3675,8-3721 (comp) | 250 | 137 | 20 | 80 | -0,003 | -0,03 |

By Gary M Fechko
Gary M, Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada September 27, 1972

METALLURGICAL LABORATORIES, INC. CHEMISTS • ASSAYERS • SPECTROGRAPHERS

1142 HOWARD STREET • SAN FRANCISCO, CALIFORNIA 94103 • AREA CODE 415 863-8575

# Qualitative Spectrographic Analysis

Submitted by Siskon Corporation
P. O. Box 889
Reno, Nevada 89504

Date September 28, 1972

Sample of Mineral

P. O. No.

Lab. No. 1758

## METALS FOUND AND PERCENTAGE RANGE

| SAMPLE MARK | LESS THAN 0.01% | .01 TO .10% | .10 TO 1.0% | 1.0 TO 10.0% | MAJOR |
|---|---|---|---|---|---|
| F-3678 thru F-3721 Composite | Zirconium | Titanium | Magnesium | Aluminum | Silicon |
| | Molybdenum | Strontium | Sodium | Calcium | |
| | Boron | Manganese | Barium | Iron | |
| FRI Hole F-3 | Vanadium | Copper | | Potassium | |
| (670' to 721' COMPOSITE) | Chromium | Lead | | | |
| | Zinc | | | | |
| | Silver | | | | |
| | Nickel | | | | |
| | Cobalt | | | | |

REMARKS:

METALLURGICAL LABORATORIES, INC.

By [signature]
SPECTROCHEMIST

Client Siskon Corporation Date September 25, 1972 RMGC Job No. 72-22-21R



FRI HOLE F-3 (NX CORE)

| | Sample No. | ppm Copper | ppm Molybdenum | ppm Lead | ppm Zinc | Oz/T Gold | Oz/T Silver |
|---|---|---|---|---|---|---|---|
| Porphyry, | F-3731.5 (721'-731.5') | 275 | 0.050% | | | | |
| Quartz seams, Fair Pyrite, | 3739.3 | 265 | 197 | | | | |
| Little $MoS_2$, $Cu_2O$, $CuFeS_2$. | 3744 | 145 | 41 | | | | |
| Small amounts of $CaWO_4$ | 3754 | 225 | 109 | | | | |
| | 3760 | 150 | 59 | | | | |
| | 3770 | 245 | 11 | | | | |
| | 3780 | 185 | -1 | | | | |
| | 3790 | 160 | 203 | | | | |
| | 3800 | 315 | 0.048% | | | | |
| | 3810 | 100 | 38 | | | 0 | 0 |
| | 3818.4 (810'-818.4') | 225 | 185 | | | 0.242 | 0.06 |
| | 3824 | 115 | 36 | | | 0.102 | 0.03 |
| | 3830 | 105 | 19 | | | 0.295 | 0.09 |
| | 3840 | 200 | 59 | | | 0 | 0 |
| | 3846 | 185 | 2 | | | 0.006 | 0 |
| | 3854 | 315 | 123 | | | 0.108 | 0.03 |
| | 3862 | 95 | 30 | | | 0 | 0 |
| | 3872 | 325 | 190 | | | 0.073 | 0.03 |
| | 3882 (872'-882') | 515 | 137 | | | | |
| | Ave. of above 19 samples | 218 | 127 | | | | |
| | F-3731.5-F3882 COMPOSITE | 195 | 74 | 30 | 260 | 0.050 | 0.09 |

9/28/72 — Requested check assay —

By Gary M. Fechko (signature)

Gary M. Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada September 25, 1972

9/29/72 Fechko phoned & said reruns check. Told him to run all 19 samples (3731.5' thru 3882') for Au & Ag.

ROCKY MOUNTAIN GEOCHEMICAL CORP.
SALT LAKE CITY, UTAH • RENO, NEVADA • SPOKANE, WASHINGTON • TUCSON, ARIZONA

10/3/72

# FRI HOME F-3

| | ounces/ton Gold | Silver |
|---|---|---|
| 800'-810' | 0 | 0 |
| 810'-818.4' | 0.242 | 0.06 |
| 818.4'-824 | 0.102 | 0.03 |
| 824'-830' | 0.295 | 0.09 |
| 830'-840' | 0 | 0 |
| 840'-846' | 0.006 | 0 |
| 846'-854' | 0.108 | 0.03 |
| 854'-862' | 0 | 0 |
| 862'-872' | 0.073 | 0.03 |
| 872'-882' | (Not assayed as pulp in SLC - will assay later - probably low) | |

810' to 830' (20') averaged 0.213 oz. Au —
0.213 x $64.50 = $13.74

Rec'd by phone from
Gary M. Fechko - Rocky Mt. Geochem. Corp.
Reno

p/c JJM, Jr.
EWS
RB
WH

Client Siskon Corp. Date October 4, 1972 RMGC Job No. 72-23-2



FRI HOLE F-3 (NX CORE)

| Sample No. | Oz/T Gold | Oz/T Silver |
|---|---|---|
| F 3731.5 (721'-731.5') | -0.003 | -0.03 |
| 3739.3 | -0.003 | -0.03 |
| 3744 | -0.003 | -0.03 |
| 3754 | -0.003 | -0.03 |
| 3760 | -0.003 | -0.03 |
| 3770 | -0.003 | -0.03 |
| 3780 | -0.003 | -0.03 |
| 3790 | -0.003 | -0.03 |
| 3800 | -0.003 | 0.06 |
| 3810 | -0.003 | -0.03 |
| 3818.4 (810'-818.4') | 0.242 | 0.06 |
| 3824 | 0.102 | 0.03 |
| 3830 | 0.295 | 0.09 |
| 3840 | -0.003 | -0.03 |
| 3846 | 0.006 | -0.003 |
| 3854 | 0.108 | 0.03 |
| 3862 | -0.003 | -0.03 |
| 3872 (862'-872') | 0.073 | 0.03 |

By Gary M. Fechko
Gary M. Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada October 4, 1972

MIDVALE OFFICE

# ROCKY MOUNTAIN GEOCHEMICAL CORP.

P. O. BOX 337 • 1323 W. 7900 SOUTH • MIDVALE, UTAH 84047 • PHONE: (801) 255-3558

## Certificate of Analysis



RMGC Numbers:
Local Job No. 72-28-41SL-C
Foreign Job No. 72-22-21R
Invoice No.: M 183

**Date:** September 28, 1972

**Client:** Siskon Corporation
640 North Sierra Street
P.O. Box 889
Reno, Nevada 89504

**Client Order No.:** None

**Report On:** 1 sample

**Submitted by:** Mr. H. B. Chessher, Jr.

**Date Received:** September 25, 1972

**Analysis:** Tungsten

**Analytical Methods:** Analysis determined colorimetrically.

**Remarks:** FRI HOLE F-3 (NX CORE

**cc:** Enc.
File- Reno
File- SLC (2)

LRR:ktg

| Sample No. | ppm Tungsten |
|---|---|
| F-3882 (872' to 882') | 30 |

By Lawrence R. Reid
Lawrence R. Reid

NOTE F-3 down about 1370 on 10/2/72



ND = None Detected 1 ppm = 0.0001% 1 Troy oz./ton = 34.286 ppm 1 ppm = 0.0292 Troy oz./ton

Client Siskon Corp. Date October 9, 1972 RMGC Job No. 72-23-15R



FRI HOLE F-3, (NX CORE)

| Notes | Sample No. | ppm Copper | ppm Molybdenum | ppm Lead | ppm Zinc | Oz/T Gold | Oz/T Silver |
|---|---|---|---|---|---|---|---|
| Porphyry Little pyrite | F-3890 (882'-890') | 160 | 6 | | | | |
| Little $MoS_2$ & $CuFeS_2$ | 3900 | 315 | 88 | | | | |
| Few crystals of $CaWO_4$ | 3905 | 535 | 209 | | | | |
| | 3913 | 275 | 126 | | | | |
| | 3922 | 235 | 10 | | | | |
| | 3929 | 165 | 32 | | | | |
| | 3934 | 180 | 16 | | | | |
| | 3941.5 | 195 | 30 | | | | |
| | 3947.2 | 325 | 2 | | | | |
| | 3952.3 | 180 | -1 | | | | |
| | 3962 | 570 | 116 | | | | |
| | 3972 | 130 | 29 | | | | |
| | 3982 | 135 | 2 | | | | |
| | 3984 (982'-984') | 125 | 1 | | | | |
| | 3991.5 | 90 | 4 | | | | |
| | 31001.5 | 195 | 38 | | | | |
| | 31010 | 235 | 130 | | | | |
| | 31013 | 255 | 149 | | | | |
| | 31023.5 | 125 | 42 | | | | |
| | 31027 | 750 | 162 | | | | |
| | 31034 | 95 | -1 | | | | |
| | 31041.5 | 240 | 16 | | | | |
| | 31050.5 | 215 | 123 | | | | |
| | F-31057 (1050.5'-1057') | 60 | 11 | | | | |
| COMPOSITES (882'-984') | F-3890-F-3984 | 220 | 66 | 10 | 60 | 0.003 | 0.12 |
| (984'-1057') | F-3991.5-F-31057 | 235 | 113 | 10 | 60 | -0.003 | -0.03 |

By [signature]
Gary M. Fechko

ROCKY MOUNTAIN GEOCHEMICAL CORP.
SALT LAKE CITY, UTAH • RENO, NEVADA • SPOKANE, WASHINGTON • TUCSON, ARIZONA

Client Siskon Corporation Date October 12, 1972 RMGC Job No. 72-23-32R



FRI HOLE F-3 (NX CORE)

| | Sample No. | ppm Copper | ppm Molybdenum | ppm Lead | ppm Zinc | Oz/T Gold | Oz/T Silver |
|---|---|---|---|---|---|---|---|
| Porphyry | F-31062 (1057'-1062') | 100 | 2 | | | | |
| Little $MoS_2$ " $CuFeS_2$ | F-31069.5 | 280 | 59 | | | | |
| Few crystals $CaWO_4$ | F-31079.5 | 95 | -1 | | | | |
| | F-31089.5 | 350 | 0.065% | | | | |
| | F-31099.5 | 180 | 38 | | | | |
| | F-31109 | 125 | 41 | | | | |
| | F-31119 | 135 | 33 | | | | |
| | F-31129 | 310 | 169 | | | | |
| | F-31139 | 280 | 66 | | | | |
| | F-31144 | 240 | 30 | | | | |
| | F-31151 (1144'-1151') | 165 | 93 | | | | |
| | F-31062-F31151 | | | 10 | 45 | -0.003 | -0.03 |

By Gary M. Fechko
Gary M. Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada October 12, 1972

Client Siskon Corporation  Date October 14, 1972  RMGC Job No. 72-23-33R



FRI HOLE F-3 (NX CORE)

| | Sample No. | ppm Copper | ppm Molybdenum | ppm Lead | ppm Zinc | Oz/T Gold | Oz/T Silver |
|---|---|---|---|---|---|---|---|
| PORPHYRY | F-31161 (1151'-1161') | 210 | 79 | | | | |
| Quartz seams Little pyrite Little $CuFeS_2$ & $MoS_2$ | 31166.5 | 150 | 16 | | | | |
| Very little $CaWO_4$ | 31171 | 220 | 83 | | | | |
| | 31178 | 270 | 23 | | | | |
| | 31185.4 | 185 | -1 | | | | |
| | 31192 | 240 | 0.057% | | | | |
| | 31202 | 135 | 99 | | | | |
| | 31212 | 240 | 76 | | | | |
| | 31222 | 95 | 6 | | | | |
| | 31232 | 115 | 33 | | | | |
| | 31242 | 195 | 4 | | | | |
| | 31252 | 220 | 45 | | | | |
| | 31260 (1252'-1260') | 90 | 59 | | | | |
| | F-31161-31260 (1151'-1161') | | | -10 | 65 | -0.003 | 0.06 |

By Gary M. Fechko

Gary M. Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada    OCtober 14, 1972

Client Siskon Corporation Date October 19, 1972 RMGC Job No. 72-24-18R



FRI HOLE F-3 (NX CORE)

| | Sample No. | ppm Copper | ppm Molybdenum | ppm Lead | ppm Zinc | Oz/T Gold | Oz/T Silver |
|---|---|---|---|---|---|---|---|
| PORPHYRY | F-31401 (1391.5'-1401') | 220 | 19 | | | | |
| FEW QUARTZ SEAMS & VEINLETS | 411 | 170 | -1 | | | | |
| LITTLE PYRITE | | | | | | | |
| LITTLE $MoS_2$ & $CuFeS_2$ | 422 | 125 | 25 | | | | |
| FEW CRYSTALS OF $CaWO_4$ | 431 | 100 | 20 | | | | |
| | 441 | 85 | 238 | | | | |
| | 451 | 310 | 96 | | | | |
| | 461 | 60 | 15 | | | | |
| | 471 | 170 | 2 | | | | |
| | 481 | 240 | 66 | | | | |
| | 490 | 145 | -1 | | | | |
| END | F-31500 (1490'-1500') | 85 | 13 | | | | |
| COMPOSITE | F-31401-F-31451 (1391.5'-1451') | 160 | 52 | 40 | 60 | -0.003 | 0.09 |
| " | F-31461-F-31500 (1451'-1500') | 135 | 40 | 10 | 55 | -0.003 | 0.06 |

By Gary M. Fechko

Gary M. Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada October 19, 1972

Client Siskon Corp. Date October 14, 1972 RMGC Job No. 72-23-34R



FRI HOLE F-3 (NX CORE)

| Sample NO. | ppm Copper | ppm Molybdenum | ppm Lead | ppm Zinc | Oz/T Gold | Oz/T Silver |
|---|---|---|---|---|---|---|
| PORPHYRY F-31265 (1260'-1265') Quartz seams | 90 | -1 | | | | |
| Little Pyrite 31272 | 195 | -1 | | | | |
| Little $CuFeS_2$ & $MoS_2$ 31282 Very little $CaWO_4$ | 130 | 52 | | | | |
| 31286.3 | 375 | 22 | | | | |
| 31292 | 135 | 20 | | | | |
| 31296.4 | 205 | 6 | | | | |
| 31302 | 250 | 32 | | | | |
| 31306 | 80 | 11 | | | | |
| 31312 | 65 | -1 | | | | |
| 31322 | 155 | 5 | | | | |
| 31330 | 80 | 22 | | | | |
| 31333 | 160 | 17 | | | | |
| 31340 | 200 | 30 | | | | |
| 31345 | 190 | 15 | | | | |
| 31352 | 60 | 6 | | | | |
| 31362 | 165 | -1 | | | | |
| 31372 (1362'-1372') | 250 | -1 | | | | |
| 31381.5 | 245 | 99 | | | | |
| 31391.5 (1381.5'-1391.5') | 110 | -1 | | | | |
| 31265 31340 (1260'-1340') | | | -10 | 65 | -0.003 | 0.03 |
| 31345 31391.5 (1340'-1391.5') | | | -10 | 70 | -0.003 | 0.03 |

By Gary M. Fechko

Gary M. Fechko

Rocky Mountain Geochemical Corporation
Reno, Nevada October 14, 1972

ROCKY MOUNTAIN GEOCHEMICAL CORP.
SALT LAKE CITY, UTAH • RENO, NEVADA • SPOKANE, WASHINGTON • TUCSON, ARIZONA

# GENERAL GEOLOGIC OUTLINES

# OF THE

# FRI CLAIM GROUP

# GENERAL GEOLOGIC OUTLINES

# OF THE

# FRI CLAIM GROUP

## SUMMARY

The Fri-Titan area is underlain by at least five sequences of sedimentary rocks that have been deformed, intruded and metamorphozed. These rocks were buried beneath a thick pile of volcanics which subsequently have been eroded away in part of the area to reveal the underlying sedimentary section. All rock units, including the volcanics, are broken and displaced by fault movement to an exceptional extent so that correlations and projections cannot be extended far with assurance.

Numerous, narrow granodiorite and rhyolite dike-like bodies cut the sedimentary rocks within a discrete west-northwesterly trending zone in which weak copper, molybdenum and tungsten mineralization is sporadically distributed on outcrop. It is speculated, and somewhat substantiated by drilling on the adjacent Titan claims, that an altered and mineralized plutonic mass may exist at shallow depths beneath the outcrops. It is this probability which makes the Fri claim area attractive as a porphyry-type copper-molybdenum prospect.

A field study of the area was made during January and February of 1972; this report, including the accompanying geologic map and sections, was prepared from field data gathered during that investigation. Results of a geophysical survey of the general area are included with this report.

## RECOMMENDATIONS

Because of the drilling results on the adjacent Titan claims in which altered and mineralized porphyry was reportedly encountered at shallow depths, and from the geology on outcrop it is recommended that the following work be carried out on the Fri claims:

(a) That a 300 foot grid copper-molybdenum geochemical survey be conducted on the sedimentary rock outcrop area within the block bounded by the two arcuate east-west faults, and including that area covered by the Titan claim group.

(b) That a vertical hole be drilled to a minimum of 500 feet deep about 600 feet southwesterly of the common corners of the Fri Nos. 89, 91, 101 claims.

(c) That a vertical hole be drilled to a minimum of 1,000 feet in depth on the Fri No. 2 claim.

## LOCATION

The Fri Claim Group consists of approximately 223 unpatented lode mining claims located in Township 7 North, Ranges 39 and 40 East, about 32 miles northwest of Tonopah in Nye County, Nevada. These claims were located by Siskon Corporation during the early part of 1971, and they adjoin the Titan Claim Group owned by Hughes Tool Company. The Fri Claim Group was staked following a long exploration study by Siskon of the general area in search of possible extensions or trends of the Hall property, a huge molycopper porphyry deposit owned by the Anaconda Company and located a few miles to the southeast.

All location monuments and claim boundary markers are surveyed in and properly set and marked, and all certificates of location were filed on time at the Nye County Courthouse in Tonopah, Nevada. A 500 scale claim map dated August 24, 1971 is available, as are data from a geophysical survey made by McPhar Geophysics for Siskon Corporation during December, 1971.

The area is easily accessible over graded dirt roads, and most localities within the claimed area can be accessible by minor dozer-road construction. Low, alluvial mantled pediments in the eastern portion give way westerly to mountainous, rocky outcrops across a treeless and arid terrain.

## GENERAL GEOLOGY

### Introduction

No mining, except for turquoise, has been done in the Fri-Titan vicinity. Only minor amounts of copper show on outcrops, although surface geochemical test sampling suggests that copper-molybdenum mineralization may be more real than apparent. Several prospect pits have tested tungsten mineralization locally.

The general geology of the Fri area appears to be quite complex: strongly deformed units, sedimentary interfingering, erosive beveling and angular unconformities, and numerous fault-displaced sedimentary sequences form a kaleidoscope of missmatching rock units which make geologic interpretations tentative and projections risky. Field investigations were limited to those needed to supply a generalized geologic picture for use in preliminary assessments, but more field work could resolve most of the remaining problems.

## Sedimentary Sequences

From the accompanying maps and sections it is seen that a thick sedimentary section (mostly fine to coarse-grained clastics, and minor carbonates) dips northwesterly and northeasterly at about 45°, except for one area in the northwestern part of the mapped area which has southerly dips of about 30°. A large portion of the claimed area is blanketed by rhyolite-latite volcanics. The sedimentary sequence probably is Mesozoic in age, and the volcanics and intrusions are probably early Tertiary. A generalized description of the sedimentary sequences (as units used for mapping purposes) is as follows:

Quartzite-Black Shales-Chert Sequence. This unit underlies the southern portion of the mapped area, and is in excess of 4,000 feet in thickness. It grades upward (crudely) in the mapped area from black shales through cherts and into quartzites. Dips are generally northeasterly, except in the turquoise tunnel area where quartzite beds are overturned (probably caused by an intrusion which is not exposed on outcrop). This sequence was strongly deformed and deeply eroded prior to a continuation of sedimentation.

Quartzite Conglomerate-Siltstone-Shale Sequence. Lying in what appears to be angular uncomformity across the deformed quartzite-black shale-chert sequence is a younger succession of about 1,000 feet in thickness which consists of quartzite conglomerates, siltstones and shales. A basal quartzite conglomerate in this sequence interfingers upward into siltstones, which in turn is overlain by shales. This quartzite conglomerate-siltstone-shale unit dips northwesterly about 45°, and appears to terminate to the southwest and northeast against faults.

Limestone Conglomerate-Mudstone Sequence. Lying unconformably (perhaps in angular unconformity) upon the shales of the quartzite conglomerate-siltstone-shale sequence is a thick succession of colorful limestone conglomerates and gray mudstones some 1,200 feet thick. Even though it is thick, the unit is distinct and unchanging, except for relative proportions of conglomerates to mudstones. The lack of size gradations between the conglomerates and the mudstones suggests that this ancient basin of deposition was receiving, simultaneously, two distinct and different type sediments from two separate sources. The mudstones appear baked: they display a peculiar hackly fracture and obscure bedding. To the west the unit is covered by mantle debris, and to the east and north it either changes character rather abruptly, or it is terminated along a fault.

Limestone-Conglomerate-Shale Sequence. To the north and east of the limestone conglomerate-mudstone sequence is yet another sedimentary group which forms a belt on outcrop in seemingly discordance with the trends of the three above described sequences. This group is designated the limestone-conglomerate-shale sequence; it is characterized by limestones (or dolomites), minor quartzite conglomerates and variegated shales. Contact relationship with the underlying limestone conglomerate-mudstone unit is obscure, but it is thought to be across a fault. A thick, persistent limestone (or dolomite) bed in this sequence is terminated abruptly along a fault at the northern end of the mapped area (this is probably the fault which throws this sequence against the limestone conglomerate-mudstone sequence, the quartzite conglomerate-siltstone-shale sequence and the quartzite-black shale-chert sequence as indicated on the accompanying map and sections.) Dips within this limestone-conglomerate-shale unit are 45°-60° northeasterly. The upper part of the sequence is covered by volcanics which almost certainly conceal yet another major fault (not indicated on map) that terminates the sequence.

Quartzite Conglomerate-Shale Sequence. Cropping out as windows in the volcanics in the northern part of the mapped area are two units of quartzite conglomerate separated by shale, as indicated on the map and Section A - $A^1$ (the shale includes some limestone). This quartzite conglomerate-shale sequence dips about 30° southerly and may be quite thick. The unit almost certainly adjoins the southwest-adjacent limestone-conglomerate-shale sequence along a fault hidden by volcanics. This quartzite conglomerate-shale sequence probably had some depositional continuity with the quartzite conglomerate-siltstone-shale sequence (and perhaps, too, the adjacent limestone-conglomerate-shale sequence), but how this could be is by no means obvious. Because of its appearance, it is included in the map and sections as part of the quartzite conglomerate-siltstone-shale sequence.

Volcanics

Much of the area is blanketed by a (probable) post-mineral rhyolite-latite volcanic pile of unknown thickness which hides the pre-volcanic sedimentary sequences. The volcanics formerly existed across the entire area but they have been removed by erosion to reveal the underlying rocks in much of the mapped area. It seems evident that the volcanics were down-faulted (or down-warped) to the north (and uplifted, relatively, to the south) along an arcuate east-west trending line which passes through the southern portions of Fri Claims 41 through 54. More recently, Basin and Range type faulting in a north-northwesterly direction has down-stepped the volcanics to the east (the northwest portion of the mapped area is an example of erosion exhuming the basement sequence of two of these blocks.) It is thought that these north-south blocks are being rotated westerly, and that the faults which originally were near vertical now dip easterly. Drilling and geophysical surveys are the only means of examining the character of the bedrock beneath these volcanics.

Intrusions

As indicated on the map, all intrusions on outcrop are narrow and strike west-northwesterly; at no place do they assume a stocklike appearance on outcrop. All intrusions are either rhyolite or granodiorite:

they are dike-like or sill-like, and collectively form a discrete west-northwesterly trending outcrop pattern. The rhyolite intrusions are more extensive, areally and numerically, and they cut the granodiorite. The granodiorite is altered and weakly mineralized in some places (see Addendum for thin section analysis). Reportedly a drill hole on the Titan Claims (designated DDH-2 on map) intersected porphyry at about 335 feet and remained in it to the total hole depth of about 550 feet; this suggests a stocklike intrusion at shallow depth there. Deformation (overturned beds) in the turquoise tunnel locality suggests that an unexposed intrusion may be present there. It is tempting to speculate that the porphyry dikes which indiscriminately cut across the sedimentary grain are the upward manifestations of a buried stocklike mass.

### Alluvium

Almost all washes have thin alluvium for various widths along their courses, even though this may not be indicated on the map. Alluvium on the pedimented area, though extensive, is thin and for all practical purposes of drilling and geophysics is essentially non-existent, at least as far eastward as the map boundary.

## DEFORMATION

Deformation, considered as folding and faulting, has been severe. All pre-volcanic sequences were obviously folded to a certain degree; fold forms beneath the angular unconformity at the base of the quartzite conglomerate-siltstone-shale sequence (and additional moderate folding above) suggest that there were at least two periods of fold deformation, in addition to northward tilting.

Faulting is particularly severe. In addition to the faulting which must have occurred with the folding and intruding of igneous material, there was very strong post-volcanic (Tertiary?) arcuate faulting in an east-west direction (as indicated by the two major sub-parallel east-west faults on the map) during which the blocks were tipped northward (the movement along the faults was downward on the north sides of the faults).

More recent downfaulting to the east along a north-northwest set of faults has cut across the arcuate faulting; this is typical Basin and Range type faulting. It is the writer's feeling also that a flat thrust fault may underlie the entire mapped area at shallow depth. Peculiar looking pseudo-limestone beds exist at various localities; these were likely formed by hydrothermal solutions which presumably ascended through carbonate beds whose presence are not suggested by superjacent outcrop evidence.

## MINERALIZATION

Copper mineralization appears very minor on outcrop, but the reported drilling results suggest a marked increase in mineral intensity with depth. The block between the east-west arcuate faults, at least as far west as the base of the limestone conglomerate-mudstone unit, shows some tungsten, copper and molybdenum mineralization. This same area displays more or less weak pervasive pyritization and rock-mineral alteration. It appears that this belt (and adjacent areas) has undergone thermal metamorphism. Depth (as in deep washes and in drill holes) seems to enhance the strength of mineralization to an extent that suggests that mineralized zones may be vertically telescoped. The locality of strongest copper mineralization on outcrop appears to be about 3,200 feet southwesterly from DDH-2; a stockwork of quartz veins is present here as it is also in the general DDH-1 to DDH-2 vicinity.

## GEOPHYSICS

A geophysical survey was made of the general Fri-Titan area by McPhar Geophysics for Siskon Corporation during December, 1971. The results of this survey is available for individual inspection in Siskon's office at Reno, Nevada.

## CONCLUSIONS

From field appearances, in conjunction with the (reportedly) favorable Titan drilling results, it is concluded that the Fri claim group is a good porphyry-type copper-molybdenum prospect. The property clearly shows promise, and it is essentially virginal. There is no recourse, from this threshold assessment point, but to further test the Fri potential through geochemistry, geophysics and drilling, and it is the writer's conclusions that such efforts are warranted.

Irving B. Gray

Irving B. Gray
Consulting Geologist

March 22, 1972

# ADDENDUM

Petrographic analysis of a porphyry dike that crops out in a wash about 100 feet southwest of the cabin about 1,100 feet northeast of the turquoise tunnel portal at the northwest corner of Fri 63. Analysis by Dr. Sidney A. Williams of Douglas, Arizona:

The specimen is a granodiorite porphyry composed of large euhedral plagioclase phenocrysts set in a fine-grained, almost granophyric matrix of quartz, orthoclase, and plagioclase. Small ragged hornblende prisms and biotite flakes were the mafites originally. The rock has suffered mild deuteric alteration.

The plagioclase is mildly sausseritized with clots of clinozoisite tending to occur in the cores of the larger crystals. Mafites have been wholly replaced by clinochlore with minor epidote and accessory sphene. Primary sphene and apatite are clustered with the mafites. Small amounts of pyrite were disseminated in the rock with no preferred sites; they are now replaced by goethite. There is no sign of magnetite, and pyrite may have been the accessory mineral instead.

Mineral percentages are estimated as: quartz 18%, orthoclase 13%, plagioclase 51%, clinochlore 8%, sericite 6%, epidote 2%, goethite 1%, and sphene and apatite 0.5% each.

# CERTIFICATE OF QUALIFICATIONS

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The Pennsylvania State University (B.S. in Geology and Mineralogy, 1950)
University Park, Pennsylvania

University of Washington (M.S. in Geology, 1955)
Seattle, Washington

University of Arizona (Ph.D. in Geology, 1962)
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(a) Soils and Gravel Laboratory Technician, Idaho Highways Materials Testing Laboratory, Boise, Idaho (1950-1951)

(b) Engineering Geologist, U. S. Army Corps of Engineers, Walla Walla District, Walla Walla, Wash. (1951-1953)

(c) Field Geologist, Project Geologist, Area Geologist for U. S. Atomic Energy Commission in Arizona and Utah (1954-1958)

(d) Field Geologist, Duval Corporation, Arizona and Nevada (1960-1963)

(e) Consulting Geologist (May, 1963 to present)

Registered Professional Engineer (Geological)
State of Nevada #1728

Member of Sigma XI (honorary scientific society)

T.D. 1520'  Vert. El. 5560±'

FRI

Start: 7/11/72
End: 8/4/72

HOLE F-1 (ROTARY) Dry to 200' then Mud

0-320 Volcanics
320-340 Volcanics
340-350 " + red clay
350-360 - V. & Red shale
360-370 Gray shale
370-380 G & Red shale
380-390 " " "
390-400 " " " + Gray lime
400-410 G. & R. shale
410-420 G. shale
420-430 G shale & Gr. lime
430-470 G lime
470-500 G. shale & G. lime
500-590
590-600 G. lime & shale

①

600-610 D. Gray limestone & shale
610-620 D. Gray Limestone
620-630 "
630-640 "
640-650
650-660 "
660-670 "
670-680
680-690 "
690-700
700-710 "
710-720 "
720-730 "
730-740 D. Gray limestone
740-750 "
750-760 D. Gray limestone & shale
760-770 " " + red shale
770-780 D. Gray limestone & red & green shale
780-790 Red & Lt. green Lime-shale little calcite & pyrite
790-800
800-810 "
810-820 "
820-830 Red & Lt. green lime-shale

②

F-1

830-840 Red & Lt. Green Lime-shale
840-850 Red, black & Lt. Green " "
850-860
860-870 Red, black & Lt Gr. Lime shale
870-880 " " " " "
880-890 " " " " "
890-900 " " " " "
900-910 " " " " "
910-920 " " " " "
920-30 " " " white dolomite
930-40 " " " " "
940-50 " " Lime white
950-60 Red & d Gray shale, white Dolomite
960-70 ", d Gr. & Lt. Gr. shale
970-980 " " " white Dol.
980-990 " Lt. gr. shale [illegible]
990-1000 Ma - D Gray & Red shale; Mi - white Dol. & Lime
1000-10 Ma. Mi. "
1010-20 "
1020-30 D. Gray + Red shales W. Dol. & lime
1030-40 "
1040-50 " + few pieces of qtz
1050-60 "

③

1060-70 "
1070-80 D. Gray, Red & Lt Green shales white Dol. and/or Lime
1080-90 D Gray & Red shales white Dol. and/or Lime
1090-1100 "
1100-10 "
1110-20 "
1120-30 "
1130-40 Lt Gray + Red shales increase in White Lime and/or Dol.
1140-50 White Lime and/or Dol. Lt Gray & Red shales
1150-60 "
1160-70
1170-80 Ma - Lt. colored white Dol. & Lime; Mi - Red & D. Gray shale, Pyrite
1180-90 "
1190-1200 7/28/72 Lt. colored white lime & Dol.
1200-10 Red + D. Gray shales Few Silicates + pyrite
1210-20 " "
1220-30 7/31/72 " "
1230-40 " "
1240-50 " "
1250-60 Same as 1200-1210
1260-70 "

④

F-1

1270-80 Lt Green colored white lime & Dol. D. Gray & Red shales, Few Silicates Little pyrite
1280-90 " "
1290-1300 " "
1300-10 " "
1310-20 " "
1320-30 " "
1330-40 " "
1340-50 " "
1350-60 " "
1360-70 " "
1370-80 " "
1380-90 " "
1390-1400 Lt colored white Lime & Dol. D. Gray & red shales, Lt Green little pyrite & silicates
1400-1405 " Slight increase in silicates
8/4/72

⑤

FRI HOLE F-1

Began NX Coring on 10/26/72 at 1405'. (3.8' on 10/26/72)

1405-08.8, 32", 70%, Lt. gray porphyry very little pyrite

10/27/72
1408.8-1414, 67", +100% Lt. gray porphyry few qtz. seams, little pyrite, little $MoS_2$

1414-1424, 114", 95% Lt gray porphyry few qtz. seams, little pyrite, little $MoS_2$

1424-34, 119", 99% Lt gray porphyry few qtz seams, little pyrite, little $MoS_2$

1434-44, 10/27/72, 118", 98% Lt gray porphyry few qtz. seams, little pyrite.

Lamped 1405-1444 with UV lamp. Few crystals of $CaWO_4$.

⑥

FRI HOLE F-1

1444'-54', 114", 95%, Lt. gray porphyry few qtz. seams, little pyrite, Tr. $MoS_2$

1454'-64', 115", 96%, Lt. gray porphyry few qtz. seams, very little pyrite

1464'-74', 120", 100%, Lt. gray porphyry few qtz. seams, very little pyrite

1474'-84', 124", +100%, Lt. gray porphyry few qtz. seams, very little pyrite

1484'-94', 118", 98%, Lt. gray porphyry, few qtz. seams & 14" qtz. vein, very little pyrite.

⑦

1494'-1504', 111", 93%
Lt gray porphyry, few qtz. seams & 12" qtz. vein, little pyrite

1504'-14', 119", 99%
Lt. gray porphyry, few qtz. seams, very little pyrite

1514'-20' (stopped Hole 10/31/72) 71", 99%, Lt. gray porphyry, few qtz. seams, little pyrite.

Lamped 1444'-1520' with UV light. Few small showings of $CaWO_4$.—

⑧

T.D. 1500', Vert., El. 5770±

Begin: 8/9/72

FRI HOLE #3 (F-3)

0-10 Lt. Gray & Brown shales
10-20 " " " Lime present
20-30 " " " "
30-40 " " " "
40-50 Gray Limestone (sil), little Brown shale
50-60 Gray Limestone (sil)
60-70 " "
70-80 D. Gray Dol. & Gray Ls shale "
80-90 Gray Ls & D. Gray Dol. "
90'-8/9/72
90-100 Gray Ls
100-110 " "
110-120 Gray & Lt. Red Ls "
120-30 Gray ~~Dol~~ shale "
130-40 Gray Ls
140-50 "
150-60 Gray Ls & Lt. ~~Red Dol.~~ shale "
160-70 Gray & Lt. Rd ~~Dol~~ little Ls "
170-80 Gray ~~Dol~~ shale "
180-90 Gray Dol. & Gray Ls shales
190-200 " " "
200 8/10/72
200-210 " " "

①

ROTARY 0'-673'
NX CORE 673'-1500'

210-20 Gray Ls & Dol, Gray shale (sil)
220-30 " " "
230-40 Lt Gray & Lt Red Ls Shale (sil)
240-50 " " (sil)
250-60 " " "
260-70 Lt. Red & Lt. Gray Ls shale (")
275 8/11/72
270-80 Lt Red & Gray Ls shale (")
280-90 " " "
290-300 " " "
300-10 " " "
310-20 " " "
320-30 " & red Latana " "
330-40 Lt Red & D. Gray Shale
340-50 " " little W. Lst.
350-60 Wh., Lt Red & D Gray shale
360-70 Lt. Red & Gray shale
370-80 " " & D. Gray shale
380-90 " " " " "
390-400 " " "
400-10 " " "
410-20 " " "

②

F-3

420-30 Lt. Red, Green & D. Gray shales Limey (few silicates)
430-40 " "
440-50 Lt. Br. & D. Gr. Limey shales "
450-60 " " " "
460-70 " " " Little Lst.
470-80 " " " (few silicates)
480-90 Lt. Br. & Lt Gr. shales Limey "
490-500 " " "
500-10 " " "
510-20 Lt Br., Lt Gre & Gray shales
520-30 " " " "
530-40 " " " "
540-50 " " " "
550-60 " " " "
560-70 " " " "
570-80 Porphyry & shales " (little Pyrite)
580-90 Porp. " " "
590-600 Porp. " " "
600-10 Porp. " " "
610-20 Porp. " " "
620-30 Porp. Lt. Br., Lt. Gre & Gray shale, few silicates, little Pyrite, small amount $MoS_2$ on quartz particles ? ?

③

630-40 Porp. Same as 620-30
640-50 Porp. Lt. Gre & Brown shales - Increase in green silicates, few pyrite
650-60 Porp. & specks $MoS_2$, Porp.
660-70 Also Green silicates, Lt. Br shales, qtz, little pyrite, a unit 3 $MoS_2$
670-73 Porp. " "

Stopped Rotary Drill —
Set up Diamond Drill.
Commenced Coring NX
on 9/6/72.

673-75.8, 21" core, 63%, Lt. gray porphyry, few quartz seams & little pyrite

675.8-684, 100" (101.5"), ±100%, Lt. gray porp. few qtz. seams, little pyrite, Tr. $MoS_2$

684-92, 96" (102), ±100%, Lt. gra. porp. few qtz. seams, little pyrite, little $MoS_2$

692-702, 115", 96%, Lt. gra. porp. few qtz. seams, little pyr., light $MoS_2$

④

702-711, 108" (110"), ±100%, Lt. gra porp. few qtz. seams, little pyr., little $MoS_2$

711-21, 114", 95%, Lt. gra porp. few qtz. seams, little calcite, fair pyrite, light $MoS_2$

721-31.5', 120", 95% Lt gra prop few qtz. seam & veinlets, fair pyrite, light $MoS_2$ —

731.5'-39.3', 94" (95"), ±100%, Lt. gra prop. few qtz. seams & veinlets, fair pyrite light to mod. $MoS_2$. 731.5'-731.8' looks a little $CaWO_4$ (not definite)

739.3-44, 51", 90% Lt. gra. porp. few qtz seams, fair pyrite, little $MoS_2$

744-54, 116", 97%, Lt. gra. porp. few qtz seams, fair pyrite, fair $MoS_2$

⑤

754'-60', 72", 100%, Lt. gra porp. few qtz. seams, fair pyrite, fair $MoS_2$ fault 759.5-760, little Cuprite ($Cu_2O$)?

760-770', 120" (127"), ±100%, Lt gray porp. few qtz seams, little pyrite, little $MoS_2$, little $Cu_2O$?

770'-80', 120" (121"), ±100%, Lt. gray prop. few qtz. seams, little pyrite, Tr. $MoS_2$ Trace $CuFeS_2$, little biotite

780-90, 120" (126"), ±100%, Lt. gray porp. few qtz seams, little pyrite, little $MoS_2$

790'-800', 119", 99%, Lt. gray porp. few qtz seams, little pyrite, little $MoS_2$, 6" qtz. vein with moderate $MoS_2$

9/8/72
800'-810', 120", 100% Lt. gray porp. few qtz seams, little pyrite, little $MoS_2$, Tr. $CuFeS_2$

⑥

9/10/72

Note: Used Ultra-Violet light on cores 721' to 810', 731.5' to 731.8' quartz appears to have a little $CaWO_4$? Few other small showings in other qtz. seams.

Checked 721'-810' with scintillator — No radioactivity

F-3

810-18.4, 101", ±100%, Lt. gray porp. few qtz. seams, fair pyrite, little $MoS_2$, about 4' of core in shear zone.

818.4-24, 62", 92% Lt. gray porp few qtz seams, fair pyrite, little $MoS_2$, Tr. $CuFeS_2$

824-30, 67", 93% Lt. gray porp. few qtz. seams, little pyrite Tr. $MoS_2$, Badly broken

⑦

830-40, 120" (122"), ±100%, Lt. gray porp. few qtz. seams, little pyrite, little $MoS_2$

840-46, 72", 100% Lt. gray porp. little pyrite

846-54, 72" (76"), ±100% Lt. gray porp. few qtz seams, little pyrite, little $MoS_2$.

854-62, 72" (74"), ±100% Lt. gray prop. little pyrite, little $MoS_2$

862-72, 117", 98% Lt gray porp. few quartz seams, little pyrite, little $MoS_2$

9/12/72
872-882, 117", 98% Lt. gray porp. few qtz. seams, An aggregate of about 12" core was qtz., fair pyrite fair $MoS_2$.

⑧

Checked 810-882 with ultra violet light. 872-882 shows little Scheelite in Quartz

882-90, 96" (119"), ±100% Lt. gray porp. few qtz. seams, little pyrite, very little $MoS_2$

890-900, 116", 97% Lt. gray porp. few qtz. seams, little pyrite very little $MoS_2$

900-905, 60" (64"), ±100% Lt. gray porp. few qtz. seams, little pyrite very little $MoS_2$, badly fractured 902'-905'

905-13, 94", 98% Lt. gray porp. few qtz seams, little pyrite, little $MoS_2$

913-922, 105", 97% Lt. gray porp. few qtz seams, little pyrite very little $MoS_2$

⑨

FRL HOLE F-3 Cont'd.

922-29, 77", 92% Lt gray porp. few qtz seams, little pyrite Tr. $MoS_2$, Tr. $CuFeS_2$?

929-34, 63", ±100% Lt gray porp few qtz seams, fresher rock, little pyrite, Tr. $MoS_2$, Very little $CuFeS_2$

934-941.5, 90", 100% Lt gray porp. few qtz seams, little pyrite, little $MoS_2$

941.5-947.2, 53", 79% Lt gray porp. few qtz seams, little pyrite badly fractured.

947.2-952.3, 60", 98% Lt gray porp. few qtz seams, little pyrite.

952.3-962, 114", 98% Lt gray porp few qtz seams, little pyrite, little $MoS_2$

(10)

962-972, 84", 70% Lt gray porp. few quartz seams, little pyrite, little $MoS_2$

972-982, 116", 97% Lt gray porp. few quartz seams, little pyrite little $MoS_2$

982-84, (28") 24", ±100%. Lt gray porp. few quartz seams, little pyrite. 9/15/72

Checked 882-984 with Ultra-Violet light.
900-905 little Scheelite + Powellite.
Few other very minor showings of scheelite in balance of core from 905-984.

6:30 A - 9/19/72 - Phoned O'Leary. Down 1023'. Core about same. Troubles with core tube.

(11)

981-991.5, 86", 96%, Lt. gray porp. few quartz seams, little pyrite Tr. $MoS_2$.

991.5-1001.5, 114", 95% Lt gray porp. few qtz seams, little pyrite little $MoS_2$

1001.5-1010-, (104") —, ±100% Lt gray porp. few qtz seams, little pyrite little $MoS_2$

1010-1013, 36", 100% Lt gray porp. same as above

1013-23.5', 83", 66% Lt gray porp. Same as above

1023.5'-1027, 42", 100% Lt gray porp. Same as above

(12)

F-3

1027-34, 83", 99% Lt gray porp few qtz seams, few calcite seams, little $MoS_2$, Tr. $MoS_2$

1034-41.5' 79", 88% Lt. gray porp. few qtz + calcite seams, little pyrite little $MoS_2$.

1041.5-50.5, 108", 100% Lt gray porp. few qtz seams, little pyrite little $MoS_2$

1050.5-1057, 9/19/72 (99") —, ±100% Lt gray porp, few qtz seams, little pyrite, little $MoS_2$ —

—‖—

1057-62, 60", 100%. Lt. gray porp. few qtz seams, little pyrite Tr. $MoS_2$

(13)

1062-69.5, 80", 89%. Lt. gray porp. few quartz seams. 6" qtz. veinlet fair pyrite, little $MoS_2$

1069.5-79.5', 120", 100% Lt gray porp. few qtz seams, fair pyrite very little $MoS_2$

1079.5-89.5, 114", 95% Lt gray porp. few quartz seams, fair pyrite, little $MoS_2$ + $CuFeS_2$

1089.5-1099.5', 119", 99% Lt gray porp. few qtz seams, fair pyrite, little $MoS_2$.

1099.5-1109 (115") —, ±100% Lt gray porp. few qtz seams, fair pyrite, little $MoS_2$,

1109-1119, 116", 97% Lt gray porp. few qtz seams, fair pyrite, little $MoS_2$ very little $CuFeS_2$.

(14)

1119-1129, 117", 98% Lt gray porp. few qtz seams, fair pyrite little + $MoS_2$.

1129-1139, 116", 97% Lt gray porp. few qtz. seams, fair pyrite little $MoS_2$

1139-1144, (61") —, ±100% Lt gray porp. few qtz. seams, fair pyrite little $MoS_2$.

1144-1151, 9/22/71 84", 100% Lt gray porp 20% ± qtz., fair pyrite few $MoS_2$.

Note: Checked F-31062 thru F-31151 with UV light. few crystals of $CaWO_3$ in the quartz.

—‖—

(15)

1151-61, 111", 93% Lt gray porp. very few qtz seams, little calcites little pyrite, ~~very~~ little $MoS_2$

1161-66.5, 55", 83% Lt gray porp. very few qtz seams, little calcite little pyrite — 0? $MoS_2$

1166.5-1171, (56") —, ±100% Lt gray porp. few qtz seams, little pyrite little $MoS_2$

1171-78, 76", 90% Lt gray porp, few qtz + calcite seams, little pyrite 0? $MoS_2$

1178-85.4, 87", 100% Lt gray porp. few qtz + calcite seams, little pyrite very little $CuFeS_2$ + $MoS_2$

1185.4-1192, (79") —, ±100% Lt gray porp. few qtz seams, little pyrite little $MoS_2$

1192-1202, 117", 98% Lt gray porp. few qtz seams, little pyrite little $MoS_2$ (about 1/16" streak solid)

1202-1212, 118", 98% Lt gray porp. few qtz + calcite seams, fair pyrite little $MoS_2$ + $CuFeS_2$

1212-22, 116", 97% Lt gray porp. few qtz seams, little pyrite very little $CuFeS_2$

1222-32, 117", 98% Lt gray porp. few qtz seams, little pyrite very little $MoS_2$ -

Fresh rock has appearance of GRANITE PORPHYRY

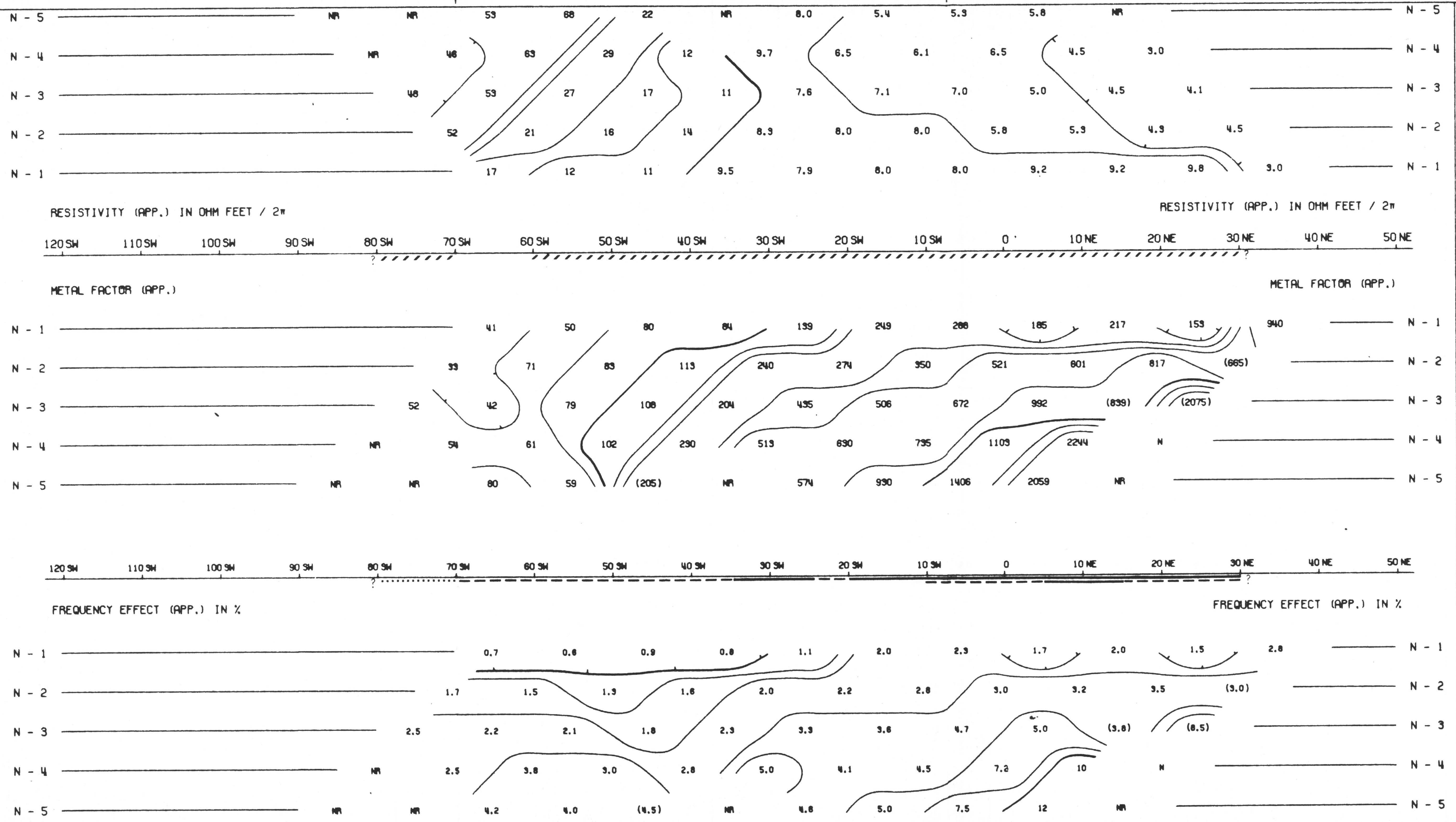
1232-42, 115", 96% Lt gray porp. few qtz seams, little pyrite.

1242-52, 119", 99% Lt gray porp. few qtz seams, some calcite little pyrite, little $MoS_2$

1252-60, 9/26/72 87", 91% Lt gray porp. few qtz seams, little pyrite little $MoS_2$

F-31161 thru F-31260
Checked cores with UV lamp. Few small showings of $CaWO_4$.

(18)

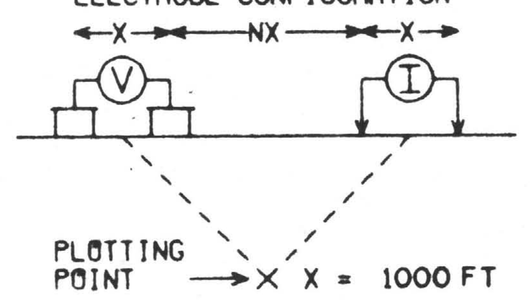



DWG. NO. - I.P. - 5903-1

# SISKON CORPORATION

FRI CLAIM GROUP, NYE COUNTY, NEVADA.

LINE NO. - A




SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.1-1.25 HZ

DATE SURVEYED: DEC 1971

APPROVED

DATE: Feb. 17/72

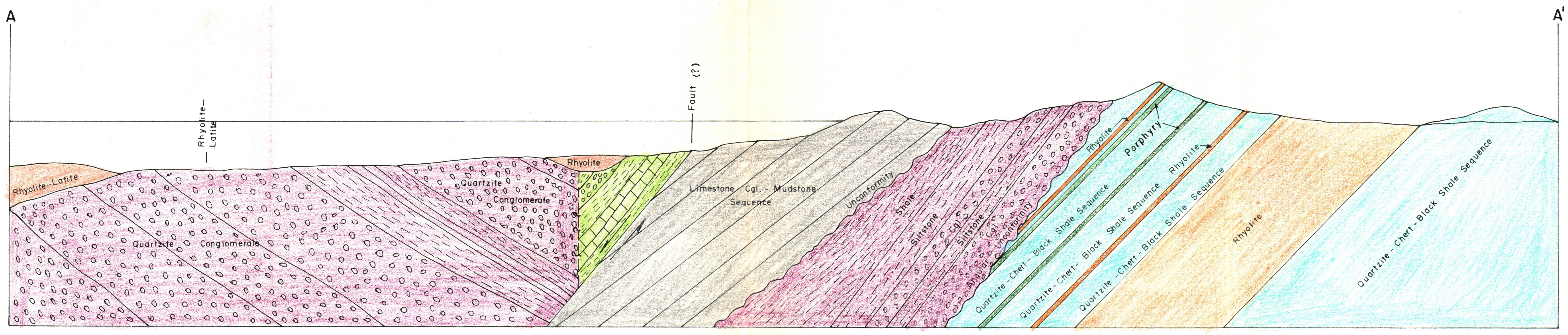
McPHAR GEOPHYSICS INCORPORATED

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

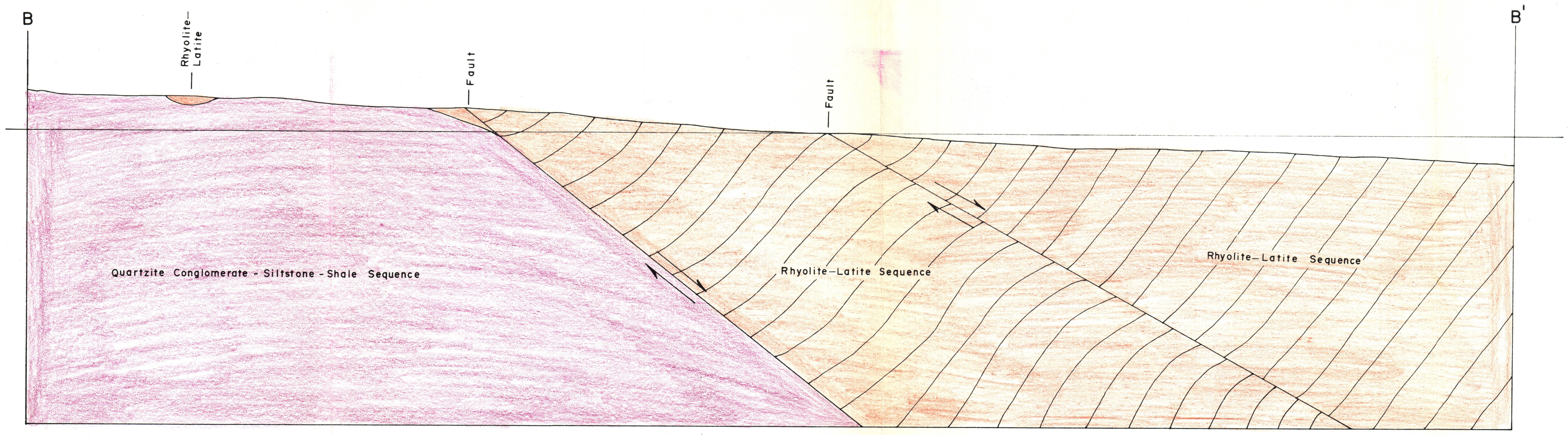
# McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

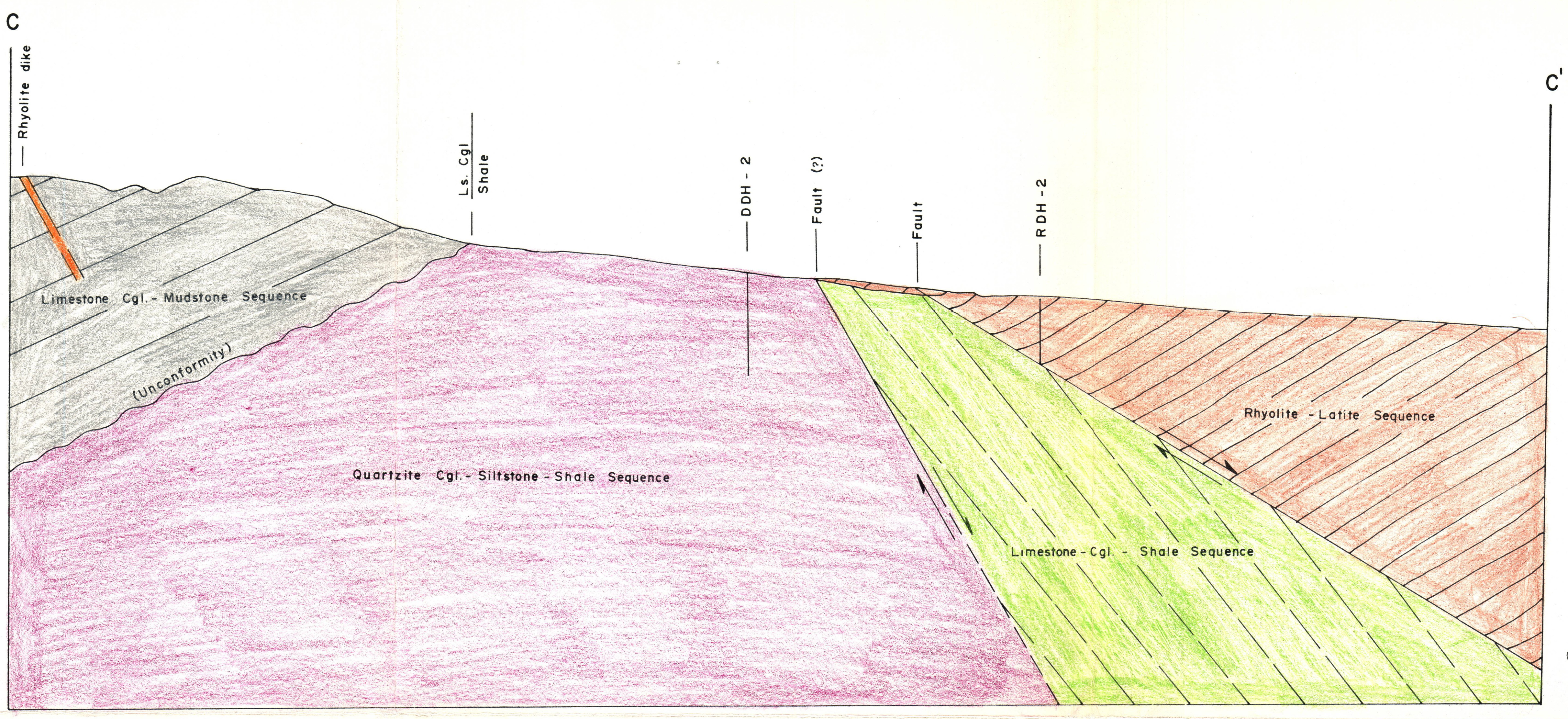
NOTE: THIS PLOT WAS PRODUCED BY MCPHAR COMPUTER DIVISION



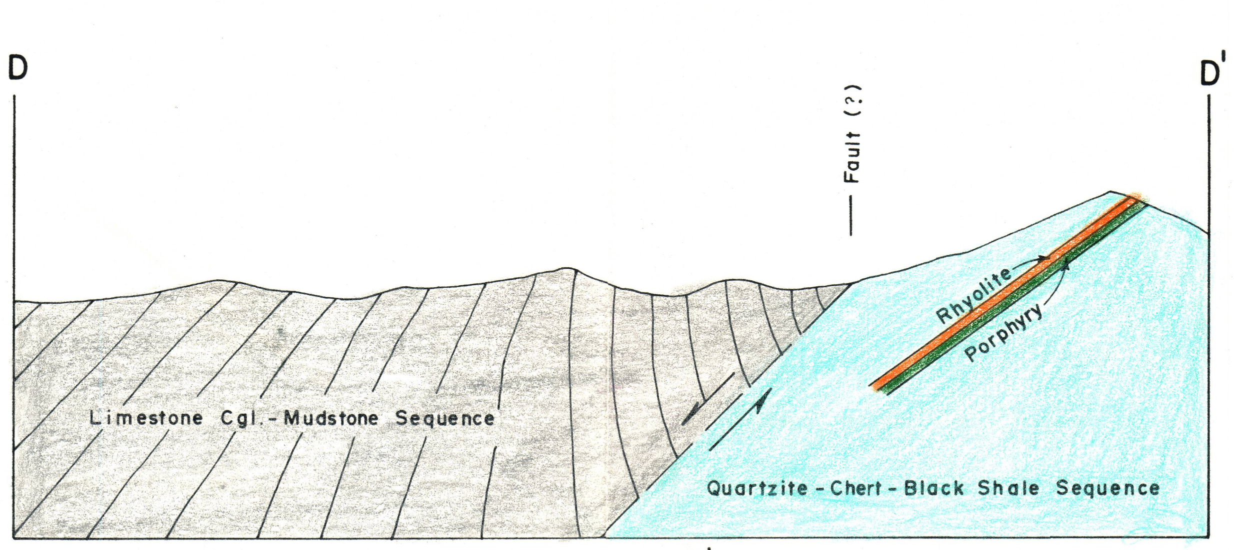

Section A-A'
Vertical N. 21°W. Section Through West Side Center Fri 45
(Looking Northeasterly)




Section B-B'
Vertical N. 85°W. Section Through West Side Center Fri. 45
(Looking Northerly)




Section C-C'
Vertical N. 63°E. Section Through DDH-2 and RDH-2
(Looking Northerly)

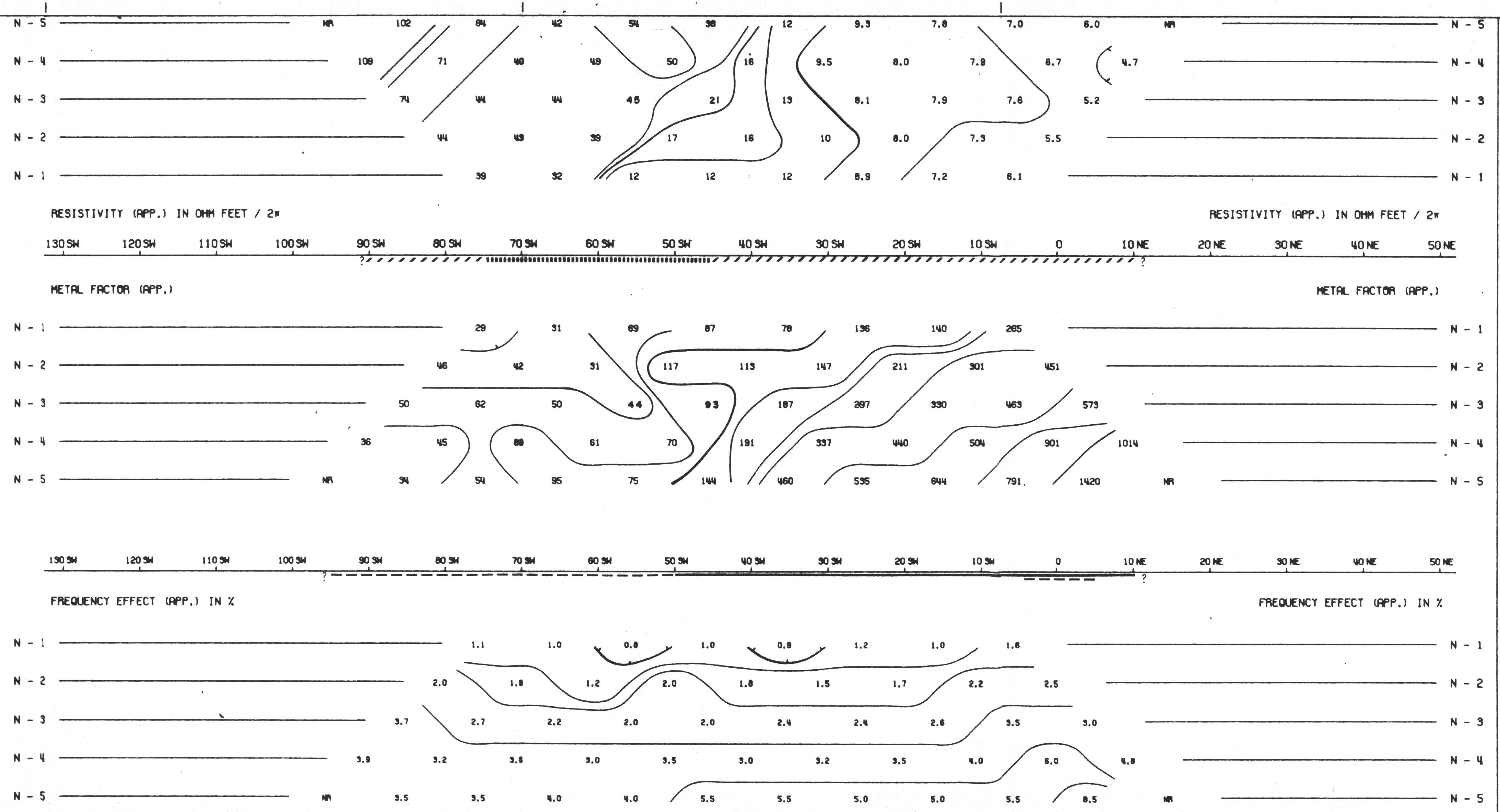



Section D-D'
Vertical N. 45°W. Section Through West Side Center Fri 45
(Looking Northeast)

Brunton - Tape Survey
Scale: 1 inch = 500 feet

**SISKON CORPORATION**
Sections to Accompany Geology Map
of the
Fri Project
T. 7 N., R. 39 E., Nye Co., Nevada

I. B. Gray Feb. 1972




DWG. NO.- I.P.-5903-2

# SISKON CORPORATION

FRI CLAIM GROUP, NYE COUNTY, NEVADA.

LINE NO.- B

ELECTRODE CONFIGURATION

PLOTTING POINT X = 1000 FT

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.1-1.25 HZ

DATE SURVEYED: DEC 1971

APPROVED:

DATE:

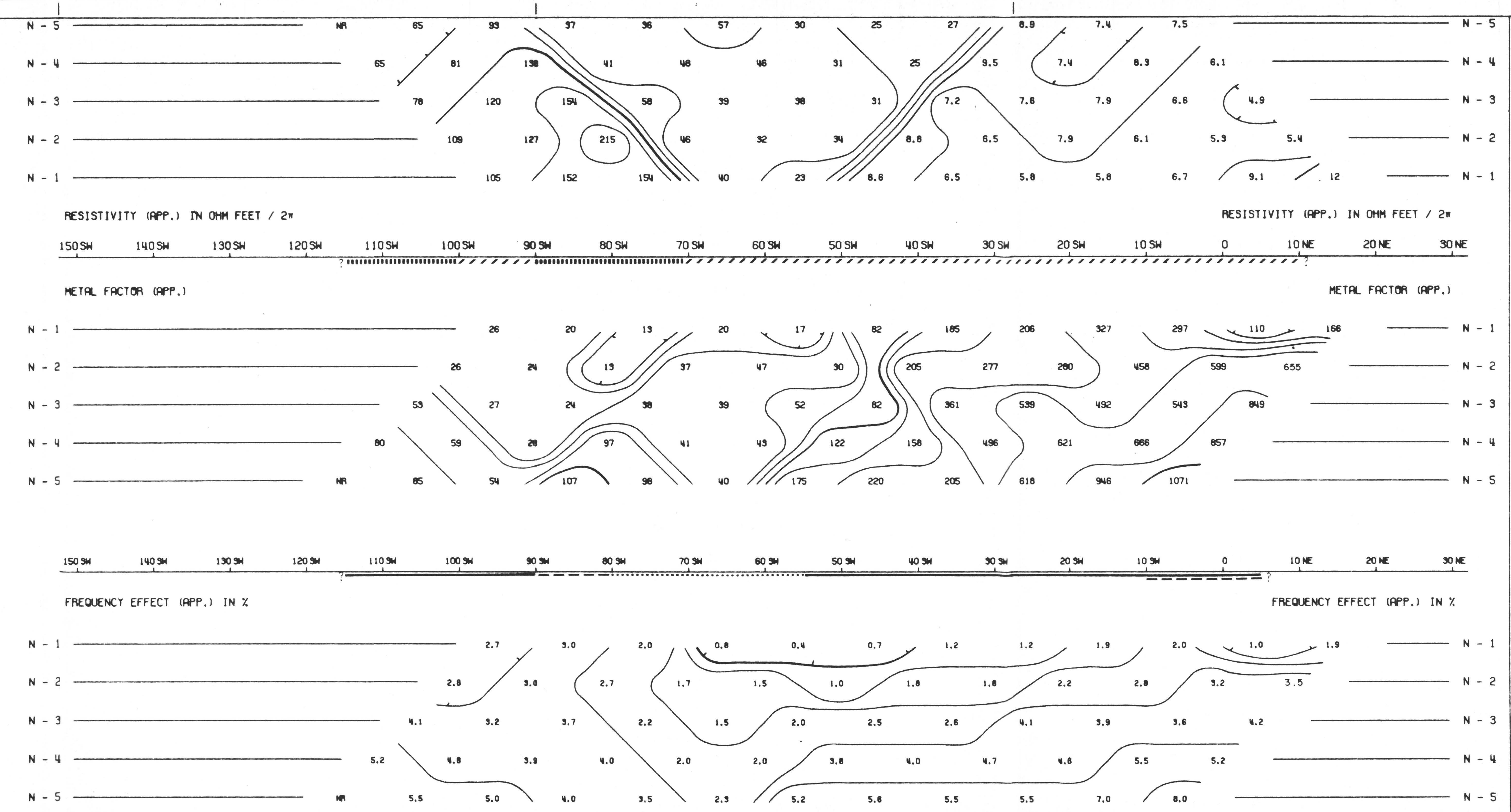
NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

McPHAR GEOPHYSICS INCORPORATED

# McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION




DWG. NO.- I.P.-5903-3

# SISKON CORPORATION

FRI CLAIM GROUP, NYE COUNTY, NEVADA.

LINE NO.- C

ELECTRODE CONFIGURATION

X NX X

PLOTTING POINT X = 1000 FT

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.1-1.25 HZ

DATE SURVEYED: DEC 1971

APPROVED:

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

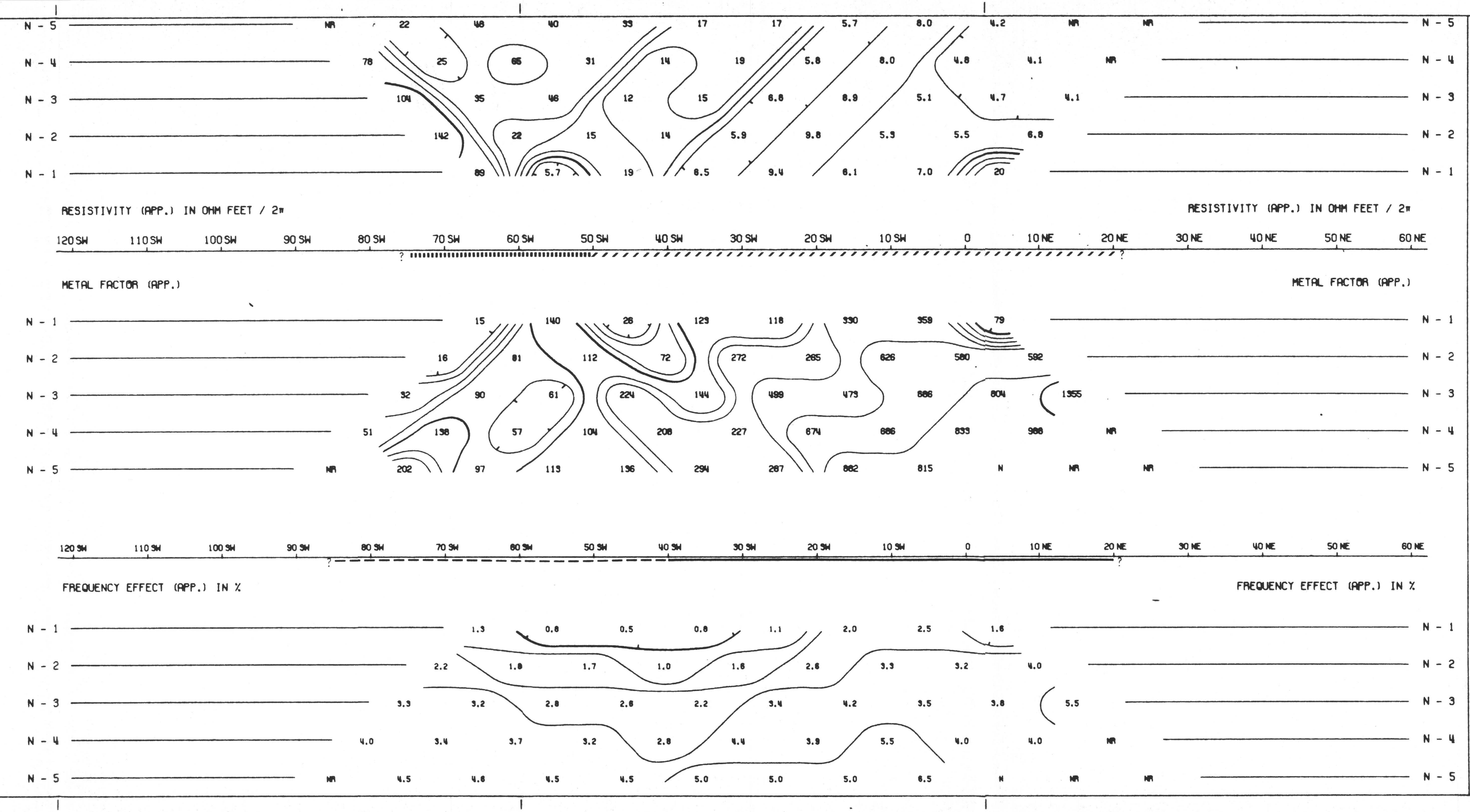
DATE:

McPHAR GEOPHYSICS INCORPORATED

## McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY MCPHAR COMPUTER DIVISION




DWG. NO.- I.P.-5903-4

# SISKON CORPORATION

FRI CLAIM GROUP, NYE COUNTY, NEVADA.

LINE NO.- D

ELECTRODE CONFIGURATION

PLOTTING POINT → X = 1000 FT

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

FREQUENCIES: 0.1-1.25 HZ

DATE SURVEYED: DEC 1971

APPROVED

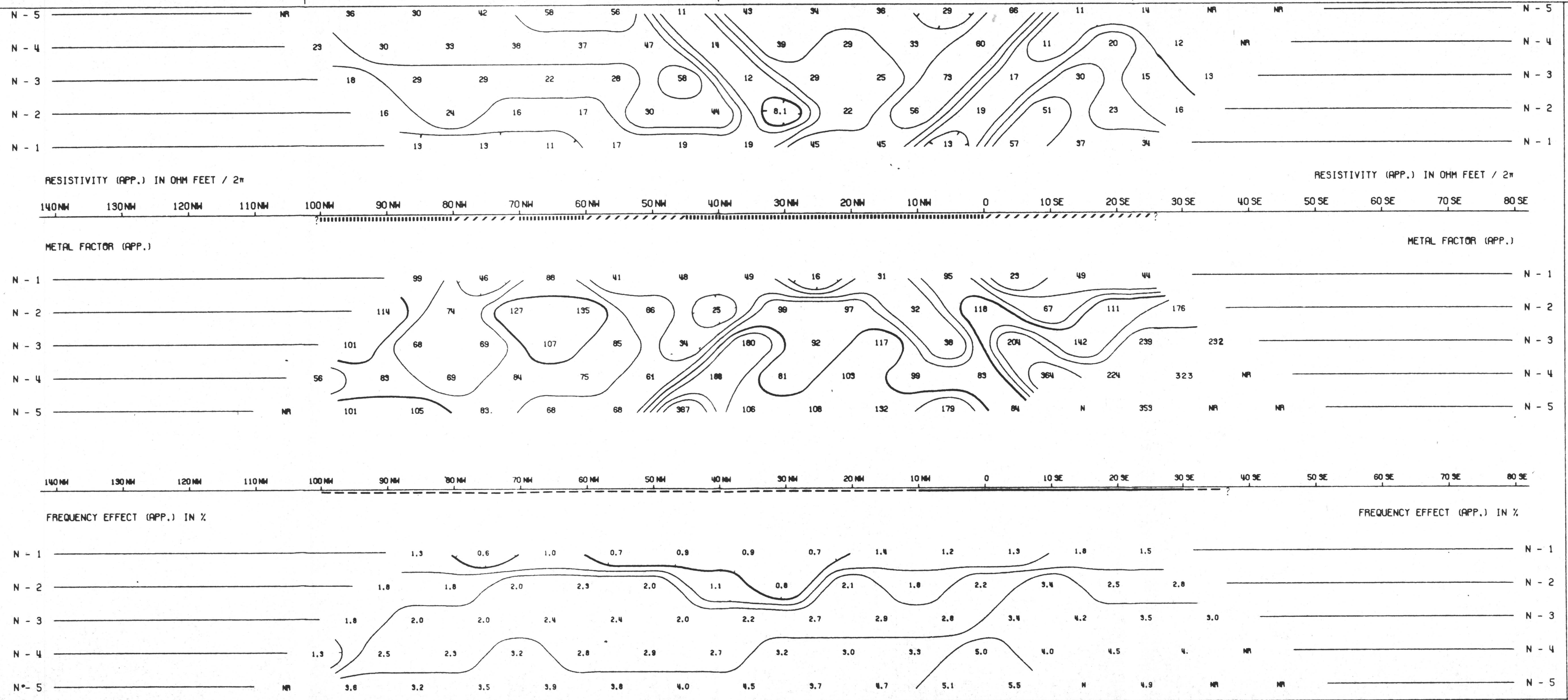
DATE

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

# McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION




DWG. NO.- I.P.-5903-5

# SISKON CORPORATION

FRI CLAIM GROUP, NYE COUNTY, NEVADA.

LINE NO.- E

ELECTRODE CONFIGURATION

PLOTTING POINT → X   X = 1000 FT

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.1-1.25 HZ

DATE SURVEYED: DEC 1971

APPROVED

DATE: Feb. 17

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

# McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

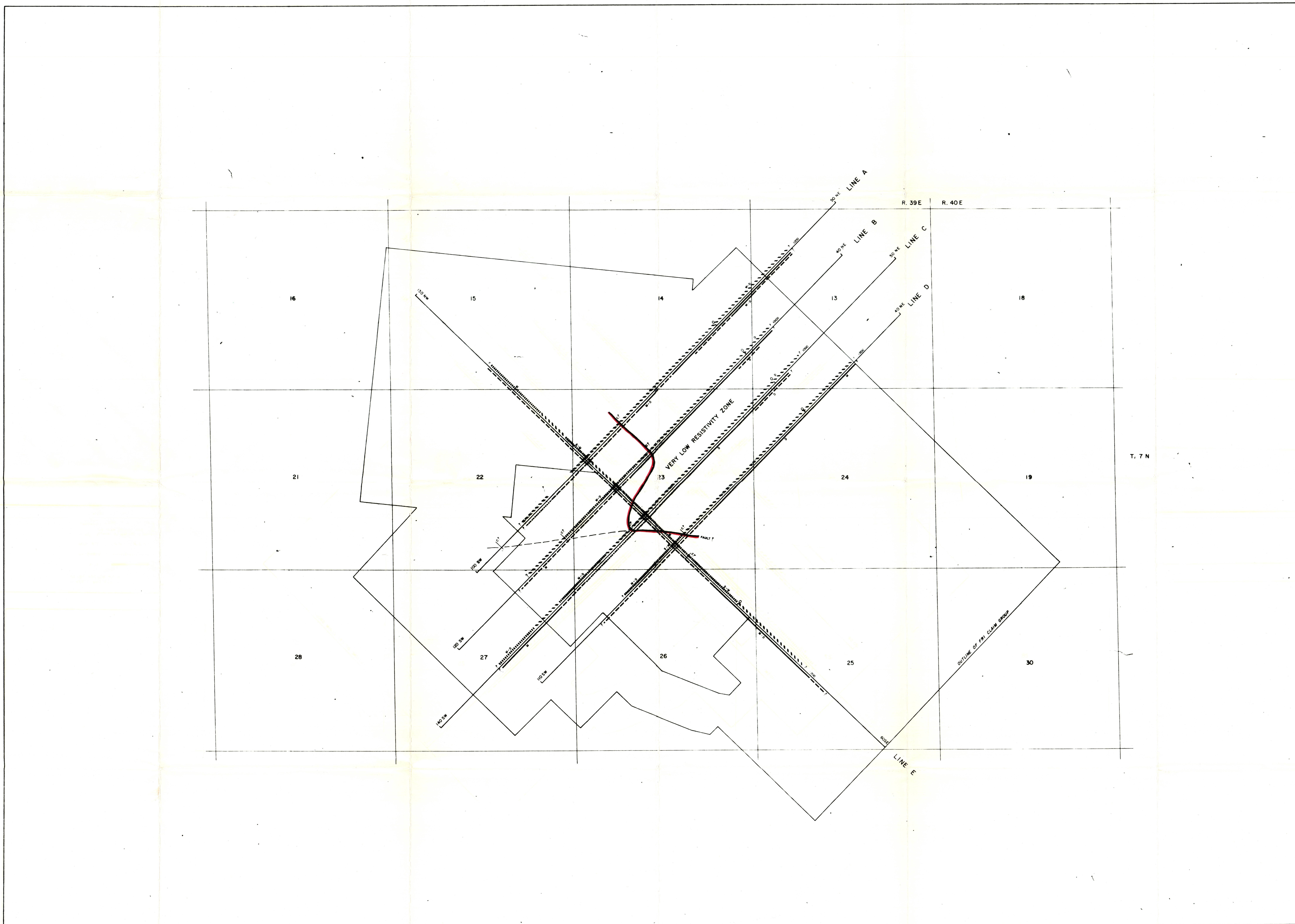
NOTE: THIS PLOT WAS PRODUCED BY McPHAR COMPUTER DIVISION

DWG. I.P.P-4832

# McPHAR GEOPHYSICS

INDUCED POLARIZATION AND RESISTIVITY SURVEY

PLAN MAP




SURFACE PROJECTION OF METAL FACTOR ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE

NOTE: Number at the end of anomaly indicates spread used

APPARENT DEPTH (S=shallow, M=moderate, D=deep)

C= CONTACT, F=FAULT

SURFACE PROJECTION OF PERCENT FREQUENCY EFFECT ANOMALOUS ZONES

| 0.1-1.25 ~ | | 0.3-2.5 ~ |
|---|---|---|
| > 10 | VERY STRONG | > 7.5 |
| 7.5-10 | STRONG | 5 - 7.5 |
| 5 - 7.5 | MODERATE | 3 - 5 |
| 3 - 5 | WEAK | 2 - 3 |
| 2 - 3 | VERY WEAK | .5 - 2 |

## SISKON CORPORATION

FRI CLAIM GROUP, NYE COUNTY, NEVADA

SCALE

FEET 1000 0 1000 2000 3000 4000 5000 FEET

1 INCH EQUALS 1000 FEET

DRAWN JK

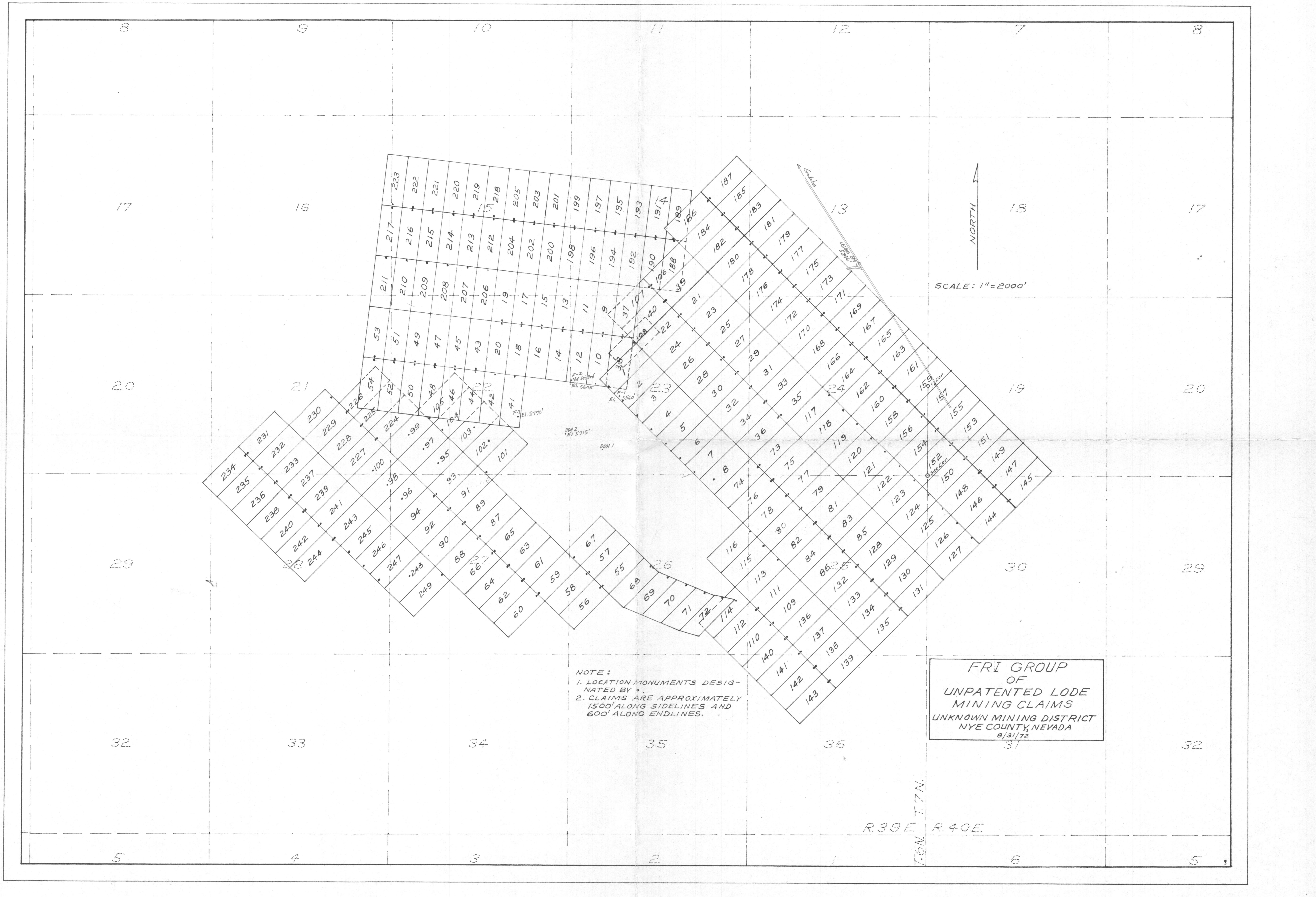
DATE JAN 1972

APPROVED

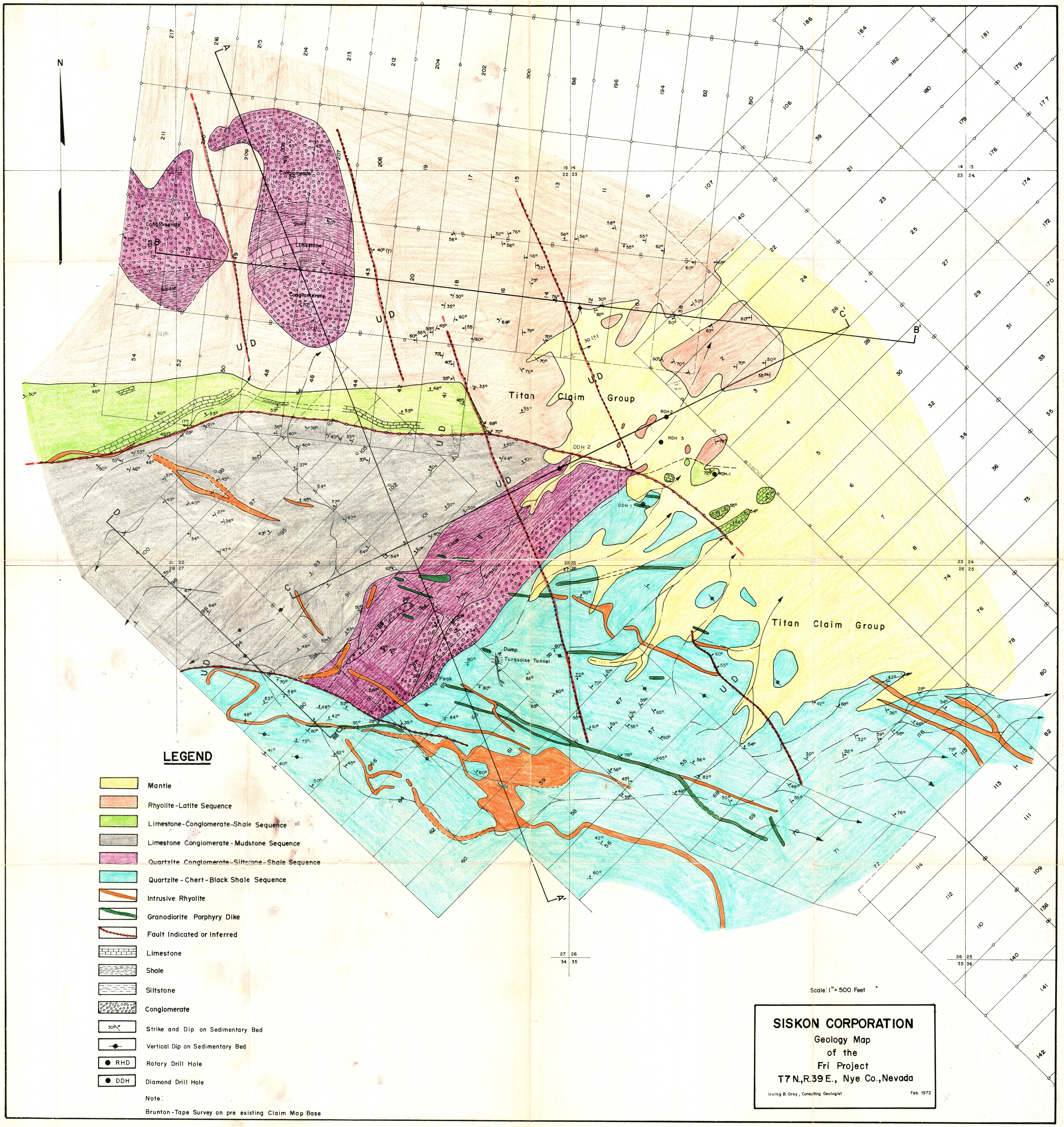
DATE

McPHAR GEOPHYSICS INCORPORATED

DWG. I.I.P.P-4832


FRI GROUP
OF
UNPATENTED LODE
MINING CLAIMS
UNKNOWN MINING DISTRICT
NYE COUNTY, NEVADA
8/31/72
NOTE:
1. LOCATION MONUMENTS DESIGNATED BY •.
2. CLAIMS ARE APPROXIMATELY 1500' ALONG SIDELINES AND 600' ALONG ENDLINES.
SCALE: 1" = 2000'
NORTH
R.39E. R.40E.
T.7N.
T.6N.
F3 El. 5770'
DDH 2 El. 5715'
DDH 1


FRI GROUP
OF
LODE MINING CLAIMS
NYE COUNTY, NEVADA
SCALE: 1"=500'
MAY 13, 1971
NOTE: REFER TO CLAIM MAP OF AUGUST 21, 1971 WHICH SHOWS 126 ADDITIONAL CLAIMS MAKING A TOTAL OF 223 249 FRI CLAIMS.
APRIL 13, 1972
SAMPLE CODE:
LOCATION
ASSAY IN PPM COPPER (SOIL & ROCK)
TITAN CLAIMS
TITAN FRACTIONS
R. 39 E.
R. 40 E.
T. 7 N.
N
1/4 COR. RELOCATED 1959 BLM
SEC. COR. RELOC. 1959 BLM
KEOUGH CLAIMS
ESSO CLAIMS?
CONSOLIDATED CLAIM?
UNKNOWN?


N
Titan Claim Group
Titan Claim Group
Dump
Turquoise Tunnel
Peak
Conglomerate
Shale
Limestone
RDH 2
RDH 3
RDH-1
DDH 2
DDH 1
LEGEND
Mantle
Rhyolite-Latite Sequence
Limestone-Conglomerate-Shale Sequence
Limestone Conglomerate-Mudstone Sequence
Quartzite Conglomerate-Siltstone-Shale Sequence
Quartzite-Chert-Black Shale Sequence
Intrusive Rhyolite
Granodiorite Porphyry Dike
Fault Indicated or Inferred
Limestone
Shale
Siltstone
Conglomerate
Strike and Dip on Sedimentary Bed
Vertical Dip on Sedimentary Bed
RHD Rotary Drill Hole
DDH Diamond Drill Hole
Note:
Brunton-Tape Survey on pre existing Claim Map Base
Scale: 1" = 500 Feet
SISKON CORPORATION
Geology Map
of the
Fri Project
T7 N., R.39 E., Nye Co., Nevada
Irving B. Gray, Consulting Geologist
Feb. 1972